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

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**BASELINE SURVEY OF THE IMPACT OF**  
**AGRICULTURAL EXTENSION SERVICES**  
**IN OSHANA REGION**

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**DIRECTORATE OF EXTENSION AND ENGINEERING SERVICES**

**ONGWEDIVA, OCTOBER 2003**

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## **ACRONYMS AND ABBREVIATIONS**

MAWRD	Ministry of Agriculture, Water and Rural Development
AEO	Agricultural Extension Officer
AET	Agricultural Extension Technician
ARDC	Agricultural Rural Development Centre
AIDS	Acquired Immune Deficiency Syndrome
CAEO	Chief Agricultural Extension Officer
CBO	Community Based Organization
DEES	Directorate of Extension and Engineering Services
DRWS	Directorate of Rural Water Supply
DART	Directorate of Agricultural Research and Training
DAP	Draft Animal Power
DVS	Directorate of Veterinary Services
DCA	Dan Church Aid
FED	Farmer's Extension Development
FSA	Farming System Areas
GDP	Gross Domestic Products
NCD	North Central Division
NDP1	First Development Plan
NDP2	Second Development Plan
NOLIDEP	Northern Regions Livestock Development Project
NNFU	Namibia National Farmers Union
NNRD	Northern Namibia Rural Development Project
RDSP	Rural Development Support Programme
REMP	Research and Extension Management Program
SARDP	Sustainable Animal and Range Development Programme
SPSS	Statistical Package for Social Science
TA	Technical Adviser
TV	Television

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Last, but certainly not least, thanks are due to all those who assisted and supported us during the impact assessment baseline survey exercise.

## **PART ONE**

### **0. FOREWORD**

The 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 study designed to survey selected indicators of extension impact during the 2002 / 2003 farming season. We intend to repeat this survey after the 2006 / 2007 seasons to gauge change over the period between the baseline survey and the final survey.

This period coincides with the span of National Development Plan (NDP2), which is the basic planning timeframe of the extension service.

Our collaborators, as well as the Namibian public at large have made calls for an assessment of the impact of agricultural extension services. 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 that operates regional programmes in response to regional realities.

This report focuses on Oshana 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

The Directorate of Extension and Engineering Service's Oshana regional team, under the leadership of the Agricultural Extension Officers, was tasked to conduct a baseline survey on the impact of agricultural extension services in the region. The survey was conducted from 12<sup>th</sup> to 23<sup>rd</sup> May 2003.

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.

The objectives of the survey were to produce findings of interest to the DEES managers to assist them to steer their programs and to provide information to external stakeholders. These stakeholders include planners and policy makers in the MAWRD and other Ministries, farmers union and tax payers in general, who are interested to see that extension services is having an impact.

The survey was carried out in the field using the questionnaires that were developed by the Agricultural Extension Officers from the region in consultation with other Agricultural Extension Officers from the other north central regions. The questionnaires contained sections to explore the farmers' characteristics, the extent of farmer-extension contact, and extension impact in terms of farmer awareness and adoption of selected extension recommendations on issues of livestock and crop production, marketing, inputs supply, use of DAP, farmer's training, use of mass media and animal health.

The questionnaires were administered in the field by enumerators under the cross supervision of the Agricultural Extension Officers from the region. The data entry and analysis was undertaken in Windhoek by contracted services and it was use Statistical Package for Social Sciences. Final frequencies and cross tabulations were established on the data and where applicable multivariate analysis was conducted.

The results of the section of the questionnaire on farmer characteristics indicate that farmers who are far from ADC are not reached by extension services. 70% of the respondents were women and the reality is that many farmers who attend agricultural meetings and training activities are female. This could be because males are away from home in urban areas. It is also notable that elderly people are more conservative when it comes to change their farming practices and habits. It is interesting to find that most farmers own between 1-30 livestock but many farmers hesitate to give the real numbers of their livestock. 50% of those selected for interview indicated that their farming activities satisfy their basic households needs, depending on the amount and period of rainfall received. The old age pension and salaries are the main sources of income in Oshana region.

A number of questions were asked to indicate levels of contact between extension and farmers directly and through the use of mass media. For instance, 70% of respondents knew the AETs working in their respectively communities, and stated that they noticed an improvement in their farming due to the assistance of extension staff. High numbers of farmers reported hearing agricultural information on the radio.

The survey indicated that most respondents grow cereals and legumes, and that more than 88% of the farmers are using improved varieties. They reported buying their seeds from local shops or from nearby ARDCs if available. Most respondents are not using chemical fertilizer. It is observed that most respondents are not using DAP implements for weeding. This is said to be because they have not received enough training on the use of cultivators and because cultivators are not readily available for those who want to purchase them. It is found that farmers have many ways to minimise pest infestation such as keeping their storage off the ground, cleaned and closed, killing pests on

contact, and pour ash in the store. Most farmers report selling their crop produce at open market and at agricultural shows and fairs.

Concerning livestock, 78% of interviewed farmers castrate their livestock using various tools. This reflects the promotion of such tools by extension especially the use of burdizzos. Among many technologies introduced to farmers in Oshana region, de-horning of cattle is one of the technologies that farmers do not practice in most cases. The result indicate that farmers do give supplementary feeds to selective livestock. Although there are numerous sources of livestock marketing information, it is observed that a high percentage of interviewees indicated that they did not receive information on livestock marketing.

It is concluded that farmers have realized improvements in their farming activities due to the intervention of extension, and that those who are not reached by extension services do want these services.



## **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 that describes its main activities and their relationship to a set of objectives [see *page 12*]. The log frame 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 that 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 pinpoint 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 gross domestic product (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 that 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 Agricultural Extension Officer, as follows.

#### 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. *(January-March 2003)*
2. Planning of field implementation: sampling procedures and logistics. *(April 2003)*
3. Field implementation: to minimize bias, extension staff took no part in interviews. Their role included:
  - hiring of enumerators;
  - training of enumerators;
  - liaising with communities;
  - transporting enumerators in the field;
  - 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 OSHANA REGION**

#### **3.1 OVERVIEW OF OSHANA REGION**

The Oshana Region, the smallest of Namibia's thirteen regions in term of size, has a surface area of 8,653 km<sup>2</sup>. To the north the region is bordered by the Ohangwena region, to the east it shares a common border with the Oshikoto region, to the south the region borders onto the Kunene region, while the Omusati region borders to the West. A portion of the Etosha National Park, inclusive of the Okaukwejo Rest Camp, and Lake Oponono falls within the southern part of the region in Uuvudhiya constituency.

The region is relatively homogeneous in term of climate, topography, vegetation, water resources and cultural composition. The northern part of the region is relatively densely populated while the southern part of the region, north of the Etosha Pan, is sparsely populated. The provision of infrastructure has consequently been concentrated within the densely populated area where a system of water pipelines, grid electricity, and roads provide the settlements with basic infrastructure.

The Oshana region is characterized by a communal land tenure system based on customary forms of land tenure. The main urban centres of Oshakati, Ongwediva and Ondangwa, located in the northern part of the region, are linked to the national road network. The road infrastructure within the communal areas of the region is generally underdeveloped.

The railway line that will link Ondangwa with Tsumeb is currently in the construction stage. The Namibian Airports Company has recently upgraded the airport facilities at Ondangwa, with the exception of the Oshakati-Ondangwa urban node the telecommunication network, especially the cellular network, is poorly developed within the rural part of the region.

#### **3.2 BIOPHYSICAL RESOURCES**

##### **3.2.1 RAINFALL**

The distribution of rainfall in Oshana region differs from constituency to constituency, and fluctuates or changes every year. For the two rainy seasons prior to this report, the annual rainfall recorded in Oshana region is between 300-600mm per annum.

The climate in the region can be describe as mild sub-arid to sub-arid with an average annual rainfall ranging between 400-500mm. The potential evapo-transpiration ranges between 2,600mm to 2,800mm per annum, thereby reducing the effectiveness of dryland agriculture. Summers are hot, with temperatures often reaching 33<sup>0</sup>C, and winters are mild with a mean minimum temperature of 6<sup>0</sup>C (in June or July).

##### **3.2.2 SOILS**

The soils are generally sandy and, partly due to the high evaporation rates in the Oshana system, are often saline. Fertility is low, and crop production potential is limited. Large-scale irrigation is not suitable as it tends to increase salinity. The main soils found in Oshana region are characterized by a sandy loam texture. The soils are suitable for agricultural production, and the main crops grown are pearl millet, sorghum, cowpea and bambara-nut.

### 3.2.3 GROUNDWATER

Groundwater over the greatest part of the region occurs in three relatively discrete compartments, namely:

- a. A discontinuous perched aquifer
- b. The main shallow aquifer
- c. A saline aquifer

Over the northern part of the region a discontinuous perched aquifer provides a limited amount of water at shallow depths. Hand dug pits and wells allow access to this ephemeral water source.

There have been plans to drill boreholes in the southern part of the region, where water is very scarce for human and animal consumption especially during the dry period (August to December). Unfortunately, the underground water is salty and cannot be used for consumption.

### 3.2.4 TOPOGRAPHY

The extremely flat topography of the Oshana region is characterized by the Oshana system, which dominates the central area. This is a complex ephemeral system of broad, shallow, vegetated channels that flows south out of Angola after good rains, meandering through the sandy soils and mostly ending in larger pans.

The largest system, the Cuvelai, reaches the vast grassland of the Ombuga, where the channels form a permanent serpentine series of saline lakes, including Lake Oponono. After good rains the *Ekuma*, *Gwashigambo* and *Nipele channels* reach the Etosha pan.

The Oshana region is part of the Etosha Depression, a predominately flat, sandy plain that forms part of the Kalahari basin. The plain is between 1,100 and 1,150 meters above sea level, sloping gently towards the Etosha pan.

### 3.2.5 RIVERS

There are no perennial rivers in Oshana region. The only source of surface water is through the few ephemeral rivers and a number of shallow watercourses (*oshanas*) and pans. A number of shallow watercourses (*oshanas*) traverse the region. Through these channels the summer floods, from a large catchments area in the adjacent parts of Angola, drain into the Etosha pan. During good rains, the floods, locally known as the *efundja*, fill the *oshanas* that may remain filled with water until June.

### 3.2.6 VEGETATION TYPE

The types of vegetation in Oshana Region can be classified broadly according to three physiographic regions, namely the Cuvelai Drainage Basin, the Ekuma grassveld and the Kalkveld.

***The Cuvelai Drainage Basin:*** A palm savannah vegetation group is predominant in this drainage system, which is located over the northern half of the region. It is characterized by open grassy drainage depressions lined by *Hypaena ventricosa* (Makalani Palms) with *Colophospermum mopane* trees and shrubs dominating on higher grounds.

***The Ekuma Grassveld:*** The southern part of the Region is predominantly covered by seasonally flooded grassland with patches of Acacia and Mopane species, becoming denser in the southwest.

*The Kalkveld:* The vegetation in the extreme southwestern corner of the Region is characterized by minor pans and low-lying areas where open shrub savannah (Mopane and Acacia species) with good edible grass cover is found.

The vegetation of the Region has, as a result of increasing population pressure and growing numbers of domestic livestock, been subject to serious desertification.

### **3.3 POPULATION ISSUES**

According to the 2001 Population Census, the region has a total population of 161,916, of whom 69% are rural based. The average household size is 5.4 persons per household. Hence, the number of farming households can be calculated roughly as 20,689 (161,916/5.4 x 69%). This assumes that the number of non-farming households living in rural areas is roughly equivalent to the number of farming households living in towns and out of the region. In Oshana region there are 10 AETs and 2 AEOs working directly with this farmers. This gives an extension worker to farmer ration of 1:1,724 (12:20,689).

The population density for Oshana region is 18.7 per km<sup>2</sup>. Oshana region hosts the main towns in the northern central communal area. There are mainly two languages (Oshindonga, Oshikwambi) spoken by people in the region. Other languages such as Oshikwanyama, Oshingandjela, Oshimbalantu, are spoken in the region mainly in the towns of Oshakati, Ongwediva and Ondangwa towns.

### **3.4 IMPACT OF HIV/AIDS**

The impact of HIV/AIDS on agricultural extension activities is significant. Whenever meetings, field days and demonstrations are organised in a particular community, the activity will often be postponed due to the death or serious ill health of people in the community. In many cases diseases related to HIV/AIDS cause the sickness or deaths of many people in the communities or villages. The labour force is decreased and as a result farm production is low. Recently, the number of orphans has increased significantly, and you find household headed by children or orphans. Another example of the effects of this disease is that the weekends are now reserved for funeral services rather than productive activities.

### **3.5 LIVELIHOOD PATTERNS**

The sources of income of different socio-economic groups of people living in Oshana region differ from place to place and community to community. Many elderly farmers get an income from pension, remittances and by exchanging or selling agricultural products (crops or livestock). Young people working in towns get their income either by providing casual labor or trading. Part-time farmers (people staying in town) get their income from salaries or wages, and from profits from sales in the case of business owners.

### **3.6 LIVESTOCK PRODUCTION**

Farming in Oshana region is dominated by cattle, goats, donkeys and few sheep. Despite the large number of animals in the region, the off-take is extremely low due in part to the high marketing costs involved, particularly the costs associated with quarantining and associated transportation costs.

There are basically two movements of cattle that traditionally occur in NCD including Oshana Region. The first movement is usually towards the end of summer (between March and May) when

cattle are brought home to the densely populated areas where many families live permanently (Mendelsohn et al., 2000). During this time, the animals enjoy the green new pastures that have grown during the rainy season and also feed on crop residues left in the fields. The second movement of animals back to the cattle posts occurs once all the grazing is depleted and it is usually between August and October. By way of contrast, more and more livestock owners tend to keep most of their livestock permanently at the cattle posts and move only a few animals when necessary. This transhumance system is increasingly breaking down due to a number of factors. For instance, the movement of animals in Oshana Region is also restricted to certain areas due to large areas of land that are fenced. In addition, the limitation of water points restricts movement of animals to other places where grazing is available. But, with the installation of pipelines and construction of water points, herders tend to move their animals to pasture further away than before.

It is difficult to know or estimate the total number of livestock sold or slaughtered from Oshana region. Marketing opportunities are found in Oshakati at MeatCo and the open markets (Omatala), and at Ondangwa open markets. These centres cater for all the North Central regions.

Livestock number estimates in Oshana region, taken from Agricultural Censuses in the late 1990s, are given in Table below.

**Table 1. Livestock population in NCD for the Agricultural Season 1996/1997 to 1999/2000**

Region	Season	Livestock						
		Cattle	Goats	Sheep	Pigs	Donkeys/Mules	Poultry	Horses
Oshikoto	1996/97	116,188	181,438	15,118	7,383	20,081	157,161	387
	1997/98	113,428	215,961	361	10,850	19,926	190,665	222
	1998/99	123,959	213,960	813	12,572	18,859	166,731	215
	1999/00	111,576	202,405	1,334	12,657	17,420	160,548	188
Ohangwena	1996/97	198,920	374,690	2,293	14,671	15,686	214,431	1,531
	1997/98	161,283	341,074	1,017	20,125	22,601	243,455	1,219
	1998/99	231,756	348,763	8,107	26,358	20,990	268,017	841
	1999/00	205,237	285,789	451	21,932	26,601	225,851	640
Oshana	1996/97	51,258	129,399	4,762	11,357	11,957	109,421	0
	1997/98	58,634	149,322	2,176	13,257	10,984	161,579	246
	1998/99	104,222	242,223	5,055	18,019	16,115	193,250	0
	1999/00	75,447	198,442	6,485	17,899	14,996	142,288	868
Omusati	1996/97	113,819	265,587	16,753	18,172	35,851	179,636	92
	1997/98	164,199	283,164	21,315	20,890	58,213	228,278	442
	1998/99	225,610	328,577	23,172	24,494	51,059	222,376	1,611
	1999/00	156,827	298,529	20,897	20,795	31,605	199,686	1,246

Source: CBS, 2001

### 3.7 CROP PRODUCTION

In Oshana region, despite the insufficient and erratic rainfall and low soil fertility, crop farming also plays a significant role in the farming sector. Many farmers in the region grow crops such as pearl

millet, sorghum, cowpeas, watermelons, bambaranuts and groundnuts. These crops are grown on dryland fields where they depend on rainfall for moisture. The harvest may be consumed by the farming household or sold at local markets. In good years it will be stored for possible use in years when food is in short supply. There are a few farmers along the canal that supplies water to Oshakati who grow some horticultural crops such as cabbage, tomatoes, spinach, onions, chilli, green peppers and sweet potatoes. These vegetables are used for home consumption and can be sold to the local markets to earn money.

**Table 2. Millet and Sorghum grain production (Metric Tons) in North Central Division**

Region	Production Season	Area Planted ('000 ha)	kg/ha	Yield ('000 mt)
Oshikoto	1994/95	65.0	100	6.5
	1995/96	65.0	100	6.5
	1996/97	66.0	380	25.1
	1997/98	52.8	170	9.0
	1998/99	56.1	150	8.4
	1999/00	61.2	400	24.5
	2000/01	58.1	296	17.2
	2001/02	50.0	160	8.0
	2002/03	62.7	240	15.0
Ohangwena	1994/95	85.0	175	14.9
	1995/96	89.0	235	20.9
	1996/97	89.7	350	31.4
	1997/98	85.0	150	12.7
	1998/99	85.2	190	16.2
	1999/00	75.3	312	23.5
	2000/01	71.5	250	17.9
	2001/02	60.5	160	9.7
	2002/03	84.4	250	21.1
Oshana	1994/95	35.0	120	4.2
	1995/96	35.0	185	6.5
	1996/97	39.0	330	12.9
	1997/98	31.2	150	4.7
	1998/99	37.1	160	5.9
	1999/00	41.0	284	11.6
	2000/01	36.9	255	9.4
	2001/02	31.5	150	4.7
	2002/03	32.0	170	5.4
Omusati	1994/95	90.0	90	8.1
	1995/96	72.0	250	18.0
	1996/97	91.8	350	32.1
	1997/98	64.3	140	9.0
	1998/99	64.2	150	9.6
	1999/00	78.0	185	14.4
	2000/01	70.3	295	20.7
	2001/02	60.0	140	8.4
	2002/03	73.4	170	12.5

Source: Namibia Early Warning and Food Information Unit, 2003

**Table 3. Pearl millet and Sorghum Average Yields per Season**

<b>SEASONS</b>	<b>MAHANGU/SORGHUM Kg/ha</b>
1998/1999	160
1999/2000	284
2000/2001	255
20001/2002	150
2002/2003	170

The table above for Pearl millet and Sorghum, provided by the Namibia Early Warning and Food Information System, indicates the variation in average yields of grain crops in the region. This variation is mainly due to erratic rainfall and dry spells during those years.

