CATTLE MARKETING IN THE EPUPA, RUACANA AND ONESI CONSTITUENCIES OF THE KUNENE AND OMUSATI REGIONS

REPORT ON A PRE-IMPLEMENTATION BASELINE SOCIO-ECONOMIC SURVEY FOR THE RUACANA QUARANTINE-FEEDLOT PROJECT

Prepared by

Piers Vigne
Vigne & Associates Consultants and Danea
P.O. Box 50364, Windhoek
Tel/fax: +61-235448
e-mail: pjcvigne@mweb.com.na

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CATTLE MARKETING PRACTICES IN EPUPA, RUACANA AND ONESI CONSTITUENCIES OF KUNENE AND OMUSATI REGIONS

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Table of Contents

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The views expressed in this report are the responsibility of the author alone, and do not necessarily reflect those of the various institutions involved in the project.

Acronyms

ADC	Agricultural Development Centre
AET	Agricultural Extension Technician
CBPP	Contagious Bovine Pleuro-pneumonia
CDW	Cold Dressed Weight
CAEO	Chief Agricultural Extension Officer
CSO	Central Statistics Office
DVS	Directorate of Veterinary Services
LW	Live Weight
MAWRD	Ministry of Agriculture, Water and Rural Development
MBEC	Ministry of Basic Education and Culture
NBC	Namibia Broadcasting Corporation
NCA	Northern Communal Areas
NEPRU	Namibia Economic Policy Research Unit
NOLIDEP	Northern Regions Livestock Development Project
PLAN	People's Liberation Army of Namibia
QED	Quarantine Enterprise Development
SADF	South African Defence Force

Executive Summary

This study aimed to collect information appropriate for providing a basis for measuring the impact of the activities of a pilot quarantine-feedlot near Ruacana in the Omusati region. The intension is that it will be followed by a post-implementation study at the end of the project early in 2002.

ONE IMPORTANT DEVELOPMENT HAS BEEN THE ADVENT OF THE MEATCO MARKETING CHANNEL. IT IS CLEARLY IMPORTANT, HOWEVER, THAT THE GOVERNMENT AND MEATCO PREPARES CONTINGENCY PLANS FOR EMERGENCY MARKETING FROM THE REGION WHICH CAN BE EFFECTED RAPIDLY IN THE NEXT DROUGHT. DROUGHTS AND THE REBUILDING OF HERDS THAT FOLLOW THEM ALSO HAVE MAJOR IMPLICATIONS

Onesi….

, sound economic reasons for existing cattle farming practices including the extremely limited marketing of cattle through Meatco. Important factors limiting cattle marketing identified in the QED survey include small herd sizes, high rates of mortality and other losses, the importance of cattle as sources of draught power, milk, manure, and other products, shortage of rural labour for improved livestock management systems, lack of investment alternatives, diversified income-generating opportunities, and, perhaps above all, poorly developed marketing systems.

1. INTRODUCTION

The objective of this pre-implementation baseline socio-economic study was to collect information appropriate for providing a basis for measuring the impact of the activities of the Quarantine Enterprise Development (QED) project in the Ruacana area. The intension is that it will be followed by a post-implementation study at the end of the project early in 2002.

The QED project involves the establishment and operation of a pilot quarantine-feedlot near Ruacana in the Omusati region (Vigne & Associates and Danea. 2001). In the northern Kunene and Omusati regions farmers and traders wishing to sell to Meatco currently must trek or truck their cattle some 150-200 kilometres south to the Omutambo Omawe Quarantine Farm. An important aim of a quarantine facility at Ruacana is to reduce trekking costs including associated weight losses and truck costs; also truck transport to Oshakati would be less costly as Ruacana is closer to the Meatco abattoir than Omutambo Omawe. As land and finance for developing additional grazing-based quarantine facilities in the Ruacana area are not available, the project proposes to pilot a feedlot-based quarantine facility offering its services to those selling cattle to Meatco.

The project will test the viability of an enterprise providing cattle with a maintenance ration for the 21 day quarantine period only, as well as different feeding regimes over longer periods aiming at weight and fat gains. Trials will be carried out to establish optimal feeding regimes for different types of cattle. Costs, which must be met by those making use of this service, will include the cost of fodder, water, veterinary treatment and of management. If sufficient farmers find these costs less than those they incur when making use of quarantine facilities at Omutambo Omawe (and in the near future Otjakati in Kunene region) it is assumed that the enterprise is likely to succeed. In the case of feedlotting for weight and fat gain, clients will also benefit from increased liveweights and improved grades[1].

It is expected that the benefits of using the facility will include, as already noted, reduced costs of trekking, reduced weight loss during trekking, lower truck transport costs, as well as avoidance of further weight loss at grazing-based quarantine farms when grazing is poor. On the other hand, farmers using the quarantine-feedlot will loose the potential benefit of cattle gaining weight during quarantining from natural pastures when grazing is good. The enterprise, which will be operated as a commercial venture, must compete against the government's Omutambo Omawe quarantine facility where no charges are levied, and the new Meatco Otjakati quarantine facility north-west of Opuwo where fees are likely to be low.

This baseline socio-economic survey focuses on cattle marketing experience within the overall rural livelihood system.

Location and method

The intension was to conduct surveys in areas within the catchment area of the proposed Ruacana Quarantine/Feedlot facility (representing the 'with project' group), and in areas likely to be beyond its catchment area (representing the 'without project' or control group).

[1] E.g. Meatco NCA prices for 21/02/01: B0 = N$ 7.67/kg CDW; B1 = N$ 8.98/kg CDW; B2 = N$ 9.48/kg CDW. C0 = N$ 6.98/kg CDW; C1 = N$ 8.25/kg CDW; C2 = N$ 8.69/kg CDW.

These areas were to be approximately equidistant to the Omutambo Omawe Quarantine Farm, but not to informal markets such as Outapi and Oshakati.

In the event the following areas were selected. Area 1: the Etoto-Ruacana area is immediately to the west and south of Ruacana, and straddles the border between the northern Kunene region and the Omusati region. This is an area where farmers may make use of the new facility for marketing.

A second area in the Kunene region was surveyed representing what was thought to represent a 'without project' situation. Area 2: the Okangwati - Epupa area. Located about 100 km to the west of Ruacana. Subsequent field work suggested that some traders and farmers operating in this area may in fact make use of the Ruacana facility.

The selection of a 'without project' survey location in Kunene region is complicated by the expected opening later this year of the Otjakati Quarantine Farm, 40 km west of Opuwo. This new marketing option is likely to disturb any assessment of the impact of the Ruacana Quarantine Feedlot in locations within its catchment area. This amounts to most of the Etanga area. Even marketing in the Okangwati area may be impacted to some degree by the advent of the new Otjakati quarantine facility.

A third area was selected to represent the 'with project' situation in the Omusati region. Area 3: immediately to the east and south of Ruacana in the north-western part of the Omusati region including Onesi, Eunda and Epalela.

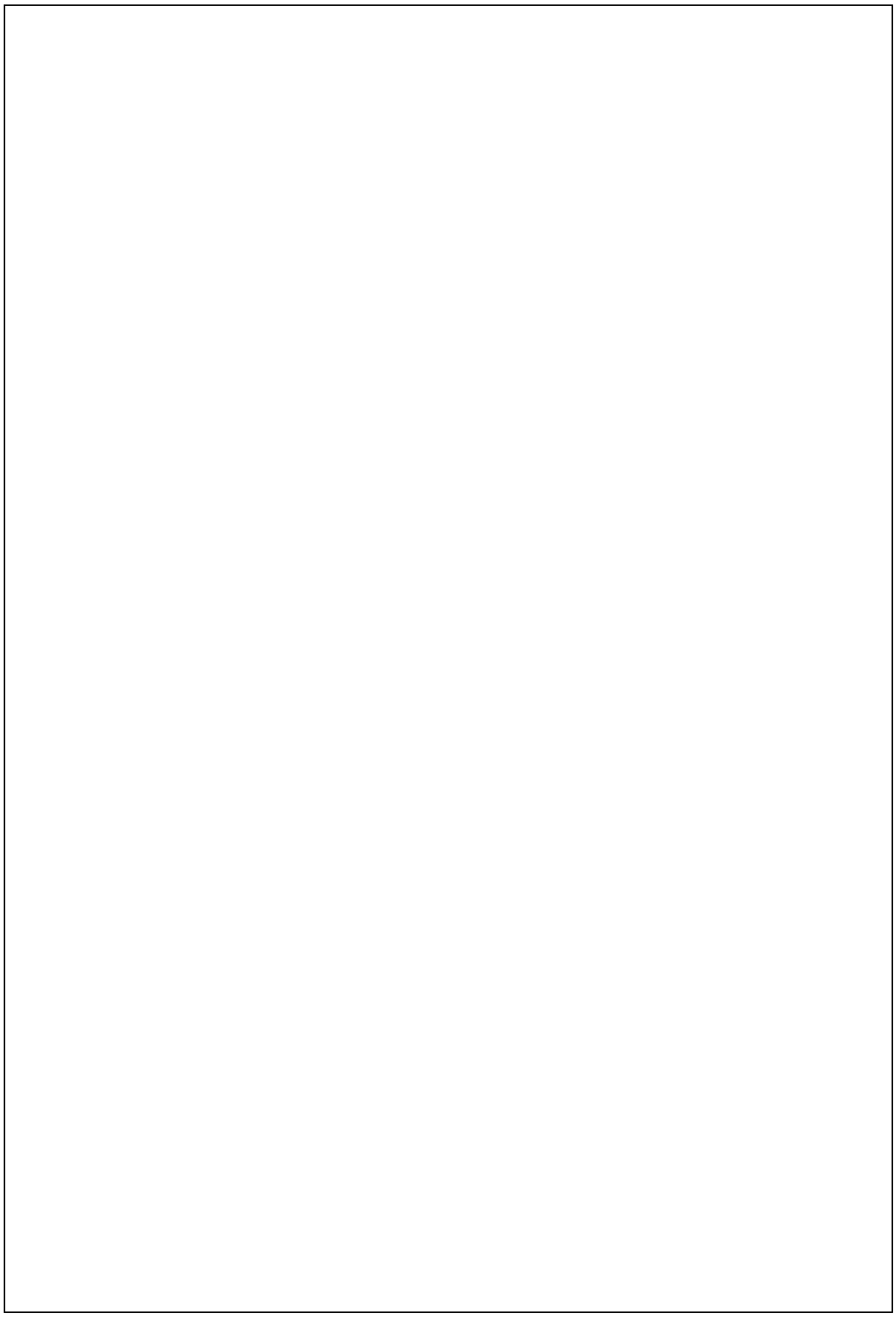
Areas 1 and 2 are occupied by predominantly Otjiherero speakers and Area 3 by Oshiwambo speakers.

Field research was undertaken by two teams of field surveyors together with the QED project socio-economist. Four surveyors were recruited to work in the Otjiherero speaking areas and four in the Oshivambo speaking area. Surveyors worked in pairs often accompanied by the socio-economist. Training emphasized the need for an informal interview approach for information gathering. It was also found essential to comprehensively explain the nature of the quarantine-feedlot project to respondents, as well as local traditional authorities. This served the dual purpose of motivating respondents to provide good information and of encouraging local communities to consider utilizing the proposed facility. Interviews usually took between one and two hours per respondent.

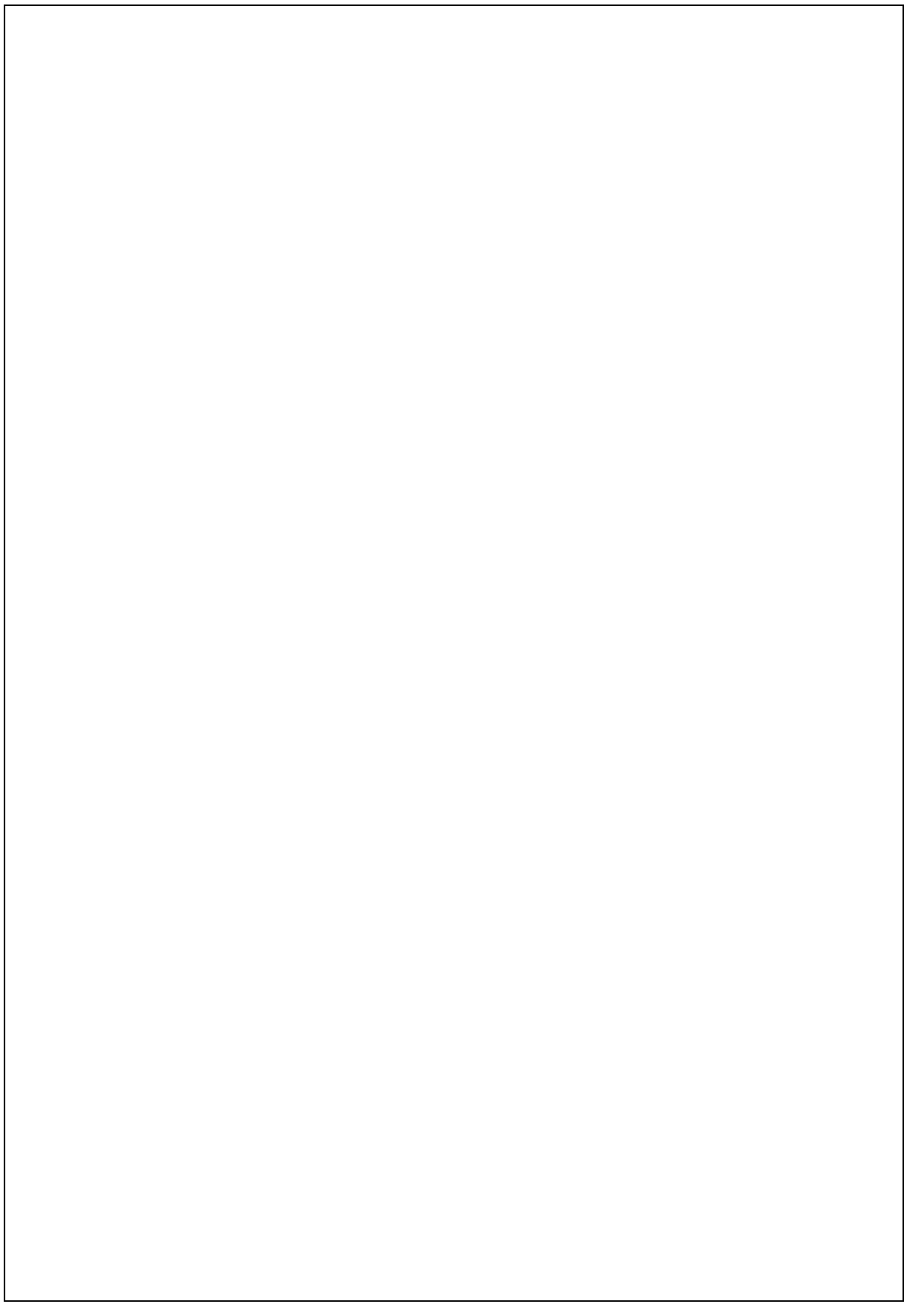
Surveyors were recruited who had good prior understanding of farming systems in the northern Kunene and Omusati regions. In the Kunene area the four surveyors were highly experienced officials of the Directorate of Veterinary Services who were on study leave for a three year period to undertake the Diploma in Agriculture course offered at Neudamm Agricultural College. The four in the Omusati area were all locally resident, unemployed graduates of the Diploma in Agriculture offered by the nearby Ogongo Agricultural College.

The study required seven days of field work in the Kunene region and four days in the Omusati region, which took place in April and May of 2001.

Map 1. Okangwati-Epupa and Ruacana-Etoto Areas



Map 2. Onesi Area



2. LIVESTOCK MARKETING IN EPUPA CONSTITUENCY, KUNENE REGION, AND RUACANA CONSTIUENCY, OMUSATI REGION

2.1 BACKGROUND

2.1.1 The Study Area

The study focused on one area in the heart of Epupa constituency of Kunene region (Area 2), and one straddling its western border with Omusati region (Area 1). Area 1, situated close to the quarantine-feedlot project location, is to the south and west of Ruacana and Etoto. Area 2, somewhat distant from the proposed quarantine-feedlot enterprise at Ruacana, where the impact of the project is uncertain, is the area of Okangwati, Omuhonga, Omuramba and Epupa. Area 1 is occupied largely by Ovahimba and Area 2 largely by Ovazemba – in both cases not exclusively so. Other respondents included Ovatjimba and Owambos in both areas.

2.1.2 Literature Review

An interesting indicator of the status of official development efforts in the Epupa constituency is the lack of documented information on the area. The area is ignored by the National Planning Commission's Annual Agricultural Survey and the MAWRD's Namibia Early Warning and Food Information System. The 1994/95 Namibia Agricultural Census Basic Tables on Communal Agriculture does not differentiate between different areas within the Kunene region, notably those to the north and south of the Veterinary Cordon Fence.

The annual veterinary campaigns carried out by the Directorate of Veterinary Services are the basis for the livestock census which forms an important source of information. On the other hand, other potential sources of data are not available. Stock cards have not been used since independence. Likewise, the system of veterinary movement permits, which might provide information on marketing routes and volumes, is not implemented in the Epupa area in a way that can provide data (see Chapter 4).

It is also indicative that livelihood studies remain largely in the realm of academia rather than development practitioners. Michael Bollig, a social anthropologist from the University of Cologne, has produced much valuable work on the area . (Bollig, 1997; Sansder et al, 1998).

Two recent studies focusing on livestock marketing have included coverage of the north Kunene region (MAWRD. 2000; NEPRU. 2000). Both these studies date from the era of Meatco auctions. As such they are largely out of date as regards north Kunene, Kavango and Caprivi regions where Meatco auctions were significant. As discussed below, some findings of the recent NOLIDEP supported study and the NEPRU study of livestock marketing in the Northern Communal Areas are open to question.

It should also be noted that work by the MAWRD's Farming Systems Research and Extension Unit based at Opuwo is beginning to produce useful information (for instance: FSRE Unit, Kunene Region 2000).

