



REPUBLIC OF NAMIBIA

**MINISTRY OF AGRICULTURE
WATER AND RURAL DEVELOPMENT**

PHOTO

OHANGWENA REGION:

**BASELINE SURVEY OF THE IMPACT OF
AGRICULTURAL EXTENSION SERVICES**

**DIRECTORATE OF EXTENSION AND ENGINEERING SERVICES
EENHANA, NOVEMBER 2003**

TABLE OF CONTENTS

Acronyms and abbreviations	2
Acknowledgements	2
PART ONE	
0 FOREWORD	3
1 EXECUTIVE SUMMARY	4
2 INTRODUCTION	5
PART TWO	
3 AGRICULTURE IN OHANGWENA REGION	9
4 AGRICULTURAL EXTENSION SERVICES IN OHANGWENA REGION	13
5 SURVEY METHOD	17
PART THREE	
6 SURVEY FINDINGS	
6.1 FARMER TYPE	22
6.2 FARMER EXTENSION CONTACT	30
6.3 EXTENSION IMPACT	35
6.4 CONCLUSIONS	49
List of References	50
Annexure 1. Farmer Questionnaire	51
Annexure 2. Questionnaire Results Tables	

Acronyms and abbreviations

ADC	- Agricultural Development Centre
AEO	- Agricultural Extension Officer
AET	- Agricultural Extension Technician
ARDC	- Agricultural Rural Development Centre
CAEO	- Chief Agricultural Extension Officer
CAET	- Chief Agricultural Extension Technician
CBO	- Community Based Organisation
DAP	- Draft Animal Power
DART	- Directorate of Agriculture research And Training
DEES	- Directorate of Extension And Engineering Services
DD	- Deputy Director
DRWS	- Directorate of Rural Water Supply
DVS	- Directorate of Veterinary Services
FC	- Focus Community
FED	- Farmer Extension Development
FSRE	- Farming System Research and Extension
KM	- Kilometres
MEATCO	- Meat Company
NBC	- Namibian Broadcasting Corporation
NCD	- North Central Division
NGO	- Non-governmental Organisation
NOREESP	- Northern Regions Extension Epidemiological Support Programme
NPC	- National Planning Commission
RDSP	- Rural Development Support Programme
REMP	- Research Extension Management Programme

Acknowledgements

The authors of this report are very grateful to the farming communities in Ohangwena region especially in Epembe, Ohangwena and Ongenga constituencies for their valuable contributions to the success of this survey. Special thanks goes to the Honourable Governor, the Honourable Councillors, and the traditional leaders in the above mentioned constituencies.

We cannot forget to thank REMP for financial contribution, Dr E. Musaba UNAM senior lecturer in the faculty of agriculture and natural resources, and Mr P. Vigne (REMP Economist) for timely technical and logistical support prior and during the survey.

Special thanks go to the DD (NCD), CAEO Ohangwena and the entire Agricultural Extension staff in Ohangwena for the support rendered during the exercise.

Finally, we wish to extend our appreciation to the enumerators, namely Ms T. Namholoh, Ms D. Shihepo, Ms T. Ngesheya and Mr P. Hangula, for the determination and dedication they showed in accomplishing their task.

Mrs N. Nashidengo and Mr E. Weyulu undertook the questionnaire survey and the preparation of this report, in collaboration with the rest of the DEES team in the Ohangwena region. Financial and technical assistance was provided by the EU supported Research Extension Management Programme. (REMP).

Disclaimer

The views expressed in this report are the responsibilities of authors and do not necessarily reflect those of the ministry of agriculture, water and rural development

PART ONE

0 FOREWORD

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

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

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

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

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

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

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

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

1 EXECUTIVE SUMMARY

It is indeed difficult to make an objective judgement of the impact of agricultural extension services on farmer livelihoods, and specifically on farm production, income, and farmer knowledge, awareness and adoption rates related to improved technologies and practices, without a yardstick to compare the past with present situation.

A first ever baseline survey on the impact of extension services on farming families in Ohangwena was carried out in 18 villages from three constituencies, namely Epembe, Ohangwena and Ongenga, according to a specific stratified random sampling procedure.

A total of 218 respondents were selected and interviewed. The survey was conducted from 12th-23rd May 2003 by six staff (four hired enumerators and two DEES staff). Prior to the field implementation of the survey, the pre-testing of the questionnaire was conducted in three selected communities to determine whether the farmers understood questionnaires.

This survey attempted to look at indicators of farmer behaviour and perceptions relating to their awareness and understanding of technology and farm practice innovations promoted by extension services, and the adoption of those technologies and practices. The findings of the survey indicated some areas where DEES can be said to have succeeded in promoting innovations, but in some areas there remains a need for improvement. Examples of successes identified include use of fertiliser, though the method of application is not well known by most farmers, pest control, use of draught animal powered cultivation practices, and the use of radio to broadcast agricultural related information. The majority of the farmers indicated that they used traditional granaries for storing their crop produce. Ash is used to control pest infestations in their granaries. The majority of the farmers acknowledged the advantages of DAP over hand hoe use for weeding, but a shortage of DAP implements in the local markets restricts the farmers from using DAP for weeding.

In many cases, the survey found that, at this stage, farmers have hardly adopted some of the innovations that the DEES has introduced and promoted, for example those recommendations relating to the marketing of livestock and crops, and the cultivation of new crop cultivars. Open markets and informal markets have proven to be the best available markets for both livestock products and crop produce in the region, and are where farmers are selling their agricultural commodities.

The report also provides information on the agricultural situation generally and on the nature of the extension services delivered in the region. This reveals, amongst other things, the limited resources the ministry is working with, including limited posts of qualified personnel, operational equipment (computers and emails), limited operational budgets, and the long distances between ADCs. One major constraint is the high number of farmers in relation to the low number of front line officials (AETs) in the region.

2 INTRODUCTION

2.1 WHAT AGRICULTURAL EXTENSION SERVICES DO AND WHO THEY SERVICE

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

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

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

2.2 QUESTIONNAIRE SURVEY RATIONALE

Extension impact: can you prove it?

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

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

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

Impact on who?

The agricultural extension service uses different methods to address individual farmers, groups of farmers and the broad mass of farmers, be it information meetings, demonstrations, training, or mass media. Ultimately, the mandate of the extension service is to serve all farmers. Therefore, this baseline study looks at the impact of extension activities on the broad community of farmers. The rationale for this is that although extension recognises that it cannot

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

Different types of impact

The DEES has drawn up a logical framework which describes its main activities and their relationship to a set of objectives (see page 13). The logframe describes extension activities which should deliver clear outputs, which in turn should contribute to the achievement of a broader purpose, which itself will contribute to a more general goal. It is the job of the extension service to carry out the activities and deliver the outputs.

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

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

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

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

We measure this by looking at indicators of:

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

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

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

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

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

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

2.3 QUESTIONNAIRE PROCESS

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

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

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

Table . Main Steps in the Baseline Study Process

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

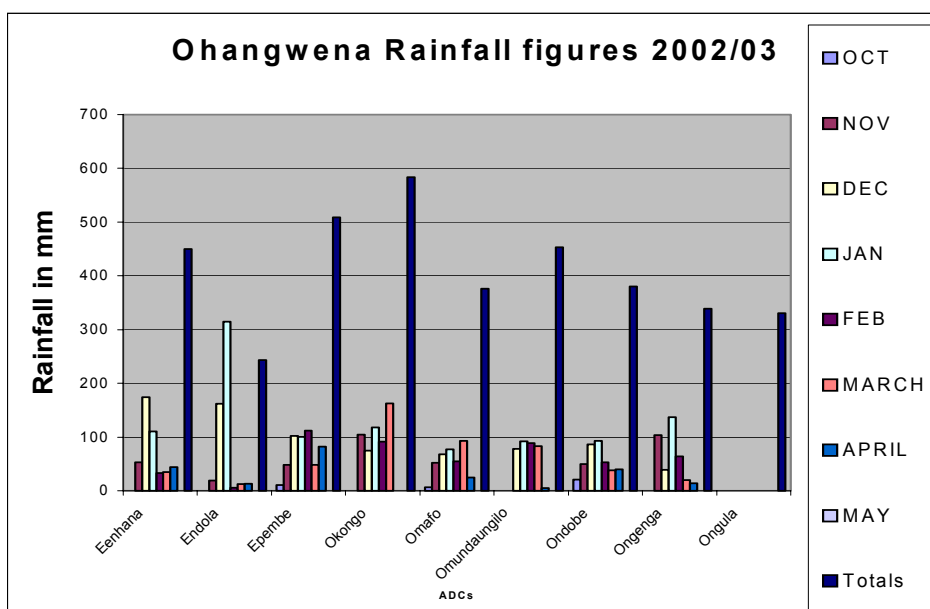
PART TWO

3. AGRICULTURE IN OHANGWENA

3.1 BIOPHYSICAL RESOURCES

3.1.1 RAINFALL

Annual rainfall ranges from 700 mm to 400mm from east to west in a good season. Bad seasons vary from 400mm to 200-mm respectively. The rainfall normally starts from end October and ends early April. The distribution is erratic. Rainfall in the Ohangwena Region supports dry land cropping of mahangu and other crops and grazing of livestock. The variability of rainfall from year to year, however, means that productivity varies considerably for subsistence agriculture.



The table below illustrates monthly rainfall figures as recorded at the Ohangwena ADCs in 2002/2003

MONTH	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	Totals
Eenhana	0	53.5	174	110.2	33	35	44	0	449.7
Endola	0	19	162	315	5.6	12	13	0	243.7
Epembe	11	48	102	100.2	111.8	48	82	0	509.2
Okongo		105	74.6	117.6	91.5	163	0	0	583.7
Omafo	7	52.4	67.7	77	54.5	93	25	0	376.4
Omundaungilo	0	0	78	92	89	83	5	0	453.1
Ondobe	21	50	86	93	53	38	40	0	380.5
Ongenga	0	104	39	137	64	20	14	0	339.1
Ongula									330.2

Comment: Where are the figures?

3.1.2 SOILS

Soil in the region is generally sandy with fine texture, weak cohesion and high absorption capacity and seriously deficient in phosphorus with low level of organic matter (Niser, 1993). Generally poor, low in nutrients and often saline. These soils combined with a semi-arid climate make crop growing difficult. Black clay may be found at the edge of Oshana and it can not be put to agricultural use because of its salt and clay contents (Franco-Namibia RDP, 1993)

3.1.3 GROUND WATER

The Cuvelai delta system supplies the western areas of the region, mainly in oshanas during the rainy season. Surface water from the Cuvelai is not present throughout the year. Communities rely on ground water resources mainly shallow wells, earth dams and boreholes but the ground water is often of too low a quality to be used for human consumption. Earth dams are excavated to capture run-off water and store it for the dry season.

3.1.4 TOPOGRAPHY

Ohangwena Region is situated on the flat plain of the greater Kalahari basin lying approximately 1100m above the sea level. It extends east to west along the Angolan border towards the west, the region incorporates a portion of the Cuvelai Delta with its relatively well-defined Oshanas and Ephemeral wet lands. Ephemeral pans characterize eastern part and poorly defined drainage lines (Ohangwena Regional Development Plan, 2001-2006)

3.1.5 RIVERS

The Region has no permanent rivers but previously seasonal rivers (Ohamaala and Oshigambo) used to run through it. These are now presumed to be blocked on the Angolan side.

3.1.6 VEGETATION TYPES

The vegetation to the west of the region differs from that of the eastern part of the region. In the west, the ephemeral wetlands of the Oshanas support an open palm and Marula trees. Other important trees include the bird palm, jackal-berry, common cluster fig, Euclea and Mopane trees. Wild plant resources are well adapted to the semi-arid environment and irregular rain. Through expanding population in the Oshana area, the diversity of the vegetation has been greatly reduced. Through use for construction and firewood, and through the clearing of fields of mahangu, the woody vegetation cover is being eliminated over much of the Oshana area, particularly during the last two decades.

