Namibia Statistics Agency

NAMIBIA CENSUS OF AGRICULTURE

2013/14

Communal Sector Revised report

June 2019

PREFACE

In the 2013/14 Agricultural Year, the Namibia Statistics Agency (NSA) in collaboration with the Ministry of Agriculture, Water and Forestry (MAWF), conducted the Agricultural Census. The census collected detailed data on crop production, crop storage, livestock production, and fish farming. The census was extensive in its scope and coverage as it provides data that can be disaggregated at regional level.

The census covered both the Communal Agriculture and Commercial Agriculture Sectors and the basic report for the communal sector was released in November 2015. Following the release of the basic report, regional profiles were to be produced, thus warrant further data processing. During the processing there were some revisions that had to be made to the data to ensure alignment and consistency. Revisions are part of best international practise since they provide for more accurate data.

The general trend of the results released earlier did not change, however changes had to be made due to;

- Changes having been applied to the first stage sampling weights (FSW) after the release of the basic report. This was because the number of PSUs actually sampled had changed. The number declared in the sampling frame to calculate the FSW differed from the figures noticed in the cleaned data.
- Secondly, the imputation method for age was changed to take care of the overestimation and underestimation of the age categories and;
- Land under crops imputation method was also adjusted in order to identify land that is under major crops (maize, sorghum and millet) in case of mixed crops.

Results presented in this report includes the revised tables that was published in the Basic Report. Tables for regional profiles will only be made available upon request.

The extensive nature of the census, in relation to its scope and coverage, is a result of the increasing demand for more detailed information to assist in the proper planning of the agricultural sector and in the administrative decentralization of planning at regional level. It is hoped that this report will be a tool to be used to provide new insights for planners, policy makers, researchers and others involved in the agricultural sector, in order to provide evidence based solutions to the challenges faced in the sector.

On behalf of the Government of the Republic of Namibia, I wish to express my appreciation for the financial support provided by the development partners, in particular, the Food and Agriculture Organization (FAO) of the United Nations and the African Development Bank (AfDB).

I would also like to acknowledge the enormous efforts made by the planning team composed of professionals from the Namibia Statistics Agency and the Ministry of Agriculture, Water and Forestry (MAWF). My appreciation also goes to all those who in one-way or the other contributed to the success of the census.

The respondent households of Namibia are herewith also appreciated for providing information to the field staff of the NSA, without which this census would not have been conducted efficiently.

I would finally like to extend my sincere gratitude to all the professionals, the consultants, National and Regional Supervisors as well as Team Supervisors and field enumerators for their commendable work. Certainly without their dedication, the census would not have been successful.

Alex Shimuafeni
Statistician-General & CEO

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AAS	:	Annual Agricultural Survey
ADC	:	Agricultural Development Centers
AfDB	:	African Development Bank
CAPI	:	Computer Assisted Personal Interview
FAO	:	Food and Agriculture Organization of the United Nations
FSW	:	First Stage Weight
HH	:	Household
MAWF	:	Ministry of Agriculture, Water and Forestry
NCA	:	Namibia Census of Agriculture
NSA	:	Namibia Statistics Agency
PPS	:	Probability Proportional to Size
PSUs	:	Primary Sampling Units

REVISIONS

In November 2015, the NSA released the communal sector results of the 2013/2014 Census of Agriculture. Following the communal sector basic report, the primary data were further processed in order to produce regional profiles. This further processing and validation of the data has led to several discrepancies in the figures of the regional profiles in comparison to those in the basic report, resulting in the revision of the results. It is important to note that the basic data used in the computation of statistics did not change. The changes emanates from the following;

- Changes in the First Stage Weight (FSW)
- Changes in the imputation method and;
- Changes in some specific tables

Changes in the First Stage Weight (FSW)

After releasing the basic report, changes were applied on the weight, since the number of PSUs that was sampled changed. The number declared in the sampling frame to calculate the FSW was different from the one observed in the cleaned data. The discrepancy between the figures was sometimes between 1 and 2. The FSW have been then revised in compliance with the figures in the reprocessed data.

The consequences of this calculation resulted in:

a) The total population in agricultural not to change significantly
b) Changes in the disaggregation of the population into various categories such as sex, age, marital status etc.
c) The calculation of the new weight could introduce changes in household's variable estimates and some tables might be affected by this change.
d) Specific changes in the table were made due to correction errors in the program used to generate the results.

Change in the imputation method

a. Age distribution

Regarding the distribution of age groups, the imputation method used for missing information was the median. That is why young population (15-19) was quite important in the basic report because the median was 19 years. Since the distribution of age is skewed and not symmetric, this approach would lead to an over/underestimate of some age groups.

In this report, for the reprocessed data, a linear regression model has been used to impute the missing ages. The imputation in the model will estimate age based on characteristics of variable that are associated with it. It is more accurate since same age population is to be involved in similar activities.

b. Change in land under crop: imputation method

Most of the mixed land crop have been declared as it is (mixed crop). To identify the crop that may be most likely to be on mixed land, a polythomious logistic model has been used. This is mostly to identify land that are under major crops (maize, sorghum and millet).

Revisions are part of the international best practises as it provides for more accurate data and improved methodology. This particular revision is in line and guided by the NSA Statistics Revision Policy. This is to ensure that statistics are relevant, objective and comprehensive. The tables affected by the revisions are shown in the table below:

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EXECUTIVE SUMMARY

Background (Chapter 1)

The Namibia Census of Agriculture (NCA) 2013/14 covered the communal and commercial farming sectors throughout the country. The objective of the NCA 2013/14 is to obtain baseline agricultural production and structural variables for the communal and commercial farming sectors at the national and regional levels. The census will provide statistics to improve planning and decision-making in the agricultural sector and satisfy the information needs of the socio-economic database being set up by the Namibia Statistics Agency (NSA).

Agricultural Households (Chapter 2)

The estimated agricultural households population of 907 714 was made up of 490 137 (54.0%) female and 417 577 (46.0%) male headed households. The female agricultural population was more than male in all regions except //Karas, Erongo, Hardap, Omaheke and Otjozondjupa. Omusati has the highest agricultural population of 243 619 whereas Khomas has the least agricultural population of 259. The sex ratio for the agricultural population is 85, which means that for every 100 females there are 85 males.

The census indicates that almost 70 percent of agricultural population lives in large household sizes. A total of 386 903 agricultural population live in 6-9 persons households while 241 134 live in 10+ persons households. Most of the agricultural population were children under the age of 15 amounting to 352 919 persons. The majority of households were involved primarily in crop and livestock production which was reported by 251 991 and 36 118 agricultural households, respectively.

Land Use (Chapter 3)

The results show that 637 273 parcels were recorded, of which the majority (280 275) were acquired through clearing, 172 198 were inherited and 111 681 were acquired through Local Authorities

A total of 331 578 males own plots and parcels as compared to 303 546 females. The combined total area of the major crops i.e. millet/mahangu, maize and sorghum is estimated at 463 246.6 ha. The total production for these crops were recorded as: 408 576.22 tonnes for millet/mahangu, 8 733.32 tonnes for sorghum and 55 985.60 tonnes for maize.

Access to Extension Services and Facilities (Chapter 4)

Agricultural households were asked to provide information on the type of extension services they received and households could have access to more than one service. About 8 041 agricultural households received extension services in the selection of crops, followed by 7 888 that received services in farm management and 7 574 that received extension services in livestock husbandry. Most of the extension services were provided by the Ministry of Agriculture, Water and Forestry, where the majority of the agricultural households (11 488) received information

from MAWF's agricultural extension services, 7 609 received information from MAWF's veterinary staff, 2 699 households received information from the MAWF's rural water supply. However, The Internet as a source of information was the least reported by agricultural households accounting for only 66 households. A large number of agricultural households (58.6%) are located within 1 km to facilities and 11.3 percent of the households were more than 10 km to facilities.

Equipment and Infrastructure (Chapter 5)

The census revealed that head loading was the main means of transport reported by 85 385 agricultural households, followed by 13 726 agricultural households that use Car or Pickup trucks. Furthermore, agricultural households that use Donkey carts and sledge as their main means of transport were both at 5 122 each. Granary was reported as the dominant type of storage facility used in the country by 88 276 agricultural households.

Access to Credit Facilities (Chapter 6)

A total of 1 494 agricultural households applied for loans during the past 5 years and 1074 (72%) received the loans. The main source of loans was Agribank accounting for 23 percent of those who received. The main purpose of acquiring loans was for livestock cited by 32.3 percent of the agricultural households followed by 20.8 percent that took loans for the purpose of agricultural labour hire.

Farm Management (Chapter 7)

The households that reported to have used fertilizers on their crops mainly applied organic fertilizers. The majority of those using organic fertilizers, applied them on millet/mahangu.

Local varieties of seeds were used by 143 326 holders which makes them the most type of seeds used in the agricultural households. The reasons for not using improved and/or hybrid seeds were attributed to non-availability, non-affordability and a lack of knowledge about these type of seeds.

Aquaculture (Chapter 8)

The census findings showed that a total of 241 agricultural households practiced fish farming on their holdings. This activity is practised in four (4) of the 14 regions, namely: Ohangwena, Omusati, Oshikoto and Zambezi. About 79 percent of these households started fish farming within the last three (3) years.

Forestry and Food Security (Chapters 9 and 10)

The census of agriculture revealed that only 0.2 percent of households reported presence of agro-forestry practices. The census indicates that 76.4 percent of the households reported having experienced food shortages. A greater number of agricultural households experienced significant

food shortage in January than other months. Loss of crops was the common reason for food shortage and was reported by 87 428 agricultural households.

Economic Activity (Chapter 11)

The census revealed that 147 358 household members were involved in economic activities other than agriculture. The highest number, 20 214 households reported that they were involved in wholesale and retail trade followed by 15 630 households who reported involvement in agricultural services.

Labour Inputs (Chapter 12)

A total of 443 537 agricultural household members were involved in agricultural activities, out of which 82.7 percent were permanently employed and 17.3 percent were engaged on a temporary basis. Most household members involved in agricultural activities were adult males accounting for 169 729, of which 143 203 were engaged on a permanent basis and 26 526 were engaged on a temporary basis.

The census further reported 100 714 paid employees of which 51 percent were males and 49 percent were females.

Crop disposition (Chapter 13)

The census revealed that the production of crops were mainly for own consumption. Millet/mahangu recorded the highest volume consumed (79 417 tonnes), followed by maize (11 139 tonnes) and sorghum with 4 512 tonnes. Millet recorded the highest post-harvest losses of 24 435 tonnes, of which 22 823 tonnes were lost in the field.

Livestock (Chapter 14)

The census reported that out of 159 484 agricultural households, 39 percent of them were engaged in livestock farming. A total of 788 856 cattle were reported of which 19 percent were owned by female household members. The census further recorded 1 618 204 goats and 163 905 sheep.

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

This publication presents the results of the 2013/2014 Namibia Census of Agriculture (NCA 2013/14), the third Agricultural Census to be conducted after independence. The 1994/95 Census was the first Agricultural Census taken after independence. From 1996 - 2003 Annual Agricultural Surveys were undertaken. The 2004/2005 Agricultural Census was planned and carried out but could not be published due to technical issues.

The Census of Agriculture 2013/14 used the modular approach thus strictly following the guidelines of the World Programme for the Census of Agriculture 2010 (WCA 2010). The aim of the WCA 2010 is to assist countries to meet the need for a wider range of data from the agricultural census, while minimizing the cost of census-taking.

Despite its marginal contribution to Gross Domestic Product (GDP), the agriculture sector in Namibia remains central to the lives of the majority of the population. Directly or indirectly, it supports the majority of the country's population. The sector can be divided into two distinct sub-sectors: the capital intensive, relatively well developed and export oriented subsector (Commercial); and the subsistence-based, high-labour and low-technology sub-sector (Communal).

1.2 OBJECTIVES

The immediate objective of the NCA 2013/14 was to obtain baseline agricultural production and structural variables for both the communal and commercial farming sectors at the national and regional levels. The long-term objective of the NCA was to provide data and statistics to improve planning and decision-making in the agricultural industry and satisfy the information needs of the socio-economic database being set up by the Namibia Statistics Agency (NSA).

Specifically, the NCA 2013/14 sought to:

a) Provide up-to-date and more reliable data on the numbers of agricultural holdings, land areas, crop production, livestock numbers, land tenure, land utilization, fertilizer usage, agro-chemicals, use of farm implements and machinery, farm population and labour force;
b) Provide detailed agricultural data such as number of holdings, total area of holdings, basic pattern of land utilization, area under crops and extent of irrigation;
c) Provide a sampling frame for subsequent agricultural surveys and other sample surveys on agricultural holdings; and
d) Provide data for estimating future trends/changes in agricultural behaviour through statistical projection models.

1.3 METHODOLOGY

1.1.1 Target population

The target population for the NCA 2013/14 consists of all the agricultural households engaged in both commercial and communal farming activities in the 14 administrative regions. However, only the results of the communal agricultural sector are presented in this report. Consequently, the target population for the communal sector survey consists of all the agricultural households in the rural communal areas of Namibia including the semi-urban areas around the urban centers.

1.3.2 Sample design

The NCA 2013/14 used a stratified two stage cluster sample design for the communal sector survey. At the first stage, primary sampling units (PSUs) were selected with Probability Proportional to Size (PPS) from the sampling frame based on the Enumeration Areas of 2011 Population and Housing Census. The size measure of a PSU in the sampling frame was the number of agricultural households which was derived from the questions included in 2011 Population and Housing Census as per the FAO recommendations. Table 1.1 shows the distribution of the agricultural households. The main strata was the regions which are also the primary domains of estimation. The frame units (PSUs) were further stratified implicitly by the constituencies within the regions. The list of agricultural households prepared within a selected PSU formed the secondary sampling frame from which a sample of agricultural households was selected systematically.

Table 1.1: Number of all households and the agricultural households by region (Communal rural and semi urban areas only)

Region	All households	Agricultural households (size measure)	Agricultural households Percent
!Karas	5,581	1,421	25.5
Erongo	3,634	1,832	50.4
Hardap	1,806	547	30.3
Kavango East	12,497	8,450	67.6
Kavango West	13,049	9,612	73.7
Khomas	864	191	22.1
Kunene	7,230	5,529	76.5
Ohangwena	40,038	35,138	87.8
Omaheke	5,564	2,334	41.9
Omusati	44,177	34,107	77.2
Oshana	21,368	16,350	76.5
Oshikoto	31,035	24,681	79.5
Otjozondjupa	6,121	3,267	53.4
Zambezi	14,800	9,193	62.1
Namibia	207,764	152,652	73.5

Source: Sampling frame based on 2011 Population and Housing Census

A third stage of sampling was introduced to measure objectively the average yields of the three major crops Maize, Sorghum and Millet for the purpose of estimating the production instead of the farmer's estimates. Hence a crop cutting experiment was conducted to measure the average yields of these crops. A list of plots under each of these crops in a sampled PSU was made using the plot information of the selected households within the PSU. These lists then formed the sampling frames for each of the crops in the PSU. Three plots were then randomly selected from each of the crop lists. If the list contained less than 3 plots then all were included in the experiment. An area was marked within the selected plot according to the FAO guidelines and the matured crop inside this marked

area was cut and weighed when the crop was wet and dry. These figures were then used to estimate the average yields of each of the crops.

1.3.3 Sample size

A total sample size of 10,550 agricultural households was determined to give reasonably reliable estimates at the regional level for the most important variables. The proportional allocation of this sample did not yield the minimum sample sizes for some of the sparsely populated regions hence a power allocation with some adjustments had to be carried out as a compromise procedure while keeping the overall national sample fixed.

In general, 10 agricultural households were sampled from each of the selected PSUs thus having a larger spread of the sample across the population of agricultural households. However, in Erongo and Omaheke regions having less communal farming activities, the sample size per PSU was raised to 16 agricultural households. Ultimately a total of 1,025 PSUs were covered in the survey. Table 1.2 shows the distribution of the sample.

Table 1.2: The distribution of the sample PSUs and agricultural households

Region	Sample PSUs	Sample Agricultural Households
!Karas	32	320
Erongo	24	384
Hardap	20	200
Kavango East	80	800
Kavango West	83	830
Khomas	8	80
Kunene	63	630
Ohangwena	159	1,590
Omaheke	26	416
Omusati	157	1,570
Oshana	109	1,090
Oshikoto	133	1,330
Otjozondjupa	49	490
Zambezi	82	820
Namibia	**1,025**	**10,550**

1.3.4 Data collection and capturing

Data collection and capturing carried out during the NCA 2013/14 was done following international best practices. The enumeration was conducted face-to-face using Computer Assisted Personal Interview (CAPI) replacing the conventional paper questionnaire. This approach helped to minimize errors during data capturing and fast tracking data processing. In contrast, information on crop cutting was collected on paper forms and captured in MS Excel at a later stage.

The processing of the data was organized into three major phases namely:

- CAPI Data entry application design using CSPro 5.0;
- Data editing and data cleaning using Stata 13 and CSPro 5.0;
- Tabulation (summary tables) using Stata 13 and Excel

These phases were carried out over an 18 month period. Out of this period, the designing of tabulation programs, and the generation, verification and correction of tables lasted for 10 months.

1.3.5 Procedures

A technical subject-matter planning team, consisting of staff members from NSA and MAWF was established to guide the entire census process from planning to implementation. A two day user-producer workshop with various stakeholders was conducted where the draft questionnaire; structure of the census; census methodology; definitions and concepts; and the activity plan were discussed and agreed upon. It was agreed in principle that the census will strictly follow the recommendations from the 2010 Round of the World Census of Agriculture (WCA) document of the FAO. The pilot survey was carried out during December 2013 and the survey instruments were finalized shortly after that.

In January 2014, a one week Training-of-Trainers (TOT) followed by a two week intensive training period for enumerators and team supervisors was conducted in four training venues. A team of four enumerators assigned to one supervisor were constituted and dispatched in the field across the whole country.

The Communal sector census was officially launched on 17 February 2014 and was conducted in two phases. The first phase which started on the 17 February 2014 entailed listing of all households and the interview that lasted for five days. The second phase, which started during May 2014 covered the crop cutting phase that was used as inputs in the calculation of the yield. The entire data collection in the field work lasted until end of July 2014.

A full publicity program was put in place to sensitize households and the public at large with the aim to reduce non-response rate among selected respondents during the census. Each team started by paying a courtesy call to regional and local authorities in order to obtain support of leaders. In addition, rigorous publicity was done through the print and electronic media country-wide.

1.4 RESPONSE RATE

Response rates were computed for each region and the overall response was 95.9 percent (see Appendix C for more details).

1.5 RELIABILITY OF ESTIMATES

The estimates presented in this report were derived from a scientifically selected sample and the analysis of survey data was undertaken at national and regional levels. Standard Errors (SEs) and Coefficients of Variation (CVs) of some of the variables are presented in the Appendix F of the main report to show the precision levels.

1.6 FINANCIAL AND TECHNICAL SUPPORT

The NCA 2013/14 was primarily funded by the Government of Namibia. In addition, the FAO provided financial and technical assistance through the Technical Cooperation Programme (TCP/NAM/3402) while the African Development Bank (AfDB) provided funds through the Statistics Capacity Building (SCB) Program.

1.7 PRESENTATION OF RESULTS

The NCA 2013/14 basic results are presented in terms of total numbers, averages and percentages of the different estimates.

CHAPTER 2: AGRICULTURAL HOUSEHOLDS DEMOGRAPHIC CHARACTERISTICS

2.1 Population size

The total population within the agricultural households for the communal sector was 907 714 of which 417 577 (46.0%) were male and 490 137 (54.0%) were female (Table 2.1 and Figure 2.1). The table shows that Hardap, //Karas, Erongo and Omaheke regions had the highest differences between the males and females population in the range of 15 to 28 percent as compared to the national difference of eight percent.

The highest number of agricultural household population for both sexes was recorded in Omusati region (243,619) with Khomas region recording the lowest number of agricultural household figures for both sexes at 259.

Table 2. 1: Size of population in the agricultural households by sex and region

Region	Total population in agricultural households	Sex				Sex Ratio
		Number of Male	%	Number of Female	%	
//Karas	4 044	2 324	57.5	1 720	42.5	135
Erongo	3 704	2 148	58.0	1 556	42.0	138
Hardap	1 234	788	63.9	446	36.1	177
Kavango East	59 404	27 302	46.0	32 102	54.0	85
Kavango West	67 123	31 246	46.6	35 877	53.4	87
Khomas	259	124	47.9	135	52.1	92
Kunene	23 639	11 600	49.1	12 039	50.9	96
Ohangwena	216 984	98 148	45.2	118 836	54.8	83
Omaheke	8 352	4 935	59.1	3 417	40.9	144
Omusati	243 619	110 283	45.3	133 336	54.7	83
Oshana	97 214	43 724	45.0	53 490	55.0	82
Oshikoto	131 632	60 196	45.7	71 436	54.3	84
Otjozondjupa	14 263	7 319	51.3	6 944	48.7	105
Zambezi	36 243	17 440	48.1	18 803	51.9	93
Total	**907 714**	**417 577**	**46.0**	**490 137**	**54.0**	**85**

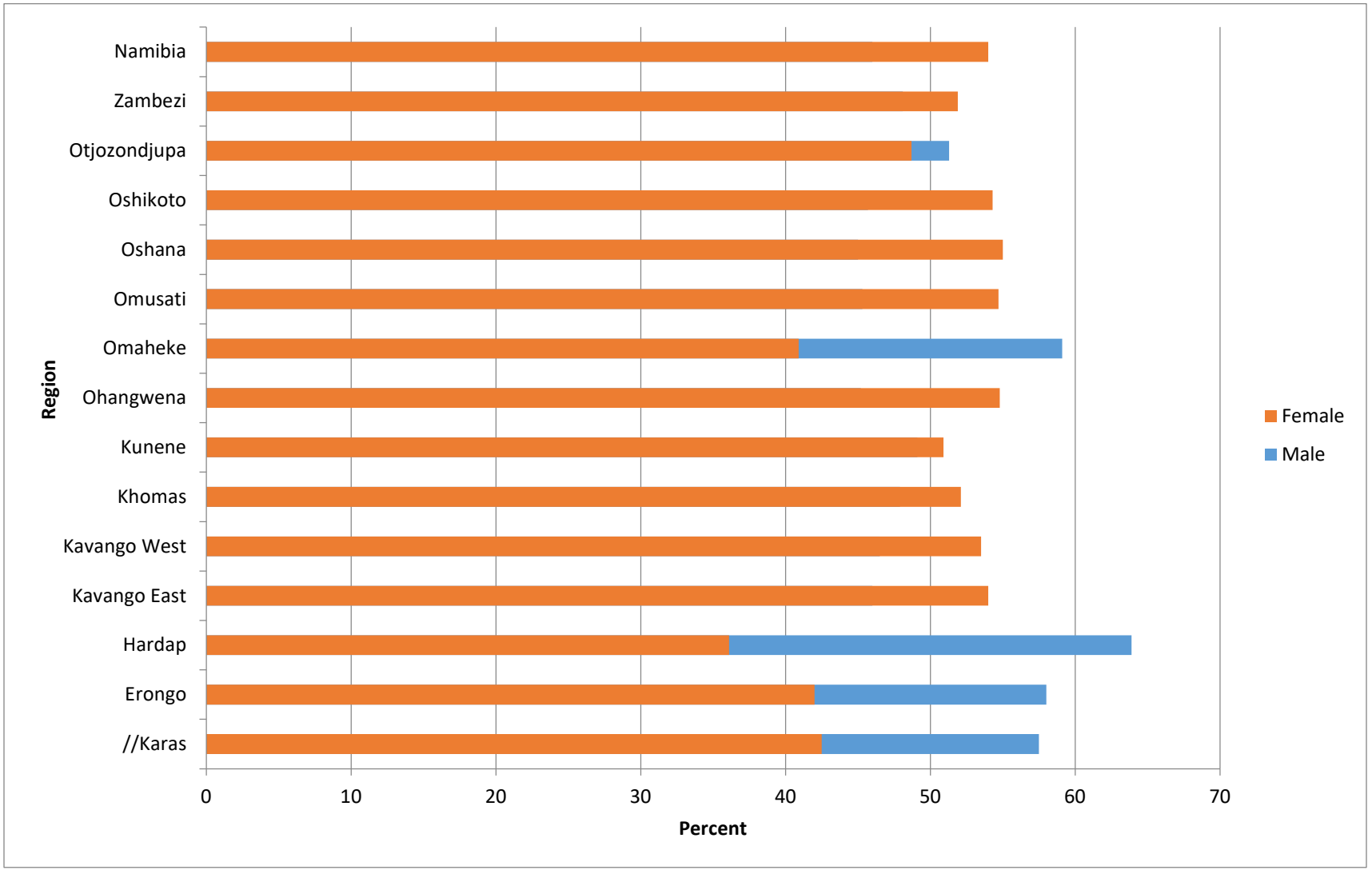

Figure 2. 1: Percentage population of agricultural household by sex and region

The Agricultural household members in the country were estimated at 907 714 out of which 241 134 live in households with 10 and more members (Table 2.2). Ohangwena region has the highest proportion of 28.8 percent of the population living in 10 or more persons' households.