### **3.8 FOOD SECURITY**

Food security is achieved when people have reliable access to the safe and nutritious food necessary to lead an active and productive life. It mainly reflects levels of poverty and is mainly determined by access to productive resources and income earning opportunities. Under-nutrition affects both physical and mental growth and development particularly in children.

In Oshana region, although many households get their income from different sources such as pensions, remittances and the selling or exchange of agricultural products, they also spend money on buying food for household consumption, school fees, hospital fees and for funeral services.

## 4. AGRICULTURAL EXTENSION SERVICES IN OSHANA REGION

### 4.1 MISSION AND STRATEGY

The Ministry of Agriculture, Water and Rural Development aims to promote and facilitate the environmentally sustainable development, management and utilization of water and agricultural resources to achieve sound socio-economic development together with all citizens.

To implement the mission statement of Ministry of Agriculture Water and Rural Development (MAWRD), the Directorate of Extension and Engineering Services (DEES) has the following main objective;

- ◆ To provide Agriculture extension services to farmers in the form of information communication, advisory and training services.

The DEES uses a logical framework to help manage the extension programme. The log frame is also used as a planning tool to implement and carry out the extension activities. It is based on government agricultural policies and the National Development Programme (NDP2). In Oshana region, the Annual Work Plan and Budget, is prepared based on the activities set out in the log frame. Within this log frame 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 in the table below.

**Table 4. Extension logical framework**

<b>GOAL</b>	
<b>Improve food security at household and national levels</b>	
(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.)	
<b>PURPOSE</b>	
Farmers have achieved increased and sustainable agricultural production and increased incomes deriving from agriculture.	
<b>OUTPUTS</b>	<b>ACTIVITIES</b>
1. Improved agricultural technology and practice options are available to stakeholders	<ul style="list-style-type: none"> <li>❖ Development of relevant agricultural technology</li> <li>❖ Development of information on relevant agricultural technologies</li> <li>❖ Dissemination of information on relevant agricultural technologies to create awareness and interest.</li> </ul>
2. Relevant farmer support information is available	<ul style="list-style-type: none"> <li>❖ Inform farmers on agriculture-related policy issues, input and product markets, and complementary service provision and on related value added opportunities, and complementary off-farm livelihood opportunities</li> </ul>
3. Human resources in the agricultural sector are developed	<ul style="list-style-type: none"> <li>❖ Farmer training in technical, management and facilitation skills</li> <li>❖ Staff of DEES and partners training in</li> </ul>

	technical, management and facilitation skills
4. Agricultural institutions and organisations are strengthened towards improved service delivery	<ul style="list-style-type: none"> <li>❖ Facilitate CBO formation, provide training in technical and management skills and support CBO projects</li> <li>❖ Management information systems</li> <li>❖ Efficient use of personnel, financial, logistical, infrastructure and material resources</li> </ul>
5. Co-operation between partner organisations is improved	<ul style="list-style-type: none"> <li>❖ Information sharing (documents and meetings), joint planning and co-ordinations, joint-planning and collaboration</li> </ul>

## 4.2 KEY EXTENSION APPROACHES

To improve the food security situation in Oshana region, the MAWRD, through the DEES, assists farmers by providing agricultural information, communication, advisory and training services. For the proper rendering of agricultural extension services to the most beneficiaries (farmers), one of the approaches which the Directorate of Extension and Engineering Services uses in Oshana region is the Farmer Extension Development (FED) group approach. Agricultural extension technicians (AETs) work with these groups in introducing new technologies (such as use of draught animal powered (DAP) technologies and new crop varieties) to farmers, mainly by conducting on-farm trials and demonstrations, and by providing training on various technical issues and by conducting study tours.

The DEES's technical staff also assist farmers to set up vegetable projects whereby farmers grow a variety of vegetables such as cabbage, tomatoes, onions, carrots, etc. The vegetables can improve the diet and the nutritional content of the food of people living in Oshana region. Another strategy the DEES uses in Oshana region is to focus on the strengthening of co-operatives and community based organizations, assisting them, for example, in conducting agricultural shows and fairs. Farmers are also assisted in agricultural marketing issues mainly through providing information to them on issues such as prices and by organising auctions. The use of mass media is another extension method which is used to inform farmers on new agricultural development technologies, meetings, agricultural shows, field days and auctions.

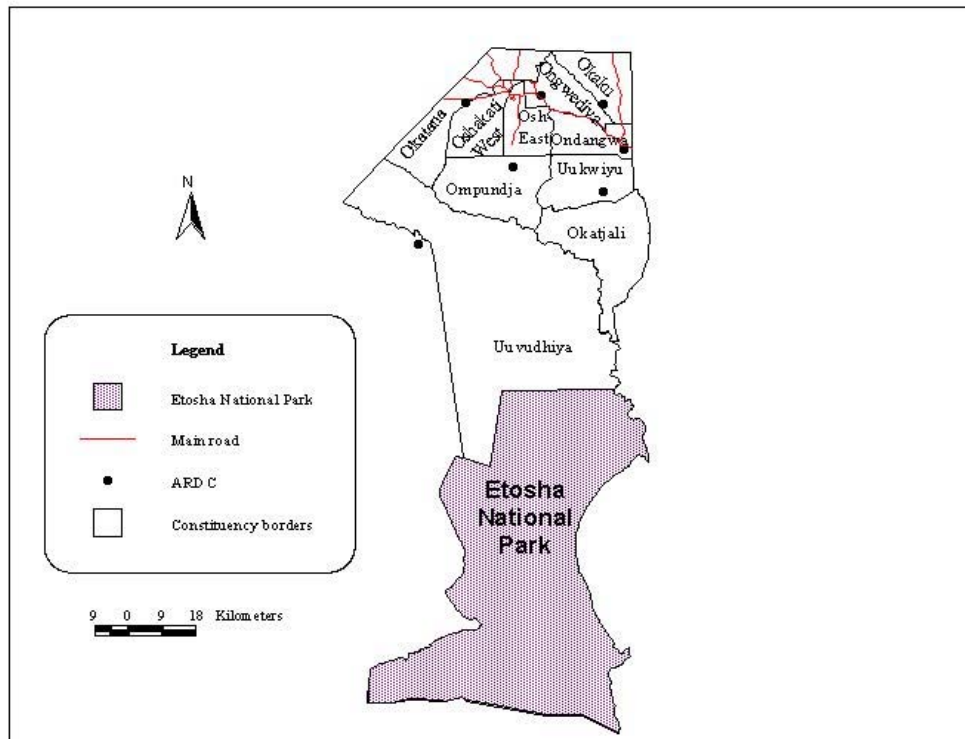
## 4.3 DEES COMPOSITION IN THE REGION

The professional staff structure in Oshana region comprises of a Chief Agricultural Extension Officer (CAEO), assisted by 3 Agricultural Extension Officers (AEO) and 1 Chief Agriculture Extension Technician (CAET). There are also 10 Agricultural Extension Technicians (AET) based at various Agricultural Rural Development Centres (ARDC). They are in direct contact with farmers on day-to-day activities. The farmers' ratio covered by Agriculture Extension Technicians in the region is high. One Agriculture Extension Technician is expected to give services up to about 1,700 farmers (see section 3.3).

The region's post establishment, excluding labourers, is shown below.

**Table 5. Post establishment for the DEES personnel in Oshana region.**

POST	TOTAL	FILLED	VACANT
CAEO	1	1	-
CAET	1	1	1
AEOs	3	3	-
AETs	11	11	-
Clerical Assistant	2	2	-
Operational Drivers	2	2	-



#### 4.4 ARDCs IN OSHANA REGION

For the proper rendering of agricultural extension services to farmers in Oshana region, the MAWRD through the DEES has established seven Agricultural Rural Development Centers (ARDCs) that cover all the constituencies within the region. All the ARDCs are manned by qualified Agricultural Extension Technicians (AETs) who are holders of Diplomas in Agriculture. The main responsibilities and duties of the AETs based at ARDCs are to interact on a day to day basis with farmers, giving them agricultural information, technical advice, information on new technologies and training them.

The seven Agricultural Rural Development Centers are indicated in the map above: Ongwediva, Ondangwa, Uukwiyu-Uushona, Okaku, Uukwangula, Ompundja Onkani,.

#### **4.5 OPERATIONAL EQUIPMENT**

All technical staff are equipped with vehicles in order to carry out agricultural extension activities. There are computers in four offices within the region, which enable the technical staff to compile their monthly, quarterly and annual reports, and also technical reports. There is also one set of audio-visual equipment at the head office which can be used by all technical staff on request.

#### **4.7 DONOR PROJECTS**

Since the mid-1990s a number of projects were operated by the DEES in the region. These included the Northern Namibia Rural Development Project (NNRDP), Sustainable Animal and Range Development Program (SARDEP), Rural Development Support Program (RDSP), Northern Regions Livestock Development Project and DAN Church Aid. All donor-supported projects mentioned above have phased out before the beginning of NDP2 except the NOLIDEP that will end up at March 2004.

#### **4.8 MAIN COLLABORATORS**

Within the MAWRD, DEES is collaborating with the Directorate of Veterinary Services, the Directorate of Agricultural Research and Training, and the Directorate of Rural Water Supply. The Directorate shares some of its Agricultural Development Centres with DVS, DRWS and DART. The four directorates work actively together to improve the living standards of the regional communities through collective training, conducting of meetings, on-farm trails and demonstrations, and other necessary assistance. In addition, not only do the DEES share its offices with the above-mentioned Directorates, but it also shares other infrastructures such as conference rooms and auction pens during farmers training, and research stations during farmers' exposure visits and warehouses.

The DEES is also collaborating with other Ministries e.g., Ministry of Environment and Tourism, Ministry of Land, Resettlement and Rehabilitating, Ministry of Regional, Local Government and Housing.

Good collaboration exists between the DEES and the regional council of Oshana region. Other collaborators are the non-governmental organizations (NGOs) such as Namibia National Farmers' Union (NNFU) and Parastatals; e.g. MeatCo and Meat Board.

## **5. SURVEY METHOD**

### **5.1 RATIONALE METHOD**

The Directorate of Extension and Engineering Services of the Ministry of Agriculture, Water and Rural Development decided to conduct a survey to assess the impact of extension activities rendered to farmers in the region. This is a report on a baseline study designed to survey selected indicators of extension impact during the 2002 / 2003 farming season. We intend to repeat this survey after the 2006 / 2007 seasons 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.

### **5.2 OBJECTIVE OF THE SURVEY**

They has the following objectives:

- To assist the agricultural extension services to judge the extent to which resources will be allocated and to produce findings of interest to the Directorate of Extension and Engineering Services (DEES) managers to assist them to steer their programs and to acquire more resources.
- To provide information to external stakeholders. These stakeholders include planners and policy makers in the Ministry of Agriculture Water and Rural Development (MAWRD) and other Ministries, farmers union and others who are interested to see that extension services are having an impact.

### **5.3 DEVELOPMENT OF QUESTIONNAIRE**

The questionnaire was developed by Agricultural Extension Officers (AEOs) from the region in consultation with other Agricultural Extension Officers from other north central regions and countywide. The questionnaire contained sections on such issues as farmers characteristics, farmers extension contact, and extension impact in terms of farmer awareness and adoption of extension recommendations on matters such as livestock production and marketing, crop production, inputs (seeds and fertilizers), use of draft animal power (DAP), farmers training, use of mass media and animal health.

In Oshana region, the questionnaire was pre-tested in two constituencies namely Uuvudhiya and Uukwiyu-Uushona. Pre-testing involved interviewing farmers from Farmers and Extension Development (FED) Groups and also farmers who do not belong to FED groups. After administering the pre-test questionnaire it was observed that 25% of farmers in non-Fed groups had difficulties to answers the questions, while only 5% of those who are in FED groups had problems to answer the same questions. It was concluded that a few changes were necessary due to sensitive issues that were included and the irrelevance of some questions.

### **5.4 SAMPLE SELECTION**

The Oshana region was classified into three major farming system areas (FSA). The classification was based mainly on the following heterogeneous characteristics: socio-economic aspects, population density, farming enterprises (e.g. types of livestock and crops), farm size, number of

household per constituency, soil type, type of ephemeral rivers and pans, rainfall and vegetation type.

The three major farming system areas are described as follows:

**South and south-east parts (A)**

The south and south-east part consists of Uuvudhiya, Uukwiyu-Uushona and Okatjali constituencies. The area is characterized by semi-desert agro-ecology. The total number of rural households is approximately 4,228, which is fewer than other areas. The area hosts high numbers of livestock and is considered as cattle posts area. The soil is characterized by sand and loam soils. There are ephemeral rivers, lake and pans, but in general the area can receive normal rainfall

**Northern part (B)**

The northern part consists of Okaku and Okatana constituencies. This part has a number of approximately rural 5,570 households, and includes many farms but they are often relatively small in size. Low numbers of livestock are found in the area. The soil is characterized by sandy-clays and loams. This part has relatively high rainfall due to tropical moisture conditions. There are a few more ephemeral rivers and pans compare to southern part.

**Western part (C)**

The western part consists of Oshakati west constituency and western part of Okatana constituency with a total of approximately rural 4,309 households. This area is heavily populated because it surrounds Oshakati town. There are few livestock. This part receives fairly high rainfall, and there are many ephemeral rivers and pans. The soil is characterized by sandy-loam soil.

Within each of the above farming system areas, two to four communities or villagers were selected using simple random sampling methods. Communities selected included those with active FED groups and those without active FED groups. The number of farmers sampled per farming system area was in proportion to the total number of farming households in the farming system area, as given above. It should be noted that these numbers are significantly lower than those derived from the 2001 Population Census, which produced its results at a later stage. However, the proportion of farming households in each part is thought to have remained more or less the same. Farmers were selected for interview within these communities based on random sampling.

The table below shows the percentage of the total questionnaires applied by constituency.

Total sample size: 228	
<b>Constituency</b>	<b>Total</b>
Uuvudhiya	21.7%
Uukwiyu-Uushona	20.4%
Okaku	22.6%
Okatana	10.4%
Oshakati west	24.4%

**Participation in FED group**

It was originally intended that all the findings data should be disaggregated so that a comparison could be made between those farmers who participate in or were members of FED groups and those not. This was because sampling was designed so that approximately 50% of the respondents were farmers reside in areas in relatively close contact with extension services and in which Farmers Extension

Development (FED) groups are active, and approximately 50% of respondents were sampled in areas in which FED groups are not active (these are referred to in this report as non-FED group farmers).

This was done in order to test the hypothesis that farmers who are in areas where FED groups are active have responded better to extension information and advice (in terms of their knowledge, attitudes and adoption of technology and practices recommended by extension) than those who were not. This is of interest because the extension strategy involves concentrating considerable support on FED groups. If we find that results are better for FED group members and the areas in which they are active, this indeed supports the strategy, as it implies that extension is succeeding. Non-group farmers and their areas can be said to act as a 'control' group, who have received little or no direct support.

To be able to draw such conclusions we needed to do the following:

First, we needed to cross tabulate the results of our questions on FED group area with the results of all the questions in section A on farmer type. We would hope that we could say from the comparison of farmer type indicators that both sets of farmers ("group" and "non-group") are basically the same type of farmers (e.g. the frequency of responses in the two different groups is reasonably similar).

We could then say that differences in terms of contact and impact indicators (in sections B and C) are likely to be due to the variable we are looking at (e.g. participation in FED group or residence in FED group area) rather than any other intrinsic difference related to farmer type.

In the event, this has not been possible, as enumerators did not indicate which of the respondents were in FED group areas and which not. What we do know however is that of the total sample of 228 farmers only 21 (<10%) indicated that they were FED group members, while 207 indicated that they were not.

## **5.5 PREPARATION OF FIELD IMPLEMENTATION**

Before the implementation of the questionnaire in the field, there was a need to recruit the interviewers or enumerators. These enumerators were selected and recruited according to the following procedures. The requirement for the candidates was Grade 12 and Diploma holder in Agriculture or Grade 12 plus experience of conducting surveys. Many candidates turned up with the necessary requirements. They sat a written interview. The four candidates were selected.

Before these enumerators went to conduct the interviews in the field, the Agricultural Extension Officers of the region who had taken part in the drafting and setting up of the questionnaire, trained them. The enumerators were trained on the following topics or issues:

- Understanding the overall purpose of the survey,
- Understanding the survey process or steps,
- Understanding the purpose of all individual questions
- Being able to explain to the respondents (farmers)
- Confidentiality, its importance of questionnaire to the respondents
- How to introduce themselves
- How to ask questions
- How to behave with respondents
- How to react to difficult farmers

## **5.6 QUESTIONNAIRE IMPLEMENTATION**

Before the enumerators conducted the survey in the field, the field-based AETs were informed by the AEOs about the survey. AETs were asked to inform the regional councillors of their respective constituencies, and the headmen of the communities selected for survey.

