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**REPUBLIC OF NAMIBIA**  
**MINISTRY OF AGRICULTURE**  
**WATER AND RURAL DEVELOPMENT**

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**NORTHERN KUNENE SUB-REGION**  
**BASELINE SURVEY OF THE IMPACT OF**  
**AGRICULTURAL EXTENSION SERVICES**

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**DIRECTORATE OF EXTENSION AND ENGINEERING**  
**SERVICESOPUWO, OCTOBER 2003**



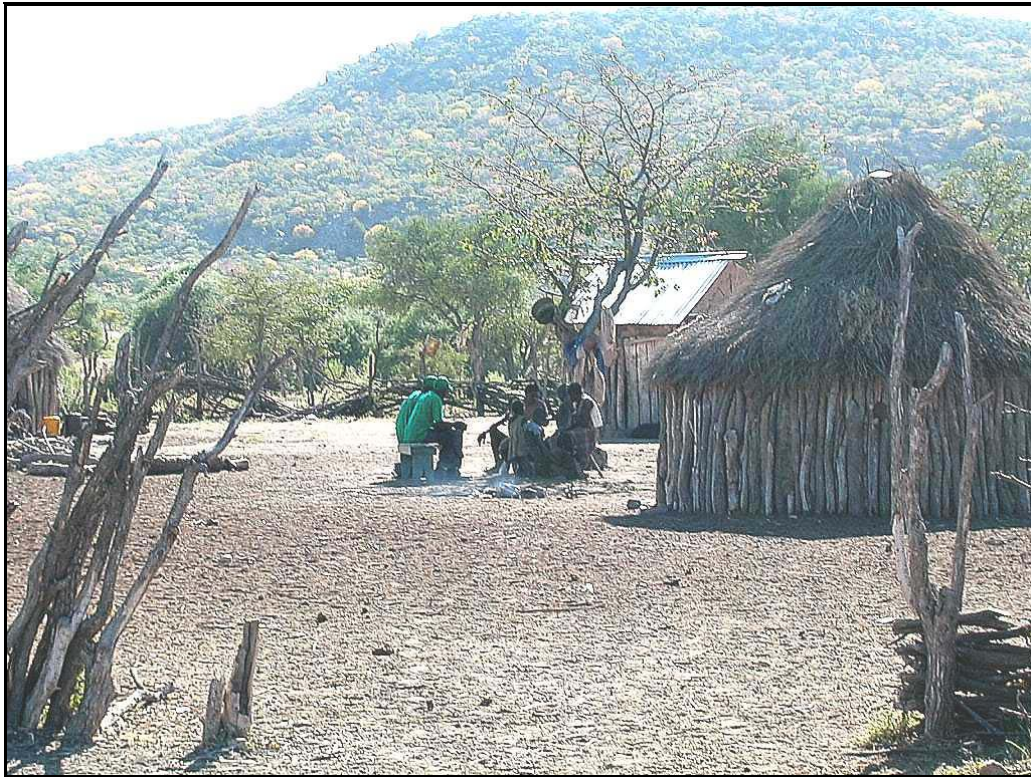


Photo above: enumerator at work

Photo cover: Okangwati cattle

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### Acronyms and abbreviations

ADC	Agricultural Development Centre
AET	Agricultural Extension Technician
AEO	Agricultural Extension Officer
CAEO	Chief Agricultural Extension Officer
CBO	Community Based Organisation
DAP	Draft Animal Power
DEES	Directorate of Extension and Engineering Services
DVS	Directorate of Veterinary Services
EU	European Union
FSRE	Farming System Research and Extension
FU	Farmers Union
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
KUNOCOFU	Kunene Communal Farmers Union
LSU	Large Stock Unit
MAWRD	Ministry of Agriculture, Water and Rural Development
MOF	Ministry of Finance
MOHSS	Ministry of Health Social Services
NCD	Northern Central Division
NOLIDEP	Northern Regions Livestock Development Project
REMP	Rural Extension Management Programme
SSU	Small Stock Unit
SPSS	Statistical Packages for Social Sciences
VCF	Veterinary Cordon Fence

### **Acknowledgements**

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## **PART ONE**

### **0 FOREWORD**

Government's annual operational expenditure on agricultural extension services has averaged about N\$ 50 million over the last few years. In addition, international donors have contributed roughly N\$ 10 million per year to both operational and capital expenditure. Agricultural Development Centres are found all over the country staffed by qualified officials equipped with vehicles and provided with operational budgets. But, is the extension service achieving what it sets out to do?

This is a report on a baseline survey designed to review selected indicators of extension impact during the 2002/03 farming season. We intend to repeat this survey after the 2006/07 season to gauge change over the period between the baseline survey and the final survey. This period coincides with the span of NDP 2, which is the basic planning timeframe of the extension service.

Calls for an assessment of the impact of agricultural extension services have been made by our collaborators, as well as the Namibian public at large. These are the people who ultimately control our purse strings; and as competition for government resources increases, we want to assess whether what we are doing is worth supporting.

As managers, we also want to know whether all the effort we are putting in is actually bearing fruit. If we find, for example, that, after years of promoting a particular farming technology or practice, farmers are simply not interested and have not adopted it, we will obviously need to think again. What are we doing wrong? Is it the wrong technology? Are our methods failing? How can we improve?

We are approaching the task of impact assessment by gathering quantitative information using formal questionnaires and qualitative information using informal, participatory methods. The two approaches need to be integrated; qualitative methods need to build on quantitative.

This report presents the results of a regional questionnaire baseline survey that has produced, we believe, objective results. Each region has designed and managed its own survey. This reflects our decentralised organisational structure which operates regional programmes in response to regional realities.

This report focuses on the Kunene north sub-region, and is being distributed to you as important collaborating partners and stakeholders in the cause of regional development. We hope you find it interesting and informative and we look forward to increasing collaboration in future.

D.R. Tshikesho  
DIRECTOR OF EXTENSION AND ENGINEERING SERVICES  
October 2003

## 1 EXECUTIVE SUMMARY

It is very difficult to prove that changes in farmer welfare, production income, behaviour, skills, and the use improved farm technology and practices have occurred as a result of the work of extension services as opposed to the influences.

Therefore, a baseline survey on extension impact on farmers was conducted in Kunene North sub-region from the 12<sup>th</sup> to 24<sup>th</sup> May 2003 in a randomly selected villages using a structured and closed questionnaire. Extension impact assessment aims to review the extent to which changes in farmer welfare, behaviour have taken place, first through revealing the baseline situation (2003), and later through reviewing how things have changed over time (2006/2007).

The sub-region has designed the questionnaire to investigate selected topics, which they expect extension will be promoting up till the time of the impact survey. The questionnaire consisted of three sections. These looked at (i) the characteristics of farmers in the sub-region; (ii) selected indicators of farmer-extension contact (here the questionnaire looked at either farmer contact with extension directly, through participating in activities with AETs, and indirectly through the radio or other farmers who have learned directly from extension); and the last section (iii) impact indicators which looks at whether farmers had received information, advice or training on the recommended innovations from the extensionists, understood the information, tried out and adapted the innovations to their specific needs, and adopted the innovation. Selected indicator topics included vaccinations, castration, dehorning, range management, branding, marketing, DAP and CBOs activity.

In brief, **Part One** of this report consists of background information why and how DEES undertook a baseline study which aimed to assess whether extension has an impact on farmers for 2002/2003 season.

**Part Two** of the report consists of background information on agriculture in the Kunene Region. It includes discussion of natural resources, population issues, livelihood patterns, livestock, crop production, as well as food security issues. On the agricultural extension services in the region, the report provides information on mission and strategy of the Directorate of Extension and Engineering Services. Key extension approaches used in the region, extension resources, active donor projects, and main collaborators with DEES in the sub-region are also discussed. The last section of Part Two on the survey methods used, provides information on the survey objectives, questionnaire development, sample selection, preparation of field implementation, questionnaire development and data analysis procedures that were used in conducting the baseline survey.

**Part Three** of the report provides information about the survey findings. The questionnaire was divided into three sections:

Section i dealt with the farmer type - under this section the questionnaire investigated the characteristics of the farmers in the sub-region. Based on pre-existing knowledge of the characteristics of farmers in the region, the responses demonstrated that the sample selected was reasonably representative of the total population of the region.

Section ii covered farmer-extension contact indicators - the study found that 64.7% of respondents stated that they knew of the existence of the Agricultural Extension Technician (AET) in their local area, and 60% that they knew the name of AET. This, to some extent, is an indication that there is good contact between farmers and the AET. Although radio has been regarded as a key extension approach in the region, 80% of respondents said that they had no

access to radio. The few who owned the radio stated that they found the information they got from the radio very useful.

Section iii investigated impact indicators - regarding the animal health issues, the survey revealed that 28.7% of respondents said that they are vaccinating their animals against Botulism and 20% indicated that they vaccinate both Botulism and Black quarter with low percentages (10-12) vaccinating against Anthrax, Brucellosis. This is because the vaccines are expensive and some lack knowledge.

Concerning improved livestock husbandry practices, dehorning is poorly practised in the area because of cultural beliefs that cattle should have horns. Castration is done by most of the respondents, but there is a need of extensionists to promote the use of new techniques like the use of the Burdizzo, as recommended. There is also a great need for extensionists to create awareness on registered branding. 57% of the respondents indicated that they did not brand their animals because they had no knowledge on the matter, and 17.6% said that they were not interested.

The provision of licks to livestock is commonly practised, but most farmers provide their animals with natural licks only, and only 0.6% provide their animals with the commercial licks.

Concerning livestock marketing, the study found that 91% of respondents said that they sell cattle to speculators, and 55.5% indicated that they sell their cattle at auctions, 45% at open markets, and 50.3% at the Oshakati abattoir via the Directorate of Veterinary Services self-quarantine procedures.

It appears that there is a great need to disseminate information on livestock marketing. It was revealed from the survey that only 15% of farmers said they got information on livestock marketing from extension and radio, and a relatively low percentages of 2.4 indicated that they got information from farmer unions, and 7.2% indicated Meatco as a source of information.

Concerning the use of draught animal power (DAP), the study revealed that since the government outsourced the ploughing services, the use of DAP became the only option farmers had to rely on in the area. This was confirmed by 52 percent of the interviewed farmers who indicated that they use DAP for ploughing. 78.4 percent said that they used DAP for transportation and only 1.8% said that they use DAP for weeding.

On community based organisation (CBO), the study found that 78.4 percent of farmers responded that they are aware of the existence of such organisations in their areas. 65.9 percent said they know of the water point committee, 53.9 percent said they know of farmers associations, and 55.5 percent mentioned conservancies, and only 1.8 percent of the respondents was aware of cooperatives. This suggests that extension has to put more effort into promoting the formation of cooperatives in the area for farmers to gain bargaining power in their farming businesses.

## **2. INTRODUCTION**

### **2.1 WHAT AGRICULTURAL EXTENSION SERVICES DO AND WHO THEY SERVICE**

Up until recently the government's agricultural extension services were focussed mainly on providing subsidised agricultural services (e.g. ploughing, farming input sales, the development and maintenance of farm infrastructure), and the administration of government programmes such as drought relief and credit schemes. In the mid-1990s, things began to change as it was realised that many of these services were not benefiting the mass of farmers and, in any case, were often best provided by the private sector.

New approaches stressed the provision of advisory, information, communications and farmer training services. Extension services aim to help farmers to develop and adopt improved farming technologies and practices, to organise themselves into self-help groups of various sorts, and to better interact with the world of agricultural markets, services, infrastructure, laws and policies in which they operate. In some places extension has been playing more of a facilitating role relating to a range of rural livelihood issues.

At the same time, greater attention was given to the communal sector, where extension services were supposed to target all farmers. Efforts were made to reach farmers by working with farmers' groups and through the mass media, and through various methods designed to impact on numbers of farmers, such as demonstrations, shows, and training courses.

### **2.2 QUESTIONNAIRE SURVEY RATIONALE**

#### **Extension impact: can you prove it?**

This section discusses some of the conceptual and practical difficulties involved in trying to assess the impact of agricultural extension services.

How can we prove that changes in farmer welfare, farm production and income, and changes in farmer behaviour (which we can define as including increased farmer knowledge and skills, improved farm technology, farm management practice, and farmer organisations) have occurred because of the work of the agricultural extension service? Many variables influence such changes (for example, other sources of information, rainfall, market prices, availability of credit, health issues, and so on) of which extension may or may not be one. It is notoriously difficult to make a causal linkage between the work of extension services and changes in farmer behaviour, let alone farm production, and ultimately welfare.

This is different from other services. In the field of education, for example, we have exam results, in the field of health we have hospital records, in the field of transport we have roads built and maintained, all clearly visible and easily measurable indicators.

#### **Impact on who?**

The agricultural extension service uses different methods to address individual farmers, groups of farmers and the broad mass of farmers, be it information meetings, demonstrations, training, or mass media. Ultimately, the mandate of the extension service is to serve all farmers. Therefore, this baseline study looks at the impact of extension activities on the broad

community of farmers. The rationale for this is that although extension recognises that it cannot directly contact all farmers, it believes that its influence ultimately reaches all farmers through normal farmer-to-farmer dissemination. This assessment does not look at the impact of specific activities on immediate beneficiaries, for example on trainees who have been exposed to specific training activities.

### **Different types of impact**

The DEES has drawn up a logical framework which describes its main activities and their relationship to a set of objectives (see page 23). The logframe describes extension activities which should deliver clear outputs, which in turn should contribute to the achievement of a broader purpose, which itself will contribute to a more general goal. It is the job of the extension service to carry out the activities and deliver the outputs.

For extension managers, it is most important to assess impact at the output level: that is to look at service delivery and changed farmer behaviour, as defined above. Changed farmer behaviour should, in turn, lead to the achievement of higher level objectives (e.g. improved yields, better risk management, increased incomes), although these are also subject to many other influences (e.g. rain, market prices, etc.).

Extension services provide information, advice and training to enable farmers to be better managers by enabling them to develop and adopt better technologies and farm management practices, and by being better organized for different types of collective action. We can measure the extent this has happened by looking at rates and degrees of change in farmer practices and management.

To do this we can break down the process of such change into a number of stages – and look at how much of each has occurred with regard to specific changes being advocated. Change requires that farmers have:

1. contact with extension (either directly through participating in activities with AETS or visiting demos, or ADCs, or indirectly through the radio or other farmers who have learned directly from extension);
2. received information, advice or training on the innovation from extensionists;
3. understood the information, advice or training on the innovation;
4. tried out and adapted the innovation to their specific needs; and
5. acted upon or adopted the innovation.

We measure this by looking at indicators of:

- Extension-farmer contact and farmer satisfaction with extension services
- Farmer awareness, understanding, adoption and change

Extension impact assessment aims to review the extent to which these things have taken place, first through revealing the baseline situation, and later through reviewing how things have changed over time.

Concerning extension-farmer contact and farmer satisfaction, we can measure this by asking about the extent farmer involvement with extension activities, and their perceptions of that involvement. Regarding farmer awareness and adoption, we select specific agricultural development issues to focus on. We cannot ask farmers about all the different technologies and practices and other information that extension services promote. We must select a few topics only. We can then say that these things represent the range of issues that extension deals with. In other words, they are indicators of the bigger picture of extension work.

Therefore, each region has designed its own questionnaire to investigate selected topics which they believe represent the many that extension in a specific region is promoting. These key topics have been selected from amongst those the region expects to be the most important over the next few years. Specific questions have been asked to try and pin-point whether farmers are aware of and understand extension recommendations, have reacted to and adopted them.

The hypothesis we are testing therefore is that extension services have a positive impact on farmer knowledge and behaviour. We are not able, at this stage, to test the hypothesis that this improved farmer knowledge and behaviour has in turn led to increased productivity and incomes, or improved agricultural GDP or balance of trade (purpose and goal indicators). To do so we need much better production and incomes data over a long period. Rather, we assume that, all being well in terms of the external environment, in other words when conditions allow, that improved farmer knowledge, technologies and practices will have an impact on production and incomes.

Finally, we must also acknowledge that monitoring extension impact, even at the output level, is not easy. How can we say that change in farmer behaviour is because of extension? Many variables influence farmer behaviour including information provided by other services. However, Namibia's extension services pride themselves on the extent to which they collaborate with other services (government, non-government and private), and are content to share credit should impact, in due course, be revealed.

### 2.3 QUESTIONNAIRE PROCESS

So far, we have focussed on conceptual issues. Now we move to the practical means of extension impact assessment.

Formal questionnaires are a useful tool for research into people's perceptions, levels of awareness, knowledge and practices related to specific issues under investigation. Questionnaires are essentially a mechanical tool, in which you ask carefully defined questions covering selected issues, to a carefully selected representative sample of the community, you receive answers which are entered on answer sheets in code form, and you analyse these answers statistically.

This survey was undertaken by the regional team of the agricultural extension service, under the leadership of the regional Chief Agricultural Extension Officer, as follows.

**Table . Main Steps in the Baseline Study Process**

1.	Questionnaire design: this involved the elaboration of region-specific indicators used to prepare questionnaires for each region. Questionnaires were based on a common national outline relating to indicators of common concern, but incorporating local specific issues. Questionnaire design also included pre-testing in the field and subsequent modification of questions to ensure they were correctly phrased, relevant and so on. <i>(January-March 2003)</i>
2.	Planning of field implementation: sampling procedures and logistics. <i>(April 2003)</i>
3.	Field implementation: to minimize bias, extension staff took no part in interviews. Their role included: <ul style="list-style-type: none"><li>- hiring of enumerators;</li><li>- training of enumerators;</li><li>- liaising with communities;</li><li>- transporting enumerators in the field;</li></ul>

- field supervision of enumerator performance; and
  - field checking of completed questionnaires.
- (May-June 2003)*

4. Data analysis: data entry and analysis was done using the software package Statistical Package for the Social Sciences (SPSS) and was contracted out. *(July-September 2003)*
5. Report preparation. *(July – October 2003)*

This process is revisited in more detail in Section 5 of this report. The questionnaire is presented in Annex 1.

## PART TWO

### 3. AGRICULTURE IN NORTHERN KUNENE REGION

The main sources used for this section of the report are as follows: NOLIDEP Phase II, Draft Project Preparation Report 2000, NOLIDEP Phase II, Draft Project Preparation Report, 2002, and Farming Systems in Kunene North A Resource Book, 2000, and the National Food Security and Nutrition assessment Report, Directorate of Planning, no date.

#### 3.1 BIOPHYSICAL RESOURCES

##### 3.1.1 RAINFALL

Kunene North has an arid climate. Based on the rainfall, the region can be demarcated into three climatic zones (i) the semi-arid zone of the northeast, (ii) the arid zone in the central part, and (iii) the hyper-arid (desert) zone along the western coastal area. Kunene North has a very short wet season mainly extending from February to April with the amount of the rainfall decreasing from east (mean annual rainfall of 300mm) to the west (mean annual rainfall of less than 50 mm). Rainfall also tends to decline from north to south.