The results further show that the highest population of 386 903 live in 6-9 persons' households. Omusati and Ohangwena regions top this category with a population of 114 899 persons and 92 282 persons, respectively.

Table 2. 2: Number and distribution of agricultural household population by household size and region

	Total population in agricultural households	Household size									
		1 person	%	2-3 persons	%	4 - 5 persons	%	6 - 9 persons	%	10+ persons	%
//Karas	4 044	344	3.1	1 120	1.3	1 170	0.6	885	0.2	525	0.2
Erongo	3 704	402	3.6	1 687	2.0	1 019	0.6	477	0.1	119	0.0
Hardap	1 234	169	1.5	453	0.5	194	0.1	326	0.1	92	0.0
Kavango East	59 404	377	3.4	5 219	6.1	10 096	5.5	26 707	6.9	17 005	7.1
Kavango West	67 123	262	2.4	3 918	4.6	10 822	5.9	29 729	7.7	22 392	9.3
Khomas	259	17	0.2	116	0.1	119	0.1	7	0.0	0	0.0
Kunene	23 639	799	7.2	3 224	3.8	5 211	2.8	8 074	2.1	6 331	2.6
Ohangwena	216 984	1 572	14.2	14 955	17.5	38 678	21.1	92 282	23.9	69 497	28.8
Omaheke	8 352	487	4.4	2 754	3.2	2 497	1.4	2 202	0.6	412	0.2
Omusati	243 619	2 654	23.9	20 966	24.5	53 196	29.1	114 899	29.7	51 904	21.5
Oshana	97 214	567	5.1	7 825	9.1	18 293	10.0	39 480	10.2	31 049	12.9
Oshikoto	131 632	2 006	18.1	14 672	17.1	25 684	14.0	53 852	13.9	35 418	14.7
Otjozondjupa	14 263	825	7.4	2 627	3.1	3 167	1.7	4 141	1.1	3 503	1.5
Zambezi	36 243	612	5.5	6 109	7.1	12 793	7.0	13 842	3.6	2 887	1.2
Total	**907 714**	**11 093**	**100.0**	**85 645**	**100.0**	**182 939**	**100.0**	**386 903**	**100.0**	**241 134**	**100.0**

2.2 Agricultural household population by age groups

The distribution of agricultural household population by age groups and region presented in Table 2.3 shows that most of the household members (352 919) are below the age of 15, followed by 15 – 19 age group (117 149). However, with the exception of the 60+ age group which recorded 92 371 persons, the pattern shows a decreasing trend with increasing age up to the 55 – 59 age group.

Table 2.3: Distribution of agricultural household population by age groups and region

Region	Total population in agricultural households	Age groups										
		Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
//Karas	4 044	877	247	292	246	309	302	292	162	260	198	859
Erongo	3 704	567	106	332	306	260	203	262	245	300	263	860
Hardap	1 234	232	78	108	100	69	59	89	111	88	80	220
Kavango East	59 404	22 524	8 371	5 520	4 245	3 460	2 916	2 421	1 979	1 490	1 499	4 979
Kavango West	67 123	28 606	8 225	6 099	4 374	3 303	2 780	2 315	2 250	2 268	2 041	4 862
Khomas	259	30	19	30	10	11	33	25	24	26	9	42
Kunene	23 639	10 412	2 390	2 017	1 683	1 122	1 043	980	787	763	570	1 872
Ohangwena	216 984	91 153	30 399	18 885	12 958	10 632	8 634	7 401	6 389	5 546	4 400	20 587
Omaheke	8 352	1 916	415	704	704	624	624	510	440	502	530	1 383
Omusati	243 619	93 498	32 445	21 641	12 588	11 422	10 451	10 147	9 039	6 383	8 221	27 784
Oshana	97 214	33 630	11 543	10 064	7 106	5 781	5 176	4 185	3 544	3 115	2 629	10 441
Oshikoto	131 632	51 290	17 133	12 329	8 437	6 082	6 028	4 931	4 543	4 122	3 356	13 381
Otjozondjupa	14 263	5 174	1 072	1 268	1 111	948	753	692	612	552	539	1 542
Zambezi	36 243	13 010	4 706	3 068	2 764	2 133	2 092	1 473	1 276	1 273	889	3 559
Namibia	**907 714**	**352 919**	**117 149**	**82 357**	**56 632**	**46 156**	**41 094**	**35 723**	**31 401**	**26 688**	**25 224**	**92 371**

Table 2.4 presents the distribution of agricultural holders by age groups and region. The results indicates that out of 169 765 agricultural holders recorded, the highest number of 44 120 was recorded in the Omusati region while the lowest number of 96 holders was recorded in Khomas region. The age group that recorded the highest figure of agricultural holders was the 60+ age group (68 627) followed by the 55 – 59 age group with 16 738 agricultural holders.

Table 2. 4: Distribution of agricultural holders by age groups and region

Region	Total agricultural holders	Age groups									
		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
//Karas	1 168	0	13	41	36	81	112	63	151	135	536
Erongo	1 263	10	42	38	54	40	108	122	162	138	549
Hardap	397	0	8	21	20	34	38	61	39	44	132
Kavango East	10 786	326	210	524	1 030	1 061	1 253	1 191	984	1 036	3 171
Kavango West	12 360	257	286	820	1 009	1 248	1 142	1 141	1 478	1 529	3 450
Khomas	96	1	0	3	0	8	16	14	22	1	31
Kunene	5 273	168	336	598	345	573	577	533	518	388	1 237
Ohangwena	40 092	2 302	1 652	1 789	2 270	2 925	3 422	3 116	3 734	2 906	15 976
Omaheke	2 546	54	56	102	119	171	272	242	312	290	928
Omusati	44 120	353	398	667	1 182	2 374	3 811	5 106	3 715	5 331	21 183
Oshana	16 522	256	207	388	660	994	1 380	1 479	1 626	1 598	7 934
Oshikoto	21 990	307	231	919	992	1 219	1 686	2 391	2 277	2 312	9 656
Otjozondjupa	3 142	37	130	189	211	240	334	296	335	346	1 024
Zambezi	10 010	163	506	1 049	1 150	1 234	825	740	840	684	2 819
Namibia	**169 765**	**4 235**	**4 074**	**7 147**	**9 079**	**12 202**	**14 976**	**16 496**	**16 192**	**16 738**	**68 627**

2.3 Relationship of agricultural household members to head of household

Table 2.5 presents the total population in agricultural households by relationship to head of households and region. The result indicates that the majority of the household members (273 748) were sons/daughters of the head, 269 283 were grandchildren, 97 311 were the other relatives of the head, while the spouses accounts for 55 018.

Table 2. 5: Total population in agricultural households by relationship to head of household and region

Region	Total population in agricultural households	Relationship to Head of Household									
		Head of household	Spouse	Son/Daughter	Son/Daughter in-law	Parent	Grandchild	Other relative	Other Non-relative	Domestic worker	Don't know
//Karas	4 044	1 253	425	780	50	43	693	492	304	0	4
Erongo	3 704	1 420	358	503	62	44	370	360	398	172	17
Hardap	1 234	455	96	220	5	2	141	95	184	31	5
Kavango East	59 404	9 760	4 791	22 537	2262	701	13 398	5 200	571	164	20
Kavango West	67 123	10 018	6 045	26 681	1825	359	15 298	6 032	698	167	0
Khomas	259	94	42	68	7	5	4	17	20	2	0
Kunene	23 639	4 909	1 629	8 459	639	251	3 129	3 979	528	116	0
Ohangwena	216 984	34 480	1 0047	61 808	4883	1248	71 736	28 232	3 355	1 166	29
Omaheke	8 352	2 562	596	1 144	233	126	1 203	1 109	615	764	0
Omusati	243 619	43 339	12 364	65 551	2363	2781	85 123	23 869	5 647	2 470	112
Oshana	97 214	15 699	6 067	29 240	1419	410	32 011	9 738	1 605	993	32
Oshikoto	131 632	23 984	7 128	37 899	1880	679	39 108	13 530	4 809	2 474	141
Otjozondjupa	14 263	3 444	1 037	3 771	278	152	2 269	2 396	834	82	0
Zambezi	36 243	8 041	4 393	15 087	440	274	4 800	2 262	389	532	25
Total	**907 714**	**159 458**	**55 018**	**273 748**	**16 346**	**7075**	**26 9283**	**97 311**	**19 957**	**9 133**	**385**

2.4 Agricultural household population by main and secondary activity

The results on agricultural household population by main and secondary activities are presented in Table 2.6 and 2.7 respectively. It is observed from Table 2.6 that out of a total of 301 072 agricultural population who reported the main agricultural activity, the highest number of 251 991 agricultural population mentioned crop production as their main activity. Furthermore, livestock production was reported by 36 118 of the population as the second main activity and this is followed by 4 468 of the population who reported trading as their main activity. Agricultural paid job outside holding and the Artisan also recorded 3 304 and 2 698 people respectively. The least activity is Horticulture with a population of 116.

As far as the status of the main activity is concerned, 147 794 of the agricultural population are Own account workers, 128 706 are Un-paid family workers with 15 809 of the population reporting to be paid workers.

The result further indicates that out of the population of 251 991 who reported crop production to be their main activity, own account workers accounted for the highest number of the population (125 838) as compared to the rest of the status of the main activity, a pattern which is replicated throughout the rest of the highlighted main activities.

Table 2. 6: Agricultural population by MAIN activity and status

Main activity	Total	Status of main activity				
		Own account worker	Employer	Paid worker	Un-paid family worker	Task worker
Crop production	251 991	125 838	884	5 047	116 051	4 171
Livestock production	36 118	17 645	686	5 177	11 919	691
Fisheries	1 726	470	64	1 161	31	0
Forestry	504	324	17	32	118	13
Horticulture	116	72	0	22	22	0
Fruit culture	147	0	0	78	51	18
Trader	4 468	22 58	396	1 457	309	48
Artisan	2 698	975	198	1 294	141	90
Agricultural paid job outside holding	3 304	212	331	2 541	65	155
Namibia	**301 072**	**147 794**	**2 576**	**15 809**	**128 706**	**5 185**

With respect to the status of the secondary activity, the result in Table 2.7 indicates that out of a total of 197 348 persons who reported on the secondary economic activity, 125 729 were non-paid family workers of which 79 708 were engaged in crop production. Very few persons reported being engaged in horticulture (470) and apiary (28) practices. In addition, 77 194 persons reported their secondary economic activity to be livestock production, out of which 30 818 were own account workers.

Table 2.7: Agricultural population by type of SECONDARY activity and status

Activity	Total	Status of secondary activity				
		Own account worker	Employer	Paid worker	Non-paid family worker	Task worker
Crop production	106 650	20 891	573	4 200	79 708	1 278
Livestock production	77 194	30 818	382	1 938	43 302	754
Fisheries	654	405	-	126	123	-
Forestry	2 003	1 016	5	76	906	-
Horticulture	470	360	3	19	88	-
Fruit culture	814	610	-	104	100	-
Trader	3 590	2 705	89	325	378	93
Artisan	3 574	1 767	53	608	963	183
Agriculture paid job outside holding	2 371	447	93	1 432	148	251
Apiary	28	15	-	-	13	-
Total	**197 348**	**59 034**	**1 198**	**8 828**	**125 729**	**2 559**

2.5 Agricultural household population by level of education

The census also collected information on the highest level of education attained by the population of agricultural households. This information as presented in Table 2.8 shows that the majority of the agricultural household population (301 229) indicated having achieved primary education as their highest level of education. Furthermore, 295 100 indicated secondary education as their highest level of education, while 115 622 had no formal education. The regional analysis reveal that Ohangwena region recorded the highest number of persons with no education (26 811) followed by Omusati with 25 334 persons. In addition, Omusati region further appear to have the highest number of persons with Pre-primary education (11 525), with primary education more prominent in both Omusati and (84 245) and Ohangwena (73 289), a trend which is mirrored in terms of the secondary education. Overall, Omusati region appear to have the highest number of persons who have attained diploma (2 506), tertiary/degree (1 919) as their highest level of education.

Table 2.8: Population 5 years and older in the agricultural households by level of education and region

Region	Total	Education level							
		None	Pre-primary	Primary	Secondary	Certificate	Diploma	Tertiary/degree	Don't know
//Karas	3 589	409	94	1 420	1 614	15	-	9	28
Erongo	3 325	1 003	33	878	1 208	27	36	55	85
Hardap	1 143	240	53	382	379	12	26	14	37
Kavango East	52 681	10 708	2 615	22 465	15 856	316	234	153	334
Kavango West	57 371	10 056	3 160	26 961	15 855	142	411	284	502
Khomas	257	28	10	43	137	12	16	8	3
Kunene	19 604	12 099	650	4 039	2 676	-	80	16	44
Ohangwena	185 877	26 811	10 420	73 289	69 480	600	1 265	1 525	2 487
Omaheke	7 044	2 351	113	1 644	2 597	74	105	67	93
Omusati	210 600	25 334	11 525	84 245	80 873	1 182	2 506	1 919	3 016
Oshana	86 388	6 547	5 057	27 605	42 198	815	1 197	1 595	1 374
Oshikoto	113 525	12 107	6 511	42 168	45 083	1 848	1 216	1 231	3 361
Otjozondjupa	11 963	3 432	307	4 658	3 449	34	39	29	15
Zambezi	31 976	4 498	1 099	11 432	13 693	221	327	437	269
Total	**785 343**	**115 622**	**41 649**	**301 229**	**295 100**	**5 297**	**7 459**	**7 343**	**11 646**

CHAPTER 3: LAND USE

3.1 Type of Holding

The census also collected information on the land use by the agricultural households. Table 3.1 presents the distribution of the population in the agricultural households by the number of holders, type of holding and region. A total of 169 871 agricultural holders were recorded, with the highest proportion of the holders (26.0%) found in the Omusati region. The least holders were in Khomas (0.1%), Hardap (0.2%) and Erongo and //Karas (0.7%) regions. With respect to the type of holding, the result shows that 104 567 holdings were mainly for crop and livestock only, whereas 8 702 were for crop only holdings and 6 093 were for livestock only holdings.

On the regional distribution, the result shows that Ohangwena (23.5%) and Omusati (28.4%) regions recorded the highest number of holdings for 'crop and livestock only'. However, the situation was more prominent in the 'livestock only' where the proportions of holdings are 26.6 percent for Omaheke and 23.3 percent for Kunene regions, while 'crop only holdings' was prominent in the Kavango East with 21.2 percent of the total crop holdings. The results further show that only the regions of Otjozondjupa and Zambezi reported holdings for 'Forestry only' with 52.9 percent and 47.1 percent respectively.

Table 3. 1: Distribution of population in the agricultural households by number of holders, type of holding and region

Region	Total population in agricultural households	Type of holding									
		Number of holders	%	Crop only	%	Livestock only	%	Forestry only	%	Crop and livestock only	%
//Karas	4 044	1 168	0.7	11	0.1	1 096	18	-		58	0.1
Erongo	3 704	1 264	0.7	136	1.6	-	0	-		1 002	1
Hardap	1 234	396	0.2	3	0	338	5.5	-		50	0
Kavango East	59 404	10 786	6.3	1 842	21.2	101	1.7	-		8 598	8.2
Kavango West	67 123	12 360	7.3	637	7.3	81	1.3	-		6 802	6.5
Khomas	259	97	0.1	80	0.9	-	0	-		16	0
Kunene	23 639	5 274	3.1	574	6.6	1 420	23.3	-		2 878	2.8
Ohangwena	216 984	40 131	23.6	1 130	13	115	1.9	-		24 521	23.5
Omaheke	8 352	2 545	1.5	8	0.1	1 620	26.6	-		795	0.8
Omusati	243 619	44 119	26	1 647	18.9	323	5.3	-		29 730	28.4
Oshana	97 214	16 522	9.7	1 460	16.8	78	1.3	-		12 214	11.7
Oshikoto	131 632	22 058	13	555	6.4	58	1	-		11 641	11.1
Otjozondjupa	14 263	3 141	1.8	116	1.3	576	9.5	18	52.9	1 864	1.8
Zambezi	36 243	10 010	5.9	503	5.8	287	4.7	16	47.1	4 398	4.2
Namibia	**907 714**	**169 871**	**100**	**8 702**	**100**	**6 093**	**100**	**34**	**100**	**104 567**	**100**

3.2 Means of Acquisition of parcels and Plots

The results presented in Table 3.2 are the number and distribution of parcels by location, means of acquiring the plot and the period acquired. The results show that 637 273 parcels were recorded, of which the majority (280 275) were acquired through clearing, 172 198 were inherited and 111 681 were acquired through Local Authorities. Out of the cleared parcels, 6 080 are within constituencies whereas 2 413 are outside constituencies, while for the parcels that were acquired through inheritance, 4 449 are located within constituencies and 444 are outside constituencies.

Table 3.2 further indicates that 560 063 parcels were acquired over 3 years, whilst 61 164 parcels were acquired between 1 - 3 years and 16 139 parcels were acquired within a year. It is worth noting that for periods exceeding three years, 'Cleared' (247 939), 'Inherited' (155 624) and 'Use right from local authority' (101 067) happen to be the main means of acquiring parcels

Table 3. 2: Number and distribution of means of acquiring the plot by parcels location, and period acquired

Means of acquiring the plot	Total	Location			Length of Period		
		Within Primary Sampling Unit	Within Constituency	Outside Constituency	Less than 1 ago	1-3 years	Over three years
Inherited	177 091	172 198	4 449	444	5 005	16 554	155 624
Purchased	57 927	56 919	810	198	1 683	7 518	48 727
Cleared	280 275	271 782	6 080	2 413	6 026	26 310	247 939
Local authorities	111 681	108 420	1 986	1 275	2 708	7 906	101 067
Sharecropping	4 008	3 830	62	116	252	1 093	2 663
Borrowed	6 225	6 059	127	39	465	1 783	3 977
Rented	21	21	-	-	-	-	21
Other	45	45	-	-	-	-	45
Total	**637 273**	**619 274**	**13 514**	**4 485**	**16 139**	**61 164**	**560 3**

3.3 Parcels and plots by ownership

The census further collected information on the management of plots and parcels of which the resulting outcome are presented in Table 3.3. A total of 331 578 males own plots and parcels as compared to 303 546 females. Most of the plots and parcels owned by males and females are found within the PSU (323 434 for males and 293 695 for females). The majority of the males who own plots were in Omusati region (91 215), Ohangwena region (65 016) and Oshikoto region (58 376), a trend that is consistent with female owners where the majority were in the regions of Omusati (92 962), Ohangwena (67 784) and Oshikoto (51 535).

Table 3. 3: Number and distribution of parcels by sex of the plot owner, location and region

Region	Total male + female	Male				Female			
		Location of the parcel				Location of the parcel			
		Within Primary Sampling Unit	Within Constituency	Outside Constituency	Total male	Within Primary Sampling Unit	Within Constituency	Outside Constituency	Total female
//Karas	3 962	2 868	4	-	2 872	1 086	4	-	1 090
Erongo	4 798	2 828	11	584	3 423	1 169	4	202	1 375
Hardap	1 729	1 503	46	-	1 549	175	3	2	180
Kavango East	35 025	14 885	1 856	161	16 902	15 399	2 551	173	18 123
Kavango West	40 819	23 763	1 680	79	25 522	14 075	1 110	112	15 297
Khomas	378	283	-	-	283	95	-	-	95
Kunene	14 790	7 344	85	-60	7 489	6 913	284	104	7 301
Ohangwena	132 800	64 614	68	334	65 016	67 154	314	316	67 784
Omaheke	10 535	8 391	7	80	8 478	2 045	12		2 057
Omusati	184 177	91 054	72	89	91 215	92 131	379	452	92 962
Oshana	65 273	32 880	83	354	33 317	31 596	121	239	31 956
Oshikoto	109 911	57 664	387	325	58 376	50 459	558	518	51 535
Otjozondjupa	11 203	7 795	36	11	7 842	3 305	56	-	3 361
Zambezi	19 724	7 562	1 663	69	9 294	8 093	2 186	151	10 430
Total	**635 124**	**323 434**	**5 998**	**2 146**	**331 578**	**293 695**	**7 582**	**2 269**	**303 546**

3.4 Holding characteristics

The distribution of the agricultural households by the holding size and household size presented in Table 3.4 shows that out of the total 159 484 agricultural households considered, the majority (54 237) have 6 – 9 household members followed by 40 664 households with 4 – 5 household members while the least households (11 091) have one member household. With respect to the holding size,

the majority of the agricultural households (58 909) have holding sizes exceeding 10.01+ ha, with the least (6 050) having holding size of 0.51 – 1.00 ha.

Table 3. 4: Distribution of agricultural households by size of holding and household size

		Household size				
Holding size (ha)	**Total**	**One member**	**2-3 members**	**4-5 members**	**6-9 members**	**10+ members**
< 0.50	8 834	1 584	2 822	2 215	1 854	359
0.51 - 1.00	6 050	864	1 582	1 726	1 471	407
1.01 - 2.00	12 148	1 339	3 447	3 479	3 085	798
2.01 - 5.00	32 569	2 333	7 818	8 361	11 107	2 950
5.01 - 10.00	40 974	2 118	8 352	10 699	15 130	4 675
10.01+	58 909	2 853	9 837	14 184	21 590	10 445
Total	**159 484**	**11 091**	**33 858**	**40 664**	**54 237**	**19 634**

With respect to land use area, the result presented in Table 3.5 shows that the number of households engaged in annual crop production is 141 952 covering on average an area of 3.68 ha per household. The results further show that 17 055 households use the land for grazing with an average of 8.23 ha per household and 4 223 households have wood land/forest with an average of 6.41 ha per household. On the contrary, only 48 households reported using land for tree crop, at an average of 0.19 ha per household. Land use for tree crop is only visible or recorded for holdings of size < 0.50 ha and 0.51 ha to 1.0 ha.

Table 3. 5: Land use area and number of households by size of holding

	Land use Categories													
	Total		Annual crop		Tree crop		Fallow land		Grazing land		Wood land/forest		Other land	
Size of Holding	Number of HH reporting	Average Area per HH (ha)	Number of HH reporting	Average Area per HH (ha)	Number of HH reporting	Average Area per HH (ha)	Number of HH reporting	Average Area per HH (ha)	Number of HH reporting	Average Area per HH (ha)	Number of HH reporting	Average Area per HH (ha)	Number of HH reporting	Average Area per HH (ha)
< 0.50	34 734	0.09	10 310	0.2	34	0.04	2 442	0.21	750	0.07	132	0.22	21 064	0.03
0.51-1.0	18 382	0.75	14 284	0.76	14	0.55	1 885	0.72	816	0.79	189	0.75	1 188	0.75
1.01-2.0	42 710	1.5	35 365	1.51	-	-	2 431	1.42	2 005	1.42	920	1.5	1 982	1.48
2.01-5.0	72 304	3.19	59 595	3.16	-	-	1 964	3.04	4 209	3.4	1 609	3.37	4 911	3.4
5.01-10.0	27 929	6.69	18 481	6.54	-	-	919	6.97	4 784	7.12	682	6.5	3 029	6.94
10.01+	13 354	27.64	3 917	37.57	-	-	659	22.23	4 491	19.69	690	22.7	3 465	28.73
Total	**209244**	**4.13**	**141952**	**3.68**	**48**	**0.19**	**10 301**	**3.14**	**17 055**	**8.23**	**4 223**	**6.41**	**35 639**	**3.98**

3.5 Production and area of major crops

The area under crop production and yield by type of crop are presented in Table 3.6. It is evident from the table that millet/mahangu is the major crop for the majority of households (129 029) which is seven times more than the households that indicated maize (17 620) as a major crop and five times more than households that indicated sorghum 24 646 as their major crop. With respect to the area under crop production, the majority of the areas remain under production of millet/mahangu (421 212.6 ha) with an estimated production of 408 576.22 tonnes (t). Similarly, sorghum is produced in 7 043 ha of land with an estimated production of 8 733.32 tonnes while maize came in third with an area of 34 991 ha and a production of 55 985.60 tonnes.

Table 3. 6: Area under crop production and yield by type of crop

Major crop	Number of Households	Area under crop (ha)	Yield (tonnes/ha)	Production (tonnes)
Maize	17 620	34 991	1.60	55 985.60
Sorghum	24 646	7 043	1.24	8 733.32
Millet/Mahangu	129 029	421 212.6	0.97	408 576.22
Total		**463 246.6**		**473 295.14**

CHAPTER 4: ACCESS TO EXTENSION SERVICES AND FACILITIES

4.1 Type of extension services

During the census, agricultural households were requested to provide information on the type of extension services they received and households could have access to more than one service. Table 4.1 summarizes the number and type of extension services the agricultural households received. The results show that the majority of the agricultural households (8 041) indicated that they received services on the selection of crops, 7 888 households received farm management, 7 574 received livestock husbandry and 5 109 households received extension services on the use of inputs. Credit service was the least extension service received by the agricultural households as it was only reported by 604 households.