The implementation of the questionnaire in the field took 10 working days, including the training of the four enumerators. It was observed that the interviews took between 35 to 45 minutes per questionnaire depending on the understanding and ability of the respondents.

Each enumerator interviewed a minimum of 6 farmers per day and up to 8 farmers. These gave the total number of questionnaire to be a minimum of 24 per day.

## **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.

Lastly, 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.

## PART THREE

### 6. SURVEY FINDINGS

Percentages are calculated based on valid responses and excluding missing data. The total sample size was 228.

#### 6.1 FARMER TYPE

As already noted in section 5, 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 that comprise the sample. These questions are asked (i) as a check on the representative-ness 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/ 2007), 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 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 before.

##### 6.1.1 Distance from ADC

**Table 6.1. Distance of Farmer from ADC**

Variable	Category	Total
Distance from ADC	< 5Km	19.0%
	6-10Km	33.9%
	11-20Km	34.8%
	> 20Km	12.2%

Table 6.1. Indicates that of the total sampled, 19% of respondents explained that they lived less than 5 km from the nearest ADCs, while 33.9% lived between 5 and 10 kilometres from the ADCs. The 34.8% of respondents lived between 10 and 20 km and only 12.2% lived more than 20 kilometres from the ADCs.

### 6.1.2 Sex of Respondents

**Table 6.2. Selected Farmer Type Variables**

Variable	Category	Total
Sex of respondent	Male	26.2%
	Female	73.8%

It was observed that about three-quarters or 73.8% of the respondents were women. This corresponds approximately with our knowledge of the area, where we find that men are often away from home for various reasons.

### 6.1.3 Age of Respondents

**Table 6.3. Age of Respondents**

Variable	Category	Total
Age of respondent	15-30	19.0%
	31-45	21.3%
	46-60	25.8%
	>60	33.9%

Table 3 indicates that the highest percentage of respondents (33%) are farmers who are more than 60 years while the smallest percentage of interviewers is between 15 – 30 years old. This could have an influence on extension impact because it is often experienced that elderly people are more conservative when it comes to change their farming practices and habits. On the other hand, senior citizens often give accurate and reliable information concerning the farming practice due to their farming experiences.

### 6.1.4 Household Head

**Table 6.4. Household Head**

Variable	Category	Total
Household head	Man	67.0%
	Woman	33.0%

Table 4, above, reveals that 67% of respondents reported that the head of household was male while 33% reported it was female. Traditionally, men are the household head. Nowadays, women are increasingly becoming the head of household due to the absenteeism and death of husbands. Indeed the 2001 Population Census report reveals that overall in the Oshana region 54% of households are female headed. This higher regional figure may reflect the relatively higher numbers of female headed households found in urban areas.

### 6.1.5 Education Level

**Table 6.1.5. Education level of Respondent**

Variable	Category	Total
Education level of respondent	Primary	71.0%
	Secondary	15.4%
	Tertiary	4.1%
	No school	9.5%

Table 5 above shows that 71% of respondents have had only part or complete primary school education, while 15.4% had secondary school education. 4.1% managed to go to tertiary education. 9.5% of farmers interviewed never attended school. This indicates that many farmers interviewed end up in primary school and few percentages have tertiary education level. There fore, the response we got differs according to farmer’s level of education and understanding of Agricultural technologies.

**6.1.6 Highest Education Level of a Member in the Household**

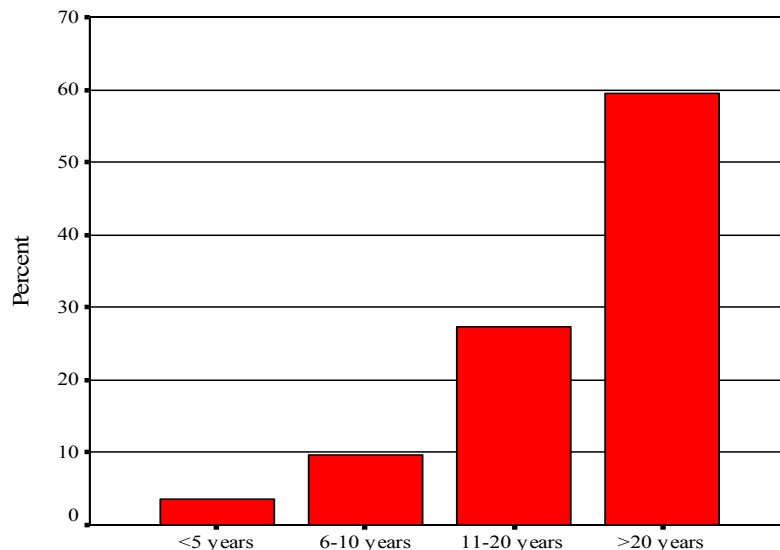
**Table 6.1.6. Highest education level of a member in the household**

Highest education level of Primary a member in the household	37.5%
Secondary	46.7%
Tertiary	13.3%
No school	2.5%

The table above indicates that 46.7% of households have a member who has undertaken part or complete secondary education. 13.3% of respondents’ households have a member who has tertiary education. This is of relevance to the design of extension materials such as pamphlets and posters, which could target more formally educated household members in the expectation that the information they contain is passed from a more educated household member to on to the less educated head of household.

**6.1.7 Respondent Farming Experience**

**Figure 6.1.7 Respondent Farming Experience**

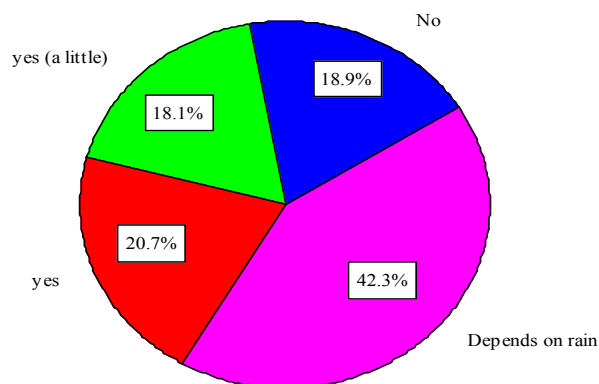


Variable	Category	Total
Respondent farming experience	<5 years	3.6%
	6-10 years	10.0%
	11-20 years	27.6%
	>20 years	58.8%

The figure above indicates that 58% of farmers have more than 20 years of farming experience. This experience is something that extension services need to take advantage of in designing their interventions.

**6.1.8 Farming Income Satisfies Basic Household Needs**

**Figure 6.1.8 Farming Income Satisfies Basic Household Needs**



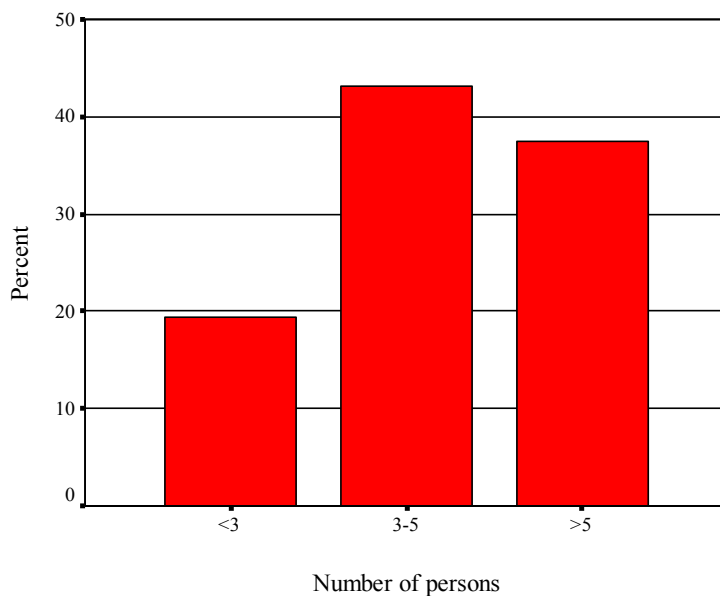
Variable	Category	Total
Farming satisfies basic household needs	yes	20.8%
	Yes (a little)	17.6%
	No	19.0%
	Depends on rain	42.5%

The survey revealed that 42.5% of respondents indicated that their farming income satisfies their basic household needs in a good rainfall year (“depend on rain”). 20.7% explained that their farming income satisfy their basic needs. Only 18.9% of respondents stated that their farming incomes never satisfy the household basic needs.

**6.1.9 Persons in the Household Helping Regularly with Farm Work**

Variable	Category	Total
Persons in the household helping regularly with farm work	<3	19.0%
	3-5	43.4%
	>5	37.6%

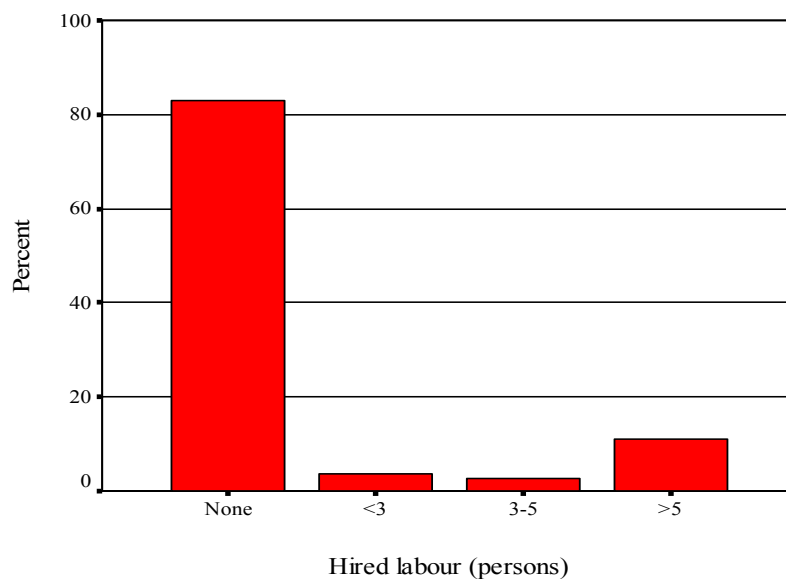
**Figure 6.1.9 Persons in the Household Helping Regularly with Farm Work**



44% of farmers interviewed indicated that they have between 3 to 5 persons who assist regularly with farm work, while 36% of respondents indicated they have more than 5 persons to assist with farm work as family labour. Only 19% of respondents explained that they have less than three persons helping regularly as farm labour.

**6.1.10 Hire Labour**

**Figure 6.1.10 Hired Labour**

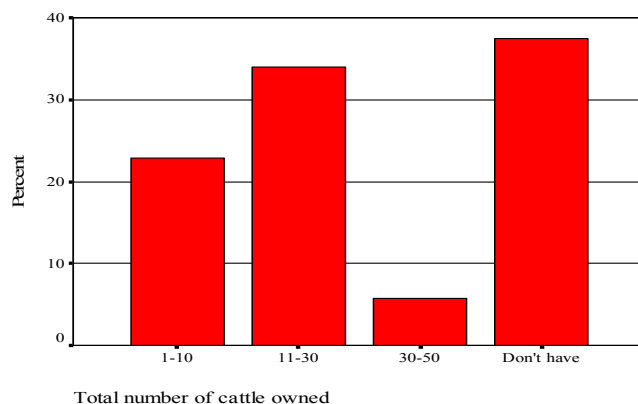


Variable	Category	Total
Hired labour	None	83.3%
	<3	3.6%
	3-5	2.7%
	>5	10.4%

83% of farmers interviewed do not use hired labour for farm work. Hired labour involves a lot of money and communal farmers cannot afford to pay.

### 6.1.11 Cattle Ownership

**Figure 6.1.11 Cattle Ownership**



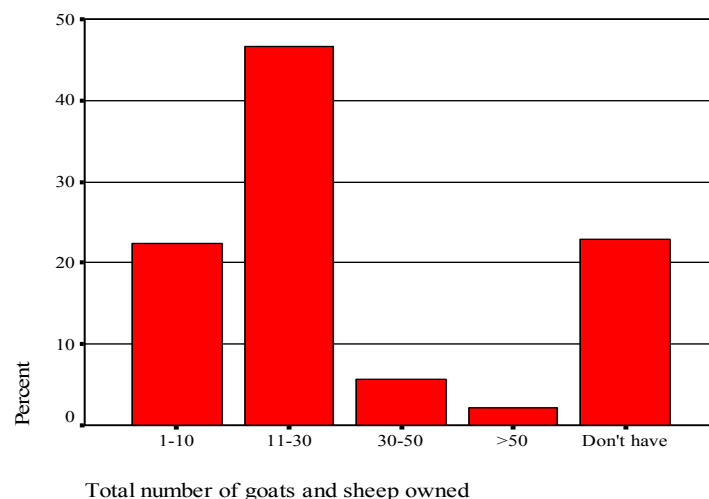
Variable	Category	Total
Total number of cattle owned	1-10	22.6%
	11-30	33.9%
	30-50	5.9%
	Don't have	37.6%

The survey revealed that about 6% of farmers interviewed indicated that they own cattle more than 30 head of cattle, which may be considered the minimum herd size with which to practice systematic production aimed at the market. 34% own between 11- 30 cattle, while 23% of respondents own between 1-10 cattle. 38% of respondents did not own any cattle.

It may be noted that farmers are sometimes reluctant to reveal the true extent of their cattle ownership to enumerators.

### 6.1.12 Goats and Sheep Ownership

**Figure 6.1.12 Goats and Sheep Ownership**



Variable	Category	Total
Total number of goats and sheep owned	1-10	22.2%
	11-30	47.5%
	30-50	5.9%
	>50	2.3%
	Don't have	22.2%

47.5% of farmers interviewed own between 11 and 30 goats or sheep, 23% of farmers own between 1 and 10 goats or sheep. 6% of respondents own between 30 and 50 goats. Only 2.3% of farmers interviewed indicate that they own more than 50 goats or sheep, while 23% don't own either goats or sheep. It may be observed that many farmers own between 11 and 30 small stock, while those who own more than 50 goats or sheep are few.

### 6.1.13 Ownership of Other Livestock

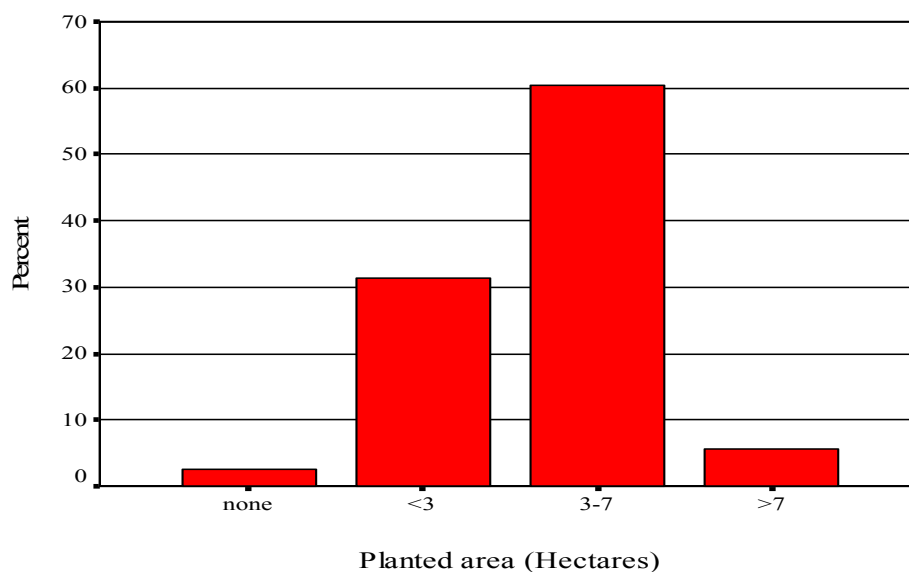
**Table 6.1.13 Ownership of other livestock**

Variable	Category	Total
Total number of donkeys/horses owned	1-10	34.4%
	11-30	3.6%
	Don't have	62.0%
Total number of poultry owned	1-10	61.5%
	11-30	26.7%
	30-50	1.4%
	Don't have	10.4%

38% of respondents own donkeys and/or horses. Again, this may be an instance where respondents are reluctant to reveal their ownership.

### 6.1.14 Crop Production

**Figure 6.1.14 Crop Production**

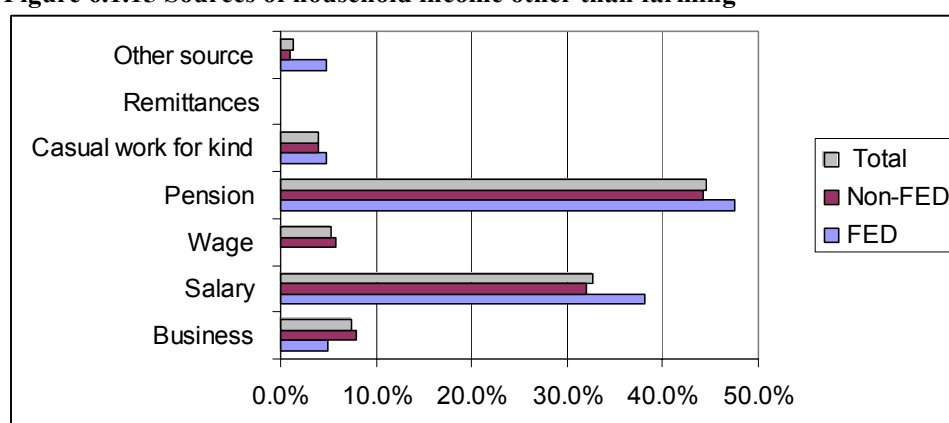


**Table 6.1.14 Crop Production**

Variable	Category	Total
Total area planted in 2002/2003	None	2.7%
	<3	31.2%
	3-7	60.2%
	>7	5.9%

Table 6.1.14 shows that 31.2% of farmers interviewed indicated they cropped less than 3 ha in the previous season, while 60.2% indicated that their field size was between 3 to 7 hectares. 9.5% of farmers responded that their field size was more than 7 hectares. It should be noted that enumerators did not corroborate these figures with visual inspection, and farmers were often not aware of the size of one hectare (in these cases enumerators tried to explain).