2.1.3 Historical Background

The importance of history

To understand the role, and perhaps more so the potential role, of livestock marketing in the livelihoods of today's residents of Epupa constituency it is essential to consider historical developments over the last 150 years. It is important to realise that the inhabitants of the area are not quite the 'traditional' pastoralists that the tourist industry, so influential of outsiders' thinking about the area, would have us believe. It may be argued that this view, which includes the notion that the Ovahimba are essentially not market oriented but are content to remain as self-reliant subsistence producers, has partly contributed to the neglect of the area by post-Independence development efforts. The problem with this neglect is that change is inevitable and that if left to market forces alone it could have negative consequences in terms, in particular, of household vulnerability to stresses. Such considerations are what lie at the heart of recent local opposition to the Epupa dam project.

The following paragraphs do not refer specifically to the history of the Ovazemba who inhabit the Ruacana-Etoto area. This is because no documented sources on these areas could be located. What is well known however is that the Ovazemba migrated into the area in the second quarter of the last century and have lived since under the authority of the Uukulonkadhi king based at Onesi. While they remain closely related to Otiherero-speaking communities they have developed close links with Oshiwambo-speakers. Some of their agricultural practices, for example, can be seen as a hybrid of both groups, involving the advanced livestock husbandry practices deriving from the former and the crop husbandry practices of the latter.

19th century instability and socio-economic diversification

The second half of the 19th century was a period of political turmoil and socio-economic diversification in the northern Kunene or Kaokoland area. In the mid-19th century the area came under the influence of Nama and Oorlam commandos who were linked to the trade economy of the Cape. Raids by these commandos largely depopulated the region, as dispossessed Otjiherero-speaking people sought refuge in south western Angola. Remnant groups, known as Ovatjimba (aardvark in Otjiherero), having lost their livestock, took to the mountains in the north, surviving as hunter gatherers. At the beginning of the 20th century, the area was under the influence of the western Ovambo kingdoms through trade in ivory and ostrich shells in exchange for grain, iron and other goods. In Angola, Ovahimba rebuilt their herds and worked for the Portuguese as hunters, scouts, plantation workers, and mercenaries. They again lost most of their herds to the Rindepest epidemic of 1897.

In 1910, Portuguese colonial policy changed. Ovahimba mercenary groups were disbanded. Pastoralist communities were strictly controlled by colonial police, were heavily taxed and were forced to labour on plantations. Meanwhile, in Namibia, Nama hegemony had been done away with by the German colonial regime. Ovahimba returned in numbers between 1910 and 1930 largely assimilating the Ovatjimba. Later others also moved to Namibia, including Ovazemba who settled west of Ruacana. The complexity of politics in the region was added to by the influence of other groups including Vita Tom's armed community from the Huila highlands, based at Otjiyandjasemo, Boer farmers and hunters, and Topnaar Nama and Damara herders around Sesfontein. From 1925, Hereros from the Outjo and Kamanjab area were forcibly relocated into southern Kaokoland.

Colonial policy of encapsulation

South African colonial reaction to this potentially unstable situation was to isolate the area and rule through appointed chiefs. In 1917 guns were confiscated, and Portuguese traders were excluded. In 1920 white farmers were moved out and a request from the Angolan Boers at Humpata to resettle in Kaokoland was rejected. Native Commissioner Hahn set up three native reserves and appointed chiefs. In 1925, the area was separated from white farms in the Kamanjab area by an empty corridor 100 km wide. A narrower corridor was created between Kaokoland and Ovamboland, and cattle movement across the Kunene river was banned. Contagious Bovine Pluero-pneumonia and Foot and Mouth Disease control regulations made trade in cattle between Kaokoland and the outside world virtually impossible between the 1930s and the 1960s. Also, recruitment of labour from Kaokoland was largely stopped, ostensibly because of human disease.

While this isolation was justified largely in the name of human and animal disease control, it also served the purpose of protecting the livestock-based settler economy to the south from what had been gradually developing into a market-oriented pastoralist society. The burgeoning Kaokoland herds were kept away from commercial markets. After at least 50 years of social and economic diversification, Kaokolanders were thus forced to become self-reliant subsistence producers.

The liberation war

Trade restrictions remained largely in force until the 1970s, although Angola did become an increasing source of barter (but not monetary) trade. In the late 1970s PLAN operations in the region led to the establishment of SADF bases at Opuwo, Okangwati, Ehomba, and Ruacana. Trade restrictions were relaxed and traders, including Angolan refugees, became active. 1980/81 and 1981/82 saw disastrous droughts and the death by starvation of an estimated 90% of the region's cattle.

This discussion of the recent history of the area points to its deliberate isolation from the monetary economy from the 1920s and 30s. This enabled the maintenance of several ancient world traditions such as kinship relations based on bailment and bride wealth, and the ceremonial significance of cattle. Simultaneously, the myth of the conservative semi-nomadic "noble savage" was established. The study of existing livestock marketing practices may throw light on the question of the extent to which these concepts are maintained today.

2.1.4 Agro-ecological Background

The northern Kunene region is characterised by aridity, with rainfall increasing from an annual mean of about 50mm in the west to some 300mm in the east. Rainfall records are available for Opuwo for only 30 years between 1940 and 1995. The annual mean from these records (which exclude the early eighties drought years) is 299 mm. Figures from Kamanjab show that rain from 1977 to 1998 was about 20 per cent lower than the previous three decades. In any case, rainfall distribution is as important as annual quantity of rain in terms of the resultant biomass production.

Both survey areas are characterised by mopane (*Colophospermum mopane*) savannah and mixed woodlands (with several species of *Acacia*, *Commiphora* and *Terminalia)*, with good seasonal grazing and moderate browse capacity in most years. Much of the area is mountainous, with the Kunene River valley marking the northern border of the region, and

sandy plains making up the eastern part (along the Kamanjab-Ruacana road). The western coastal strip comprises the northern part of the Namib desert.

Considering the two survey areas: Area 1 (Ruacana-Etoto) included the riverine area to the west of Ruacana and the sandy plains to the south along the main road to Kamanjab and west to Etoto. Area 2 (Okangwati-Epupa) includes parts of the ephemeral Omuhonga river valley, parts of the Omuhonga and Zebra mountain foothills, and the south bank of the Kunene river at the Epupa Falls.

During the survey the entire region was covered in lush grasses and green trees. Informants observed that they had not seen the area looking like this since the 1970s. Since then the area has been subject to prolonged periods of below average rain with bad droughts in 1980/81 and 1981/82 and 1991/92 and 1993/94. Serious fodder shortages arise when the predominant annual grasses (important species include *Stipagrostis hirtigluma, Eragrostis spp*. and *Schmidtia kalahariensis* and fodder trees (important specied include *Colophospermum mopane, Faidherbia albida, Commiphora spp.* and *Terminalia pruniodes*) are depleted in most years towards the end of the dry season.

The vegetative environment is largely the result of pastoralist activity. The survey areas have been used by herders for at least four or five hundred years. Deforestation and degradation of grass species composition are clear in many places, though it will be interesting to review the effect of two or three years of good rains on such processes.

Another aspect of the agro-ecology that must be noted is that of livestock diseases. While diseases like rinderpest and food and mouth disease are now a thing of the past in the area, isolated outbreaks of contagious bovine pleuro-pneumonia (CBPP) have occurred in recent years. The disease is brought in by cattle from Angola. Annual vaccination campaigns are effective but coverage is sometimes uneven. Botulism infections caused by cattle eating bones of infected animals is another problem resulting from phosphorus deficiency in places. Other important diseases include anthrax and black quarter, as well as internal parasite infestation. Small stock also suffer from pleuro-pneumonia and mange.

2.1.5 Socio-economic Background

Northern Kunene region is sparsely populated. The 1991 census indicated a population of 26,176, of whom some 4,000 were residents of Opuwo, inhabiting an area of about 50,000 km^2 – though part of this area is the uninhabited Namib Desert to the west.

Social organisation in the study area is based on elaborate socio-cultural institutions such as matri-clans and patri-clans, lineages, age-sets, age-stages, and different types of land tenure rights. While the Otjiherero speaking people are recognised as belonging to the same south western Bantu Group, and to have followed the same migration routes, as the Owambo and Ovimbundu, their split from the Ovambos and their movement into arid south western Angola and then Kaokoland seems to have led to them to largely abandon agronomic production. It is claimed that the Otjiherero speaking people are the only Bantu-speaking group who abandoned agronomy for nomadic pastoralism (Williams. 1991; Oliver and Atmore. 1981).

Williams (1991) suggests that the Otjiherero-speaking people's greater affiliation with a cattle economy led them to adopt a double clan descent system – which differs from the usual matrileal system of Bantu-speaking peoples. The patrineal lineage is responsible for the care of sacred cattle and the scared fire, and related religious and cultural practices.

The head of this lineage is responsible for maintaining the link between the ancestors and the living. He is also responsible for distributing the inheritance of sacred property amongst the patri-clan. Again this differs from the more centralised Ovambo tradition where the king appointed a chief-priest to serve the whole community. Amongst Otjiherero-speakers the matrileal line of descent is mainly responsible for the inheritance of profane and other property.

Many of these institutions, both sacred and profane, are maintained by different forms of exchange involving cattle. They result in high levels of social security that are essential for survival in the region's high risk pastoralist environment. Himba chieftaincies are to a large degree a legacy of colonialism; further their political relations are overlain by the liberation struggle which have divided some communities along party political lines. These institutions, being a recipe for conflict, often serve to obstruct development efforts.

Information used in the remainder of this section derives from regional data sets. It should not necessarily be taken as representative of the Epupa constuency.

Household and individual food insecurity is a chronic problem amongst the region's poor. The 1993/94 household income and expenditure survey revealed that 40.6 per cent of households spent more than 60 per cent of their total income (in cash and kind) on food. This is a generally accepted indicator of poverty. Further, 11.3 per cent of the region's households spend more than 80 per cent of their income on food (CSO, 1996). Those who are most vulnerable to food insecurity are mainly female-headed households, the elderly and those with limited access to outside sources of income and high dependency ratios.

Food crises result from sudden events such as drought, pest and disease outbreaks, unemployment, children's diseases, malaria and HIV/AIDS, or due to gradual processes such as population growth, deforestation, declining soil fertility and range degradation. The HIV/AIDS pandemic is now widely recognised to be the single greatest challenge to household food security nationally (SIAPAC 1999) though its impact on the pastoralist Ovahimba is lower than on other communities in the country.

Malnutrition is widespread among children in the region. Between 20 and 25 per cent of all children under five suffer from chronic under-nutrition and some 5 to 13 per cent suffer from moderate to severe wasting[2] (MOHSS, 1993). Earlier data indicated that in the former Kaokoland 51 per cent of children under five suffered from chronic under-nutrition, while in the former Damaraland the equivalent figure was 45 per cent (Rossouw, 1990).

Vitamin A deficiency leading to the eye disease xerophalmia, niacin deficiency leading to pellagra, and iodine deficiency occurrence is considered moderate (MOHSS/ICCIDD 1992). Data from the health information system for 1996 show that malnutrition increases with age in under fives. This is probably because of poor feeding practices (including feeding babies and children with alcoholic drinks) and in some cases the arrival of new borns (Epidemiological Unit, 1996).

2.1.6 Infrastructure

[2] Chronic under nutrition/stunting is defined as below minus two standard deviations from height-for-age. Moderate to severe wasting is defined as below minus two standard deviations from reference weight-for-height.

The Kunene region is generally less well provided for in terms of basic physical infrastructure, social services and market services than the rest of the country. On the other hand, current developments such as clinic establishment, rural electrification and mobile schools are changing the situation.

The farming sector is served by a network of Ministry of Agriculture, Water and Rural Development Agricultural Development Centres, and State Veterinary Offices throughout the region. Large distances and limited transport mean that farmers associations have a vital role to play in augmenting these government's services. A number of local farmers associations are active in this regard. In future, these should be an important focus of development initiative. The nearest Agribank offices are located in Oshakati and Otjiwarongo. The region's residents feel they are poorly served by the Agribank currently because of its requirement for non-livestock collateral for loans, and because of the high cost of purchasing private-tenure farms under the Affirmative Action Loan Scheme.

Lack of roads remains a major impediment to regional development, not least of all to livestock marketing.

2.1.7 Livestock and Livelihoods Background

Livestock production in both survey areas is based on transhumant grazing of mixed herds of cattle, goats and sheep, and settled mixed agriculture, involving rainfed cropping on a subsistence scale in area 1, and below self-sufficient subsistence scale in area 2. Seasonal livestock movements between settlement areas and cattle posts, involving seasonal use, resting and rotation of grazing, are believed to be effectively developed given the dis-equilibrium savannah ecosystem which prevails (Benke et al. 1998). Dis-equilibrium systems are those in which "…the condition of this grazing system at any particular time is determined more by chance occurrence of non-biological events than by interaction between the biological components of the system itself" (Behnke and Scoones. 1993; p.9).

Livestock herds are the main determinant of wealth in the Okangwati area, while inhabitants of the Ruacana area are largely settled, produce substantial mahangu harvests, are more integrated into the monetary economy, and undertake migrant labour. The main contribution of cattle to livelihoods is in the form of milk, butterfat, and leather. Cattle slaughtering takes place at ceremonial occasions, in particular circumcisions, weddings and funerals. Otherwise, cattle are slaughtered before they die of old age and are eaten when they die from disease and starvation. Cattle may also be slaughtered *in extremis* in times of drought when grain stocks are exhausted and livestock prices crash. Herd maximisation is in part an individual household's strategy to survive drought; on the other hand through overgrazing it exacerbates the problem of drought for the community as a whole. Overgrazing results in severe environmental degradation, particularly around some water points and permanent settlement areas where livestock are concentrated. These issues are discussed in more detail in paragraph 2.2.4.

Regional Livestock Numbers

Recent livestock census figures, derived from the Directorate of Veterinary Services's (DVS) annual vaccination campaigns, are presented below. The reliability of these figures has been questioned, notably by the recent NOLIDEP study (MAWRD. 2000). However, it is understood that they derive from numbers of cattle vaccinated as well as estimates of those not vaccinated in a particular year. The latter derive from practical experience; for

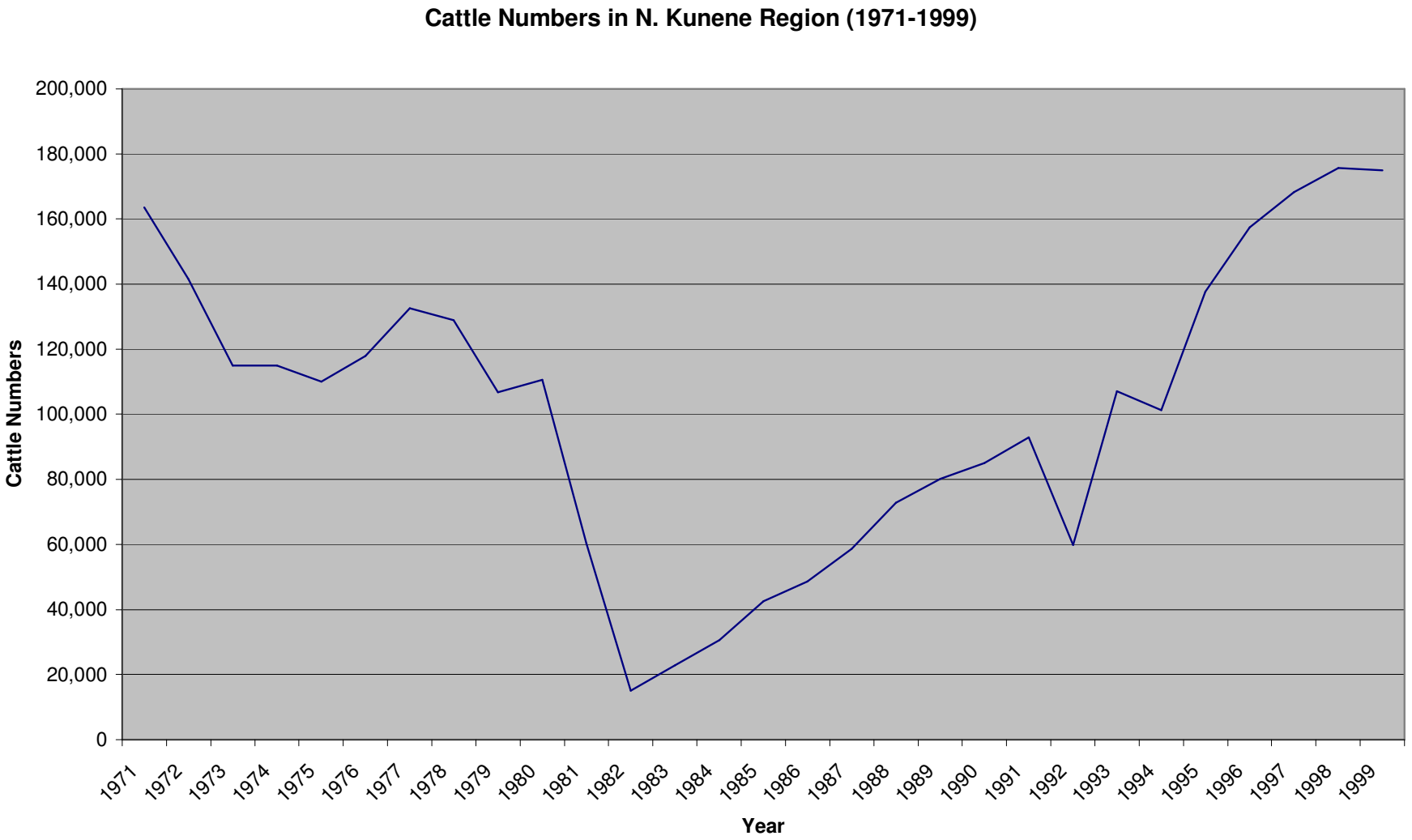
instance, in years following a CBPP outbreak it is likely that most cattle will be brought for vaccination[3].