At regional level, Oshikoto region reported the highest number of agricultural households that received extension services across the services spectrum except for water irrigation and drainage where the highest number of households receiving this service was recorded in Omaheke region. In addition, Zambezi region recorded the second highest number of households who received farm management, selection of crop, input use and marketing services, while the //Karas and Hardap regions on average recorded the least numbers of agricultural households that reported to have received different types of Extension services (Table 4.1).

Table 4. 1: Number of agricultural households by type of extension service and region

Region	Type of extension services										
	Farm management	**Selection of crop**	**Input use**	**Credit**	**Farm mechanization**	**Livestock husbandry**	**Plant protection**	**Environmental conservation**	**Marketing**	**Water irrigation and drainage**	**Other**
//Karas	129	5	5	-	11	164	-	-	8	64	71
Erongo	111	37	32	20	22	233	38	36	67	74	14
Hardap	49	5	-	-	50	5	-	-	4	17	1
Kavango East	496	883	533	138	296	778	207	69	164	120	132
Kavango West	858	896	310	51	54	283	370	39	27	-	143
Khomas	-	-	-	-	2	-	-	-	-	-	-
Kunene	205	199	23	-	11	220	110	21	15	38	56
Ohangwena	752	604	654	-	18	1 195	434	103	61	299	-
Omaheke	371	259	26	33	20	769	112	74	184	127	30
Omusati	824	648	68	61	15	594	270	23	41	17	349
Oshana	705	735	876	23	295	565	311	112	144	36	399
Oshikoto	1 994	1,845	1,511	221	393	1 630	592	178	619	3	795
Otjozondjupa	95	110	85	4	22	360	120	85	11	9	30
Zambezi	1 299	1 815	986	53	293	778	415	94	359	107	219
Namibia	**7 888**	**8 041**	**5 109**	**604**	**1 502**	**7 574**	**2 979**	**834**	**1 704**	**911**	**1840**

4.2 Source and type of information

The Census of Agriculture collected information from the agricultural households on the type and source of the information they received. The results presented in Table 4.2 show that radio was cited by the majority of agricultural households to be the most used source of different types of information. For the agricultural households that reported receiving information through radio, 7 308 households receive information on Crop varieties followed by 5 629 households that received information on Livestock husbandry and diseases. However, internet was reported to be the least used source of information for households.

Table 4. 2: Number of agricultural households by type of information received and source

Sources	Type of information													
	Weather	**Crop varieties**	**New agricultural practices**	**Farm machinery**	**Credit facilities**	**Plant diseases and pests**	**Marketing**	**Rangeland management**	**Livestock husbandry & diseases**	**Agronomic practices**	**Water & irrigation**	**Fish farming**	**HIV/AIDS**	**Other**
Radio	2 742	7 308	2 841	1 245	585	3 366	1,400	485	5,629	89	906	183	3 406	1 521
Television	197	348	185	74	59	267	100	81	305	22	91	22	236	51
Internet	46	44	19	17	9	16	23	-	88	18	-	-	38	8
Newspaper	332	733	261	154	78	486	175	104	608	116	30	-	606	207
Magazines/Bulletins	70	92	54	66	18	88	20	8	142	21	6	-	60	94
Extension officers	657	2 449	1 105	699	192	955	517	195	1 770	87	305	28	579	529
Farmer to farmer	530	1 126	704	344	124	502	398	130	1 796	25	340	55	629	244
Farmers' associations	145	299	202	112	109	184	152	72	352	29	172	25	230	52
Agricultural show/exhibition	133	354	218	45	44	137	69	59	391	29	99	25	116	45
Neighbour	1 499	3 315	948	685	235	1 544	681	250	2 722	41	463	106	2 271	648
Other	268	950	202	147	74	357	236	71	661	16	13	6	486	689

4.3 Source of extension service

The number of agricultural households receiving information by source of extension service and region presented in Table 4.3 reveals that the majority of the agricultural households (11 488) received information from MAWF's agricultural extension services, 7 609 received information from MAWF's veterinary staff, 2 699 households received information from the MAWF's rural water supply, whereas 1 121 obtain their information from farmers' union/cooperatives. However, The Internet as a source of information was the least reported by agricultural households accounting for only 66 households. At the regional level, Hardap and Khomas regions are the only regions having the least representation across the sources of the extension services.

Table 4. 3: Number of agricultural households which received information by source and region

	Extension Service Source												
Region	**MAWF veterinary staff**	**MAWF agricultural extension**	**Farmers' unions/cooperatives**	**NGO**	**MAWF rural water supply**	**Meat Board of Namibia**	**Agronomic Board of Namibia**	**Agra Cooperation**	**MAWF - Forestry**	**Private sector Dealers**	**Internet**	**Ministry of Environment**	**Other**
//Karas	224	43	29	8	140	12		18	3				38
Erongo	164	169	30	13	87	23		64	23		9	24	6
Hardap	45	8											6
Kavango East	881	1075	173	152	368	17	37		9		9	119	127
Kavango West	582	1442	5	8	69	15		9	9	6		17	249
Khomas						1				1			
Kunene	87	318		71	11	4			11	40	2		18
Ohangwena	763	958	20	250	141	81		100	83	34	19	240	391
Omaheke	349	531	208		249	79		66	7				6
Omusati	524	985	16		259	23	22	60	45			25	212
Oshana	699	1330	71	84	346	82		180	142	16		51	365
Oshikoto	1778	2673	235	110	454	152	39	48	153	73	19	122	1286
Otjozondjupa	205	231	14		55		6	16	32	6			36
Zambezi	1307	1726	321	134	519	31	45	10	219	44	8	119	129
Namibia	**7609**	**11488**	**1121**	**830**	**2699**	**519**	**150**	**573**	**735**	**221**	**66**	**717**	**2869**

4.4 Households satisfied with extension service source

The census requested agricultural households to indicate whether they are satisfied with the extension services rendered by various service providers. The resulting outcome in Table 4.4 presents the number of agricultural households that are satisfied with the extension services by source and region. The result reveals that 10 518 agricultural households reported to be satisfied with MAWF agricultural extension services, while 7 244 agricultural households reported to be satisfied with MAWF Veterinary staff services.

Agricultural households that indicated satisfaction with the extension services offered by MAWF rural water supply were 2 401 while those that reported to be satisfied with the farmers union/cooperatives were 1 017 households. Services from the Agronomic Board were the least reported as they only account for the total of 67 households who indicated satisfaction with this service.

Table 4. 4: Number of agricultural households which are satisfied with extension services by source and region

Region	Source of service												
	MAWF veterinary staff	MAWF agricultural extension	Farmers' unions/cooperatives	NGO	MAWF rural water supply	Meat Board of Namibia	Agronomic Board of Namibia	Agra Cooperation	MAWF - Forestry	Private sector Dealers	Internet	Ministry of Environment	Other
//Karas	220	36	18	17	160			10					37
Erongo	151	166	29	7	93	12		79	23	3	6	25	11
Hardap	44	7	1		1							1	1
Kavango East	867	956	180	102	371	12	29		9		9	28	239
Kavango West	622	1450	6	8	84		25					17	200
Khomas								2					
Kunene	110	304	5	81	6	10			11	40	2		10
Ohangwena	691	829	16	106	68			97	68		47	139	526
Omaheke	275	451	213		202	72		78	5			5	41
Omusati	685	911	54		110			34	58			16	154
Oshana	543	1 245	90	31	394	38		151	18				5081
Oshikoto	1 688	2 423	288	73	418	133		39	162	58	14	96	383
Otjozondjupa	233	162	4		52			8	37	6			19
Zambezi	1 115	1 578	113	132	442	102	13	16	179	61	8	59	275
Total	**7 244**	**10 518**	**1 017**	**557**	**2 401**	**379**	**67**	**514**	**570**	**168**	**86**	**386**	**3 404**

4.5 Distance to agricultural facilities

Distance to facilities was one of the information sought from the agricultural households during the census to measure access to facilities. Table 4.5 shows that over half of the agricultural households about 59% reside within a kilometre (km) of different agricultural facilities. Specifically, about 67 percent of the households reported to be within one km to the water point and 62 percent were within one km to the feeder roads.

In contrast, about 11 percent of the agricultural households were reported to live more than 10 km from the agricultural facilities. In particular, the results show that about 31 percent of the agricultural households reported to live more than 10 km from the regional produce market, 21 percent reported to live more than 10 km from the local produce market and a further 20 percent reported to live more than 10 km from the Agricultural Development Centre (ADC).

Table 4. 5: Percent of households by distance to facilities

Facilities	Distance to facilities						
	less than 1km	**1 km**	**2 km**	**3 km**	**4-5 km**	**6-10 km**	**>10 km**
Local produce market	53	4.9	4.3	4.2	5.5	7.4	20.7
Regional produce market	47.6	0.7	2.8	1.6	3.4	13	30.9
Local input dealer / farm	53.5	5.7	10.4	7.1	8.7	3.7	10.8
Agricultural Development Centre (ADC)	38.2	3.5	6.2	6.6	13.7	12.2	19.8
Nurseries	40.3	9.4	11.8	7.6	7.4	9.2	14.3
Agricultural Research Centers	45.2	4.4	6.4	4.2	12.1	16.5	11.2
Public transport	55.5	6.8	7.7	6	7.4	6.7	9.8
Feeder roads	62.3	9	5.3	2.1	2.7	6.9	11.7
All year gravel road	60.4	7.1	5	3.2	5.8	7.7	10.7
Tarmac	52.2	4.7	3.9	3.4	8.6	11.6	15.5
Water point	66.9	10.6	5.9	3.9	4.1	3	5.7
Livestock Development Center	58.9	6.3	5.4	2.5	7.2	8.3	11.4
Mills	59.5	5.7	8.7	6.7	7.8	5.6	6
Other	72.5	1.1	3.3	1.4	5.1	4.3	12.2
Total	**58.6**	**7**	**6.1**	**4.3**	**5.9**	**6.8**	**11.3**

CHAPTER 5: EQUIPMENT AND INFRASTRUCTURE

5.1 Means of transport

Transport plays a significant role in the structure of food production and marketing, since good access to market can make a significant difference in the level of rural incomes.

Table 5.1 reveals that 85 385 households recorded head loading as their main means of transport, with 13 726 households reporting car or pick up as their main means of transport. Mules were the least main means of transportation reported by a single household.

In terms of source of accessibility, 113 233 households own their main means of transport, 4 164 borrow while 3 501 rent their main means of transportation.

Table 5. 1: Number and distribution of households by main means of transport

Means of transport	Number of households	Source of main access				Number of transport equipment owned
		Owns	Borrow	Rent	Others	
Head loading	85 385	83 999	383	334	669	-
Car /Pick up	13 726	10 485	882	1 619	740	13 699
Lorry	97	45	52	0	0	129
Tractor	362	138	51	173	0	176
Bicycle	1 148	1 148	0	0	0	1 509
Oxen	1 752	1 032	575	145	0	3 213
Oxen cart	1 968	1 320	268	380	0	2 075
Donkeys	2 343	2 082	190	22	49	8 200
Mules	1	1	0	0	0	2
Donkey cart	5 122	4 370	351	364	37	6 344
Boats/Ferry	61	44	0	0	17	81
Wheelbarrow	4 357	4 277	65	0	15	5 669
Trailers /Truck	60	29	0	31	0	29
Horses	197	197	0	0	0	502
Canoes	516	384	118	14	0	471
Sledge	5 122	3 476	1 229	401	16	4 421
Others	252	206	0	18	28	126
Total	**122 469**	**113 233**	**4 164**	**3 501**	**1 571**	**46 646**

5.2 Storage facilities

Crop storage entails keeping crops for a certain period of time as food for the household for sale at higher prices or as seeds for planting in the following season. Table 5.2 shows that granary was the dominant storage facility used in the country with 88 276 holdings reporting using it, followed by 46 918 holdings who use bags, while 23 186 reported drums as their storage facility.

With respect to the regional breakdown, Omusati region reported the highest number (36 607) of holdings using granary as a storage facility followed by Ohangwena region with 25 575 holdings and Oshikoto region with 14 418 holdings. Storage in bags is the dominant storage method used by 10 645 holdings in Kavango East region followed by 9 791 holdings in Kavango West region. Drums are mostly used in Ohangwena region where they account for about 7 075 holdings followed by Oshikoto region with 6 922 holdings.

Table 5. 2: Number and distribution of holdings reporting storage facility by region

Region	Type of storage facility										
	Granary	In the house	Specific house / room	Under shelter / outside	Sealed containers	Bags	Drums	Silo	Cold storage	Under ground	Other
//Karas	0	216	11	6	20	246	0	0	32	0	0
Erongo	5	45	8	10	6	90	6	0	0	0	3
Hardap	0	3	63	9	0	64	0	0	0	0	0
Kavango East	218	121	6	47	39	10 645	300	38	0	0	0
Kavango West	298	131	147	63	9	9 791	256	158	36	0	42
Khomas	0	2	0	0	0	9	0	0	0	0	0
Kunene	163	149	60	45	17	1 450	288	7	0	0	6
Ohangwena	25 575	276	146	74	1 858	3 466	7 075	653	0	0	151
Omaheke	7	237	50	15	140	1 866	127	4	106	53	0
Omusati	36 607	417	245	57	866	6 093	5 084	60	0	0	467
Oshana	10 658	115	0	0	887	1 912	2 890	0	0	0	170
Oshikoto	14 418	93	268	48	1 628	3 876	6 922	143	22	0	297
Otjozondjupa	83	124	28	16	234	516	37	0	0	0	13
Zambezi	244	216	47	30	0	6 894	201	9	0	0	11
Total	**88 276**	**2 145**	**1 079**	**420**	**5 704**	**46 918**	**23 186**	**1 072**	**196**	**53**	**1 160**

5.3 Type of equipment owned

Households were requested to provide information on the type of equipment, number of equipment owned, average number of equipment per household and years of ownership. Twenty-four different types of equipment were reported by the households. Under normal circumstances, every agricultural household should have the following basic equipment: Hoes/Etemo, Axes, Pangas/Machete, Sheller spade, Fork hoe, Pail, - and Ox-plough.

The results of the seven main types of equipment are provided in Tables 5.3, 5.4 and 5.5 while the details of all the 24 types of equipment's are provided in Annex A1-A3.

The results show that nearly all the agricultural households (97.99%), owned the seven mentioned main equipment (Table 5.3). In addition, households reported to own on average five Hoes/Etemos, three Pails and two of each type of Axes, Pangas/Machete, Sheller spade and Fork hoe (Table 5.4).

With the exception of Fork hoe and Pail, more than 90 percent of households who own these equipment, have had them for more than a year (Table 5.5).

The least used equipment were Planter (273 households), Weeder (491 households), Sprayer (600 households) and Harrow/cultivator (682 households). (Annex A1).

Table 5. 3: Number of agricultural households who reported use of agricultural equipment by type and ownership status

Equipment used	Total households reporting	Ownership status				
		Owned	Rented	borrowed	Other	% owned
Hoes/Etemo	149 421	147 755	329	1 038	299	99
Axes	138 298	136 445	424	1 064	365	99
Pangas/Machete	126 383	125 000	302	654	427	99
Sheller spade	88 066	86 176	383	1 098	409	98
Fork hoe	5 555	5 418	48	73	16	98
Ox-plough	61 535	59 387	270	1 600	278	97
Pail	17 243	16 901	93	37	212	98

Table 5. 4: Number of agricultural equipment owned by type, average number owned per agricultural household

Type of equipment	Total Number of agricultural households reporting	Number of equipment owned	Average number of equipment per household
Hoes/Etemo	149 482	764 373	5
Axes	138 333	243 970	2
Pangas/Machete	126 408	237 065	2
Sheller spade	88 110	163 596	2
Fork hoe	5 610	8 940	2
Ox-plough	61 554	81 206	1
Pail	17 298	59 229	3
Total	**586 795**	**1558 379**	**17**

Table 5.5: Number and distribution of agricultural households by type of equipment owned and years of ownership

Type of equipment owned	No. of agricultural households. reporting having equipments	Years of ownership		
		Less than 1 year	1 - 10 years	More than 10 years
Hoes/Etemo	149 482	11 940	85 955	51 464
Axes	138 333	8 828	79 807	49 610
Pangas/Machete	126 408	11 493	76 353	38 468
Sheller spade	88 110	7 121	53 408	27 297
Fork hoe	5 610	537	3 454	1 556
Ox-plough	61 554	3 535	32 897	24 895
Pail	17 298	2 899	11 809	2 452
Total	**586 795**	**46 353**	**343 683**	**195 742**

CHAPTER 6: ACCESS TO CREDIT FACILITIES

6.1 Number of households who applied for agricultural loan

The number of agricultural households who applied for loans during the past 5 years by region is presented in Table 6.1. The result shows that out of the total of 159 484 agricultural households, 1 494 households have applied for loans during the past 5 years (preceding the census) of which 1 074 (71.9%) households received loans.

The results further indicate that at regional level, Oshikoto recorded the highest number of households (331) that applied for loans, of which 255 (77.0%) households were successful. Furthermore, Ohangwena was the second highest region of loan applicants with 241 households, however, only 168 (69.7%) of the households received loans. The third highest region to have applied for loans was Omusati (231 households) with 192 (83.1%) households getting the loans. Khomas region recorded the lowest number of loan applicants accounting only for five households of which four received the loans.

Table 6. 1: Number of agricultural households who applied for loan during past 5 years by region

Region	Total number of Agricultural households	Number of Agricultural Households who applied for Loan	Number of Agricultural households who received Loan	Number of Agricultural households who did not receive Loan
//Karas	1 253	27	23	4
Erongo	1 424	77	45	32
Hardap	459	14	9	5
Kavango East	9 760	72	22	50
Kavango West	10 026	26	11	15
Khomas	94	5	4	1
Kunene	4 909	81	73	8
Ohangwena	34 480	241	168	73
Omaheke	2 562	123	71	52
Omusati	43 339	231	192	39
Oshana	15 699	169	137	32
Oshikoto	23 984	331	255	76
Otjozondjupa	3 444	44	37	7
Zambezi	8 051	53	27	26
Total	**159 484**	**1 494**	**1 074**	**420**

6.2 Purpose of loan received

The census asked households that received loans to indicate all reasons for acquiring loans. The results shows that most of the agricultural households (32.3%) that received loans in the past 5 years preceding the census, reported to have received loans for livestock purposes.

(Table 6.2) Furthermore, 25.6 percent of the agricultural households reported to have received loans for other agriculture purposes, while 20.8 percent of households reported to have received loans for agricultural labour.

Table 6. 2: Number and distribution of agricultural households which received loan during past 5 years by purpose of the loan

Purpose of Loan	Number of Agricultural households that received a Loan	%
Agriculture labour	224	20.8
Seeds	143	13.3
Fertilizer	56	5.2
Livestock	347	32.3
Trading agricultural produce	14	1.3
Tractor	4	0.4
Borehole	12	1.1
Other agricultural purposes	275	25.6
Total	**1,075**	**100.0**

6.3 Source and period of loan

It is evident from table 6.3 that Agribank provided most of the loans (23.2%) to households of which 139 loan applicants received the loans for more than 3 years repayment period. Similarly, family and friends gave loans to 17.1 percent of the households, where the majority of the loan recipients (131 households) had the loan for less than a year. The result further reveals that 10.6 % of the households got loans under shelter/outside and 10.1 % got loans from micro finance institutions. The majority of these loans were for a period of less than a year in both instances.

Overall the loan period is predominantly less than one year (451 agricultural households) followed by between 1 and 3 years (314 households).

Table 6. 3: Number and distribution of agricultural households which received loan during the past 5 years by source and period of loan

Source of loan	Total number of agricultural households that received loan	%	Number of Agricultural households			
			Loan Period			
			Less than 1 year	Between 1 and 3 years	More than 3 years	Other
Agribank	249	23.2	51	39	139	20
Development Bank of Namibia	28	2.6	-	28	-	-
Commercial Banks	47	4.4	-	40	7	-
Micro Finance Institutions	109	10.1	60	27	22	-
Money Lenders	35	3.3	5	30	-	-
Self Help Group	99	9.2	76		-	23
Under Shelter / Outside	114	10.6	68	46	-	-
Government	74	6.9	17	20	11	26
NGO	63	5.9	37	25	1	-
Family and Friends	184	17.1	131	28	6	19
Others	73	6.8	6	31	13	23
Total	**1 075**	**100.0**	**451**	**314**	**199**	**111**

6.4 Source of loan and type of collateral

Agricultural households who were recipients of loans were also requested to provide information on the type of collateral they provided. The results presented in Table 6.4 reveal that 419 agricultural households did not provide any collateral, while 176 offered livestock as collateral primarily to under shelter/outside (50 households), Government (37 households) and Agribank (34 households). Similarly, 125 loan recipient households used third parties as collateral mostly to loans from Agribank. Only eight households offered their land titles as collateral for loans received from Agribank.

Table 6. 4: Number and distribution of agricultural households which received loan by source and type of collateral during the past 5 years.

Source of loan	Agricultural HHs that received loan	% of total	Type of collateral						
			No collateral	Land Title	Crops	Livestock	Salary	Third party	Other
Agribank	249	23.2	26	8	-	34	30	78	73
Development Bank of Namibia	28	2.6	-	-	22	-	6	-	-
Commercial Banks	47	4.4	28	-	-	14	5	-	-
Micro Finances Institutions	109	10.1	44	-	-	20	-	-	45
Money Lenders	35	3.3	-	-		5	18	-	12
Self Help Group	99	9.2	49	-		16	34	-	-
Under Shelter / Outside	114	10.6	26	-	19	50	-	19	-
Government	74	6.9	37	-		37	-	-	-
NGO	63	5.9	53	-		-	-	9	1
Family and Friends	184	17.1	97	-	33	-	28	19	7
Others	73	6.8	59	-	-	-	8		6
Total	**1 075**	**100.0**	**419**	**8**	**74**	**176**	**129**	**125**	**144**

CHAPTER 7: FARM MANAGEMENT

7.1 Use of fertilizers

Fertilizers make crops grow faster and bigger so that crop yields are increased. They are minerals, which must first dissolve in water so that plants can absorb them through their roots. Fertilizers provide plants with the essential chemical elements needed for growth particularly nitrogen, phosphorus and potassium.

The number of agricultural households which applied fertilizer by type is given in Table 7.1 below. There is a consistent application of both organic and inorganic fertilizers to crops such as maize, sorghum and millet, with millet having a consistent higher number of households applying fertilizers (23 404 agricultural households). It is worth noting that organic fertilizers are commonly applied by households for most crops.

Table 7. 1: Number of agricultural households that applied fertilizer by type

Type of crop	Households applied Organic	Households applied Inorganic
Maize	448	384
Sorghum	3 438	1 119
Millets	23 404	8 486
Cabbages	15	-
Tomatoes	-	6
Water Melons	8	8
Pumpkin	6	-
Soya Beans	91	8
Ground Nuts	173	55
Beans	160	42

7.2 Type of seed used

Table 7.2 presents the number of holders by type of crops and the seeds they are using. It can be observed from the table that there is a consistent use of the local varieties of seeds for all the crops as opposed to the improved and hybrid seeds.

Table 7. 2: Number of holders by type of crop and type of seed

Type of crop	Number of holders		
	Local seeds	Improved seeds	Hybrid seeds
Maize	14 731	2 721	182
Sorghum	20 489	1 710	75
Millets	107 978	23 826	1 494
Other Cereal	9	-	-
Vegetables	87	35	17
Fruits	32	3	-

Table 7.3 reveals that a high number of agricultural households do not use improved seeds mostly because they are not available (32 045 households), too expensive (31 281 households) or because they have no knowledge of them (33 862 households).

Furthermore, 7 412 agricultural households indicated that they do not use improved seeds as they do not see their usefulness. Such households are more in Oshikoto (2 758), Omusati (1 727) and Ohangwena (1 224) regions.

Table 7. 3: Number of households not using improved seed by reason and region

Region	Total number of households not using improved seed	Reason not using improved seeds				
		No knowledge	Too expensive	Not available	Do not see usefulness	Others
Erongo		1	6		5	6
Hardap	1	-	-	1	-	-
Kavango East	9 145	2 596	4 419	1 997	51	82
Kavango West	10 502	2 635	4 353	2 854	280	380
Kunene	1 975	1 343	284	106	221	21
Ohangwena	22 340	6 899	4 547	6 880	1 224	2 790
Omaheke	383	222	156	-	5	-
Omusati	30 963	12 889	5 401	8 739	1 727	2 207
Oshana	12 925	2 529	2 824	4 368	1 071	2 133
Oshikoto	19 199	3 789	5 031	6126	2 758	1 495
Otjozondjupa	675	127	257	218	30	43
Zambezi	6 451	832	4 003	756	40	820
Total	**114 559**	**33 862**	**31 281**	**32 045**	**7 412**	**9 977**

7.3 Use of pesticides

The number of agricultural holders that applied pesticides on crops by type of pesticides is presented in Table 7.4. The results show that most of the holders used other pesticides that are not fungicides, herbicides or insecticides on their crops. The use of other pesticides is more prominent

with millet (10 819 holders), followed by sorghum (2 012) and maize (1 134). Insecticides were mostly used by 499 holders that applied it to millet, followed by 90 applying it to maize, while 53 holders used it on sorghum and a mere eight holders applied it on vegetables.