### 6.1.15 Sources of Household Income other than Farming

**Figure 6.1.15 Sources of household income other than farming****Table 6.1.15 Sources of Household Income other than Farming**

Variable	Category	Total
Business	yes	7.2%
	no	92.8%
Salary	yes	32.1%
	no	67.9%
Wage	yes	5.4%
	no	94.6%
Pension	yes	44.3%
	no	55.7%
Casual work for kind	yes	4.1%
	no	95.9%
Remittances	no	100.0%
Other source	yes	.9%
	no	99.1%

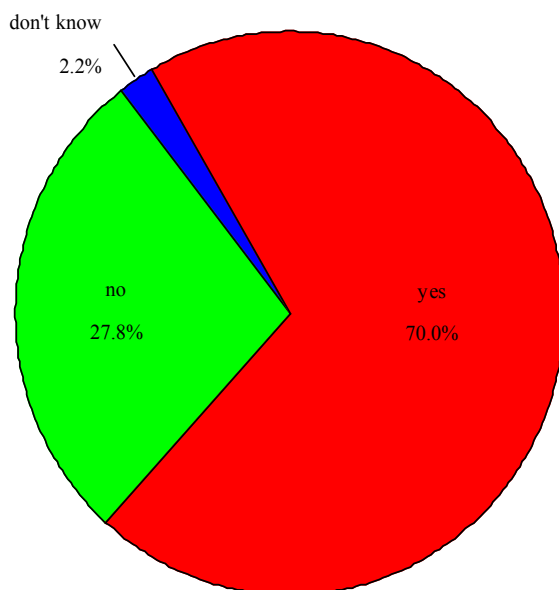
Households usually rely on various sources of income. It can be seen that pensions and salaries are the most common main sources of income other than farming. The reliability of the answers recorded on the matter of remittances is doubtful.

## 6.2 FARMER EXTENSION CONTACT

The questions reported 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 Farmer Awareness of Agricultural Extension Technician

**Figure 6.2.1 Farmer Awareness of Agricultural Extension Technician**

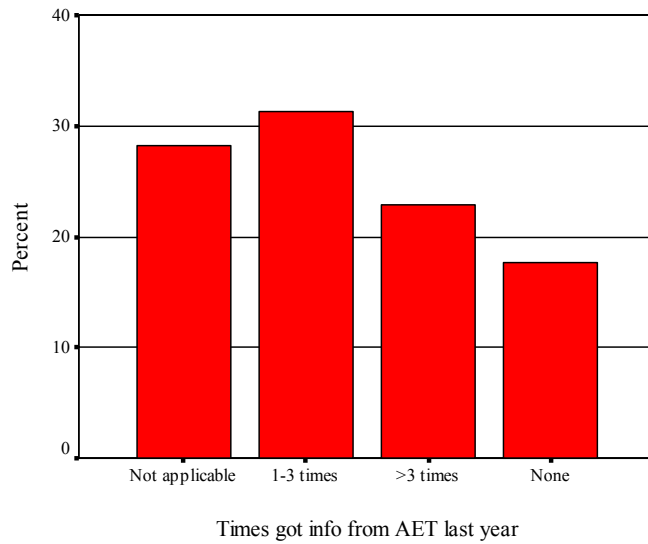


Variable	Category	Total
Extensionist (AET) exists and works in the area	Yes	71.9%
	No	25.8%
	Don't know	2.3%
There should be an AET in your community	Yes	26.7%
	No	56.1%
	Not applicable	17.2%

72% of farmers interviewed knew that an AET is working in their community. 28% of respondents said that they don't have a technician in their area or did not know.

### 6.2.2 Times farmer Got Information from AETs

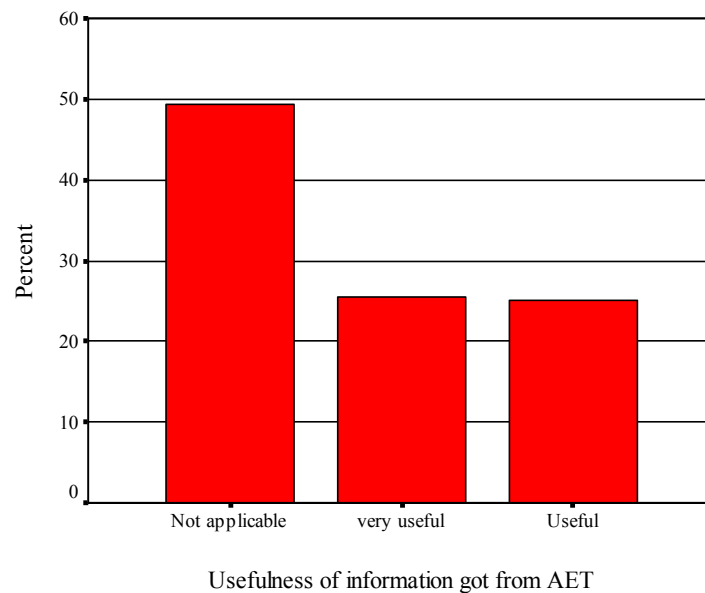
**Figure 6.2.2. Times farmer Got Information from AETs**



Variable	Category	Total
Times got info from AET last year	Not applicable	26.7%
	1-3 times	32.1%
	>3 times	23.1%
	None	18.1%

### 6.2.3 Usefulness of Information Got from AETs

**Figure 6.2.3. Usefulness of Information Got from AETs**

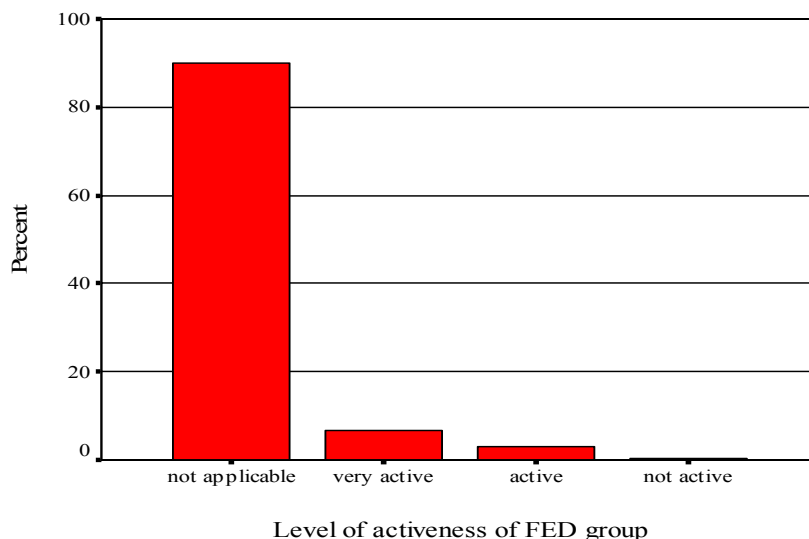


Variable	Category	Total
Usefulness of information got from AET	Not applicable	48.4%
	very useful	26.2%
	Useful	25.3%

Altogether some 51.5% of respondents said that information received from extension was useful or very useful.

### 6.2.4 Farmer Perception of Activeness of FED Group

Figure 6.2.4 Farmer Perception of Activeness of FED Group



Variable	Category	Total
Level of activeness of FED group	not applicable	90.5%
	very active	6.3%
	active	2.7%
	not active	.5%

Although the sample was selected so that communities where FED groups were active were included, it appears that few farmers were aware of their existence.

### 6.2.5 Farmer Awareness of Extension Training

Variable	Category	Total
Has heard of farmer training by extension staff	Yes	58.4%
	No	41.6%
Aware (heard of) the training	not applicable	42.5%
	leadership skills	2.3%
	Demonstration	52.0%
	exposure visits	1.8%
	Others	.5%
	Don't know	.9%
Has attended leadership training in	Yes	1.4%
	No	98.6%

The survey showed that farmers are aware of extension activities, particularly demonstrations. Participation in farmer training courses is negligible.

### 6.2.6 Attendance At Other Extension Activities

**Table 6.2.6. Attendance At Other Extension Activities**

Variable	Category	Total
Has attended demonstration	yes	19.5%
	no	80.5%
Has attended exposure visit	yes	2.7%
	no	97.3%
Has attended agric. shows/fairs	yes	.5%
	no	99.5%
Has attended none training	yes	2.3%
	no	97.7%
Has attended other training	yes	.5%
	no	99.5%
After training has applied skills	yes	16.3%
	no	83.7%

Again, participation in extension activities is revealed to be low.

### 6.2.7 Mass Media in Extension

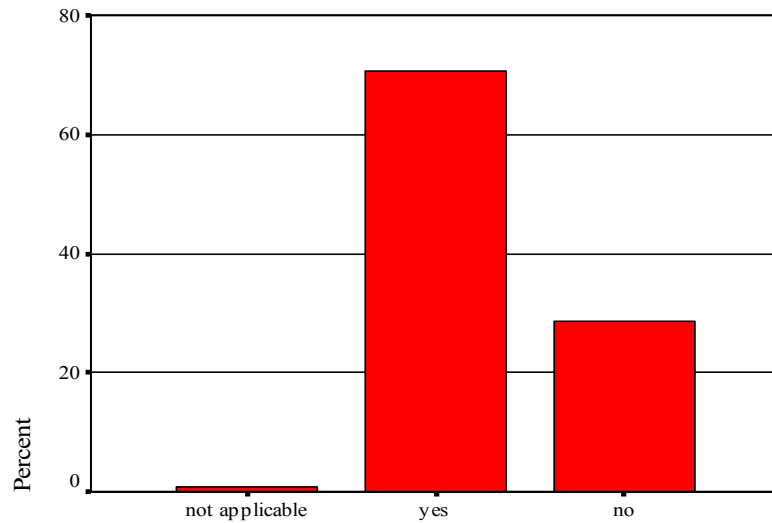
**Table 6.2.7. Mass Media In Extension**

Variable	Category	Total
Got information from radio	Yes	82.0%
	No	
Got information from printed media	Yes	13.6%
	No	86.4%
Got information from TV	Yes	1.9%
	No	98.1%

By contrast with the low levels of participation in extension methods involving direct contact between AETs and farmers, table 6.2.8. shows that 82.% of farmers interviewed stated that they got agricultural information from the radio. 13.6% got agriculture information from the printed materials. TV is of little importance. This is a good indication that if a farmer has a radio, than that farmer is able to listen to agricultural information and communicate such information to others.

### 6.2.8 Farmers stating they are considering new farming practices

**Figure 6.2.9 Farmers stating they are considering new Farming Practice**

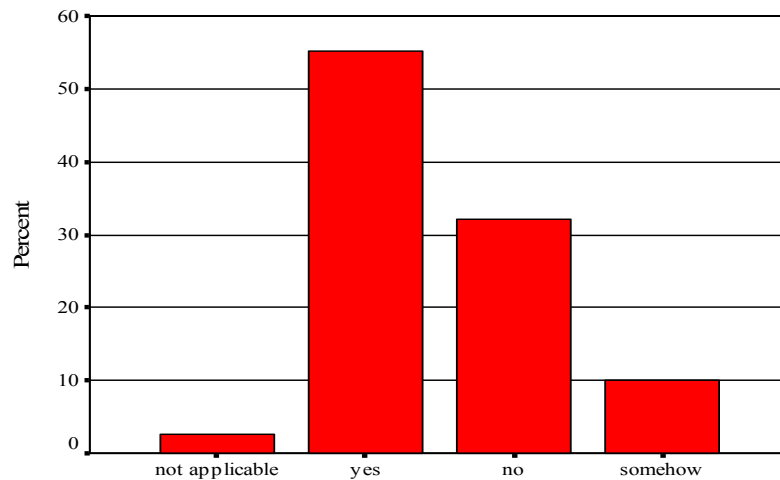


Considering new farming practices

70% of farmers interviewed indicated that they are considering new farming practices. This suggests that farmers are willing to try out innovations which extension services are promoting.

### 6.2.9 Farmers stating they have realized improvements in farming due to extension activities

**Figure 6.2.10 Farmers Stating they have Realized Improvements in Farming due to Extension Activities**



Realized improvements in farming due to extension activities

The figure above shows that 57% of farmers interviewed responded that they have noticed improvement in their farming activities due to extension activities. 32% explained that they have not noticed any improvement due to extension activities.

### 6.3 EXTENSION IMPACT

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 on extension impact indicators.

#### 6.3.1 Crops Grown

**Table 6.3.1 Crops Grown**

Variable	Category	Total
Grew cereal only	Yes	.5%
Grew cereal + cotton	Yes	.5%
Grew cereal + legumes	Yes	97.7%
Grew cereal + vegetables	Yes	39.8%
Grew other crops	Yes	1.8%

The table reveals that most of the farmers interviewed (97.7%) grow cereals and legumes. Only 0.5% of farmers explained that they grow cereals only or cereals and cotton, respectively. It is also important to note that 39.8% indicated that they grow cereals and vegetables.

#### 6.3.2 Use of Improved Crop Seeds

**Table 6.3.2 Use of Improved Crop Seeds**

Variable	Category	Total
Plants local mahangu seed	yes	88.2%
Plants Okashana seed	yes	73.3%
Plants Kangara seed	yes	10.9%
Plants local sorghum seed	yes	86.9%
Plants Macia seed	yes	9.0%
Plants Local cowpea seed	yes	23.1%
Plants Nakare seed	yes	.5%
Plants Shindimba seed	no	100.0%

Table 6.3.2 shows that 88.2% of farmers interviewed indicated that they grow local pearl millet seeds, while 73.3% of farmers use Okashana seed, and 23.1% of farmers use local cowpea seeds.

#### 6.3.3 Sources of Seed

**Table 6.3.3 Sources of Seed**

Variable	Category	Total
Bought seed last year from ADCs	yes	31.7%
Bought seed last year from local trader	yes	34.4%
Bought seed last year from cuca shops	yes	4.1%
Bought seed last year from church parish	yes	.9%
Bought seed last year from elsewhere	yes	2.3%

Table 6.3.3 shows that between 34.4% and 31.7% farmers interviewed used to buy their seeds from local shops or from their local ARDCs. It was also indicated that many farmers do not have access to buy seeds especially the improved varieties.

### 6.3.4 Fertilizer use

**Figure 6.3.4 Fertiliser Use**

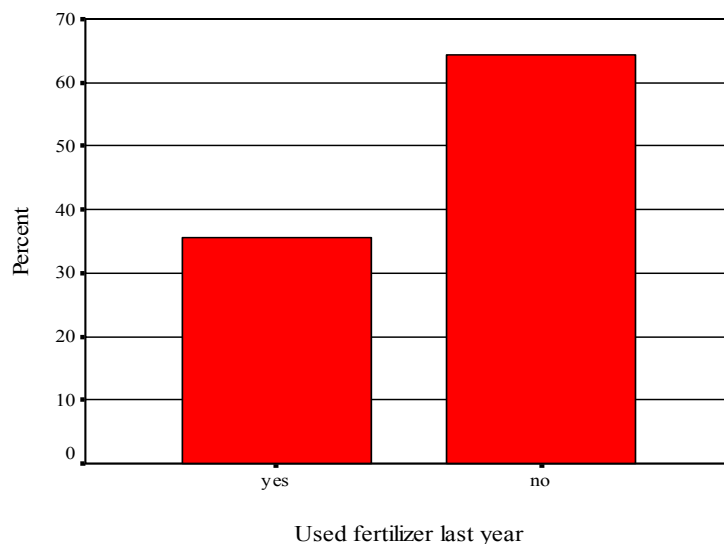


Figure 6.3.4 indicates that 36% of respondents used fertilizer in the preceding year, while 64% did not use it. This represents a relatively high percentage of users in comparison to other regions. The amount used is not explored in this survey.

**Table 6.3.4. Fertiliser Use**

Variable	Category	Total
Knows benefits of fertiliser use	no	38.5%
	to feed crops	57.0%
	to kill pests	4.5%
Used fertilizer last year	yes	35.7%
	no	64.3%
Method of fertiliser application	not applicable	62.4%
	broadcast	3.6%
	top dressing	4.5%
	mixing with seed	29.4%
Buys fertilizer mainly from	not applicable	63.3%
	ADCs	29.0%
	Shops	3.2%
	Elsewhere	4.5%

Table 6.3.4, above, shows that 57% of farmers interviewed explain that they know the benefit of fertilizer use as to feed crops, while 43% said they did not know the benefit of fertiliser use or gave an incorrect answer. Most of those who used fertiliser indicated that they bought fertilizers from the ADCs.