The vegetation towards the east is known as the dry woodlands. It grows on deep greyish sands. Dominant tree species are silver cluster-leaf, wild teak, Zambezi teak, wild seringa, Omangeti tree, apple leaf and several acacia species. Grazing consists of annual grasses of various species, e.g. Onhululo, Ombindangolo, Wanenune., with few perennial grasses in the east (Omaoleole, Omundjadu)

3.2 POPULATION ISSUES

The Region has a total population of 228,334 persons, of these females are 124,828 (55 per cent) and males are 103,556 (2001 Population and Housing Census). The total number of households is 35,938. This may be taken as equivalent to the number of farming households in the region. The number of urban households is 360. Hence, the population is 1% urban and 99% rural based. 60% of all households are female headed. It is estimated that about 5% of the

farming household are weekend farmers i.e. 1,798 households (Ohangwena Regional Development Plan 2001/2006). With a total population of 228,334 and the total area of 10,703 square km, the population density is 22 persons / square km. The major language groups are Oshikwanyama, Oshindonga and Oshikwambi; minor languages include San languages, Portuguese as well as the national language English.

3.3 IMPACT OF HIV/AIDS

HIV/AIDS is well known for its magnitude and negative impact on human, social and economic life. It puts pressure on health systems, the economy and the social life of the region and must be addressed.

HIV/AIDS has had a major impact on the farming community resulting in:

- A decreased labour force for agricultural activities due to death and illness.
- Reduced income for buying seeds and inputs, which is directed to buying of drugs and burial expenses.
- Cattle that would be used as DAP, and income generation are used to cover burial costs.
- Reduced production due to death of productive people therefore leaving the old to take care of farming activities and orphans.
- Decreased cultivated areas due to orphan headed households and decreased farm labour.

3.4 LIVELIHOOD PATTERNS

Mahangu and livestock production remains the economic base in Ohangwena Region. Non-agricultural employment opportunities are still in their infancy. Subsistence farming is the main source of income for more than 70% of the households. Only 2% of the households earn their income mainly from business activity (Ohangwena Regional Development Plan 2001/2006) Other sources of income are pension, remittances, salaries and selling Okapana.

3.5 LIVESTOCK PRODUCTION

The following are the livestock numbers in the region (DVS Census Figures for 2002/2003)

- | | |
|-----------|---------|
| • Cattle | 135,699 |
| • Sheep | 313 |
| • Goats | 153,799 |
| • Horse | 721 |
| • Donkeys | 12,956 |
| • Poultry | 80,317 |
| • Pigs | 6,169 |

There is a great deal of variation in the patterns of ownership for all livestock. Cattle are the most important domestic animals, because they make up such a significant biomass and also because they are of high value. The average number of cattle per household is about six, yet over half of all households in Ohangwena do not own cattle. The biggest cattle owners are wealthy people, often with their own private trading business or with formal employment. There is also a clear relationship between household size and stock ownership. Large households have more cattle while small households have less. Many homes have more goats than cattle. Female-headed households have fewer domestic animals. The average number of

goats per household is about 8, even though a third of all homes do not own any goats. (A Profile of North-Central Namibia. J. Mendelsohn)

Marketing

Formal market: Cattle are kept for 21 days in quarantine then sold to Meatco. The region has one quarantine facility at Okongo with a capacity of 16,000 animals per year, but currently it is under utilized with only an average of 537 animals passing through it per year. (Quarantine figures. 2001-2003).

Auction: has not been operational in the region, but expected to start in 2003 after construction of the auction pen in Omauni-Okongo constituency.

Informal market: marketing is normally done through the informal markets at Oshikango, Ohangwena, Onhuno, Eenhana, Omafo and Okongo where sellers gather their animals for sale to highest bidders.

3.6 CROP PRODUCTION

Area	Crop type	Estimated Ha Cultivated
F1 - Okongo, Omundaungilo, Epembe and Eenhana	Pearl millet	26,500
F2 - Ondobe, Oshikango and Ohangwena	“	22,550
F3 - Engela, Ongenga and Endola	“	27,000

Sorghum, Cowpea pumpkins, melons, mallows and maize are intercropped with pear millet. There is no irrigation in the region. Crop production is rainfed.

3.7 FOOD SECURITY

Mahangu is mainly grown for subsistence purposes due to the erratic rainfall. In recent years, farmers have not harvested enough to keep the family throughout the year. Most families supplement with other income sources. The government has introduced food for work and relief schemes for drought years. Household food insecurity is evident in the fact that under nutrition remains widespread amongst children less than five years of age. Families spend a large part of their income on school fees, hospital fees, burials/funerals, and food.

4. AGRICULTURAL EXTENSION SERVICES IN OHANGWENA REGION

4.1 MISSION AND STRATEGY

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

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

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

The DEES is committed to provide quality services to our farmers through capacity building for staff, information and experiences sharing as well as collaboration with stakeholders in agricultural development both the private and the public sectors within and outside Ohangwena region.

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

LOG FRAME GOAL: IMPROVED FOOD SECURITY AT HOUSEHOLD AND NATIONAL LEVEL

Purpose:

Farmers have increased and sustainable agricultural production and increased incomes deriving from agriculture.

Output1:	Output2:	Output3:	Output4:	Output5:
Improved agricultural technology and practice options are available to stakeholders.	Relevant farmer support information is available.	Human resources in the agriculture sector are developed.	Agricultural institutions and organisations are strengthened towards improved service delivery.	Co-operation between partner organizations is improved.

4.2 KEY EXTENSION APPROACHES

In Ohangwena Region, DEES works not only with individual farmers, but also with groups of farmers. There are two types of groups; the Focus Communities (FC), where the Farming System Research and Extension Unit (FSRE-U) puts in place its tests and trials, and the Farmer Extension and Development (FED) Groups. Currently the region employs FSRE across the board through participatory, demand driven and multidisciplinary approaches

Previously extension services were delivered through FED groups. Needs analyses were conducted and prioritized, eventually to look for solutions through trials/tests in FSRE-U focus communities. Ultimately on-farm demonstrations and farmer training related to recommendations focussed mainly on FED groups.

In Ohangwena, there were three 3 FC (Onambaba, Ekolola and Omatunda) and 89 active FED groups scattered throughout the region's 11 constituencies (Endola, Ongenga, Ongenga Engela, Oshikango, Ohangwena, Ondobe, Omulonga, Eenhana, Epembe, Omundaungilo and Okongo). Other approaches included agricultural shows, seed fairs, farmers' field days, individual visits, study tours and farmers training (workshops).

Normally, Ohangwena region holds its annual agricultural shows on the month of June. The participants to this event are farmers from the 89 FED groups, who are displaying their agricultural products. Also attending and having display were representatives from FSRE- U, DART, DVS, DoP, OMAFA, MMIU, NNFU, Etunda project, Agribank, MEATCO, FATPP and NDC. The objective of the show is to exchange information, new ideas, and new techniques and to promote competition among farmers as well as to motivate them to produce more to improve their living standard.

Ohangwena also holds its annually Agricultural Seed Fair on the month of October. The objective of the fair is for farmers to display their best seeds of the season, to exchange seeds among themselves and with researchers, new ideas, new techniques and to promote competition among farmers as well as to motivate them to produce more to improve their living standards. Mass media programmes are developed as per the identified problems into extension messages and distributed through leaflets, posters and radio programmes in vernacular.

Collaboration with stakeholders (farmers association and relevant departments) is normally through joint workshops meetings and the holding of fairs/shows.

Comment: ?

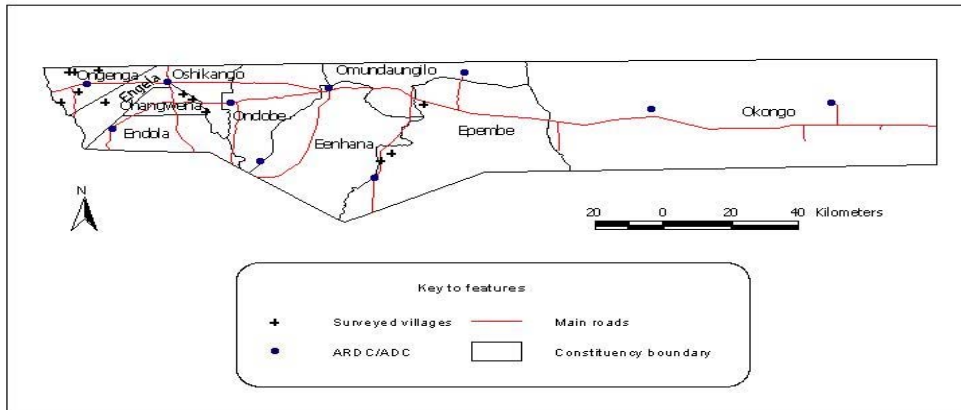
Study Tours: DEES Ohangwena organizes farmers study tours within Ohangwena Region, research stations (Mahenene and Mashare) and abroad (Zimbabwe). As a result, many farmers have successfully implemented many of the technologies they have seen, especially chicken production, cotton, sweet potatoes and weeding with cultivators.

4.3 DEES POST ESTABLISHMENT IN THE REGION

<u>RANK</u>	<u>FILLED</u>	<u>VACANT</u>
CAEO	1	0
AEO	1	2
CAET	2	0
AETs	13	5
Labourers	17	0

The front line extension staff to farm household ratio is 1:1,997 (18 AET posts: 35,938 farming households - see section 3.2).

4.4 AGRICULTURAL DEVELOPMENT CENTRE



DEES Ohangwena has ADCs at Omauni, Okongo, Epembe, Omundaungilo, Omulonga, Ondobe, Endola and Ongenga. It has also two ARDCs at Eenhana and Omafo. In each ADCs, there is one Agricultural Extension Technician (AET), who is in charge of extending agricultural services for its constituency. In the case of Omafo ARDC, there are 3 AETs, who serve Engela, Ohangwena and Oshikango constituencies and at Eenhana ARDC there are three AETs, who are covering Eenhana North and South, while one AET is covering the media issue in the region. At the moment there is no AET at Omauni ADC due to the fact that the construction is not yet completed.

Eenhana is the Sub-Divisional Headquarters, from where Chief Agricultural Extension Officer (CAEO), two Chief Agricultural Extension Technicians (CAETs) and Agricultural Extension Officer (AEO) operate.

4.5 OPERATIONAL EQUIPMENT

Vehicles: 13

Computers: 5 (all in Eenhana)

E-mail addresses: 2

The region is in need of additional computers and audio-visual equipment.

4.6 DONOR PROJECTS

The table below indicates donor projects, which were and are still in the region.

Project Name	Period in the region	Activities involved
RDSP	1995 to 1999	Offices construction, vehicles furniture, staff and farmers training
DANCHURCHAID	1995 to 1998	Offices construction, Furniture, vehicles, trials and demos.
NOLIDEP	1995 up to date	Livestock development (boreholes, dams, SSSCF, and training
REMP	1999 up to date	Offices construction, vehicles, furniture, inputs fairs and shows
NOREESP	2000 to date	Training (staff) income generating projects
Ohangwena Poverty Reduction	1998 to 2000	Staff capacity building ,Farmers training

4.7 MAIN COLLABORATORS

- ❖ DVS
- ❖ DRWS
- ❖ Farmers Union
- ❖ Regional councils
- ❖ Line ministries
- ❖ NGOs and parastatals (Meatco, Northern Namibian Tanneries, the Meat Board of Namibia, NBC, Eenhana Community Radio)

One of the main characteristics of the Farming Systems Research and Extension approach is its holistic view of the farming systems, and the need for multidisciplinary approaches and collaboration in addressing their development needs. DEES therefore emphasises contact and co-operation with a number of important stakeholders. Another advantage of stakeholders working together is the sharing of the resources and an understanding of what the other parties are doing. This is mainly achieved through meetings, workshops and joint planning.

Perhaps our closest collaboration is with the Directorate of Veterinary Services. Normally, every region is supposed to have a State Veterinarian, but there is none in Ohangwena region. Five ADCs out of 10 ADCs work closely with DVS and Rural Water Supply staff in the region.

There is also good cooperation between extension services and traditional authorities as well as regional councillors. Field extension workers are working directly with councillors and headmen in their respectively constituencies.

Only one farmer co-operative exists in the region with collaboration during shows/fairs and line Ministries are collaborating through meetings.