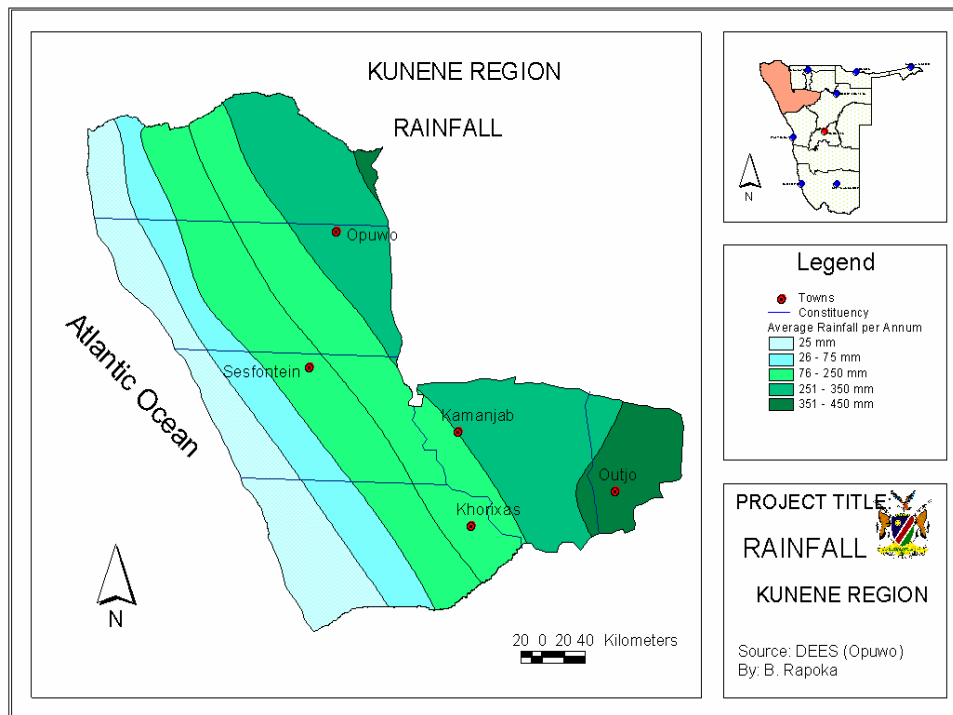


Fig 3.1 Rainfall Distribution in Kunene Region

### **3.1.2 SOILS**

The characteristics of soils in the western and central parts of Kunene North vary with the topographical features of the area. They are shallow and sandy with lots of rocks and stones on the upper slopes, while soils in the valley bottoms are sandy loam to clay types. The soils in the eastern areas of Kunene North also vary with the topography. On the sand plains or low-lying calcrete ridges, it is sandy with poor nutrient content and low water retention capacity. But, soils in the pans and depressions contain more clay and water can collect in these areas after rains. Hand-dug wells are excavated in these locations to provide water during the dry season. There are alluvial deposits along the Kunene River and the seasonal rivers. Highlands in the Kaoko-Otavi, Ombombo area of about 15000 ha receive relatively high rainfall and are considered suitable for growing crops.

The soils in the region tend to have poor structure and are susceptible to erosion. This is especially true with the alluvial soils along the Kunene River and the seasonal rivers. Most degradation occurs around livestock watering points. Boreholes are located on some of the most vulnerable soils. The ground in the woodlands during the dry season is bare. The first rains erode the valuable topsoil which is easily washed away after having been broken by livestock trampling. Soil erosion and topsoil loss are most severe within an approximately 30 km radius around Opuwo, and severe denudation is obvious all along both sides of Ruacana-Kamanjab road to the east of Opuwo.

### **3.1.3 GROUND WATER**

Little is known about the dynamics of the groundwater resources in the Region. Groundwater resources are by far the most important sources of water used in the region. The highest density of water points, i.e. 10-20 per 100 sq km, is found around Opuwo. Underground water and natural fountains support some vegetation and provide water for the people, their animals and wildlife.

Natural water sources are supplemented by a number of boreholes sunk for the inhabitants and their livestock. Two main bulk water supply schemes using groundwater sources, operated by the Department of Water affairs, are at Opuwo and Sesfontein, with the consumption of 662,724 cu meters and 28,656 cu meters of water respectively 1990.

The only real and lasting method of improving the region's water resources would be through conservation by building contour bunds to control floods and building dams to harvest and store water for use during the dry season. This should also be accompanied by controlling livestock numbers.

### **3.1.4 TOPOGRAPHY**

The topography of the region is very diverse. Mountains, valleys and plains are typical features that characterize the region. Altitude ranges from sea level along the coast, to about 2,100m above the sea level over the Baynes mountains in the north central part of the region.

#### **3.1.4.1 THE SIX MAIN LAND TYPES IN THE REGION**

##### *(a) The Mountainous Areas*

This area of the northern and central parts of the region includes the Baynes, Zebra, Steilrand, Otjihipa, Hartman, Giraffe and Joubert mountains. These mountains have long steep slopes.

Hills with sharp ridges run along the central part of the Kunene Region in a more or less North-South direction.

*(b) The Plateau region*

This region is typified by an association of flat valleys and steep ridges and escarpments. The plateau summits are often level to undulating and are dissected by streams and gullies. These are the most eroded areas in the region.

*(c) The Riverine and Lacustrine areas*

Geological processes in the Region have brought about a network of streams and rivers. Erosion and deposition have given rise to steep riverbanks and alluvial plains respectively. There are also narrow alluvial plains along the Kunene River.

*(d) The Coastal Desert*

The Namib desert is typically a monotony of shifting sands and gravel plains interspersed with occasional low hills with sharp ridges and concave slopes. Transverse sand dunes of low amplitude cover the central and northern coastal areas. Gently sloping bare rocks terraces are found in the south, close to the coastline. A number of river valleys from the hinterland reach the sea as flat sand filled open channels. Some of the sand is brought down by flash floods and deposited as flow velocity decreases in the desert area. The rest of it is deposited by wind as river channels form barriers that block wind flow.

*(e) The Karst Area*

These are limestone-dolomite outcrop areas giving a variety of landforms. The underlying rock consists of rocks that are readily dissolved by water. The development of typical Karst topography is limited but it is believed that springs in the central part of the region at Kaoko-Otavi, Ombombo, Ehomba and Sesfontein, for example, may be of Karst origin.

*(f) The Etosha Region*

This is the area within the Etosha National Park.

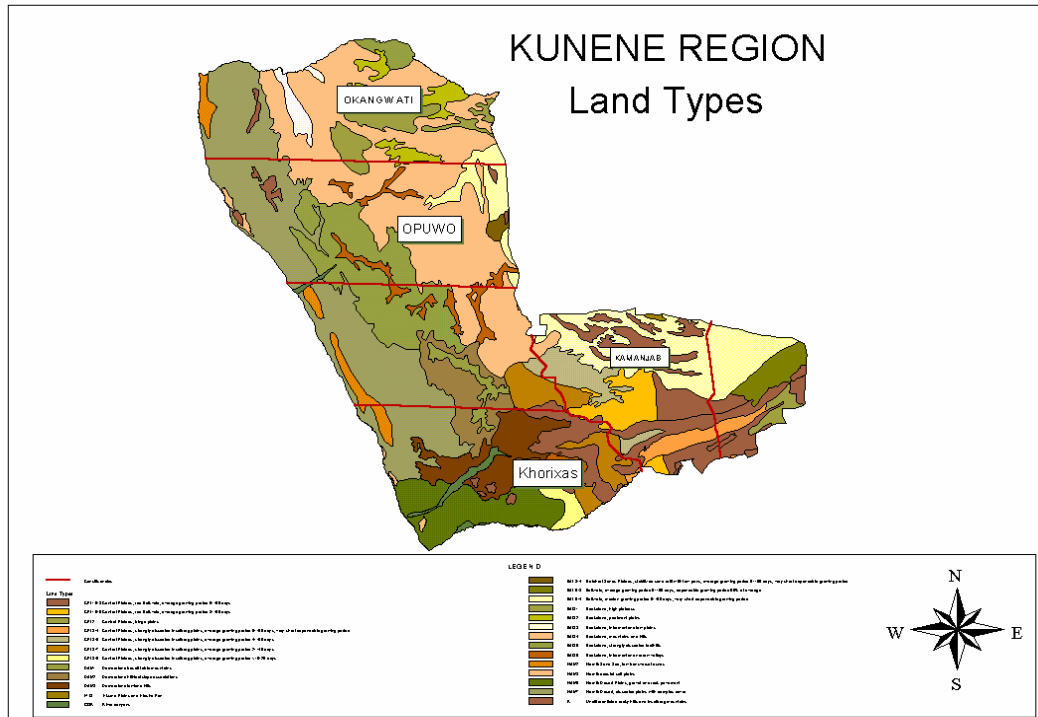


Fig 3.2 Land Types in Kunene Region

### 3.1.5 RIVERS

There is only one perennial river in Kunene North: the Kunene River. The Kunene River is the third largest river in Namibia and rises in Angola near Huambo. It flows south for about 500 km, first down steep mountains, and then it flattens out towards the Calluege Dam. After rushing down the Ruacana Falls, the river flows westwards for 340 km, through rugged mountains most of the way, over the highest waterfall, the Epupa Falls, and on to the Atlantic ocean. It constitutes the border between Namibia and Angola.

There are three major river catchment's areas, the Khumib, Hoarusib, and Hoanib, which cover the central and southern parts of Kunene North. These ephemeral rivers and their tributaries, during good rainy seasons, give rise to floods originating from heavy rain in the upper catchments, and provide essential water for people, livestock and wildlife living in the lowest desert reaches of these rivers.

During the rainy season herds begin watering at standing pools and in the riverbeds. Typically the pools are located under rock surfaces. As the dry season progresses the wells deepen and a chain of three or four people work together to draw water from the well.

The OvaHimba highlands are the catchments for almost all the major rivers rising in the region, with the Steilrandberge forming the division between the rivers flowing into the Kunene and those running south into the Hoarusib. Although these rivers only flow on the surface after rains, there is an underground flow throughout the year and the water is periodically forced to emerge because of rocks obstructing its course. Natural springs are then formed.

### 3.1.6 VEGETATION TYPES

On the extreme high ground, in the vicinity of Omutambo-Maowe, perennial grasses (e.g. *Stipagrostis uniplumis* and *Schmitdia kalahariensis*) occur because of relative abundance of open water. Here, and in Onais, a sward of tall perennial grasses with only scattered trees and shrubs, cover the deep coarse sand. *Aristida meridionalis* (which grows up to 150 cm high), *Stiparostis uniplumis* and *Schmitdia pappophoroides* are the dominant grass species. Trees are mainly represented by *Peltophorum africanum* (up to 8 m), *Lonocarpus nelsii* and *Acacia reficiens* while *Acacia giraffe* occurs here in a shrub form, seldom exceeding 3 m in height.

In the mountains, the grass has become scarce because of poor soil and over-grazing, except for some times, there is hardly any grass left. On the river terraces *Faidherbia albida* (Ana tree) grow with pods that provide good nutrition to livestock, especially important to the young and sick ones. In more open valleys, Mopane grows into tall trees, sometimes into association with *Terminalia prunoids*, but more often as virtually pure stands. The flat valleys in the Central High ground (e.g. near Opuwo, Oukongo and Ondore) are mainly covered with dwarf shrubs although scattered trees, usually Mopane or *Acacia* spp, also occur. In the valleys of the Interior Highlands and Eastern Sandveld, where frequent winter frost occurs, *Acacia* spp. are dominant, notably, *Acacia tortillis* Sp *heteracantha*, *Acacia hebeclada*, *ss tristis* and *Acacia melifera* *ss detinens*. *Acacia karoo* and *Acacia arenaria* are found in the north western highlands where the coarse granitic sand supports characteristic sandveld communities dominated by scattered tall *Acacia giraffe*, up to 15 m high. Other sand favoring trees common are *Terminalia sercea*, *Albizia anthe*.

Annual grasses and plants, notably *Crinum* spp., appear after the first rains. The dwarf shrub valleys are of considerable economic importance during the dry season, when these shrubs, particularly *Leucoshaera bainesii* and *Petaliduum* species, form a valuable source of forage to both small and large stock. The upper Kunene River is lined with numerous large trees including many stands of tall palms (*Hyphaene ventricosa*). Dense thickets frequently block access to the river. Bushes commonly found here include *Ficus capreifolia*, *Rhus quatinian*, *Tamarix usneoides*, *securing virosa* and *Eucleapseudebenus*.

Large trees, sometimes exceeding 20 m in height, fringe the major seasonal rivers. *Faidherbia albida* is usually the dominant species. Also conspicuous are *Acacia giraffae*, Six types of trees stand out as being particularly valuable – mopane, silver terminalia (*Terminalia seicea*), purple pod terminalia (*Terminalia prunoides*), marula (*Sclerocaya birra*) makalani palms (*Hyphaene petersiana*) and berchemia (*Berchemia discolor*). These species are used as fire wood, construction poles, basket and mat weaving, medical uses etc.. Another important fruiting tree is Jackal berries (*Diospyros mespiliformis*).

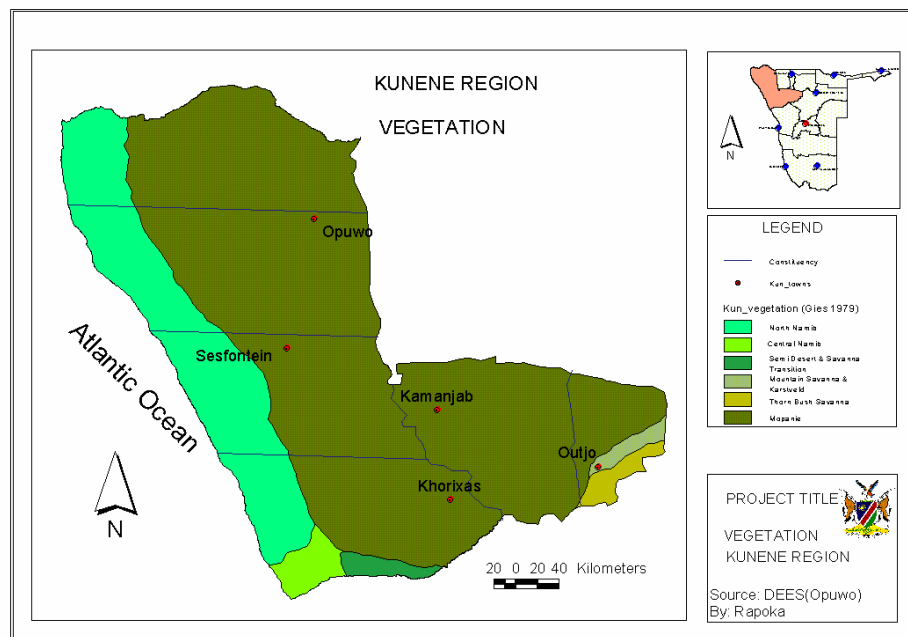


Fig 3.3 Vegetation types

### 3.2 POPULATION ISSUES

#### 3.2.1 POPULATION DISTRIBUTION

The Kunene Region has an area of 115,293 km<sup>2</sup> with an overall population density of 0.6 person / km<sup>2</sup> (Population Census, 2001). In 1970, the total population of Kunene North was estimated at 13,000. The 1991 census put the sub-region's population at 26,176, slightly more than double that of the earlier estimate, of which an estimated 84% of the inhabitants live in the rural areas and 16 % in town. According to the 2001 census, the population of the Epupa and Opuwo Constituencies of Kunene, which roughly corresponds to the demarcation of northern Kunene used by the DEES, stood at 32,935.

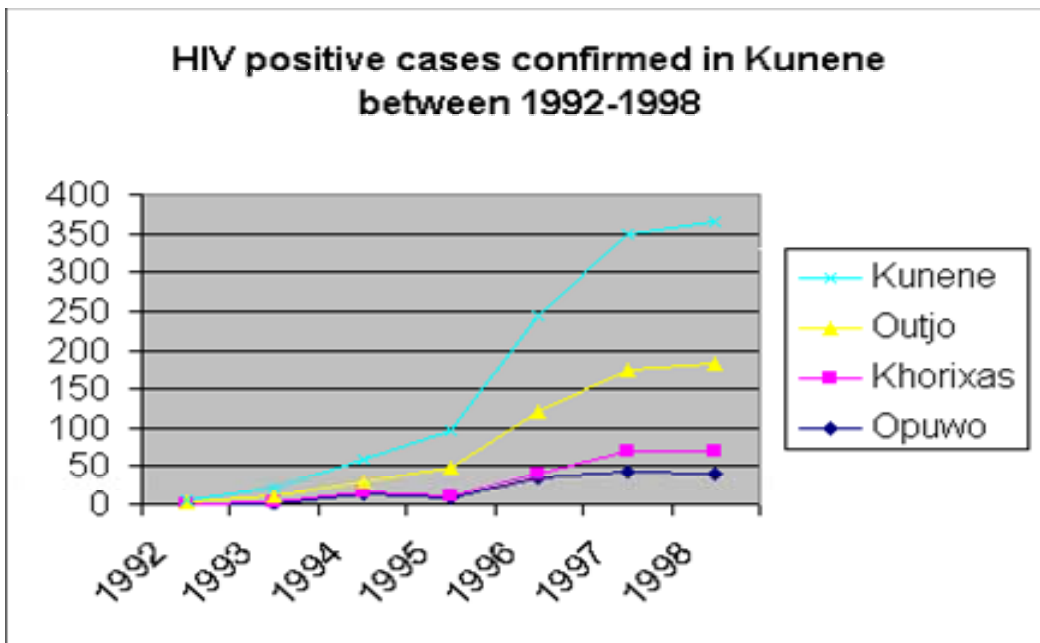
Other information given in the 2001 Population Census include an unemployment rate of 23% and that 72% of households have access to a radio. The whole region has 34% of households headed by females, but this is slightly lower in Kunene North. (Farming Systems in Kunene North, A Resource Book).

The three main ethnic groups found in the region comprise of Ovahimba, Zimba and Ovaherero. The Ovahimba occupy the area to the west and north, the Ovaherero and Damara speaking peoples are more settled south of Opuwo.

### 3.2.2 IMPACT OF HIV/ AIDS

The HIV / AIDS infection is spreading at alarming rate in Kunene region. The group worst affected is between 16 and 45 years of age.

Table 1. Trend of HIV positive confirmed cases in the region between 1992- 1998



The above figure shows a significant increase of HIV cases in the region.

Table 2: Fatality rate for top 5 diseases in Kunene

Disease	Opuwo	Kunene
Malaria	0.03 %	0,05 %
Tuberculosis	8,2 %	4,96 %
HIV/ AIDS	28,6 %	42,76 %
Injuries	0 %	0,06 %
Diarrhoea	0,48 %	0,6 %

(In MOHSS, Kunene Region, Annual report 1999/2000, 2000)

Table 2 shows that HIV/AIDS cases in the region are on increase compared to other diseases.

Table 3: Comparison of Hospitalisation and deaths due to HIV/ Aids related diseases 2001/2002 and 2002/2003 per district.

District	Hospitalisation		Death	
	01/02	02/03	01/02	02/03
Outjo	71	96	23	40
Opuwo	39	27	15	12
Khorixas	29	33	8	18
<b>Kunene</b>	<b>139</b>	<b>156</b>	<b>46</b>	<b>70</b>

(MoHSS, Quarterly Report, June 2003)

The table above shows that the hospitalisation and death rate due to HIV/AIDS related diseases are on the increase in the region.

According to MoHSS, 2003, lack of change in sexual behaviours, illiteracy, and poverty are the main contributing factors to the increase of HIV/AIDS in the region. The impact of HIV/AIDS on agriculture is expected to be severe. The poor will get poorer as a result of reduced productivity (due to poor health), diversion of labour from production to caring for sick, sale of livestock to finance for initial health care the sick would need, and eventually funeral expenses.

### 3.2.3 WEEKEND / PART-TIME FARMERS

The incidence of weekend and part time farmers is relatively low in northern Kunene region as compared to all other regions of the country. Most weekend farmers in Kunene north are working in the public sector. They have employed herders to look after their cattle and in most cases family members have to look after the cattle. During the weekend, livestock management is the main farming activity done on the farm. This includes vaccination of the animals against diseases, supervision and record keeping etc. Like other farmers in the region, part time farmers are also practising seasonal grazing to keep their grazing through out the year.

## 3.3 LIVELIHOOD PATTERNS

Rural livelihoods in Kunene North are mainly based on a mixed livestock production system (cattle, sheep and goats) utilizing extensive rangelands. Some farmers are semi nomadic; they follow their animals to the grazing areas while part of the family remains sedentary.