### 6.3.5 Crop Weeding Practice

Figure 6.3.5 Crop Weeding Practice

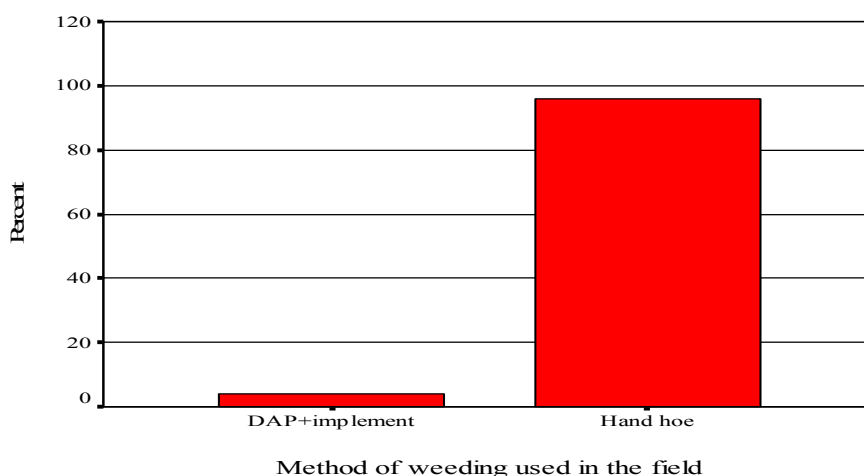


Figure 6.3.5a Farmer thinks that using DAP for Weeding is better than Hand Hoe

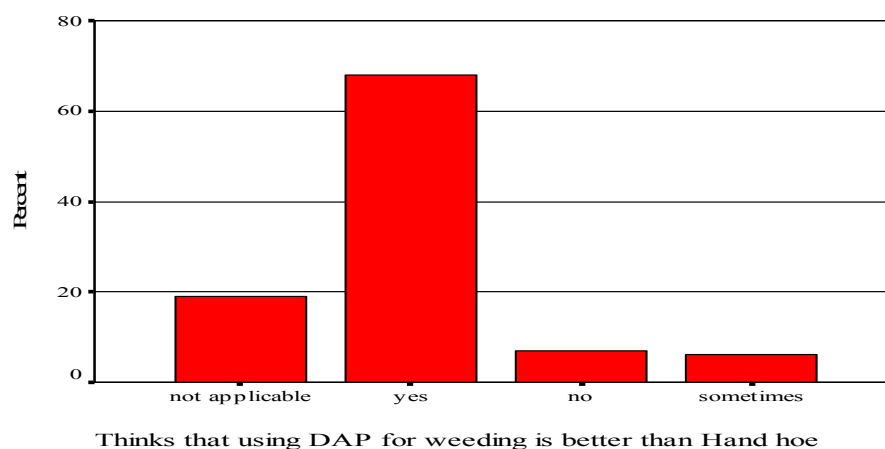


Table 6.3.6. Weeding Methods

Variable	Category	Total
Method of weeding used in the field	DAP+ implement	4.1%
	Hand hoe	95.9%
DAP implements mainly used for weeding	none	95.0%
	Senegalese cultivator	.9%
	BS 41 cultivator	3.6%
	Plough	.5%
Thinks that using DAP for weeding is better than hand hoe	not applicable	18.6%
	yes	67.7%
	no	7.3%
	sometimes	6.4%

Figure 6.3.5, above, indicates that some 96% of farmers interviewed are using hand hoe to weed their fields, while only 4% are using DAP and an implement for weeding. This is clear indication that extension efforts to promote the use of DAP and implement technology is yet to have a significant impact. Figure 6.3.5a reveals that 68% of farmers interviewed indicated that using DAP and implements for weeding is better and faster than using a hand hoe. This suggests a relatively high level of awareness of the technology. Constraints to adoption are likely, therefore, to lie elsewhere, possibly lack of skills or lack of availability of the implements.

### **6.3.7 Crop Storage Method**

**Table 6.3.7 Grain Storage Methods**

Variable	Category	Total
Main type of storage used for produce	Granary	95.5%
	Basket	1.8%
	Metal container	1.4%
	Plastic container	.9%
	Bags	.5%

Table 6.3.7 reveals that 95.5% of farmers interviewed stated that they store their crop grains in traditional mopane granaries, while 1.8% use baskets, 1.4% use metal containers and 0.9% and 0.5% are using plastic containers and bags respectively. Despite the growing shortage of raw materials for making traditional granaries, it appears that farmers still do not believe in storing pearl millet or sorghum in metal or plastic containers.

### **6.3.8 Grain Storage Pest Management**

**Table 6.3.8. Grain Storage Pest Management**

Variable	Category	Total
Method used to minimize pest infestation in stored produce	not applicable	13.1%
	always keep store closed	8.1%
	keep storage basket off the ground	12.7%
	Kill the pest on contact	.5%
	pour ash in the store	65.6%

Table 6.3.8. indicates that 65.6% of interviewees poured ash in their grain store as the method to minimize pest infestation in stored produce. 12.7% and 8.1% kept their storages off the ground, cleaned and closed. Only 0.5% indicated that they kill the pests on contact.

### **6.3.9 Grain Marketing Practice**

**Table 6.3.9. Grain Marketing Practice**

Variable	Category	Total
Sells some of the produce	not applicable	2.3%
	yes	28.1%
	no	69.7%
Produce mainly sold at this type of market	not applicable	70.1%
	open market	11.8%
	agricultural shows + fairs	2.3%
	elsewhere	15.8%
Frequency of produce sales	not applicable	71.0%
	everyday	.9%
	occasionally	26.2%
	once a year	1.8%

28.1% of interviewees reported selling some of their grain produce, while 69.7% indicated that they do not sell any. 11.8% indicated that they sold their produce at open markets, while only 2.3% of interviewers said that they sell their produce at agricultural shows and fairs. 26.2% of farmers reported selling occasionally, 0.9% used to sell every day and 1.8% used to sell their produce once a year.

### 6.3.10 Practice of Castrating Livestock

Figure 6.3.10. Practice of Castrating Livestock

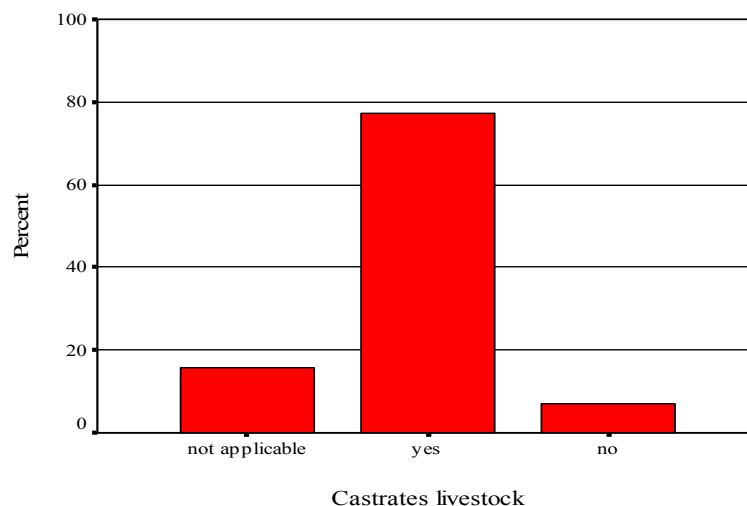


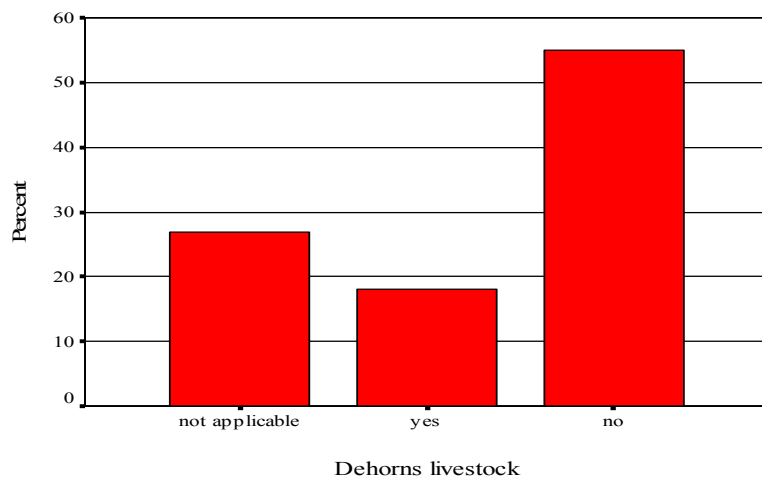
Table 6.3.10. Practice of Castrating Livestock

Variable	Category	Total
Castrates livestock	not applicable	15.8%
	yes	76.9%
	no	7.2%
Main castration method used	not applicable	22.6%
	knife	13.6%
	burdizzo	56.6%
	rubber ring	7.2%

Figure 6.3.10 indicates that 77% of farmers interviewed explained that they use to castrate their livestock, 7.2 % do not castrate their animals, while some 16% do not own livestock. 56.6% of farmers use burdizzo as their main tool to castrate livestock. 13.6% explained that they are still using the knives and 7.2% use rubber-rings (as they are most affordable to many farmers).

### 6.3.11 Practice of Dehorning Cattle

Figure 6.3.11 Practice of Dehorning Cattle



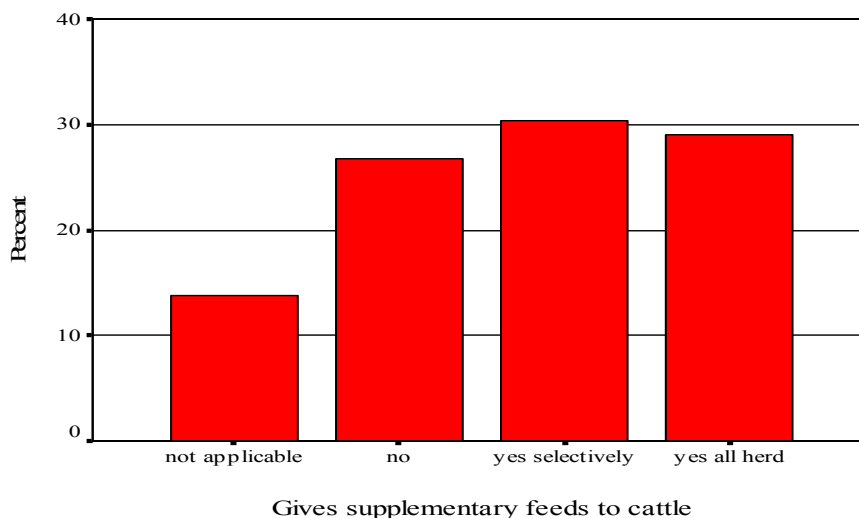
**Table 6.3.11. Practice of Dehorning Cattle**

Variable	Category	Total
Knows benefits of dehorning livestock	not applicable	25.3%
	yes	9.0%
	no	65.6%
Dehorns livestock	not applicable	26.7%
	yes	18.1%
	no	55.2%

The table 6.3.11 reveals that 9.0% of farmers interviewed knew the benefit of dehorning livestock (cattle), 65.6% indicated that they don't know the benefit of dehorning. Only 18.1% indicated that they actually dehorn their livestock.

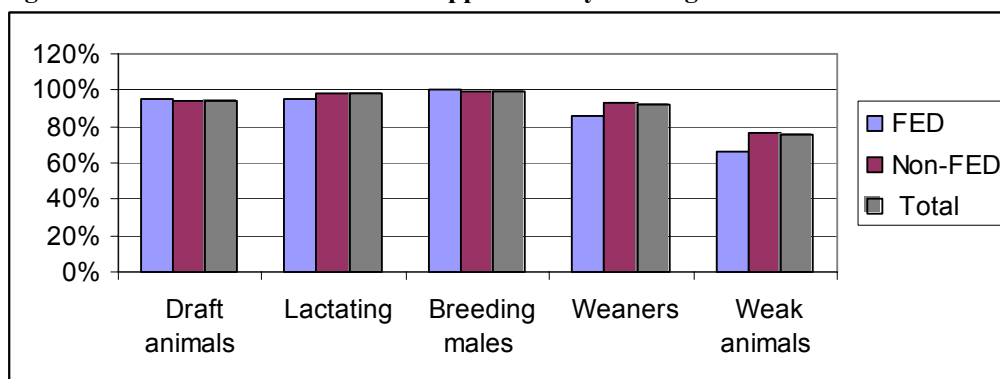
**6.3.12 Practice of Giving Supplementary Feed to Cattle**

**Figure 6.3.12. Practice of Giving Supplementary Feed to Cattle**

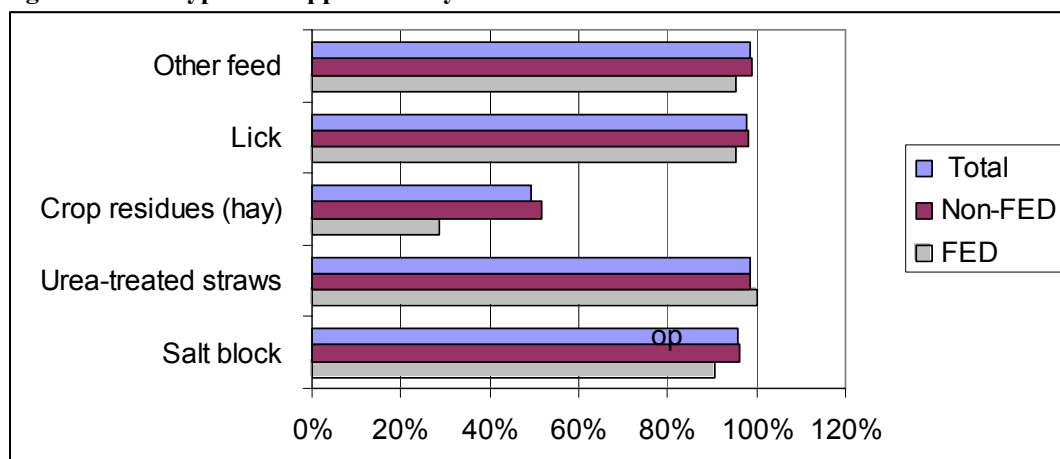


The figure above indicates that 31% of farmers interviewed give supplementary feed to selected animals. 28% of farmers gave supplementary feed to all their animals.

**Figure 6.3.12. Practice of Selective Supplementary Feeding of Cattle**



**Figure 6.3.12. Types of Supplementary Feed Used**



**Table 6.3.12. Supplementary Feeding Practice**

Variable	Category	Total
Knows the benefits of supplementary feeding	not applicable	12.7%
	yes	70.0%
	no	17.3%
Gives supplementary feeds to cattle	not applicable	13.8%
	no	27.1%
	yes selectively	29.8%
	yes all herd	29.4%
Time of supplement feeding	not applicable	99.1%
	dry season	.5%
	throughout the year	.5%

**6.3.13 Vaccination of Cattle**

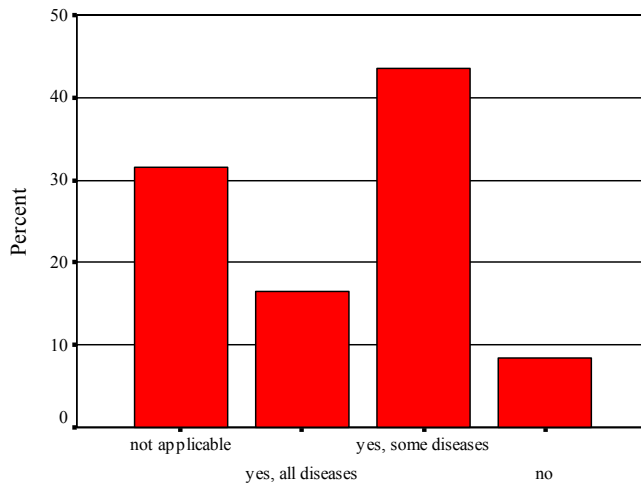
**Table 6.3.13 Vaccination of Cattle**

Variable	Category	Total
Cattle taken to crush pen for vaccination yearly	not applicable	30.3%
	yes	61.1%
	no	8.6%
Reason for not vaccinating cattle	not applicable	91.4%
	no need	3.6%
	no knowledge	4.5%
	crush pen too far	.5%

The table 6.3.13 reveals that 61.1% of interviewers reported taking their cattle to crush pens for vaccination yearly. This is equivalent to all those who reported owning cattle.

**6.3.14 Farmer Knows Schedule of Diseases Livestock are Vaccinated Against**

**Figure 6.3.14. Farmer Knows Schedule of Diseases Livestock are Vaccinated Against**



Knows schedule of diseases livestock are vaccinated against

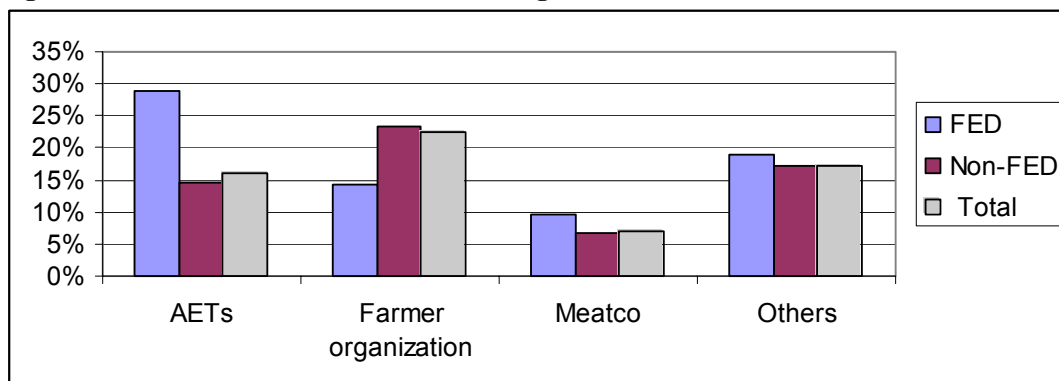
**Table 6.3.14. Vaccination of Cattle**

Variable	Category	Total
Knows the scheduled diseases livestock are vaccinated against	not applicable	32.0%
	Yes, all diseases	16.4%
	yes, some diseases	43.8%
	No	7.8%
Received training from DEES in prevention, diagnosis & treatment of diseases	not applicable	13.1%
	Yes	9.5%
	No	77.4%

The figure and table above indicated that 43% of farmers know some diseases it is recommended to vaccinate livestock against. 16% indicated that they know all diseases that animals are vaccinated against. Only 9.5% of farmers received training from DEES in prevention, diagnosis and treatment of diseases.