Amongst other things DVS figures reveal a significant drop in numbers following the 1980/81 and 1981/82 drought, the 1990/91 and 1991/92 drought, and, to a lesser extent the 1993/94 drought. Droughts are an ever-present threat which clearly have had disastrous consequences for the region's farmers in the past. It is important to note that there have been few developments of late (for instance, contingency plans to effect emergency marketing during drought) to suggest that such disasters will not be repeated.

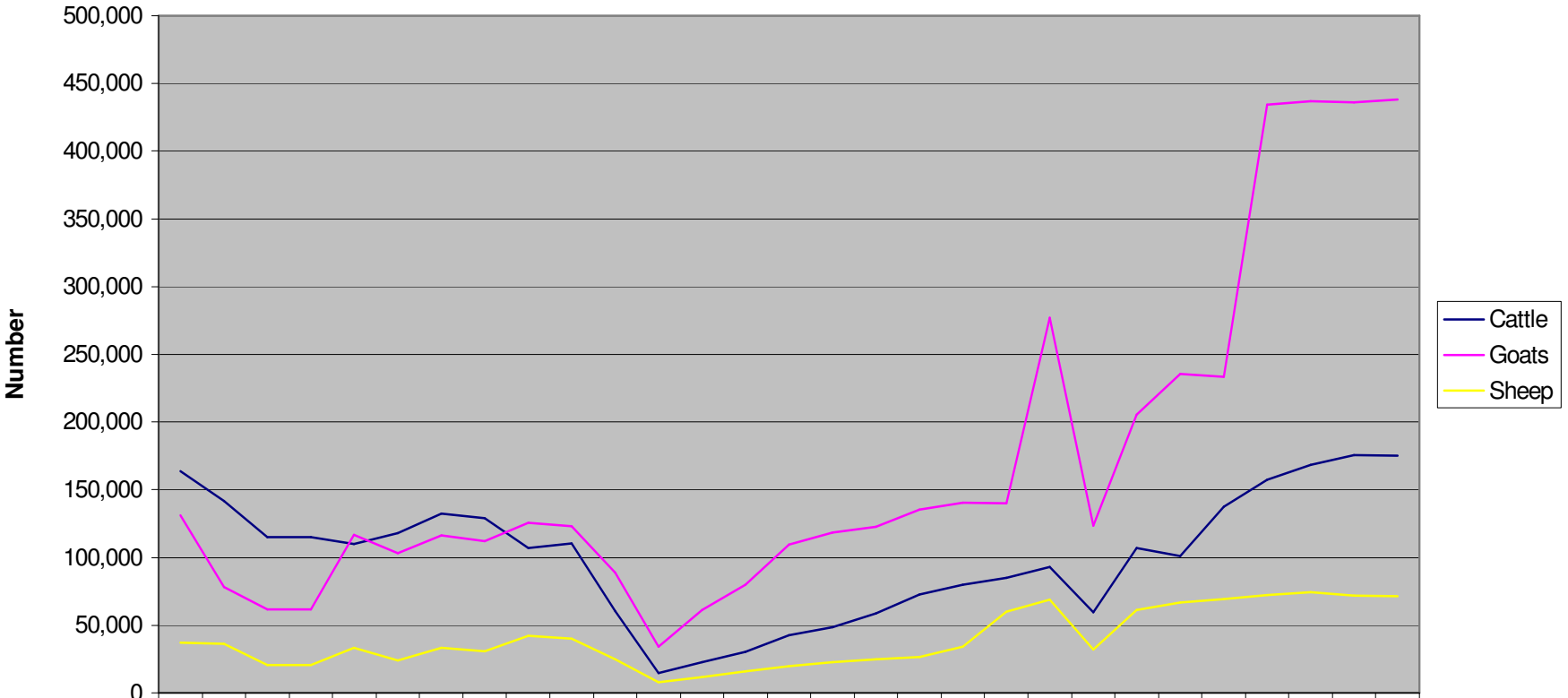
One important development has been the advent of the Meatco marketing channel. It is clearly important, however, that the government and Meatco prepares contingency plans for emergency marketing from the region which can be effected rapidly in the next drought. Apart from their social welfare implications, droughts and the rebuilding of herds that follow them, also have major implications for livestock marketing. One reason for low levels of marketing during the 1980's was that herds were being rebuilt during this period (others included the impact of the war economy and limitations on movements during the war).

The figures also illustrate the importance of the region's goat herd relative to other stock particularly since the mid-1990s.

[3] For example, in 1997 it is reported that Chief Kapika initiated a boycott of the annual CBPP vaccination campaign. In October an outbreak occurred amongst the unvaccinated cattle. The Chief immediately called for the resumption of the campaign. Veterinary officials believe that the numbers of cattle brought for vaccinations in the campaign that took place over the next three months represent a good count of the animals in the area.


Cattle Numbers in N. Kunene Region (1971-1999)
Cattle Numbers
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
Year

Livestock Numbers in N. Kunene Region (1971-1999)



	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cattle	163	141	115	115	110	117	132	128	106	110	60,	15,	22,	30,	42,	48,	58,	72,	80,	85,	92,	59,	107	101	137	157	168	175	174
Goats	131	78,	61,	61,	116	103	116	112	125	123	89,	34,	61,	80,	109	118	122	135	140	140	277	123	205	235	233	434	436	436	438
Sheep	37,	36,	20,	20,	33,	23,	33,	30,	42,	40,	25,	7,8	11,	16,	19,	22,	24,	26,	34,	60,	68,	32,	61,	66,	69,	72,	74,	72,	71,

Year

2.2 FINDINGS OF THE FIELD SURVEY

2.2.1 Farm Household Characteristics

Table1. Respondents' characteristics in the Okangwati-Epupa and Ruacana-Etoto areas

Indicator	Ruacana–Etoto Area 1 (n=20)	Okangwati–Epupa Area 2 (n=21)
Age of head of household (years)	18-30: 0% 31-40: 10% 41-50: 25% 51-60: 20% 61+: 45%	18-30: 10% 31-40: 14% 41-50: 14% 51-60: 14% 61+: 48%
No. of persons living at home	Average: 9 (max: 36; min:5)	Average: 12 (max: 28; min: 5)
No. of employees	2 households only	2 households only
Education of head of household	No school: 80% Part primary: 15% Above secondary: 5%	No school: 76% Part primary: 24%
Sources of income/production	Livestock: 100% Crops: 95% Trade/shop: 0% Casual work: 15% Pension: 40% Salary: 10% Remittances: 35%	Livestock: 100% Crops: 70% Trade/shop: 14% Casual work: 24% Pension: 43% Salary: 0% Remittances: 0%
Top 3 livestock farming problems	Disease: 90% Lack/grazing: 60% Lack/water: 65% Theft: 55% Marketing: 20% Predators: 0%	Disease: 43% Lack/grazing: 71% Lack/water: 48% Theft: 48% Marketing: 38% Predators: 19%
DVS Brand Mark	Yes: 0% No: 100%	Yes: 19% No: 81%

Household size

It is notable that those making up a household include members of the nuclear and extended family who are staying in the household. The latter usually bring their own cattle with them into the household herd. A household may also include young married sons. Amongst the Ovahimba, new households are not formed at marriage, but only when the head of a homestead dies or a young man inherits a substantial number of animals from a matrilineal relative. Independent homesteads with children and growing herds are not usually established until men are between 35 and 50 years old.

Sources of income

A number of differences between the two areas surveyed are apparent. Crop production is practiced by only 70 per cent of respondents in area 2, and 95 per cent in area 1. Trading is practiced by 14 per cent of those in area 2, and none in area 1. Remittances do not feature as a source of income in any area 2 households, while they contribute to 35 per cent of area 1 households. Where herd size maximisation is the primary object of farmers, as is generally the case in both survey areas, the extent of household economic diversification is believed to have a major impact on livestock sales. This issue is briefly discussed below.

Area 1: In the Ruacana-Etoto area settled mixed farming is the norm. Cattle farming appears quite advanced (possibly due in part to the influence of wealthy farmers with large holdings at cattle posts in the area (these were not surveyed as labourers at such cattle posts were invariably unwilling to respond to questions without authorisation from the post owner)). Rainfall is more reliable and cropping practices are influenced by the nearby Oshivambo speaking experience. Large fields of predominantly pearl millet are cultivated. Surpluses produced in years of good rainfall (for instance in both 1999/2000 and 2000/01) are commonly stored by households for up to three or four years. Crop self-sufficiency is therefore assured except after several consecutive years of drought. Other significant sources of income include pensions and remittances. On the other hand, the area is generally more integrated into the cash economy, for instance in terms of purchasing consumer items and production inputs, and paying for education and health services. One can conclude that while sources of income are greater than in area 2, so are demands on the household economy.

Area 2: As with the QED survey, Bollig (1997) reports that about 70 per cent of all households in the Epupa area practice crop production on a small scale. His survey of 75 fenced gardens along the Kunene river revealed an average area of 7.8 ha of which in an average year about two thirds are cultivated. The QED survey team observed many somewhat smaller fields in the Omuhongo river valley in which predominantly maize, as well as pearl millet, pumpkins, melons and beans were cultivated. Bollig (1997) reports that it is usually the case that few households in area 2 are self-sufficient in grain. Maize grain and meal purchases, mainly through barter trade, are reportedly one of the major reasons for livestock sales when stocks run low. Given the exceptionally good rainfall experienced in the 2000/01 cropping season it may be expected that harvests will likewise be exceptional. This may be expected to impact on cattle sales volumes (see paragraph 2.2.4).

In general, economic diversification is far less evident in area 2 than area 1. Instances of trading practice identified are likely to reflect the sampling method used in that several farmers were interviewed in the Okangwati and Epupa settlements.

Livestock farming problems

In area 1 livestock disease was considered the main problem, while in area 2 grazing shortages was. In both cases livestock marketing ranked the fifth most significant problem issue. This was the case despite the boycott of sales ongoing at the time of the survey reportedly due to cattle marketing grievances. The problem appears to be perceived by more respondents in area 2 than in area 1 which has has less involvement with the Meatco marketing channel. In area 1 no respondents had experience of self-quarantining and

appeared resigned to informal marketing channel. They nevertheless expressed great interest in the prospect of quarantine-feedlotting.

Brand marks

Respondents were asked about their adoption of the newly introduced national brand marking system to gauge their level of awareness of a potentially useful means of combating cattle theft. In the event only traders and one large-scale owner in area 2 were found to have registered brands. The contrast between the finding of no farmers with registered brand marks in the Ruacana area as compared to the nearby Onesi area where almost all farmers had acquired them suggests the need for promotional activities in the Ruacana area.

2.2.2 Herd Size and Composition

Table 2. Herd characteristics in the Okangwati-Epupa and Ruacana-Etoto areas

Class	Okangwati–Epupa Area (n=21)	Ruacana–Etoto Area (n=20)	Paskin '94 Ovahimba (n=15)	Paskin'94 Herero (n=39)
Cows - average herd no. Cows - % of herd	42.9 33.5%	54.3 50%	 39%	 46%
Bulls - average herd no. Bulls - % of herd	1.6 1.3%	1.6 1.5%	 1%	 1%
Oxen - average herd no. Oxen - % of herd	44.9 35.1%	21.2 19.5%	 33%	 21%
Calves (< 24 mths)– average herd no. Calves - % of herd	38.6 30.2%	31.8 29.2%	 27%	 32%
Total cattle herd – Average Max: Min: <20 cattle:	 128 645 3 5	 108.9 265 26 0	 170 405 19 1	 134 661 18 1
Total cattle – total sample	2,688	2,178	2,544	5,179
Estimated calving %	45	29.3	34.4	36.8
Bull:cow ratio	1:27	1:34	1:39	1:46
Goats – average no.	111.6 (all hh)	81 (all hh.)	-	-
Sheep - average no. of those owning	23.3 (14 hh only)	26.6 (13 hh only)	-	-
Donkeys- average no. of those owning	2.3 (13 hh only)	5.7 (12 hh only)	-	-

Reliabilty of findings

The QED survey asked farmers to focus their answers on livestock they owned. This is often a very different thing from cattle they herd and benefit from. To what extent this distinction was accurately reflected by respondents is not clear. It must be concluded that acquiring information on livestock ownership and herd characteristics is extremely difficult under the circumstances prevailing in the study area. Surveyors were asked to assess the reliability of respondents based on their interviews and existing knowledge of farmers. In the Okangwati-Epupa are they felt 76 per cent to be unreliable, while in the Ruacana-Etoto area 80 per cent were thought to be reliable.

This is partly because: (1) large herds are broken up and located in many different areas (sometime rejoining the main herd in the rainy season and sometimes operating completely independently); (2) the ancient world system of bailment of livestock is extensively practiced (see Box 1); (3) large owners, particularly if they have bailed many animals, may not know how many cattle they own; (4) farmers are reluctant to give accurate information because of privacy concerns and suspicion of officialdom and outsiders.

Box 1. Livestock Bailment and Gifting

Bollig reports (Bollig 1995b, 1995c and 1995c) that a survey of 49 herds revealed that only the largest 20% of herd owners actually owned all or even most of the cattle and small stock they herded. Some 30% of households rely largely on loans from various relatives or, more precariously, from one relative. Younger households are found to be particularly dependent on bailed livestock. New herds are started with gifts at birth and circumcision. At between 25 and 30 years of age men will visit first matrilineal and them patrilineal relatives far and wide to ask for livestock loans, usually one or two heifers per lender. Lender and borrower may be some 150 kilometres away from eachother. Donations are often male animals. Loans are made under different conditions. In some cases the borrower may only use the milk, while the animal and its off-spring remain owned by the lender. In others, ownership of the off-spring may be shared. Marketing or slaughter of borrowed cattle is a joint decision, and may take place after the cow has reproduced. Borrowed cattle are returned if the borrower needs the animals, if the borrower is considered negligent, if any other dispute arises between the two, or if the lender dies. At this point all his bailed animals will return to the household for redistribution according to the inheritance system.

This system of livestock exchanges serves several purposes. (1) For the lender it reduces the risk of losses from drought and disease through wide spatial spread. (2) It enables the borrower to start farming on his own, either as a young man or, importantly to restock after suffering losses following droughts and other disasters. (3) It is the glue the maintains kinship relations which are the basis of social security, again particularly important in times of stress.

It would seem that the traditional values attached to cattle are gradually being changed by the advent of the monetary economy, and, in time, cattle will become a commodity mainly used for monetary income generation. This process has occurred rapidly amongst the other Otjiherero speaking people to the south in recent years. The cost of this transition is that with the reduction of the bailment and gifting systems the poor will be left more vulnerable to shocks and stresses. An important concern expressed in the Cunene Feasibility Study (Bollig. 1996) was that the sudden

development of a massive meat market at the construction sight and increased trade and transport opportunities in the area would lead to rapid change and profound social disruption.

On the other hand, it may be argued, the gradual upgrading of livestock marketing systems would enable gradual social changes and the evolution of alternative coping mechanisms. For this reason it is suggested that the planned upgrading of livestock marketing provisions in the area is one of the most important development initiatives that can take place.

Size of cattle holding

The QED survey in the Okangwati-Epupa area found an average herd size of 128 cattle, from a randomly selected sample. High standard deviation diminishes the significance of the average holding size as an indicator. The largest herd encountered in this area amounted to 645 cattle. Taking an approximation of Bollig's categorisation noted three paragraphs down (Bollig.2001): 19% constituted what may be termed the rich, owning between 206 and 695 cattle with an average holding of 342; 24% constituted what may be termed of medium wealth, owning between 141 and 200 cattle with an average holding of 175 cattle; and 57% constituted what may be termed the poor, owning between 2 and 81 cattle with an average holding of 37 cattle. 24% of farmers sampled owned less than 20 head Most commentators concede there are many poor households in the area. These include Ovahimba, Ovazemba and Ovatjimba. Some poor households operate using bailed cattle; others own no cattle at all. Some small cattle herd owners kept large numbers of small stock. The range of ownership in the Ruacana-Etoto area was much less and the average size of holding was 109 cattle (max: 265, min: 26).

Farmers were asked how the size of their holdings had changed in recent years. Nearly all reported decreases. The reliability of this answer must be open to doubt as widespread drought has not been experienced in the area since the mid-1990s.

Assessing the size and structure of cattle holdings, particularly in the Okangwati-Epupa area, is far from straightforward as already noted. The NOLIDEP Livestock Marketing Study (MAWRD. 2000; p. 162) asserts that "a typical wealthy household" in the area under review owns 850 cattle and a "typical poor household" owns 180 cattle. It is not clear from the report how these figures were arrived at or what they actually represent. Key informants in the area considered ownership of such large numbers unlikely – though some said it might be possible in a few cases. In such cases many animals would probably be bailed to relatives. Further comments on the findings of the NOLIDEP study on herd numbers and structure are given in Annex 2.

Bollig (1996) mentions herds of up to 500 cattle and 400 small stock (about two thirds goats and one third sheep). His extensive field research must be given significant credence. In a survey by Bollig of cattle herds (rather than ownership) of 36 households (comprising altogether 4,634 cattle), rich households (n=7, 19.4%) herded some 35.6% of all cattle with an average herd size of 236 head, medium households (n = 13, 36.1%) herded 43.2% with an average herd size of 154 head, while poor households (n = 16, 44.4%) herded 21.3%an average herd size of 62 head (Bollig. 2001). The overall average

herd size per household was 129 cattle – almost identical to that of the QED survey. However, Bollig's figures still do not give a definitive view of size of holdings. This is because poorer and medium household herds usually include many cattle which they do not own while in rich households many cattle are loaned to others. On the other hand, the reliability of the QED figures as representative of actual ownership is also doubtful.

Table 3. Average cattle holdings by wealth category

Wealth Category	QED survey				Bollig survey			
	no of households	% of hh	Average cattle holding	% of total holdings	no of households (	% of hh	Average cattle Holding	% of total holdings
Rich	4	19	342	50	7	19.4	236	35.5
Medium	5	24	175	33	13	36.1	154	43.2
Poor	12	57	37	17	16	44.5	62	21.3
Total	21	100	128	100	36	100	129	100

Holding structure

The QED survey attempyted to look at the structure of entire cattle holdings. Most notably the percentage of oxen in the Area 2 was, at some 35 per cent, much higher than that in Area 1 where the figure was close to 20 per cent, and in the Onesi area at about 17 per cent (see para 3.2.2). This is an indicator of the relatively low level of marketing in Area 2. In the QED survey, answers to questions about numbers of tollies and heifers less than 24 months old were found to be unreliable. Hence, calves were defined as all cattle less than 24 months old.