5. SURVEY METHOD

The survey focused on indicators of the impact of the extension services on contacts with communal farmers and their consequent awareness, understanding and adoption of innovations recommended. A formal questionnaire based method was used to provide quantitative information. A total of 218 questionnaires were administered to randomly selected respondents. 50% of the communities selected for the questionnaire were communities in which FED groups were active and 50% were communities where FED group were not active.

5.1 RATIONALE: BASELINE AND IMPACT SURVEYS

To strengthen the monitoring and evaluation of the extension services, the DEES believed that a baseline and impact survey should be conducted. This is expected to assist managers in improving the effectiveness of their extension strategies, and provide evidence to planners and funders of the cost-effectiveness of investing in extension services.

5.2 SURVEY OBJECTIVES

The objective of the survey was to investigate the extent of the impact of the extension services on communal farmers. This includes the level of contact between farmers and the extension agents, agricultural technology awareness and adoption by farmers and related sources of information. The survey intended to look into the degree to which crop and livestock husbandry practices were known about, understood and carried out, such as adopting new seed varieties, row planting, herd management, use of draught animal power (DAP) and the use of fertilisers.

5.3 QUESTIONNAIRE DEVELOPMENT

Questions were divided into three parts as follows: farmer type, farmer extension contact and extension impact. Before the field implementation questionnaires were pre-tested in two communities (Oshikuni FED group and Ohamukulungudju non-FED group). The aim of pre-testing was to check if the questionnaires were understood by the farmers, to identify problems and suggest possible solutions to each questionnaire, and to find out how much time would be spent on each questionnaire per farmer. Basically, there were no major problems experienced during the pre-testing.

5.4 SAMPLE SELECTION

The region was divided into three relatively homogenous parts based on key characteristics of the farming system. These characteristics included: rainfall, soil type, population density, and farming systems (farm size, number of livestock, practice of agro forestry and aqua-culture, etc.).

The three parts were as follow:

EASTERN PART: (F1) Okongo, Omundaungilo, Epembe and Eenhana constituencies. The total number of households in these constituencies is 10,674. These constituencies have the highest rainfall, the largest numbers of livestock, abundant pasture, as well as the biggest size of farms as compared to the rest of the region. Their soils are characterized by sandy soil and sandy clay soil. They have a relatively low population density.

CENTRAL PART: (F2) Ondobe, Ohangwena and Oshikango constituencies. The total number of households is 12,236. These constituencies have the medium levels of rainfall and livestock numbers, and population density. Soil is characterized by sandy clay soil. Their farm sizes are small compared to F1.

WESTERN PART: (F3) Engela, Ongenga and Endola constituencies. The total number of households is 13,083. These constituencies are highly populated areas. Aquaculture and agro forestry is widely practiced and sizes of the farms are smaller compared to F1 and F2. Soils are mainly loam clay soil.

The following is a breakdown of the number of questionnaire administered in each farming system. This was not proportional to the number of households as was supposed to be the case.

- 32 questionnaires were applied in F1.
- 76 questionnaires were applied in F2
- 110 questionnaires were applied in F3

The constituencies selected for administering the questionnaire were identified using a random sampling method, which allowed all constituencies to have an equal opportunity to be selected. Within the selected constituency a further stratification took place. This was between communities in which FED groups were active and those where FED groups were not active. Communities were randomly selected from lists of each type of community.

The aim of stratifying according to whether a community hosts a FED group or not was to enable comparisons to be made between those farmers who were members of FED groups and those who were not. The aim was to select approximately 50% of the respondents who were FED group members and 50% who were not (referred to in this report as non-FED group farmers).

This was done in order to test the hypothesis that farmers who are in FED groups 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 in the region 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 provides evidence that the group strategy is effective. Non-group farmers and their areas can be said to act as a 'control' group, who have received relatively little or no direct support.

The following are the communities which were selected to apply questionnaire

- | | |
|----|---|
| F1 | Omuhongo FED group
Omuthiya FED group
Ohamukulungudju non FED group
Ohakafiya non FED group |
| F2 | Ongonga FED group
Ondungulu FED group
Okatope kaShikundule non FED group
Onamwilwa non FED group
Onheleiwa ya Ndalya Fed group
Etale non FED group |
| F3 | Onambaba FED group
Elakalapwa non FED group
Ongudi FED group |

Oshimwaku non FED group
Ombenoni non FED group
Okambebe non Fed group
Eenghoshi FED group
Oshindobe FED group

Within the selected communities, the farming households were listed and given numbers, then numbers were put in a cup from which numbers were picked. This enabled each household to have an equal opportunity of being picked and interviewed.

5.5 PREPARATION FOR FIELD IMPLEMENTATION

The region employed four enumerators. The positions were advertised on Namibia Broadcasting Cooperation (NBC) Oshiwambo services. The minimum requirements were that successful candidate should have the following:

- Grade 12 or Diploma in agriculture
- Resident in Ohangwena region
- Fluent in Oshiwambo
- Ability to work away from her /his home.
- Previous experience in agricultural survey would serve as advantage

The interview was divided into two parts i.e. writing and oral. A total of 36 applicants were received and sat for the written interview. Out of 36 interviewees only 10 interviewees, who scored more than 69%, were allowed to take the oral interview. Out of 10 interviewees four interviewees scored the highest and were chosen as enumerators. A memorandum of agreement was signed between the survey officials and enumerators. Two of them were grade 12-certificate holders, while two held National Diplomas in Agriculture. Gender was not balanced due to the fact that there were three ladies and one male.

There was a one-day training course prior to the field implementation. The training took place at Eenhana ARDC from 8 h 00 up to 17 h 00. The aim of the training was to prepare enumerators for the farmers' interview, to check whether questionnaires were clear to them, especially considering all the issues of translation from English to the Oshiwambo language.

The survey officials visited the identified communities prior to the field implementation to familiarize themselves with the headmen and inform them of the aim of the survey as well as to acquire the lists of the households.

Enumerators were introduced to Agricultural Extension Technicians, Headmen and councillors of the surveyed areas before the interview.

5.6 QUESTIONNAIRE IMPLEMENTATION

Time per questionnaire

The average time spent per questionnaire ranged from 35 to 40 minutes per farmer on the first two days of the survey. This decreased to an average time of 20 minutes per farmer as enumerators got used to questionnaires.

Number of respondents per day

The table overleaf indicates number of respondents interviewed in each constituency.

Constituency	Community	Number of respondents per day	Total respondents in F1
Epembe(F1)	Omuhongo	8	32
	Omufiya	8	
	Ohamukulungudju	8	
	Ohakafiya	8	
Ohangwena(F2)	Onamwilwa	12	76
	Okatope	12	
	Onheleiwa ya Ndalya	12	
	Ondungulu	12	
	Ongonga	14	
	Etale	14	
Ongenga (F3)	Onambaba	14	110
	Ongudi	14	
	Oshimwaku	12	
	Elakalapwa	14	
	Oshindobe	14	
	Eenghoshi	14	
	Okambebe	14	
	Ombenoni	14	

Kilometers

Only one vehicle was involved in the survey. The table below summarizes the breakdown of kilometers per Farming System area.

Constituency	Estimated Km	Actual Km Travelled	Estimated Cost	Actual Cost
Epembe F1	350	350	1050.	1050
Ohangwena F2	500	800	1500	2400
Ongenga F3	650	650	1950	1950
Total Km Travelled	1500	1800	4500	5400

As can be seen from the table the officers undertaking the survey underestimated the kilometres used by 300 km.

PRACTICAL PROBLEMS

The survey team did not experience major problems in F1 and F2, but in F3 there was a minor problem. The problem was that there was a suspicion of the survey officials being from an opposition political party. The issue was solved with the intervention of the Honorable Councillor of the constituency. Some of the listed household owners were found to have died before the survey commenced, so the team had to replace them with others.

Breakdown of the cost of survey:

The table below shows the breakdown of the survey cost

Item	Cost per unit	Total
Transport (1800)	N\$ 3	N\$ 5400
Allowance of enumerators	N\$ 200 per day plus 100 per night for 10 days	N\$ 12000
Grand Total		N\$ 17400

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 218.

6.1 FARMER TYPE

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

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

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

FED Group Membership

Total sample size = 218

Fed Group member = 85 (39%)

Non-FED group member = 133 (61%)

ADC	FED group member		Total
	Yes	No	Col %
Ongenga	42.4%	56.4%	50.9%
Omafo	27.1%	39.1%	34.4%
Epembe	30.6%	4.5%	14.7%

The table shows the total of respondents covered in each constituency, 50.9% in Ongenga, 34.4% in Ohangwena and 14.4% in Epembe respectively.

6.1.1 Distance from ADC

Variable	Category	FED group member		Total
		Yes	No	
Distance from ADC	< 5km	4.7%	2.3%	3.2%
	6-10km	48.2%	35.3%	40.4%
	11-20km	37.6%	48.9%	44.5%
	> 20km	9.4%	13.5%	11.9%

The table shows that 44.5% of the respondents live between 11 to 20 km from the nearest ADC 40.4% the respondents live between 6-to10 km 11.9% live more than 20 km while 3.2 % live less than 5 km.

6.1.2 Sex of respondents

Variable	Category	FED group member		Total
		Yes	No	
Sex of respondent	Male	41.0%	39.1%	39.8%
	Female	59.0%	60.9%	60.2%

The table shows that 62.2% of the respondents interviewed were female while 39.8% were male.

6.1.3 Age of respondent

Variable	Category	FED group member		Total
		Yes	No	
Age of respondent	15-30	11.8%	20.3%	17.0%
	31-45	11.8%	16.5%	14.7%
	46-60	15.3%	17.3%	16.5%
	>60	61.2%	45.9%	51.8%

The table reveals that 51.8% interviewees were above 60 years of age, 17% were between 15 to 30, 16.5% between 46 to 60 years, while 14.7% were between 35 to 45 years.

6.1.4 Respondents as household head

Variable	Category	FED group member		Total
		Yes	No	
Household head	Spouse	14.1%	8.3%	10.6%
	Man	55.3%	56.4%	56.0%
	Woman	30.6%	35.3%	33.5%

The table shows that 56.0% of the households interviewed were male headed while 33.5% were female headed.

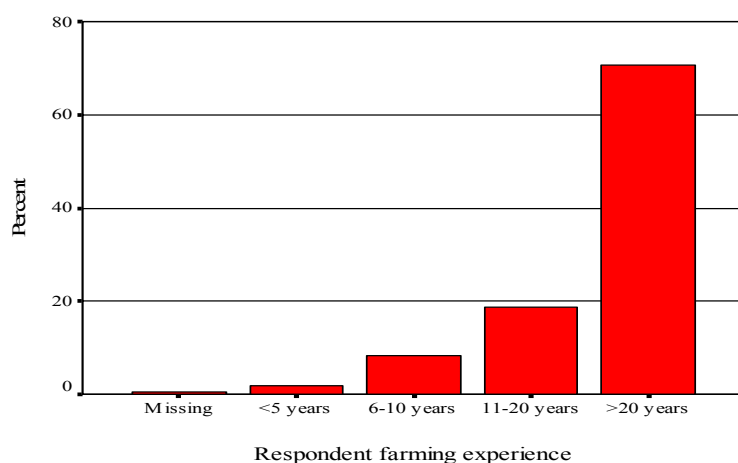
6.1.5 Education Levels

Variable	Category	FED group member		Total
		Yes	No	
Education level of respondent	Primary	31.8%	48.9%	42.2%
	Secondary	16.5%	18.8%	17.9%
	Tertiary	1.2%	.8%	.9%
	No school	50.6%	31.6%	39.0%
Highest education level of a member in the household	Primary	41.0%	28.2%	33.3%
	Secondary	36.1%	46.0%	42.0%
	Tertiary	7.2%	4.8%	5.8%
	No school	15.7%	21.0%	18.8%

The table shows that 39% of respondents had not attended school, 42.2% of the respondents had attended primary school only, and about 19% had attended secondary level or above. On the other hand, about 47% of respondents indicated that the highest educational attainment of any member of their household was above secondary level. This can be taken to include those who have completed Grade 10. It suggests that many households include members with secondary 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 on to the head of household.