**6.3.15 Sources of Livestock Marketing Information**

**Figure 6.3.15 Sources of Livestock Marketing Information**



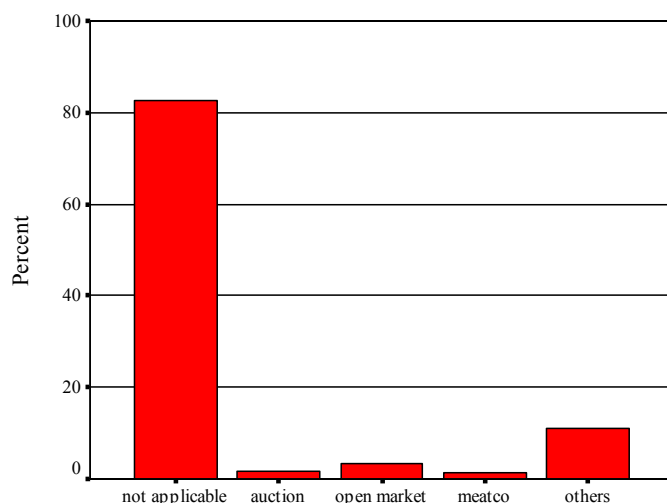
**Table 6.3.15 Livestock Marketing: Sources of Information**

Variable	Category	Total
Receives livestock marketing information regularly	not applicable	.5%
	yes	59.2%
	no	40.3%
Receives livestock marketing information from <b>AETs</b>	not applicable	.9%
	yes	16.4%
	no	82.7%
Receives livestock marketing information from <b>Farmer organization</b>	not applicable	1.4%
	yes	22.3%
	no	76.4%
Receives livestock marketing information from <b>MeatCo</b>	Not applicable	1.4%
	yes	7.3%
	no	91.4%
Receives livestock marketing information from <b>Others</b>	not applicable	.9%
	yes	16.4%
	no	82.7%

59.2% of farmers interviewed indicated that they use to receive livestock marketing information regularly. 16.4% of farmers reported receiving livestock marketing information from the AETs, 22.3% of interviewers from farmers organizations 7.3% indicated that received livestock marketing information from MeatCo. 16.4% use to receive marketing information from other sources.

**6.3.16 Types of Markets Where Cattle are Mostly Sold**

**Figure 6.1.16. Livestock Markets**



Type of market where cattle is mostly sold

In the figure 6.3.15 on types of markets where cattle are mostly sold, it is indicated that 10% of interviewees sell more livestock to others, while only small percentages sell their livestock either to open markets, Meatco or auctions. Over 80% of interviewees indicated they do not sell cattle.

**Table 6.3.16 Livestock Marketing**

Variable	Category	Total
Livestock type sold most	not applicable	7.8%
	small stock	17.0%
	large stock	15.1%
	poultry	6.0%
	don't sell	52.8%
	don't own	1.4%

17% of farmers sell small stock, 15.1% sell large stock, and 6.0% of interviewers sell poultry.

**Table 6.3.17 Livestock Marketing: Type of Market where Livestock are Mostly Sold**

Variable	Category	Total
Type of market where cattle is mostly sold	not applicable	81.9%
	auction	1.8%
	open market	3.6%
	Meatco	1.4%
	others	11.3%
Type of market where small stock is mostly sold	not applicable	83.7%
	auction	.5%
	open market	2.3%
	others	13.6%
Type of market where poultry is mostly sold	not applicable	89.1%
	open market	1.8%
	others	9.1%
Type of market where pigs is mostly sold	not applicable	95.9%
	others	4.1%
Type of market where donkey is mostly sold	not applicable	99.5%
	others	.5%

Looking at the table 6.1.15a on type of markets where livestock are mostly sold, most farmers interviewed indicated that they do not sell any livestock.

**Table 6.3.18 Season when most cattle are sold**

Variable	Category	Total
Season for selling most cattle	not applicable	65.2%
	summer	2.3%
	winter	4.1%
	autumn	.5%
	any season	28.1%

Table 6.1.18 shows the season when most livestock are sold, it reveals that 28.1% of interviewers sell their livestock or animals at any time, depending on when they need money. The 4.1% and 2.3% interviewers indicated that they use to sell their livestock during winter and summer periods respectively.

**Table 6.3.19 Age at which most cattle are sold**

Variable	Category	Total
Age at which most cattle are sold	not applicable	65.6%
	4-6 years	10.0%
	7-9 years	1.8%
	>9 years	1.8%
	any age	20.8%

At the table 6.1.17 on age at which most cattle are sold, it indicates that 20.8% of farmers interviewed sell their cattle at any age, while 1.8% indicate that they may sell cattle aged between 7-9 and > 9 years of age. 10% indicate that they sell livestock at the age between 4- 6 years. Farmers who are selling cattle aged not more than six years need to be encouraged, because at this age good prices are offered by the market.

## **6.4 CONCLUSIONS**

### **6.4.1. Farmers Type**

The survey sample selection procedure ensured that questionnaires were applied to a reasonably representative sample of the population.

For instance, many farmers were selected who are living farming far away from the nearest Agriculture Development Centre (ADC). For these farmers to get assistance from agricultural extension services requires long distance to travel by both farmers and Agriculture Extension Staff technician. The MAWRD through the DEES has tried to implement the policy of decentralization to bring service close to their clients (farmers) and it is often the case that extension offices are the only government offices in many remote areas. But the survey suggests that there are a need to build more ADCs and man them with AETs.

The majority of respondents surveyed were female and this coincides with the real situation. This contributes to the low and slow adoption of agricultural technologies, as men are still often decision makers on farming matters.

More than 50% of farmers interviewed indicated that they have more than 20 years of farming experiences, but their formal education levels are very low. This is also likely to have an more influence in their farming practices when it come to modern farming practices and adoption of new technologies.

It is important to learn that 50% of farmers interviewed, indicated that their farming activities (livestock and crop production) satisfy their basic household needs, although this depends on their receiving sufficient rain. Most farmers have other sources of income, e.g. pensions, salaries and business. There is also a good number of farmers trying to obtain cash incomes through selling their farm produce.

Many farmers appreciate the efforts the DEES in introducing new technologies such as the use of new crop varieties, and of draft animal powered cultivation technologies.

### **6.4.2. Farmer Extension contact**

It is interesting to note that many farmers in Oshana Region are living within a distance from their local ARDC where it may be expected that they have reasonable access to agricultural extension services. But one AET is expected to serve or give technical advice to about 1,700 farmers on average. This is the main reason why only a few farmers are able to be assisted and receive technical advice directly from AETs. This situation needs to be reviewed by the decision makers who need to consider new strategies for reaching farmers.

More than 82% of the farmers interviewed indicated that they heard agricultural information on NBC radio. This percentage gives a good indication that the radio is a very good means of agricultural information dissemination. Radio use need to be encouraged since many farmers stated that they get agricultural information from it. The use of radio will assist in giving agricultural information to farmers and to create awareness of new farming practices. However, it is important to note that information heard on the radio will have more impact on the adoption of new technologies if it is complemented by direct contact with agricultural extension staff.

### **6.4.3. Extension Impact**

Crop production is a dominant farm commodity in Oshana Region. More than 90% of respondents indicated that they are grow local pearl millet and sorghum. Many farmers interviewed indicated that

they now use improved varieties of pearl millet, sorghum and cowpeas. This is partly due to information and training received from the agricultural extension staff.

During the interviews farmers stated they have acquired knowledge on the use of local and improved seeds. They have also appreciated the introduction of new varieties through on-farm demonstrations and training received from the agricultural extension staff. Indeed, these interventions have improved their farming practices and increase yields. This is a good indication that there is significant adoption of new technologies by farmers and the extension staff interventions have made a difference in their farming practice.

It is very interesting to learn that more than 68% of farmers interviewed indicated that they appreciate that the use of draft animal power and implements for weeding is more effective and efficient than hand hoes. But, the agricultural extension technicians need to train more farmers and to look to other means to encourage farmers to use the technology. The adoption DAP cultivators seems to be hampered by the fact that there are few cultivators available to farmers for demonstration purposes. Even so, many farmers are now demanding to purchase their own cultivators. The MAWRD is looking at this issue very seriously and is negotiating with business people so that there will be an adequate supply of the implements at affordable prices.

The marketing of agricultural produce, be it livestock or crops, has not yet been a focus of great attention by agricultural extension staff in the north central regions. Although marketing information is provided to farmers only a few farmers indicated that they sell some of their produce.

Only some 15% to 17% of farmers report selling their livestock, and 28% farmers their crop produce. The problem of marketing is partly attributable to the lack of proper market infrastructure and the type of information given to farmers concerning the marketing. Extension services and farmer organizations should do proper market research and provide farmers with accurate information on marketing options and opportunities.

Traditional granaries made of mopane trees proved to be the most popular grain storage mechanism. 95.5% of respondents indicated that they use this type of granary. Most farmers pour ash into the granaries as the method to control storage pests, while some indicating that they use bitter bush leaves and stems and chaffs on top of the grains as another pest control method. Extension staff should study this Indigenous Technical Knowledge and develop recommendations in terms of doses to apply and other matters.

The survey has found that there are few farmers (about 31%) who are giving supplementary feeds to their livestock. This technology needs to be encouraged and both extension staff and farmers organizations need to put more effort into its promotion.

Many farmers in the region use livestock manure to increase soil fertility. The survey indicated that 36% of respondents had used fertilizer in order to increase yields. This technology proved to be one of the innovations that farmers can adopt easily, but the price at which fertilizers are sold in the market made it unaffordable to many farmers. The issue of price subsidisation may be considered by planners.

It is notable that more than 78% of farmers castrate their livestock using various tools. This partly reflects extension promotion of especially the use of the burdizzo. Among many innovations introduced to farmers in Oshana region, de-horning of cattle is one that farmers still do not practice to any degree. The survey reveals that only 18% of respondents dehorned their cattle. Farmers need to be given the information regarding de-horning in the light of the traditional attitudes to horn which prevail. More training needs to be conducted emphasizing the advantages and disadvantages of horns on animals.

The MAWRD, through the Directorate of Veterinary Services, is carrying out annual vaccination campaigns in the northern communal areas against the following disease: Lung Sickness (CBPP) Anthrax, Lumpy Skin Disease, and Foot & Mouth Disease, not to forget Rabies in dogs and cats. The survey reveals that nearly all cattle owners take their cattle to crush pens for vaccination. Information dissemination and farmers training continues to make more farmers understand the importance of vaccination campaign.

Last but not least, farmers stated they have realized improvements in their farming activities due to extension interventions. More than 57% of respondents indicated that they have noticed improvement in their farming activities due to extension services.

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**ANNEXURE 1. FARMER QUESTIONNAIRE****OSHANA REGION: Agricultural Extension Impact Assessment Baseline Survey****FARMER CHARACTERISTICS**

1	Respondent's name..... Village/Community.....		Office use only
	Constituency..... Enumerator's name.....		
	Date:.....May 2003 ADC.....		
	1.1 Distance from ADC (km): <5 <input type="checkbox"/> 1, 6-10 <input type="checkbox"/> 2, 11-20 <input type="checkbox"/> 3, >20 <input type="checkbox"/> 4		1.1 <input type="checkbox"/>
	1.2 Sex of respondent: Male <input type="checkbox"/> 1, Female <input type="checkbox"/> 2		1.2 <input type="checkbox"/>
2	2.1 Age of the respondent?		2.1 <input type="checkbox"/>
	18-30 <input type="checkbox"/> 1 31-43 <input type="checkbox"/> 2	44-56 <input type="checkbox"/> 3 >56 <input type="checkbox"/> 4	2.2 <input type="checkbox"/>
3	2.2 Head of the household?		
	Spouse <input type="checkbox"/> 1 Man <input type="checkbox"/> 2 Woman <input type="checkbox"/> 3		
3	<b>Education:</b>		3.3 Respondent farming experience?
	3.1 Respondent	3.2 Highest other	
	Primary <input type="checkbox"/> 1	<input type="checkbox"/> 1	< 5 years <input type="checkbox"/> 1
	Secondary <input type="checkbox"/> 2	<input type="checkbox"/> 2	6 – 10 years <input type="checkbox"/> 2
	Tertiary <input type="checkbox"/> 3	<input type="checkbox"/> 3	11 – 20 years <input type="checkbox"/> 3
	No school <input type="checkbox"/> 4	<input type="checkbox"/> 4	> 20 years <input type="checkbox"/> 4
4	Number of people helping regularly with farm work?		4.3 Does farming satisfy basic household needs?
	4.1 Family labour	4.2 Hired Labour	
	<3 <input type="checkbox"/> 1	<input type="checkbox"/> 1	Yes <input type="checkbox"/> 1
	3-5 <input type="checkbox"/> 2	<input type="checkbox"/> 2	Yes (a little) <input type="checkbox"/> 2
	>5 <input type="checkbox"/> 3	<input type="checkbox"/> 3	No <input type="checkbox"/> 3
			Depend on rain <input type="checkbox"/> 4
5	Number livestock owned:		5.5 Area (ha) planted in 02/03.
	Cattle (5.1)	Goats/sheep (5.2)	
	1-10 <input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
	11-30 <input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
	30-50 <input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
	> 50 <input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4
	Don't have <input type="checkbox"/> 5	<input type="checkbox"/> 5	<input type="checkbox"/> 5
			<3 <input type="checkbox"/> 1
			3-7 <input type="checkbox"/> 2
			> 7 <input type="checkbox"/> 3
6	Any other household income sources:		6.1 <input type="checkbox"/>
		Yes No	6.2 <input type="checkbox"/>
	6.1. Business <input type="checkbox"/> 1	<input type="checkbox"/> 2	6.3 <input type="checkbox"/>
	6.2. Salary <input type="checkbox"/> 1	<input type="checkbox"/> 2	6.4 <input type="checkbox"/>
	6.3. Wages <input type="checkbox"/> 1	<input type="checkbox"/> 2	6.5 <input type="checkbox"/>
	6.4. Pension <input type="checkbox"/> 1	<input type="checkbox"/> 2	6.6 <input type="checkbox"/>
	6.5. Casual work for kind <input type="checkbox"/> 1	<input type="checkbox"/> 2	6.7 <input type="checkbox"/>
	6.6. Remittances <input type="checkbox"/> 1	<input type="checkbox"/> 2	
	6.7. Other <input type="checkbox"/> 1	<input type="checkbox"/> 2	

**FARMER EXTENSION CONTACT**

7	<p>7.1 Is there an AET working in your community?</p> <p>Yes <input type="checkbox"/>1                  No <input type="checkbox"/>2                  Don't know <input type="checkbox"/>3</p>	<p>7.2 If <b>No</b>, do you think there should be an AET in your community?</p> <p>Yes <input type="checkbox"/>1                  No <input type="checkbox"/>2</p>	<p>7.1 <input type="checkbox"/>                  7.2 <input type="checkbox"/></p>																					
8	<p>8.1 If <b>Yes</b>, how often did you get agricultural information from the AET last year?</p> <p>1-3 times <input type="checkbox"/>1                  &gt; 3 times <input type="checkbox"/>2                  None <input type="checkbox"/>3</p>	<p>8.2 How did you find these information(s)?</p> <p>Very useful <input type="checkbox"/>1                  Useful <input type="checkbox"/>2                  Not applicable <input type="checkbox"/>3</p>	<p>8.1 <input type="checkbox"/>                  8.2 <input type="checkbox"/></p>																					
9	<p>9.1 Are you a member of any FED group?</p> <p>Yes <input type="checkbox"/>1                  No <input type="checkbox"/>2</p>	<p>9.2 If <b>Yes</b>, how active is your FED group?</p> <p>Very active <input type="checkbox"/>1                  Active <input type="checkbox"/>2                  Not active <input type="checkbox"/>3</p>	<p>9.1 <input type="checkbox"/>                  9.2 <input type="checkbox"/></p>																					
	<p>10.1 Have you ever heard of farmer training by extension staff?</p> <p>Yes <input type="checkbox"/>1                  No <input type="checkbox"/>2</p>	<p>10.2 If <b>Yes</b>, what were those trainings?</p> <p>Leadership skills <input type="checkbox"/>1                  Demonstration <input type="checkbox"/>2                  Exposure visits <input type="checkbox"/>3                  Agricultural shows &amp; fairs <input type="checkbox"/>4                  Others <input type="checkbox"/>5                  Don't know <input type="checkbox"/>6</p>	<p>10.1 <input type="checkbox"/>                  10.2 <input type="checkbox"/></p>																					
10	<p>10.3 Which of the training have you attended?</p> <table border="0"> <tr> <td></td> <td>Yes</td> <td>No</td> </tr> <tr> <td>1. Leadership skills</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>2. Demonstration</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>3. Exposure visits</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>4. Agric. shows/fairs</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>5. None</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. Leadership skills	<input type="checkbox"/> 1	<input type="checkbox"/> 2	2. Demonstration	<input type="checkbox"/> 1	<input type="checkbox"/> 2	3. Exposure visits	<input type="checkbox"/> 1	<input type="checkbox"/> 2	4. Agric. shows/fairs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	5. None	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6. Others	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<p>10.4 After attend such training, have you applied any of the skills you've learned?</p> <p>Yes <input type="checkbox"/>1                  No <input type="checkbox"/>2</p>	<p>10.3.1 <input type="checkbox"/>                  10.3.2 <input type="checkbox"/>                  10.3.3 <input type="checkbox"/>                  10.3.4 <input type="checkbox"/>                  10.3.5 <input type="checkbox"/>                  10.3.6 <input type="checkbox"/>                  10.4 <input type="checkbox"/></p>
	Yes	No																						
1. Leadership skills	<input type="checkbox"/> 1	<input type="checkbox"/> 2																						
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5. None	<input type="checkbox"/> 1	<input type="checkbox"/> 2																						
6. Others	<input type="checkbox"/> 1	<input type="checkbox"/> 2																						