Bollig (2001), rather than looking at holdings, presents figures on the structures of three different herd types (see Table 4) based on counts of 22 herds. In herd type A the entire cattle herd is together, in herd type B the household herd has been reduced as some male and young stock have been taken to cattle camps, and herd type C represents herds in cattle camps. The figures show that the percentage of females is highest in pure household herds, whereas the percentage of oxen is highest in cattle camps.

Table 4. Structure of Cattle Herds

Herd type	% female stock			% male stock			
	in milk	not in milk	heifer	tollie	ox	bull	calf
A-entire herd at homestead	18.8	7.4	18.1	12.0	20.3	1.2	18.9
B-some males/young at camps	21.9	13.4	19.9	12.0	9.2	1.8	21.9
C-entire herd at camps	8.9	6.3	19.3	16.7	41.6	1.9	8.9
Averages	45.8			52.4			
	27.1		18.7	32.5		1.4	18.5
	18.4	8.7	18.7	12.6	19.9	1.4	18.5

Calving rate

Calving rates presented in Table 1 are based on herd composition at the time of the survey. They do not represent actual births. Considering calf mortality rates (see below), as well as cow mortality, actual calving rates may be higher than those reported above. Calving rate variation was not that significant, with annual calving rarely going below 25% or above 50%. It may be noted that calving rates in the region vary significantly with rainfall and grazing. Sanga, as with other breeds, exhibit low calving percentages in times of poor grazing and other stress, and vice versa.

2.2.3 Mortality Rates and Theft

Table 5. Cattle losses in last 12 months in the Ruacana–Etoto area

Cause of loss	Calves (0-24 mnths)			Matures (>2 mnths)			Total		
	Average	As % of current no.	No. of farmers (n=20)	Average	As % of current no.	No. of farmers (n=20)	Average	As % of current no.	No. of farmers (n=20)
Disease	2.1	6.6	9	5.2	6.7	14	7.3	6.7	15
Starvation	1.6	5.2	5	1.4	1.8	8	3.0	2.8	10
Theft	0.1	0.3	1	3.1	4.0	12	3.2	2.9	12
Lost	0	0	0	0	0	0	0	0	0
Total	3.8	12.1	10	9.7	12.6	16	13.5	12.4	17

Table 6. Cattle losses in last 12 months in the Okangwati–Epupa area

Cause of loss	Calves (0-24 mnths)			Matures (>24 mnths)			Total		
	Average	As % of current no.	No. of farmers (n=21)	Average	As % of current no.	No. of farmers (n=21)	Average	As % of current no.	No. of farmers (n=21)
Disease	2.8	7.3	8	2.3	2.6	8	5.1	4.0	10
Starvation	3.8	9.9	9	6.4	7.2	16	10.2	8.0	17
Theft	1	2.6	8	2.6	2.9	9	3.6	2.8	10
Lost	0	0	0	0	0	0	0	0	0
Total	7.6	19.7	11	11.3	12.7	18	18.9	14.8	19

Losses revealed in the QED survey are not unreasonable particularly given that last year was reportedly a "drought" year in much of the Okangwati-Epupa survey area resulting in poor grazing and unusually high mortality due to starvation. Although farmers were asked to distinguish between deaths due to disease and starvation, their ability to do so is often questionable. It is likely that some deaths attributed to disease were in fact due to starvation.

2.2.4 Marketing and Consumption Off-take

Table 7. Cattle marketing off-take Okangwati-Epupa and Ruacana-Etoto areas

Class	Okangwati–Epupa Area (n=21)	Ruacana–Etoto Area (n=20)
Total bulls sold:	15	5
Overall average sales in last 12 months-	0.7	0.25
% of sample who sold-	43	20
Average per seller-	1.6	1.25
% sold via self-quarantine Meatco-	40	0
% sold to traders-	60	100
% sold at Meatco auction-	0	0
Total oxen sold:	215	129
Overall average sales in last 12 months	10.3	6.8
% of sample who sold-	81	95
Average per seller-	12.6	6.8
% sold via self-quarantine Meatco-	38 (av. no. 21.6)	0
% sold to traders-	41 (av. no. 8.5)	100
% sold at Meatco auction-	21 (av. no. 11.7)	0
Total cows sold:	38	36
Overall average sales in last 12 months	1.8	1.8
% of sample who sold-	48	40
Average per seller-	3.8	4.5
% sold via self-quarantine Meatco-	50	0
% sold to traders-	26	100
% sold at Meatco auction-	21	0
Total calves sold:	19	72
Overall average sales in last 12 months	0.9	3.6
% of sample who sold-	28.6	55
Average per seller-	3.2	6.5
% sold via self-quarantine Meatco-	42	0
% sold to traders-	58	100
% sold at Meatco auction-	0	0
Total all classes sold:	287	242
% of sample who sold-	81	95
Average per seller-	16.9	12.7
% sold via self-quarantine Meatco-	40	0
% sold to traders-	39	100
% sold at Meatco auction-	11	0

Table 8. Total marketing off-take in the Okangwati-Epupa and Ruacana-Etoto areas

Class	Okangwati–Epupa Area	Ruacana–Etoto Area (n=20)

	(n=21)	
Total bulls off-take/total sample: Overall average off-take of bulls -	15/35 42.8%	5/32 15.6%
Total oxen off-take: Overall average off-take of oxen -	215/942 22.8%	129/425 30.4%
Total cows off-take: Overall average off-take of cows -	38/900 4.2%	36/1085 3.3%
Total calves off-take: Overall average off-take of calves -	19/811 2.3%	72/636 11.3%
Total all classes off-take: Overall average off-take -	287/2,688 10.7%	242/2,178 11.1%
Percentage of cattle sold of, by types: Bulls- Oxen- Cows- Calves-	 5.2% 74.9% 13.2% 6.6%	 2.1% 53.3% 14.9% 29.8%

Marketing channels

Whereas in the Ruacana-Etoto area all cattle sold in the last year were sold to traders and none to Meatco, in the Okangwati-Epupa area it was reported that 40 per cent of cattle were marketed to Meatco via Omutambo Omawe. These cattle were sold by only 5 of the sample (24 per cent). 11 per cent of cattle sold from the Okabngwati-Epupa area were sold at the last Meatco auction held in late 1999 and early-2000, and the rest were sold to traders. It is concluded that to date only those se`lling larger numbers of cattle have attempted to sell via Omuatambo Omawe. It is likely that in time some of those selling smaller numbers will follow suit. However, for the time being this development has been arrested by the sales boycott already mentioned. In the Ruacana-Etoto area farmers were unanimous in stating that Omutambo Omawe was too far for them to move their cattle. In addition, they were relatively more satisfied with prices received from traders than was the case in the Okangwati-Epupa area were prices are significantly lower.

Sales off-take

There are clear differences in marketing strategies based on wealth difference. Considering the two survey areas together, several households (5 households, 12 per cent) did not barter any cattle at all, while 12 households (24 per cent) reportedly sold 10 and more heads of cattle during the same period.

It is also notable that those with larger holdings not only sold more cattle but better quality cattle for which better prices were reportedly received.

The QED survey reveals the high degree of oxen sales. On the other hand, the high percentage of oxen in the holding as reported in the Okangwati-Epupa survey area (Table 2) gives reason to doubt the validity of some information. The relatively higher level of overall sales in the Ruacana area may reflect less of a focus on ox sales. Ruacana farmers report that some 30 per cent of their sales are of young animals. This bodes well for the operations of the proposed quarantine-feedlot to which young animals may be expected to respond well.

Consumption/loaning off-take

Unfortunately, data gathered during the QED survey on slaughter and consumption by the household and giving and loaning cattle proved to be partial and unreliable.

Bollig (2001) analysed livestock transfers of a survey of 4,634 cattle from 36 households over a 22 month period. He found that 68.6 per cent (3,179) of the animals initially recorded were still in the herd after 22 months, 11.1 per cent (514) had died prematurely, 2.5 per cent (116) were slaughtered, 9.6 per cent (445) were loaned, exchanged or given away and 5.1 per cent (236) were sold. Considering only the 32.4 per cent off-take: 35.3 per cent had died, 7.9 per cent were slaughtered, 27 per cent were loaned, 3.4 per cent were given as presents, and 16.4 per cent were sold (70 to 80 per cent of these were bartered).

The main reason for intended off-take from the herd therefore was loaning. Almost double twice as many cattle were used for social exchange as for commercial exchange. As noted in Box 1, gift giving and loaning are means of expressing familial relationships. Young men start their herds with gifts from relatives. Loans remain the property of the farmer and may be recalled or are returned on the death of the owner.

The main reason given for slaughtering was the old age of the animal (43.3 per cent of all animals slaughtered), 37.2 per cent were slaughtered for ritual activities such as funerals, initiation rituals, marriage and healing rituals. These are usually large oxen. In other words, most cattle are not slaughtered for ceremonies, as is sometimes asserted, but due to old age.

The number of livestock that were slaughtered over a 22 months period from 1994 to 1996 was found to differ widely from household to household. On average households slaughtered some 21.4 goats, 6.8 sheep and 5.9 cattle (i.e. 0,97 goats/month, 0,31 sheep/month, and 0,27 cattle/month). However, while the poorest households did not slaughter any cattle at all, rich households slaughtered more than ten cattle. Overall, smaller off-take percentages are registered by those with larger as compared to those with smaller herds. In addition, cattle which die of disease and starvation are normally consumed.

Discussion of motivation for cattle sales

An on-going issue of debate concerns the motivation for livestock sales in the area. It is clear that surplus production both of male and female animals is taking place. A key question is to what extent are farmers' objectives to increase capitalisation and to exploit the social role of cattle through livestock accumulation, in which case cattle are sold only in times of stress (e.g. food supply and health crises), and to what extent are farmers prepared to sell for non-emergency needs, in other words to finance non-traditional consumer and investment needs.

The QED survey finds average marketing off-take of about 10 per cent in the two survey areas (Table 6). With cattle losses of between 12 and 15 per cent (Tables 3 and 4), and an unknown but probably significant off-take as gifts and self-consumption, it is likely that up to about a third of the farmers' holding is disposed of in one way or another annually.

Given that the institution of sacred cattle[4] limits the pool from which cattle can be utilised such off-take as revealed by this survey must be considered reasonably efficient.

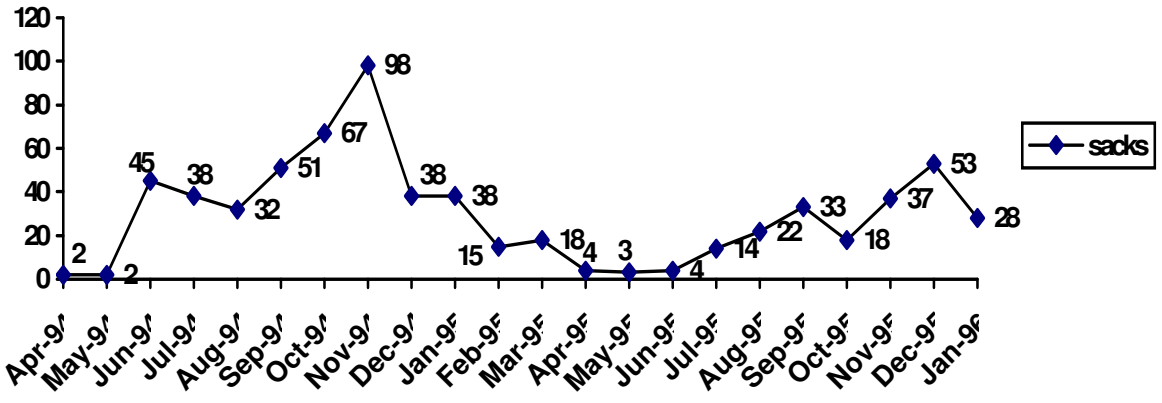
It is important to be aware of the speific role of cattle in drought periods. Although years of serious widespread and consecutive drought have not been experienced in the survey areas since the mid-1990s, the severity and frequency of serious droughts in the region historically suggests that cattle marketing strategies will be significantly influenced by over-riding drought mitigation and survival strategies. In the Okangwati-Epupa area, where economic diversification in limited, households greatly rely on livestock sales as a means of acquiring grain in drought years when crops fail. Box 2 and Fig 1, taken from the work of Bollig (2001) illustrate the relationship between household grain needs, crop seasons and crop failures.

Box 2. Seasonal differences in grain purchases

Bollig reports that all 24 of the Himba households surveyed for 22 months between April 1994 and January 1996 bought significant amounts of maize. The average was 27 60 kg sacks of maize (range 7 to 79) i.e. 1.2 sacks of maize per household on average per month. The rainy season of 93/94 was poor, and additionally many gardens in the Omuhonga basin had been washed away in one of the rare floods of that year. Maize production was low and milk yields dropped. Households had to buy significant amounts of maize from June onwards. The number of sacks bought from traders peaked in November 1994 reaching 98 sacks (24 households, 4.1 sack per household). Early rains in November resulted in the sprouting of bushes and trees and an increase in lactation, so that by December less maize was acquired. However significant amounts of maize had to be bought well into the rainy season. From March to May the milk yields peaked so that nutrition became once again milk-based for some months. From late May the maize harvest begins, reducing the need to buy additional maize. The 1994/95 rain year was good with above average precipitation and a good maize harvest. Maize purchases only picked up in November, and did not reach the levels reached in 1994, as some households still had their own maize until January 1996.

[4] The survey's attempts to look into the issue of sacred cattle served mainly to reveal the complexity of the institution – with different types of sacred cattle having different roles. It also revealed that the institution is undergoing change – several respondents stated that they had abandoned the tradition. The survey also found that the findings of the NOLIDEP study (MAWRD. 2000) that 31 per cent of the total herd are sacred and therefore not for sale is a significant over-estimation.

Fig. 1 Purchase of Maize (in sacks) between 4/94 and 1/96 in 24 Himba Households



It is interesting to note that while, all maize was acquired from livestock sales, only 44 per cent of all goat proceeds and 58 per cent of all cattle proceeds was spent on food. A major part of all the animals sold was used for alcohol, cloth, blankets and medicine. Table 9 summarizes the findings of a monthly survey on livestock sales and acquisition of food and consumer goods.

Table 9. Himba Livestock Sales April 94 to Jan 96

Col 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Name	**We**	**Go**	**she**	**cat**	**Sac**	**g/c for maize**	**per cent for maize**	**sacks/ goat**	**sack/ cattle**	**box**	**blanket**	**cloth**	**Perso**
1Munge	3	15	13	4	26	12/4	43/100	1,00	6.0	-	5	-	3/4
2Muhuw	5	27	1	2	13	16/0,3	57/15	0,59	-	8	-	-	3/1
3Mbatja	2	9	2	4	22	6/3	55/75	1,00	5.3	1	1	1	7/6
4Vahiku	3	17	0	2	14	9/2	53/100	0,8	3.5	-	1	1	3/1
5Katjira	1	20	29	18	22	13/1,2	27/6	1	-	20	3		7/1
6Kandju	1	9	8	10	42	7/3.5	41/35	1	9	16	3	1	9/2
7Hikumi	1	13	1	4	28	7/1.8	50/45	1	5	10			6/3
8Twarek	2	23	1	6	32	7/4.5	29/75	1	5.3	2	2	6	7/3
9Mirirek	1	7	0	1	4	4/0	-	1	-	0	1	0	7/5
10Tjand	5	11	8	0	7	7	41/-	0,9	-	0	1	3	3/1
11Kama	3	25	3	6	25	5/4	18/67	0.9	5.5	15	2	0	4/4
12Katue	2	40	2	4	40	27/3	64/75	0,9	5.3	3	0	2	9/5
13Woku	4	47	17	2	23	13/2	20/100	1	3.5	18	1	2	5/6
14Waka	4	27	2	4	17	12/2	41/50	0,9	3.5	8	3	1	11/5
15Huku	4	7	9	0	14	14/0	87/-	1	2	0	0	0	10/2
16Muha	4	13	5	3	19	7/2	39/67	1	4.5	4	0	0	6/5
17Kamu	5	5	3	2	8	4/1	50/50	1	4	0	2	0	4/4
18Kosev	3	24	3	4	21	11/1	41/25	0,9	5	1	2	2	11/3
19Taku	2	20	7	4	13	8/1	30/25	0,9	6	3	0	4	5/1
20Mbase	1	21	2	9	46	18/6	78/67	1	4.8	10	2	1	12/6
21Koria	3	35	4	2	29	25/1	64/50	1	4	6	3	1	8/3
22Mban	1	59	45	19	49	26/3	25/16	1	5.3	13	3	11	8/7
23Kaere	4	29	0	3	15	11/1.3	38/43	0,7	3.9	6	0	0	5/5
24Non	2	12	0	15	49	6/8	50/53	1	4.6	1	0	1	14/12
25Vahe	2	6	2	13	79	2/13	15/100	1	5.9	12	3	0	13/7
Averages	-	21.4	6.8	5.9	27		44/58						7/4
Std. Dev.	-	13.2	10.1	5.2	16.6	-	-	0.1	1.4	6.2	1.3	2.5	-

Notes: (1) Col 1: Households, (2) Col 2 : Wealth Categories (1 rich – 5 poor), (3) Col 3 to 5: goats, sheep, cattle sold, (4) Col 6: total amount of sacks obtained, (5) Col 7 and 8: number and percentage of livestock devoted to maize purchases, (6) Col 9 and 10: average number of sacks obtained per goat and per head of cattle, (7) Cols 11 to 13: boxes of alcohol, blankets and cloth bought, (8) Col 14: Persons in household,

The QED surveyors interviews supports the evidence that farmers are inclined to sell for non-essential needs. The most obvious long-standing manifestation of this is the barter trade in alcoholic beverages. Other items in demand, which the QED survey identified, include blankets, tobacco, medicines, veterinary drugs and vaccines, watches, radios, clothes, cash for hired labour, cash for travelling expenses, and even shops, buildings and bakkies.