Cattle are valued animals, they are a sign of wealth; the more cattle a person possesses, the wealthier he is in social as well as economic terms. Cattle have an economic value as primary sources of people's diet. Cattle, together with small stock, are the most important factors as their products are used for home consumption and for long and short-term cash needs.

Because of the sparse and erratic rainfall in the area, the possibilities for rainfed agriculture in the area are limited. Small-scale horticulture is practiced during the wet season along the large ephemeral rivers. Although this form of domestic production is limited, and yields are generally small, it does represent an important supply to household diets. The population located on the south and central part of Opuwo town is more involved in cultivation than the more nomadic community in the north. Most Himba have gardens sited on riverbanks or near springs. The principal crops grown throughout these areas are maize, melons, mahangu, beans and sugar cane.

### 3.4 LIVESTOCK PRODUCTION

#### 3.4.1 NUMBER OF LIVESTOCK IN KUNENE NORTH

In Kunene North farmers generally follow a nomadic lifestyle. According to the Directorate of Veterinary Services in Opuwo, the accuracy of any information on livestock numbers is questioned, as livestock move in and out of areas. This movement of cattle makes accurate counting very difficult as illustrated by the state Veterinarian in Opuwo, Dr Zou.

The number of cattle vaccinated at specific vaccination points (there are more than 100 points in the region) fluctuates drastically, but the total number vaccinated is relatively stable. Although this total is the only livestock number available it does not enable us to determine livestock off-take rates for Kunene North. It may be argued that the vaccination programme is supported by farmers with a specific intention, and that some farmers do not believe in vaccination and therefore do not bring their cattle to the vaccination points. Furthermore, the climatic conditions result in livestock movements into areas where there are no vaccination points.

##### 3.4.1.1 Cattle Census in the 1999 – 2002

Directorate of Veterinary Services Kunene Region Livestock Census

**Table . Cattle - 1995 to 2002 (Census figures for the end of the year)**

Veterinary Area	1995	1996	1997	1998	1999	2000	2001	2002
Opuwo	136,617	154,926	165,704	173,473	172,933	173,969	176,215	177,216
Sesfontein	1,035	2,500	2,553	2,218	1,987	2,746		
Outjo	94,999	74,310	76,992	75,424	59,421	59,432	68,940	98,411
<b>Khorixas &amp; Kunene S.</b>	<b>15,411</b>	<b>31,501</b>	<b>24,677</b>	<b>28,175</b>	<b>20,200</b>	<b>14,066</b>	<b>15,308</b>	<b>17,778</b>
Kunene Region	248,062	263,237	269,926	279,290	254,541	252,213	262,464	295,407

**Table . Goats - 1995 to 1999 (Census figures for the end of the year)**

Veterinary Area	1995	1996	1997	1998	1999	2000	2001	2002
Opuwo	209,874	405,372	405,486	404,484	406,128	429,567	258,790	259,601
Sesfontein	23,694	29,110	31,481	31,710	32,212	42,124		
Outjo	42,001	45,034	45,105	42,627	41,250	39,170	49,197	62,410
<b>Khorixas &amp; S. Kunene</b>	<b>59,709</b>	<b>86,171</b>	<b>81,147</b>	<b>82,541</b>	<b>79,095</b>	<b>60,136</b>	<b>74,121</b>	<b>83,871</b>
Kunene Region	335,78	565,687	563,219	561,362	558,685	572,997	384,109	407,884

**Table . Sheep - 1995 to 1999 (Census figures for the end of the year)**

Veterinary Area	1995	1996	1997	1998	1999	2000	2001	2002
Opuwo	64,068	66,387	67,377	65,640	64,881	67,431	63,616	64,476
Sesfontein	5,225	5,809	6,989	6,445	6,459	7,093		
Outjo	40,735	39,616	43,658	45,123	38,787	36,545	46,673	44,411
<b>Khorixas &amp; S. Kunene</b>	<b>8,334</b>	<b>11,614</b>	<b>11,864</b>	<b>12,632</b>	<b>12,765</b>	<b>19,791</b>	<b>11,996</b>	<b>20,845</b>
Kunene Region	118,362	123,426	129,888	129,840	122,892	132,860	124,286	131,734

### Number of small stock

Small stock herds usually are between 100 and 400 animals. If the herds become larger, animals are lent to relatives or herded at livestock posts. Large percentages of animals consist of young and female animals

Goats and sheep are herded extensively with flocks often being quite large, numbering from less than a hundred to over a thousand. Goats are traditionally more popular than sheep in the Kunene North

### 3.4.2 LIVESTOCK OWNERSHIP FIGURES

**Table: Livestock ownership in Kunene Region (2000)**

Poor HH	Opuwo	Okangua -ti	Omuram -ba	Warm- quelle	Etanga	Otjon- deka	Av.
<b>Poor HHs</b>							
Cattle	45	180	50	25	160	35	82.5
Goat	90	250	110	60	350	45	150.8
Sheep	25	30	20	10	150	15	41.6
<b>Wealthy HHs</b>							
Cattle	300	850	320	200	700	320	448
Goat	230	600	430	250	900	420	472
Sheep	90	150	250	150	360	120	187

### 3.4.3 MARKETING INFRASTRUCTURE

The Northern Regional Livestock Development Project (NOLIDEP) is one of the most active project in the Kunene region. The project aims at improving livestock production and sustainable range management.

A number of sixteen auction kraals were constructed under the project. Eight kraals are for small stock units and another eight for large stock.

The auction kraals has been constructed at eight different places namely:

- 2 at Okanguati one for LSU&SSU
- 2 at Ohandungu one for LSU&SSU
- 1 at Opuwo (Otjorungondo) LSU
- 1 at Ombombo for LSU
- 2 at Otjokavare for LSU&SSU
- 2 at Kaoko-Otavi for LSU&SSU
- 2 at Etanga for LSU&SSU
- 2 at Otvani for LSU&SSU

The marketing of livestock are taking place at the above-mentioned kraals. The farming community is managing the facilities themselves. The farmers unions and associations are collecting commission fees from users, and thus building up financial resources that could be used to organize much needed services to farmers. The facilities are also used for organizing agricultural shows, vaccination of livestock, farmers' days and demonstrations.

### 3.4.4 LIVESTOCK MARKETING

The Kunene north area is situated north of Veterinary Cordon Fence (VCF). This means that livestock from the area marketed for export south of the VCF can only be slaughtered at the Meatco abattoir at Oshakati.

Cattle marketing in Kunene North is a constraint due to lack of organized auctions and high transport cost. The only source of formal marketing is Meatco. Animals must pass through the quarantine facilities namely, Omutambo Omaue, in Omusati region, or the community managed Otjakati quarantine camp near Etanga. At the time of reporting, the Directorate of Veterinary Services has prohibited the usage of Otjakati quarantine camp due to poor fencing that need repair.

In order to improve prices, the self-quarantine system was put in place in 2000 whereby farmers take care of their animals themselves (controlling, feeding and transporting) through the entire quarantine process until they are sold to Meatco at its Oshakati abattoir. This is a costly and inconvenient system which is difficult for most owners to manage. Costs include those of (i) labour for trekking cattle to the quarantine facility and for herding cattle inside Omutambo Omaue, (ii) the cost of trucking cattle from the quarantine camps to the abattoir at Oshakati, and (iii) the value of lost of weight and decreased fat grade resulting from this procedure – especially when grazing in the quarantine camps is poor.

Due to lack of marketing facilities informal marketing tends to be prominent in the region whereby collectors and traders buy animals in Kunene North. Traders are generally felt to be exploitative.

A new abattoir is being constructed in Opuwo under the auspices of the Ministry of Trade and Industry at the time of reporting, but this will not be of export standards.

#### 3.4.4.1 Livestock marketing figures

##### (a) Formal marketing

Livestock	YEARS		
	1998	1999	2000
Cattle	8310	6603	8449

(Meatco Opuwo, 2003)

##### (b) Informal marketing

Livestock	Years	
	2000	2001
Cattle	9318	2384
Sheep	2087	1167
Goats	15595	7713

(DVS, MAWRD Opuwo, 2003)

### 3.5 CROP PRODUCTION

Crop production in Kunene North is regarded as secondary in importance to livestock production, complementing the raising of livestock, which is a principal source of livelihood to Kunene North farmers. Farmers cultivate maize, watermelons, sorghum intercropped with pumpkin and beans, for domestic consumption. They cultivate fields with sizes ranging between

0.1 ha and 2.5 ha mainly using hand hoes. They usually fence off their fields by cutting down bushes. However, due to the erratic nature of rainfall, poor soil fertility and inadequate cultivation practices, it is rare for farmers to produce enough to feed their families. Consequently, they depend on the purchase of maize meal with income from the sale of livestock.

Most gardens are located on alluvial soils along the banks of the rivers. However some farmers cultivate temporary and permanent gardens near the springs. So far, no data has been collected on crop production by the Namibia Early Warning and Food Information System from Kunene

### **3.6 FOOD SECURITY**

As already indicated, households in the region rely heavily on livestock farming for their survival. There is little diversification of the income sources and few cash transfers are received from pensions and family members working elsewhere.

As a consequence of the poor resource base throughout the area, formal wage employment is limited to government posts (teachers, nurses, police, extension workers, etc.) located in urban settlements. While there is evidence that some young men in the northern Kunene are seeking employment outside of the area, there is not a tradition of migrant labour among the resident population. The formal skills base among the adult population is extremely limited. According to the 1991 Population Census, 75% of those classified as economically active were involved in the subsistence agricultural sector. Some 10% were employed in the public sector, while 3% were in the wholesale and retail trade.

According to the survey conducted in the Opuwo district, only 16.8% of the households interviewed earn an income through wage employment (SIADD-Namibia)

## **4. AGRICULTURAL EXTENSION SERVICES IN KUNENE REGION**

### **4.1 MISSION AND STRATEGY**

The Mission of the Directorate of Extension and Engineering Services (DEES) is:

“to provide agricultural extension services in the form of advisory, information communication, and training services aimed at empowering farmers, and at encouraging the adoption of improved agricultural and related income generating technologies and practices.”

In other words the Directorate of Extension and Engineering Services exists to promote the adoption of improved agricultural technologies and practices in order to increase agricultural production, empower farmers and facilitate sustainable improvement in living conditions of rural communities.

The DEES is responsible for the management of national extension programmes that include the functions of planning, implementing, monitoring, evaluating and re-planning activities to meet objectives determined by government policy.

In order to carry out all its duties more effectively, in 2002 the Directorate adopted a logical framework, which is a tool that links long term policies and plans (e.g. Second National Development Plan [NDP2]) with short-term plans (e.g. Annual Work Plan and Budgets) and which sets out what should be monitored and evaluated. Within this logframe the Directorate has set out its goal and purpose, and defined the outputs as well as the main activities that have to be carried out to achieve the set objectives of the Ministry at large. The core of this Logframe is reproduced below.

#### **4.1.1 LOG FRAME GOAL**

#### **IMPROVED FOOD SECURITY AT HOUSEHOLD AND NATIONAL LEVEL**

It should be noted that food security is not the same as food self-sufficiency. Food security refers to the ability to secure enough food, whether it is produced or purchased using income from other sources, while food self sufficiency refers to the ability to produce enough food.

#### **4.1.2 PURPOSE**

Farmers have achieved increased and sustainable agricultural production and increased income deriving from agriculture.

#### **4.1.4 OUTPUTS (IN BOLD) AND EIGHT MAIN ACTIVITIES (IN ITALICS)**

##### **1. Improved agricultural technology and practice options are available**

*1.1 Continuously develop technologies and related information and disseminate*

##### **2. Relevant staff and farmer support information is available.**

*2.1 Inform farmers on policy issues, input and product markets and complementary off farm and non-farming livelihood opportunities.*

### **3. Human resources in the agriculture sector are developed**

*3.1 Train farmers in technical, management and facilitation skills*

*3.2 Train FSRE staff in technical, management and facilitation skills*

### **4. Agricultural institution and organization are strengthened towards improved service delivery**

*4.1 Facilitate CBO formation, training and projects*

*4.2 DEES MIS*

*4.3 Efficient use of DEES personnel, financial, logistics, infrastructure and material resources.*

### **5. Co-operation between partner organizations is improved**

*5.1 Information sharing, joint planning for coordination & collaboration*

## **4.2 KEY EXTENSION APPROACHES**

The group extension approach is known by the staff to be cost effective however, it was never introduced in the sub-region for various reasons. Currently, what the staff are using is the individual farmer and community visit as the main means of contacting farmers.

For the issues like livestock shows, marketing and training, the AETs usually go through farmers union/ associations who will convey the message to the farmers and vice versa. Having recognised the cost-ineffectiveness of farmers visits, the extension management in Kunene North is currently trying to embark on the group approach. An example of the group approach was set up by the AET from Etanga ward, but still needs to be improved on, as it was not introduced at a right time to the farmers.

The use of mass media communication in the area is something that we use a lot because most of our farmers can not read but they can listen to their radio's for every new development in society. Thus, radio plays a very crucial role in information dissemination.

To prove the concept "seeing is better than hearing" we embark on demonstrations to create awareness to farmers on various new technologies, e.g. bloodless castration method, dehorning and DAP techniques.

There are study tours almost every year or farmer exposure visit to verify what other farmers do in their regions since our farmers need exposure. This approach is also very important for awareness creation on various subjects.

Farmers' training is one of the main approaches used to address problems encountered by farmers. Training needs assessment is carried out every end of the year, based on it, training courses are planned and thereafter implemented. It is one way in which farmers acquire or gain new knowledge and skills.

### 4.3 DEES POST ESTABLISHMENT IN KUNENE NORTH

Staff	Post	Filled	Vacant
CAEO	1	1	0
AEO	2	2	0
AET	9	7	2
CLERK	1	1	0
CLERICAL ASSISTANT	4	4	0
DRIVERS	3	3	0
LABOURERS	10	8	2

### 4.4 AGRICULTURAL DEVELOPMENT CENTERS

The Directorate is highly decentralized. The Regional Office is in Otjisoko-Tjongava, 10 km from Opuwo. Agricultural Development Centers (ADC) are located in Opuwo, Okangwati, Kaoko-Otavi, Etanga, and Oruvandjei. One new ADC will soon be opened at Otjokavare.

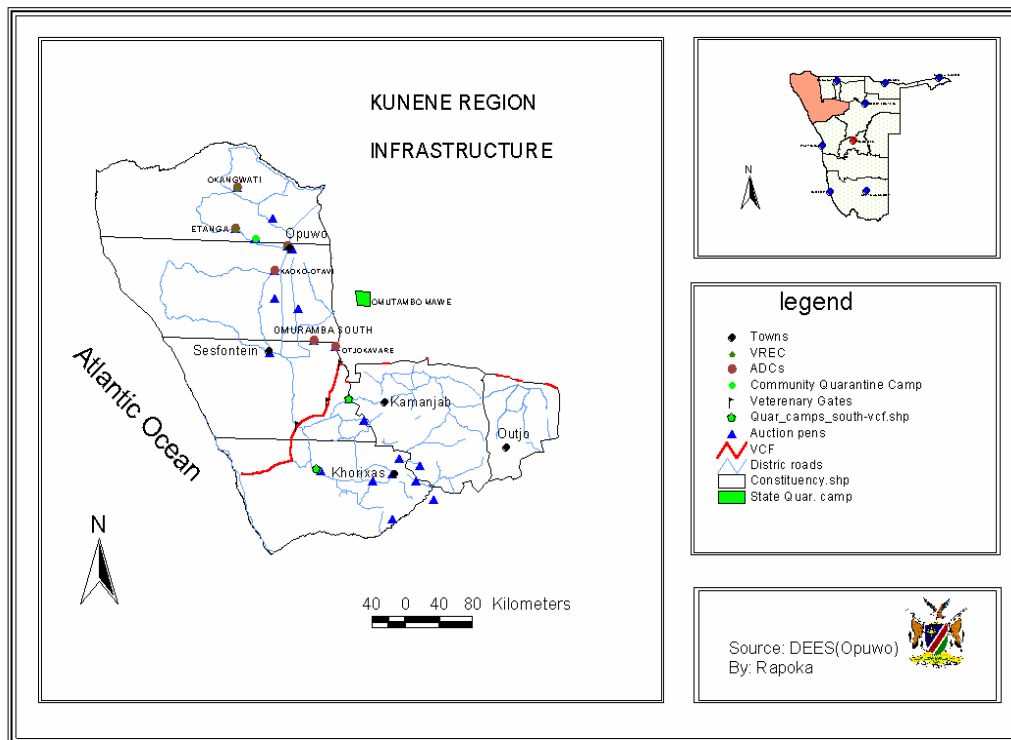


Fig 3.4 Infrastructure

## 4.5 OPERATIONAL EQUIPMENT

### 4.5.1 VEHICLES

Double cab =1  
2x4 Single cab =1  
4x4 Single cab =11  
Mini bus (sixteen seater)= 1  
Trucks =2  
Yamaha Motorbike =1

### 4.5.2 COMPUTERS

There are nine (9) computers in Kunene North of which six (6) are at Otjisoko-tjongava head quarters, one (1) at Opuwo, Okanguati ADC one (1), as well Kaoko-Otavi.

### 4.5.3 AUDIO- VISUAL AIDS

Television and VCR  
Flip Chart stands x 4  
Overhead projector x 1

## 4.6 ANNUAL BUDGET BY MAIN VOTE

The table below indicates the operational budget, excluding remuneration, received by DEES Kunene North, for the 2003/2004 financial year.

Vote	2003/2004 (N\$)
1 casual	4,796
1 overtime	16,977
21 DSA	97,088
22 M & S	56,647
23 Transport	584,304
24 Utilities	24,938
25 Maintenance	19,351
27 Services	14,208
101 Furniture	13,283
103 Equipment	4,440

## 4.7 DONOR PROJECTS

Prior to independence the region received very little development assistance. After independence, however, Government, with assistance of bilateral and multilateral donors, initiated and implemented a number of projects and programmers aimed at addressing development needs of the people or the farmer's community in the Kunene North sub region. A number of projects have been introduced to support the work of the DEES and they are Northern Livestock Development Project (NOLIDEP), Research Extension Management Programme (REMP) and the EU Micro projects.

#### **4.8 MAIN COLLABORATORS**

DEES's main collaborators in the region are the Division of Rural Water Supply, the Directorate of Veterinary Services, the Directorate of Agricultural Research and Training, the Division of Community Development, other Ministries such as Health, Lands etc, as well as the NGOs, farmers, Farmers Unions and other organizations. The Directorate of Extension and Engineering Services aims to coordinate and collaborate strongly with the above-mentioned bodies.

The DEES strives for mobilization of untapped human and material resources whereby we recognize and encourage these organization as key participants in the development process, so that together we can help farmers to participate in efforts to help themselves realize their own development aspiration, thus reducing dependence on Government interventions.



## 5 SURVEY METHOD

### 5.1 RATIONALE: BASELINE AND IMPACT SURVEYS

After independence, the Ministry of Agriculture, Water and Rural Development has put agricultural programs in place aimed to achieve national agricultural development goals. One of the programs is agricultural extension services. It is very difficult to assess the impact that agricultural extension services have on farmers as well as on agriculture, because changes in farmer knowledge and practices, and in agricultural production, are due to numerous influences and often happen over the long term.

The study was conducted as a baseline survey to determine the knowledge and behaviour of the farmers with regard to information, advice and training that DEES is providing. The findings from this survey are intended to help planners to know if their work is having an impact. It is also hoped to demonstrate to external stakeholders (including the taxpayers and Ministry of Finance) that extension services are worth supporting.

As this report covers a baseline study designed to survey selected indicators of extension impact during the 2002/03 farming season, it is intended to repeat this survey after the 2006/07 season to gauge change over the period between the baseline survey and the final survey. This period coincides with the span of NDP 2, which is the basic planning timeframe of the extension service.