**EXTENSION IMPACT**

<b>1. Mass Media</b>									
11	11.1 From where do you get agricultural information?	Yes	No	How often did you receive this information last year?			11.1.1	<input type="checkbox"/>	
	1. Radio	<input type="checkbox"/> 1	<input type="checkbox"/> 2	Radio (11.2)	Print (11.3)	TV (11.4)	11.1.2	<input type="checkbox"/>	
	2. Printed media	<input type="checkbox"/> 1	<input type="checkbox"/> 2	Daily	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	11.1.3	<input type="checkbox"/>
	3. TV	<input type="checkbox"/> 1	<input type="checkbox"/> 2	Weekly	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	11.2	<input type="checkbox"/>
				Monthly	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	11.3	<input type="checkbox"/>
				Occasionally	<input type="checkbox"/> 4	<input type="checkbox"/> 4	<input type="checkbox"/> 4	11.4	<input type="checkbox"/>
How did you find this information?		Radio (11.5) Print (11.6) TV (11.7)			11.5	<input type="checkbox"/>			
Useful	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	11.6	<input type="checkbox"/>				
Somehow	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	11.7	<input type="checkbox"/>				
Not useful	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3						
<b>2. CROPS</b>									
<b>Seeds</b>									
12	12.1 Which type of crops are you growing?				12.1.1	<input type="checkbox"/>			
		Yes	No				12.1.2	<input type="checkbox"/>	
	1. Cereals only	<input type="checkbox"/> 1	<input type="checkbox"/> 2				12.1.3	<input type="checkbox"/>	
	2. Cereal + Cotton	<input type="checkbox"/> 1	<input type="checkbox"/> 2				12.1.4	<input type="checkbox"/>	
	3. Cereal + Legumes	<input type="checkbox"/> 1	<input type="checkbox"/> 2				12.1.5	<input type="checkbox"/>	
	4. Cereal +Vegetables	<input type="checkbox"/> 1	<input type="checkbox"/> 2						
5. Others	<input type="checkbox"/> 1	<input type="checkbox"/> 2							

	<p>12.2 What type of seeds do you normally plant?</p> <table border="0"> <tr> <td></td> <td>Yes</td> <td>No</td> </tr> <tr> <td>1. Local mahangu</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>2. Okashana</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>3. Kangara</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>4. Local sorghum</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>5. Macia</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>6. Local cowpea</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>7. Nakare</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>8. Shindimba</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> </table>		Yes	No	1. Local mahangu	<input type="checkbox"/> 1	<input type="checkbox"/> 2	2. Okashana	<input type="checkbox"/> 1	<input type="checkbox"/> 2	3. Kangara	<input type="checkbox"/> 1	<input type="checkbox"/> 2	4. Local sorghum	<input type="checkbox"/> 1	<input type="checkbox"/> 2	5. Macia	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6. Local cowpea	<input type="checkbox"/> 1	<input type="checkbox"/> 2	7. Nakare	<input type="checkbox"/> 1	<input type="checkbox"/> 2	8. Shindimba	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<p>12.3 Where did you buy your seeds for the two last years?</p> <table border="0"> <tr> <td></td> <td>Yes</td> <td>No</td> </tr> <tr> <td>1. ADCs</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>2. Local traders</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>3. Cuca shops</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>4. Church parish</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>5. Elsewhere</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> <tr> <td>6. Don't buy</td> <td><input type="checkbox"/>1</td> <td><input type="checkbox"/>2</td> </tr> </table>		Yes	No	1. ADCs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	2. Local traders	<input type="checkbox"/> 1	<input type="checkbox"/> 2	3. Cuca shops	<input type="checkbox"/> 1	<input type="checkbox"/> 2	4. Church parish	<input type="checkbox"/> 1	<input type="checkbox"/> 2	5. Elsewhere	<input type="checkbox"/> 1	<input type="checkbox"/> 2	6. Don't buy	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<p>12.2.1 <input type="checkbox"/></p> <p>12.2.2 <input type="checkbox"/></p> <p>12.2.3 <input type="checkbox"/></p> <p>12.2.4 <input type="checkbox"/></p> <p>12.2.5 <input type="checkbox"/></p> <p>12.2.6 <input type="checkbox"/></p> <p>12.2.7 <input type="checkbox"/></p> <p>12.2.8 <input type="checkbox"/></p> <p>12.3.1 <input type="checkbox"/></p> <p>12.3.2 <input type="checkbox"/></p> <p>12.3.3 <input type="checkbox"/></p> <p>12.3.4 <input type="checkbox"/></p> <p>12.3.5 <input type="checkbox"/></p> <p>12.3.6 <input type="checkbox"/></p>
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6. Don't buy	<input type="checkbox"/> 1	<input type="checkbox"/> 2																																																	
13	<b>Fertilizer</b>																																																		
	<p>13.1 Do you know the benefits of fertilizer use?</p> <p>No <input type="checkbox"/>1</p> <p>To feed crops <input type="checkbox"/>2</p> <p>To kill pests <input type="checkbox"/>3</p> <p>To kill weeds <input type="checkbox"/>4</p>	<p>13.2 Did you use it in the last two years?</p> <p>Yes <input type="checkbox"/>1</p> <p>No <input type="checkbox"/>2</p>	<p>13.1 <input type="checkbox"/></p> <p>13.2 <input type="checkbox"/></p>																																																
	<p>13.3 How do you apply your fertilizer?</p> <p>Broadcast <input type="checkbox"/>1</p> <p>Top dressing <input type="checkbox"/>2</p> <p>Mixing with seeds <input type="checkbox"/>3</p>	<p>13.4 Where do you <b>mainly</b> buy your fertilizer?</p> <p>ADCs <input type="checkbox"/>1</p> <p>Shops <input type="checkbox"/>2</p> <p>Elsewhere <input type="checkbox"/>3</p>	<p>13.3 <input type="checkbox"/></p> <p>13.4 <input type="checkbox"/></p>																																																
14	<b>Weeding + Draught Animal Power</b>																																																		
	<p>14.1 With what do you weed your field?</p> <p>DAP + implement <input type="checkbox"/>1</p> <p>Hand Hoe <input type="checkbox"/>2</p> <p>Both <input type="checkbox"/>3</p>	<p>14.2 If DAP, which implements are you using?</p> <p>Senegalese Cultivator <input type="checkbox"/>1</p> <p>BS 41Cultivator <input type="checkbox"/>2</p> <p>Moun Cultivator <input type="checkbox"/>3</p> <p>Plough <input type="checkbox"/>4</p>	<p>14.1 <input type="checkbox"/></p> <p>14.2 <input type="checkbox"/></p>																																																
	<p>14.3 Do you think that using DAP for weeding is better than Hand Hoe?</p> <p>Yes <input type="checkbox"/>1</p> <p>No <input type="checkbox"/>2</p> <p>Sometimes <input type="checkbox"/>3</p>		<p>14.3 <input type="checkbox"/></p>																																																

15	<b>Storage</b>		
	15.1 Where do you mainly store your harvested produce? Granary <input type="checkbox"/> 1 Basket <input type="checkbox"/> 2 Metal container <input type="checkbox"/> 3 Plastic container <input type="checkbox"/> 4 Bags <input type="checkbox"/> 5	15.2 How do you mainly minimize the infestation of pest in your stored produce? Always keep my store close <input type="checkbox"/> 1 Keep my storage basket off the ground <input type="checkbox"/> 2 Kill the pest on contact <input type="checkbox"/> 3 Pour Ash in my store <input type="checkbox"/> 4	15.1 <input type="checkbox"/> 15.2 <input type="checkbox"/>
16	<b>Marketing</b>		
	16.1 Do you sell some of your produce? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	16.2 If yes, where do you mainly sell your produce? Open market <input type="checkbox"/> 1 Agricultural shows + fairs <input type="checkbox"/> 2 Elsewhere <input type="checkbox"/> 3	16.1 <input type="checkbox"/> 16.2 <input type="checkbox"/>
	16.3 How often do you sell your produce? Every day <input type="checkbox"/> 1 Occasionally <input type="checkbox"/> 2 Once a year <input type="checkbox"/> 3		16.3 <input type="checkbox"/>
<b>3. LIVESTOCK</b>			
17	<b>Husbandry</b>		
	17.1 Do you castrate your livestock? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	17.2 If Yes, with what do you mainly castrate? Knife <input type="checkbox"/> 1 Burdizzo <input type="checkbox"/> 2 Rubber ring <input type="checkbox"/> 3	17.1 <input type="checkbox"/> 17.2 <input type="checkbox"/>
	17.4 Do you know the benefits of dehorning livestock? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	17.3 Do you dehorn your livestock? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	17.3 <input type="checkbox"/> 17.4 <input type="checkbox"/>
18	<b>Supplementary Feed</b>		
	18.1 Do you know the benefits of supplementary feeding? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	18.2 Do you give supplementary feed to your cattle? No <input type="checkbox"/> 1 Yes selectively <input type="checkbox"/> 2 Yes all herd <input type="checkbox"/> 3	18.1 <input type="checkbox"/> 18.2 <input type="checkbox"/>
	18.3 If Selectively, to which animals? Yes No 18.3.1 Draft <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.3.2 Lactating <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.3.3 Breeding males <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.3.4 Weaners <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.3.5 Weak animals <input type="checkbox"/> 1 <input type="checkbox"/> 2	18.4 Which feeds do you supplement? Yes No 18.4.1. Salt block <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.4.2. Urea-treated straws <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.4.3. Crop residues (Hay) <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.4.4. Licks <input type="checkbox"/> 1 <input type="checkbox"/> 2 18.4.5. Others <input type="checkbox"/> 1 <input type="checkbox"/> 2	18.3.1 <input type="checkbox"/> 18.3.2 <input type="checkbox"/> 18.3.3 <input type="checkbox"/> 18.3.4 <input type="checkbox"/> 18.3.5 <input type="checkbox"/>

	18.5 When do you supplement? (one only)			18.4.1 <input type="checkbox"/>	
	Dry season	<input type="checkbox"/> 1		18.4.2 <input type="checkbox"/>	
	Rainy season	<input type="checkbox"/> 2		18.4.3 <input type="checkbox"/>	
	Any time	<input type="checkbox"/> 3		18.4.4 <input type="checkbox"/>	
	Throughout the year	<input type="checkbox"/> 4		18.4.5 <input type="checkbox"/>	
				18.5 <input type="checkbox"/>	
<b>Animal Health</b>					
19	19.1 Do you take your cattle to crush pens for vaccination every year?	19.2 If No, why?	19.3 If yes, do you know the scheduled diseases livestock are vaccinated against at crush pens?	19.1 <input type="checkbox"/>	
	Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	No need <input type="checkbox"/> 1 No knowledge <input type="checkbox"/> 2 Crush pen too far <input type="checkbox"/> 3	Yes, all diseases <input type="checkbox"/> 1 Yes, some diseases <input type="checkbox"/> 2 No <input type="checkbox"/> 3	19.2 <input type="checkbox"/> 19.3 <input type="checkbox"/>	
	19.4 Did you (family member) receive any training in prevention, diagnosis & treatment of diseases, from extension staffs? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2			19.4 <input type="checkbox"/>	
<b>Marketing</b>					
20	20.1 Which of your livestock do you sell most?	20.2 Do you regularly receive any information on livestock marketing prices?	20.3 From whom do you receive these information's?	20.1 <input type="checkbox"/>	
	Small stock <input type="checkbox"/> 1 Large stock <input type="checkbox"/> 2 Poultry <input type="checkbox"/> 3 Don't sell <input type="checkbox"/> 4 Don't own <input type="checkbox"/> 5	Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	1. AETs Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2 2. Farmers organizations Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2 3. Meatco Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2 4. Others Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	20.2 <input type="checkbox"/> 20.3.1 <input type="checkbox"/> 20.3.2 <input type="checkbox"/> 20.3.3 <input type="checkbox"/> 20.3.4 <input type="checkbox"/>	
	Where do you sell your livestock mostly?			20.4 <input type="checkbox"/>	
	Auction <input type="checkbox"/> 1 Open market <input type="checkbox"/> 2 Meatco <input type="checkbox"/> 3 Others <input type="checkbox"/> 4	20.4 Cattle <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	20.5 Small stock <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	20.6 Poultry <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	20.7 Pigs <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
				20.8 Donkeys <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	
20.9 During which season do you sell most of your livestock?		15.10 At what age do you sell most of your oxen?		20.9 <input type="checkbox"/>	
Summer <input type="checkbox"/> 1 Winter <input type="checkbox"/> 2 Autumn <input type="checkbox"/> 3 Spring <input type="checkbox"/> 4 Any season <input type="checkbox"/> 5		4-6 years <input type="checkbox"/> 1 7-9 years <input type="checkbox"/> 2 >9 years <input type="checkbox"/> 3 Any age <input type="checkbox"/> 4		20.10 <input type="checkbox"/>	

**D. General**

21	21.1 Apart from what you are farming with currently, are you considering of farming with something new?  Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	21.2 If Yes, why?  Earn more income <input type="checkbox"/> 1 Have more assets/property <input type="checkbox"/> 2 Be able to feed my family <input type="checkbox"/> 3	21.1 <input type="checkbox"/> 21.2 <input type="checkbox"/>
	21.3 Have you realized any improvements in your farming activities due to extension services?  Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2 Somehow <input type="checkbox"/> 3		21.3 <input type="checkbox"/>

Thank You Very Much

**ANNEXURE 2. QUESTIONNAIRE RESULTS TABLES - OSHANA REGION****SECTION A. FARMER TYPE****Table 1. FED Group Membership**

FED group membership:			Total
Constintuency	Yes	No	
Uvudiya	19.0%	22.0%	21.7%
Uukwiyuushona	9.5%	21.5%	20.4%
Ukukwiyu	0	?.5%	?.5%
Okaku	28.6%	22.0%	22.6%
Okatana	23.8%	9.0%	10.4%
Oshakati west	19.0%	25.0%	24.4%
Total	99.90%	100.00%	100.00%

**TABLE 2. DISTANCE OF FARMER FROM ADC**

Variable	Category	FED Group Member		Total
		Yes	No	
Distance from ADC	< 5Km	33.3%	17.5%	19.0%
	6-10Km	28.6%	34.5%	33.9%
	11-20Km	33.3%	35.0%	34.8%
	> 20Km	4.8%	13.0%	12.2%
	Total	100.00%	100.00%	99.90%

**TABLE 3. SELECTED FARMER TYPE VARIABLES**

Variable	Category	FED Group Member		Total
		Yes	No	
Sex of respondent	male	23.8%	26.5%	26.2%
	female	76.2%	73.5%	73.8%
Age of respondent	15-30	4.8%	20.5%	19.0%
	31-45	9.5%	22.5%	21.3%
	46-60	38.1%	24.5%	25.8%
	>60	47.6%	32.5%	33.9%
Household head	man	81.0%	65.5%	67.0%
	woman	19.0%	34.5%	33.0%
Education level of respondent	primary	81.0%	70.0%	71.0%
	secondary	14.3%	15.5%	15.4%
	tertiary		4.5%	4.1%
	No school	4.8%	10.0%	9.5%
Highest education level of a member in the household	primary	25.0%	39.4%	37.5%
	secondary	62.5%	44.2%	46.7%
	tertiary	12.5%	13.5%	13.3%
	No school		2.9%	2.5%
Respondent farming experience	<5 years		4.0%	3.6%
	6-10 years		11.0%	10.0%
	11-20 years	28.6%	27.5%	27.6%
	>20 years	71.4%	57.5%	58.8%
Persons in the household helping regularly with	<3	4.8%	20.5%	19.0%

farm work	3-5	42.9%	43.5%	43.4%
	>5	52.4%	36.0%	37.6%
Hired labour	None	85.7%	83.0%	83.3%
	<3		4.0%	3.6%
	3-5	4.8%	2.5%	2.7%
	>5	9.5%	10.5%	10.4%
Farming satisfies basic household needs	yes	33.3%	19.5%	20.8%
	yes (a little)	9.5%	18.5%	17.6%
	No	14.3%	19.5%	19.0%
	Depends on rain	42.9%	42.5%	42.5%

**TABLE 4. LIVESTOCK OWNERSHIP**

Variable	Category	FED Group Member		Total
		Yes	No	
Total number of cattle owned	1-10	14.3%	23.5%	22.6%
	11-30	38.1%	33.5%	33.9%
	30-50	14.3%	5.0%	5.9%
	Don't have	33.3%	38.0%	37.6%
Total number of goats and sheep owned	1-10	19.0%	22.5%	22.2%
	11-30	57.1%	46.5%	47.5%
	30-50	4.8%	6.0%	5.9%
	>50		2.5%	2.3%
Total number of donkeys/horses owned	1-10	38.1%	34.0%	34.4%
	11-30		4.0%	3.6%
	Don't have	61.9%	62.0%	62.0%
Total number of poultry owned	1-10	76.2%	60.0%	61.5%
	11-30	23.8%	27.0%	26.7%
	30-50		1.5%	1.4%
	Don't have		11.5%	10.4%

**Table 5. Crop Production**

Variable	Category	FED Group Member		Total
		Yes	No	
Total area planted in 2002/2003	none	4.8%	2.5%	2.7%
	<3	23.8%	32.0%	31.2%
	3-7	61.9%	60.0%	60.2%
	>7	9.5%	5.5%	5.9%

**TABLE 6. SOURCES OF HOUSEHOLD INCOME OTHER THAN FARMING**

Variable	Category	FED Group Member		Total
		Yes	No	
Business	yes	4.8%	7.5%	7.2%
	no	95.2%	92.5%	92.8%
Salary	yes	38.1%	31.5%	32.1%
	no	61.9%	68.5%	67.9%
Wage	yes		6.0%	5.4%
	no	100.0%	94.0%	94.6%
Pension	yes	47.6%	44.0%	44.3%

	no	52.4%	56.0%	55.7%
Casual work for kind	yes	4.8%	4.0%	4.1%
	no	95.2%	96.0%	95.9%
Remittances	no	100.0%	100.0%	100.0%
Other source	yes	4.8%	.5%	.9%
	no	95.2%	99.5%	99.1%