Additionally, herbicides were applied by 139 holders used it on millet, 18 holders applied it on sorghum while seven holders applied it on maize. Fungicides was applied by 100 holders mainly on millet while 22 holders applied them on maize.

Table 7. 4: Number of holders applied pesticides by type of crop and type of pesticides

	Number of holders applied			
Type of crop	**Insecticides**	**Herbicides**	**Fungicides**	**Others**
Maize	90	7	22	1 134
Sorghum	53	18	-	2 012
Millets	499	139	100	10 819
Other Cereal	-	-	-	-
Vegetables	8	-	-	31
Fruits	-	-	-	21

Other includes traditional methods of pesticides used

7.4 Use of irrigation

Water is the limiting factor to crop production in most areas of Namibia and without water most of the other agricultural practices applied to crops will not result in a significant increases in yields. Table 7.5 reveals that agricultural households use irrigation of which 1 232 (70.6 %) irrigate millet and 319 (18.3 %) irrigate maize crops.

Table 7. 5: Number and distribution of households who practise irrigation by crop type

Type of crop	Number of agricultural household practicing irrigation	%
Maize	319	18.3
Sorghum	41	2.3
Millets	1 232	70.6
Cabbages	38	2.2
Spinach	25	1.4
Fruits	3	0.2
Vegetables	87	5.0
Total	**1 745**	**100.0**

The results presented in Table 7.6 show that most of the agricultural holders use surface irrigation methods to irrigate their crops and the majority of them do not pay for irrigation water. The situation is more prominent in holders (850) who are irrigating millet and 247 holders who are irrigating maize.

Table 7. 6: Number of holders by method of irrigation used on crop and payment

Land use	Method used Irrigation				Payment for irrigation water	
	Total	**Surface**	**Sprinkles**	**Drip**	**Pay**	**No pay**
Maize	247	148	21	79	89	134
Sorghum	20	-	20	-		
Millet	850	639	143	68	71	653
Cabbages	38	23	15	-	6	32
Spinach	25	6	-	19		25
Water Melon	12	12	-	-	12	
Pumpkin	12	12	-	-	12	
Beans	24	24	-	-	10	14
Paw-paw	3	-	-	3	3	

With respect to the source of water for irrigation, the results presented in Table 7.7 indicate that the majority of the households (31.0 %) use rural water supply as a source of irrigation. In addition, 20.8 percent of the households get their water from Borehole and 16.6 percent get theirs from River/Lake/Pond/ Mountain/ by gravity. The least used source of irrigation was reported to be Waste water/semi purified water (2.1 % of the households).

Table 7. 7: Distribution of agricultural households which practice irrigation by source of water

Source of irrigation	Number of HHs practicing Irrigation	%
River/Lake/Pond/Mountain/ by gravity	186	16.6
River/Lake/Pond/ by pumping	124	11.1
Dam/Reservoir/Earth dam	90	8.1
Harvested	74	6.6
Borehole	233	20.8
Waste water/semi purified	24	2.1
Rural water supply	347	31.0
Canal	40	3.6
Total	**1 118**	**100.0**

7.5 Type of inputs used

The result in Table 7.8 presents the number of holders who used inputs by educational level and type of inputs. The table indicates that the number of holders using local seeds irrespective of their educational status is 118 843 followed by 28 609 holders who cited the use of improved seeds, while organic fertilizers were used by 24 067 holders.

With respect to the educational level, local seeds are predominantly used by holders with primary education (50 625), followed by holders with secondary education (29 928) holders, while those with no education accounts for 25 010 holders. This trend appears to be consistent with the use of other inputs by holders except for the holders using the hybrid seeds whereby holders with primary education were in the majority (598) followed by holders with secondary education (537) and those with no education (436).

Table 7. 8: Number of holders who used inputs by educational level and type of inputs

Education level of holders	Number of holder and Household farm practice						
	Local seed	**Improved seed**	**hybrid seeds**	**Organic fertilizer**	**Inorganic fertilizer**	**Pesticide**	**irrigation**
None	25 010	4 611	436	4 616	1 341	16 226	254
Pre-primary	5 071	1 068	64	1 657	333	3 306	16
Primary	50 625	13 189	598	10 002	3 626	29 052	704
secondary	29 928	7 660	537	5 497	2 581	18 348	346
Certificate	1 134	176	42	158	431	328	24
Diploma	1 710	361	81	467	107	1 070	19
Tertiary/degree	1 282	458	23	329	168	969	35
Dont Know	4 083	1 086	192	1 341	443	2 487	55
Total	**118 843**	**28 609**	**1 973**	**24 067**	**9 030**	**71 786**	**1 453**

Information pertaining to the main source of inputs was also solicited from the holders during the census. The result presented in Table 7.9 indicates that the majority of the holders (121 353) reported that they use their own inputs followed by 8 007 holders who reported to have to have obtained their inputs from markets, while the holders who use the Government as their supply of inputs were 4 922.

At regional level, the majority of holders (32 606) who use their own source of inputs were from Omusati region, while Ohangwena and Oshana regions have the highest number of holders (1 997 holders and 1 777 holders respectively) who make use of markets inputs.

Table 7. 9: Number of holders by source of agricultural input and region

Region	Total number of holders	Main source of supply input				
		Own	Markets	Cooperatives	Government	NGO's
//Karas	48	34	8		6	
Erongo	106	96	4	6		
Hardap	3	1	2			
Kavango East	9 760	8 976	530	82	133	39
Kavango West	10 023	9 410	366	89	116	42
Kunene	2 592	2 204	227	37	116	8
Ohangwena	29 028	26 003	1 997	16	726	286
Omaheke	479	394	78		7	
Omusati	35 452	32 606	1 354	59	1 312	121
Oshana	15 477	12 675	1 777	118	720	187
Oshikoto	23 095	20 618	1 315	43	1 091	28
Otjozondjupa	1 499	1 307	128	11	35	18
Zambezi	8 068	7 029	221	128	660	30
Total	**135 630**	**121 353**	**8 007**	**589**	**4 922**	**759**

CHAPTER 8: AQUACULTURE/FISH FARMING

8.1 Fish farming

During the census, agricultural households were asked whether fish farming was practised on the holding. Out of the 14 regions, only households from four regions (Ohangwena, Omusati, Oshikoto and Zambezi) (as indicated in Table 8.1) reported to be engaged in fish farming.

The results show that a total of 241 agricultural households practise fish farming out of the 109 854 households which reported. In particular, Omusati region has the highest proportion (51%) of households practising fish farming followed by Oshikoto with 31 percent of households practicing fish farming, while Zambezi region has the lowest proportion of 6.2 percent of the households practising this type of farming.

Table 8. 1: Distribution of agricultural household practising fish farming by region

Region	number of agricultural HHs	Agricultural HHs with fish farming	% of Total HHs fish farming
Ohangwena	34 480	30	12.4
Omusati	43 339	122	50.6
Oshikoto	23 984	74	30.7
Zambezi	8 051	15	6.2
Total	**109 854**	**241**	**100**

8.2 Fish farming system

The distribution of agricultural households by fish farming system and average surface area of water bodies/pond is shown in Table 8.2. The results indicate that the still water culture (pond) system with an average surface area of $3m^2$ is used by 119 agricultural households while the running water culture system with an average surface area of $364m^2$ is used by 107 households and the cage culture fish farming system having an average surface area of $20m^2$ is used by 15 households.

Table 8. 2: Distribution of agricultural household by fish farming system and average size of water bodies/pond

Fish farming system	Number of HHs reported	Average surface area in m^2
Still water culture (pond)	119	3.2
Running water culture	107	364.4
Cage culture (Dam)	15	20.0
Total	**241**	**387.6**

8.3 Source of fingerlings and Fish stock

The census collected information on the number of fingerlings stocked by type as well as source of the fingerlings and the quantity of fish harvested during the past 12 months. The results summarized in Table 8.3 show that only 73 fingerlings were sourced from private traders, while 168 fingerlings were from other sources. With respect to the number of fingerlings stocked, the majority (2 976) were Carp which were stocked in all four regions, with 343 Tilapia stocked in all four regions except Ohangwena.

The total number of fish harvested was 1 721 with 922 harvested from Ohangwena, 582 from Zambezi, 157 from Omusati and 60 from Oshikoto regions.

Table 8. 3: Number of fingerlings stocked by type, source and quantity of fish harvested and region during the past 12 months

Region	Source of fingerlings		Number of fingerlings stocked				Number of fish harvested
	Private trader	Other	Tilapia	Cat Fish	Carp	Other	
Ohangwena	**-**	30	-	-	680	115	922
Omusati	**34**	88	106	-	1 339	-	157
Oshikoto	**39**	35	179	60	608	60	60
Zambezi	**-**	**15**	58	58	349	146	582
Total	**73**	**168**	**343**	**118**	**2 976**	**321**	**1 721**

8.4 Partial fish harvest by reason

During the census, agricultural households were also asked whether they carried out partial harvest from the fish farms. Table 8.4 depicts the number of agricultural households who carried out partial fish harvesting by reason. A total of 106 agricultural households carried out partial harvesting of which 90 was for own consumption and only 15 households from Oshikoto region partially harvested their fish for marketing purposes.

Table 8. 4: Number of agricultural households who carried out partial fish harvest by reason and region

Region	Total number of agricultural HHs	Agricultural HHs who Carried out partial fish harvest		Reasons for Partial Harvest	
			%	Own consumption	Marketing
Ohangwena	34 480	19	17.9	19	-
Omusati	43 339	17	16.0	17	-
Oshikoto	23 984	55	51.9	39	15
Zambezi	8 051	15	14.2	15	-
Total	**109 854**	**106**	**100.0**	**90**	**15**

8.5 Period aquaculture had been practice

Agricultural households were also asked to find out how long they have been practising aquaculture. The outcome summarized in Table 8.5 indicates that the majority of the households (190) have been practising aquaculture for the last three years, while only 32 households had been in practice for the last 10 years.

Table 8. 5: Number of agricultural households who practice aquaculture by number of years and region

Region	Number of HHs reported	Agricultural households practising aquaculture		
		Since last 3 years	Since the last 5 years	Since last 10 years
Ohangwena	30	11	19	0
Omusati	122	105	0	17
Oshikoto	74	59	0	15
Zambezi	15	15	0	0
Total	**241**	**190**	**19**	**32**

8.6 Practice of aquaculture by water type and source

The distribution of agricultural households who practice aquaculture by water type and water source is presented in Table 8.6. It is evident from the table that most of the households (174) practice fresh water fish farming of which 107 use rain as the source of water. Similarly, 56 households practice brackish water fish farming where the majority of the households (39) use dams as water source.

Table 8. 6: Distribution of agricultural households who practice aquaculture by water type and water source

Water Source	Total number of agric HHs who practise	Number of agric HHs who practice Aquaculture by water type		
		Fresh water	Brackish water	Other
Rain	135	107	17	11
Groundwater	52	52	0	0
Rivers /canal	15	15	0	0
Dams	39	0	39	0
Total	**241**	**174**	**56**	**11**

8.7 Number of workers in aquaculture

The census of agriculture collected information on the number of workers engaged in fish farming activities. Table 8.7 shows that 38 percent of workers were involved in feeding activities with 37 percent being males and 38 percent females. Similarly, 31 percent of the workers were involved in harvesting/fishing of which 30 percent were males while 32 percent were females.

Table 8.7: Number and distribution of workers who participated in fish activity by type of activity and sex

Type of fish farm activity	Total no of workers who participated	% of total workers	Number of workers who participated			
			Male workers	%	Female workers	%
Feeding	324	38	151	37	173	38
Water monitoring	138	16	69	17	69	15
Harvesting/Fishing	267	31	122	30	145	32
Watering and Cleaning	78	9	39	10	39	9
All of the above	52	6	26	6	26	6
Total	**859**	**100**	**407**	**100**	**452**	**100**

CHAPTER 9: FORESTRY

9.1 Use of forest land

This section discusses one of the important resources the country is endowed with, namely forestry. Forests conserves soil and water, maintains biological diversity, and provides many products such as woods and food. Without forests, large areas of Namibia would become deserts, and the people in those areas, and the country as a whole, would suffer in various ways.

Table 9.1 presents the estimates of area of forest land by type of land use. The table reveals that the primary land use covers about 1 387 081 ha which accounted for 607 132 ha of forest while secondary land use covers an area of 606 015ha, of which 233 317 ha covered in forest.

Table 9. 1: Estimate of area of forest land by type of land use

Forestry type	Main use		
	Total Area in ha	Primary land use in ha	Secondary land use in ha
Forest	840 449	607 132	233 317
Other wooded land	1 152 647	779 949	372 698
Total	**1 993 096**	**1 387 081**	**606 015**

The census further revealed that 1 727 (0.2%) out of the 907 714 households reported practicing agro-forestry (Table 9.2), whereby the majority of these households were found in the region of Oshikoto (877 households). The presence of agro-forestry reported in //Karas, Hardap and Khomas regions was found to be insignificant.

Table 9. 2: Number and distribution of agricultural households reporting the practice of agro-forestry on the holding by region

Region	Total Agricultural HHs	HHs who reported forestry practices	%
//Karas	4 044	-	0.0
Erongo	3 704	4	0.1
Hardap	1 234	-	0.0
Kavango East	59 404	12	0.0
Kavango West	67 123	99	0.1
Khomas	259	-	0.0
Kunene	23 639	63	0.3
Ohangwena	216 984	197	0.1
Omaheke	8 352	17	0.2
Omusati	243 619	134	0.1
Oshana	97 214	100	0.1
Oshikoto	131 632	877	0.7
Otjozondjupa	14 263	92	0.6
Zambezi	36 243	132	0.4
Namibia	**907 714**	**1 727**	**0.2**

9.2 The purpose of agro-forestry

The presence of agro-forestry was reported by 31 261 agricultural households (Table 9.3). The table further shows that multiple use was reported by the majority of the households (9 728) as the main purpose of practicing agro-forestry followed by 5 488 households who reported wood cover as the main purpose of use. Only about 556 households reported biodiversity to be the main purpose of agro-forestry.

Table 9. 3: Number of agricultural households by main purpose of forestry

Main Purpose	Number of agricultural Households
Production	4 148
Soil and water management	1 288
Multiple use	9 728
Conservation	1 906
Sustainable livelihood	4 003
Wood cover	5 488
Biodiversity	556
Fodder	1 552
Other	2 592
Total	**31 261**

CHAPTER 10: FOOD SECURITY

10.1 Presence of food shortage

The 2013/14 Census of Agriculture collected information on whether there were times during the past 12 months that the agricultural household members were not able to obtain sufficient food to eat.

The findings presented in Table 10.1 show that 121 891 agricultural households experienced food shortages. The regions of Kavango East (92.0%), Kavango West (89.2%) and Kunene (85.4%) are found to be more vulnerable to food shortages (Table 10.1) than other regions. //Karas (20.6 %) is the least vulnerable region. It turned out that the agricultural households (mostly from Omusati and Ohangwena) which experienced food shortages during the past 12 months were also those which were worried about not having enough food during the past three months (see Table 10.2).

Table 10. 1: Distribution of agricultural households who experienced food shortage during the past 12 months by region

Region	Total Number of Agricultural Households	Number of Households that experienced food Shortage	%
//Karas	1 253	258	20.6
Erongo	1 424	758	53.2
Hardap	459	138	30.1
Kavango East	9 760	8 984	92.0
Kavango West	10 026	8 944	89.2
Khomas	94	26	27.7
Kunene	4 909	4 194	85.4
Ohangwena	34 480	28 171	81.7
Omaheke	2 562	1 253	48.9
Omusati	43 339	35 022	80.8
Oshana	15 699	12 033	76.6
Oshikoto	23 984	15 257	63.6
Otjozondjupa	3 444	1 372	39.8
Zambezi	8 051	5 481	68.1
Total	**159 484**	**121 891**	**76.4**

Table 10. 2: *Distribution of agricultural Households worried about not having food during the last 3 months by region*

Region	Total Number of Agricultural Households	Agricultural Households worried not having enough food	% of Households worrying not having enough food
//Karas	1 253	258	20.6
Erongo	1 424	755	53.0
Hardap	459	134	29.2
Kavango East	9 760	8 984	92.0
Kavango West	10 026	8 933	89.1
Khomas	94	26	27.7
Kunene	4 909	4 188	85.3
Ohangwena	34 480	28 136	81.6
Omaheke	2 562	1 253	48.9
Omusati	43 339	35 002	80.8
Oshana	15 699	12 033	76.6
Oshikoto	23 984	15 241	63.5
Otjozondjupa	3 444	1 372	39.8
Zambezi	8 051	5 470	67.9
Namibia	**159 484**	**121 785**	**76.4**

10.2 Number of meals taken per day

In the communal areas of Namibia, 52.3 percent of children take three meals a day on average as compared to 15.2 percent adults (Table 10.3 and Figure 10.1). In Omaheke region, around 91.9 percent of children are recorded to have on average taken three meals a day followed by Erongo region with 87.3 percent. //Karas region recorded the least percentage (27.1%) of children who took three meals a day on average. Where there is insufficient food for all members, adults would rather eat once or twice a day and allowed the children to eat thrice.

Table 10. 3: Distribution of Agricultural Households Population by average number of meals taken per day and region

Region	Household Population by Proportion of meals taken per day					
	One meal		Two meals		Three meals	
	Adults	Children	Adults	Children	Adults	Children
//Karas	21.3	12.3	65.1	60.6	13.6	27.1
Erongo	6.3	1.2	44.6	11.4	49.0	87.3
Hardap	10.1	2.1	50.0	55.3	39.9	42.6
Kavango East	49.8	25.3	41.0	43.9	9.2	30.8
Kavango West	48.6	20.9	45.8	39.6	5.6	39.6
Khomas	44.0	27.3	28.0	40.9	28.0	31.8
Kunene	21.1	13.6	69.0	46.8	9.9	39.6
Ohangwena	19.1	6.3	69.1	39.6	11.8	54.2
Omaheke	5.0	2.1	35.3	6.0	59.7	91.9
Omusati	18.8	8.6	66.7	29.8	14.5	61.7
Oshana	20.8	13.9	60.9	43.5	18.4	42.6
Oshikoto	23.1	10.2	64.0	40.7	12.9	49.2
Otjozondjupa	22.5	8.2	42.3	29.4	35.2	62.4
Zambezi	6.4	3.2	47.9	22.5	45.7	74.3
Namibia	**23.4**	**11.0**	**61.4**	**36.7**	**15.2**	**52.3**

10.3. Months in which food shortage occurred

The distribution of agricultural households who experienced food shortages in 2013 and 2014 is presented in Table 10.4. The results reveal that generally, more households experienced - significant food shortages in January than the subsequent months of the year.

Table 10. 4: Distribution of agricultural households who experienced food shortage in 2013 and 2014

Year	Months	Number of agricultural households who experienced food shortage
2013	January	23 387
	February	4 313
	March	5 988
	April	4 987
	May	7 810
	June	8 789
	July	6 243
	August	17 964
	September	13 388
	October	12 316
	November	7 662
	December	6 347
2014	January	52 413
	February	7 549
	March	4 672
	April	2 635
	May	962
	June	179

10.4. Reason for food shortage

The reasons for the shortage of food provided by the agricultural households are presented in Table 10.5. The first most important reason for food shortage identified by agricultural households was “loss of crops/ or insufficient production” (87 428) followed by Lack of jobs (5 164).

On the other hand, the second most important reason for food shortage identified by households was lack of jobs (19 389), followed by Lack of adequate land and Lack of adequate labour with 13 594 and 11 879 agricultural households respectively.

Furthermore, 11 409 households cited lack of adequate capital , 10 002 households cited lack of jobs and 9 218 households cited lack of adequate labour as the third main reason for food shortage.

Table 10. 5: Distribution of agricultural households by main reason for food shortage

Reasons for food shortage	Number of agricultural household		
	First Reason	Second Reason	Third Reason
Loss of crops/Insufficient production	87 428	11 209	3 845
Lack of jobs	5 164	19 389	10 002
Inability to work because of illness or injury	1 008	2 376	2 462
Disabled, old age	2 072	6 078	4 044
Lack of adequate land	4 348	13 594	7 415
Lack of adequate capital	4 197	10 825	11 409
Family too big	2 490	7 794	7 299
Lack of adequate labour	2 687	11 879	9 218
Over selling produce	71	211	234
Loss of livestock	4 784	11 281	8 940
Others	4 375	7 208	10 259
Don't Know	3 268	17 803	44 520

10.5. Immediate response to alleviate food shortage

Households were asked to provide information on their immediate responses to alleviating food shortage. The results presented in Table 10.6 show that a total of 268 208 household members obtain assistance from Government's food relief programme followed by 107 567 persons who used their savings to buy food. A further 48 128 persons alleviated food shortage through Social grants. Only 495 household members used sale of land as main immediate response to alleviate food shortage (Table 10.6 adult males and females as well as in boys and girls disaggregation).

Table 10. 6: Distribution of agricultural Household Population who experienced food shortage by type of immediate response taken by sex

Steps taken to alleviate Food Shortage	Total	Agricultural Household Population			
		Adult male	Adult female	Boys	Girls
Use saving to buy food	107 567	38 310	44 529	12 374	12 354
Take out a loan	2 451	953	1 028	235	235
Sell land	495	183	184	64	64
Sell livestock	18 388	8 175	6 414	1 931	1 868
Get another job	10 173	4 552	4 349	629	643
Start or expand family business	5 700	1 717	2 915	532	536
Social grant	48 128	14 389	20 690	6 544	6 505
Food relief	268 208	69 711	82 214	58 095	58 188
Help from charities	7 418	1 855	2 854	1 351	1 358

Note: The adult males and females are from the age of 15 years and above while boys and girls are below 15 years of age.

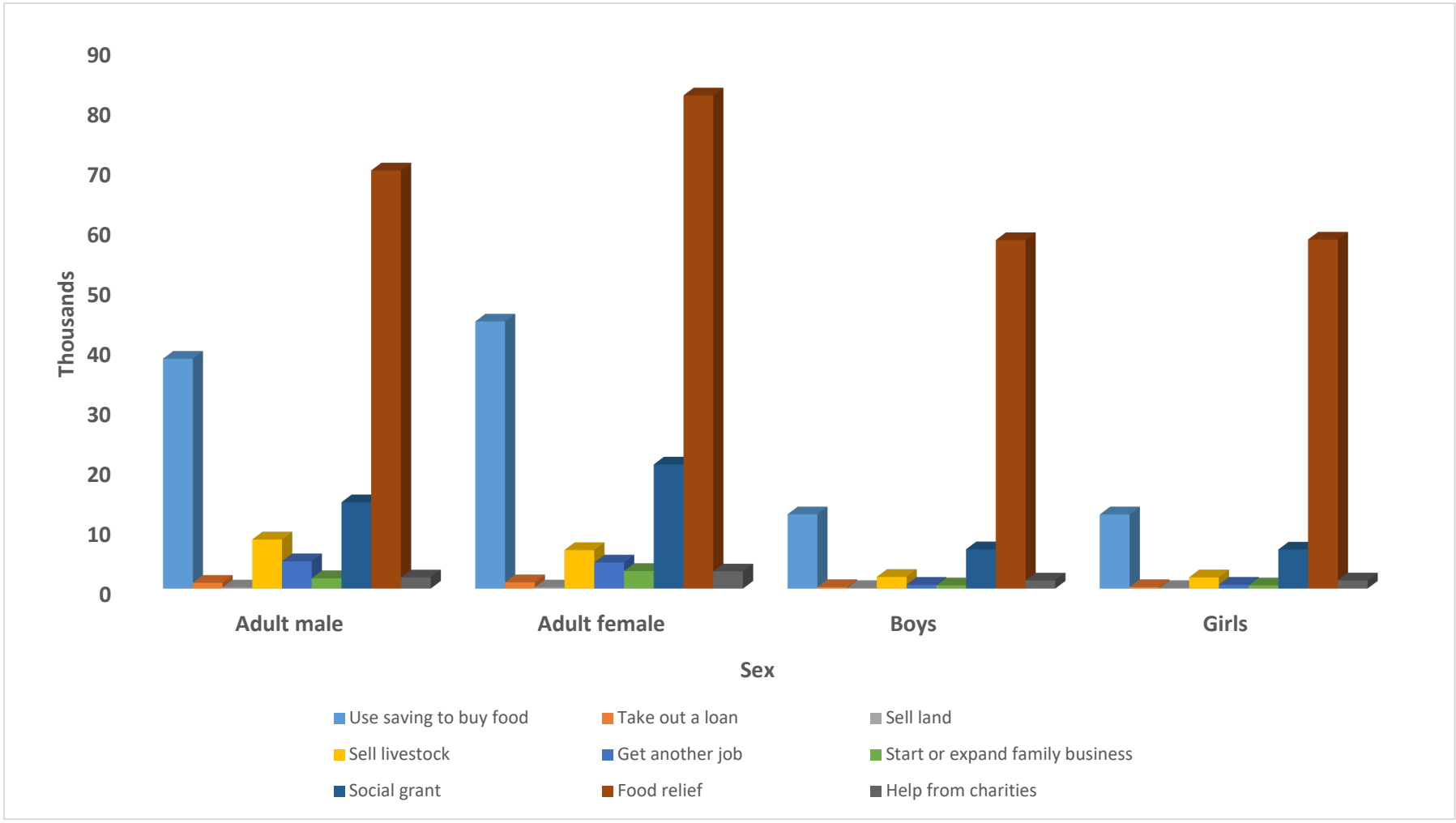

Figure 10. 1: Agricultural Household Population who experienced food shortage by type of immediate response taken by sex

Changes in eating patterns were observed in all groups (adult male and female adult and boys and girls), with most of them (186 412 persons) preferring to skip meals as a way of managing the available food (Table 10.7 and Figure 10.3). In addition, reducing the size of the meal was reported (156 243 persons) as the second preferred change in the eating pattern across the board, while the least preferred option was reported (140 834 persons) as being eating less preferred food.