It is suggested that this process is likely to continue as the area becomes increasingly re-integrated into the modern economy, after its deliberate exclusion in colonial times (see

2.1.3). Tourism, schools (including the new MBEC mobile schools), clinics, rural electrification and even telephone services, are forces for change. Schools, for example will soon expose locals to exotic cultural norms and related consumer items. Equally, increased market access and better prices will in itself constitute a powerful force promoting market orientation. The evidence indicates that with such change will come a gradual re-orientation of livestock farming objectives towards their income generating function and away from their social functions. Further, while such change may lead to changes in social relationships, and perhaps greater social stratification, it continues to take place gradually it will not necessarily lead to degradation of social structures.

It may be that the proposed quarantine-feedlot facility at Ruacana could facilitate that process. On the other hand, most farmers interviewed said that the distance to Ruacana was almost the same as that to Omutambo Omawe (although it is considerably shorter) and that they would prefer to market there. Traders moving cattle to the informal markets of Omusati region are those more likely to benefit from the Ruacana facility. It is yet to be seen how much if any of this benefit is passed on to farmers.

2.2.5 Attitudes and Perceptions on Different Market Channels

The survey took place in the tenth week (starting 23 April 2001) of a prolonged boycott of a livestock sales throughout most of northern Kunene organised by farmers unions and traditional authorities. Farmers surveyed in the Ruacana-Etoto area did not participate in the boycott. This issue was inevitably raised in meetings with chiefs and headmen, as well as individual informants in the Okangwati-Epupa area. On these occasions the boycott was said to be mainly an expression of dissatisfaction about low prices and "cheating" over prices offered by the Meatco Oshakati abattoir. This study is not the place to discuss the boycott in detail. Clearly, the reasons behind it are complex and multiple. Nevertheless, it is evident from the survey that farmers have high levels of mistrust of Meatco. This mistrust is no doubt being fanned from a number of sides. These may include traders, who would prefer farmers to sell to them rather than undertake self-quarantining, and farmers unions, who may be accused of using farmer grievances to consolidate their positions. On the other hand, it is the opinion of this report that Meatco, and other authorities including the Ministry of Agriculture, Water and Rural Development, have not done enough to give farmers clear information on Meatco's procedures and pricing system so as to counter the mistrust and misinformation that prevails.

All farmers expressed dissatisfaction with the system of Meatco buying, known as "auctions", which was discontinued in mid-2000. The main concern was again prices. In addition, information on market days was poorly communicated. Several farmers stated that they were not aware of when Meatco auctions would take place, and thus did not take advantage of them. This may be partly explained by the low rates of literacy and radio listening in the area. Successful cattle vaccination campaigns reportedly require high levels of effort to spread the information.

In the Okangwati-Epupa area farmers recognised that the new self-quarantining provisions were more beneficial than the old auction system. Several expressed appreciation of the bonuses paid by Meatco at the end of the year. But a number of problems were repeatedly expressed. These included:

- distance to Omutambo Omawe;
- lack of water and grazing en route to and in Omutambo Omawe;
- the short quarantine period means that cattle do not have time to adapt to the different grazing environment;
- CDW prices offered by Meatco which are lower than those announced over the NBC Otjiherero language service (which are the prices paid at Okahandja – and which exclude deductions paid by NCA farmers to cover the cost of transport from Oshakati to Okahandja, and the lower market value of offal and hides from the NCAs);
- lack of understanding of the Meatco pricing and grading system;
- the sellers' inability to estimate the market value of an animal until it is priced at the abattoir (due to inability to age, assess fatness, assess conformation, and assess weight, and understand grading system);
- the perception that offal, feet, heads and hides are not paid for;
- low prices paid for condemned carcasses (and the refusal of Meatco to offer the seller the condemned carcass for him to sell privately);
- failure to understand the reason for the various deductions as expressed in the Meatco slaughter statement provided to all sellers;
- the difficulty of having to apply to Meatco for a slaughter date before moving cattle to the quarantine camp;
- rumours that the Meatco graders at the abattoir deliberately cheat farmers and demand bribes;
- accounts of cases where farmers feel sure cattle have been mixed up when payment is made (ie. a farmer with a thin, old, small ox receives a higher price than one with a fat, young, big ox in the same batch);
- while costs of self-quarantining are high returns in terms of prices paid are unpredictable;
- Oshakati is perceived as a dangerous and alien environment, stories of theft and other forms of loss abound.

Ultimately, it perhaps human nature that it is bad news that travels and indeed gets worse along the way. It is vital for Meatco to actively counter this using means of information communication that are appropriate to the area. This means, for instance, using traditional authorities and word of mouth rather than the radio and printed word. It also means being prepared to repeat the message again and again over a prolonged period.

The prevailing mistrust of Meatco by farmers is likely to impact directly on the QED project. Farmers whose animals are sold to Meatco via the quarantine-feedlot who are dissatisfied with the prices they receive are likely to look to the quarantine-feedlot for answers. They may even blame the quarantine-feedlot, especially if the costs of the quarantine-feedlot are deducted from the price they receive.

It is proposed therefore that the project must implement measures to counter the prevailing situation. The project should design a number of activities to improve communication of information on the Meatco pricing system to potential and actual clients of the quarantine-feedlot (See Chapter 4).

2.2.6 Specific Marketing Costs when Self-quarantining at Omutamo Omawe

Although only 4 out of 21 respondents in the Okangwati-Epupa survey area reported self-quarantining, their sales represented about 40 per cent of all those reported in the last 12 months. Evidently, it was wealthier farmers with larger sales volumes that were able to take advantage of the self-quarantining option.

Trekking cattle from the area reportedly takes 5 or 6 days from Okangwati itself – where movement is authorized by the police. Most respondents did not use hired labour for the process. Those who did reported that labour for trekking alone would cost N$ 300 per person. Others reported labour for trekking and looking after animals in the quarantine camp cost N$500 per person. Other costs include the cost of using kraals for over-nighting en route and of food. Food costs can be high during the period of absence from home which may amount to nearly one month – as when in desperation the owner slaughters or purchases meat from others.

Respondents reported that they preferred to self-quarantine and sell to Meatco in early winter when their animals were fat. Weight loss was then less significant. All reported weight loss during trekking; estimates of 30 to 40 kg were common. Some reported weight loss during quarantining itself, some no change, and some weight gain. In general, grazing at Omutambo Omawe was reported as fair, and losses were not perceived as a major problem. None reported deaths or theft but some indicated it was a risk.

The journey to Omutambo Omawe was seen as difficult because of the long distance, poor grazing and lack of water en route. In contrast the journey to Ombalantu market seems easier. Grazing and drinking water are more readily available and the routes are better known. Consequently, trekking is carried out at a much more leisurely pace (9 to 15 days were reported) than to Omutambo Omawe, and weight losses are less severe.

Farmers with larger numbers of animals to sell were prepared to put up with the costs involved because they were guaranteed to sell their cattle and did not need the selling skills and contacts necessary for sales in the informal markets in Omusati region. Those selling few cattle had little alternative than to sell to traders. Because of the livestock sales boycott at the time of the field work only a few collectors were met and interviewed. These reported that they sold exclusively to the informal markets at Epalela and Outapi to where trekking was easier than Omutambo Omawe and where they had good contacts to ensure sales.

None of the farmers sampled in the Etoto-Ruacana area reported having marketed cattle after self-quarantining at Omutambo Omawe. The main reason given for this was distance and unfamiliarity with the area and process. Farmers estimated that trekking animals to Omutabo Omawe would take at least four days – which would cost about N$300 per person for hired labour. All those sampled reported sales in the last 12 months to traders who usually offered prices which were not too far below expectations. Most sales were to traders who came to buy at farms or cattle posts (a seller's market) rather than at market places where demand and prices are uncertain (a buyer's market).

3. LIVESTOCK MARKETING IN ONESI CONSTITUENCY, OMUSATI REGION

3.1 BACKGROUND

3.1.2 The Study Area

The study focused on the Onesi constituency in north west Omusati region. The area is close to the project area, farm homesteads being between 25 and 60 kilometres to the south east of the site of the proposed quarantine-feedlot at Oshifo (see map). The area falls under the Uukulonkaadhi traditional authority and includes three settlements-cum-service centres, Onesi itself, Eunda and Epalela. The area is close to the Etoto-Ruacana survey area reported on in Part 1 of this report.

3.1.3 Literature Review

Recent literature covering the agricultural economy in northern Namibia has a tendency to attempt analysis on the basis of political boundaries rather than agro-ecological zones. Hence, the diverse situation in former Ovamboland is often considered as if it were a single entity. Case studies areas are selected which are considered typical of different agro-ecological zones. The weakness of this approach is shown when considering, as does this survey, the situation of one area only – in this case the extreme north west of the former Ovamboland. No case studies relating to the livestock economy have been located which target the present study area.

3.1.4 Historical Background

The survey area falls under the Uukolonkadhi tribal area with its Chief currently residing at Onesi. This tribe occupies the western extreme of the Owambo people's expansion from the east (Williams. 1991) adjacent to the Uukwaluudhi to the south, the Ombalantu to the east and the Eshinga and Ondombodhola to the north in what is now Angola, and lies next to the area traditionally occupied by Otjiherero-speaking people in former Kaokoland.

Although the Owambo people are mixed farmers, producing a range of field crops, cattle are traditionally the most important economic factor for the clan or extended family. Cattle are inherited property while land, traditionally, is not. Traditionally in a matrinial society, cattle are cared for by a maternal uncle who is head of the clan. Williams (1991) states that cattle are traditionally divided into six overlapping categories: breeding, sacrifice, inheritance, bride-wealth, for refund or ransom, and for barter. In recent times clans have broken up into households many of which no longer own cattle; up to 50 per cent of households in the densely populated Oshana region and perhaps 30 per cent in the survey area where grazing is more plentiful are estimated to be without cattle.

Until recently cattle were kept at the homestead during the rainy season when there was enough grazing and water. After grazing the millet and sorghum stalks after harvest most of the cattle herd were moved to cattle posts to take advantage of grazing and water over

winter. This transhumant management system has to a large extent been replaced by the permanent holding of a few cattle at home as well as at one or most posts, in the relatively few households that possess sufficient numbers of livestock.

Colonial occupation and its attendant economic and cultural changes in the early twentieth century, the war of liberation, and the last 11 years of national independence have resulted in a process of rapid modernization of traditional rural society in the survey area. One of the strongest redoubts of tradition, it is often said, is the Oshiwambo-speaking people's allegiance to the non-economic values associated with cattle. Others would argue that this is not the case, and that there are, for the most part, sound economic reasons for existing cattle farming practices including the extremely limited marketing of cattle through Meatco. Important factors limiting cattle marketing identified in the QED survey include small herd sizes, high rates of mortality and other losses, the importance of cattle as sources of draught power, milk, manure, and other products, shortage of rural labour for improved livestock management systems, lack of capital investment alternatives, diversified income-generating sources, and, perhaps above all, poorly developed marketing systems.

3.1.5 Agro-ecological Background

The north west Omusati region is characterised by aridity with mean annual rainfall of about 300mm and great seasonal variability. The prevailing vegetation is mopane (*Colophospermum mopane*) and acacia savannah and mixed woodlands with good seasonal grazing and moderate browse capacity in most years. The area comprises sandy plains and includes the Olushandja dam and Etunda irrigation scheme. Potable water shortages are the norm in most areas. Settled mixed farming is increasing with new fields being established annually as one moves to southern and western extremes of the survey area.

Because of low and probably declining productivity and hence diminishing returns to labour, agriculture is generally unable to sustain the growing population which is therefore moving off the land to urban areas. This in turn leads to one of the major constraints to increasing productivity: seasonal labour shortages. For example, farmers surveyed said they did not have enough labour to cut and conserve cereal stover immediately after the harvest when its nutrient value for animal feed is highest. This is despite the fact that most farmers experience high losses from livestock starvation virtually every year (though such deaths are attributed by most farmers to disease rather than starvation).

Cattle and goat farming is the most important agricultural activity in the Region. However, despite a slight increase in cattle off-take after the introduction of prices equal to those south of the Veterinary Cordon Fence in the mid-1990s, marketing through formal channels is minimal. Significant importation of cattle from Angola takes place. Other livestock include sheep, donkeys, horses, poultry and pigs. Nearly all farmers own livestock. Local agricultural extension staff estimated that between 20 to 30 per cent of household, being mainly female head households, do not own cattle. They may nevertheless benefit from cattle loaned by others.

Omusati region hosts the largest number of cattle of the country's northern regions. Accurate data is however lacking. Agricultural Census data is widely thought to be unreliable, while Directorate of Veterinary Services data is not sufficiently disaggregated

to be useful. In addition, the latter's livestock census is estimated to be perhaps 20 per cent below actual figures.

Pearl millet, produced under rainfed conditions, is the most important crop. Surplus production in the survey area is stored traditionally for several years. In addition it is used for bartering for livestock with farmers in Kunene region. Other crops include sorghum, maize, cowpeas, bambaranuts, groundnuts, beans, pumpkins, melons, gourds, and spinach. Crop yields are notoriously low due to poor soils and insufficient and erratic rainfall. Field sizes are limited by capacity to cultivate rather than land shortages. Cultivation is largely powered by animal traction. Field areas of up to 20 hectares cultivated by one household were observed being during the field work. Irrigated crop and horticultural production takes place at the Etunda Scheme and Olushandja Dam which border the survey area to the north west and north east respectively.

The 2000-2001 rainy season started late (in February) but then proceeded well with above average rain falling in a well distributed manner until late April. This was enough to produce good yields of field crops and good grazing. Even so, by the time of the field work, which took place at the end of May 2001, grazing was already visibly under pressure in some areas.

3.1.6 Socio-economic Background

This section considers data from the Omusati region as a whole. Agricultural production makes a significant though, it is believed, declining contribution to average communal area household income, both actual and imputed. Most rural people rely mainly on purchased food, using incomes derived from employment, pensions, remittances of both food and cash and a range of non-farm activities including trading. The 1993/94 Namibia household Income and Expenditure Review (CSO. 1996) found that Own production of food comprised 26.2 per cent of total intake in the Omusati region as a whole. This is the highest rate of consumption of food in kind as part of total consumption of any region in the country (CSO, 1996).

Household and individual food insecurity is a chronic problem amongst the region's poor. The Household Income and Expenditure Survey revealed that 40.1 per cent of households spent more than 60 per cent of their total income (in cash and kind) on food. This is a generally accepted indicator of poverty. Further, 9.0 per cent of the region's households spend more than 80 per cent of their income on food (CSO, 1996).

A 1994 survey of the Ombalantu area estimated that some 57 per cent of all households lived below the poverty line (van Rooy et al, 1994). These are mainly female-headed households, the elderly and those with limited access to outside sources of income and high dependency ratios.

Food crises result from sudden events such as drought, pest and disease outbreaks, unemployment, children's diseases, malaria and HIV/AIDS, or due to gradual processes such as population growth, deforestation, and range degradation. The HIV/AIDS pandemic is now widely recognised to be the single greatest challenge to household food security nationally (SIAPAC. 1999). In 1998 some 20 per cent of all antenatal attendees in the north central Regions were HIV positive.

Drought on the other hand is something that the region's population copes with better than some other regions. This is partly as a result of the limited importance of agriculture as a source of income – despite the Region's almost wholly rural population – and also because of well-developed household food storage and social safety net systems.

Nevertheless, malnutrition is widespread among children in the region. About 27 per cent of all children under five are stunted and suffer from chronic undernutrition and some 10 per cent suffer from moderate to severe wasting[5]. Vitamin A deficiency leading to the eye disease Xerophalmia, niacin deficiency leading to pellagra, iodine deficiency occurrence is considered moderate (MOHSS, 1993; MOHSS/ICCIDD, 1992). Data from the Health Information System for 1996 show that malnutrition increases with age in under fives. This is probably because of poor feeding practices and in some cases the arrival of newborns (Epidemiological Unit, 1996).

It is important to note that HIV/AIDS is having an increasing impact on the region's agricultural labour force in that it is the most productive members of society (16-49 year olds) that are most infected. This may well constrain agricultural development efforts because available labour will be concentrated on food self-sufficiency requirements, and points to the need to promote labour saving technologies and practices.

3.1.7 Infrastructure

The farming sector is served by a network of Ministry of Agriculture, Water and Rural Development Agricultural Development Centres, and State Veterinary Offices throughout the Omusati region. Agricultural extension technicians are stationed in the survey area at Onesi, Eunda and Oshifo. A veterinary technician is stationed at Onesi (and in future one will be stationed at Oshifo); the nearest State Veterinarian is stationed at Outapi. The nearest Agribank offices are located in Oshakati. Important informal cattle markets take place regularly at Epalela, Outapi, Okahao and Oshakati. Lack of all-weather roads remains a major impediment to regional development, not least of all to livestock marketing.

[5] Chronic under nutrition/stunting is defined as below minus two standard deviations from height-for-age. Moderate to severe wasting is defined as below minus two standard deviations from reference weight-for-height.

3.2 FINDINGS OF THE FIELD SURVEY

3.2.1 Farm Household Characteristics

Table 10. Respondents' characteristics in the Onesi and the Ruacana-Etoto areas

Indicator	Onesi Area (n=30)	Ruacana–Etoto Area (n=20)
Age of head of household (years)	18-30: 3% 31-40: 7% 41-50: 10% 51-60: 23% 61+: 57%	18-30: 0% 31-40: 10% 41-50: 25% 51-60: 20% 61+: 45%
No. of persons living at home	Average: 17.8 (max: 38; min: 4)	Average: 9 (max: 36; min:5)
No. of employees	6 households only (av.: 2)	2 households only
Education of head of household	No school: 16% Part primary: 77% Secondary: 0% Above secondary: 7%	No school: 80% Part primary: 15% Above secondary: 5%
Sources of income/production	Livestock: 100% Crops: 97% Trade/shop: 40% Casual work: 17% Pension: 60% Salary: 20% Remittances: 26%	Livestock: 100% Crops: 95% Trade/shop: 0% Casual work: 15% Pension: 40% Salary: 10% Remittances: 35%
Top 3 livestock farming problems	Disease: 87% Lack/grazing: 57% Lack/water: 57% Theft: 87% Marketing: 20% Straying: 3%	Disease: 90% Lack/grazing: 60% Lack/water: 65% Theft: 55% Marketing: 20% Predators: 0%
DVS Brand Mark	Yes: 97% No: 3%	Yes: 0% No: 100%

Representativeness of sample

Whereas in the Kunene region survey areas the sample taken could be said to be reasonably random (in that it derived from the undirected wanderings of the survey team), the same was not the case in the Onesi survey. In this case the sample was variously selected by the local agricultural extension technician, the local headman, and by sampled households giving directions to the next household.