6.1.6 Respondent farming experience

Variable	Category	FED group member		Total
		Yes	No	
Respondent farming experience	<5 years	2.4%	1.5%	1.8%
	6-10 years	5.9%	9.8%	8.3%
	11-20 years	10.6%	24.2%	18.9%
	>20 years	81.2%	64.4%	71.0%

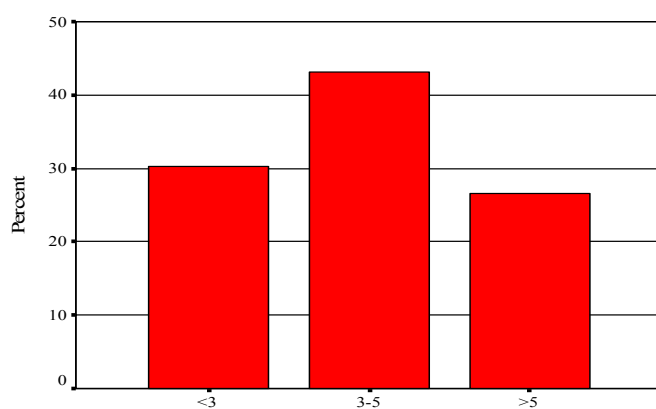


The table and graph indicate that 1.8% of respondents' farming experience was less than 5 years, 8.3% was from 6 to 10 years, 18.9% was from 11 to 20 years, while 71.0% was more

than 20 years. It can be noted from the table above that experience of more than 20 years was higher than the rest of categories in both FED and non-FED groups.

6.1.7 Persons regularly helping with farm work

Variable	Category	FED group member		Total
		Yes	No	
Persons in the household helping regularly with farm work	<3	25.9%	33.1%	30.3%
	3-5	41.2%	44.4%	43.1%
	>5	32.9%	22.6%	26.6%

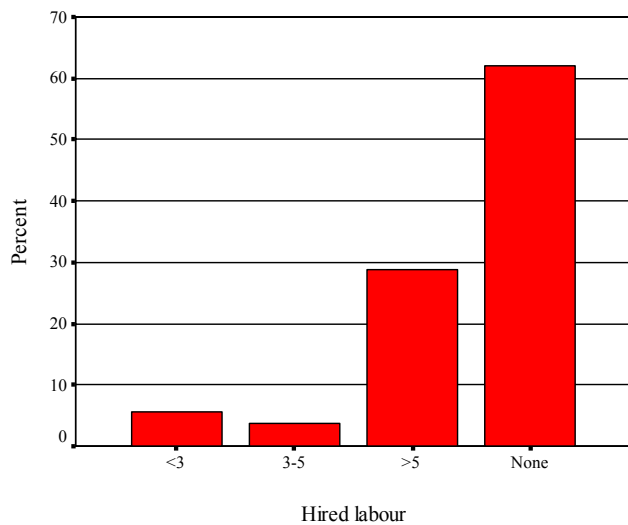


Persons in the household helping regularly with farm work

The table and graph reveal that 30.3% of respondents had less than 3 members of the household helping with farm work regularly, 43.1% of respondents had from 3 to 5 people, while 26.6% of respondents had more than 5 people. In comparing FED and non-FED group respondents there is no significant difference between the categories.

6.1.8 Hired labour

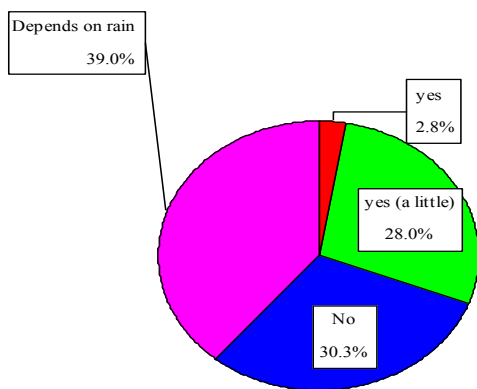
Variable	Category	FED group member		Total
		Yes	No	
Hired labour	<3	5.9%	5.3%	5.5%
	3-5	1.2%	5.3%	3.7%
	>5	32.9%	26.3%	28.9%
	None	60.0%	63.2%	61.9%



The table and graph indicate that 5.5% of respondents employed less than 3 hired people, 3.7% 3 to 5 hired people, 28.9% more than 5 hired people, while 61.9% did not hire people at all. This shows that most farmers (more than 50%) in the region do not hire labour.

6.1.9 Farming Satisfaction

Variable	Category	FED group member		Total
		Yes	No	
Farming satisfies basic household needs	Yes	3.5%	2.3%	2.8%
	Yes (a little)	22.4%	31.6%	28.0%
	No	30.6%	30.1%	30.3%
	Depends on rain	43.5%	36.1%	39.0%



The table and graph indicate that 2.8% of respondents stated that farming satisfied their basic households needs, 28,0% said it satisfied it a little, 30,3% said it did not satisfy their needs,

while 39.0% said it depended on rainfall. This illustrates that for the many farming households, satisfaction of their basic needs relies heavily on the availability of rainfall.

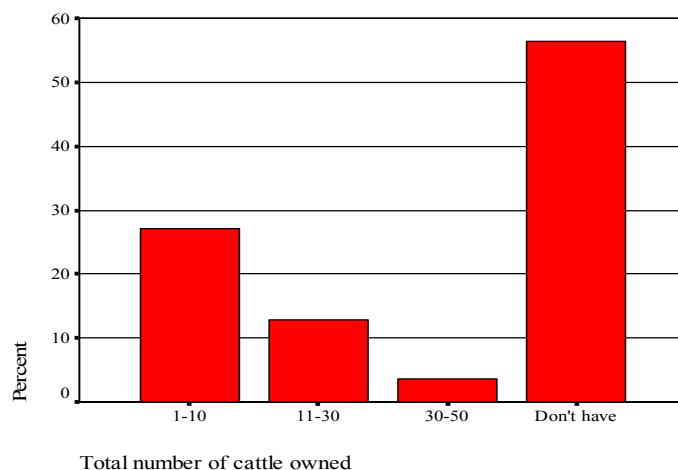
6.1.10 Area Planted.

Variable	Category	FED group member		Total
		Yes	No	
Total area planted in 2002/2003	<3	75.9%	70.5%	72.6%
	3-7	22.9%	28.8%	26.5%
	>7	1.2%	.8%	.9%

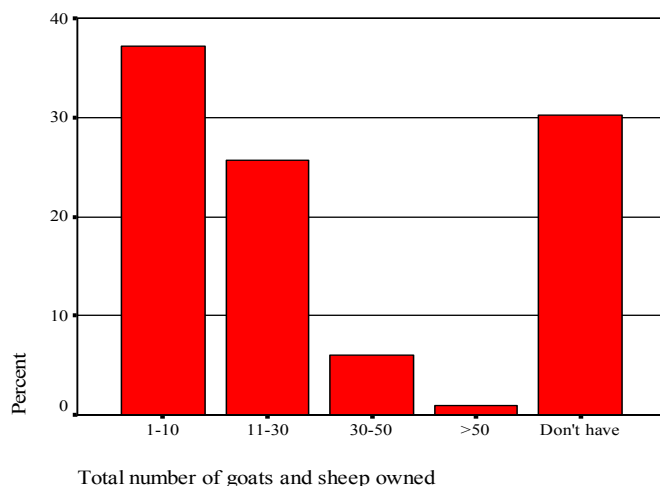
The table shows that a total 72.6% of respondents planted less than 3 ha, 26.5% planted from 3-7 ha, while 0.9 % planted more than 7 ha.

6.1.11 Livestock Ownership

Variable	Category	FED group member		Total
		Yes	No	
Total number of cattle owned	1-10	28.2%	26.3%	27.1%
	11-30	20.0%	8.3%	12.8%
	30-50	1.2%	5.3%	3.7%
	Don't have	50.6%	60.2%	56.4%
Total number of goats and sheep owned	1-10	34.1%	39.1%	37.2%
	11-30	28.2%	24.1%	25.7%
	30-50	8.2%	4.5%	6.0%
	>50	2.4%		.9%
	Don't have	27.1%	32.3%	30.3%
Total number of donkeys/horses owned	1-10	32.9%	33.8%	33.5%
	11-30		.8%	.5%
	Don't have	67.1%	65.4%	66.1%
Total number of poultry owned	1-10	69.4%	74.4%	72.5%
	11-30	28.2%	12.8%	18.8%
	30-50		3.8%	2.3%
	>50		3.0%	1.8%
	Don't have	2.4%	6.0%	4.6%



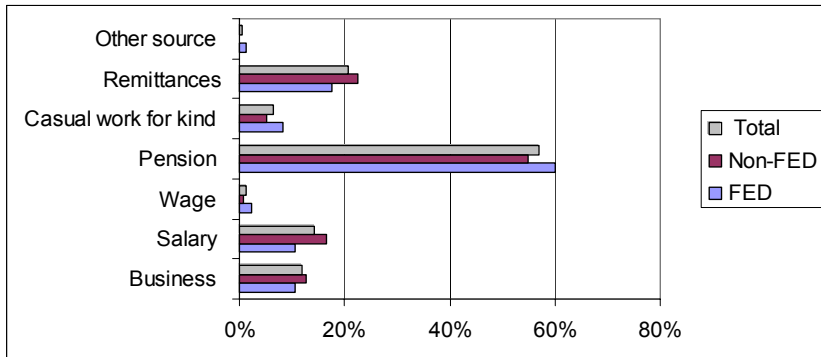
The table and graph show that 56.4% of respondents do not own cattle, 27.1% own less than 11 cattle, while very few have between 11-50.



The table/graph shows that 37.2% have between 1-10 goats and sheep, 30.3% don't have any, 25.7% have between 11-30, while very few (6.9%) have between 30-50.

6.1.12 Other main income sources for farming households in Ohangwena

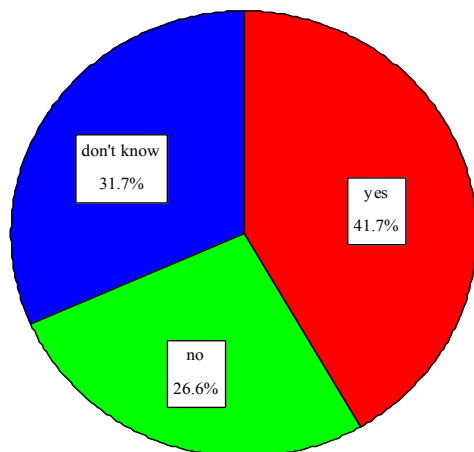
Type of income source	Category	FED group member		Total
		Yes	No	
Business	Yes	10.6%	12.8%	11.9%
Salary	Yes	10.6%	16.5%	14.2%
Wage	Yes	2.4%	.8%	1.4%
Pension	Yes	60.0%	54.9%	56.9%
Casual work for kind	Yes	8.2%	5.3%	6.4%
Remittances	Yes	17.6%	22.6%	20.6%
Other source	Yes	1.2%		.5%



The table and graph indicate that the majority of households get income from the pension pay out (56.95%), remittances (20.6%), and 14.2% from salaries while 11.9% from business. There are no major differences between FED and non-FED group farmers in most of the categories.

6.2 EXTENSION CONTACT

6.2.1 AET in the area



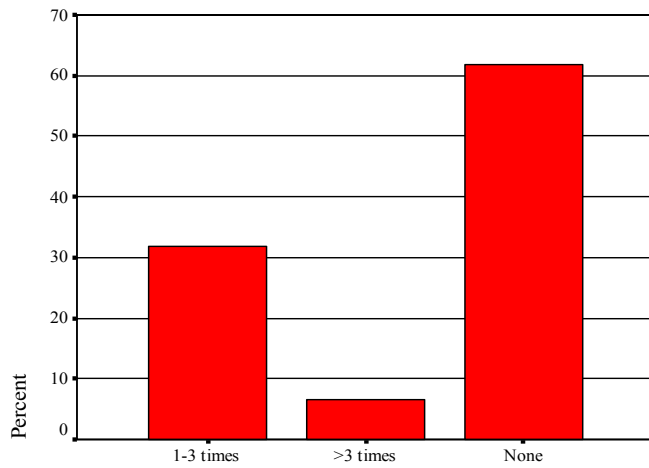
The farmers were asked whether they knew there was an AET working in their area. The pie chart indicates that 41.7% said that there was an AET who was working in their area, 31.7% didn't know, while 26.6% said there was no AET in their area.