Table 10. 7: Distribution of agricultural household population who have taken steps to manage the available food by sex

Change in eating pattern	Agricultural Household Population				
	Total	**Male adult**	**Female adult**	**Boys**	**Girls**
Skipping meals	186 412	55 045	61 688	35 275	34 404
Eating less preferred food	140 834	40 084	44 983	27 995	27 772
Reducing the size of the meal	156 243	44 872	50 110	30 820	30 441

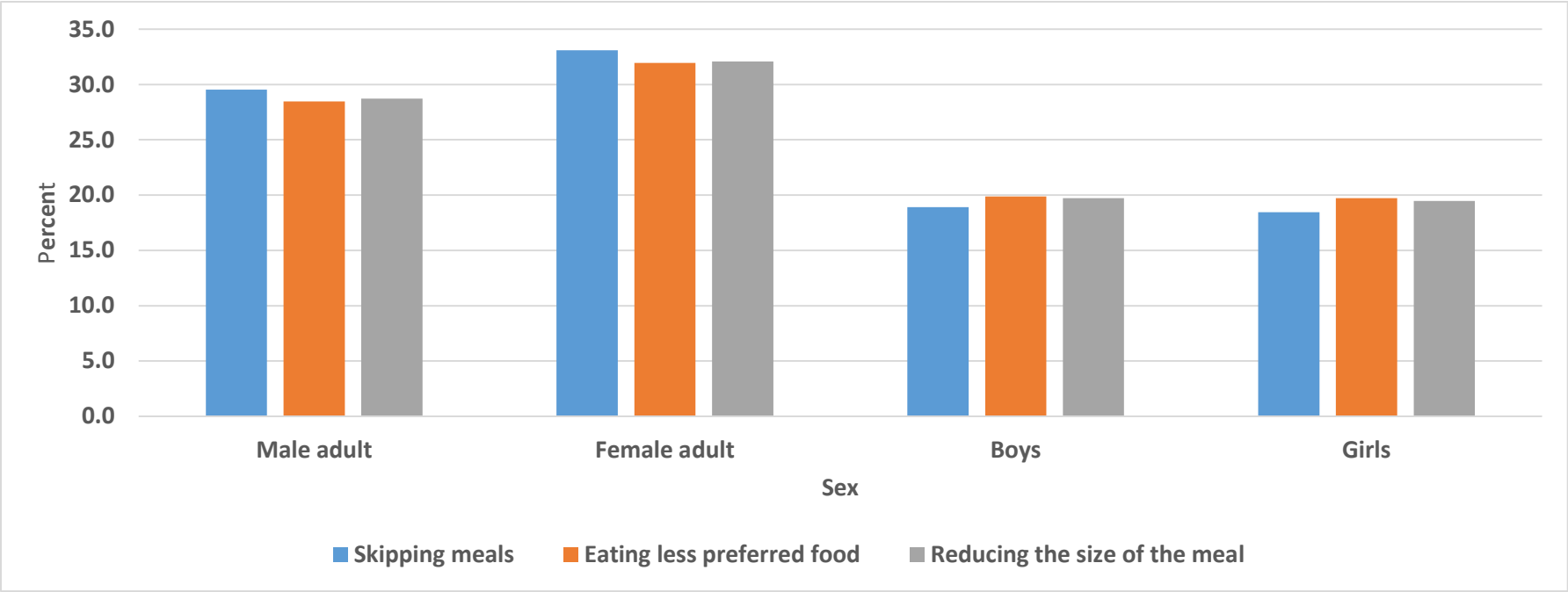

Figure 10. 2: Percent of agricultural household who took steps to alleviate food shortage by kind of steps taken and Sex

A total of 90 316 Agricultural households out of 159 484 Agricultural households reported that they are likely to experience food shortage in the coming twelve months (Table 10.8). The results further show that households in Kunene region (77.8%), Kavango West region (74.3%), Ohangwena region (65.3%), and Kavango East region (64.3%) are most likely to experience food shortages. The least number of agricultural households (6.4 %) likely to experience food shortages in the next 12 months was reported in Khomas region.

Table 10. 8: Number of agricultural Households likely to experience food shortages in the next 12 months by region

Region	Total Number of Agricultural Households	Agricultural HHs likely to experience food shortage	% of households likely to experience food shortage
//Karas	1 253	127	10.1
Erongo	1 424	391	27.5
Hardap	459	72	15.7
Kavango East	9 760	6 274	64.3
Kavango West	10 026	7 450	74.3
Khomas	94	6	6.4
Kunene	4 909	3 819	77.8
Ohangwena	34 480	22 506	65.3
Omaheke	2 562	748	29.2
Omusati	43 339	24 496	56.5
Oshana	15 699	8 251	52.6
Oshikoto	23 984	11 702	48.8
Otjozondjupa	3 444	557	16.2
Zambezi	8 051	3 917	48.7
Namibia	**159 484**	**90 316**	**56.6**

The number of agricultural households that experienced one form of natural or man-made disasters by the extent of the disaster is presented in Table 10.9. A great number of agricultural households reported that they experienced severe disasters in the past 12 months. The majority of these households (55 141) indicated that they experienced severe drought, while 30 286 households suffered severely from pests/diseases. Floods and tidal waves as well as erratic rains also severely affected 9 083 and 7 709 of agricultural households, respectively. In general, similar patterns were also observed when it came to slight and moderate experiences of the disasters.

Table 10. 9: Number of agricultural households that experienced natural disasters in the past 12 months by extent of disaster

Type of disaster	Total	Agricultural Households		
		Slight	Moderate	Severe
Floods and tidal waves	24 761	8 162	7 516	9 083
Drought	101 967	18 996	27 830	55 141
Hailstorms	11 802	5 273	4 506	2 023
Pests/diseases	79 918	22 581	27 051	30 286
Erratic rains	28 342	9 569	11 064	7 709
wild fires	6 559	3 359	1 853	1 347
Other	11 871	4 774	3 731	3 366
Man made	22 375	11 201	7 103	4 071
Insecurity	6 032	3 139	1 805	1 088

CHAPTER 11: OTHER ECONOMIC ACTIVITIES

11.1 Economic activities other than agriculture

The census asked the agricultural households population to indicate other types of economic activities they are engaged in, and the resulting outcome is presented in Table 11.1 and Figure 11.1. The female population in the agricultural households is in the majority in some of the economic activities such as Manufacturing (56.5%), Wholesale and retail trade industries (56.1%) as well as in Agricultural services (51.2%).

Otherwise, the male population dominated the Hunting, trapping, game propagation; Forestry, logging and related service; Fishing, aquaculture and related service activities, as well as in Hotels and restaurant activities.

Table 11.1: Number of agricultural household population by sex and type of economic activity other than agriculture

Other Economic Activity	Total	Number of Agricultural Population			
		Male	%	Female	%
Agricultural services	15 630	7 633	48.8	7 997	51.2
Hunting, Trapping, Game propagation	1 326	810	61.1	516	38.9
Forestry, Logging and Related service activities	2 860	1 547	54.1	1 313	45.9
Fishing, aquaculture and related service activities	3 637	2 158	59.3	1 479	40.7
Manufacturing	10 184	4 427	43.5	5 757	56.5
Wholesale and retail trade	20 214	8 871	43.9	11 343	56.1
Hotels and restaurants	1 741	997	57.3	744	42.7
Other	91 766	46 553	50.7	45 213	49.3
Total	**147 358**	**72 996**	**49.5**	**74 362**	**50.5**

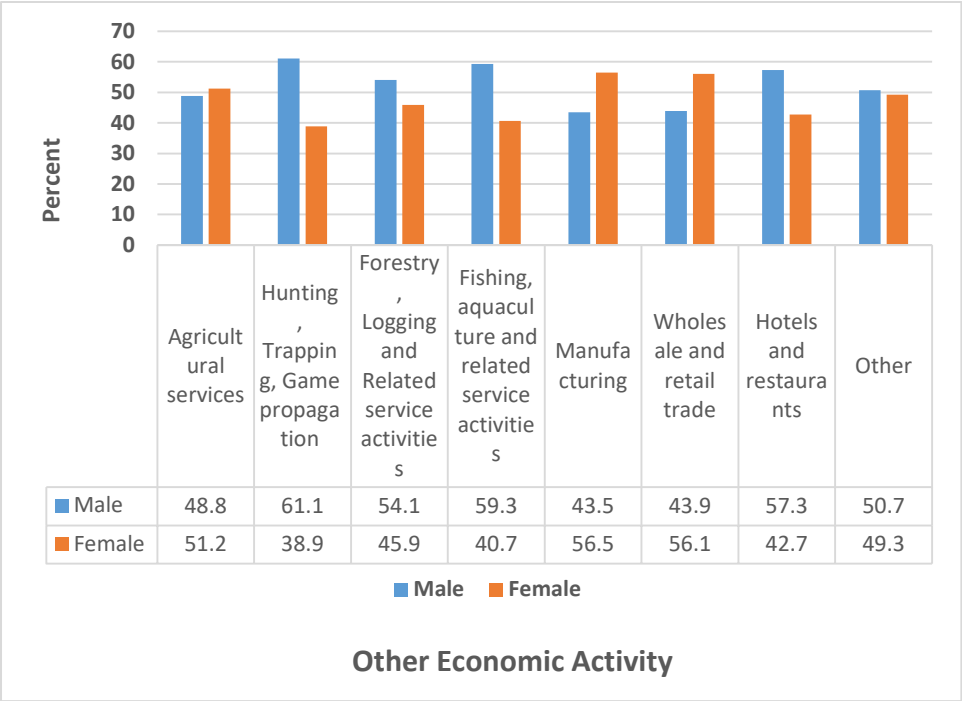

Figure 11. 1: Percentage of agricultural household population by sex and type of economic activity other than agriculture

11.2 Other income sources

Other income sources of the agricultural households' population by the sex are presented in Table 11.2. The results show that the majority of the females derived extra income from old age pension grants (55.7%), external remittances (52.9%) and from economic production (51.9%).

In contrast, the male population was dominant in deriving extra income from paid employment (59.3%), from veteran social grants (56.3%), from pension income (53.8%), from Social grants (53.6%), from investment income (53.1%) and from internal remittances (52.7%).

Table 11.2: Number of agricultural households with other income source by sex

Income source	Total	Agricultural Household Population reporting Other Income			
		Male	%	Female	%
Income derived from economic production	4 384	2 109	48.1	2 275	51.9
Income from paid employment	11 225	6 652	59.3	4 573	40.7
Investment income	452	240	53.1	212	46.9
Pension income	3 276	1 762	53.8	1 514	46.2
Remittances-internal (within Namibia)	4 059	2 140	52.7	1 919	47.3
Remittances-external (outside Namibia)	221	104	47.1	117	52.9
Veteran social grant	631	355	56.3	276	43.7
Social grant	5 766	3 088	53.6	2 678	46.4
Old age pension grant	14 330	6 342	44.3	7 988	55.7
Other	3 373	1 693	50.2	1 680	49.8
Total	**47 717**	**24 485**	**51.3**	**23 232**	**48.7**

CHAPTER 12: LABOUR INPUTS

12.1 Agricultural household members by status of employment

The total agricultural households members involved in agricultural activities were 443 537 of which 366 873 were permanent workers while 76 664 were temporary workers (Table 12.1 and Figure 12.1). Of the total adult males and females engaged in agricultural work, 84.4 percent of males and 82.8 percent of females were permanently engaged in agricultural activity. The majority of boys and girls in the agricultural households who are engaged in the agricultural work were permanently engaged (80.6 % for boys and 80.4 % for girls).

Table 12. 1: Distribution of agricultural household members engaged in agricultural activity by work status and sex*

Work status	Total	Numbers of household members involved in agricultural activity							
		Adult male	%	Adult female	%	Boys	%	Girls	%
Permanent	366 873	143 203	84.4	119 088	82.8	54 678	80.6	49 904	80.4
Temporary	76 664	26 526	15.6	24 760	17.2	13 175	19.4	12 203	19.6
Total	**443 537**	**169 729**	**100.0**	**143 848**	**100.0**	**67 853**	**100.0**	**62 107**	**100.0**

**Note: The adult male and female are from the age of 15 years and above while boys and Girls are below 15 years of age.*

9.1 Paid employees

Table 12.2 presents the distribution of paid employees in the agricultural households by sex and region. The results show that the total number of reported paid employees in the agricultural households was 100 714, which comprises of 51 686(51.3%) males and 49 028 (48.7%) females. The table also indicates that Kavango East region recorded the highest percentage of paid female employees with 72.1 percent followed by Kavango West region with 51.1 percent.

Table 12. 2: Distribution of paid employees by sex and region

Region	Paid employees				
	Both Sexes	Male	%	Female	%
//Karas	300	267	89.0	33	11.0
Erongo	672	597	88.8	75	11.2
Hardap	332	329	99.1	3	0.9
Kavango East	25 611	7 133	27.9	18 478	72.1
Kavango West	10 646	5 209	48.9	5 437	51.1
Khomas	59	43	72.9	16	27.1
Kunene	765	675	88.2	90	11.8
Ohangwena	7 988	5 879	73.6	2 109	26.4
Omaheke	1 392	1 241	89.2	151	10.8
Omusati	16 285	8 740	53.7	7 545	46.3
Oshana	10 637	5 450	51.2	5 187	48.8
Oshikoto	15 791	9 130	57.8	6 661	42.2
Otjozondjupa	1 080	946	87.6	134	12.4
Zambezi	9 156	6 047	66.0	3 109	34.0
Total	**100 714**	**51 686**	**51.3**	**49 028**	**48.7**

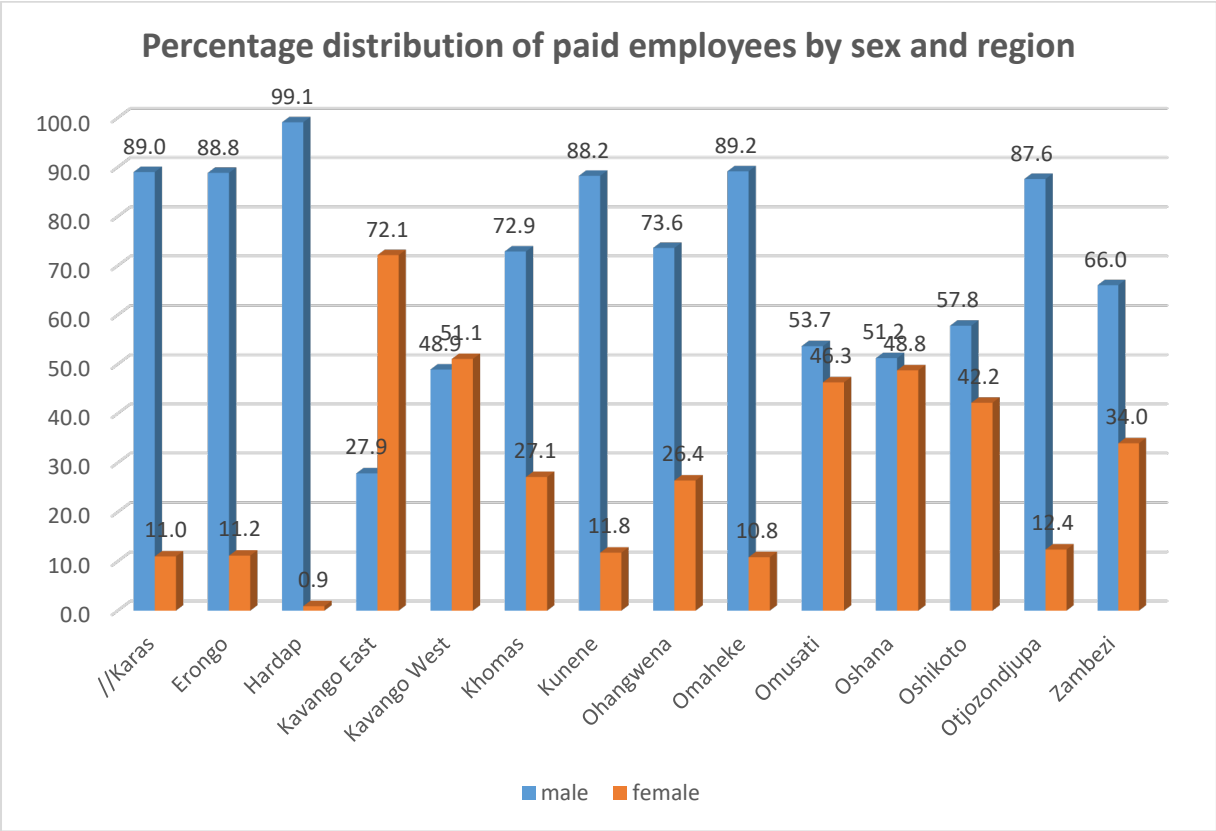

Figure 12. 1: Percentage distribution of paid employees by sex and region

9.2 Hired employees

The hired employees were further asked to indicate their status of employment of which the resulting outcome is presented in Table 12.3. The majority of these employees (69 980) were hired on temporary basis as opposed to 30 734 workers hired on permanent basis. Furthermore, of the hired workers, 57.9 percent of the total adult males and 77.5 percent of total adult females were hired on a temporary basis. Similarly, 83.6 percent of the boys and of the girls were also found to be temporarily hired.

Table 12. 3: Distribution of hired employees by work status and sex

		Number of hired employees							
Work status	**Total**	**Adult male**	**%**	**Adult female**	**%**	**Boys**	**%**	**Girls**	**%**
Permanent	30 734	19 060	42.1	9 498	22.5	1 045	16.4	1 131	16.4
Temporary	69 980	26 252	57.9	32 649	77.5	5 329	83.6	5 750	83.6
Total	**100 714**	**45 312**	**100.0**	**42 147**	**100.0**	**6 374**	**100.0**	**6 881**	**100.0**

Note: The adult males and females are from the age of 15 and above while boys and girls are below 15 of age.

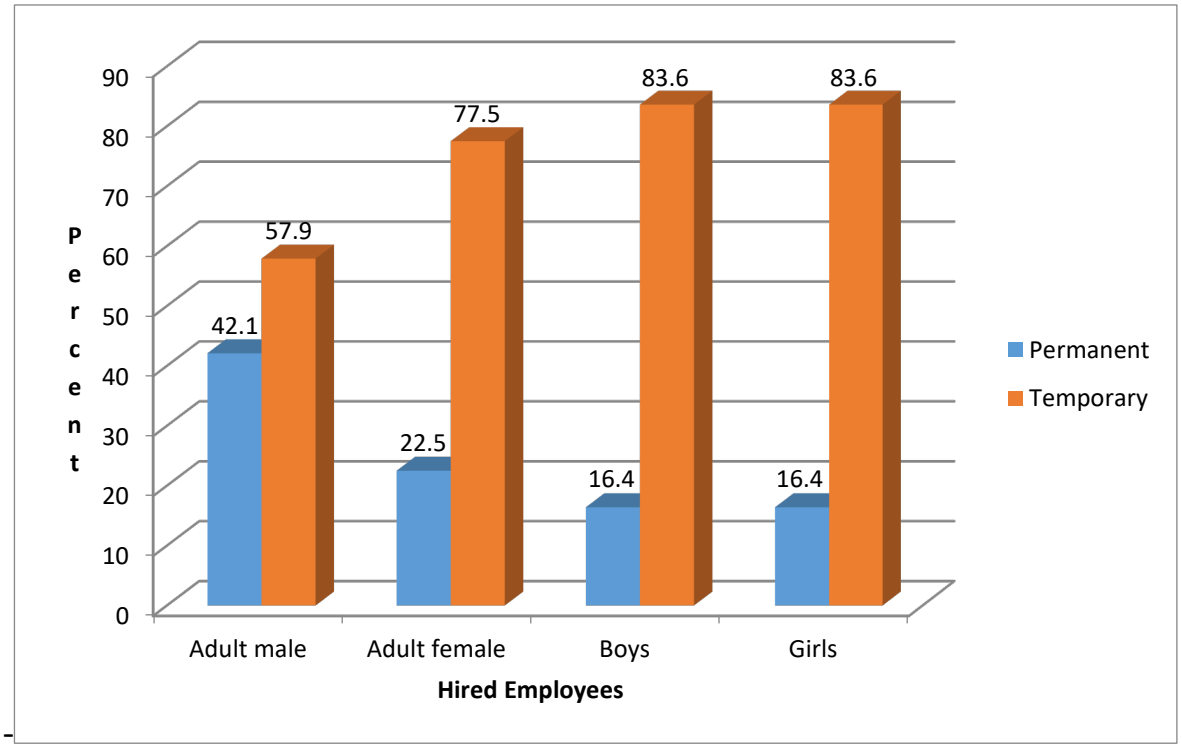

Figure 12. 2: Percentage distribution of hired employees by work status and sex

CHAPTER 13: Usage and disposition of crops

13.1 Quantity disposed and use of crops

During the census, agricultural households were requested to provide information on the quantity of crops produced and how the crops were used. Table 13.1 shows that millet/mahangu recorded the highest quantity consumed (79 417 tonnes), disposed of as gifts, (54 997 tonnes) or stored (51 689 tonnes). A significant amount of millet/mahangu (24 435 tonnes) was reported to have been lost after harvest.

Similarly, 11 139 tonnes of maize were consumed, 8 241 tonnes were disposed of as gifts, and 1 866 tonnes were used as seeds. The quantity of maize lost after harvest was estimated at 1 932 tonnes. In addition, a further 1 605 tonnes of maize were sold while 1 076 tonnes were processed for sale.

With respect to wheat, 3 154 tonnes were reported as being lost after harvest, while 1 606 tonnes were currently in stock, 1 381 tonnes were consumed and 1 143 tonnes were given away as gifts.

The amount of sorghum consumed was 4 512 tonnes of with 3 908 tonnes disposed of as gifts, 2 019 tonnes lost after harvest and 1 431 tonnes retained as seeds (Table 13.1).

Table 13. 1: Quantity of crop products by type of use /disposition

Crop name	Quantity used for (tonnes)							
	Sale	Consumption	Seed	Processed for sale	Animal Feed	Gift	Currently in store	Lost after harvest
Wheat	2	1 381	229	-	3	1 143	16 06	3 154
Maize	1 605	11 139	1 866	1 076	246	8 241	7 18	1 932
Sorghum	148	4 512	1 431	52	24	3 908	647	2 019
Millets/Mahangu	1 257	79 417	12 653	5 12	1 312	54 997	51 689	24 435
Water Melons	100	138	74	-	13	541	-	15
Pumpkin	13	831	74	12	3	383	-	271
Beans	97	3 158	845	3	14	569	225	442

13.2 Quantity of crop production sold

The quantity of crop production sold to different recipients presented in Table 13.2 shows that maize recorded the highest number of production sold (1 604 tonnes). The majority thereof (472 tonnes) was sold to Private Trader in local markets, 404 tonnes was sold to Private trader in Constituencies and 316 tonnes was reported to have been sold to Consumer markets and only 137 tonnes was sold to Government. The total value of all the maize sold to various recipients was estimated to be N$ 3 438 067.

Millet/mahangu was recorded as the second highest crop sold at 1 253 tonnes of which the highest quantity of 685 tonnes was to neighbours/relatives, followed by 189 tonnes to Consumer markets, 119 tonnes to Private traders in local markets and Government bought about 110 tonnes. The total value of the millet/mahangu sold to all the various recipients amounted to N$ 3 490 719.