## SECTION B. FARMER CONTACT

**TABLE 7. EXTENSION CONTACT: AET**

Variable	Category	FED Group Member		Total
		Yes	No	
Extensionist (AET) exists and works in the area	yes	95.2%	69.5%	71.9%
	no	4.8%	28.0%	25.8%
	don't know		2.5%	2.3%
There should be an AET in your community	yes	4.8%	29.0%	26.7%
	no	76.2%	54.0%	56.1%
	not applicable	19.0%	17.0%	17.2%
Times got info from AET last year	Not applicable	4.8%	29.0%	26.7%
	1-3 times	28.6%	32.5%	32.1%
	>3 times	66.7%	18.5%	23.1%
	None		20.0%	18.1%
Usefulness of information got from AET	Not applicable	4.8%	53.0%	48.4%
	very useful	61.9%	22.5%	26.2%
	Useful	33.3%	24.5%	25.3%

**TABLE 8. FED GROUP ACTIVENESS**

Variable	Category	FED Group Member		Total
		Yes	No	
Level of activeness of FED group	not applicable	14.3%	98.5%	90.5%
	very active	52.4%	1.5%	6.3%
	active	28.6%		2.7%
	not active	4.8%		.5%

**TABLE 9. FARMER TRAINING**

Variable	Category	FED Group Member		Total
		Yes	No	
Has heard of farmer training by extension staff	yes	90.5%	55.0%	58.4%
	no	9.5%	45.0%	41.6%
Aware (heard of) the training	not applicable	9.5%	46.0%	42.5%
	leadership skills	14.3%	1.0%	2.3%
	demonstration	66.7%	50.5%	52.0%
	exposure visits	9.5%	1.0%	1.8%
	others		.5%	.5%
	Don't know		1.0%	.9%

Has attended leadership training in	yes	9.5%	.5%	1.4%
	no	90.5%	99.5%	98.6%

**TABLE 10. ATTENDANCE AT OTHER EXTENSION ACTIVITIES**

Variable	Category	FED Group Member		Total
		Yes	No	
Has attended demonstration	yes	66.7%	14.5%	19.5%
	no	33.3%	85.5%	80.5%
Has attended exposure visit	yes	23.8%	.5%	2.7%
	no	76.2%	99.5%	97.3%
Has attended agric. shows/fairs	yes		.5%	.5%
	no	100.0%	99.5%	99.5%
Has attended none training	yes	4.8%	2.0%	2.3%
	no	95.2%	98.0%	97.7%
Has attended other training	yes		.5%	.5%
	no	100.0%	99.5%	99.5%
After training has applied skills	yes	52.4%	12.5%	16.3%
	no	47.6%	87.5%	83.7%

**TABLE 11. MASS MEDIA IN EXTENSION**

Variable	Category	FED Group Member		Total
		Yes	No	
Got information from radio	yes	76.2%	82.7%	82.0%
	no	23.8%	17.3%	18.0%
Got information from printed media	yes	28.6%	11.9%	13.6%
	no	71.4%	88.1%	86.4%
Got information from TV	yes		2.1%	1.9%
	no	100.0%	97.9%	98.1%
Times received info from radio last year	none	28.6%	22.0%	22.6%
	weekly	4.8%	1.5%	1.8%
	monthly		2.0%	1.8%
	occasionally	66.7%	74.5%	73.8%
Times received info from print last year	none	61.9%	88.0%	85.5%
	monthly	4.8%	1.0%	1.4%
	occasionally	33.3%	11.0%	13.1%
	none	95.2%	95.5%	95.5%
Times received info from TV last year	daily		.5%	.5%
	occasionally	4.8%	4.0%	4.1%
	not applicable	23.8%	20.0%	20.4%
	useful	57.1%	70.5%	69.2%
Usefulness of info from printed materials	somehow	19.0%	9.5%	10.4%
	not applicable	66.7%	87.5%	85.5%
	useful	28.6%	10.0%	11.8%
	somehow	4.8%	2.5%	2.7%

Usefulness of info on from TV	not applicable	100.0%	99.0%	99.1%
	useful		1.0%	.9%

## SECTION C. EXTENSION IMPACT

**TABLE 12. CROPS GROWN**

Variable	Category	FED Group Member		Total
		Yes	No	
Grew cereal only	yes		.5%	.5%
	no	100.0%	99.5%	99.5%
Grew cereal + cotton	yes	4.8%		.5%
	no	95.2%	100.0%	99.5%
Grew cereal + legumes	yes	95.2%	98.0%	97.7%
	no	4.8%	2.0%	2.3%
Grew cereal + vegetables	yes	38.1%	40.0%	39.8%
	no	61.9%	60.0%	60.2%
Grew other crops	yes	9.5%	1.0%	1.8%
	no	90.5%	99.0%	98.2%

**TABLE 13. USE OF IMPROVED SEED**

Variable	Category	FED Group Member		Total
		Yes	No	
Plants local Mahangu seed	yes	85.7%	88.5%	88.2%
	no	14.3%	11.5%	11.8%
Plants Okashana seed	yes	90.5%	71.5%	73.3%
	no	9.5%	28.5%	26.7%
Plants Kangara seed	yes	38.1%	8.0%	10.9%
	no	61.9%	92.0%	89.1%
Plants local Sorghum seed	yes	85.7%	87.0%	86.9%
	no	14.3%	13.0%	13.1%
Plants Macia seed	yes	19.0%	8.0%	9.0%
	no	81.0%	92.0%	91.0%
Plants local Cowpea seed	yes	4.8%	25.0%	23.1%
	no	95.2%	75.0%	76.9%
Plants Nakare seed	yes		.5%	.5%
	no	100.0%	99.5%	99.5%
Plants Shindimba seed	no	100.0%	100.0%	100.0%

**TABLE 14. SOURCES OF SEED**

Variable	Category	FED Group Member		Total
		Yes	No	
Bought seed last year from ADCs	yes	47.6%	30.0%	31.7%
	no	52.4%	70.0%	68.3%
Bought seed last year from local trader	yes	47.6%	33.0%	34.4%
	no	52.4%	67.0%	65.6%
Bought seed last year from cuca shops	yes	4.8%	4.0%	4.1%

	no	95.2%	96.0%	95.9%
Bought seed last year from church parish	yes		1.0%	.9%
	no	100.0%	99.0%	99.1%
Bought seed last year from elsewhere	yes		2.5%	2.3%
	no	100.0%	97.5%	97.7%
Did not buy seed last year	yes		7.0%	6.3%
	no	100.0%	93.0%	93.7%

**TABLE 15. FERTILISER USE**

Variable	Category	FED Group Member		Total
		Yes	No	
Knows benefits of fertiliser use	no	19.0%	40.5%	38.5%
	to feed crops to kill pests	76.2%	55.0%	57.0%
Used fertilizer last year	yes	57.1%	33.5%	35.7%
	no	42.9%	66.5%	64.3%
Method of fertiliser application	not applicable	38.1%	65.0%	62.4%
	broadcast	4.8%	3.5%	3.6%
	top dressing	14.3%	3.5%	4.5%
	mixing with seed	42.9%	28.0%	29.4%
Buys fertilizer mainly from	not applicable	38.1%	66.0%	63.3%
	ADCs	61.9%	25.5%	29.0%
	Shops		3.5%	3.2%
	Elsewhere		5.0%	4.5%

**TABLE 16. CULTIVATION**

Variable	Category	FED Group Member		Total
		Yes	No	
Method of weeding used DAP+ implement in the field			4.5%	4.1%
	Hand hoe	100.0%	95.5%	95.9%
DAP implements mainly used for weeding	none	85.7%	96.0%	95.0%
	Senegalese cultivator	4.8%	.5%	.9%
	BS 41 cultivator	4.8%	3.5%	3.6%
	Plough	4.8%		.5%
Thinks that using DAP for weeding is better than hand hoe	not applicable	9.5%	19.6%	18.6%
	yes	81.0%	66.3%	67.7%
	no	9.5%	7.0%	7.3%
	sometimes		7.0%	6.4%

**TABLE 17. GRAIN STORAGE**

Variable	Category	FED Group Member		Total
		Yes	No	

Main type of storage used for produce	granary	95.2%	95.5%	95.5%
	basket	4.8%	1.5%	1.8%
	metal container		1.5%	1.4%
	plastic container		1.0%	.9%
	bags		.5%	.5%

**TABLE 18. GRAIN STORAGE PEST MANAGEMENT**

Variable	Category	FED Group Member		Total
		Yes	No	
Method used to minimize pest infestation in stored produce	not applicable	23.8%	12.0%	13.1%
	always keep store closed	9.5%	8.0%	8.1%
	keep storage basket off the ground	9.5%	13.0%	12.7%
	Kill the pest on contact		.5%	.5%
	pour ash in the store	57.1%	66.5%	65.6%

**TABLE 19. GRAIN MARKETING**

Variable	Category	FED Group Member		Total
		Yes	No	
Sells some of the produce ]	not applicable	4.8%	2.0%	2.3%
	yes	28.6%	28.0%	28.1%
	no	66.7%	70.0%	69.7%
Produce mainly sold at this type of market	not applicable	71.4%	70.0%	70.1%
	open market	14.3%	11.5%	11.8%
	agricultural shows + fairs		2.5%	2.3%
	elsewhere	14.3%	16.0%	15.8%
Frequency of produce sales	not applicable	66.7%	71.5%	71.0%
	everyday		1.0%	.9%
	occasionally	33.3%	25.5%	26.2%
	once a year		2.0%	1.8%

**TABLE 20. ANIMAL HUSBANDRY**

Variable	Category	FED Group Member		Total
		Yes	No	
Castrates livestock	not applicable	9.5%	16.5%	15.8%
	yes	85.7%	76.0%	76.9%
	no	4.8%	7.5%	7.2%
Main castration method used	not applicable	14.3%	23.5%	22.6%
	knife	9.5%	14.0%	13.6%
	burdizzo	61.9%	56.0%	56.6%
	rubber ring	14.3%	6.5%	7.2%

Knows benefits of dehorning livestock	not applicable	28.6%	25.0%	25.3%
	yes	19.0%	8.0%	9.0%
	no	52.4%	67.0%	65.6%
Dehorns livestock	not applicable	28.6%	26.5%	26.7%
	yes	23.8%	17.5%	18.1%
	no	47.6%	56.0%	55.2%

**TABLE 21 A. SUPPLEMENTARY FEEDING**

Variable	Category	FED Group Member		Total
		Yes	No	
Knows the benefits of supplementary feeding	not applicable	4.8%	13.6%	12.7%
	yes	85.7%	68.3%	70.0%
	no	9.5%	18.1%	17.3%
Gives supplementary feeds to cattle	not applicable	4.8%	14.7%	13.8%
	no	14.3%	28.4%	27.1%
	yes selectively	42.9%	28.4%	29.8%
	yes all herd	38.1%	28.4%	29.4%
Time of supplement feeding	not applicable	95.2%	99.5%	99.1%
	dry season		.5%	.5%
	throughout the year	4.8%		.5%

**TABLE 21 B. SELECTIVE SUPPLEMENTARY FEEDING**

Selectively give supplementary feed to Draft animals	no	4.8%	6.5%	6.3%
	yes selectively	95.2%	93.5%	93.7%
Selectively give supplementary feed to lactating	no	4.8%	1.5%	1.8%
	yes selectively	95.2%	98.5%	98.2%
Selectively give supplementary feed to breeding males	no		.5%	.5%
	yes selectively	100.0%	99.5%	99.5%
Selectively give supplementary feed to weaners	no	14.3%	6.5%	7.2%
	yes selectively	85.7%	93.5%	92.8%
Selectively give supplementary feed to weak animals	no	33.3%	23.0%	24.0%
	yes selectively	66.7%	77.0%	76.0%

**Table 21 c. Type of Supplementary Feeds Used**

Salt block is the supplement feed	no	9.5%	4.0%	4.5%
	yes	90.5%	96.0%	95.5%
Urea-treated straws is the supplement feed	no		1.5%	1.4%
	yes	100.0%	98.5%	98.6%

Crop residues (hay) is the supplement feed	no	71.4%	49.0%	51.1%
	yes	28.6%	51.0%	48.9%
Lick is the supplement feed	no	4.8%	2.0%	2.3%
	yes	95.2%	98.0%	97.7%
Other feed is the supplement feed	no	4.8%	1.0%	1.4%
	Yes	95.2%	99.0%	98.6%

**TABLE 22. ANIMAL HEALTH**

Variable	Category	FED Group Member		Total
		Yes	No	
Cattle taken to crush pen for vaccination yearly	not applicable	38.1%	29.5%	30.3%
	yes	61.9%	61.0%	61.1%
	no		9.5%	8.6%
Reason for not vaccinating cattle	not applicable	95.2%	91.0%	91.4%
	no need	4.8%	3.5%	3.6%
	no knowledge		5.0%	4.5%
	crush pen too far		.5%	.5%
Knows the scheduled diseases livestock are vaccinated against	not applicable	38.1%	31.3%	32.0%
	yes, all diseases	9.5%	17.2%	16.4%
	yes, some diseases	47.6%	43.4%	43.8%
	no	4.8%	8.1%	7.8%
Received training from DEES in prevention, diagnosis & treatment of diseases	not applicable		14.5%	13.1%
	yes	14.3%	9.0%	9.5%
	no	85.7%	76.5%	77.4%

**TABLE 23. LIVESTOCK MARKETING: LIVESTOCK TYPE SOLD MOST**

Variable	Category	FED Group Member		Total
		Yes	No	
Livestock type sold most	not applicable		8.6%	7.8%
	small stock	20.0%	16.7%	17.0%
	large stock	20.0%	14.6%	15.1%
	poultry	10.0%	5.6%	6.0%
	don't sell	50.0%	53.0%	52.8%
	don't own		1.5%	1.4%

**Table 24. Livestock Marketing: Sources of Information**

Variable	Category	FED Group Member		Total
		Yes	No	
Receives livestock marketing information regularly	not applicable		.6%	.5%
	yes	80.0%	56.9%	59.2%
	no	20.0%	42.5%	40.3%
Receives livestock	not applicable		1.0%	.9%

marketing information from <b>AETs</b>		yes	28.6%	15.1%	16.4%
		no	71.4%	83.9%	82.7%
Receives livestock marketing information from <b>Farmer organization</b>	not applicable			1.5%	1.4%
	yes	14.3%	23.1%	22.3%	
		no	85.7%	75.4%	76.4%
Receives livestock marketing information from <b>Meatco</b>	not applicable			1.5%	1.4%
	yes	9.5%	7.0%	7.3%	
		no	90.5%	91.5%	91.4%
Receives livestock marketing information from <b>Others</b>	not applicable			1.0%	.9%
	yes	19.0%	16.1%	16.4%	
		no	81.0%	82.9%	82.7%

**Table 25. Livestock Marketing: Type of Market where Livestock are Mostly Sold**

Variable	Category	FED Group Member		Total
		Yes	No	
Type of market where cattle is mostly sold	not applicable	66.7%	83.5%	81.9%
	auction	4.8%	1.5%	1.8%
	open market	14.3%	2.5%	3.6%
	Meatco		1.5%	1.4%
	others	14.3%	11.0%	11.3%
Type of market where small stock is mostly sold	not applicable	81.0%	84.0%	83.7%
	auction		.5%	.5%
	open market		2.5%	2.3%
	others	19.0%	13.0%	13.6%
Type of market where poultry is mostly sold	not applicable	90.5%	88.9%	89.1%
	open market		2.0%	1.8%
	others	9.5%	9.0%	9.1%
Type of market where pigs is mostly sold	not applicable	90.5%	96.5%	95.9%
	others	9.5%	3.5%	4.1%
Type of market where donkey is mostly sold	not applicable	100.0%	99.5%	99.5%
	others		.5%	.5%

**Table 26. Season In Which Most Livestock Are Sold**

Variable	Category	FED Group Member		Total
		Yes	No	
Season for selling most livestock	not applicable	52.4%	66.5%	65.2%
	summer	4.8%	2.0%	2.3%
	winter	4.8%	4.0%	4.1%
	autumn		.5%	.5%
	any season	38.1%	27.0%	28.1%

**Table 27. Age At Which Most Livestock Are Sold**

Variable	Category	FED Group Member		Total
		Yes	No	
Age at which most livestock is sold	not applicable	52.4%	67.0%	65.6%
	4-6 years	14.3%	9.5%	10.0%
	7-9 years	4.8%	1.5%	1.8%
	>9 years	9.5%	1.0%	1.8%
	any age	19.0%	21.0%	20.8%

**Table 28. Attitude To New Farming Practices And Technologies**

Variable	Category	FED Group Member		Total
		Yes	No	
Considering farming with new things	not applicable	4.8%		.5%
	yes	76.2%	71.0%	71.5%
	no	19.0%	29.0%	28.1%
Reasons for considering new farm opportunities	not applicable	33.3%	30.7%	30.9%
	earn more income	52.4%	45.2%	45.9%
	have more assets/property		2.5%	2.3%
	be able to feed my family	14.3%	21.6%	20.9%

**Table 29. Perceptions As To Whether Improved Farming Is Due To Extension Support**

Variable	Category	FED Group Member		Total
		Yes	No	
Realized improvements in farming due to extension activities	not applicable	4.8%	2.0%	2.3%
	yes	76.2%	54.5%	56.6%
	no	9.5%	33.0%	30.8%
	somehow	9.5%	10.5%	10.4%