Variable	Category	FED group member		Total
		yes	no	
There should be an AET in your community	Yes	15.3%	39.8%	30.3%

The survey found out that 15.3% in FED group said that they are still in need of an AET in their community, while 39.8% in non-FED group said that there was a need of an AET in their community.

6.2.2 Times got information

Variable	Category	FED group member		Total
		yes	no	
Times got info from AET last year	1-3 times	63.5%	11.4%	31.8%
	>3 times	14.1%	1.5%	6.5%
	None	22.4%	87.1%	61.8%

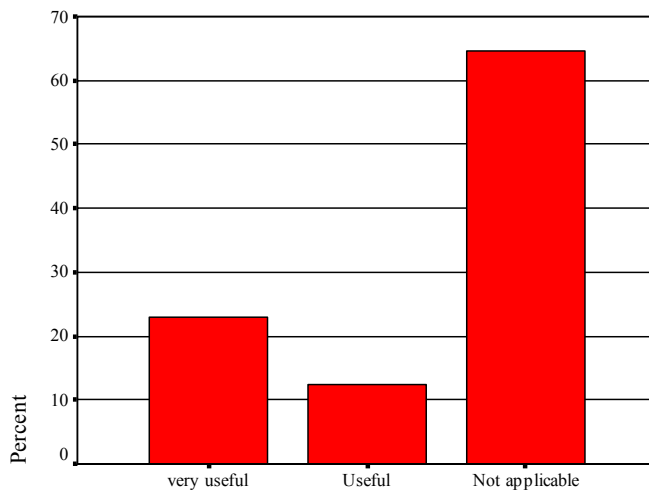


Times got info from AET last year

The table and graph indicate that 31.8% of respondents stated that they had received agricultural information from AET 1 to 3 times in the last year, 6.5% received information more than 3 times, while 61.8% said they did not receive any.

6.2.3 Usefulness of information from the AET

Variable	Category	FED group member		Total
		yes	no	
Usefulness of information got from AET	Very useful	45.9%	8.3%	22.9%
	Useful	28.2%	2.3%	12.4%
	Not useful			
	Not applicable	25.9%	89.5%	64.7%

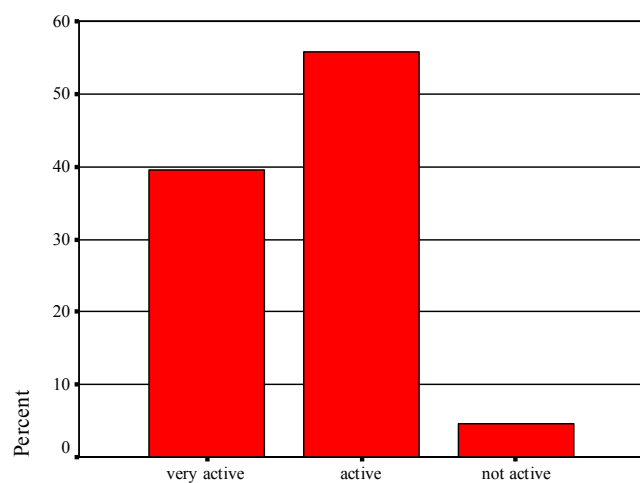


Usefulness of information got from AET

Farmers were asked if the information they get from AET was very useful, useful or not useful. The table/graph indicates 22.9% of respondents said that the information they got from AET was very useful and 12.4% was useful. For 64.7% the question was not applicable.

6.2.4 Activeness of FED group

Variable	Category	FED group member		Total
		yes	no	
Level of Activeness of FED group	Very active	39.5%		39.5%
	Active	59.8%		59.8%
	Not active	4.7%		4.7%



Level of activeness of FED group

The table and graph show that a total of 39.5% of respondents said that their FED group was very active, 55.8 % said that was active and 4.7% said was not active. N.B. This question was not asked in non-FED group communities since they were not members.

6.2.5 Knowledge of Farmer Activities Provided by Extension

Knowledge of type activity offered by extension staff	Category	FED group member		Total Col %
		yes	no	
Farmer training by extension staff	Yes	82.4%	17.6%	51.8%

Comparing the FED and non-FED group on knowledge of farmer training activities provided by extension staff, the table shows that 82.4% in FED and 17.6% in non-FED group said that they were aware of farmer training having been offered by extension staff.

Knowledge of type activity offered by extension staff	Category	FED group member		Total
		yes	no	
Leadership skills	Yes	7.1%	2.3%	4.1%

The survey found that 7.1% in FED and 2.3% in non-FED group communities were aware of leadership skills offered by extension staff.

Knowledge of type activity offered by extension staff	Category	FED group member		Total
		yes	no	
Demonstration	Yes	47.1%	23.3%	32.6%
Exposure visits	Yes	2.4%	3.0%	2.8%
Agricultural shows & fairs	Yes	17.6%	8.3%	11.9%
Other trainings	Yes	3.5%	3.0%	3.2%
Don't know about any training	Yes	8.2%	2.3%	4.6%

The table indicates that 32.6% of the respondents knew about demonstrations conducted by extension services, 11.9% knew of Agricultural Shows and Fairs, 4.6% of respondents did not know of any training, and 2.8% of the respondents knew of exposure tours.

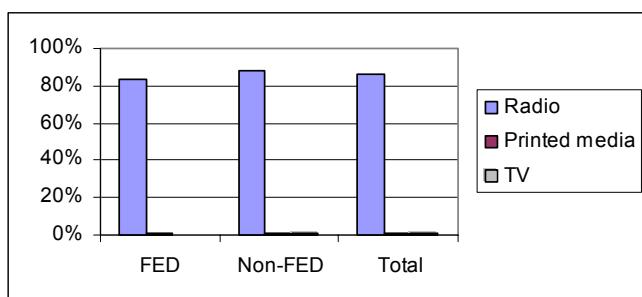
6.2.6 Attendance at Various activities organised by Extension

Name of activity has attended	Category	FED group member		Total Col %
		yes	no	
Leadership training	Yes	4.7%	1.5%	2.8%
Demonstration	Yes	32.9%	4.5%	15.6%
Exposure visit	Yes	4.7%		1.8%
Agric. Shows/fairs	Yes	4.7%	4.5%	4.6%
None training	Yes	43.5%	32.3%	36.7%
Other training	Yes	1.2%	.8%	.9%
After training has applied skills	Yes	41.2%	7.5%	20.6%

The table shows that 20.6% of respondents said that they had applied skills they had learnt from extension services, 15.6% stated they had attended demonstrations, 2.8% had attended leadership training, while 36.7 said they did not participate in any training.

6.2.7 Mass Media in Extension

Type of Source	Category	FED group member		Total Col %
		yes	no	
Radio	Yes	83.5%	88.0%	86.2%
Printed media	Yes	1.2%	.8%	.9%
TV	Yes		.8%	.5%



The farmers were asked which mass media they get the agricultural information from. The table and graph show that a total of 86.2% got their agricultural information from radio, 0.9% from printed media and 0.5% from TV. This indicates that the majority of farmers can be reached through radio both in FED and non-FED groups.

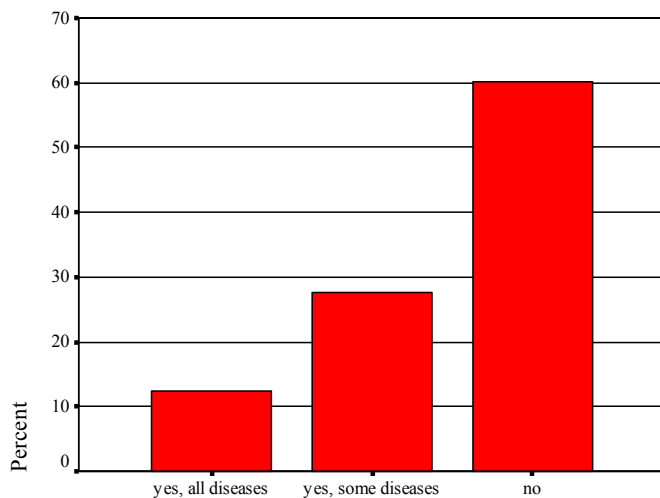
Variable	Category	FED group member		Total
		yes	no	
Times received info from radio last year	Daily	1.4%		.5%
	Weekly	22.5%	22.2%	22.3%
	Monthly	12.7%	1.7%	5.9%
	Occasionally	63.4%	76.1%	71.3%
Usefulness of info on the radio	Useful	87.5%	83.9%	85.3%
	Somehow	12.5%	14.4%	13.7%
	Not useful		1.7%	1.1%

The table above shows that 71.3% of the respondents had received information occasionally through radio last year, 22.3% weekly, 5.9% monthly and 0.5% daily. The total of 85.3% indicated that the agricultural information received was useful; 13.7% was somehow useful, while 1.1% said it was not useful.

6.3 EXTENSION IMPACT INDICATORS

6.3.1 Animal Health

Variable	Category	FED group member		Total
		Yes	No	
Cattle taken to crush pen for vaccination yearly	yes	48.8%	42.0%	44.7%
	no	51.2%	58.0%	55.3%
Reason for not vaccinating cattle	no knowledge	25.0%	8.7%	11.1%
	crush pen too far	25.0%	17.4%	18.5%
	not applicable	50.0%	73.9%	70.4%
Knows the scheduled diseases livestock are vaccinated against	yes, all diseases	9.4%	14.3%	12.4%
	yes, some diseases	34.1%	23.3%	27.5%
	no	56.5%	62.4%	60.1%
Received training from DEES in prevention, diagnosis & treatment of diseases	yes	18.8%	8.3%	12.4%
	no	81.2%	91.7%	87.6%

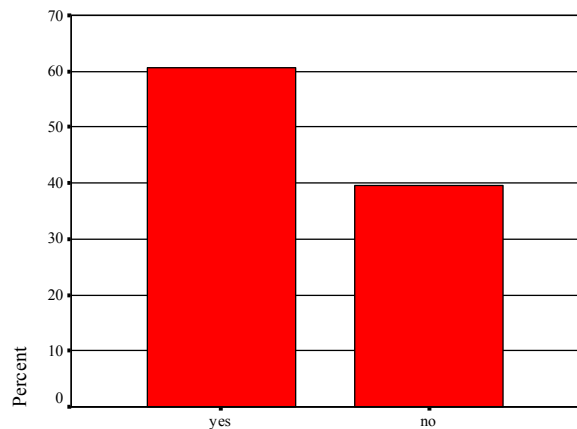


Knows the schedule of diseases livestock are vaccinated against

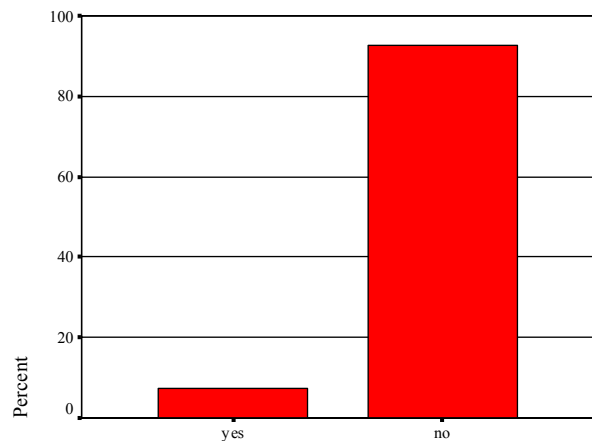
The table and graph show that 44.7% of the cattle owning respondents say they take their cattle to crush pens for vaccination, while 55.3% say they do not take them. 11.1% of the respondents who say they do not take their cattle for vaccination stated that this was because they did not know about vaccinations, 18.5% of the respondent said the reason for not vaccinating was that the crush pens were too far from their homes. 12.4% of respondents knew all scheduled diseases livestock are vaccinated against, while 27.5% knew some and 60.1% did not know them at all.