Table 13. 2: Quantity of crop product sold by type of crop, total value, receiving client.

Crop name	Quantity sold (in tonnes)	Value sold (N$)	Quantity sold to					
			Gov. Org	Private trader local market	Private trader constituency	Consumer at market	Neighbour/relative	Other
Wheat	2	5 264	-	2	-	-	-	-
Maize	1604	3 438 067	137	472	404	316	182	93
Sorghum	145	445 261	1	10	6	34	67	27
Millet/Mahangu	1253	3 490 719	110	119	48	189	685	102
Cabbage	2	7 923	-	-	-	-	2	-
Water Melon	100	25 179	-	-	-	100	-	-
Pumpkin	13	8 339	-	-	3	-	1	9
Carrots	0	10 513	-	-	-	-	-	-
Other Vegetables	2	14 734	-	-	-	-	1	1
Soya Beans	7	16 408	4	1	-	2	-	-
Ground Nuts	13	86 030	-	-	-	6	3	4
Sweet Potatoes	1	7 937	-	-	-	1	-	-
Beans	90	110 371	-	1	3	12	74	-

13.3 Post-harvest losses

Table 13.3 presents the distribution of the harvest losses of crops encountered by the households and the place of occurrence.

Holders reported to have predominantly suffered greater losses in millet/mahangu which was reported to be about 24 436 tonnes in total. Out of that, a significant quantity of 22 823 tonnes was lost in the field and 464 tonnes lost during storage. The loss of millet/mahangu during the transportation process was reported to be 144 tonnes.

Furthermore, agricultural households reported that a total of 3 155 tonnes of wheat was lost, with 3 144 tonnes lost in the field followed by eight (8) tonnes during storage. Sorghum was the third highest crop with total losses of 2 019 tonnes of which 1 983 tonnes were lost in the field, while maize recorded a total loss of 1 932 tonnes, of which 1 865 tonnes were estimated to be lost in the field (Table 13.3).

Table 13. 3: Distribution of crop harvest losses by place of occurrence

		Quantity of losses (tonnes)			
Crop name	**Total**	**In the Field**	**During the Storage**	**During Transport**	**Other**
Wheat	**3 155**	3 144	8	-	3
Maize	**1 932**	1 865	45	18	4
Rice	**6**	6	-	-	
Sorghum	**2 019**	1 983	29	3	4
Oats	**1**	1	-	-	-
Millets/Mahangu	**24 436**	22 823	464	144	1 005
Cabbages	**3**	3	-	-	-
Lettuce	**5**	5	-	-	-
Tomatoes	**9**	9	-	-	-
Water Melons	**15**	15	-	-	-
Pumpkin	**271**	269	2	-	-
Carrots	**1**	-	-	1	-
Other Vegetables	**3**	3	-	-	-
Soya Beans	**9**	9	-	-	-
Ground Nuts	**68**	68	0	-	-
Beans	**442**	393	0	0	49

Chapter 14: Livestock

14.1 Livestock ownership

The distribution of agricultural households who reported having livestock by region is presented in Table 14.1 and Figure 14.1. The results show that the total number of agricultural households who own livestock was 62 129 representing about 39.0 percent of the total number of agricultural households.

The results further indicated that though Omusati and Ohangwena regions have the highest number of households (14 354 and 10 927 respectively) with livestock, however, Omaheke region has the highest percentage (90.4%) of agricultural households who own livestock, followed by Otjozondjupa region (69.7%) and Erongo region (54.8%). Kunene and Zambezi regions both reported 53.5 percent and 50.1 percent of the total number of agricultural households owning livestock, respectively.

Table 14. 1: Distribution of agricultural households who have livestock by region

Region	Total number of Agricultural households	Agricultural HHs who have livestock	% within region
//Karas	1 253	377	30.1
Erongo	1 424	780	54.8
Hardap	459	220	47.9
Kavango East	9 760	4 428	45.4
Kavango West	10 026	4 908	49.0
Khomas	94	14	14.9
Kunene	4 909	2 627	53.5
Ohangwena	34 480	10 927	31.7
Omaheke	2 562	2 315	90.4
Omusati	43 339	14 354	33.1
Oshana	15 699	5 350	34.1
Oshikoto	23 984	9 392	39.2
Otjozondjupa	3 444	2 400	69.7
Zambezi	8 051	4 037	50.1
Total	**159 484**	**62 129**	**39.0**

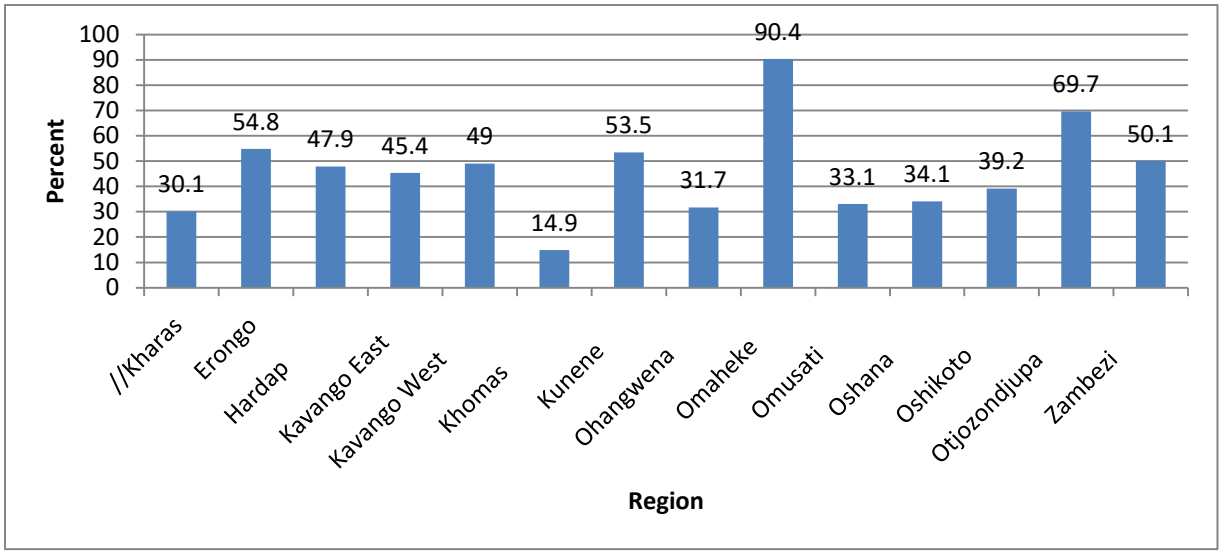

Figure 14. 1: Percentage distribution of agricultural households who have livestock by region

14.2. Cattle by type

The census asked agricultural households to indicate the number and type of cattle they own. The resulting outcome presented in Table 14.2 indicates that there are 788 856 heads of cattle in the communal sector, 639 068 heads of cattle is owned by male household members representing about 81.0 percent of the total number of cattle owned by agricultural households in comparison to the 19.0 percent owned by their female counterparts. This situation, where males own more cattle as compared to the females, is consistent across the type of cattle categories presented in the table.

With respect to the type of cattle owned, the results show that the majority of the cattle owned by households were cows (329 970) of which 66 951 (20.3%) were owned by female household members and 263 019 (79.7%) were owned by male household members. Furthermore, the table indicates Heifers to be the second highest type of cattle owned by agricultural households (110 240) of which the majority (82.1%) were owned by male members of the households. In contrast, the lowest type of cattle recorded to be owned by the households with a total of 65 763 cattle is the Male Calves less than one year.

Table 14. 2: Number and distribution of Cattle by type

Type of Cattle	Total number of cattle	Number of cattle owned by female household members	%	Number of cattle owned by male household members	%
Bulls	64 159	10 498	16.4	53 661	83.6
Cows	329 970	66 951	20.3	263 019	79.7
Heifers	110 240	19 703	17.9	90 537	82.1
Female calves less than 1 year	80 370	17 042	21.2	63 328	78.8
Male calves less than 1 year	65 763	10 988	16.7	54 775	83.3
Tollies 1-3 years	69 801	11 844	17.0	57 957	83.0
Oxen	68 553	12 762	18.6	55 791	81.4
Total	**788 856**	**149 788**	**19.0**	**639 068**	**81.0**

14.3. Small stock by type

The distribution of goats and sheep owned by the households by type and sex presented in Table 14.3 shows that a total of 1 618 204 goats were owned by agricultural households. Of these, 580 757 goats were owned by females (while 1 037 447 were owned by males). The results further show that the majority (55. 9% and 57.9%) of the goats owned by male (55.9%) and female (57.9%) members of the households were female goats of other types, while the least (4.6% and 4%) respectively were of male Boerbok type (Figure 14.2). The total sheep own by the agricultural households were 163 905 of which the male household members owned 138 488 sheep and female members owns 25 417 sheep. The results (Figure 14.3) further indicate that the majority of sheep that are owned by the female and male members were female sheep (76.5% and 79.9%, respectively).

Table 14. 3: Number and distribution of Goats and Sheep by type and sex

Goats and Sheep	Number of Goats and Sheep	Number of Goats and Sheep owned by female households members	%	Number of Goats and Sheep owned by male households members	%
Boerbok (Female)	261 819	89 282	15.4	172 537	16.6
Boerbok (Male)	70 828	23 279	4.0	47 549	4.6
Other Goats (Male)	369 413	132 065	22.7	237 348	22.9
Other Goats(Female)	916 144	336 131	57.9	580 013	55.9
Total Goats	**1 618 204**	**580 757**	**100**	**1 037 447**	**100.0**
Sheep(Male)	33 748	5 975	23.5	27 773	20.1
Sheep(Female)	130 157	19 442	76.5	110 715	79.9
Total Sheep	**163 905**	**25 417**	**100**	**138 488**	**100.0**

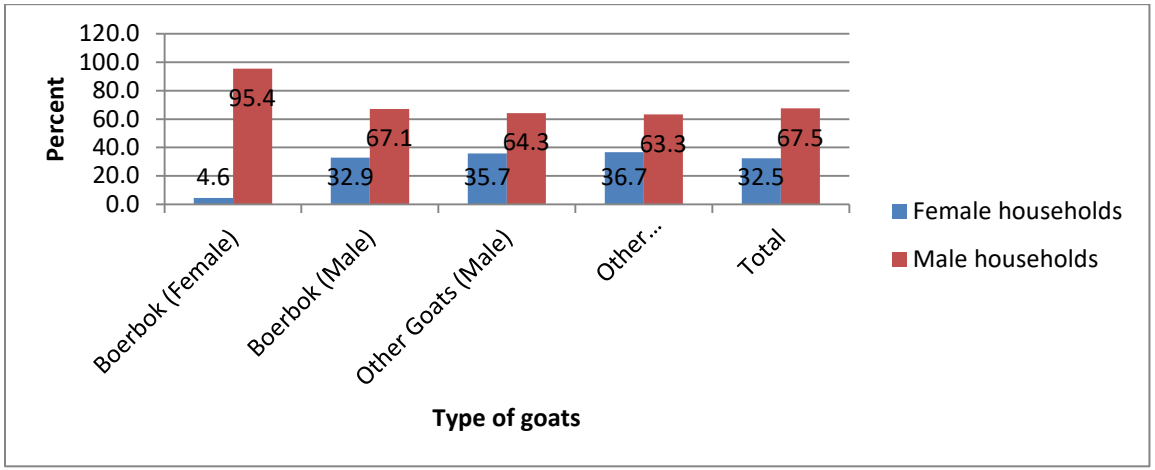

Figure 14. 2: Percentage of goats owned by households by type and sex

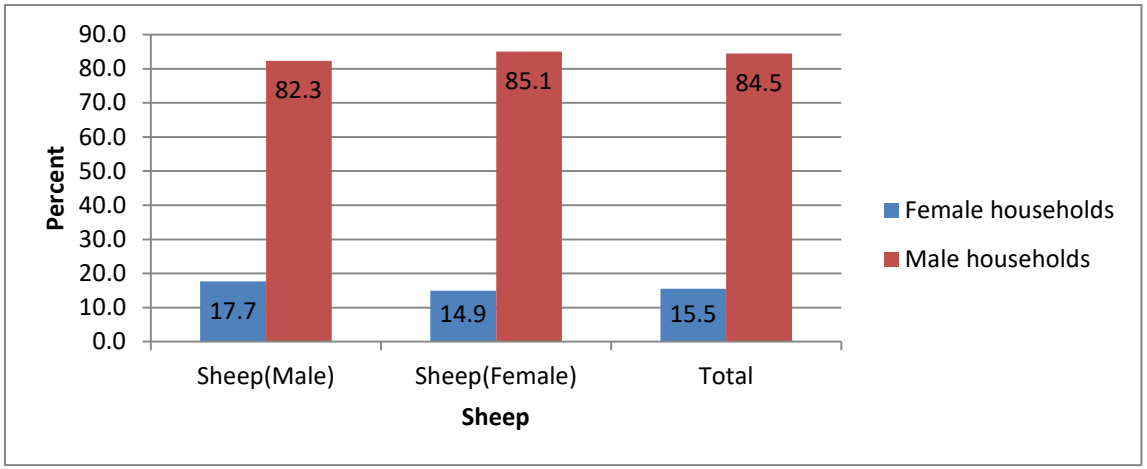

Figure 14. 3: Percentage of sheep owned by households by type and sex

14.4. Domestic animals by type

Information on other domestic animals was collected and the results are presented in Table 14.4. The table indicates that the majority of households own dogs (162 407), followed by donkey/mules (160 880) and pigs (87 206). The female members of the households owned more pigs (78.3%) and cats (54.6%) than the male members, while the male members were horses (87.7%), dogs (72.1%) and donkey/mules (70.1%).

Table 14. 4: Number and distribution of other domestic animals by type and sex

Domestic animals	Number of domestic animals	Number of domestic animals owned by female households members	%	Number of domestic animals owned by Male households members	%
Pigs	87 206	68 259	78.3	18 947	21.7
Donkeys/Mule	160 880	48 124	29.9	112 756	70.1
Horses	17 205	2 123	12.3	15 082	87.7
Dogs	162 407	45 250	27.9	117 157	72.1
Cats	54 635	29 852	54.6	24 783	45.4
Other	2 246	1 044	46.5	1 202	53.5

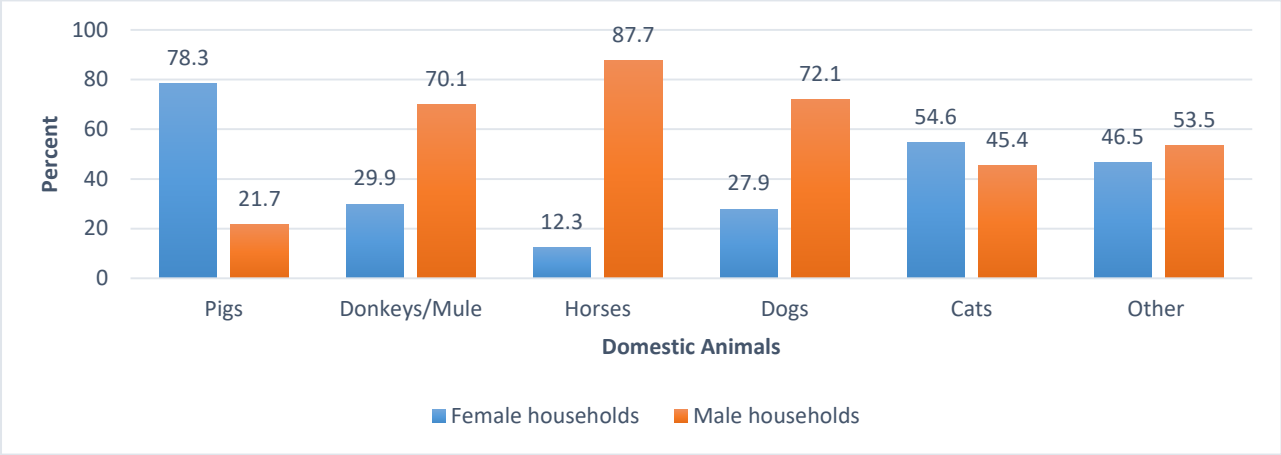

Figure 14. 4: Percentage distribution of other domestic animals by type and sex

14.5. Poultry by type

The distribution of poultry owned by poultry type and sex of the household members presented in Table 14.5 shows that total numbers of poultry owned were 1 51 3299 of which 1 038 212 (68.6%) were owned by female household members and 475 087 (31.4%) were owned by male households members. The results further indicate that the female members of the households owned more indigenous chicken (69.8%), exotic chicken (broilers) (67.7%) and exotic chicken (layers) (65.3%) than the male members, whereas the male members owned more geese (67.6%), pigeons (59.5%) guinea fowl (57.2%) than the female members.

Table 14. 5: Numbers and distribution of poultry by type and sex

Type of Poultry	Number of Poultry	Number of Poultry owned by female households members	%	Number of Poultry owned by male households members	%
Indigenous Chicken	1 335 464	931 753	69.8	403 711	30.2
Exotic Chicken(layers)	81 746	53 346	65.3	28 400	34.7
Exotic Chicken(broilers)	28 679	19 412	67.7	9 267	32.3
Duck	34 220	19 950	58.3	14 270	41.7
Geese	4 923	1 596	32.4	3 327	67.6
Guinea Fowl	3 374	1 444	42.8	1 930	57.2
Pigeons	17 369	7 031	40.5	10 338	59.5
Other	7 524	3 680	48.9	3 844	51.1
Total	**1 513 299**	**1 038 212**	**68.6**	**475 087**	**31.4**

14.6. Livestock intake

Table 14.6 shows a distribution of Livestock intake by type of animal during the past 12 months. Generally across all livestock most of the intake were attributed to by birth.

However, the majority of the purchased and acquired livestock were cattle (44.6%) followed by pigs (36.6%) and sheep (21.6%) while the least purchased and acquired livestock were poultry accounting only for 9.8 percent.

Table 14. 6: Number and distribution of Births, Purchases and Acquired Animals by type

Type of live stock	Total livestock intake	Number of births		Number of purchases and acquired	
			%		%
Cattle	103 463	57 281	55.4	46 182	44.6
Goats	474 049	409 076	86.3	64 973	13.7
Pigs	80 377	50 982	63.4	29 395	36.6
Poultry	868 883	783 515	90.2	85 368	9.8
Sheep	51 770	40 573	78.4	11 197	21.6

14.7 Livestock Off-take

In addition to the livestock in-take, the total number of livestock off-take were also recorded and the resulting outcome presented in Table 14.7 which shows a livestock off-take was mainly through consumption except for Pigs and sheep that showed a high percentages (47.7% and 46.5% respectively).

Table 14. 7: Number and distribution of livestock consumed, sold and given away by type during the past 12 months

Type of Livestock	Total livestock off- take	Number consumed	%	Number sold	%	Given away/gifts	%
Cattle	74 521	42 618	57.2	22 869	30.7	9 034	12.1
Goats	240 325	137 279	57.1	80 703	33.6	22 343	9.3
Pigs	45 010	20 836	46.3	21 206	47.1	2 968	6.6
Poultry	732 627	557 293	76.1	96 516	13.2	78 818	10.8
Sheep	26 717	11 386	42.6	12 413	46.5	2 918	10.9

14.8 Livestock Losses

The distribution of livestock lost by type and reasons for loss during the past 12 months is presented in Table 14.8. The results indicate that livestock lost, the majority died due to diseases, followed by those that died due to starvation. Moreover, the livestock were lost to predators while some were lost to theft or just lost. Livestock which died as a result of diseases, the highest percentage were pigs (55.6%) followed by poultry (40.8%) of those that died because of starvation, the highest percentage were cattle (62.3%) followed by sheep and goats accounting for 34.9 and 34.1 percent, respectively. Poultry were lost mainly to predators (47.2%) while pigs (15.4%) and sheep (15.0%) were lost mainly to theft.

Table 14. 8: Number and distribution of livestock lost by type of livestock, reason for loss during the past 12 months

Type of livestock	Total Livestock losses	Death due to disease	%	Stolen or lost	%	Lost to predators	%	Death due to starvation	%
Cattle	542 174	119 311	22.0	63 570	11.7	21 542	4.0	337 751	62.3
Goats	708 231	264 393	37.3	104 017	14.7	98 658	13.9	241 163	34.1
Pigs	19 716	10 964	55.6	3 034	15.4	2 058	10.4	3 660	18.6
Poultry	921 061	376 177	40.8	73 959	8.0	435 172	47.2	35 753	3.9
Sheep	87 163	25 871	29.7	13 099	15.0	17 792	20.4	30 401	34.9

14.9. Feeding practice used

The distribution of households by feeding practice used for each type of livestock during the past 12 months is presented in Table 14.9. It is evident from the table that the majority of livestock receiving feeds were goats (197 017), followed by poultry (186 681) and cattle (183 117). The table further indicates that more pigs (56 430) received feeds as compared to sheep (41 655).

The census further revealed that the majority of the livestock; goats (53 567), poultry (46 667), cattle (45 299) and sheep (7 586); were fed only by grazing/free ranging with some feed, while 18 908 pigs were fed with feeds only (no grazing or scavenging). Furthermore, grazing/free ranging with some feeding was the second prominent feeding method in goats (39 129), cattle (31 480) and sheep (7 483) while feeding on crop residues was prominent with poultry (36 546) and feeding with some grazing/free ranging was the second prominent method with pigs (9 413).

Table 14. 9: Number and distribution of households by feeding practice used, type of livestock during the past 12 months

Feeding practice	Type of Livestock				
	Cattle	Goats	Sheep	Pigs	Poultry
Baled grass	6 518	5 787	1 876	-	-
Camel thorn pods	7 350	8 145	2 316	591	-
Commercial feed meals	4 249	3 259	1 632	1 664	3 775
Crop residue(e.g. maize/millet)	23 514	28 669	3 228	7 966	36 546
Lucerne	9 243	5 758	2 722	504	1 000
Mainly feeding with some grazing/Free ranging	14 106	17 189	2 890	9 413	30 190
Mainly grazing/Free ranging with some feeding	31 480	39 129	7 483	6 325	31 749
Only feeding(no grazing or scavenging)	2 668	3 147	819	18 908	29 539
Only grazing/free ranging with some feed	45 299	53 567	7 586	8 624	46 667
Other	3 437	4 420	819	1 880	7 215
Protein Lick	7 729	7 034	3 307	-	-
Salt lick	23 337	17 727	5 062	-	-
Summer Phosphate Supplementation	4 187	3 186	1 915	555	-
Total	**183 117**	**197 017**	**41 655**	**56 430**	**186 681**

14.10 Pasture management system used

The distribution of the households by the type of main pasture management system used and by region during the past 12 months is presented in Table14.10. The results reveal that continuous grazing as the main pasture management system was reported in almost all the regions except in Khomas and Zambezi regions where the main pasture management system was rotational grazing on available land. Furthermore, Omusati region reported the highest number (51 136) of households practising the three types of pasture management systems, of which the highest number (38 552 households) practised continuous grazing as the primary pasture management system with 6 353 households using rotational grazing based on available grazing land and a further 6 231 households practising rotational grazing based on available water points.

Ohangwena region has the second highest number of households (44 015) using the three pasture management systems with the majority, about 32 297 households, reporting the use of continuous grazing as a primary pasture management system.

Table 14. 10: Number and distribution of households by type of main pasture management system used and region during the last 12 months

Regions	Rotational grazing based on available grazing land	Rotational grazing based on available water points	Continuous grazing	Total
//Karas	420	581	1 161	**2 162**
Erongo	671	417	1 301	**2 389**
Hardap	17	11	418	**446**
Kavango East	1 457	2 829	8 407	**12 693**
Kavango West	428	2 581	10 392	**13 401**
Khomas	84	12	50	**146**
Kunene	1 808	1 324	3 787	**6 919**
Ohangwena	4 202	7 516	32 297	**44 015**
Omaheke	912	451	2 934	**4 297**
Omusati	6 353	6 231	38 552	**51 136**
Oshana	2 219	3 086	8 271	**13 576**
Oshikoto	4 209	3 399	18 660	**26 268**
Otjozondjupa	1 455	476	4 355	**6 286**
Zambezi	4 425	3 259	2 949	**10 633**
Namibia	**28 660**	**32 173**	**133 534**	**194 367**

The census requested the households to provide information on the type of improved practice used by the households for their livestock. The results presented in Table 14.11 indicates that 86 801 households employ different types of improved practices, of which 71 697 households use veterinary drugs, 8 242 use commercially prepared animal feed while 6 862 make use of insemination practises.

The regional breakdown of the households who make use of veterinary drugs indicates that the majority were from Omusati region (19.5%) followed by Ohangwena region (18.8%) and Oshikoto region (14.7%). Furthermore, households who have indicated using commercially prepared animal feed were mostly from the regions of Omusati (17.0%), Omaheke (15.3%), Otjozondjupa (13.9%), Oshikoto (13.4%) and Ohangwena (12.8%). Finally, insemination is also practised in the regions of Ohangwena (20.9%), Omusati (18.8%) as well as Oshikoto (17.4%).