**Comment:** So how come it is called a baseline survey?

### 5.2 SURVEY OBJECTIVES

The objective of the survey was to provide a baseline which will be used as a basis for measuring change in future and hence assesses whether extension services have an impact on farmers knowledge and behaviour (e.g. awareness, understanding, adoption) particularly in terms of farm technology, farm management practice and farmer organization resulting from the information, advice and training that the extension service is providing.

### 5.3 QUESTIONNAIRE DEVELOPMENT

#### 5.3.1 STRUCTURE OF THE QUESTIONNAIRE

The questionnaire was designed by the DEES staff in the northern Kunene sub-region using the log frame as a reference. Training was conducted on how to design/ develop a questionnaire. The drafted questionnaire underwent considerable revisions during the monthly reporting meetings and was also pre-tested in the field, after which it was finalised. All the possible answers in the questionnaire were given numerical codes to categorise responses to each question. The questionnaire is presented in Annex 1.

#### 5.3.2 PRE – TESTING

The pre-testing was conducted in all 5 extension wards, within the ward, 4 villages were selected, 2 which had been exposed to considerable extension contact in the past, and 2 which had not experienced much extension contact. During pre-testing, the regional survey officials were allowed to capture any flaws in questions and suggest possible improvements. The pre-testing of the questionnaires was also to make any amendments necessary to maximize the

quality of returns and minimize the error rate on answers. Twenty two (22) questionnaires were administered. During pre-testing farming households were randomly selected.

### **5.3.3 PRACTICAL PROBLEMS**

The main problem encountered was that the wording of some questions was not clear.

## **5.4 SAMPLE SELECTION**

There are five extension wards in Kunene North. The extension impact survey was carried out in all five extension wards (Opuwo, Okangwati, Etanga, Kaoko Otavi and Oruvandjei). Within each ward, four villages were randomly selected. The term village is here used loosely to describe a community often spread out over a large area, but linked through traditional authority structures. Farming households were selected randomly within these communities. In practice this sometimes involved driving, on and off-road as well as walking long distances in search of households. It was not uncommon to drive for an hour only to interview a single household!

## **5.5 PREPARATION OF FIELD IMPLEMENTATION**

### **5.5.1 ENUMERATOR SELECTION**

Enumerator selection was a little bit difficult in Kunene North since the target group (Agricultural Diploma holder, who are not employed) were not found in the region. Therefore, another criterion was set for Kunene North whereby unemployed youth in position of grade 12 certificate, fluent in Otjiherero with experience in surveys were targeted. Based on the set criteria, four (4) unemployed youth were selected. In the event, these proved to be of exceptionally high quality in carrying out the duties demanded of them.

### **5.5.2 TRAINING**

A one-day training for the enumerators was conducted at Otjisoko-Tjongava ADC, which was led by two regional survey officials. During training, the enumerators were introduced to various research concepts such as objectives of the survey, importance of understanding of the question, translation of questions into vernacular language. Enumerators were also sensitised regarding the cultural sensitivities of the area they worked in. Local language was used in some cases and it was an advantage since the enumerators were able to translate the questionnaires in the local languages.

### **5.5.3 COMMUNITY LIAISON**

After the finalisation of the sample selection and field implementation program and itinerary, the AETs responsible for the extension wards arranged meetings with selected villages' headmen to explain the objectives of the survey as well as to arrange possible dates for administering the questionnaires. The Regional Governor was also informed. Mass media (radio) was also used although it was not effective since it could not reach all farmers due to poor radio coverage.

## **5.6 QUESTIONNAIRE IMPLEMENTATION**

About 168 questionnaires were administered, ±15 questionnaires per day. The time spent per questionnaire ranged between 25-40 minutes. This excludes the often lengthy periods that must

be spent on introductions and explanations when administering questionnaires in the area. The total kilometres travelled were 1,850. Fieldwork was extended for 11 days due to the vast distances and poor roads that had to be covered in some extension wards and also due to migratory patterns in the same areas.

### 5.6.1 PRACTICAL PROBLEMS

Sensitive questions like the number of animals owned were time consuming during discussions because the information on the purpose of the survey did not get to the communities very well. In addition, it must be noted that too much time and energy was spent in reaching the respondents due to vast distances and migratory patterns in the area.

### 5.6.2 COST OF SURVEY

Items	Cost / item (N\$)	Total (N\$)
Enumerator remuneration	4 enumerator ×10 days @N\$200 plus 8 nights overnight in the field @N\$ 100	11,200.00
Kilometers	1,850@ N\$ 2.3	4,255.00
2 x Regional survey officials	Camping rate for 8 nights overnight in the field @N\$70	1,120.00
<b>Total</b>		<b>16,575.00</b>

## 5.7 DATA ANALYSIS

Data entry and analysis was undertaken in Windhoek by contracted services. Questionnaires were inspected for errors, double responses, omissions, unanswered questions and general completeness prior to data entry, and where necessary the corrections were made. Coding of responses for some questions that were not pre-coded was done.

Trained data entry assistants transferred the data from the questionnaires into Microsoft Excel. Data analysis was done using Statistical Package for Social Sciences (SPSS) software. The data was transferred from Excel to the SPSS templates. This involved matching the cases and variables from Excel with those defined in SPSS data file. Using SPSS, the initial frequency tables covering all the defined variables per region were generated. These frequency tables were checked for errors, by inspecting values in each column against the codes for each response in the SPSS data file, and tracing the error to the specific source questionnaire. The necessary corrections were made to the data file based on information found on the questionnaire.

The corrected data set was used to generate preliminary frequency tables for all variables for the region and these tables were circulated to Region Survey Officials for review and comments during a two-day workshop. The Regional Survey Officials provided clarity on some errors in particular omissions/ unanswered questions and inconsistencies based on their knowledge of extension in their regions. After the workshop, the comments from regional officials were used in making final corrections to the data set.

Final frequencies and cross-tabulations were established on the data, and where applicable multivariate analysis was conducted. In addition, appropriate graphics in the form of simple bar graphs, clustered bar graphs and pie charts for selected variables or survey questions were generated to complement the findings presented in the final tables.

The final tables and graphics were sent back to the regions, together with the completed questionnaires, so that report preparation could be completed.



The Kunene North Survey Team

## PART THREE

### 6 SURVEY FINDINGS

Percentages are calculated based on valid responses and excluding missing data.  
The total sample size was 167.

#### 6.1 FARMER TYPE

As already noted in section 5 of this report, the sample of the regional population that the questionnaire was applied to was selected randomly. This section of the report presents information on important characteristics indicating the types of farmers which comprise the sample. These questions are asked (i) as a check on the representativeness of the sample, and (ii) in some cases to learn more about the farmers.

The information presented below, should help us to judge the extent to which the sample was in fact representative of the entire farming community in the region. Based on our previous knowledge of farmers in the region, it can be concluded that the randomly selected sample was indeed reasonably representative. In addition, it will be important to ensure that, when the impact survey is conducted (planned for 2006/07), the sample then selected displays similar characteristics.

If it were found that the characteristics of the farmers, as sampled in either the baseline or the impact survey to follow, were significantly different from those of the community as a whole (i.e. were not representative) or from each other, this could compromise the findings of the survey related to extension - farmer contact (see 6.2) and extension impact (see 6.3). This is because responses to questions on indicators of extension – farmer contact and of extension impact may be influenced by the characteristics of the farmers, as below. For instance, if the farmers sampled all lived less than 5 kilometres from the ADC, one could say this is not representative of the whole region's population. Further, it is obvious, that one would expect this to have an influence on extension – farmer contact and impact. Likewise, to a greater or lesser extent, with all the characteristics reported on.

##### 6.1.1 Nearest Agricultural Development Centre

Variable	Category	Percent of Households
Agricultural Development Centre	Etanga	14.4%
	Kaoko-Otavi	15.0%
	Okanguati	34.1%
	Opuwo	21.0%
	Oruvandjei	15.6%

The survey was carried within the wards of the above five Agricultural Development Centres (ADC). The survey revealed that 34 percent of the respondents were from Okanguati ADC area. 21 percent of the respondents were from the Opuwo ADC area, while 15 percent were from Kaoko- Otavi. This is approximately in line with population distribution in the sub-region during the time of the survey.

#### 6.1.2 Age of respondent

Variable	Category	Percent of Households
Age of respondent	< 25	4.8%
	25-35	27.5%
	36-64	50.3%
	>64	17.4%

The aim of this question was to find out the ages of the farmers involved in farming. Based on the above the survey revealed that that 50 percent of the respondents fell in the range 36-64 years and 28 percent of the respondents fell in the age group from 25-35 years.

#### 6.1.3 Respondent type

Variable	Category	Percent of Households
Respondent type	Head of household	50.9%
	Wife of household head	21.6%
	Other	27.5%

The survey revealed that 51 percent of the respondents were household heads and 22 percent were the wife of the household head. Others were usually unmarried children – who can often be in their late twenties and thirties.

#### 6.1.4 Household size

Variable	Category	Percent of Households
Household size (persons)	<5	9.0%
	6-10	27.5%
	>10	63.5%

The respondents were asked to reveal their household sizes, excluding their hired labour. The information from the survey revealed that 9 percent of the households have less than five (5) household members and 28 percent have 6-10 members per household ,whereas 64 percent indicated have more than ten (10) members per household.

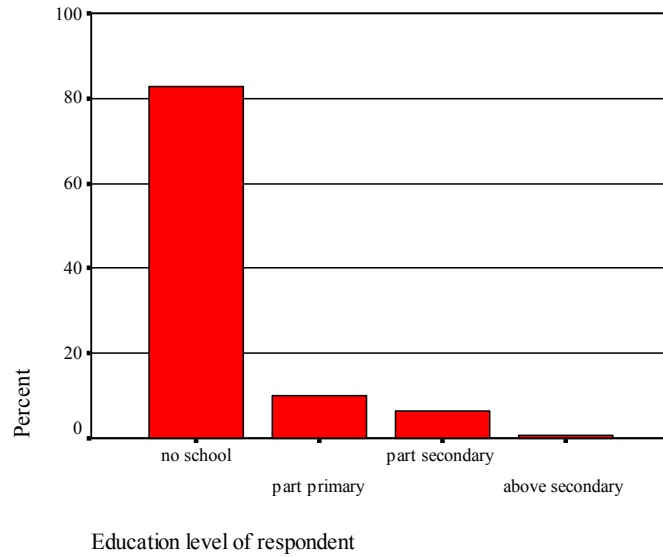
#### 6.1.5 Hired labour

Variable	Category	Percent of Households
Hired labour	Yes	10.8%
	No	89.2%

The respondents were asked whether they hire labour as cattle caretaker/field workers. The aim of the question was to find out whether the respondents are using their own family members for the above mentioned activities. From the responses, 11 percent said that they do hire labour, while 89 percent indicated that they do not.

6.1.6 Education level of respondent

**Fig 1. Education level of respondent**

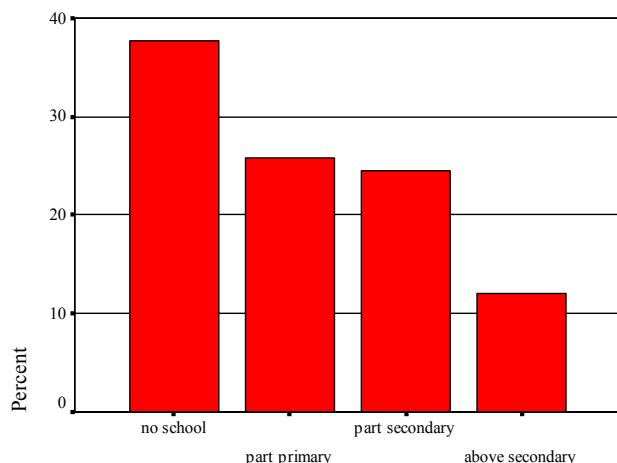


Variable	Category	Percent of Households
Education level of respondent	No school	82.6%
	Part primary	10.2%
	Part secondary	6.6%
	Above secondary	.6%

Farmers were asked about their education levels. As shown above, 82.6% of respondents stated they had not received any formal education. This is a very high figure compared to other regions of the country, which has obvious implications for extension work and communication methods.

6.1.7 Highest education level of a member in the household

**Fig 2. Highest education level of a member of a household**



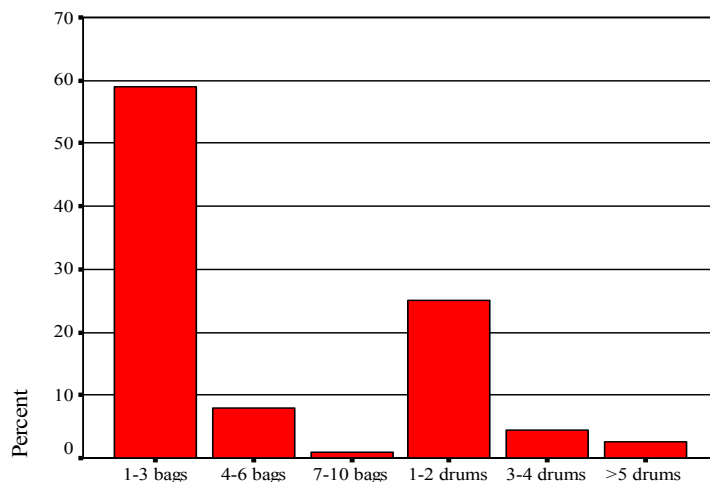
Highest education level of a member in the household

Variable	Category	Percent of Households
Highest education level of a member in the household	No school	37.7%
	Part primary	25.7%
	Part secondary	24.6%
	Above secondary	12.0%

It is interesting to compare the educational levels of the farmer respondents in the previous table with the educational level of the member of the household with the highest educational attainment. Here we see that 24.6% of households have members with part secondary level and 12% report above secondary level. If these people are resident in the household is doubtful, but they do nevertheless represent a valuable source of information for households.

6.1.8 Total crop harvest in 2002/2003

**Fig 3. Total crop harvest in 2002/03**



Total crop harvest in 2002/2003

Total crop harvest in 2002/2003	1-3 50 kg bags	58.9%
	4-6 50 kg bags	8.0%
	7-10 50 kg bags	0.9%
	1-2 210kg drums	25.0%
	3-4 210kg drums	4.5%
	>5 210 kg drums	2.7%

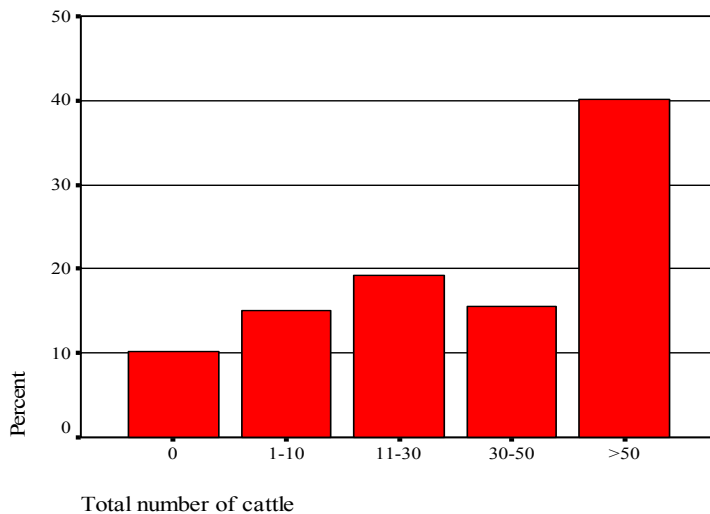
Farmers were asked to reveal their crop harvest/ yield in 2002/2003. This question aims to indicate, of those farmers who are planting crops, whether they are harvesting anything and if so what their harvest is. These figures are important because when households run out of their home grown grain they must sell or exchange livestock to purchase sufficient for the rest of the year. In this case, the harvest is measured in locally understood units - bags and drums.

From the interviewed farmers, 59 percent indicated that they did harvest 1-3 bags. 25 percent of the respondents had received a harvest of 1-2 drums, while 8 percent of the other respondents indicated that they harvested 4-6 bags.

In terms of rainfall records and seasonal biomass production indicators using satellite imagery, the 2002/03 season can be considered more or less average.

### 6.1.9 Total number of cattle owned

**Fig 4 Livestock Ownership**



Variable	Category	Percent of Households
Total number of cattle	0	10.2%
	1-10	15.0%
	11-30	19.2%
	30-50	15.6%
	>50	40.1%

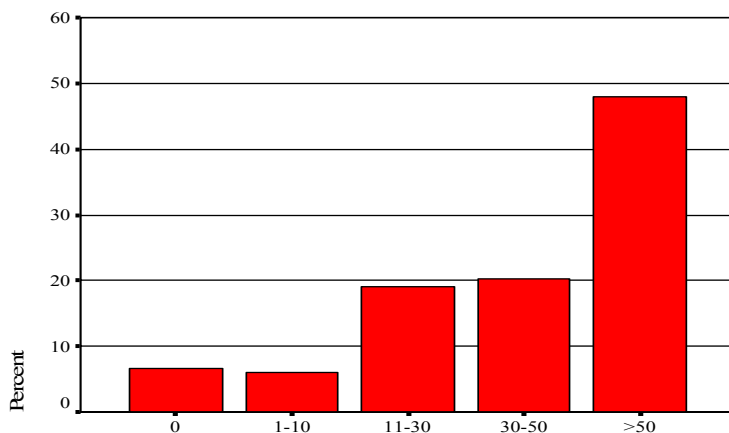
Farmers were asked to reveal the number of cattle they owned.

The survey revealed that 40 percent of the farmers owned more than fifty (>50) cattle. It was found that 19 percent of respondents owned 11-30 cattle, while 10 percent of the respondents did not own cattle at all.

It is likely that the result given by the respondents may not be completely accurate. Considering that farmers in the region are always striving for higher numbers of cattle, and that the past few years have not seen severe drought in the area, the percentages of those that reported owning more than fifty (>50) cattle are low.

6.1.10 Total sheep and goat owned

**Fig 5. Total Number Of Goats And Sheep Owned**



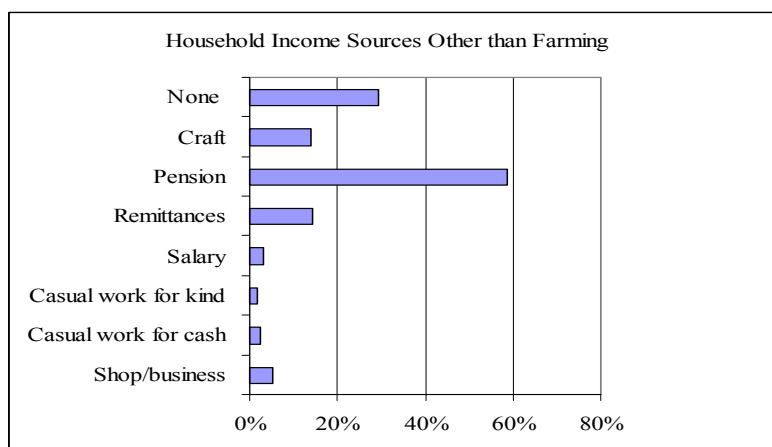
Total number of goats and sheep

Variable	Category	Percent of Households
Total number of goats and sheep	0	6.6%
	1-10	6.0%
	11-30	19.2%
	30-50	20.4%
	>50	47.9%

Farmers were asked to reveal the number of goats and sheep they owned. From the survey 48 percent of the respondents indicated that they owned more than fifty (>50) goats/sheep, while 20 percent own 30-50 goats/sheep. Again, the accuracy of these figures is open to some question.