6.3.2 Animal Husbandry Practice

Variable	Category	FED group member		Total
		Yes	No	
Castrates livestock	yes	61.2%	60.2%	60.6%
	no	38.8%	39.8%	39.4%
Main castration method used	knife	28.3%	37.0%	33.6%
	burdizzo	64.2%	49.4%	55.2%
	rubber ring	7.5%	13.6%	11.2%
Knows benefits of dehorning livestock	yes	21.2%	17.3%	18.8%
	no	78.8%	82.7%	81.2%
Dehorns livestock	yes	8.2%	6.8%	7.3%
	no	91.8%	93.2%	92.7%



Castrates livestock



Dehorns livestock

The table and graphs reveal that 60.6% of the respondents castrate their livestock, while 39.4% did not castrate. 33.6% of those who castrate used a knife, 55.2% used a burdizzo, and 11.2%

used rubber rings to castrate their livestock. 18.8% of the respondents knew the benefits of dehorning livestock, while 81.2% of respondents did not know the benefit of dehorning. 7.3% of the respondents dehorned and 92.7% did not know the benefit of dehorning livestock. The highest percentage of those used burdizzo was found in FED while the highest percentage used knife in non-FED group

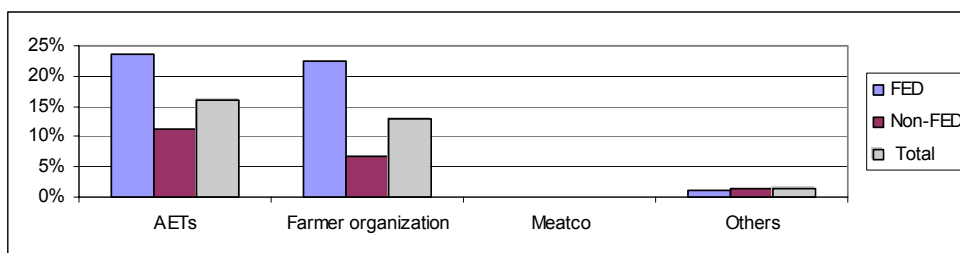
6.3.3 Livestock marketing

Variable	Category	FED group member		Total
		Yes	No	
Livestock type sold most	Small stock	15.9%	22.3%	19.7%
	Large stock	9.8%	11.6%	10.8%
	Poultry	23.2%	24.0%	23.6%
	Don't sell	50.0%	42.1%	45.3%
	Don't own	1.2%		.6%

The table shows that 45.3% of respondents said they did not sell their livestock, 23.6% sold poultry, 19.7% sold small stock, 10.8% large stock and 0.6% did not own livestock.

6.3.4 Sources of Information of Livestock Marketing

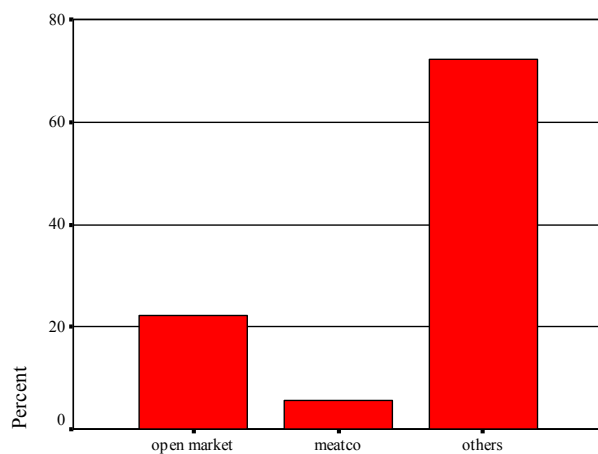
Variable	Category	FED group member		Total
		Yes	No	
Receives livestock marketing information regularly	yes	23.5%	11.3%	16.1%
	no	76.5%	88.7%	83.9%
Receives livestock marketing information from AETs	yes	22.4%	6.8%	12.8%
	no	77.6%	93.2%	87.2%
Receives livestock marketing information from Farmer organisation	no	100.0%	100.0%	100.0%
Receives livestock marketing information from Meatco	yes	1.2%	1.5%	1.4%
	no	98.8%	98.5%	98.6%
Receives livestock marketing information from Others	yes	9.4%	9.2%	9.3%
	no	90.6%	90.8%	90.7%



The table and graph shows how farmers received livestock marketing information. 16.1% received information regularly, 83.9% did not receive information regularly. 12.8% received livestock marketing information from their AET, while 87.2 % did not receive information from AET. 100% said they did not receive any information from any farmer’s organisations. 1.4% said they received from Meatco, while 98.6% did not receive information from Meatco. 9.3% said that they received livestock marketing information from other organisations, and 90.7% did not receive any information from other resources.

6.3.5 Type of Market where Livestock mostly sold

Variable	Category	FED group member		Total
		Yes	No	
Type of market where cattle is mostly sold	open market	28.6%	18.2%	22.2%
	Meatco	14.3%		5.6%
	others	57.1%	81.8%	72.2%
Type of market where small stock is mostly sold	auction	21.4%		7.3%
	open market	14.3%	18.5%	17.1%
	others	64.3%	81.5%	75.6%
Type of market where poultry is mostly sold	open market	28.6%	17.1%	21.0%
	others	71.4%	82.9%	79.0%



Type of market where cattle is mostly sold

The table and graph show different types of market where respondents say their livestock are mostly sold. 22.2% said that they sold their cattle mostly at open market, 5.6% at Meatco, and 72.2% sold at other places. 7.3% sold their small stock at auctions and 17.1% at open market, while 75.6% at other places. 21.0% sold their poultry at open market, while 79.0% at other places.

6.3.6 Season in which most livestock are sold

Variable	Category	FED group member		Total
		Yes	No	
Season for selling most livestock	summer		1.6%	1.0%
	winter	7.3%	1.6%	3.8%
	autumn	2.4%		1.0%
	spring	12.2%	1.6%	5.7%
	any season	78.0%	95.3%	88.6%

The table indicates the season in which livestock are mostly sold. 88.6% of the respondents said at any season, 5.7% in spring, 3.8% winter, and 1.0% in summer and autumn respectively.

6.3.7 Age at which most Livestock are sold

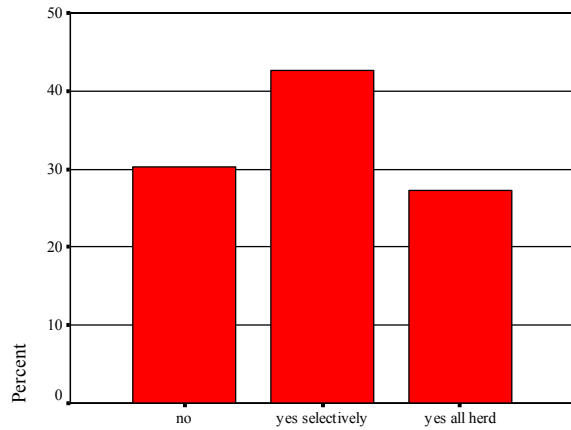
Variable	Category	FED group member		Total
		Yes	No	
Age at which most livestock is sold	4-6 years	38.1%	40.0%	38.9%
	7-9 years	4.8%		2.8%
	>9 years	14.3%	6.7%	11.1%
	Any age	42.9%	53.3%	47.2%

The table shows the age at which most livestock are sold. 47.2% of respondents said that they sell at any age, 38.9% from 4 to 6 years, 11.1% at more than 9 years, while 2.8% between 7 and 9 years old.

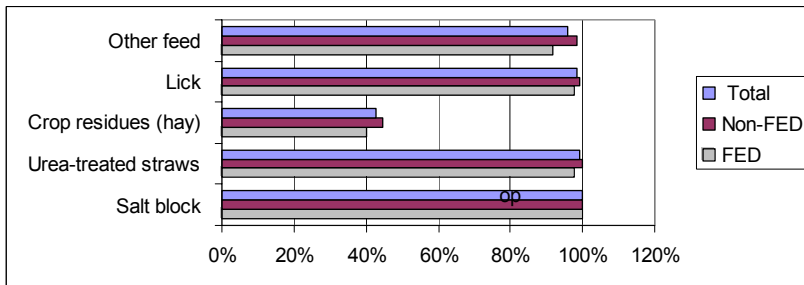
6.3.8 Supplementary Feeding

Variable	Category	FED group member		Total
		Yes	No	
Knows the benefits of supplementary feeding	yes	67.9%	60.2%	63.1%
	no	32.1%	39.8%	36.9%
Gives supplementary feeds to cattle	no	25.0%	33.9%	30.3%
	yes selectively	42.5%	42.6%	42.6%
	yes all herd	32.5%	23.5%	27.2%
Salt block is the supplement feed	yes	100.0%	100.0%	100.0%
Urea-treated straws is the supplement feed	no	2.4%		.9%
	yes	97.6%	100.0%	99.1%
Crop residues (Stover) is the supplement feed	no	60.0%	55.6%	57.3%
	yes	40.0%	44.4%	42.7%
Lick is the supplement feed	no	2.4%	.8%	1.4%
	yes	97.6%	99.2%	98.6%
Other feed is the supplement feed	no	8.2%	1.5%	4.1%
	yes selectively	91.8%	98.5%	95.9%

Variable	Category	FED group member		Total
		Yes	No	
Time of supplement feeding	dry season	70.2%	69.6%	69.9%
	rainy season	28.1%	29.1%	28.7%
	any time	1.8%	1.3%	1.5%



Gives supplementary feeds to cattle



The table and graphs show that 63.1% of the respondents knew of the benefits of supplementary feeding, while 36.9% did not know of the benefits. 30.3% did not give feed supplements to their cattle, 42.6% gave supplementary feed to their cattle selectively, while 27.2% gave to their whole herd. 100% of respondents indicated that they gave salt blocks as supplementary feed, 0.9% did not give urea treated straws, while 99.1% gave urea treated straw to their cattle as supplement feed.

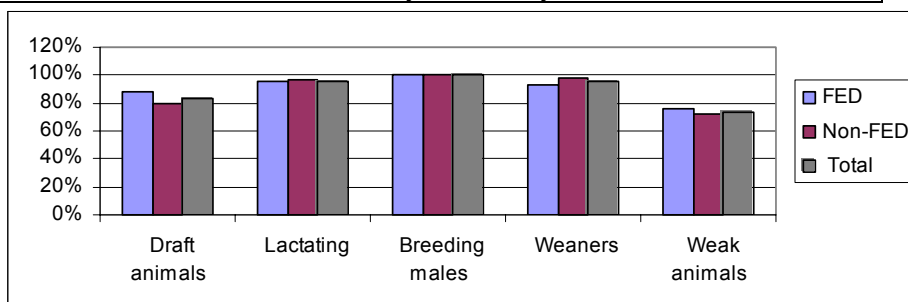
57.3% of respondents did not give crop residue as supplement feed and 42.7% gave crop residue as supplementary feeding to their livestock. 1.4% of the respondents did not give lick as supplementary feed, while 98.6% gave lick as supplement feed to their livestock. 4.1% did not supplement either with other feeds, while 95.9% gave but to selected cattle.

The majority of the farmers (69.9%) said that they supplemented their livestock during the dry season and 1.5% supplemented any time.

It seems likely that some of these figures raise concerns about the way the questionnaire was applied.

6.3.9 Selective Supplementary Feeding

Variable	Category	FED group member		Total
		Yes	No	
Selectively give supplementary feed to Draft animals	no	11.8%	20.3%	17.0%
	yes selectively	88.2%	79.7%	83.0%
Selectively give supplementary feed to lactating	no	4.7%	3.8%	4.1%
	yes selectively	95.3%	96.2%	95.9%
Selectively give supplementary feed to breeding males	yes selectively	100.0%	100.0%	100.0%
Selectively give supplementary feed to weaners	no	7.1%	2.3%	4.1%
	yes selectively	92.9%	97.7%	95.9%
Selectively give supplementary feed to weak animals	no	23.5%	27.8%	26.1%
	yes selectively	76.5%	72.2%	73.9%



The table and graph show that those who provide supplementary feed selectively to certain animals said the following: 17.0% did not give to DAP animals, while 83.0% gave to DAP animals. 95.9% gave supplementary feed selectively to lactating animals. 100% said that they gave supplementary feed to breeding males. 4.1% did not give supplementary feed to weaners and 95.9 gave supplementary feed to weaners. 26.1% did not give supplementary feed to weak animals and 73.9% gave supplementary feed to weak animals.