This approach was adopted for several reasons. First, the survey was directed only at those households owning cattle. The intension was to gather information on cattle marketing not on ownership. Second, it was found beneficial that surveyors were introduced to respondents by someone known to and trusted by them. Thirdly, it was found that only male heads of household were willing to provide the information being sought. Hence, in

the interest of saving time, it was found worthwhile to visit only those households where it was known that the head of household was present at the time.

Revealing indicators of the nature of the sample include the age distribution of respondents and the numbers of members of respondents households. In general it can be said that older and larger households tend to have larger herds.

The advantage of this method of sampling was that the majority of respondents are considered to have provided reliable responses to the questions raised. This was in stark contrast to the situation in the north Kunene region.

Sources of income

Sources of income, it may be observed are far more diversified than in the Kunene region where reliance on livestock is overwhelming. Farmers in the Onesi area are less reliant on cattle as a source of income. Conventional wisdom has it that this is a reason for lack of marketing in the area, or, better stated, a reason why farmers in the area demand higher prices (in the past only offered in the informal sector) for their cattle. Such higher prices are demanded because of the other values of cattle – as breeders, draught animal power, milk, manure, bride price, gifts, bailment, ceremonial etc.

Livestock farming problems

Livestock disease and theft were identified as the most pressing problems facing farmers. This is reflected in the later question on cattle losses. In both cases however it must be noted that farmers' frequent inability to distinguish death caused by starvation from death caused by disease makes this response unreliable. For instance, respondents often reported death from "gall sickness" (anaplasmosis) which may often have been due to starvation (which also results in a swollen gall bladder). Death from plant poisoning is also reportedly quite common inn the area (E. Masaire. Pers comm.) but again largely unrecognised by farmers.

Ultimately, the full extent and causes of livestock mortality will not be known reliably until more survey work is undertaken and reliable post-mortems can be carried out.

Livestock marketing was considered a relatively minor issue, even by this sample who might be said to be those most likely to be interested in marketing.

The ranking of problems that are in reality all inter-related serves mainly to point to perceptions of key bottle-necks. Overall the responses depict a low-input low-output cattle farming system, the development of which is constrained by a complex of problems including high losses due to malnutrition, starvation and disease, themselves the immediate results of the natural resource environment and low labour and external inputs commitment, which is in turn partly the result of the low cash returns realised from cattle. Theft and straying losses may also be put down partly to the low perceived value of cattle and hence the insufficient allocation of labour to prevent these losses. Lack of labour is a major problem in a society in the process of rapid modernisation, where children now attend school and young men leave the rural areas.

Registered brand marks

Respondents were asked about their adoption of the newly introduced national brand mark system to gauge their level of awareness of a potentially useful tool in an area prone to cattle theft and cattle straying. It was found that all but one of the sample have registered brands, indicating a high level of interest in measures to combat theft and straying cattle.

3.2.2 Herd Size and Composition

Table 11. Herd characteristics in the Onesi and Ruacana-Etoto areas

Class	**Onesi Area (n=30)**	**Ruacana–Etoto Area (n=20)**
Cows - average herd no. Cows - % of herd	33.3 46.3%	54.3 50%
Bulls - average herd no. Bulls - % of herd	3.3 4.6%	1.6 1.5%
Oxen - average herd no. Oxen - % of herd	12.4 17.2%	21.2 19.5%
Calves - average herd no. Calves - % of herd	22.9 31.8%	31.8 29.2%
Total cattle herd – Average Max: Min: <20 cattle:	 71.9 258 12 3	 108.9 265 26 0
Total cattle – total sample	2,159	2,182
Estimated calving %	34.3%	29.3%
Bull:cow ratio	1:10	1:34
Goats – average no.	47.2 (all h.h.)	81 (all hh.)
Sheep - average no. of those owning	7.9 (17 hh only)	26.6 (13 hh only)
Donkeys- average no. of those owning	This question was omitted due to the reported sensitivity of the issue in the area following recent negative statements by politicians concerning donkeys.	

Unfortunately, few comparisons are possible with other recent studies (Duvel and Stephanus. 1999; Deniau. 1997; Grimm. 1994) which mainly report on different parameters.

Ownership

The limited range of livestock ownership found in the survey reflect the sample selection process. As already noted selection focused specifically on those owning cattle. In practice the tendency was to select those with relatively large herds. Further light is thrown on the question of herd sizes in the area by data provided by the State Veterinarian

on livestock numbers reported by farmers attending the annual vaccination campaign (see Annex 2).

Farmers were asked how the size of their herds had changed in recent years. Nearly all reported decreases. The reliability of this answer is open to doubt as a major drought has not been experienced in the area since 1994/95.

Calving rate

The calving rate was calculated on the basis of herd composition at the time of the survey. It does not actually represent actual births. Calving rate variation was not that significant, with annual calving rarely going below 25% or above 50%. The high losses experience (see below) puts a question mark over this method of assessment. Nevertheless calving percentages of around 30 per cent are well below what would be considered efficient.

By way of explanation, it was observed that early weaning and separate kraaling and herding of calves and cows is not practiced in the Omusati area (unlike in the Ruacnan and Okangwati survey areas). Other causes of low herd fertility rates are likely to be diseases, infertility amongst cows, physiological stress of cows caused by poor nutrition and lack of water, and lack of a breeding season resulting in calving in times of grazing and water stress leading to high calf and cow mortality.

3.2.3 Losses

Table 12. Cattle losses in last 12 months in the Onesi area

Cause of loss	Calves (0-2 yrs)			Matures (>2 yrs)			Total		
	Average (n=30)	As % of current no. (n=30)	No. of farmers	Average (n=30)	As % of current no. (n=30)	No. of farmers	Average (n=30)	As % of current no. (n=30)	No. of farmers
Disease/ starvation	6.2	26.9	27	9.7	17	29	15.9	21.3	29
Theft	1.6	7.1	8	3.4	6.7	13	5	6.8	18
Lost	0.3	1.1	2	2.3	3.6	8	2.6	2.7	9
Total	8.1	35.1	27	15.4	27.3	29	23.5	30.8	29

Although farmers were asked to distinguish between deaths due to disease and starvation, their ability to do so is often questionable. By far the majority of deaths were attributed by farmers to disease, whereas it is likely that they were mostly due to starvation (Dr E. Masaire. Pers.com). Hence, the two are reported on together as above.

The accuracy of some of the figures given is open to doubt. In particular, it is likely that mortality as reported took place over a longer period than one year. Nevertheless, even if mortality as reported took place over a period of two years, it must still be considered alarming. With losses reported at such high levels in a year of average rainfall, as was the case in the period being reported on, one can only assume that they will be significantly

higher in years of low rainfall which result in poor grazing, experienced in perhaps one year every three or four years on average.

High levels of calf mortality have been reported in other recent livestock studies in the four north central regions. Duvel and Stephanus (1999) found that in a sample of 20 farmers in Uukwaluudhi district the average calf mortality rate amounted to 64 per cent, in a sample of 20 farmers in Uuvudhiya district calf mortality amounted to 36 per cent, and in a sample of 16 farmers in Okongo it amounted to 15.1 per cent. They did not survey mature cattle mortality rates. Deniau (1997), who surveyed 60 farmers in communities in the Ohangwena region, and the Uukwambi and Uukwaluudhi areas, found that over a two year period (one poor rain ('95-96) and one good rain ('96-97)) the average death rate for cattle less than one year old was 17 per cent, for cattle over one year old and less than three years old the death rate was 21 per cent, and for cattle age three years and older the average death rate was again 17 per cent.

On the other hand mortality and loss rates revealed in Part 1 of this report (see page…) are more reasonable. Findings of lower mortality rates in the Ruacana-Etoto area, very close to the Onesi survey area, suggest that mortality due to disease and starvation may be due to different management practices in the two areas rather than environmental factors. This conclusion is supported by anecdotal evidence concerning different practices in two areas.

Such high levels of losses, especially when considering losses from all causes together, must be recognised as a major constraint to cattle marketing. While, other constraints to marketing (including small herd size, market inaccessibility, and the social status attached to ownership) are frequently noted, high levels of mortality have not been widely recognised in the literature.

It is notable that this constraint is one that can be addressed by government services. The recent introduction of stock branding may be expected to reduce theft and lost cattle. However, it is suggested that livestock health and livestock management extension and training services in the NCAs are below requyirements given the importance of livestock to the rural economy, and the apparent need for farmer support services in this area. This is not the place for a full motivation of this assertion. An opening argument to be considered is the ratio of State Veterinarians and livestock specialists in the extension service to farming households and to livestock. What is clear is that ratios in the Omusati, Oshana, Ohangwena and Oshikoto regions are by far the worst in the country.

It is recommended that further studies of the extent and causes of livestock mortality are undertaken in the northern regions, preferably by veterinarians. If these support the findings of the present and other recent surveys, the government should be urged to significantly upgrade the capacity of its livestock health and extension support services.

3.2.4 Marketing and Consumption Off-take

Table 13. Cattle marketing off-take in the Onesi area and Ruacana-Etoto area

Class	Onesi Area (n=30)	Ruacana–Etoto Area (n=20)

Total bulls sold:	7	5
Overall average sales in last 12 months-	0.2	0.25
% of sample who sold-	10	20
Average per seller-	2.3	1.25
% sold via self-quarantine Meatco-	0	0
% sold to traders-	100	100
% sold at Meatco auction-	0	0
Total oxen sold:	108	129
Overall average sales in last 12 months	3.6	6.8
% of sample who sold-	73	95
Average per seller-	5.1	6.8
% sold via self-quarantine Meatco-	32	0
% sold to traders-	30	100
% sold at Meatco auction-	38	0
Total cows sold:	11	36
Overall average sales in last 12 months	0.4	1.8
% of sample who sold-	7	40
Average per seller-	1.6	4.5
% sold via self-quarantine Meatco-	0	0
% sold to traders-	55	100
% sold at Meatco auction-	45	0
Total calves sold:	15	72
Overall average sales in last 12 months	0.5	3.6
% of sample who sold-	4	55
Average per seller-	3.8	6.5
% sold via self-quarantine Meatco-	0	0
% sold to traders-	100	100
% sold at Meatco auction-	0	0
Total all classes sold:	141	242
% of sample who sold-	57	95
Average per seller-	8.3	12.7
% sold via self-quarantine Meatco-	25(4 farmers only)	0
% sold to traders-	43	100
% sold at Meatco auction-	32	0
Percentage of cattle sold by type:		
Bulls-	5%	2%
Oxen-	76%	53%
Cows-	8%	15%
Calves-	11%	30%

Only four (13%) of farmers surveyed sold cattle via Omutambo Omawe. These were all oxen and represented 25% of all sales, again indicating that those with larger sales volumes were those able to use the self-quarantining option. 32% of all sales were reported to be at the last Meatco auction in the area. 43% of farmers did not sell at all. Ox sales clearly predominated in the Onesi area.

Farmers stated that their marketing options were, with the demise of the Meatco auctions, extremely limited. Those selling only a few cattle found both Omutambo Omawe and local markets unsatisfactory. Most informal sales took place at market places such as Epalela, where sales are not assured, partly because of competition from cattle brought from Angola and northern Kunene.

Table 14. Cattle off-take for self-consumption and gifts in the Onesi area

Class	Onesi Area (n=30)
Total bulls consumption/gift off-take: Overall average off-take in last 12 months- % of sample who consumed/gifted- Average per consumer/seller- % consumed- % gifted-	0
Total oxen consumption/gift off-take: Overall average off-take in last 12 months- % of sample who consumed/gifted- Average per consumer/seller- % consumed- % gifted-	33 1.1 40 2.75 18 82
Total cows consumption/gift off-take: Overall average off-take in last 12 months- % of sample who consumed/gifted- Average per consumer/seller- % consumed- % gifted-	3 0.1 7 0.4 33 67
Total calves consumption/gift off-take: Overall average off-take in last 12 months- % of sample who consumed/gifted- Average per consumer/giver- % consumed- % gifted-	13 0.4 10 1.3 0 100
Total all classes consumption/gift off-take: Overall average off-take in last 12 months- % of sample who consumed/gifted- Average per consumer/giver- % consumed- % gifted-	49 1.6 50 3.2 14 86
Percentage of cattle consumed/gifted by type: Bulls- Oxen- Cows- Calves-	 0 67% 6% 27%

It may be observed that the number of cattle given as gifts or loaned amounted to only 1.6% of the total sample. As expected this is far lower than figures reported by Bollig as taking place amongst the Ovahimba in the Okangwati area (see paragraph 2.2.4).

Table 15. Total off-take in last 12 months in the Onesi area

Class	Onesi Area (n=30)
Total bulls off-take/total sample: Overall average off-take of bulls -	7/99 7%
Total oxen off-take: Overall average off-take of oxen -	141/372 37.9%
Total cows off-take: Overall average off-take of cows -	14/999 1.4%
Total calves off-take: Overall average off-take of calves -	28/687 4.1%
Total all classes off-take: Overall average off-take -	190/2,159 8.8%
Percentage of cattle disposed of, by types: Bulls- Oxen- Cows- Calves-	 3.7% 74.2% 7.3% 14.7%

Off-take in the above table is taken to include all cattle marketed, slaughtered for home consumption and given as gifts. It should also be noted that households may be expected to consume most of the cattle which have died due to starvation, disease and old age. Average overall off-take, considering losses due to premature mortality, theft and straying (see paragraph 3.2.3) probably amounts to about 30 per cent per annum.

3.2.5 Information Sources

Farmers were asked from which sources they had recently received information relating to cattle marketing – be it formal or informal. Farmers acknowledged these sources as follows:

Table 16. Marketing information sources in the Onesi area

Information source	% of farmers acknowledging source
Other farmers/family	47%
Radio	83%
Traditional authority	57%
Agricultural extension	70%
Veterinary Services	17%
Meatco	23%

Responses to the question of information sources concerning cattle marketing were undoubtedly biased by the sample selection process in that the majority of informants were introduced to the surveyors either by local Agricultural Extension Technicians or the local Headman. However, the influence of the radio as a source of information stands out.

Farmers were asked whether they heard the Meatco's price broadcasts on the Oshiwambo language service of the NBC. 13 per cent said they had never heard the broadcasts, 33 per cent said they occasionally heard the broadcasts, and 53 per cent said they often heard the broadcasts.

Lastly, farmers were asked if they understood the Meatco pricing and grading system. 87 per cent said they did not. This was supported in discussion in which it was clear that several had not realised that self-quarantine prices were different from Meatco auction prices. Most said they understood that prices were better with self-quarantining but that they did not understand clearly what the different grades quoted on the radio referred to. Some specifically requested more information on the Meatco pricing system. 13 per cent (four farmers) said they did understand the pricing system. Of these two farmers said they were happy with the new price system. On further questioning farmers expressed particular appreciation for the payment of bonuses, and for free gifts of T-shirts and caps. Two expressed unhappiness with the new system considering it unfair that Meatco did not pay them for offal, feet, heads and hides. The explanation they reported having been given for this, to the effect that Meatco's income from selling these items was used to pay for specific items of abattoir equipment, was clearly not acceptable.

3.2.6 Attitudes and Perceptions on Different Market Channels

Answers to surveyors attempts to ask questions about the relative merits of selling via Meatco self-quarantining, Meatco auctions and traders proved difficult to analyse. Answers usually turned into a general discussion of the problems encountered with the three alternatives. It may be mentioned that the question was asked in an attempt to make a comparison with figures produced by Duvel and Stephanus (1999); this proved impossible.

Some general comments on the discussions that took place on this issue are as follows:

- all respondents expressed dissatisfaction with Meatco auctions because of the low prices offer (low prices were thought to be due to cheating by Meatco, two farmers said that they thought that low prices resulted from the fact that meat originating from the north could not be exported from the country);

- Meatco auctions were recognised as offering the benefit of immediate payment and the capacity to buy all types of cattle;

- several respondents complained that sales to traders were difficult because demand was often low at cattle markets (Epalela and Outapi) and they were forced to wait for many days before they could conclude a sale, and prices were, in this case, likely to be low;

- others said that traders' prices were usually fair and reasonable because negotiations were involved;

- about 30 per cent of respondents claimed to not know anything about self-quarantining;

- another 30 per cent had heard of Omutambo Omawe but that it was too far from them and they didn't know what was involved (these are people with very low levels of sales often of old animals);

- a few had heard about self-quarantining but thought that prices were the same as Meatco auction prices;

- 5 farmers expressed appreciation of the bonuses offered by Meatco;

- those who did know about self-quarantining complained about the following issues:
  - the distances and costs of transport to Omutambo Omawe (all respondents);
  - they did not have the labour needed for the self-quarantining process;
  - because of lack of grazing and water en route to Omutamo Omawe farmers were forced to pay high prices for truck transport;
  - unfair allocation of grazing camps in Omutambo Omawe (accusations of tribal bias of responsible officials were made);
  - poor quality grazing and live weight losses in quarantine;
  - Meatco not paying for offal, feet, heads, and hides;
  - meat that is condemned by Meatco is destroyed rather than being given back to the owner for sale.