6.1.11 Sources of other household income

**Fig 6 Sources Of Household Income**

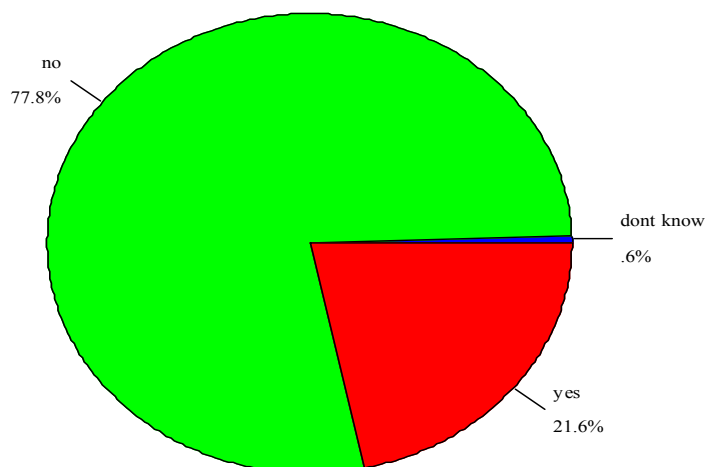


Farmers were asked whether they have additional sources of income apart from farming. Considering the high percentage of respondents who report not having their basic household needs met by farming (see 6.1.12), this question aims to find out whether there are other sources from where farmers are getting income in order to satisfy their household needs.

The survey revealed that apart from farming very few people can rely on other sources of household income. The highest portions (58 percent) of the respondents rely on pensions to provide an additional income. From the survey it was found out that 29 percent of the respondents don't have any other sources of income besides farming.

#### 6.1.12 Basic household needs satisfaction

**Fig 7. Farming satisfies basic household needs**



Variable	Category	Percent of Households
Farming satisfies basic household needs	Yes	21.6%
	No	77.8%
	Don't know	.6%

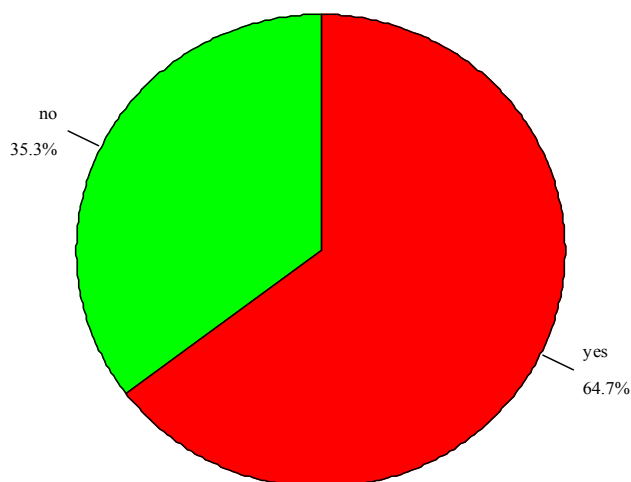
Farmers were asked whether farming (cattle, sheep, goats, crop fields and gardens) satisfies the basic household needs. The survey revealed that a high portion of respondents 78 percent said that their basic household needs were not satisfied. 22 percent of respondents indicated that their basic household needs were satisfied, while 0.6 percent did not know.

## 6.2 SECTION B. FARMER – EXTENSION CONTACT INDICATORS

Questions reported on in this section aim to indicate levels of contact between farmers and the extension services, by various means. Such contact is the first stage and is indeed a pre-requisite to extension work having an impact on farmers.

### 6.2.1. Extensionist (AET) exists and works in the area

Variable	Category	Percent of Households
Extensionist (AET) exists and works in the area	Yes	64.7%
	No	35.3%

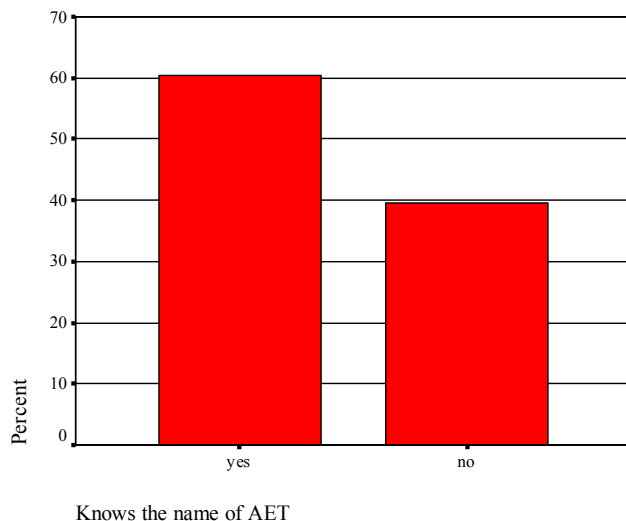


Farmers were asked if they knew if there was an extension technician working in their area. This question aims to indicate the level of contact between extension services and farmers.

The survey revealed that most of the respondents knew that there was an extension technician in their area. 35 percent did not know if there was an extension technician located in the area.

6.2.2. Knows the AET by name

**Fig 9 Knows the AET by name**

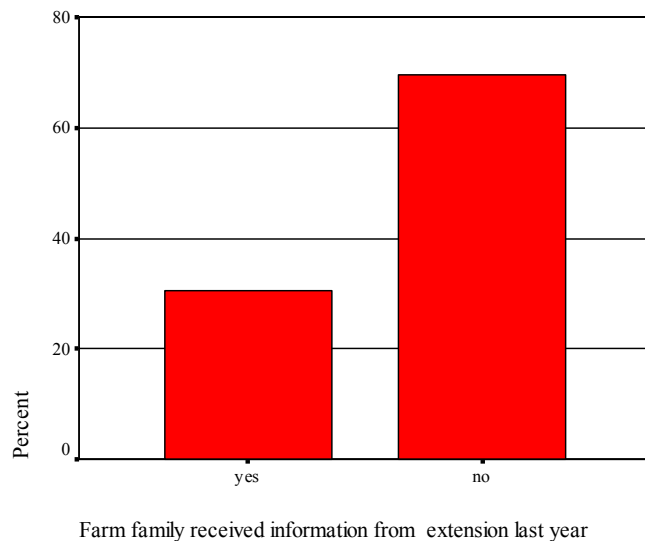


Variable	Category	Percent of Households
Knows the name of AET	Yes	60.8%
	No	38.6%

Farmers were asked if they knew the name of their local extension technician working in their area. The question aims to support the previous question, that is looking at the farmers knowledge of their local extension technician working in their area. It can be assumed that farmers knowing the name of the technician is an indication of good level of contact. The survey revealed that most of the respondents knew their extension by name, while 39 percent did not know the extension technician by name.

6.2.3. Information received from extension last year

**Fig 10 Farm family got information from extension last year**

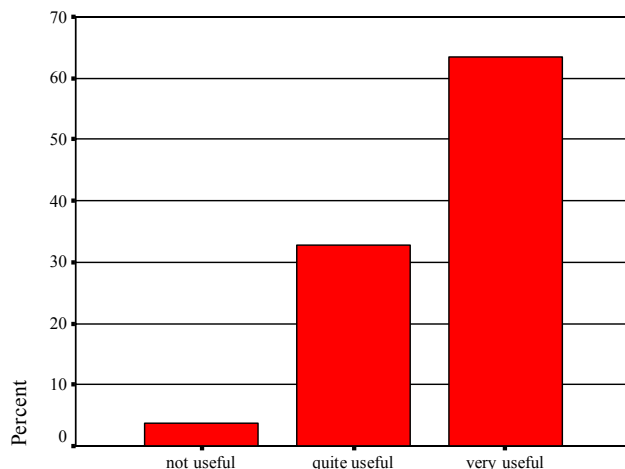


Variable	Category	Percent of Households
Farm family received information from extension last year	Yes	30.5%
	No	69.5%

Farmers were asked whether they had received information from extension last year. If farmers had received information from extension, it can be assumed that there is a good level of contact between the farmers and extension.

#### 6.2.4. Usefulness of information given by the extensionists

**Fig 11 Usefulness of information given by the extensionist**



Usefulness of information given by the extensionist

Variable	Category	Percent of Households
Usefulness of information given by the extensionist	Not useful	3.8%
	Quite useful	32.7%
	Very useful	63.5%

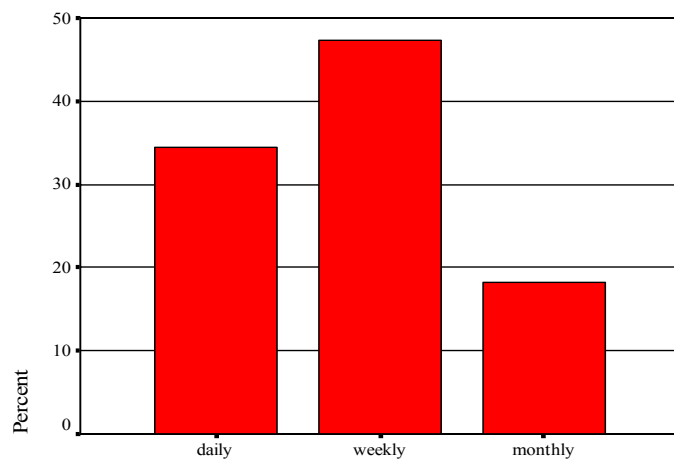
Those farmers who received information from extension were asked whether the information received last year (2002) was useful. If most respondents indicate that the information from extension was useful, it can be assumed that extension is having an influence on the farmers. Of those interviewed farmers who received information from extension (see 6.2.3), 64 percent indicated that the information received from extension were very useful. 4 percent of the respondent's felt that the information received were not useful at all.

#### 6.2.5 Extensionist contact by radio

Variable	Category	Percent of Households
Heard agric information on the radio in the last year.	Yes	56.3%
	No	43.7%
Reasons for not listening to agric info on radio	No radio	80.8%
	No satellite reception	6.4%
	Programme timing	3.8%
	No interest	9.0%

Farmers were

**Fig 12 Extension Contact By Radio**



Times heard agric. information on the radio

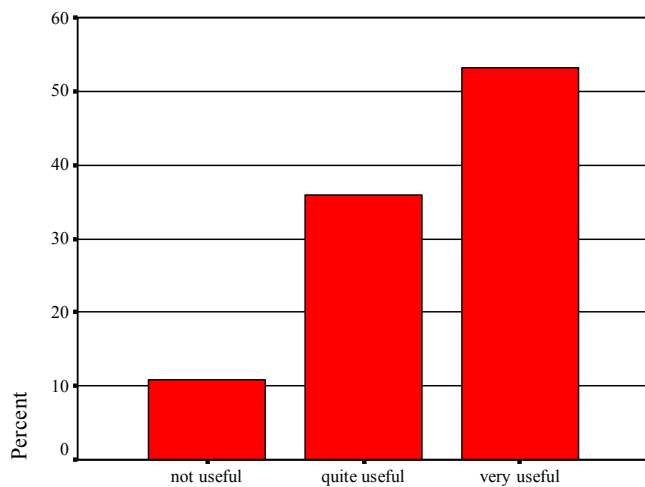
Variable	Category	Percent of Households
Times listened to agric. info on the radio	Daily	34.4%
	Weekly	47.3%
	Monthly	18.3%

The question aims to find out that besides the information given by extensionist, whether farmers did use the NBC radio broadcasts as another source of agricultural information, and if yes how often. 43.7 percent of farmers indicated they did not listen to the radio in the last year, mainly because they did not have a radio. This in turn is often because the areas they live in do not receive NBC broadcast signals.

Of those 56.3 percent who did listen to the radio in the last year, less than half of farmers (47 percent) indicated that they did listen to agricultural information on the radio weekly, while 34 percent said that they did listen to agricultural information on the radio on daily basis.

### 6.2.6 Usefulness of information on the radio

**Fig 13 Usefulness of agricultural information on the radio**



Usefulness of agric. information on the radio

Usefulness of info on the radio	Not useful	10.9%
	Quite useful	35.9%
	Very useful	53.3%

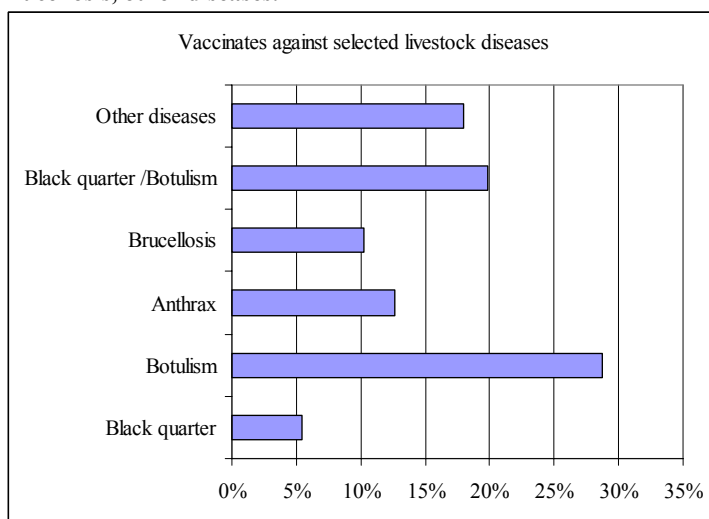
The farmers were asked how useful they found the agricultural information that they had heard on the radio was. The highest portion of respondents 53 percent indicated that the information received on the radio was very useful. 36 percent said that the information received on the radio was quite useful, while 11 percent felt that the information received on the radio was not useful at all.

### 6.3 SECTION C. EXTENSION IMPACT INDICATORS

The section reports on indicators of extension impact in terms of farmer awareness, farmer understanding, farmer attitudes and farmer adoption of specific extension recommendations relating to key farming issues in the region. Readers are referred to section 2.2. for further discussion of the issue of extension impact indicators.

#### 6.3.1 Animal Health Practice – Vaccination

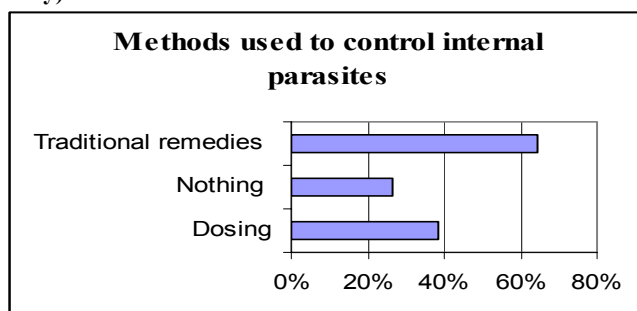
**Fig 14 Vaccinates against Black quarter only, Botulism only, Anthrax, Brucellosis, Black quarter & Brucellosis, other diseases.**



Farmers were asked whether they vaccinate their livestock against the above mentioned diseases, as recommended. The survey revealed that of those farmers who did vaccinate their livestock, less than half of the farmers (29 percent) are vaccinating against Botulism only 20 percent of the farmers are vaccinating against both Black quarter and Botulism, while 18 percent indicated that they vaccinate against other diseases.

#### 6.3.2 Animal Health Practice – Internal Parasites

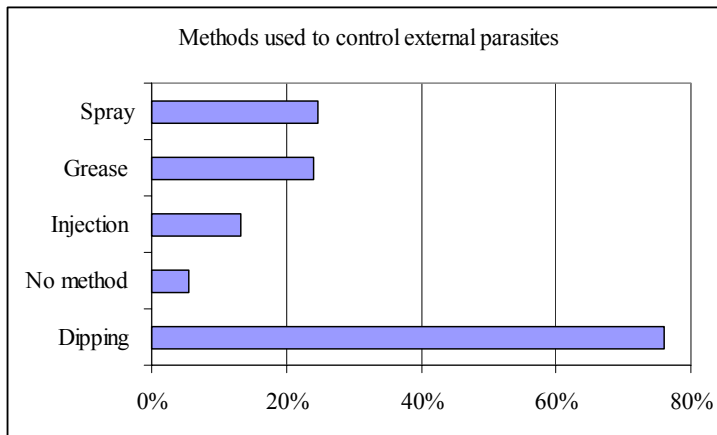
**Fig 15 Methods used to control internal parasites: dosing, traditional remedies, no method (yes % only)**



The questionnaire wanted to confirm from the farmers what method they used to control internal parasites, particularly in their goat flocks. The survey revealed that 64 percent of the respondents indicated that they used traditional remedies. 38 percent of the farmers are dosing using purchased drugs, while 26 percent are not attempting to control against internal parasites.

### 6.3.3 Animal Health Practice – External Parasites

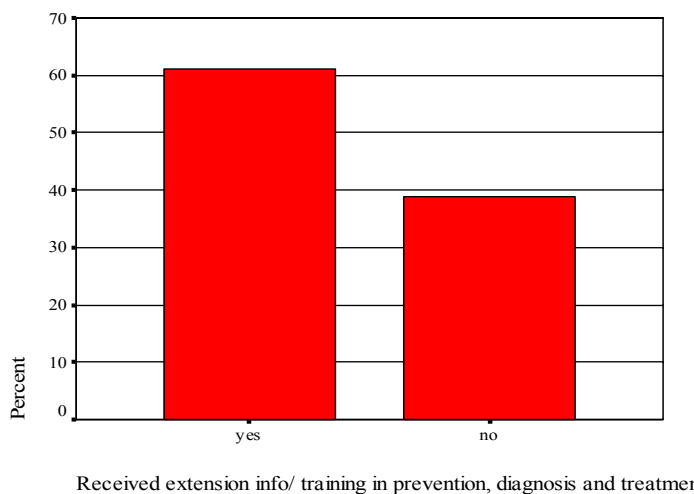
**Fig 16. Methods used to control external parasites**



Farmers were asked how they did control external parasites in their livestock. Extension is promoting control of external parasites. The question aimed to find out whether there had been any impact made by extension on the farmers concerning the control of external parasites. Of those farmers who control external parasites, 84 percent of the respondent's use the handpick up method, 76 percent are dipping their animals, while 25 percent of the respondents are spraying their animals as to control external parasites. Only 5 percent did not used any method to control external parasites in their livestock.

### 6.3.4 Extension Support in Animal Health

**Fig 17 Received extension info/training in prevention, diagnosis and treatment of diseases.**

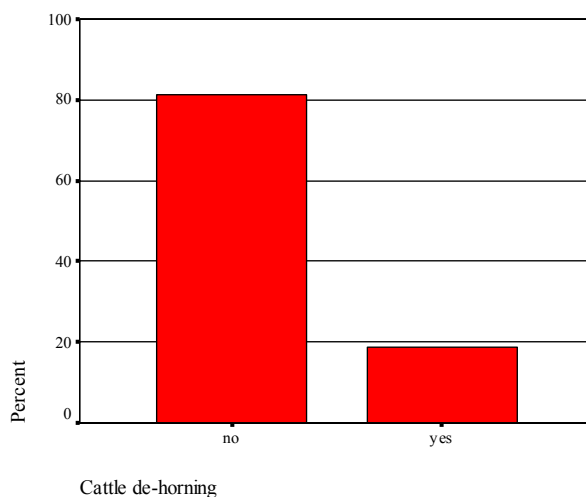


Variable	Category	Percent of Households
Received extension info/ training in prevention, diagnosis and treatment of diseases	Yes	61.1%
	No	38.9%
Usefulness of animal health info/training	Very useful	63.6%
	Quite useful	36.4%

Farmers were asked if they had received extension information/training in livestock disease prevention, diagnosis and treatment. The survey revealed that 61 percent had received information/training in prevention, diagnosis and treatment, 40 percent indicated that they did not received information/training in prevention, diagnosis and treatment.

### 6.3.5 Animal Husbandry Practice – Dehorning

**Fig 18 Cattle dehorning**



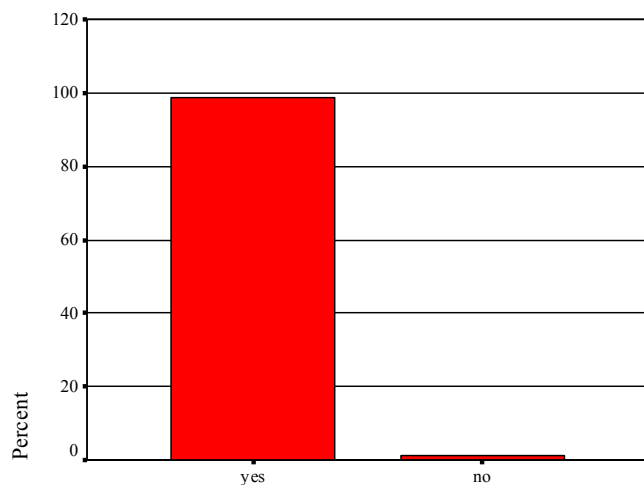
Variable	Category	Percent of Households
Cattle de-horning	No	81.4%
	Yes	18.6%

Farmers were asked if they dehorn their animals. The question aims to find out whether what extension had been promoting (that dehorning facilitates cattle husbandry) had an impact on the farmers. 81 percent of the respondents indicated that they did not dehorn their animals as this practice is not acceptable in their culture, while 19 percent did dehorn their cattle.