Again, there is reason to suspect that these figure reveal a problem with the way this question was administered.

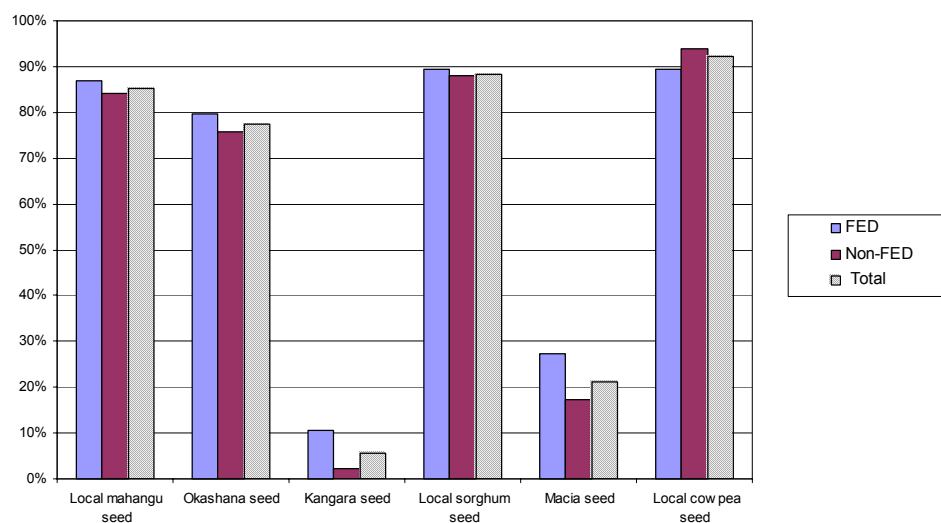
6.3.10 Crops grown

Variable	Category	FED group member		Total
		yes	no	Col %
Grew cereal only	Yes		.8%	.5%
Grew cereal + cotton	No	100.0%	100.0%	100.0%
Grew cereal + legumes	Yes	98.8%	99.2%	99.1%
Grew cereal + vegetables	Yes	48.2%	54.1%	51.8%
Grew other crops	Yes	2.4%	7.5%	5.5%

The table shows that 99.1% of the respondents grew cereal and legumes, 51.8% grew cereal + vegetables, 5.5% grew other crops, while 0.5% grew only cereal. 100% of the respondents did not grow cotton both in FED and non-FED group. This also indicates that the majority of farmers in the region inter crop cereal with legumes.

6.3.11 Use of Improved Seed

Variable	Category	FED group member		Total
		Yes	No	Total
Plants local Mahangu seed	Yes	86.9%	84.2%	85.3%
	No	13.1%	15.8%	14.7%
Plants Okashana seed	Yes	79.8%	75.9%	77.4%
	No	20.2%	24.1%	22.6%
Plants Kangara seed	Yes	10.7%	2.3%	5.5%
	No	89.3%	97.0%	94.5%
Plants local Sorghum seed	Yes	89.3%	87.9%	88.4%
	No	10.7%	12.1%	11.6%
Plants Macia seed	Yes	27.4%	17.4%	21.3%
	No	72.6%	82.6%	78.7%
Plants local Cowpea seed	Yes	89.3%	94.0%	92.2%
	No	10.7%	6.0%	7.8%
Plants Nakare seed	Yes	26.2%	11.4%	17.1%
	No	73.8%	88.6%	82.9%
Plants Shindimba seed	Yes	8.3%	4.5%	6.0%
	No	91.7%	95.5%	94.0%



The table and graph indicate that 85.3% of respondents planted local Mahangu seeds, while 14.7% did not plant local Mahangu seeds. 77.4% of respondents planted Okashana seeds, while 22.6% did not plant Okashana seeds. 94.5% of respondents did not plant Kangara and 5.5% planted Kangara seeds. 88.4% planted local sorghum while the rest 11.6% did not plant local seeds. 78.7 % did not plant Macia and 21.3% planted Macia seeds. 92.2% of respondents planted local cowpeas seeds and 7.8% did not plant local cowpeas seeds. 17.1% of respondents indicated that they planted Nakare and 82.9 % did not plant Nakare seeds. 6.0 % of respondents planted Shindimba and 94.0 % did not plant Shindimba seeds.

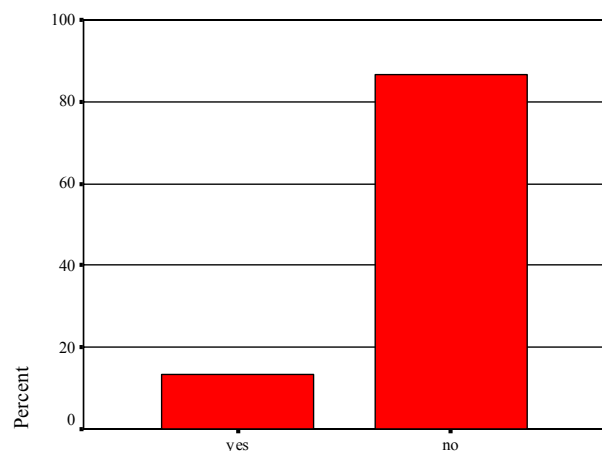
6.3.12 Sources of Seed

Variable	Category	FED group member		Total
		Yes	No	
Bought seed last year from ADCs	yes	36.9%	16.5%	24.4%
	no	63.1%	83.5%	75.6%
Bought seed last year from local trader	yes	22.6%	26.3%	24.9%
	no	77.4%	73.7%	75.1%
Bought seed last year from cuca shops	yes	34.5%	40.6%	38.2%
	no	65.5%	59.4%	61.8%
Bought seed last year from church parish	yes	8.3%	9.0%	8.8%
	no	91.7%	91.0%	91.2%
Bought seed last year from elsewhere	yes	1.2%	3.8%	2.8%
	no	98.8%	96.2%	97.2%
Did not buy seed last year	yes	11.9%	18.8%	16.1%
	no	88.1%	81.2%	83.9%

The respondents were asked from where they bought their seeds for the last two years. The table reveals that the majority of the respondents did not buy seeds. Instead of buying seeds they use their own seeds. It should be noted that Yes in the table refers to farmers who bought seeds, while No refers to those farmer who did not buy seeds from different places in the region. From the table one can learn that the highest percentage of respondents bought their seeds from cuca shops and from local traders.

6.3.13 Fertiliser Use

Variable	Category	FED group member		Total
		Yes	No	
Knows benefits of fertiliser use	no	56.0%	65.9%	62.0%
	to feed crops	40.5%	30.3%	34.3%
	to kill pests	3.6%	3.8%	3.7%
Used fertilizer last year	yes	21.4%	8.3%	13.4%
	no	78.6%	91.7%	86.6%



Used fertilizer last year

The table and graph show that 62.0% said they did not know the benefit of fertilizer use, 34.3% knew that fertilizer was used to feed crops, and 3.7% thought that it was to kill pests. This also indicates that the majority of the farmers did not know the benefit of fertilizer use.

13.4% of respondents used fertilizer last year, while 86.6% did not use fertilizer last year. One can learn from the table that the majority of our farmers in the region did not use fertilizer for the two last years.

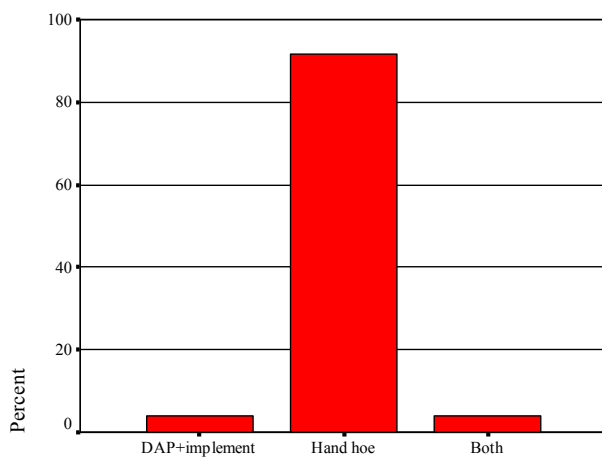
Variable	Category	FED group member		Total
		Yes	No	
Method of fertilizer application	broadcast	6.0%	3.1%	4.2%
	top dressing	3.6%	3.1%	3.3%
	mixing with seed	11.9%	6.2%	8.4%
	none	78.6%	87.7%	84.1%
Buys fertilizer mainly from	ADCs	19.0%	10.0%	13.6%
	Shops	2.4%	1.5%	1.9%
	Elsewhere	1.2%	.8%	.9%
	Nowhere	77.4%	87.7%	83.6%

The respondents were asked if they knew the correct method of fertilizer application as well as where they mainly bought fertilizer from. 84.1% said they did not know any method of fertilizer application, 8.4% said that they mixed fertilizer with seeds.4.2% said they broadcast and 3.3% knew the top dressing method. One can see from the table that the methods of fertilizer application were not well known in the region both in FED and non-FED groups.

The table also shows that 13.6% of the respondents bought their fertilizer from ADCs, 1.9% from shops, 0.9 % from elsewhere in the region or outside the region, while 83.6% said there was nowhere they could buy fertilizer.

6.3.14 Crop weeding

Variable	Category	FED group member		Total
		Yes	No	
Method of weeding used in the field	DAP+ implement	2.4%	5.3%	4.1%
	Hand hoe	92.9%	91.0%	91.7%
	Both	4.8%	3.8%	4.1%
DAP implements mainly used for weeding	BS 41 cultivator		3.3%	2.3%
	Plough	100.0%	96.7%	97.7%
Thinks that using DAP for weeding is better than Hand hoe	yes	83.3%	90.8%	87.9%
	no	11.9%	6.1%	8.4%
	sometimes	4.8%	3.1%	3.7%



Method of weeding used in the field

The table and graphs show that 91.7% of respondents used hand hoes for weeding, 4.1% used DAP and an implement as their means of weeding. 2.3% of these used the BS 41 cultivator for weeding and 97.3% used plough as DAP implements mainly used for weeding. 87.9% said that using DAP is faster than hand hoe, 8.4% said no, while 3.7% said sometimes is faster than hand hoe. This gives the impression that using DAP for weeding is faster than using hand hoes.

6.3.15 Grain Storage

Variable	Category	FED group member		Total
		Yes	No	
Main type of storage used for produce	granary	84.7%	87.2%	86.2%
	basket		1.5%	.9%
	metal container	10.6%	6.8%	8.3%
	plastic container	4.7%	3.8%	4.1%
	bags		.8%	.5%

The table indicates that 86.2% of the respondents used a traditional granary to store their grain harvest, 0.9% used baskets, 8.3% used metal containers, and 4.1% used plastic containers, while 0.5% used bags. This shows that the majority of the farmers were using granary to store their agricultural produce both in FED and in non-FED group.

6.3.16 Grain Storage/Pest Management

Variable	Category	FED group member		Total
		Yes	No	
Method used to minimize pest infestation in stored produce	always keep store closed	55.3%	66.9%	62.4%
	keep storage basket off the ground	12.9%	9.0%	10.6%
	pour ash in the store	31.8%	24.1%	27.1%

Farmers were asked about the methods they use to minimize pest infestation in stored produce. The survey found that 62.4% of the respondents kept their stores always closed, 10.6% kept storage basket off the ground and 27.1% poured ash into the store. The table reveals that many farmers in the region kept their stores closed, this is happening both in FED and non-FED groups.