3.2.7 Specific Marketing Costs when Self-quarantining at Omutamo Omawe

Only four farmers in the sample had taken cattle to Omutambo Omawe for self-quarantining. These all complained about the distances to be travelled. Two took their cattle by a truck organised by a local merchant. The cost of this transport amounted to N$80 per head. The other two reported that trekking took three and four days respectively and resulted in significant weight loss. Water supply en route was a particular problem.

Because they lacked trust in hired labour two respondents accompanied their cattle through the process themselves. This clearly represents a significant opportunity cost. The others paid for labour and food – reportedly amounting to N$ 100 per animal marketed.

In all cases the sales took place in winter when grazing was reportedly poor; in all cases farmers stated that their cattle visibly lost weight. One farmer reported that he had been promised that fodder would be available for sale, but that this did not materialise. One farmer told at length of bias and “corruption” in the allocation of grazing camps to farmers by the authorities at Omutambo Omawe. This problem was perceived as having a tribal origin.

All respondents agreed that self-quarantining through Omutambo Omawe was difficult to manage and costly. Although several recognised that prices paid by Meatco more or less off-set costs, though this assessment was not based on proper accounting, the managerial difficulties involved represented a major constraint. Many respondents expressed eager anticipation of the quarantine-feedlot at Oshifo. In many cases the perceived convenience of the Oshifo quarantine-feedlot as a marketing channel was more important than economic considerations. Practical experience may, of course, yet prove otherwise.

4. KEY RECOMMENDATIONS

Finding 1

Lack of knowledge about Meatco's buying practices on the part of farmers, traders and government extension staff limits sales to Meatco in the survey area.

It is **recommended** that:

1.1 Information and training should be provided to potential clients of the quarantine-feedlot enterprise. Training needs as indicated by this study are outlined in Box 2, below.

Box 3. Outline Training Needs Assessment of Quarantine-Feedlot Staff, local Agricultural Extension Technicians and Officers and Farmers and Traders in Formal Cattle Marketing

- Review of (i) local informal marketing options ('bush markets', pension day slaughters, collectors, traders, live cattle markets) and (ii) Meatco auction practices up to 2000.

- Why Meatco stopped buying at auctions: costs of auctions, consequent low prices, and benefits of self-quarantining for Meatco.

- Self-quarantining procedures and costs to the farmer (getting a slaughter/quarantine date, movement to Omutambo Omawe, quarantine, movement to Oshakati, grading, slaughter).

- Meatco grading system (trainee should be able to approximately assess weight, age, fatness and conformation of cattle) and pricing system (origin of prices, calculation of prices including offal feet, hides etc. and all deductions).

- Quarantine-feedlotting for weight maintenance and increase and fat grade increase. The costs of processing animals through the quarantine-feedlot, and the projected price benefits of quarantine-feedlotting in terms of price increase:
  - through weight gain for young animals,
  - through fat grade increase for older animals,
  - through deferred costs of self-quarantining at Omutambo-Omawe.

1.2 Extension information and training should be provided by:
(1) the enterprise owner and his staff;
(2) Meatco extension staff;
(3) the MAWRD extension staff based at Okangwati, Ruacana, Onesi and Eunda, and further afield.

1.3 It is suggested that agricultural extension staff and the quarantine-feedlot enterprise staff should receive training from Meatco staff at Eloolo abattoir and Okapuka.

They should also receive training at quarantine-feedlot site before and during the first intake from an adviser/trainer who remains at the facility throughout.

1.4 Agricultural extension staff at four local ADCs (as in para. 2) should, together with Meatco staff and the QED project, design a livestock marketing information and training programme. Key components of this livestock information and training programme could include:

1.4.1 A traditional cattle show organised by the community at Oshifo to coincide with the official opening of the quarantine-feedlot.

1.4.2 The presence of Meatco's Oshakati-based extension officer at the quarantine-feedlot on intake days to communicate directly to farmer/clients. On the basis of liveweight measurements, and approximate age, fat, and conformation assessment carried out by the quarantine-feedlot staff and the Meatco extension officer, a non-binding guideline price range for the animal should be given to the client before his animal enters the feedlot. For obvious reasons, this should price range should err on the low side.

1.4.3 The potential quarantine-feedlot client should also receive information on the duration of feedlotting, its projected costs, and its projected objectives, in terms of price increase through weight gain for young animals and through fat grade increase for older animals. At this point the farmer can decide whether he wants to sell his animal to Meatco via the quarantine-feedlot process or to proceed to sell them on the informal market. If this scenario is realised it could be envisaged that an informal market place could well develop at the feedlot sight. The existing government-constructed, but currently redundant, auction kraals, on the other side of the main road could be the venue for such sales.

1.4.4 Short farmer training courses should be offered by AETs at Okangwati, Ruacana, Onesi and Eunda ADCs based on the needs outlined in Box 2.

1.4.5 Meatco extension activities need to be carried out in collaboration with government extension staff. Both parties should make more use of radio and visual aids (e.g.pamphlets and posters)in providing information to farmers. A simplified version of the Meatco booklet on meat marketing should be produced.

It is suggested that recommendations 1.1 to 1.4 could be supported by the QED project, given good co-operation from Meatco, the MAWRD DEES and DART.

Finding 2

High levels of livestock losses in the Onesi area, apparently due mainly to management-related starvation (rather than drought-related per se) and disease, results in significant financial losses for farmers, encourage the perpetuation of low-input low-output livestock farming systems, and discourage livestock marketing in general and formal livestock marketing (which requires higher inputs) in particular.

It is **recommended** that:

2.1 Further studies of the extent and causes of livestock mortality should be undertaken in north-western Omusati region. If these support the findings of the present survey the government should be urged to significantly upgrade the performance of its veterinary and extension support services. New approaches to livestock management, including husbandry and marketing issues, and health extension and training need to be adopted by the DEES and DVS. Key issues are outlined in the box below.

Box 4. New approaches to livestock husbandry, nutrition and health extension

To build on the agricultural extension service's and veterinary service's existing strengths and opportunities, the following initial measures are suggested for piloting in the north west Omusati region.

1. Farmer's training needs in relation to cattle husbandry, health care and marketing need to be assessed by the livestock group of the Ongwediwa FSRE team and the State Vet at Outapi together with selected AETs and FED groups. **Basic issues to consider would include**….

2. As a pilot, up to 10 local AETs and AHI's training needs relating to animal husbandry and nutrition, health and marketing should to be assessed. Training needs assessment could be carried out by the livestock group of the Ongwediwa FSRE team relating to livestock management, and by the State Vet at Outapi at a short group meeting with AETs and AHIs.

3. Two to three day training courses in animal husbandry and health respectively should be designed and implemented by the above officers. The marketing component of the courses could be designed and delivered by Meatco Oshakati staff.

4. Once trained, AETs and AHIs should, during their everyday contacts with farmers, enquire as to the nutrition and health status of farmer herds (mortality and morbidity). Farmers should also be encouraged to report health problems to local AETs. AETs should advise individual farmers with problems as far as possible. Problems should be reported by AETs directly and as soon as possible to the State Vet at Outapi. In extreme cases the State Vet should be requested to visit the farmer. Livestock husbandry and health issues should be specifically included in the monthly and quarterly reports of AETs.

5. FED group activities should be designed and implemented to focus attention on key husbandry issues. The scope of these issues should extend beyond supplementary feeding and skins and hides as reportedly already catered for.

6. Basic veterinary drugs should be on sale at all AETs and AHIs offices or where possible at one or more local private retail outlets.

7. AETs should implement short training courses to interested farmers in formal livestock marketing. (see needs assessment in Box 1).

8. Meatco monthly prices (as provided by the monthly DoP Price Watch e-mail) should be provided to and displayed by AET in a farmer friendly way.

It is suggested that recommendation 2.1 is beyond the capacity of the QED project budget and that alternative means of implementation should be considered.

Annex 1.

FARMER QUESTIONNAIRE

A. Farm characteristics

<table>
<tr><td colspan="2">Enumerator.....Date.....Village.....
Distance from Ruacana Q/F (km).....
Distance from Omutambo Omawe (kms) ……</td></tr>
<tr><td colspan="2">Age: 18-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61 + ☐</td></tr>
<tr><td>Number of persons in the h.h:

Number not living at home:

Number employed ‘on farm’ :</td><td>Education: 3.2
No school ☐1
Part primary ☐2
Secondary Grade …….
Above Secondary ☐4</td></tr>
<tr><td>Production/income: 4..1
Livestock/products ☐1
Crops ☐2
Shop/business ☐ 3
Casual work ☐ 4
Salary ☐ 5
Remittances ☐ 6
Pension ☐ 7
(Prioritise top <u>three</u>)</td><td>Ranking of livestock farming problems:
Disease ☐1
Grazing/lack ☐ 2
Water ☐ 3
Theft ☐ 4
Marketing ☐ 5
Other…… ☐ 6
(Prioritise top <u>three</u>)</td></tr>
<tr><td>Do you have a registered brandmark?

Y / N</td><td>Do you trade in (buy & sell) cattle?

Y / N</td></tr>
</table>

B. Herd composition

Type	Age		
	< 4 yrs	**4-6 yrs**	**>6 yrs**
Bulls			
Mature Oxen (>24 months)			
Cows			
Calves (0-24 months*)		Total cattle **that <u>belong</u> to you**.	
Goats		Total cattle herd size 4-5 years ago (1996/7)	
Sheep			
Donkeys**			

Assessment of reliability of informant……

***(P.S. Asking respondents to distinguish between young calves and heifers and tollies proved unreliable and was abandoned)**

Losses in last 12 months

Loss	Calves (0-2 yr)	Adult >2 yrs
Disease		
Starvation (drought)		
Theft		
Other		

D. Cattle Disposal : Which of the following have you disposed of in the last 12 months?

Type	Total Number	(1) meatco self-quarantine, (2) trader, (3) self-consumption, (4) gift /loan	Price received meatco/ Trader(n$)	Price expected (n$)
Bulls				
Oxen				
Cows				
Calves 0-2yr				

E. Information sources

Where do you get information on cattle marketing?	Does respondent hear Meatco prices on radio?
Other farmer ☐ 1 Radio ☐ 2 Traditional authority ☐ 3 Agric extension ☐ 4 Vet services ☐ 5 Meatco ☐ 6 Other ☐ 7	Never ☐ 1 Occasionally ☐ 2 Often ☐ 3
	Does farmer understand the Meatco pricing criteria? Y / N

F. Attitudes and Perceptions

Criteria	Meatco S-Q	Trader	Meatco auction
Can take a larger number of cattle			
Can take different quality animals			
Good prices			
Quick payment			
Fair system/no cheating			
Convenience – availability of market			
Other (specify)			

Why not sell to Meatco S-Q now. What are problems with current system?

G. Specific marketing costs when self-quarantine in Omutambo Omawe and selling to Meatco

Typical mature ox	Trekking labour	Liveweight losses (+/- kg) in trekking	Liveweight change (+/- kg) in oo	Trucking costs from OO
Rainy season/ good grazing				
Dry season/ Bad grazing				
Deaths				
Theft				

SEMI-STRUCTURED INTERVIEW SECTION

Reasons for selling?

Cash for regular income (e.g. Systematic commercial)
Cash for emergency (describe specifics)
Animal too old/not producing
Impending drought
Save money in nampost saving account

Why not sell more?

Marketing constraints: in relation to different marketing options (1-5, above)
No need for cash: alternative sources, low level of needs
Building up herd (target number , upon reaching which will sell more)

Marketing plans for next drought (e.g. 1980/81, 1993/4)

Will try and sit it out
Will try and sell early: by what means?, esp if in poor condition and prices are low (nb '81 drought)

If (1) self-quarantined at oo:

Dates? What numbers/type/age animals sold? How where animals moved? Costs of trekking? Weight loss during trekking? Weight loss during quarantine? Other losses? Discuss mc slaughter statement..price, deductions etc. Price relative to expectations? What general problems are experienced? What are the benefits of this form of marketing?

If (2) trader:

Dates? What numbers/type/age animals sold? Price? Price relative to expectations? What did trader do with animal(s)? (meatco or informal market?). What general problems are experienced? What are the benefits of this form of marketing?

If (3) private sale:

Dates? What numbers/type/age animals sold? What did purchaser want the animal for? Where? Price fixing mechanism? What general problems are experienced? What are the benefits of this form of marketing?

If (4) self-slaughter and sale:

Dates? What numbers/type/age animals sold? Where sold? Price received relative to expectation? What general problems are experienced? What are the benefits of this form of marketing?

The aim of the survey will be to see whether the q/f has improved the marketing situation for benefits. After the q/f enterprise has been in operation for a period the situation will be reviewed to gauge whether any change has occurred.

Have prices changed
Has accessibility of market outlets changed
Has availability of market outlets changed
Has trust in marketing improved
Has the reason for marketing changed over project period
Are farmers selling more with new opportunity

CATTLE MARKETING DATA EXPLANATION

The aim of this section is to determine how market demand-oriented the farmer/seller and trader is. Has the q/f enterprise changed the type of animal being marketed during the project period – for example by selling younger and better quality animals?

Age

Survey key	Description
Aa	0-12 months/0-1 yr – no permanent incisors (a grade)
Ab	12 months-48 months/1-4 yrs – 1-6 permanent incisors (b grade)
Ac	48 months/4 yrs + - 7-8 permanent incisors (c grade)

Weight

Survey key	Description
Wa	0-340 kg liveweight (approx.170 kg cdw) – no price premium
Wb	341 – 420 kg (approx. 171-209 kg cdw) – premium of 10 cents/kg
Wc	421 kg + (approx. 21o kg cdw) – premium of 20 cents/kg

Fatness

Survey key	Carcass description	Code	Thickness of subcutaneous fat layer (mm)
Fa	No fat	0	0
Fb	Very lean	1	<1
Fc	Lean	2	1-3
Fc	Medium	3	3-5
Fc	Fat	4	5-7
Fd	Slightly overfat	5	7-10
Fd	Excessively overfat	6	>10

Conformation

Survey key	Description
Ca	Very flat (code 1) or flat (code 2) – no premium paid
Cb	Medium (code 3), round (code 4) or very round (code 5) – premium of 15 cents/kg

Annex 2.

Selected Livestock Herd Figures Gathered from the 2001 DVS Vaccination Campaign in Omusati Region

Issues of cattle loans, multiple herds, including cattle posts, and whether calves are included may disguise ownership accounts.

Otjekwa 06.03.01 (nr Ruacana)

Farmer	Cattle	Goats	Sheep	Equines
1	13	15	7	2
2	83	10	0	5
3	130	0	0	1
4	48	60	7	0
5	82	48	6	10
6	81	12	5	2
7	29	0	0	6
8	108	120	47	5
9	120	20	5	8
10	21	0	0	4
11	64	0	0	5
12	17	38	0	0
13	98	278	59	8
14	25	87	0	1
15	55	0	0	0
Total	974	688	136	57
Average	64.9	45.9	9.1	3.8

Mahanene Border post 09.03.01

Farmer	Cattle	Goats	Sheep	Equines
1	48	65	2	0
2	29	30	23	4
3	30	43	5	5
4	8	48	8	2
5	14	4	0	0
6	53	48	33	2
7	45	28	11	4
8	24	150	80	0
9	27	15	0	4
10	39	78	4	7
11	45	42	6	2
12	53	59	0	0
13	19	10	0	0
14	6	34	8	0
15	16	48	6	0
16	17	66	6	0
17	13	17	9	1
18	380	85	25	0
19	62	86	3	1
20	28	43	2	1
21	47	48	0	5
22	45	104	5	0
23	22	30	0	0
24	58	23	3	0
25	17	25	11	1
Total	1145	1229	250	39
Average	45.8	49.2	10	1.6

Incl. 215 from Angola. On 22.03 a further 1975 out of 2181 cattle from Angola were vaccinated.

Eunda 20.03.01

Farmer	Cattle	Goats	Sheep	Equines
1	22			
2	17			
3	29			
4	20			
5	5			
6	14			
7	9			
8	40			
9	34			
10	15			
11	34			
12	34			
13	25			
14	15			
15	10			
16	36			
17	12			
18	16			
19	37			
20	8			
21	25			
22	30			
23	13			
24	29			
25	17			
26	31			
27	70			
28	43			
29	11			
30	5			
31	30			
Total	736			
Average	23.7			

Ombuumbu crushpen (Oshifo) – ie cattle not at cattlepost – 05.05.01

Farmer	Cattle	Goats	Sheep	Equines
1	73	0	0	0
2	17	16	0	0
3	10	23	0	0
4	10	40	5	0
5	24	30	0	0
6	35	24	10	0
7	12	20	0	2
8	7	28	0	0
9	5	28	5	0
10	11	48	0	6
11	31	0	0	0
12	11	0	0	2
13	17	62	0	0
14	25	0	0	0
15	57	80	2	0
16	28	30	6	5
17	7	30	0	18
18(K)	7	0	0	0
19	12	43	3	5
Total	399	502	31	38
Average	21	26.4	1.6	2

Etoto 06.03.01

Farmer	Cattle	Goats	Sheep	Equines
1	123	40	10	4
2	44	0	0	0
3	86	70	30	5
4	54	20	0	0
5	120	0	0	0
6	80	120	70	8
7	25	36	7	14
8	86	48	0	8
9	22	0	0	3
Total	640	334	117	42
Average	71.1	37.1	13	4.6

Epalela 09.03.01

Farmer	Cattle	Goats	Sheep	Equines
1	13	35	0	0
2	68	12	0	0
3	17	16	0	0
4	18	38	2	0
5	16	12	0	2
6	18	68	4	2
7	9	15	0	0
8	1	45	0	10
9	13	15	0	0
10	3	36	0	0
11	19	0	0	0
12	2	10	0	0
13	29	89	14	0
14	60	90	35	2
15	7	35	0	0
16	17	35	15	0
17	70	300	20	3
18	21	6	2	0
19	15	30	4	0
20	98	26	16	5
21	57	50	15	0
22	26	40	20	5
23	9	5	0	0
24	10	19	3	0
25	30	0	0	0
Total	646	1027	150	29
Average	25.8	41.1	6	1.2

Omatemba 05.03.01 (cattle posts?)