Table 14. 11: Number and distribution of households by type of improved practice for their livestock and region

Region	Total	Type of improved practice					
		Commercially prepared animal feeds	%	Veterinary drugs	%	Insemination	%
//Karas	1 716	151	1.8	1 067	1.5	498	7.3
Erongo	1 820	303	3.7	955	1.3	562	8.2
Hardap	640	156	1.9	341	0.5	143	2.1
Kavango East	5 691	123	1.5	5 411	7.5	157	2.3
Kavango West	6 889	128	1.6	6 552	9.1	209	3.0
Khomas	142	22	0.3	29	0.0	91	1.3
Kunene	3 094	218	2.6	2 526	3.5	350	5.1
Ohangwena	15 967	1 057	12.8	13 479	18.8	1 431	20.9
Omaheke	3 839	1 264	15.3	2 404	3.4	171	2.5
Omusati	16 686	1 400	17.0	13 999	19.5	1 287	18.8
Oshana	6 534	584	7.1	5 685	7.9	265	3.9
Oshikoto	12 851	1 108	13.4	10 548	14.7	1 195	17.4
Otjozondjupa	5 014	1 146	13.9	3 585	5.0	**283**	4.1
Zambezi	5 918	582	7.1	5 116	7.1	220	3.2
Namibia	**86 801**	**8 242**	**100.0**	**71 697**	**100.0**	**6 862**	**100.0**

APPENDIX

A. Glossary of Census Terms

Agricultural holding: An agricultural holding is an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form, or size.

Agricultural holder: The agricultural holder is defined as the civil or juridical person who makes the major decisions regarding resource use and exercises management control over the agricultural holding operation.

Area of holding according to land use types: Land use refers to activities – such as growing crops, raising livestock or cultivating fish – carried out on the land making up the holding with the intention of obtaining products and/or benefits.

Agricultural census reference period: The reference period for agricultural census items varies according to the type of data. The reference periods are usually the day of enumeration (for inventory items) or a twelve-month reference period (for continuing activities).
Agricultural Extension Services: refers to the provision of agricultural advice and information.

Locality: A locality is any place with one or more dwellings, either a compact settlement or to crop and livestock producers etc. Extension services may be provided by Government scattered houses.

Agricultural Equipment: refers to machinery, implements and other facilities used on a farm to help with farming.

Area harvested: Area harvested refers to the total area from which the crop is gathered.

Arable land: Arable land is land that is used in most years for growing temporary crops. It includes land used for growing temporary crops in a twelve month reference period, as well as land that would normally be so used but is lying fallow or has not been sown due to unforeseen circumstances.

Agricultural land: Agricultural land is the total of cropland and permanent meadows and pastures.

Agricultural Season: The main/first agricultural season normally refers to the growing cycle of temporary crops that are planted and harvested in the first half of the year, occasionally extending up to the end of June.

Agro-forestry: farm management system involving growing trees in conjunction with crops and livestock production.

Aquaculture: farming of aquatic organisms including fish, crustaceans, mollusks, and aquatic plants.

Apiary: is the maintenance of honey bee colonies, commonly in hives, by humans.

Collateral is defined as assets pledged as security for a loan of money, which means that if the borrower defaults on the terms of the loan, the collateral may be sold and the proceeds used to pay off the loan. For the purpose of the agricultural census, collateral is used in a wider sense to also cover guarantee provided for the purchase of goods and services.

Cropland: Cropland is the total of arable land and land under permanent crops.

Drainage: removal of excess water to improve agricultural productivity.

Drip irrigation: A drip irrigation system delivers water directly to the root zone of a plant, where it seeps slowly into the soil one drop at a time. Almost no water is lost through surface runoff or evaporation, and soil particles have plenty of opportunity to absorb and hold water for plants

Economic activity status: a classification describing a person as employed, unemployed or not economically active.

Economic Production Activities: Other economic production activities undertaken by the household enterprise, other than agricultural production on the holding.

Educational attainment: highest level of education achieved by a person.

Employed: a person with paid work or in self-employment.

Employee: a person in paid employment.

Enumeration area (EA): small geographic unit defined for census enumeration purposes.

Enterprise: an economic unit under single management consisting of one or more than one establishment.

Exotic: Refers to livestock introduced in the country from abroad.

Extension workers: These are individuals employed by the government or non-governmental organizations who work as agricultural development agents for contacting and demonstrating improved farming methods to farmers.

Extension Services: refers to personal contact with extension personnel or direct participation in extension activities such as a farm demonstration.

Environmental conservation: refers to practice of protecting the environment, on individual, organizational or governmental level, for the benefit of the natural environment.

Freehold farms: The permanent ownership of land or buildings which can be legally passed on to heirs

Fertilizers: substances that supply plants with nutrients or enhance plant growth, containing at least 5% of the three primary nutrients. (N P & K)

Forest: land with trees of height 5 meters or more with crown cover of more than 10%.

Frame: the basis used for identifying all the statistical units to be enumerated in a statistical collection.

Field: A field is a piece of land in a parcel separated from the rest of the parcel by easily recognizable demarcation lines, such as parts, cadastral boundaries and/or hedges.

A field may consist of one or more plots, where a plot is a part or whole of a field on which a specific crop or crop mixture is cultivated.

Farm management practices: refers to the different activities practiced on the farm, such as use of irrigation, application of fertilizers, use of improved seed, use of pesticides, etc.

Feeder road: is a minor or small road used to bring the traffic to a major road.

Granary: is a special storage house/receptacle which has been constructed in such a way that pests e.g. rodents will not easily access the granary.

Household: A household consists of one or more persons related or unrelated who live together in one or part of one or more than one housing unit/dwelling unit and have common catering arrangements.

Household food security: the situation where all members of a household at all times are consuming enough safe and nutritious food.

Head of household: The Head of the household is a person of either sex who is a member of the household and generally runs the affairs of the household and is looked upon by the other members of the household as the main decision maker.

Hired labour: Is labour input supplied by other persons other than the holding members and who are paid for their work either in cash or kind or both. The persons are hired for doing agricultural work on the holding; they can be permanent or temporary.

Irrigation: Irrigation refers to purposely providing land with water, other than rain, for improving pastures or crop production.

Improved/cross: refers to livestock which are crosses of exotic and indigenous breed.

Indigenous cattle: refers to livestock of local types e.g. the long horned cattle.

Joint holder: is a person making the major decisions regarding resource use and exercising management control over the agricultural holding operations, in conjunction with another person.

Legal status: Legal status refers to the juridical aspects under which the agricultural holding is operated. It also refers to other aspects about the type of holding. From the juridical point of view, a holding may be operated by a single individual, jointly by several individuals with or without contractual agreement belonging to the same or to different households.

Land tenure: Land tenure refers to the current status of the land operated by the holding. The collection of data should relate specifically to that land. Land rented out to others should be excluded. The reference period for land tenure data is usually the day of enumeration.

Land temporarily fallow: Land temporarily fallow is arable land at prolonged rest before re-cultivation. This may be part of the holding's crop rotation system or because the normal crop cannot be planted because of flood damage, lack of water, unavailability of inputs, or other reasons.

Land under temporary crops: Land under temporary crops includes all land used for crops with a less than one year growing cycle; that is, they must be newly sown or planted for further production after the harvest.

Land under permanent crops: Land under permanent crops refers to: land cultivated with long-term crops which do not have to be replanted for several years; land under trees and shrubs producing flowers, such as roses and jasmine; and nurseries (except those for forest trees, which should be classified under "forest or other wooded land"). Permanent meadows and pastures are excluded from land under permanent crops.

Land under temporary pastures: is the land temporarily cultivated with pastures.

Land under permanent pastures: means land used permanently (i.e. for five years or more), seeded and cared for or grown naturally (grazing land). Permanent pastures on which trees and shrubs are grown should be classified under this category only if the growing of grass (naturally growing grass) is the most important use of the area.

Land use: classification of land according to the activity undertaken on the land.

Legal status of holder: juridical aspects under which an agricultural holding is operated.

Livestock: animals (including birds and insects) kept or reared in captivity mainly for agricultural purposes.

Loan/Credit: Loan for agricultural purposes refers to any type of credit received for purposes related to the operations of the agricultural holding.

Local produce market: refers to farmers who buy produce at your local farmer market. Farmer's markets feature local farmers who sell their products once or twice a week at stands located in public use areas.

Miller: refers to a person who operates a mill, a machine to grind a cereal crop to make floor.

Mixed or Associated Cropping: Mixed cropping, also called associated and inter-planted cropping, refers to the situation when two or more different temporary or permanent crops are grown simultaneously on the same field or plot.

Mixed stand: This describes different crops simultaneously grown on the same plot.

Module: a separate component of the agricultural census –a modular approach is used for the agricultural census, with core and supplementary modules.

Nurseries refer: to a place where young plants are grown and cared for.

Number of years since cleared (for each parcel): The purpose of this item is to better understand the extent of recent land clearances, especially where shifting cultivation is present or where deforestation is a concern. Usually, it will only be necessary to collect data in broad ranges, such as: in the last one year; 1–3 years ago; 4 or more years ago.

Organic fertilizers: fertilizers prepared from processed plant and animal materials

Own-account agricultural production: a household characteristic, indicating that the household contains one or more agricultural holdings.

Other wooded land: land with trees/shrub/bush cover less than that required to be classified as a forest.

Parcel: A parcel is any piece of land, of one land tenure type, entirely surrounded by other land, water, road, forest or other features not forming part of the holding or forming part of the holding under a different land tenure type.

Pesticide: substances intended to repel, mitigate, control or destroy diseases and pests in plants or animals and to prevent any harm to agricultural commodity during production, storage, transport, processing and marketing etc.

Permanent crops: Permanent crops are crops with a more than one year growing cycle. Permanent crops may be grown in a compact plantation or as scattered trees/plants and both should be included.

Plot: A plot is defined as a piece of land within the holding on which a specific crop or a crop mixture is grown. A parcel may be made up of one or more plots.

Pure stand: This is a crop cultivated in a crop plot. A pure stand can either be permanent or temporary.

Primary Sampling Unit (PSU): Is the smallest Geographical area defined for the purpose of data collection. PSUs were created using the Enumeration areas of the 2011 Population and Housing Census.

Period of loan or credit refers to the period over which the loan or credit is to be paid off, as agreed at the time the loan was received.

Range land Management: is the carefully use of land management of rangeland resources (plants, animals, soil and water) to meet the needs and desires of society.

Respondent: The respondent is the person from whom data are collected about the agricultural unit. **Random sampling:** sampling method used for sample surveys, in which each unit within the scope of the survey has a fixed, but not necessarily the same, probability of selection in the sample.

Reference period: the time period to which a given data item collected in a census or survey refers – for example, an agricultural year for crops; the day of enumeration for livestock.

Soil degradation: Soil degradation is the decline in soil quality caused by natural processes or, more commonly, improper use by humans. Its consequences include: loss of organic matter; decline in soil fertility; decline in structural condition; erosion; adverse changes in salinity, acidity or alkalinity; and the effects of toxic chemicals, pollutants or excessive flooding.

Soil erosion: Soil erosion is the displacement of soil material by running water, rainfall, wind or other factors, resulting in a decline of arable layers

Sub-holding: A sub-holding is defined as a single agricultural activity or group of activities managed by a particular person or group of persons in the holder's household on behalf of the agricultural holder.

Sub-holder: A sub-holder is a person responsible for managing a sub-holding on the holder's behalf.

Sampling frame: the means by which all in-scope units are identified for a sample survey.

Sampling error: the error in statistics obtained from a sample survey because data are collected from only a sample of unit

Sector: the institutional category (such as household, corporation, cooperative, government) to which the holding belongs.

Soil degradation: decline in soil quality caused by natural processes or improper use by humans.

Source of Loan refers to who provided the credit.

Specific house/room; refers to a house or room used purely/solely for storage of agricultural produce.

Scope: the geographical area or types of units covered by a statistical collection

Temporary crops: crops with a less than one-year growing cycle.

Total area of holding: Total area of holding is the area of all the land making up the agricultural holding. It includes all land operated by the holding without regard to title or legal form. Thus, land owned by members of a household but rented to others should not be included in the area of the holding.

Under shelter/outside; meaning that there are some shelters for storage, but not a house with complete walls.

Unemployment: a situation where a person of working age is without work, but is available for work and seeking work.

Wood or Forest land: includes wood lots or tracts of timber, natural or planted, which have or will have value as wood, timber or other forest products

Whenever "–"i.e. dash appears, it indicates that data is insignificant to publish.

B. Census Questionnaire

REPUBLIC OF NAMIBIA
MINISTRY OF AGRICULTURE, WATER AND FORESTRY

Namibia Statistics Agency

Section 01: Households Listing within PSUs

IDENTIFICATION: R [__|__|C [__|__|__|__|PSU [__|__|__|DU N [__|__|HH N [__|__|__|

01. **REGION** ……..…….. [__|__|	03. **PSU…….. [__|__|__|**
02. **CONSTITUENCY**…….. [__|__|__|	04**. DU Number …….. [__|__|__|**
	05**. HH Number …….. [__|__|__|**

General information

STARTDATE [__|__| Month [__|__| YEAR **2014**

STARTTIME [__|__| H [__|__| Min

ENDDATE [__|__| Month [__|__| YEAR **2014**

ENDTIME [__|__| H [__|__| Min

Interviewer Identification

List All Households and Holdings in the Primary Sampling Unit (PSU)

Dwelling Number	COORDINATES		Household Number	Locality	Name of Head of Household	Listing Status 1=Continue 2= Vacant 3= Refusal 4= Non-contact 5= partially completed	Contact number	Sex of Head of Household 1= Male 2= Female	Main Water Source (drinking & cooking) 1=Piped water inside house 2=Piped water outside house but in yard 3=Public standpost/water point 4=Community borehole 5=River/stream/pond 6=Canal 7=Protected well or spring 8=Unprotected well or spring 9=Other 0=Skip
	Latitude	Longitude		q0101	q0102	q0103	q0104	q0105	q0106

Toilet facility Type 1=Flush/pour toilet inside house 2=Flush/pour toilet shared by houses 3=Dry sanitation toilet (VIP) outside yard 4=Dry sanitation toilet (VIP) shared by houses 5=No toilet use bush 6=Other, specify 0=Skip	**What is the distance (meters) to the nearest water point for use by the Household? (Respondent estimate)**	**Does any Member of this Household engage in Agricultural Activities within this PSU?** 0= skip 1= Yes 2= No (If "No", skip to question q116-q119)	**Serial No number of agricultural households within the PSU**	**Number of people in the household** 1= 1 person 2= 2 to 3 persons 3= 4 to 5 persons 4= 6 to 9 persons 5= 10 or more persons	**Number of economically active members** 1= 1 person 2 = 2 persons 3= 3 persons 4= 4 persons 5= 5 or more persons	Crop Land Area 0= Skip 01= None 02= Under 0.5 ha 03= 0.5 ha and under 1 ha 04= 1 ha and under 2 ha 05= 2 ha and under 3 ha 06= 3 ha and under 4 ha 07= 4 ha and under 5 ha 08= 5 ha and under 10 ha 09= 10 ha and under 20 ha 10= 20 ha and under 50 ha 11= 50 ha and under 100 ha 12= 100 ha and over 99= Don't Know 99	**Permanent agricultural workers** 0= Skip 01= None 02= 1 Worker 03= 2 Workers 04= 3 Workers 05= 4 Workers 06= 5 Workers 07= 6 Workers or more workers 99= Don't know	**Number of Cattle** 00= Skip 01= None 02= 1 to 2 heads 03= 3 to 4 heads 04= 5 to 9 heads 05= 10 to 19 heads 06= 20 to 49 heads 07= 50 to 99 heads 08= 100 to 199 heads 09= 200 to 499 heads 10= 500 heads and over 99= Don't know
q0107	q0108	q0109	q0110	q0111	q0112	q0113	q0114	q0115

Number of Goats 00= Skip 01= None 02= 1 to 4 heads 03= 5 to 9 head 04= 10 to 19 heads 05= 20 to 49 heads 06= 50 to 99 heads 07= 100 to 199 heads 08= 200 to 499 heads 09 = 500 heads and over 99= Don't know	**Number of Sheep** 00= Skip 01= None 02= 1 to 4 heads 03= 5 to 9 head 04= 10 to 19 heads 05= 20 to 49 heads 06= 50 to 99 heads 07= 100 to 199 heads 08= 200 to 499 heads 09 = 500 heads and over 99= Don't know	**Number of Chickens** 00= skip 01= None 02= 1 to 9 chickens 03= 10 to 49 chickens 04= 50 to 199 chickens 05= 200 to 999 chickens 06= 1000 to 4999 chickens 07= 5000 to 9999 chickens 08= 10000 chickens and over 99= Don’t know	**Fishing**		**Aquaculture**	**Forestry**	Final **Listing Status** 1= Completed 2= Partially completed
			On-Farm 0= skip 1= Yes 2= No	**Off-Farm** 0= skip 1= Yes 2= No	0= skip 1= Yes 2= No	0= skip 1= Yes 2= No	
q0116	q0117	q0118	q0119	q0120	q0121	q0122	q0123

NAMIBIA CENSUS OF AGRICULTURE

Section 02: Demographic characteristics and activity status of each household members

01. **REGION** …….. [__|__| 02. **CONSTITUENCY**……. [__|__|__|	03. **PSU**…….. **[__|__|__|** 04**. DU Number** …….. **[__|__|__|** 05**. HH Number** …….. **[__|__|__|**

General information

STARTDATE [__|__| Month [__|__| YEAR **2014**

STARTTIME [__|__| H [__|__| Min

ENDDATE [__|__| Month [__|__| YEAR **2014**

ENDTIME [__|__| H [__|__| Min

Interviewer Identification

Section 02: Demographic characteristics and activity status of each household members

Person Number	List of Household members (START FROM THE HEAD)	Relationship to Head of Household 1= Head 2= Spouse 3= Son/Daughter 4= Son/Daughter in Law 5= Parent 6= Grandchild7= Other relative 8= Other non-relative9= Domestic Worker 99= Don't Know	Sex 1= Male 2= Female	Age 00= less than 1 year 98= If 98 or more 99= Don't know	Marital Status 1= Never married 2= Married with certificate 3= Married traditionally 4= Consensual union 5= Divorced 6= Widowed 7=Separated 99=Don't know	Education (For persons 5 years and above) Highest level of education completed. 0= None 1= Pre-primary 2= Primary 3= Junior Secondary 4= Senior Secondary 5= Certificate 6= Diploma 7= Tertiary/Degree 99=Don't know	Literacy Can Household Member Read or Write in any Language? 1= Yes 2= No
q0200	q0201	q0202	q0203	q0204	q0205	q0206	q0207
1							
2							
3							
4							
5							
6							
7							
8							

Section 02: Demographic characteristics and activity status of each household members

Main Activity 1= Crop production 2= Livestock production 3= Fisheries 4= Forestry 5= Horticulture 6= Fruity culture 7= Trader 8= Artisan 9= Agriculture paid job outside holding 10= Non agriculture paid job 11= No activity-looking for work 12= No activity-not looking for work 13= Student 14= Household work 15= Child less than 8 years old 16= Bee Keeping 17= None	**Situation of main activity** 1= Own account worker(independent) 2= Employer 3= Paid worker 4= Non-paid family worker 5= Task worker 6= Not active 7= Not applicable	**Secondary Activity** 01= Crop production 02= Livestock production 03= Fisheries 04= Forestry 05= Horticulture 06= Fruity culture 07= Trader 08= Artisan 09= Agriculture paid job outside holding 10= Non agriculture paid job 11= No activity-looking for work 12= No activity-not looking for work 13= Student 14= Household work 15= Child less than 8 years old 16= Apiary 17= None	**Situation of secondary Activity** 01= Own account worker(independent) 02= Employer 03= Paid worker 04= Non-paid family worker 05= Task worker 06= Not active 07= Not applicable	**Does the Household Member Manages a field/plot** 1= Yes 2= No	**Does the Household Member Owns livestock** 1= Yes 2= No	**Is the Household Member a Holder** 1= Yes 2= No	**Interview Status** 1=Continue 2=Vacant 3=Refusal 4=Non-Contact
q0208	q0209	q0210	q0211	q212	q0213	q0214	

Section 03: Land Under different Land Uses

List all parcels/fields plots under crop and under other land uses in q301

Parcel No.	Field No.	Plot No	List of Crop land and other land use type (if mixed crops list each in a row with similar field/plot number)	Land use Code	Sex of person responsible 1= Male 2= Female	Location of field/plot 1= Within PSU 2= Outside PSU but within constituency 3= Outside constituency	How did Household acquire use of field/plot? 1= Inherited 2= Purchased 3= Cleared 4= Use right from Local Authority 5= Sharecropping 6= Borrowed 7= Rented 8= Other
			q0301	q0302	q0303	q0304	q0305

Section 03: Land Under different Land Uses

Period in years since land Cleared or Acquired 1= Under a year ago 2= 1-3 years ago 3= 4 or more years ago	Area in Ha measured with GPS (Clockwise)	Area in Ha measured with GPS (Anti-clockwise)	**Holder Area Estimate**		**Number of Trees for Permanent Crops**	**Number of Trees planted other than trees for permanent crops**
			Estimate unit 1= Hectare 2= Km²	Holder estimate Area (ha)		
q0306	q0307	q0308	q0309	q0310	q0311	q0312

Section 04: Extension visits/ services and Agriculture Information

Extension Service Topic No		**Which of the following extension service provider do you have access to?** a=MAWF veterinary services b= MAWF agricultural extension c= Farmers' unions d= NGO e= MAWF rural water supply f=Meat Board of Namibia g=Agronomic of Namibia h=Agra i=MAWF–Forestry j=Private sector Dealers k=Internet l= Ministry of Environment m= Other	**Which Extension Topic did you receive any service for?** a= Farm management b= Selection of crop c= Input use d= Credit e= Farm mechanization f= Livestock husbandry g= Plant protection h= Environmental conservation i= Marketing j= Water irrigation and drainage k=Other	**What are the Main sources of Extension Service you received?** a=MAWF veterinary services b= MAWF agricultural extension c= Farmers' unions d= NGO e= MAWF rural water supply f=Meat Board of Namibia g=Agronomic of Namibia h=Agra Co-operation i=MAWF - Forestry. j=Private sector Dealers k=Internet l= Ministry of Environment m= Other	**Do you use extension Services?** a=MAWF veterinary services b= MAWF agricultural extension c= Farmers' unions d= NGO e= MAWF rural water supply f=Meat Board of Namibia g=Agronomic of Namibia h=Agra Co-operation i=MAWF-Forestry j=Private sector Dealers k=Internet l =Ministry of Environment m= Other
		Q0404	Q0405	Q0406	Q0407

Section 04: Extension visits/ services and Agriculture Information

Extension Service Topic No		**Which of the following extension services satisfy your need?** a=MAWF veterinary services b= MAWF agricultural extension c= Farmers' unions d= NGO e= MAWF rural water supply f=Meat Board of Namibia g=Agronomic of Namibia h=Agra Co-operation i=MAWF - Forestry. j=Private sector Dealers k=Internet l= Ministry of Environment m Other	**Which of the following agricultural related information were received by this holding?**	
			Information Topic (Select all that apply) a= Weather b= Crop varieties c= New agricultural practices d= Farm machinery e= Credit facilities f= Plant diseases and pests g= Marketing h=Rangeland management i=Livestock husbandry & diseases j=Agronomic practices k=Water & Irrigation l=Fish farming m= HIV/AIDS o=Other	**Main information source** a= Radio b= Television c-= Internet d-= Newspaper e= Magazines/Bulletins f= Extension officers g= Farmer to farmer h= Farmers' associations i= Agric show/exhibitions j= Neighbour k= Other
		Q0408	Q0409	Q0410

Section 05: Access to Facilities

Facility No		**Access to type of facility** 00= skip 01= Local produce market 02= Regional produce market 03= Local input dealer/farm supply shops 04= Agriculture Development Centre (**ADC)** 05= Nurseries 06= Agricultural research centers 07= Public transport 08= Feeder roads 09= All year round gravel road 10= Tarmac 11= Water point 12= Livestock development Center 13= Mills 14= Other 15= none	**What is the Distance to the nearest facility** (in kilometers) **(estimate by the respondent)**
		q0502	q0503

Section 06: Means of Transportation

q0601. Does this household have any means of transportation? 1= Yes; 2= No |__|

(*If yes, Record only the main means of transportation*); If "No", ⇨ Go to the next Section 07