### 6.3.6

Animal Husbandry Practice – Castration

**Fig 19 Castration of large and small stock**



Castration of large and small-stock

Variable	Category	Percent of Households
Castration of large and small-stock	Yes	98.8%
	No	1.2%

Farmers were asked whether they are castrating both large and small stock. It is interesting to learn that 98 percent of the respondents are castrating both large and small stock. 86.1 percent of the respondents are castrating their animals in winter and 65.7 percent indicated that their animals are castrated at the age of 6-12 months.

6.3.7. Methods often practiced on castration

Variable	Category	Percent of Households
Castration method often practiced	Knife	77.0%
	Burdizzo	21.8%
	Rubber ring	1.2%

Farmers were asked about the method they use in castrating their animals. The survey revealed that 77 percent of the respondents are using a knife to castrate their animals and 21 percent of the respondents are using the Burdizzo. This indicated that farmers have not yet adopted such new technologies as recommended.

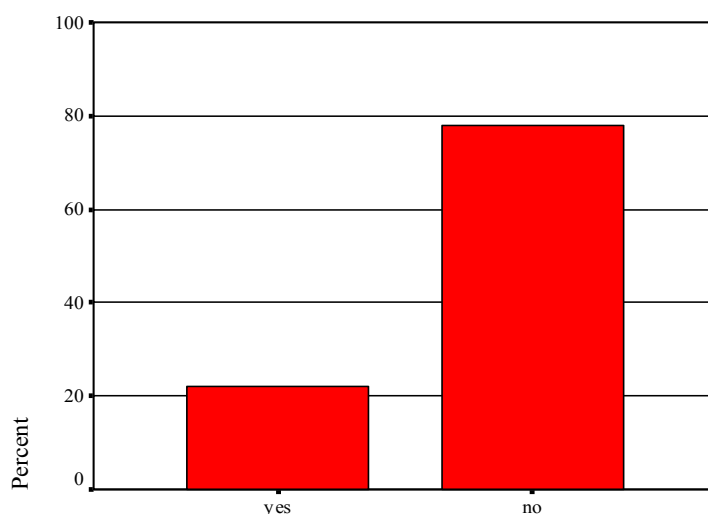
6.3.8. Information received from extension on castration

Variable	Category	Percent of Households
Received information from extension on castration	Yes	23.6%
	No	76.4%

Farmers were asked if they had received information from extension on castration. 76.4 percent of the respondents indicated that they did not receive on castration from extension.

### 6.3.9 Animal Husbandry Practice - Branding

**Fig 20 Animals branded with registered brand**



Animals are register branded

Variable	Category	Percent of Households
Animals are register branded	Yes	22.2%
	No	77.8%

Farmers were asked whether they are branding their animals using registered brand marks. The survey revealed that 77.8 percent of the respondents are not branding their animals.

### 6.3.10. Reasons for not branding their animals with a registered brand

Variable	Category	Percent of Households
Reasons for not branding	No knowledge	57.6%
	Not interested	17.6%
	Tradition	12.8%
	Others	12.0%

When asked the reason for not branding their animals, 57.6 percent of the respondents indicated that the reason was that they did not have knowledge and 17.6 percent indicated that they are not interested.

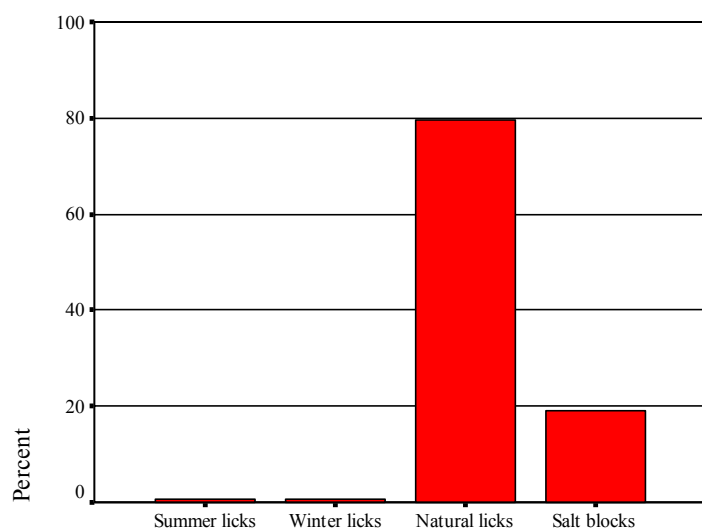
### 6.3.11 Information received from extension on branding

Variable	Category	Percent of Households
Has received info from extension on branding	Yes	26.2%
	No	73.8%

Farmers were also asked whether they had received information from extension on branding. As shown above, 73.8% of the respondents indicated they had not received information on branding.

### 6.3.12 Animal Husbandry Practice – Supplementary Feeding

Fig. 21 Types of licks used



Types of licks used

Variable	Category	Percent of Households
Types of licks used	Summer licks	.6%
	Winter licks	.6%
	Natural licks	79.7%
	Salt blocks	19.0%
Time to supplement livestock	Dry season	11.3%
	Wet season	5.7%
	Throughout the year	73.6%
	Once in a while	9.4%
Kind of animals supplemented	Small stock	8.8%
	Large stock	5.0%
	Both	86.2%

Farmers were asked if they are supplementing their animals with licks, and, if so, with what type of licks and at what time of the year. As shown above, 94.6 percent of the respondents are supplementing their cattle with licks. 79.7 percent of the respondents indicated that they were

supplementing their animals with natural licks throughout the year. The survey also found out that 86.2 percent of the respondents were supplemented both large and small stock. Virtually no use of commercial licks was found.

#### 6.3.13 Information on licks received from extension.

Variable	Category	Percent of Households
Received info on licks from extension	Yes	18.6%
	No	81.4%
Finds info on licks/supplement feeding	Quite useful	20.0%
	Very useful	76.7%
	Not useful	3.3%

Apart from supplementing, farmers were asked if they had received information on supplementary feeding from extension. 81.4 percent of the respondents indicated that they had not received information on licks from extension. 76.7 percent of the respondents who had received information on licks said they found it useful and 3.3 percent found the information not useful

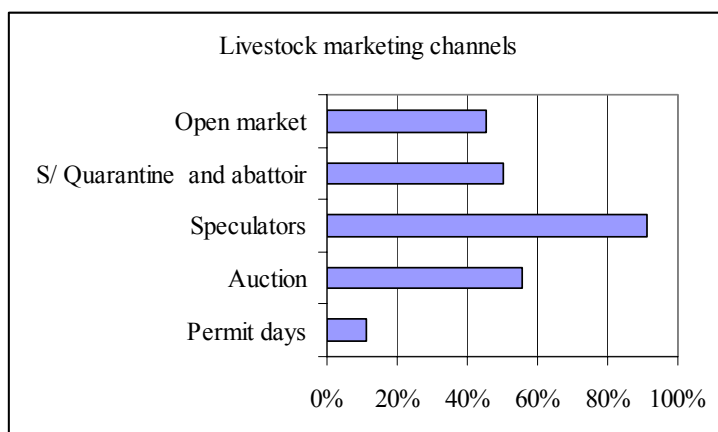
#### 6.3.14 Livestock Marketing

Variable	Category	Percent of Households
Markets livestock	Yes	92.8%
	No	7.2%

Farmers were asked whether they market their livestock. The question aimed to know whether farmers are marketing their livestock or not. The information provided by the survey indicated that 92.8 percent of the respondents market their livestock.

#### 6.3.15 Livestock Marketing Channels

**Fig 22 Livestock Marketing Channels**



Farmers were asked where they are selling their livestock. The study found out that 91 percent of the respondents market their animals to speculators. 50 percent of the respondents market their animals via self quarantining procedures to the Meatco abattoir at Oshakati, 55 percent sold animals at auction, and 45.5 percent say that they market their animals at open markets.

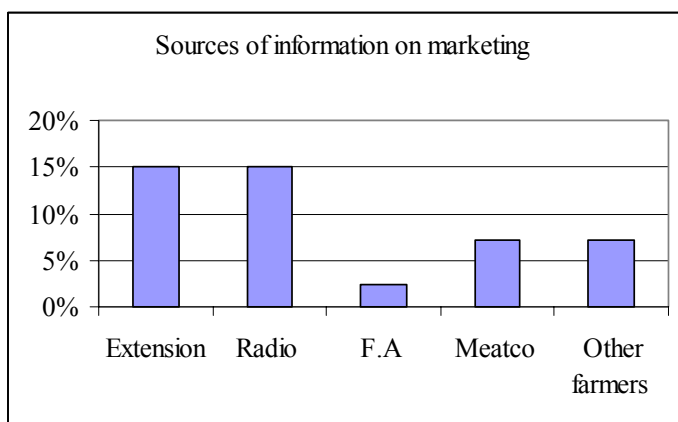
6.3.15 Awareness of self-quarantine system

Variable	Category	Percent of Households
Aware of self quarantine system	Yes	70.0%
	No	30.0%

Farmers were asked if they were aware of self quarantine system. As shown above, 70% of the respondents were aware of self-quarantine system.

6.3.16 Sources Of Information On Marketing

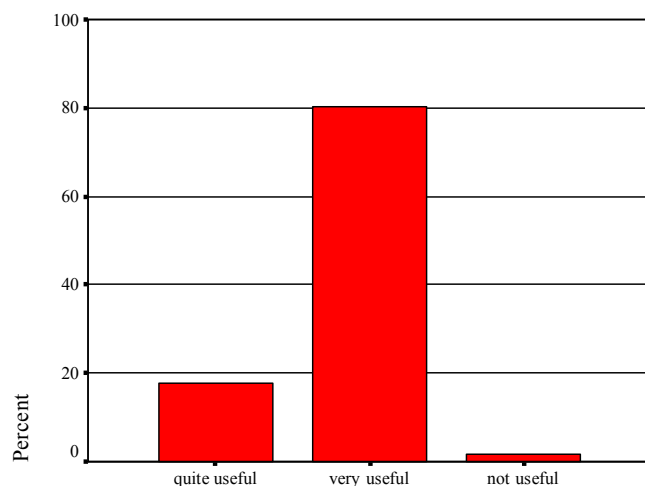
**Fig 23 Sources Of Information On Marketing**



Farmers were asked about their main sources of information on marketing. The question was aimed to find out who is providing marketing information to farmers. Most of the respondents (15.1 percent) indicated that extension is one of their sources of marketing information, 15 percent stated that they heard marketing information from the radio, with only 2.4 percent who indicated farmers unions as their main source of information.

### 6.3.17 Extension Support in Range Management

**Fig 24 Usefulness of information on range management**



Usefulness of information on range mgmt

Variable	Category	Percent of Households
Received information on range management from extension last year	Yes	28.7%
	No	71.3%
Usefulness of information on range mgmt	Quite useful	17.9%
	Very useful	80.4%
	Not useful	1.8%

Farmers were asked whether they had received information on range management from extension in the last year. The question aims to find out if farmers had received information from extension on range management and how did they perceive the information. 28 percent of the respondents indicated that they had received information from extension last year. The survey also revealed that 80 percent of the respondents who had received such information found it very useful and 1.8 percent saw the information not useful.

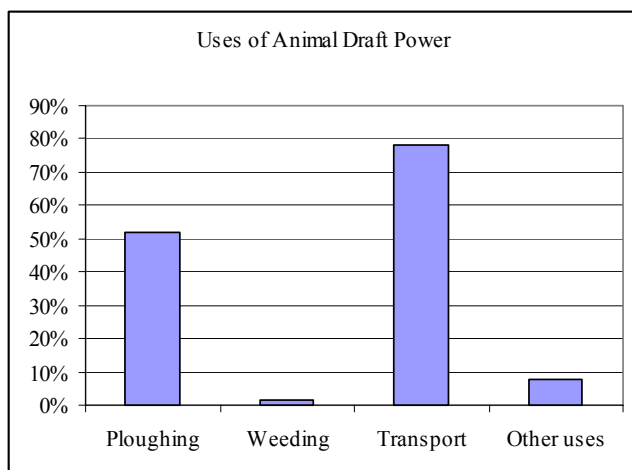
### 6.3.18 Perceptions of Range Management Methods

Variable	Category	Percent of Households
Measures to ensure adequate grazing all year	Nothing	4.2%
	De-stocking	.6%
	Seasonal grazing	95.2%

Farmers were asked which range management methods they are using to ensure adequate grazing all the year. A relatively high percentages of respondents (95.2) percent indicated that they are practiced seasonal grazing, 4.2 percent did nothing and 0.6 percent de-stock to ensure adequate grazing all year.

6.3.19 Crop Production Practice – Draught Animal Power (DAP)

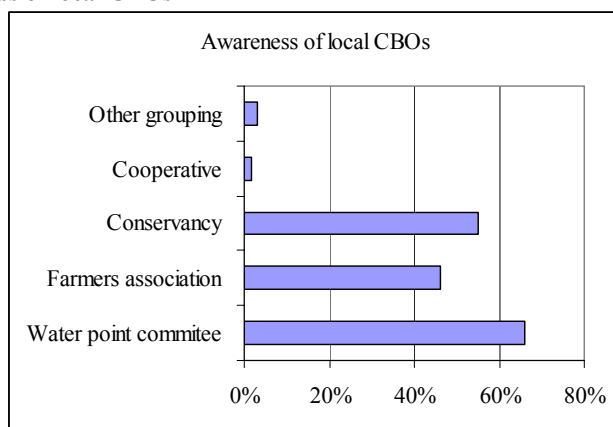
**Fig 25 Use DAP for ploughing, weeding, transport, other uses**



Farmers were asked what they are using DAP for. Transport was identified as the main use; by 78 percent of the respondents and 52.1 percent of the respondents indicated that they use DAP for ploughing. The use of DAP for weeding was the lowest indicated by 1.8 percent of the respondents. This could be the case because crop production in the area is only complementing livestock production, which is a major farming practice in the area.

6.3.20. Awareness of local CBOs

**Fig 26 Awareness of local CBOs**

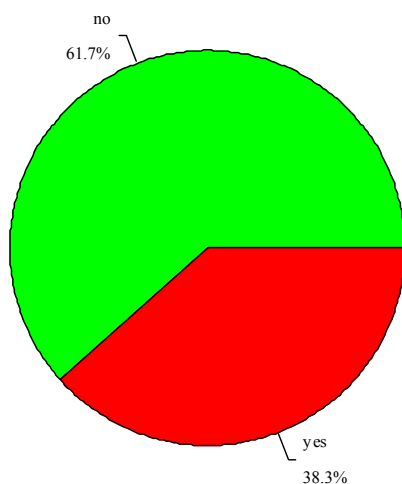


When asked if farmers are aware of CBOs operating in their areas, only 78.4 percent of the respondents said that they are aware of CBOs in the area. 70 percent of the respondents indicated that the water point committee is the most active CBO in the area. Others CBOs in the area are farmers’ associations, conservancy associations and cooperatives. 46.1 percent of the respondents indicated that they are aware of farmers’ associations, conservancy associations 55.1 percent, and cooperatives 1.8 percent respectively. This shows that there is a great need for

extensionists in the area to encourage the formation and strengthening of associations and cooperatives.

### 6.3.21. Membership of CBOs

**Fig 27 Members of CBOs**



#### 6.3.13.1 Member of a CBO

Variable	Category	Percent of Households
Member of a CBO	Yes	38.3%
	No	61.7%

Farmers were asked whether they are members of CBOs. 38.3 percent of the respondents stated that they were members while 61.7 percent indicated that they were not members of local CBOs.

## 6.4. CONCLUSIONS

### 6.4.7. Farmer Type

The survey has revealed that 50.3 percent of the respondents aged between 36-64 years are head of the households and 4.8 percent of the respondents are less than 25 years old. It is very interesting to learn that most households had more than 10 members which resulted in low percentage of hired labour in the sub region.

It is a common knowledge that literacy level is very low among farmers, hence the study confirmed that 83 percent of the respondents had no schooling at all.

The study has also found that 91.6 percent of the respondents produce maize, which is regarded as a staple crop in the sub region. The crop is planted on an area of less than 3 ha with the total harvest of 1-3 bags of 50 kg per annum.

Livestock production is the dominant farming practice in the sub region with 40.1 percent of the respondents owning more than 50 cattle, 47.9 percent of the respondents owned more than fifty goats and sheep and 61.1 percent of the respondents owned between 1-10 equines.

### 6.4.8. Farmer Extension Contact

The study found that 95.6 percent of the respondents indicated that they had no contact with the AET, this may be caused by the high ratio of AET to farmers which may need attention from the planners in the Ministry. Farmers that are close the ADCs are making use of it. 64.7 percent of the respondents confirmed that they know of the existence of the AET. This to some extent is a good indication of farmer extension contact.

Radio has been regarded as a one of the key extension approaches in the sub region but most of the farmers had no radio as indicated by 80 percent of the respondents.

### 6.4.9. Extension Impact

Apart from the diseases that are taken care of by the government such as Rabies, Foot and Mouth disease and lung sickness, 50 percent of the respondents indicated that they do not vaccinate their animals due to the high cost of vaccines. 60.5 percent of the interviewed farmers indicated that they do not vaccinate their animals due to high cost 27.2 percent of the respondents said that they have no knowledge, 7.4 percent indicated that there is a lack of vaccines in the area and 4.9 percent answered that they see no need. Apart from the diseases, the survey has shown a high level of recognition of parasites as a problem especially in the case of internal parasites, 73.1 percent of the respondents recognised internal parasites as a problem but only 38.2 percent of the respondents apply recommended doses. Traditional remedies are highly used to control internal parasites; this was confirmed by 64.4 percent of the respondents. The problem of external parasites is also recognised whereby 76 percent of the respondents indicated that they dip their animals and 83.8 percent indicated that they hand pick to control external parasites.

Dehorning in cattle is poorly practised in the sub region as it was indicated by 73 percent of the respondents because culture does not permit animals not to have horns. This indicated that there is a great need of extensionists to point out the merits and demerits of horns on animals.

It is also very interesting to learn that 98.8 percent of the interviewed farmers are castrating their animals. But one cannot deduce that extension has done exceptionally well in spreading the message on castration due to the fact that those who have received information from extension on castration are only 23.6 percent. This is also evident by the fact that only 21.8 percent of the respondents are using Burdizzo which is a technique extension is advocating to farmers whereas 77 percent are still using knives for castration. This shows that there is a great need for extension to create awareness of the advantages and disadvantages of Burdizzo and knives to the farmers.

77.8 percent of the respondents indicated that they are not branding their animals because they have no knowledge. This shows that there is a great need for extension FUs and other stakeholders to put more emphasis on creating awareness on registered branding.

As part of animal husbandry practices, 94.6 percent of the interviewed farmers indicated that they provide their animals with licks. 79 percent of the respondents said that they give natural licks, 0.6 percent said that they give summer and winter licks while 1.9 percent said that they give salt blocks. The importance of commercial licks need to be addressed although it is costly, it contains all needed minerals by the livestock.

The survey revealed that 91 percent of the respondents sell their animals to speculators and 50 percent of the respondents said they market their cattle to Meatco through self quarantine, 55.7 percent sell their animals at auction and 54.5 percent of the interviewed farmers sell to open markets.