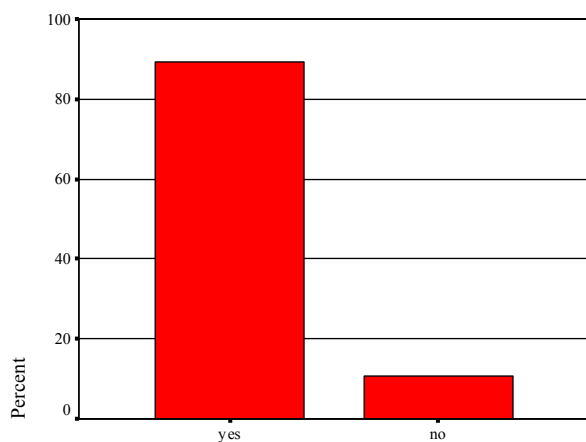
6.3.17 Grain Marketing

Variable	Category	FED group member		Total
		Yes	No	
Sells some of the produce	yes	12.9%	6.8%	9.2%
	no	87.1%	93.2%	90.8%
Produce mainly sold at this type of market	open market	72.7%	40.0%	57.1%
	agricultural shows + fairs		50.0%	23.8%
	elsewhere	27.3%	10.0%	19.0%
Frequency of produce sales	everyday	8.3%	8.3%	8.3%
	occasionally	75.0%	50.0%	62.5%
	once a year	16.7%	41.7%	29.2%

The table shows that 9.2% of respondents sold some of their grain produce, 90.8% did not sell their grain produce. 57.1% sold their produce mainly at open market, 23.8% at agricultural shows and fairs, while 19.0% sold elsewhere. 8.3% sold every day, 62.5% occasionally and 29.2% sold once a year. This shows that the majority of the farmers did not sell their produce both in FED and in non-FED groups, and those who sold did so only occasionally.

6.3.18 Attitude to New Farming Practices and Technologies

Variable	Category	FED group member		Total
		Yes	No	
Considering farming with new things	yes	84.7%	92.5%	89.4%
	no	15.3%	7.5%	10.6%
Reasons for considering new farm opportunities	earn more income	32.4%	23.8%	26.9%
	have more assets/property	11.3%	18.9%	16.1%
	be able to feed my family	56.3%	57.4%	57.0%

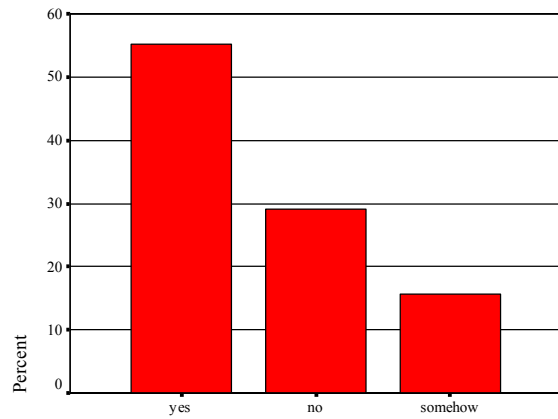


Considering new farming practices

The table and graph indicate farmer attitudes to new farming practices and technologies. It shows that 89.4% said that they consider farming with new farming practises beneficial while 10.6% did not consider it beneficial. 26.9% considered using new farming practises as a way of earning more income, 16.1% to have more assets/property and 57.0% be able to feed their family.

6.3.19 Perception that Improved Farming is Due to Extension

Variable	Category	FED group member		Total
		Yes	No	
Realized improvements in farming due to extension activities	yes	72.9%	43.5%	55.1%
	no	10.6%	41.2%	29.2%
	somehow	16.5%	15.3%	15.7%



Realized improvements in farming due to extension activities

The table and graph indicate that 55.1% of respondents realised improvements in farming due to extension activities, 15.7% said there was improvement somehow, while 29.2% said no improvement was realised.

6.4 CONCLUSIONS

6.4.1 Farmer type

From the survey findings, it can be concluded that half of the farming communities selected for the survey lived between 11 and 20 km from the nearest ADC. More than 60% of the respondents were females suggesting women are doing more of the farming activities while males are engaged in other income generating activities.

It can also be noted that more than 70% of the farmers have more than 20 years farming experience. More than 50% of farmers do not hire labour and thus use family labour only. Linked to this it can also be noted that more than 70% of respondents reported planting less than three hectares.

It can also be deduced that for the majority of farmers in the region, satisfaction of household basic needs through farming heavily depends on the availability of rainfall.

It is commonly perceived that every household owned livestock, including quite large numbers of cattle. The survey found that the pattern has changed substantially: the average number of cattle per household was lower than expected, and cattle ownership is more uneven. There is indeed a great deal of variation in the pattern of ownership for all livestock in terms of who keeps animals and the number they have. The variation also sets livestock farming quite apart from crop farming, because every rural household farms with crops but only a selection of households have livestock, with the exception of poultry. More households kept goats compared to cattle, the average number of goats kept per households was found to be 10.

6.4.2 Farmer extension contact

It can be concluded that the farmer: AET ratio is very high, and that, due to the long distances between farmers households and their local ADCs, many farmers do not receive extension services. Despite this, the majority of farmers stated that they received agricultural information from extensionists 3 times per year.

The survey also revealed that the majority of farmers got agricultural information through NBC radio programmes. Despite having extension demonstrations, farmers' trainings/exposure tours, fairs and agricultural shows, 37% of farmers stated that they did not receive any training from extension in the last year.

6.4.3 Extension Impact

The survey revealed that the majority of farmers give supplementary feed to DAP animal and weaners during the dry season. Most of the farmers do not sell their animals, and for those who do, they sell them mainly through the informal market. They also tend to sell old animals (mainly 6-9 years). This suggests that there is a great need for more extension interventions to create awareness of management practises and to increase off-take to the formal market of younger animals. The survey also reveals that majority of farmers do not know the benefits of fertiliser use and methods of fertiliser application

LIST OF REFERENCES

Ohangwena Regional Development Plan 2001-2006

A Profile of North Central Namibia by John Mendelsohn, Selma Obeid and Carole Robert

Population and Housing Census 2001

Niser 1993

Franco-Namibia RDP 1993

Quarantine figures 2001-2003

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	Education:		3.3 Respondent farming experience?
	3.1 Respondent	3.2 Highest other	< 5 years <input type="checkbox"/> 1 6 – 10 years <input type="checkbox"/> 2 11 – 20 years <input type="checkbox"/> 3 > 20 years <input type="checkbox"/> 4
	Primary <input type="checkbox"/> 1 Secondary <input type="checkbox"/> 2 Tertiary <input type="checkbox"/> 3 No school <input type="checkbox"/> 4	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	3.1 <input type="checkbox"/> 3.2 <input type="checkbox"/> 3.3 <input type="checkbox"/>
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	Yes <input type="checkbox"/> 1 Yes (a little) <input type="checkbox"/> 2 No <input type="checkbox"/> 3 Depend on rain <input type="checkbox"/> 4
	<3 <input type="checkbox"/> 1 3-5 <input type="checkbox"/> 2 >5 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	4.1 <input type="checkbox"/> 4.2 <input type="checkbox"/> 4.3 <input type="checkbox"/>
5	Number livestock owned:		5.5 Area (ha) planted in 02/03.
	Cattle (5.1)	Goats/sheep (5.2)	Donkeys/Horses (5.3)
	1-10 <input type="checkbox"/> 1 11-30 <input type="checkbox"/> 2 30-50 <input type="checkbox"/> 3 > 50 <input type="checkbox"/> 4 Don't have <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	Chickens (5.4) <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <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 No, 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"/></p> <p>7.2 <input type="checkbox"/></p>																					
8	<p>8.1 If Yes, how often did you get agricultural information from the AET last year?</p> <p>1-3 times <input type="checkbox"/>1 > 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"/></p> <p>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 Yes, 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"/></p> <p>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 Yes, 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 & fairs <input type="checkbox"/>4 Others <input type="checkbox"/>5 Don't know <input type="checkbox"/>6</p>	<p>10.1 <input type="checkbox"/></p> <p>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"/></p> <p>10.3.2 <input type="checkbox"/></p> <p>10.3.3 <input type="checkbox"/></p> <p>10.3.4 <input type="checkbox"/></p> <p>10.3.5 <input type="checkbox"/></p> <p>10.3.6 <input type="checkbox"/></p> <p>10.4 <input type="checkbox"/></p>
	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																						

EXTENSION IMPACT

1. Mass Media				
11	11.1 From where do you get agricultural information?		How often did you receive this information last year?	11.1.1 <input type="checkbox"/>
		Yes No	Radio Print TV	11.1.2 <input type="checkbox"/>
	1. Radio	<input type="checkbox"/> 1 <input type="checkbox"/> 2	(11.2) (11.3) (11.4)	11.1.3 <input type="checkbox"/>
	2. Printed media	<input type="checkbox"/> 1 <input type="checkbox"/> 2	Daily <input type="checkbox"/> 1	
	3. TV	<input type="checkbox"/> 1 <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 2	11.2 <input type="checkbox"/>
			Monthly <input type="checkbox"/> 3	11.3 <input type="checkbox"/>
			Occasionally <input type="checkbox"/> 4	11.4 <input type="checkbox"/>
How did you find this information?			11.5 <input type="checkbox"/>	
	Radio (11.5) Print (11.6) TV (11.7)		11.6 <input type="checkbox"/>	
Useful	<input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1		11.7 <input type="checkbox"/>	
Somehow	<input type="checkbox"/> 2 <input type="checkbox"/> 2 <input type="checkbox"/> 2			
Not useful	<input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 3			
2. CROPS				
<u>Seeds</u>				
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>
	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																																																	
	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																																																	
13	<p><u>Fertilizer</u></p> <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 mainly 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	<p><u>Weeding + Draught Animal Power</u></p> <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 41 Cultivator <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	<u>Storage</u>		15.1 <input type="checkbox"/> 15.2 <input type="checkbox"/>
	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	
16	<u>Marketing</u>		16.1 <input type="checkbox"/> 16.2 <input type="checkbox"/>
	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	
	16.3 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"/>
3. LIVESTOCK			
17	<u>Husbandry</u>		17.1 <input type="checkbox"/> 17.2 <input type="checkbox"/>
	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	
	17.4 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	<u>Supplementary Feed</u>		18.1 <input type="checkbox"/> 18.2 <input type="checkbox"/>
	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	
	18.3 If Selectively, to which animals?		18.4 Which feeds do you supplement?
	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	18.4.1. 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	

	18.5 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"/>
19	<u>Animal Health</u>			
	19.1 Do you take your cattle to crush pens for vaccination every year? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	19.2 If No, why? No need <input type="checkbox"/> 1 No knowledge <input type="checkbox"/> 2 Crush pen too far <input type="checkbox"/> 3	19.3 If yes, do you know the scheduled diseases livestock are vaccinated against at crush pens? Yes, all diseases <input type="checkbox"/> 1 Yes, some diseases <input type="checkbox"/> 2 No <input type="checkbox"/> 3	19.1 <input type="checkbox"/> 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"/>
20	<u>Marketing</u>			
	20.1 Which of your livestock do you sell most? 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	20.2 Do you regularly receive any information on livestock marketing prices? Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	20.3 From whom do you receive these information's? Yes No 1. AETs <input type="checkbox"/> 1 <input type="checkbox"/> 2 2. Farmers organizations <input type="checkbox"/> 1 <input type="checkbox"/> 2 3. Meatco <input type="checkbox"/> 1 <input type="checkbox"/> 2 4. Others <input type="checkbox"/> 1 <input type="checkbox"/> 2	20.1 <input type="checkbox"/> 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 Cattle 20.5 Small stock 20.6 Poultry 20.7 Pigs 20.8 Donkeys Auction <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 <input type="checkbox"/> 1 Open market <input type="checkbox"/> 2 <input type="checkbox"/> 2 <input type="checkbox"/> 2 <input type="checkbox"/> 2 <input type="checkbox"/> 2 Meatco <input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 3 <input type="checkbox"/> 3 Others <input type="checkbox"/> 4 <input type="checkbox"/> 4 <input type="checkbox"/> 4 <input type="checkbox"/> 4 <input type="checkbox"/> 4			20.4 <input type="checkbox"/> 20.5 <input type="checkbox"/> 20.6 <input type="checkbox"/> 20.7 <input type="checkbox"/> 20.8 <input type="checkbox"/>
20.9 During which season do you sell most of your livestock? 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		15.10 At what age do you sell most of your oxen? 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		20.9 <input type="checkbox"/> 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