Farmer	Cattle	Goats	Sheep	Equines
1	110	100	95	
2	5	20	0	
3	6	45	0	
4	18	35	0	
5	68	40	0	
6	6	19	0	
7	88	62	0	
8	80	60	0	
9	16	16	0	
10	9	0	0	
11	37	10	0	
12	22	0	0	
13	45	50	1	
14	20	46	1	
15	40	21	0	
16	50	30	0	
17	100	0	0	
18	60	20	0	
19	20	0	0	
20	112	150	0	
21	300	70	0	
22	10	8	0	
23	200	150	10	
24	20	0	0	
25	35	0	0	
26	17	60	4	
27	3	0	0	
28	26	50	2	
29	106	70	1	
30	50	80	3	
31	31	100	5	
32	6	0	0	
33	111	97	0	0
34	67	20	5	0
35	36	200	20	0

36	9	0	2	0
37	34	0	0	0
38	39	26	9	3
39	39	40	0	0
40	68	40	0	8
41	27	0	0	0
42	60	9	3	0
43	27	0	0	0
44	64	26	6	10
45	350	106	21	3
46	78	50	26	3
Total	2725	1926	214	27
Ave	59.2	41.9	4.7	1.7

Otjomilungu 06.03.01 (cattle posts)

No.	**Cattle**	**Goats**	**Sheep**	**Equines**
1	56	20	0	0
2	108	0	0	0
3	130	0	0	0
4	85	0	0	0
Total	379	20	0	0
Ave	94.8	5	0	0

Okaulukwa 07.03.01 (cattle posts)

No.	**Cattle**	**Goats**	**Sheep**	**Equines**
1	51	45	2	5
2	48	37	0	8
3	96	0	0	0
4	59	0	0	0
5	280	0	0	5
6(Kaherero)	335	100	1	13
Total	869	182	3	31
Ave	144.8	30.3	0.5	5.2

Annex 3.

Review of NOLIDEP Livestock Marketing Study Findings on Herd Numbers and Structure

The NOLIDEP study (MAWRD. 2000) presents a typology of livestock owners in the Kunene North region: pages 162-170 and pages 211-215.

NOLIDEP method

The determination of the typology of livestock owners in the region was based on "participatory discussions with farmers". It is not clear whether information was gathered from individual interviews or collective meetings or both. Nor is any idea of the number of informants given. It is difficult therefore to assess the reliability of the data.

NOLIDEP study areas

The NOLIDEP study divided the region into different areas according to geographical zones and headmen constituencies. Unfortunately, these areas are only roughly defined and are not mapped. This makes it impossible to corroborate data presented. Two of the NOLIDEP report areas would appear to overlap to some degree with the QED survey area. These are what the NOLIDEP report terms "Opuwo including the surrounding area and the areas to the north east, ie towards Ruacana" and "Okangwati the area that falls under headman Munimuhoro Kapika" (as the authority of Chief Kapika is disputed in places this definition is not very helpful).

NOLIDEP results

Table 1. Total herd size

Area	**DVS census 1998**	**DVS census range (1995-98)**	**NOLIDEP estimates**
Cattle			
Opuwo	49,775	40,064 - 51,654	43,350
Okangwati	26,939	16,725 - 26,939	65,400
Goats			
Opuwo	Not given	Not given	30,900
Okangwati	Not given	Not given	36,500
Sheep			
Opuwo	Not given	Not given	7,000
Okangwati	Not given	Not given	3,900

Table 2. Average cattle herd size

Area	**NOLIDEP total cattle herd estimates**	**NOLIDEP estimate of number of owning households**	**Average cattle herd size per house hold**
Cattle			
Opuwo	43,350	340	126
Okangwati	65,400	140	467

By way of partial explanation of the discrepancy between DVS and NOLIDEP figures for the Okangwati area the report states that "It is possible that about 20,000 cattle owned by Namibians are grazing in Angola and that about 5,000 cattle owned by Angolans are grazing and being vaccinated in Namibia". Reconciliation of the figure remains a concern.

In addition, the average herd size given for the Okangwati area of 467 is implausible (see paragraph 2.2.2 of main report).

Table 3. Cattle mortality and off-take rates

Area	Mortality (%)		Own consumption (%)		Sales (%)		Total off-take (%)	
	Poor	Wealthy	Poor	Wealthy	Poor	Wealthy	Poor	Wealthy
Opuwo	8.9	6.6	8.9	3.1	8.9	6.6	17.8	9.7
Okangwati	8.3	5.9	8.3	7.1	7.8	2.3	16.1	9.4

Mortality and off-take percentages are presented on the basis of typical "poor" and "wealthy" households. In Opuwo a poor household is said to own 45 cattle and a wealthy one 300, while in Okangwati a poor household owns 180 cattle and a wealthy one 850. It is not clear from the explanations given (page 162) how these figures were arrived at or what they actually represent.

Own consumption in the table above includes traditional uses such as weddings and funerals, and sales, as above, includes barter trade. Off-take includes both of the above and excludes deaths.

The report suggests that a mortality rate of 3 percent should not be exceeded. Realistic target off-take rates are said to be about 20 per cent per annum.

Looking at the whole region, the report estimates that out of a total regional cattle herd of 189,000, at least 60,000 are "holy cattle" "not for sale". Again this assertion is doubtful. Of the remaining 129,000 head an estimated 13,380 or 10.4% are said to be been sold in the previous year.

The report (page 69) states that "a typical small herd size consists of 20-30 holy cattle, while households owning large herds have up to 300 of these cattle. These animals are not for sale (even in a drought) and are utilized only for traditional events". The report estimates that in the region as a whole at least 31.7% (60,000 out of 189,000 head) are holy cattle not available to the market. The QED survey suggests that this figure is considerably exaggerated.

Table 4. Market outlets

	Sales				Home consumption		Total off-take /% of total herd (Table 1)
	Informal (live) / % of total sales	Traders at Meatco points/ % of total sales	Meatco / % of total sales	Total sales / % of total herd (Table 1)	Urban markets	Rural	
Cattle							
Opuwo	1,101 / 24.6	780 / 17.4	2,601 / 58	4,482 / 10.3	210	1,120	5,812 / 13.4
Okangwati	180 / 15.8	220 / 19.4	736 / 64.8	1,136 / 1.7	30	1,000	2,166 / 3.3
Goats							

Opuwo	4,974 / 96.1 (error?)	780 / 15.1 (error?)	-	5,174 (error?)/ 16.7	1,300	3,100	9,574 / 31
Okangwati	238 / 70.4 (error?)	220 / 65.1 (error?)	-	338 (error?)/ 0.9	203	2,450	2,991 / 8.2
Sheep							
Opuwo	1,456 / 100	-	-	1,456 / 20.8	211	500	2,167 / 31
Okangwati	30 / 100	-	-	30 / 0.76	22	-	52 / 1.3

Total off-take excludes urban home consumption (as these have come from sales).

The reports presents the above estimates of the number of cattle being marketed through different outlets (page 214). These figures were arrived at by a combination of discussions and direct observation by field workers.

Comparative Review of Findings of NOLIDEP Livestock Marketing Study and NEPRU on Livestock Marketing

A major study of livestock market flows (NEPRU. 2000), based on studies of the Ombalantu and Oshakati livestock market record books and interviews with traders, concludes that insignificant numbers of cattle enter these markets from northern Kunene. Between 71% and 87% of cattle marketed annually at the Ombalantu market during the period from 1994 to 1997 (average 20,725 head per annum) are said to come from Angola. The remainder are said to originate almost exclusively from Omusati region, with "only small flows of a few hundred cattle a year coming from Kunene" (page 71).

At the smaller Oshakati market about 78% of the estimated 2,348 cattle sold between June 1995 and July 1996 were thought to come from Oshana and Omusati . Only 6% (140 head) came from Kunene.

In summary the report suggests that only a few hundred cattle a year reach the informal markets at Ombalantu and Oshakati, by far the biggest in the north.

According to NOLIDEP's livestock marketing study (MAWRD. 2000; page 194) around 1,700 cattle and 2,200 goats are transported from the Opuwo to the Ombalantu and Oshana region markets annually. The report states that "the villages around Opuwo seem to be the main area of supply" (see Table 4, above).

The QED survey suggests that significant trade takes place between the Epupa-Okangwati area, the Ehomba area and the Ruacana-Etoto area, and the Omusati and Oshana livestock markets. Considering the small number of animals purchased in these areas by Meatco in the past (see MAWRD. 2000; page 159), it is doubtful that the demise of the Meatco buying operation accounts for this discrepancy in findings.

The QED findings however have little quantitative validity. However, it is evidently the case that more cattle are currently trekked directly to the Ruacana, Epalela, Ombalantu, Okahao, Oshakati and Ondangwa markets than go south to Omutambo Omawe and Meatco. The main reasons for this are reportedly that the distances are shorter; water and

grazing en route are more secure, and the market itself is more secure (given the uncertainties and consequent mistrust of the Meatco market).

Ultimately, we can but conclude that current levels of information on livestock marketing in north western Namibia are rudimentary. It is recommended that one way of remedying this situation is to re-introduce the Directorate of Veterinary Services movement permit system in the area, and to analyse the records on an annual basis.

Directorate of Veterinary Service (DVS) Movement Permits

The prescribed system, which is not implemented in the Epupa constituency currently, involves the following steps:

1. A "Permission to travel with animals" form is signed by authorised headmen on behalf of someone wanting to move animals.
2. The DVS office checks that the headman is duly authorised to sign for the proposed movement, and stamps the form.
3. The form is taken to the police station in order for the police to count the animals and stamp the form.
4. The form is returned to the DVS office and a "Movement Permit" is issued.

Observations at the Okangwati ADC indicate that the last step is not carried out. Hence, no records of authorised livestock movements exists. It is recommended that with or without the formal issuing of an authorised movement permit records of livestock movement should be kept for information purposes.

Annex 4.

Meatco NCA Carcass Weight and Slaughter Grade Statistics 2000

Initially, the QED survey attempted to ask farmers about the weights and grades of cattle they had sold to different markets. Information received proved unreliable. Instead, this annex presents Meatco data on slaughter weights and grades for the year 2000. It may be noted that Meatco figures attribute some 76% of its Eloolo slaughters during the same period to north Kunene sources.

Meatco Carcass Weight Categories

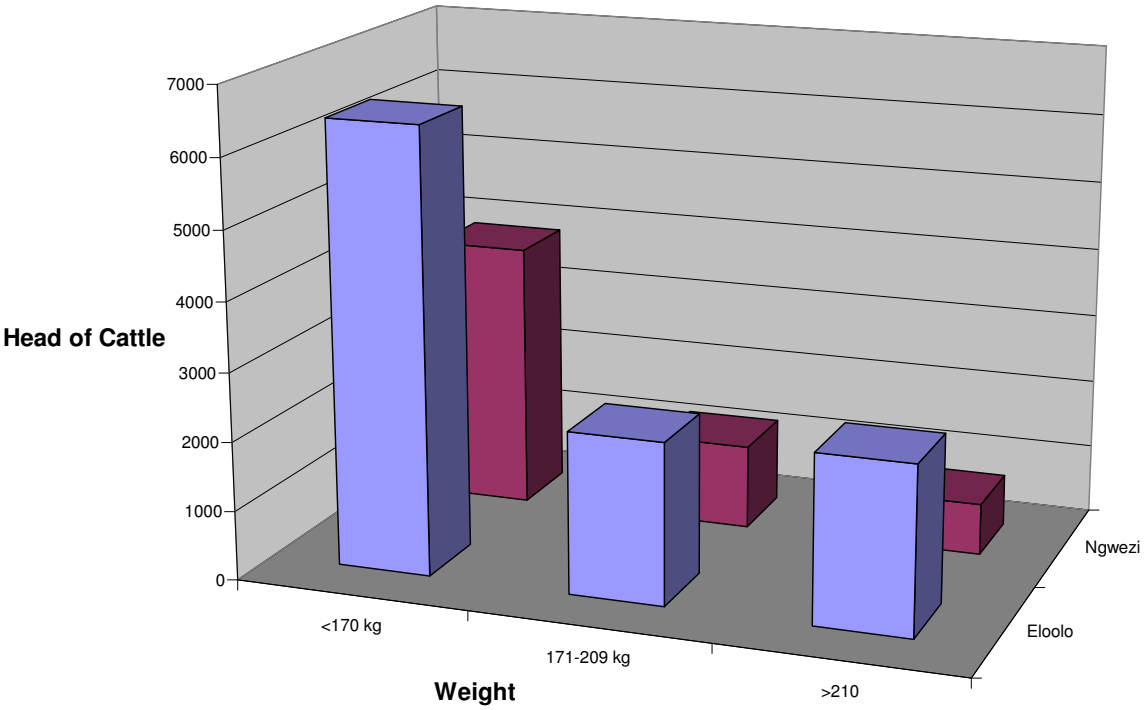
Table 1– Eloolo Abattoir, Oshakati

Weight	Number	Percent	Total kg	Average kg
<170 kg	6420	57.40	827,478.13	128.89
171-209 kg	2336	20.89	441,894.92	189.17
>210	2428	21.71	610,690.00	251.52
Total	11184	100	1,880,063.05	168.10

Table 2– Ngwezi Abattoir, Katima Mulilo

Weight	Number	Percent	Total kg	Average kg
<170 kg	3872	66.36	498,825.22	128.83
171-209 kg	1217	20.86	229,001.98	188.17
>210	746	12.78	174,522.62	233.94
Total	5835	100	902,349.82	154.64

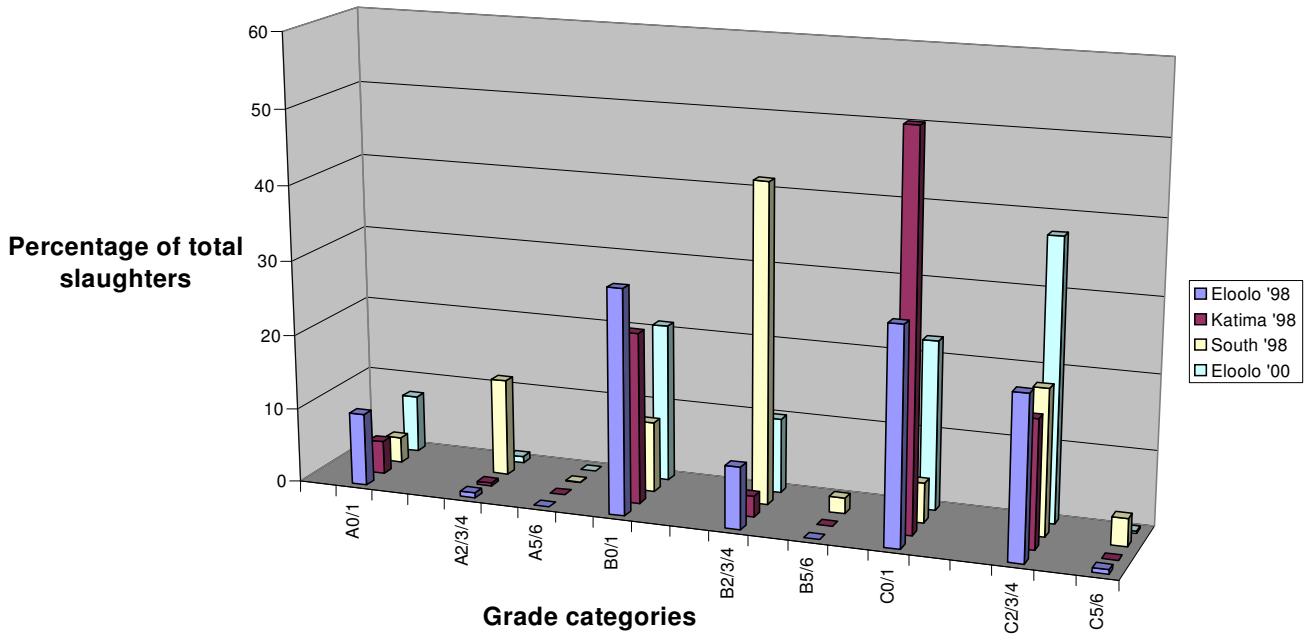
Meatco NCA CDW Categories (2000)



Meatco Oshakati Slaughter Grades Jan-Dec 2000

Grade	Number	Total CDW (kg)	Average CDW (kg)	LW (kg) (CDWx2)	Grades	% Slaughters (Nolidep p. 151)				
						June'98-May'99			Jan-Dec '00	
						Eloolo	Ngwezi	South	Eloolo (%)	Eloolo (n)
A0	692	68,464.71	98.93744	197.874884						
A1	204	23,906.45	117.1885	234.376960	A0/1	9.7	4.4	3.4	7.650	896
A2	90	12,931.92	143.688	287.376						
A3	11	1,634.00	148.5455	297.090909						
A4	0	0	0	0	A2/3/4	0.7	0.4	13	0.862	101
A5	0	0	0	0						
A6	0	0	0	0	A5/6	0	0	0.1	0	0
B0	1187	147,886.62	124.5886	249.177118						
B1	1283	177,977.58	138.7199	277.439719	B0/1	30	22.8	9.4	21.091	2,470
B2	935	143,798.64	153.7953	307.590673						
B3	211	37,921.84	179.7244	359.448720						
B4	26	5,326.71	204.8735	409.746923	B2/3/4	8.3	2.8	42.7	10.007	1,172
B5	0	0	0	0						
B6	0	0	0	0	B5/6	0	0	2.1		0
C0	1393	228,973.27	164.3742	328.748413						
C1	1252	214,932.71	171.6715	343.342987	C0/1	28.8	52.3	5.3	22.585	2,645
C2	1858	345,872.40	186.1531	372.306135						
C3	1954	421,022.96	215.4672	430.934452						
C4	579	140,832.43	243.2339	486.467806	C2/3/4	21.7	17	19.4	37.494	4,391
C5	30	8,310.96	277.032	554.064						
C6	6	1,691.65	281.9417	563.883333	C5/6	0.6	0	3.7	0.307	36
Total	11,711	1,981,484.8	169.1986	338.397207		99.8	99.7	99.1	100	11,711

Meatco Slaughter Grades 1998 & 2000



Annex 5.

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