15 percent of the respondents said that their sources of marketing information are extensionists and radio. 7.2 percent of the respondents said Meatco and 2.4 percent indicated FUs. One can conclude that marketing information is not passed on well to farmers, hence a massive improvement in promoting livestock marketing in the sub region is needed, as this is the main farming activity farmers are engaged in.

Since the government outsourced the ploughing services, the use of DAP became the only option farmers had to rely on in the area. This was confirmed by 52 percent of the interviewed farmers who indicated that they use DAP for ploughing. 78.4 percent said that they use DAP for transportation.

On community based organisation (CBO) a question was raised whether they are aware of CBOs in the area. 78.4 percent responded that they are aware. 65.9 percent said they know of the water point committee, 53.9 percent said they know of farmers associations and 55.5 percent mentioned conservancy and only 1.8 percent of the respondents were aware of cooperatives. The 1.8 percent of the respondents who indicated that they are aware of cooperatives in the area is very small. This shows that extensionsits have to put more effort into promoting the formation of cooperatives in the area for farmers to gain bargaining power in their farming business.

## REFERENCES

1. Republic of Namibia. Ministry of Agriculture, Water and Rural Development. August 2002. *NOLIDEP PHASE II Second Draft Project Preparation Report*, Project Support Services, Windhoek, Namibia.
2. Republic of Namibia. Ministry of Agriculture, Water and Rural Development. 2000. *NOLIDEP PHASE II Draft Project Preparation Report*, Project Support Services, Windhoek, Namibia
3. Talavera, P. , Katjimune ,J. , Mbinga,A., etal. 2000. Farming Systems in Kunene North A Resource Book. Kunene North Farming System Research and Extension Unit. Ministry of Agriculture ,Water and Rural Development, Kunene Region.
4. Republic of Namibia. Ministry of Agriculture. Directorate of Planning .1994. *National Food Security and Nutritional Assessment Report*. Windhoek: Ministry of Agriculture, Water and Rural Development.

**ANNEXURE 1. FARMER QUESTIONNAIRE –KUNENE NORTH**

**A. Farmer type:**

1.	Enumerator.....Date.....ADC..... Village..... Constituency ..... Distance from ADC Kms <10 <input type="checkbox"/> 1; 10-30 <input type="checkbox"/> 2; 31-50 <input type="checkbox"/> 3; >50 <input type="checkbox"/> 4	Office use only 1.1 <input type="checkbox"/>	
2.	2.1 Sex of respondent: Male <input type="checkbox"/> 1 Female <input type="checkbox"/> 2	2.2 Age: <25 <input type="checkbox"/> 1 25-35 <input type="checkbox"/> 2 36-64 <input type="checkbox"/> 3 >64 <input type="checkbox"/> 4	2.1 <input type="checkbox"/> 2.2 <input type="checkbox"/>
3.	3.1 Respondent is: household head <input type="checkbox"/> 1 wife of household head <input type="checkbox"/> 2 other <input type="checkbox"/> 3	3.2 Household size (number of household members) <5 <input type="checkbox"/> 1 6-10 <input type="checkbox"/> 2 >10 <input type="checkbox"/> 3 3.3 Do you use hired labour? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	3.1 <input type="checkbox"/> 3.2 <input type="checkbox"/> 3.3 <input type="checkbox"/>
4.	Education: resp.(4.1) highest (4.2) No school <input type="checkbox"/> 1 <input type="checkbox"/> 1 Part primary <input type="checkbox"/> 2 <input type="checkbox"/> 2 Part Secondary <input type="checkbox"/> 3 <input type="checkbox"/> 3 > Secondary <input type="checkbox"/> 4 <input type="checkbox"/> 4	4.3 Have you attend literacy training ? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	4.1 <input type="checkbox"/> 4.2 <input type="checkbox"/> 4.3 <input type="checkbox"/>
5.	5.1 Do you produce crops? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2  What types of crops are you planting? 5.2 Maize Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2  5.3 Mahangu Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2  5.4 Beans Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2  5.5 Melons Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2  5.6 Sugar Cane Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2  5.7 Total crop area planted in 02/03 (ha) 0 <input type="checkbox"/> 1 <3 <input type="checkbox"/> 2 <3 <input type="checkbox"/> 3	5.8 What was the total harvest of your crops this year? (02/03) 50 kg Bags Drums 1-3 <input type="checkbox"/> 1 1-2 <input type="checkbox"/> 4 4-6 <input type="checkbox"/> 2 3-4 <input type="checkbox"/> 5 7-10 <input type="checkbox"/> 3 >5 <input type="checkbox"/> 6  Total number livestock owned: Cattle(5.9) Goats/sheep (5.10) Equines (5.11) 0 <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 1-10 <input type="checkbox"/> 2 <input type="checkbox"/> 2 <input type="checkbox"/> 2 11-30 <input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 3 30-50 <input type="checkbox"/> 4 <input type="checkbox"/> 4 <input type="checkbox"/> 4 > 50 <input type="checkbox"/> 5 <input type="checkbox"/> 5 <input type="checkbox"/> 5  5.12 Does farming satisfy your basic h.h. needs Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2 Don't know <input type="checkbox"/> 3	5.1 <input type="checkbox"/> 5.2 <input type="checkbox"/> 5.3 <input type="checkbox"/> 5.4 <input type="checkbox"/> 5.5 <input type="checkbox"/> 5.6 <input type="checkbox"/> 5.7 <input type="checkbox"/> 5.8 <input type="checkbox"/> 5.9 <input type="checkbox"/> 5.10 <input type="checkbox"/> 5.11 <input type="checkbox"/> 5.12 <input type="checkbox"/>

6.	6.2 Other household income sources:			6.2.1 <input type="checkbox"/>
		Yes	No	6.2.2 <input type="checkbox"/>
	6.2.1 Shop, business	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6.2.3 <input type="checkbox"/>
	6.2.2 Casual work for cash	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6.2.4 <input type="checkbox"/>
	6.2.3 Casual work for kind	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6.2.5 <input type="checkbox"/>
	6.2.4 Salary	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6.2.6 <input type="checkbox"/>
	6.2.5 Remittances	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6.2.7 <input type="checkbox"/>
	6.2.6 Pension	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6.2.8 <input type="checkbox"/>
	6.2.7 Craft	<input type="checkbox"/> 1	<input type="checkbox"/> 2	
6.2.8 None	<input type="checkbox"/> 1	<input type="checkbox"/> 2		

**B. Farmer extension contact**

7.	7.1 Is there an AET working in your area? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	7.2 Do you know his/her name? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2 (enumerator to check)	7.1 <input type="checkbox"/> 7.2 <input type="checkbox"/>
	7.3 Did you or a member of your family get farming related information from extension in the last year? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	7.4 If Yes, how many times? 1-3 times <input type="checkbox"/> 1 > 3 times <input type="checkbox"/> 2 Not at all <input type="checkbox"/> 3	7.3 <input type="checkbox"/> 7.4 <input type="checkbox"/>
	7.5 If No, Why? No interest <input type="checkbox"/> 1 Unavailability of farmers <input type="checkbox"/> 2 No contact with AET <input type="checkbox"/> 3	7.6 If yes, how did you find the information given by the AET/extension? Not useful <input type="checkbox"/> 1 Quite useful <input type="checkbox"/> 2 Very useful <input type="checkbox"/> 3	7.5 <input type="checkbox"/> 7.6 <input type="checkbox"/>
8.	8.1 Did you listen to agric. info. on the radio in the last year ? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	8.2 If no, why? No Radio <input type="checkbox"/> 1 No Satellite reception <input type="checkbox"/> 2 Program timing <input type="checkbox"/> 3 No interest <input type="checkbox"/> 4	8.1 <input type="checkbox"/> 8.2 <input type="checkbox"/>
	8.3 If Yes, How often did you listen to the agric. info on the radio? Daily <input type="checkbox"/> 1 Weekly <input type="checkbox"/> 2 Monthly <input type="checkbox"/> 3	8.4 Have you found agric. info. on the radio.... Not useful <input type="checkbox"/> 1 Quite useful <input type="checkbox"/> 2 Very useful <input type="checkbox"/> 3 Give one example.....	8.3 <input type="checkbox"/> 8.4 <input type="checkbox"/>

**C. Extension Impact**

<p>9. <b><u>Animal health</u></b></p> <p>9.1 Do you vaccinate your animals? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p>	<p>9.2 If, no why? (main one only)</p> <p>Lack of vaccines <input type="checkbox"/> 1 Expensive <input type="checkbox"/> 2 See no need <input type="checkbox"/> 3 No knowledge <input type="checkbox"/> 4</p>	<p>9.1 <input type="checkbox"/> 9.2 <input type="checkbox"/></p>																					
<p>9.3 How often do you vaccinate? (one only)</p> <p>Monthly <input type="checkbox"/> 1 After 6 months <input type="checkbox"/> 2 Annually <input type="checkbox"/> 3 After 2 years <input type="checkbox"/> 4 When funds are available <input type="checkbox"/> 5</p>	<p>9.4 If yes, what diseases do you vaccinate against?</p> <table border="0"> <tr> <td></td> <td>Yes</td> <td>No</td> </tr> <tr> <td>1. Black quarter</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>2. Botulism</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>3. Anthrax</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>4. Brucellosis</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>5. Black quarter/Botulism</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>6. Others</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> </table>		Yes	No	1. Black quarter	<input type="checkbox"/> 1	<input type="checkbox"/> 2	2. Botulism	<input type="checkbox"/> 1	<input type="checkbox"/> 2	3. Anthrax	<input type="checkbox"/> 1	<input type="checkbox"/> 2	4. Brucellosis	<input type="checkbox"/> 1	<input type="checkbox"/> 2	5. Black quarter/Botulism	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6. Others	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<p>9.3 <input type="checkbox"/> 9.4.1 <input type="checkbox"/> 9.4.2 <input type="checkbox"/> 9.4.3 <input type="checkbox"/> 9.4.4 <input type="checkbox"/> 9.4.5 <input type="checkbox"/> 9.4.6 <input type="checkbox"/></p>
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5. Black quarter/Botulism	<input type="checkbox"/> 1	<input type="checkbox"/> 2																					
6. Others	<input type="checkbox"/> 1	<input type="checkbox"/> 2																					
<p>9.5 Did you receive any info./training in prevention, diagnosis and treatment of the diseases from extension? No <input type="checkbox"/> 1 Yes <input type="checkbox"/> 2</p>	<p>9.6 If yes, how did you find the info./training? Very useful <input type="checkbox"/> 1 Quite useful <input type="checkbox"/> 2 Not useful <input type="checkbox"/> 3</p>	<p>9.5 <input type="checkbox"/> 9.6 <input type="checkbox"/></p>																					
<p>9.7 If yes, how/they did you find the info./training? Very useful <input type="checkbox"/> 1 Quite useful <input type="checkbox"/> 2 Not useful <input type="checkbox"/> 3</p>	<p>9.8 Do you experience <u>internal</u> parasites in your herd/flock? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p>	<p>9.7 <input type="checkbox"/> 9.8 <input type="checkbox"/></p>																					
<p>9.9 If yes, how do you control them?</p> <table border="0"> <tr> <td></td> <td>Yes</td> <td>No</td> </tr> <tr> <td>Dose</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>None</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>Traditional remedies</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> </table>		Yes	No	Dose	<input type="checkbox"/> 1	<input type="checkbox"/> 2	None	<input type="checkbox"/> 1	<input type="checkbox"/> 2	Traditional remedies	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<p>9.8 Do you experience <u>external</u> parasites in your herd/flock? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p>	<p>9.9 <input type="checkbox"/> 9.10 <input type="checkbox"/></p>									
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<p>9.10 If yes, how do you control them?</p> <table border="0"> <tr> <td></td> <td>Yes</td> <td>No</td> </tr> <tr> <td>1. Dipping</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>2. None</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>3. Inject</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>4. Apply grease</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>5. Spraying</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>6. Pick by hand</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> </table>		Yes	No	1. Dipping	<input type="checkbox"/> 1	<input type="checkbox"/> 2	2. None	<input type="checkbox"/> 1	<input type="checkbox"/> 2	3. Inject	<input type="checkbox"/> 1	<input type="checkbox"/> 2	4. Apply grease	<input type="checkbox"/> 1	<input type="checkbox"/> 2	5. Spraying	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6. Pick by hand	<input type="checkbox"/> 1	<input type="checkbox"/> 2		<p>9.10.1 <input type="checkbox"/> 9.10.2 <input type="checkbox"/> 9.10.3 <input type="checkbox"/> 9.10.4 <input type="checkbox"/> 9.10.5 <input type="checkbox"/> 9.10.6 <input type="checkbox"/></p>
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6. Pick by hand	<input type="checkbox"/> 1	<input type="checkbox"/> 2																					

10.	<p><b>Improve Livestock Husbandry:</b></p> <p>10.1 Do you <b>de-horn</b> your cattle?</p> <p>No <input type="checkbox"/> 1</p> <p>Yes <input type="checkbox"/> 2</p>	<p>10.2 If no, why? (one only)</p> <p>Don't know how <input type="checkbox"/> 1</p> <p>Culture <input type="checkbox"/> 2</p> <p>No need <input type="checkbox"/> 3</p> <p>No manpower <input type="checkbox"/> 4</p> <p>Don't know <input type="checkbox"/> 5</p>	<p>10.1</p> <p><input type="checkbox"/></p> <p>10.2</p> <p><input type="checkbox"/></p>
	<p>10.3 If yes, at what age?</p> <p>3-6 months <input type="checkbox"/> 1</p> <p>6-12 months <input type="checkbox"/> 2</p> <p>&gt;12 months <input type="checkbox"/> 3</p>	<p>10.4 Did you received info from extension on de-horning?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>10.3</p> <p><input type="checkbox"/></p> <p>10.4</p> <p><input type="checkbox"/></p>
	<p>10.5 Do you <b>castrate</b> your animals?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p> <p>10.6 If yes, at what age?</p> <p>3-6 months <input type="checkbox"/> 1</p> <p>6-12 months <input type="checkbox"/> 2</p> <p>&gt;12 months <input type="checkbox"/> 3</p> <p>10.7 At what time of the year do you castrate? (main one only)</p> <p>Winter <input type="checkbox"/> 1</p> <p>Summer <input type="checkbox"/> 2</p> <p>Spring <input type="checkbox"/> 3</p> <p>Autumn <input type="checkbox"/> 4</p> <p>Through the year <input type="checkbox"/> 5</p>	<p>10.8 What method of castration do you practice often? (one only)</p> <p>Knife <input type="checkbox"/> 1</p> <p>Burdizzo <input type="checkbox"/> 2</p> <p>Rubber rings <input type="checkbox"/> 3</p> <p>10.9 Did you received info from extension on castration?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>10.5</p> <p><input type="checkbox"/></p> <p>10.6</p> <p><input type="checkbox"/></p> <p>10.7</p> <p><input type="checkbox"/></p> <p>10.8</p> <p><input type="checkbox"/></p> <p>10.9</p> <p><input type="checkbox"/></p>
	<p>10.10 Do you <b>brand</b> you animals with a registered brand mark?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>10.11 If no, why? (one only)</p> <p>No knowledge <input type="checkbox"/> 1</p> <p>Not interested <input type="checkbox"/> 2</p> <p>Tradition <input type="checkbox"/> 3</p> <p>Others <input type="checkbox"/> 4</p>	<p>10.10</p> <p><input type="checkbox"/></p> <p>10.11</p> <p><input type="checkbox"/></p>
	<p>10.12 Did you or a member of your family received info from extension on branding?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>10.13 Do you provide <b>licks</b> to your animals?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>10.12</p> <p><input type="checkbox"/></p> <p>10.13</p> <p><input type="checkbox"/></p>
	<p>10.14 If no, why? (one only)</p> <p>No knowledge <input type="checkbox"/> 1</p> <p>Not interested <input type="checkbox"/> 2</p> <p>No source/money <input type="checkbox"/> 3</p> <p>Others <input type="checkbox"/> 4</p>	<p>10.15 What type of licks do you use?</p> <p>Summer licks <input type="checkbox"/> 1</p> <p>Winter licks <input type="checkbox"/> 2</p> <p>Natural licks <input type="checkbox"/> 3</p> <p>Salt blocks <input type="checkbox"/> 4</p>	<p>10.14</p> <p><input type="checkbox"/></p> <p>10.15</p> <p><input type="checkbox"/></p>

	<p>10.16 When do you supplement your livestock? (one only)</p> <p>Dry season <input type="checkbox"/> 1</p> <p>Wet season <input type="checkbox"/> 2</p> <p>Through out the year <input type="checkbox"/> 3</p> <p>Once in a while <input type="checkbox"/> 4</p>	<p>10.17 Which animals do you supplement?</p> <p>Small stock <input type="checkbox"/> 1</p> <p>Large stock <input type="checkbox"/> 2</p> <p>Both <input type="checkbox"/> 3</p>	<p>10.16 <input type="checkbox"/></p> <p>10.17 <input type="checkbox"/></p>																		
	<p>10.18 Did you receive info on licks from extension?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>10.19 How did you find the info?</p> <p>Quite useful <input type="checkbox"/> 1</p> <p>Very useful <input type="checkbox"/> 2</p> <p>Not useful <input type="checkbox"/> 3</p>	<p>10.18 <input type="checkbox"/></p> <p>10.19 <input type="checkbox"/></p>																		
11.	<p><b><u>Livestock marketing:</u></b></p> <p>11.1 Do you market your livestock?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>11.2 If yes, where do you market your animals?</p> <table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>1. Permit days</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>2. Auction</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>3. Speculators</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>4. S/Q &amp; abattoir</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>5. Open market</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> </tbody> </table>		Yes	No	1. Permit days	<input type="checkbox"/> 1	<input type="checkbox"/> 2	2. Auction	<input type="checkbox"/> 1	<input type="checkbox"/> 2	3. Speculators	<input type="checkbox"/> 1	<input type="checkbox"/> 2	4. S/Q & abattoir	<input type="checkbox"/> 1	<input type="checkbox"/> 2	5. Open market	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<p>11.1 <input type="checkbox"/></p> <p>11.2.1 <input type="checkbox"/></p> <p>11.2.2 <input type="checkbox"/></p> <p>11.2.3 <input type="checkbox"/></p> <p>11.2.4 <input type="checkbox"/></p> <p>11.2.5 <input type="checkbox"/></p>
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5. Open market	<input type="checkbox"/> 1	<input type="checkbox"/> 2																			
	<p>11.3 If no, why? (main one only)</p> <p>Low prices <input type="checkbox"/> 1</p> <p>Distance to market <input type="checkbox"/> 2</p> <p>Limited marketing channels <input type="checkbox"/> 3</p>	<p>11.4 Are you aware of the self-quarantine system?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>11.3 <input type="checkbox"/></p> <p>11.4 <input type="checkbox"/></p>																		
	<p>11.5 Do you receive any marketing info?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>11.6 If yes, from whom?</p> <table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>1. Extension</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>2. Radio</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>3. F.A.</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>4. Meatco</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> <tr> <td>5. Other farmers</td> <td><input type="checkbox"/> 1</td> <td><input type="checkbox"/> 2</td> </tr> </tbody> </table>		Yes	No	1. Extension	<input type="checkbox"/> 1	<input type="checkbox"/> 2	2. Radio	<input type="checkbox"/> 1	<input type="checkbox"/> 2	3. F.A.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	4. Meatco	<input type="checkbox"/> 1	<input type="checkbox"/> 2	5. Other farmers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<p>11.5 <input type="checkbox"/></p> <p>11.6.1 <input type="checkbox"/></p> <p>11.6.2 <input type="checkbox"/></p> <p>11.6.3 <input type="checkbox"/></p> <p>11.6.4 <input type="checkbox"/></p> <p>11.6.5 <input type="checkbox"/></p>
	Yes	No																			
1. Extension	<input type="checkbox"/> 1	<input type="checkbox"/> 2																			
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3. F.A.	<input type="checkbox"/> 1	<input type="checkbox"/> 2																			
4. Meatco	<input type="checkbox"/> 1	<input type="checkbox"/> 2																			
5. Other farmers	<input type="checkbox"/> 1	<input type="checkbox"/> 2																			
12.	<p><b><u>Range management:</u></b></p> <p>12.1 Did you receive information on range management from extension last year?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>12.2 If yes, how did you find the information?</p> <p>Quite useful <input type="checkbox"/> 1</p> <p>Very useful <input type="checkbox"/> 2</p> <p>Not useful <input type="checkbox"/> 3</p>	<p>12.1 <input type="checkbox"/></p> <p>12.2 <input type="checkbox"/></p>																		

	<p>12.3 What can you do to have grazing through out the year? (main one only)</p> <p>Nothing <input type="checkbox"/> 1</p> <p>Fencing <input type="checkbox"/> 2</p> <p>Herding the animals <input type="checkbox"/> 3</p> <p>Resettle strong farmers in commercial areas <input type="checkbox"/> 4</p> <p>De-stocking <input type="checkbox"/> 5</p> <p>Seasonal grazing <input type="checkbox"/> 6</p>		12.3 <input type="checkbox"/>
13	<p><b>Crops:</b></p> <p>13.1 Did you or a member of your family received info from extension on crop production?</p> <p>1. None Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p> <p>2. Maize Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p> <p>3. Mahangu Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p> <p>4. Beans Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p> <p>5. Melons Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p> <p>6. Sugar Cane Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2</p>	<p>13.2 If yes, how did you find the info.?</p> <p>Quite useful <input type="checkbox"/> 1</p> <p>Very useful <input type="checkbox"/> 2</p> <p>Not useful <input type="checkbox"/> 3</p>	<p>13.1.1 <input type="checkbox"/></p> <p>13.1.2 <input type="checkbox"/></p> <p>13.1.3 <input type="checkbox"/></p> <p>13.1.4 <input type="checkbox"/></p> <p>13.1.5 <input type="checkbox"/></p> <p>13.1.6 <input type="checkbox"/></p> <p>13.2 <input type="checkbox"/></p>
14.	<p><b>DAP:</b></p> <p>14.1 Do you use DAP?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>14.2 If yes, what do you use it for?</p> <p>Yes No</p> <p>1. Ploughing <input type="checkbox"/> 1 <input type="checkbox"/> 2</p> <p>2. Weeding <input type="checkbox"/> 1 <input type="checkbox"/> 2</p> <p>3. Transport <input type="checkbox"/> 1 <input type="checkbox"/> 2</p> <p>4. Other <input type="checkbox"/> 1 <input type="checkbox"/> 2</p>	<p>14.1 <input type="checkbox"/></p> <p>14.2.1 <input type="checkbox"/></p> <p>14.2.2 <input type="checkbox"/></p> <p>14.2.3 <input type="checkbox"/></p> <p>14.2.4 <input type="checkbox"/></p>
	<p>14.3 If no, why? (one only)</p> <p>Don't have animals <input type="checkbox"/> 1</p> <p>Don't have implements <input type="checkbox"/> 2</p> <p>No knowledge <input type="checkbox"/> 3</p> <p>Expensive <input type="checkbox"/> 4</p> <p>Time consuming <input type="checkbox"/> 5</p> <p>Others <input type="checkbox"/> 6</p>	<p>14.4 Did you or a member of your family received any training on DAP from extension?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>14.3 <input type="checkbox"/></p> <p>14.4 <input type="checkbox"/></p>
	<p>14.5 How did you find the training</p> <p>Quite useful <input type="checkbox"/> 1</p> <p>Very useful <input type="checkbox"/> 2</p> <p>Not useful <input type="checkbox"/> 3</p>		14.5 <input type="checkbox"/>
15.	<p><b>Policies &amp; legislation:</b></p> <p>15.1 Are you aware of any agric. related polices/laws?</p> <p>Yes <input type="checkbox"/> 1</p> <p>No <input type="checkbox"/> 2</p>	<p>15.2 If yes, which one?</p> <p>Yes No</p> <p>1. Drought <input type="checkbox"/> 1 <input type="checkbox"/> 2</p> <p>2. Veld fire <input type="checkbox"/> 1 <input type="checkbox"/> 2</p> <p>3. Conservancies <input type="checkbox"/> 1 <input type="checkbox"/> 2</p> <p>4. Others <input type="checkbox"/> 1 <input type="checkbox"/> 2</p>	<p>15.1 <input type="checkbox"/></p> <p>15.2.1 <input type="checkbox"/></p> <p>15.2.2 <input type="checkbox"/></p> <p>15.2.3 <input type="checkbox"/></p> <p>15.2.4 <input type="checkbox"/></p>

	<p>15.3 Where did you get the info. About these policies from? (main one only)</p> <p>Agric. Ext officials    <input type="checkbox"/> 1</p> <p>Radio                      <input type="checkbox"/> 2</p> <p>Councillor              <input type="checkbox"/> 3</p> <p>Others                    <input type="checkbox"/> 4</p>		<p>15.3</p> <p><input type="checkbox"/></p>
<p>16.</p>	<p><b>CBOs:</b></p> <p>16.1 Do you have any CBO's in your area/village?</p> <p>Yes                      <input type="checkbox"/> 1</p> <p>No                        <input type="checkbox"/> 2</p>	<p>16.2 If yes, which ones?</p> <p style="text-align: right;">Yes      No</p> <p>1. Water point committee    <input type="checkbox"/> 1    <input type="checkbox"/></p> <p>2</p> <p>2. Farmers association    <input type="checkbox"/> 1    <input type="checkbox"/> 2</p> <p>3. Conservancies        <input type="checkbox"/> 1    <input type="checkbox"/> 2</p> <p>4. Co-operative         <input type="checkbox"/> 1    <input type="checkbox"/> 2</p> <p>5. Other                    <input type="checkbox"/> 1    <input type="checkbox"/> 2</p>	<p>16.1 <input type="checkbox"/></p> <p>16.2.1 <input type="checkbox"/></p> <p>16.2.2 <input type="checkbox"/></p> <p>16.2.3 <input type="checkbox"/></p> <p>16.2.4 <input type="checkbox"/></p> <p>16.2.5 <input type="checkbox"/></p>
	<p>16.3 Are you a member of any CBO?</p> <p>Yes                      <input type="checkbox"/> 1</p> <p>No                        <input type="checkbox"/> 2</p>		<p>16.3</p> <p><input type="checkbox"/></p>

## **ANNEXURE 1. QUESTIONNAIRE RESULTS TABLES – KUNENE NORTH**

Sample size = 167

### **SECTION A. FARMER TYPE**

**TABLE . NEAREST AGRICULTURAL DEVELOPMENT CENTRE**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Agricultural Development Centre	Etanga	14.4%
	Kaoko-Otavi	15.0%
	Okanguati	34.1%
	Opuwo	21.0%
	Oruvandjei	15.6%

**TABLE . SELECTED FARMER CHARACTERISTICS**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Age of respondent	< 25	4.8%
	25-35	27.5%
	36-64	50.3%
	>64	17.4%
Respondent type	Head of household	50.9%
	Wife of household head	21.6%
	Other	27.5%
Household size (persons)	<5	9.0%
	6-10	27.5%
	>10	63.5%
Hired labour	Yes	10.8%
	No	89.2%
Education level of respondent	No school	82.6%
	Part primary	10.2%
	Part secondary	6.6%
	Above secondary	.6%
Highest education level of a member in the household	No school	37.7%
	Part primary	25.7%
	Part secondary	24.6%
	Above secondary	12.0%
Attended literacy training	Yes	18.0%
	No	82.0%

**TABLE . CROPS PRODUCTION**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Crop producer	Yes	91.6%
	No	8.4%
Grows mahangu	Yes	24.0%
	No	76.0%
Grows beans	Yes	58.1%
	No	41.9%
Grows melons	Yes	82.6%

	No	17.4%
Grows sugarcane	Yes	13.8%
	No	86.2%
Total planted crop area in 2002/2003	0	5.1%
	<3 ha	59.0%
	>3 ha	35.9%
Total crop harvest in 2002/2003	1-3 bags	58.9%
	4-6 bags	8.0%
	7-10 bags	9%
	1-2 drums	25.0%
	3-4 drums	4.5%
	>5 drums	2.7%

**Table . Livestock Ownership**

Variable	Category	Percent of Households
Total number of cattle	0	10.2%
	1-10	15.0%
	11-30	19.2%
	30-50	15.6%
	>50	40.1%
Total number of goats and sheep	0	6.6%
	1-10	6.0%
	11-30	19.2%
	30-50	20.4%
	>50	47.9%
Total number of equines	0	25.7%
	1-10	61.1%
	11-30	12.6%
	>50	.6%

**TABLE . SOURCES OF HOUSEHOLD INCOME**

Variable	Category	Percent of Households
Farming satisfies basic household needs	Yes	21.6%
	No	77.8%
	Don't know	.6%
Shop/business is other source of household income	Yes	5.4%
	No	94.6%
Casual work for cash is other source of household income	Yes	2.4%
	No	97.6%
Casual work for kind is other source of household income	Yes	1.8%
	No	98.2%
Salary is other source of household income	Yes	3.0%
	No	97.0%
Remittances are other source of household income	Yes	14.4%
	No	85.6%
Pension is other source of household income	Yes	58.7%
	No	41.3%

Kunene North Sub-Region: Baseline Survey of the  
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	No	41.3%
Craft is other source of household income	Yes	13.8%
	No	86.2%
None other source of household income	Yes	29.3%
	No	70.7%

**SECTION B. FARMER – EXTENSION CONTACT INDICATORS**

**Table . Farmer-Extension Contact Indicators**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Extensionist (AET) exists and works in the area	Yes	64.7%
	No	35.3%
Knows the name of AET	Yes	60.8%
	No	38.6%
	3.00	.6%
Farm family received information from extension last year	Yes	30.5%
	No	69.5%
Times farmer got information from AET/extension in last year	1-3 times	68.3%
	>3 times	31.7%
Reasons for not getting info from extension	No interest	2.6%
	Unavailability of farmers	1.8%
	No contact with AET	95.6%
Usefulness of information given by the extensionist	Not useful	3.8%
	Quite useful	32.7%
	Very useful	63.5%

**TABLE . EXTENSION CONTACT BY RADIO**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Heard agric information on the radio in the last year.	Yes	56.3%
	No	43.7%
Reasons for not listening to agric info on radio	No radio	80.8%
	No satellite reception	6.4%
	Programme timing	3.8%
	No interest	9.0%
Times listened to agric. Info on the radio	Daily	34.4%
	Weekly	47.3%
	Monthly	18.3%
Usefulness of info on the radio	Not useful	10.9%
	Quite useful	35.9%
	Very useful	53.3%
List of example heard on the radio	2.00	100.0%

**SECTION C. EXTENSION IMPACT INDICATORS**

**TABLE . ANIMAL HEALTH PRACTICE – VACCINATION**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Vaccinates animals	Yes	49.1%
	No	50.9%
Reason for not vaccinating	Lack of vaccines	7.4%
	Expensive	60.5%
	See no need	4.9%
	No knowledge	27.2%
Times to vaccinate	Monthly	11.0%
	After 6 months	52.4%
	Annually	14.6%
	After 2 years	4.9%
	When funds are available	17.1%
Vaccinates against Black quarter	Yes	5.4%
	No	94.6%
Vaccinates against Botulism	Yes	28.7%
	No	71.3%
Vaccinates against Anthrax	Yes	12.6%
	No	87.4%
Vaccinates against Brucellosis	Yes	10.2%
	No	89.8%
Vaccinates against Black quarter /Botulism	Yes	19.8%
	No	80.2%
Vaccinates against other diseases	Yes	18.0%
	No	82.0%

**TABLE . ANIMAL HEALTH PRACTICE – INTERNAL PARASITES**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Livestock experience internal parasites	Yes	73.1%
	No	26.9%
<b>Dosing</b> method used to control internal parasites	Yes	38.2%
	No	61.8%
<b>No method</b> used to control internal parasites	Yes	26.4%
	No	73.6%
<b>Traditional remedies</b> are used to control internal parasites	Yes	64.4%
	No	35.6%

**TABLE . ANIMAL HEALTH PRACTICE – EXTERNAL PARASITES**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Livestock experience external parasites	Yes	82.6%
	No	17.4%
<b>Dipping</b> is used to control external	Yes	76.0%

parasites	No	24.0%
<b>No method</b> is used to control external parasites	Yes	5.4%
	No	94.6%
<b>Injection</b> is used to control external parasites	Yes	13.2%
	No	86.8%
<b>Grease application</b> is used to control external parasites	Yes	24.0%
	No	76.0%
<b>Spraying</b> is used to control external parasites	Yes	24.6%
	No	75.4%
<b>Pick by hand</b> is used to control external parasites	Yes	83.8%
	No	16.2%

**Table . Extension Support in Animal Health**

Variable	Category	Percent of Households
Received extension info/ training in prevention, diagnosis and treatment of diseases	Yes	61.1%
	No	38.9%
Usefulness of animal health info/training	Very useful	63.6%
	Quite useful	36.4%

**TABLE . ANIMAL HUSBANDRY PRACTICE – DEHORNING**

Variable	Category	Percent of Households
Cattle de-horning	No	81.4%
	Yes	18.6%
Reasons for not dehorning	Don't know how	14.3%
	Culture	73.0%
	No need	4.8%
	No manpower	1.6%
	Don't know	6.3%
Age at dehorning	3-6 months	30.3%
	6-12 months	69.7%
Received extension info on dehorning	Yes	28.1%
	No	71.9%

**Table . Animal Husbandry Practice – Castration**

Variable	Category	Percent of Households
Castration of large and small-stock	Yes	98.8%
	No	1.2%
Age at castration	3-6 months	30.1%
	6-12 months	65.7%
	>12	4.2%
Time of year for castration	Winter	86.1%
	Summer	3.0%

	Spring	1.2%
	Autumn	7.3%
	Throughout the year	2.4%
Castration method often practiced	Knife	77.0%
	Burdizzo	21.8%
	Rubber ring	1.2%
Received information from extension on castration	Yes	23.6%
	No	76.4%

**Table . Animal Husbandry Practice - Branding**

Variable	Category	Percent of Households
Animals are register branded	Yes	22.2%
	No	77.8%
Reasons for not branding	No knowledge	57.6%
	Not interested	17.6%
	Others	12.8%
	Others	12.0%
Has received info from extension on branding	Yes	26.2%
	No	73.8%

**TABLE . ANIMAL HUSBANDRY PRACTICE – SUPPLEMENTARY FEEDING**

Variable	Category	Percent of Households
Provide cattle licks	Yes	94.6%
	No	5.4%
Reason for not providing licks	No knowledge	44.4%
	No source / money	44.4%
	Others	11.1%
Types of licks used	Summer licks	.6%
	Winter licks	.6%
	Natural licks	79.7%
	Salt blocks	19.0%
Time to supplement livestock	Dry season	11.3%
	Wet season	5.7%
	Throughout the year	73.6%
	Once in a while	9.4%
Kind of animals supplemented	Small stock	8.8%
	Large stock	5.0%
	Both	86.2%
Received info on licks fro extension	Yes	18.6%
	No	81.4%
Finds info on licks/supplement feeding	Quite useful	20.0%
	Very useful	76.7%
	Not useful	3.3%

**TABLE . LIVESTOCK MARKETING**

Variable	Category	Percent of Households
Markets livestock	Yes	92.8%
	No	7.2%

**TABLE . LIVESTOCK MARKETING CHANNELS**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Market animals on permit days	Yes	11.4%
	No	88.6%
Markets animals at auction	Yes	55.7%
	No	44.3%
Markets animals at speculators	Yes	91.0%
	No	9.0%
Markets animals at S/Q and abattoir	Yes	50.3%
	No	49.7%
Markets animals at open market	Yes	45.5%
	No	54.5%
Main reason for not marketing animals	Low prices	82.6%
	Distance to markets	17.4%

**TABLE . AWARENESS OF SELF-QUARANTINE SYSTEM**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Aware of self quarantine system	Yes	70.0%
	No	30.0%

**TABLE . SOURCES OF INFORMATION ON MARKETING**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Received info on livestock marketing	Yes	29.5%
	No	70.5%
Extension is source of info on livestock marketing	Yes	15.1%
	No	84.9%
Radio is source of info on livestock marketing	Yes	15.0%
	No	85.0%
F.A is source of info on livestock marketing	Yes	2.4%
	No	97.6%
Meatco is source of info on livestock marketing	Yes	7.2%
	No	92.8%
Other farmers as source of info on livestock marketing	Yes	7.2%
	No	92.8%

**Table . Extension Support in Range Management**

<b>Variable</b>	<b>Category</b>	<b>Percent of Households</b>
Received information on range management from extension last year	Yes	28.7%
	No	71.3%
Usefulness of information on range mgmt	Quite useful	17.9%
	Very useful	80.4%

Not useful	1.8%
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**Table . Perceptions of Range Management Methods**

Variable	Category	Percent of Households
Measures to ensure adequate grazing all year	Nothing	4.2%
	De-stocking	.6%
	Seasonal grazing	95.2%

**Table . Extension Support in Crop Production**

Variable	Category	Percent of Households
Received crop production information from extension	Yes	84.9%
	No	15.1%
Received extension information on production of <b>maize</b>	Yes	13.8%
	No	86.2%
Received extension information on production of <b>mahangu</b>	Yes	4.8%
	No	95.2%
Received extension information on production of <b>beans</b>	Yes	8.4%
	No	91.6%
Received extension information on production of <b>melons</b>	Yes	8.4%
	No	91.6%
Received extension information on production of <b>sugarcane</b>	Yes	1.2%
	No	98.8%
Finds the info on crop production	Quite useful	8.2%
	Very useful	91.8%

**Table . Crop Production Practice – Draught Animal Power (DAP)**

Variable	Category	Percent of Households
Use draft animal power (DAP)	Yes	83.2%
	No	16.8%
Use DAP for ploughing	Yes	52.1%
	No	47.9%
Use DAP for weeding	Yes	1.8%
	No	98.2%
Use DAP for transport	Yes	78.4%
	No	21.6%
Use DAP in other uses	Yes	7.8%
	No	92.2%
Reasons for not using DAP	Don't have animals	55.6%
	Don't have implements	33.3%
	No knowledge	11.1%

**Table . Extension Support in Draught Animal Power**

Variable	Category	Percent of Households
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Received some training on DAP from extension	Yes	11.4%
	No	88.6%
Usefulness of DAP training	Quite useful	11.8%
	Very useful	64.7%
	Not useful	23.5%

**TABLE . AWARENESS OF AGRICULTURAL POLICIES**

Variable	Category	Percent of Households
Aware of any agric. related laws, policy or act.	Yes	58.7%
	No	41.3%
Aware of Drought policy	Yes	44.3%
	No	55.7%
Aware of Policy on veld fire	Yes	47.9%
	No	52.1%
Aware of Conservancies	Yes	53.3%
	No	46.7%
Aware of Others policies	Yes	3.6%
	No	96.4%
Main source of information on policies	Agric. Extension officials	58.6%
	Radio	8.1%
	Councilor	8.1%
	Others	25.3%

**TABLE . ROLE OF COMMUNITY BASED ORGANISATIONS**

Variable	Category	Percent of Households
Knows about CBOs in the area/village	Yes	78.4%
	No	21.6%
Water point committee is a CBO in the area	Yes	65.9%
	No	34.1%
Farmers association is a CBO in the area	Yes	46.1%
	No	53.9%
Conservancy is a CBO in the area	Yes	55.1%
	No	44.9%
Cooperative is a CBO in the area	Yes	1.8%
	No	98.2%
Other grouping is a CBO in the area	Yes	3.0%
	No	97.0%
Member of a CBO	Yes	38.3%
	No	61.7%