	Means of transport used	**Source of Main access** ***(reference to q602)***	**If Owned ,** how many
Means Transport No	1= Head loading 2= Car/Pick up 3= Lorry 4= Tractor 5= Bicycle 6= Oxen 7= Oxen cart 8 = Donkeys 9=Mules 10= Donkey cart 11= Boats/Ferry 12= Wheelbarrow 13= Trailers /Truck 14= Horses 15= Canoes 16= Sledge 17=Others 0=skip	1= Owns 2= Borrow 3= Rent 4= Others	
	q0602	q0603	q0604

Section 07: Storage facility

q0701: Does the holding have any storage facility for produce? 1= Yes 2= No |__|

(If "No", ⇨ go to the next Section 08)

Storage Facility No	Type of storage facility used	Type of unit used to fill the storage facility	Number of units used	Weight in Kg.	Volume (for office use only)
	1= granary 2= In the house 3= Specific house/room 4= Under shelter/outside 5= Sealed containers 6= Bags 7 = Drums 8= Silo 9= Cold storage 10= under ground 11=other 0 =Skip	1= Latta (25kg) 2= Bags (50kg) 3= (51 kg to 100kg)			
	q0702	q0703	q0704	q0705	q0706

Section 08: Source Of Loan

Q0801 Did this holding apply for a Loan for agricultural purposes in the last 5 years? |__|

1= Yes ⇨ Go to q0802

2= No, if No ⇨ Go to the 09 section

Q0802 Was the loan granted? |__|

1= Yes, if Yes ⇨ Go to q0803 - q0806

2= No, if No ⇨ Go to q0807

Serial number of items	**Source of Loan received during last 5 years**	**Loan Period**	**What was the reasons of the Loan?**	**Type collateral security**	**If it was not granted, why not?**
	1= AgriBank 2= Development Bank of Namibia 3= Commercial Banks 4= Micro finances institutions 5= Money lenders 6= Self-help group 7= Under shelter/outside 8= Government 9= NGO 10=Family and friends 11= Other 0=Skip	1= Less than 1 Year 2= Between 1 and 3 years 3= More than 3 years 4= Others	1= Agriculture labour 2= Seeds 3= Fertilizer 4= Agro chemicals 5= Farm implements and machinery 6= Irrigation structures 7= Livestock 8=Aquaculture(marine resources and fisheries) 9= Bee farming(pollination) 10= Trading agricultural produce 11= Tractor 12= Borehole 13= Debushing 14= Threshing 15= Other agricultural purposes	1= No collateral 2= Land title 3= Crops 4= Livestock 5= Salary 6= Third party 7= Other	1= Lack collateral security 2= Not profitable 3= Ignorance 4= Negative past experience(ITC) 5= Not applicable 6= Other
	q0803	q0804	q0805	q0806	q0807

Section 09: Farm management Practices (Only For Crops Fields)

Parcel no	Fields no	Plot no	Type of Ownership	Did you use any type of irrigation during the last 12 months	Which irrigation method was used on the irrigated area?	What was the source of irrigation water	Did the holder pay for irrigation
			1 = Own 2 = Rented 3 = Other 0=Skip to end section	1= Yes 2 = No	1 = Surface irrigation 2 = Sprinklers 3 = Drop irrigation	1= River /Lake/Pond/Mountain / by gravity 2= River /Lake/Pond/by pumping/ 3= Dam /Reservoir /Earth dam 4= Deep Well/Tube well 5= Shallow well 6= Municipal/Town Council Water supply 7= Harvested 8 = Borehole 9 = Waste water/semi purified 10 = Rural Water Supply 11= Canal	1 = Yes 2 = No
			q0901	q0902	q0903	q904	q0905

Section 09: Farm management Practices (Only For Crops Fields)

Parcel no	Fields no	Plot no	Irrigation water payment terms	What was the frequency of for water payment for irrigation?	Agricultural Inputs (Indicate all that apply)	Main source of supply of inputs	(if the response in q0908 is 1 and 4, reason for not using improved input
			1 = water fee per ha 2 = water fee per volume 3 = other	1 = Quarterly 2 = Once a month 3= Annually 4= Others	1= Local seeds 2= Improved seeds 3= hybrid seeds 4= Organic fertiliser 5= Inorganic fertiliser 6= Pesticides 7=Herbicides 8= Fungicides 9= Other	1 = own 2 = markets 3 = cooperatives 4 = government 5 = NGO's	1 = No knowledge 2 = Too expensive 3 = Not available 4 = do not see usefulness 5= others
			q0906	q0907	q0908	q0909	q910

Section 10: Aquaculture (Fish Farming)

q1001: Was Fish Farming carried out by this holding during the past 12 months?

(If « No », ⇨ go to the section11)

Q1002 Do you have a pond/dam? |__| Yes = 1 N0 = 2, If yes size of pond in m2

	Fish farming system	Source of fingerlings	Number of stocked Fingerlings				Number of fish Harvested	Total Weight (Kg) of Fish Harvested during the last 12 months
	1 = Still water culture (Pond) 2 = Running water culture 3 = Water recycling system 4 = Cage culture (Dam) 0=Skip	1 = Government 2 = NGO/Project 3 = Private trader 4 = Other	Tilapia	Catfish (Clarias)	Carp	Other Specify		
	q1003	q1004	Q1005	Q1006	Q1007	Q1008	Q1009	Q1010

Section 10: Aquaculture (Fish Farming)

Q1011 Was partial harvest from fish farming carried out on this farm during the past 12 months? |__|

1=yes

2=no

(If « No », ⇨ go to Q1013)

Q1012: What was the reason for partial harvest? |__|

1 = Own Consumption

2 = Marketing

3 = Other

Q1013 For how many years did the farmer practice aquaculture? |__|

1 = the last three years

2 = the last five years

3 = the last ten years

4 = over ten years

Water used for aquaculture

Water Type Number	What is the water type **1 = Freshwater** **2 = Brakish water** **3 = Other**	What is the water source 1 = Rain-fed 2 = Groundwater/ borehole 3 = Rivers/canals 4 = Lakes/reservoirs 5 = Dams
	q1014	**q1015**

Section 10: Aquaculture (Fish Farming)

Management of Site

Type of Activity 1 = Feeding 2 = Water monitoring 3 = Cleaning 4 = Feeding & Water monitoring 5 = Feeding & Cleaning 6 = Harvesting/fishing 7= Watering & Cleaning 8 = All of the above	Number of male workers	Number of female workers
q1016	**q1017**	**q1018**

Section 11: Forestry

Q1101 PRESENCE OF FOREST 1= Yes 2= No |__|

If "NO" ➡ Go to the next section 12

AREA OF FORESTRY AND OTHER WOODED LAND

Measured area of forest land and other woodland should be transferred from Section 03

Serial No	TYPE 0 = Skip 1= Forestry 2= Other wooded land	AREA (as primary land use)	AREA (as secondary land use)	TOTAL
	q1102	q1103	q1104	q1105

Q1106 MAIN PURPOSE OF FOREST AND WOODED LAND

Production	|__|
Soil and water management	|__|
Multiple use	|__|
Conservation	|__|
Sustainable livelihood	|__|
Wood cover	|__|
Biodiversity	|__|
Fodder	|__|
Other (e.g. Windbreaks)	|__|

CODES

1= Yes

2= No

Q1107. PRESENCE OF AGRO-FORESTRY PRATICES ON THE HOLDING 1= Yes 2= No |__|

Section 12: Apiary

Q1201: Is apiary in this holding? 1 = Yes 2 = No |__|

If "No" ➡ Go to next section 13

Number of bee hives by type and by honey quantity produced during the last 12 months

Type No	TYPE OF BEE HIVE 1= Local 2= Kenya Top-Bar 3= Langstroth 4= Others 0= skip	NUMBER OF BEE HIVES		PRODUCTION (Kg)
		Colonized	Non-Colonized	
	q1202	q1203	q1204	q1205

Section 13: Food Security

Q1301 did the holding experience any Food shortages during the past 12 months?

1= Yes 2= No |__|

In the past 3 months, did you worry that your household would not have enough food? Yes = 1 No = 2	**On the average, how many meals, including breakfast are taken per day in your household?**	
	Adults	**Children** **(less than 5 years old)** **Leave blank if no children**
q1302	**q1303**	**q1304**

q1305. When did the household experience this food shortage?

Year	Reference month is December 2013
2013 2013	**01= January** **02 = February** **03=March** **04=April** **05=May** **06=June** **07= July** **08= August** **09= September** **10= October** **11= November** **12= December**
	q1305

Section 13: Food Security

Main Reasons Food Shortage

q1306. First main reason	|__|
q1307. Second main reason	|__|
q1308. Third main reason	|__|

CODES

00= Skip
01= Loss of crops/Insufficient production
02= Lack of jobs
03= Inability to work because of illness or injury
04= Disabled, old age
05= Lack of adequate land
06= Lack of adequate capital
07= Family too big
08= Lack of adequate labour
09= Over selling produce
10= Loss of livestock
11= Others
99 = Don't Know

What was the households' immediate response to food shortage?

Serial No		**Immediate response(Change in eating pattern)** 1= Skipping meals 2= Eating less preferred food 3= Reducing the size of meal	**By which household member**			
			Adult Male	Adult Female	**boys**	**Girls**
			1=Yes 2 =No	1 =Yes 2 = No	1 =Yes 2 = No	1 = Yes 2 = No
		q1309	q1310	q1311	**q1312**	**q1313**

Section 13: Food Security

Q1319. Is the household likely to experience food shortage during the next 12 months?

Which of the following natural disasters did the household experience?

Serial No	**Steps taken to alleviate food shortage** 1= Use saving to buy food 2= Take out a loan 3= Sell land 4= Sell livestock 5= Get another job 6= Start or expand family business 7= Social grand 8= Food relief 9= Help from charities	**By whom**			
		Adult Male	**Adult Female**	**Boys**	**girls**
		1 = Yes 2 = No	1 = Yes 2 = No	**1 = Yes** **2 = No**	**1 = Yes** **2 = No**
	q1314	**q1315**	**q1316**	**q1317**	**q1318**

Q1319 Is the household likely to experience food shortage during the next 12 months?

1 = Yes 2 = No **|__|**

Which of the following natural disasters did the household experience?

Natural disasters

q1320. Floods and tidal waves |__|
Q1321 Drought |__|
Q1322 Hailstorms |__|
q1323. Pests/diseases |__|
q1324. Erratic rains |__|
q1325. Wild fires |__|
q1326. Other |__|

Man-made disasters

q1327. Insecurity |__|
q1328. Wild fires |__|

Codes

0 = No damage

1 = Slight

2 = Moderate

3 = Severe

Section 14: Economic Activity

q1401. Are there other Economic Activities on the holding? Yes = 1 No = 2 |__|

If no, ➡ go to Section 15

Activity Serial No		**Economic activity** 1= Agricultural services 2= Hunting, trapping, game propagation and related service activities 3= Forestry, logging and related service activities 4= Fishing, aquaculture and related service activities 5= Manufacturing 6= Wholesale and retail trade 7= Hotels and Restaurants 8= Other 0=skip	By which HH member?			
			Number of Adult Male HH members	Number of Adult Female HH members	**Number of Boys**	**Number of Girls**
		q1402	**q1403**	**q14504**	**q1405**	**q1406**

Section 14: Economic Activity

Q1407. What are the other sources of income?

Income Source Serial No		**Income Source** 0= skip 1= Income derived from economic production activities other than agricultural production 2= Income from paid employment 3= investment income 4=Pension income 5= Remittances - Internal (within Namibia) 6= Remittances - External (outside Namibia) 7 = veteran social grant 8 = social grant 9 = old age pension grant 10=other	By whom			
			Number of Adult Male HH members	Number of Adult Female HH members	**Number of boys**	**Number of girls**
		q1408	q1409	q1410	q1411	q1412

Section 15: Labor Inputs

Number of members of the holdings who worked permanently or temporarily on the holding during the past 12 months.

Indicate the numbers of the household who was involved in the agricultural activities Permanent or temporally for the past 12 months.

Permanent workers: Is a person who works on the holding to perform farm activates for at least six months during the agricultural season. **Temporary workers**: Is a person who works on the holding for a period less than six months during the agricultural season.

PERMANENT BASIS

q1501. ADULT MALES 15 years above [__|__|__|

q1502. ADULT FEMALES 15 years above [__|__|__|

q1503. CHILDREN BOYS 15 years below [__|__|__|

q1504. CHILDREN GIRLS 15 years below [__|__|__|

TEMPORARY BASIS

q1505. ADULT MALES 15 years above [__|__|__|

q1506. ADULT FEMALES 15 years above [__|__|__|

q1507. CHILDREN BOYS 15 years below [__|__|__|

q1508. CHILDREN GIRLS 15 years below

q1509. Did the HH have any paid employee during the agricultural season? 1=Yes 2=No |__|

If no, ➡ go to Section 16

How many persons were in paid employment during the last 12 months?

Number of persons paid employees:

PERMANENT BASIS

q1501. ADULT MALES (Numbers) [__|__|__|

q1502. ADULT FEMALES (Numbers) [__|__|__|

q1503. CHILDREN BOYS (Numbers) [__|__|__|

q1504. CHILDREN GIRLS (Numbers) [__|__|__|

TEMPORARY BASIS

q1505. ADULT MALES (Numbers) [__|__|__|

q1506. ADULT FEMALES (Numbers) [__|__|__|

q1507. CHILDREN BOYS (Numbers) [__|__|__|

q1508. CHILDREN GIRLS (Numbers) [__|__|__|

Section 16: Equipment

q1601. What types of equipment were within holding during the past 12 months?

Equipment Serial No	**Type of Equipment** 01= Hoes 02= Axes 03= Slashers 04= Pangas/Machete 05= Watering cans 06= Wheelbarrows 07= Pruning knives 08= Pruning saws 09= Chain/Handsaw 10= Sheller spade 11= Fork hoe 12= Tractor 13= Plough mechanical 14= Ox-plough 15= Trailer 16= Harrow/Cultivator 17= Weeder 18= Planter 19= Sprayer 20= Pail 21= Milk can 22= Hand Mill (Manual Hammer) 23= Hammer Mill (Engine Driven) 24= Ox Cart 25= Other	Equipment name	**Do you own?** 1 = Yes 2 = No	**Type of ownership** 1=owned 2 = rented 3=borrowed 4 =other	**Enter the number of agricultural equipment owned by the household**	**If used during past 12 months**	
							When did you buy the equipment used? 1= Less than 1 year ago 2= 1-10 years ago 3= More than 10 years ago	**Did the holding use these agricultural equipment during the past twelve months?** 1= Yes 2= No
	q1601			q1602	q1603	q1604	q1605

Section 17: Production and disposition of crop products

Crop Name	Crop Code (refer to Section 03)	What is the quantity harvested and in what conditions/ state?			What is the quantities sold and to whom was it sold?			
		Unit of measurement(refer to the codes provided) 1=Latta 25 kg 2=Bags 50 kg 3=More than 50 kg bag 4=Other	**Number of Units harvested**	**Condition/State** 1=Mahangu Fresh raw harvest 2=Mahangu dry at harvest 3=Sorghum Wet/fresh raw harvest 4=Sorghum dry at harvest 5=Sorghum dry after additional drying 6=Maize green harvested: with shell/cob and stalk 7=Maize green harvested: with shell/cob and without stalk 8=Maize fresh/raw harvested: with shell/cob and with stalk 9=Maize fresh/raw harvested: with shell/cob without stalk 10=Dry at harvest	**Quantities sold**	**Cost per unit of measurement N$**	**Total value production sold in N$**	**Most sold to:** 1= Government organizations 2= Private trader local market village 3= Private trader constituency market 4= Consumer at market 5= Neighbour/Relative 6= Other, specify
	q1701	q1702	q1703	q1704	q1705	q1706	q1707	q1708

Section 17: Production and disposition of crop products

Fill in quantities which were used for other purposes?						Please indicate	
Processed for sale	**Processed for animal feed**	**Given to**	**Consumed by HH (including that before harvest)**	**Used for seed**	**Quantities stored/Currently in storage**	**Portion lost after harvest (%)**	**Where did most losses happen?** 1=on the field 2= during the storage 3=during the transport 4=others
q1709	q1710	q1711	q1712	q1713	q2114	q2115	q1716

Section 18: Livestock

Did any member of the household raise or own any livestock during reference period?

1= Yes 2= No |__| (If "No", ⇨ go to the q1807)

Livestock Serial No.	Livestock	Number reared/kept How many head of livestock did the holding raise or own?	How many owned by female Household members?
	q1801	q1802	q1803
1	Indigenous cattle (beef)		
2	Exotic (beef)		
3	Crossbreed (beef)		
4	Dairy cattle		
5	Bulls		
6	Cows		
7	Heifers		
8	Fem calves < 1 year		
9	Male calves < 1 year		
10	Tollies 1-3 years		
11	Oxen		
0	Skip		
Total livestock			
12	Boerbok (Female) /doe		
13	Boerbok (Male)/buck		
14	Other Goats (Male)		
15	Other Goat (Female)		
0	Skip		
	Goats total		
16	Sheep (Male)/ ram		
17	Sheep (Female)/ewe		
0	Skip		
	Total Sheep		
18	Pigs		
19	Donkeys/Mules		
20	Horses		
21	Dogs		
22	Cats		
23	Other specify		
0	Skip		
Total Livestock Pigs Donkeys Horses Dogs Cats Other			

Section 18: Livestock

Livestock Serial No.	Poultry	Total number reared/kept How many poultry did the holding raise or own?	How many owned by female Household members?
	q1804	q1805	q1806
1	Indigenous Chicken		
2	Exotic Chicken (layers)		
3	Exotic Chicken (broilers)		
4	Ducks		
5	Geese		
6	Guinea Fowl		
7	Pigeons		
8	Others, specify		
0	Skip		
	Total Poultry		

Livestock Intake 2013/2014 (during the last 12 months)

Livestock Type	Number of livestock bought or received from others	Number born How many head of livestock were born alive in the farm during the last 12 months	Total livestock Type
q1807	q1808	q1809	q1810
Cattle			
Goat			
Sheep			
Pig			
Poutry			

Section 18: Livestock

Livestock Off-take 2013/2014

Livestock Serial No.	**Livestock Serial Number**	**Number consumed by the HH**	**Number sold/traded How many livestock were sold?**	**Number given away (gifts, traditional fines)** How many head of livestock were given away as gift or traditional fines?	**Total livestock take-off**
	q1811	q1812	q1813	q1814	q1815
1	Cattle				
2	Goat				
3	Sheep				
4	Pig				
5	Poultry				
0	Skip				
Total Offtake					

Section 18: Livestock

Livestock Losses (2013/2014).

Livestock Serial No.	**Livestock Serial Number**	**Number of deaths due to disease**	How many of livestock were stolen or lost?	**Number Lost to Predators** How many of livestock were lost to predator?	**Number of Deaths due to Starvation** How many of livestock died due to starvation?	**Number of losses due to other reasons (Specify) e.g. drowning, lightning accidents)** How many of the livestock lost due to other reasons	**Total livestock Losses**
	q1816	**q1817**	**q1818**	**q1819**	**q1820**	**q1821**	**q1822**
1	Cattle						
2	Goat						
3	Sheep						
4	Pig						
5	Poutry						
0	Skip						
						Total Losses	

Section 18: Livestock

Q1823 what have been (for this household) the feeding practices of animal feeds for the livestock in the past 12 months?

Livestock Serial No.	Feeding Practice		Livestock Type				
			Cattle	Goats	Sheep	Pigs	Poutry
	Q1823		q1824	q1825	q1826	q1827	q1828
1	Only grazing/Free ranging						
2	Mainly grazing /Free ranging with some feeding						
3	Mainly Feeding with some grazing/Free ranging						
4	Only feeding (no grazing or scavenging)						
5	Salt Licks						
6	Protein Licks						
7	Summaer Phosphate Supplementation						
8	Commercial feed meals						
9	Crop residue (e.g. maize/mahangu) stover						
10	Camelthorn pods						
11	Baled grass						
12	Lucerne						
13	Other						
0	Skip						

q1829 Main pasture management system used during the last 12 months

	Pasture Management System
	01 =Rotational grazing based on available grazing land 02 = Rotational grazing based water points 03 = Continuous grazing 00=Skip
	q1829

Section 18: Livestock

q1830: Did the Household use the following practices on livestock?

	1=Commercially prepared animal feeds 2=Veterinary drugs 3=Insemination 0=skip
1	
2	
3	

Section 18: Livestock

Note 1: All parcels, fields and plots IDs under crop and under other land uses listed in Section 03 with the corresponding name of land use. And code should be transferred to this section

Note 2: Only consider fields more than 0.001 Ha for measurements

Parcel No.	Field No.	Plot No	Area in Ha measured with GPS (Clockwise)	Area in Ha measured with GPS (Anti-clockwise)	Number of Trees for Permanent Crops	Final Interview Status
			q1902	q1903	q1904	q1905

Crop-cutting Forms

CROP - CUTTING FORM

FORM C - C

REGION | **CONSTITUENCY** | **PSU**

	DU No.	Hh ID	Parcel No.	Field No.	Plot No.	Name of Crop	Crop Code	Pure or Mixed	Number of stands or stools of crop counted/ found on the plot	Wet			Dry			Farmer's Estimate		
										Weight	Day	Month	Weight	Day	Month	Unit of measurement	Number of Units measured	Condition /State (refer to code list)
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1																		
2																		
3																		
9																		
10																		
11																		

Name of TS: ……..…… **Signature:……..……** **Date:……..**

Name of RS: ……..…… **Signature:……..……** **Date:……..**

C. Response Rates

Table A. 1 : Response Rates

Region	PSUs			Agricultural Households		
	PSUs found	PSUs interviewed	Response Rate	Number of households expected	Household interviewed	Response Rate
//Karas	27	27	100.0	270	246	91.1
Erongo	24	24	100.0	384	368	95.8
Hardap	18	18	100.0	180	150	83.3
Kavango East	80	80	100.0	800	794	99.3
Kavango West	83	83	100.0	830	801	96.5
Khomas	8	8	100.0	80	52	65.0
Kunene	63	63	100.0	630	591	93.8
Ohangwena	156	156	100.0	1 560	1 493	95.7
Omaheke	26	26	100.0	416	380	91.3
Omusati	157	157	100.0	1 570	1 524	97.1
Oshana	109	108	99.1	1 090	1 047	96.1
Oshikoto	132	132	100.0	1 320	1 285	97.3
Otjozondjupa	48	47	97.9	480	461	96.0
Zambezi	78	78	100.0	780	770	98.7
Namibia	**1 009**	**1 007**	**99.8**	**10 390**	**9 962**	**95.9**

D. Estimation procedure

Crop-cutting

Population figures were estimated based on the sample data using a weighting procedure as explained below.

Variables collected during phase 1

Since the sample is selected in 2 stages there will be 2 probabilities of selection, p_1 for the first stage and p_2 for the second stage. First stage probability is based on the PPS selection procedure and the second stage probability is based on the random sampling procedure.

First stage probability of selection p_1 is given by

$$p_1 = \frac{M_{hi} n_h}{M_h}$$

Where;

M_{hi} = Number of Agricultural households in PSU i in stratum h (PSU size as derived from the 2011 Population and Housing Census)

M_h = Number of agricultural households in the stratum h (stratum size)

n_h = Number of PSUs selected from the stratum h

Second stage probability of selection p_2 is given by

$$p_2 = \frac{m_{hi}}{M'_{hi}}$$

Where;

M'_{hi} = Number of agricultural households in PSU i in stratum h according to survey listing

m_{hi} = Number of agricultural households in the sample from PSU i in stratum h

Therefore the inclusion probability of a holding, $p = p_1 * p_2$

Base weight

Since the PPS selection is and unequal probability selection the sample data has to be weighted. These weights which are generally called sample weights or base weights are the inverse of the inclusion probability.

Therefore the base weight W is given by

$$W_{hi} = \frac{1}{p} = \frac{1}{p_1} * \frac{1}{p_2} = \frac{M_h}{M_{hi} n_h} * \frac{M'_{hi}}{m_{hi}}$$

Although the expected sample agricultural households was m_{hi} the responding households would be less than this number. Since the non-response was not too large and the reasons seem to suggest that there are no remarkable differences between the responding and non-responding households, the responding households (r_{hi}) were taken as a random sample of the selected households. This will affect the probabilities and accordingly the weight and therefore the non-response adjusted weight is

$$w'_{hi} = \frac{M_h}{M_{hi} * n_h} * \frac{M'_{hi}}{r_{hi}}$$

Estimation of a total

A total $\hat{Y}$ could be estimated from the sample by the following estimator;

$$\hat{Y} = \sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hi} y_{hij}$$

Where;

y_{hij} = value of any characteristic of the j[th] household in i[th] PSU of stratum h

L = Number of strata

Estimation of a ratio

A ratio is estimated by;

$$\hat{R} = \frac{\hat{Y}}{\hat{X}}$$

Where $\hat{X}$ is estimated in the same way as $\hat{Y}$.

An *average* is in effect a ratio of two estimates, an estimate of the total $\hat{Y}$and an estimate of the total number of units (agricultural households, individuals etc). An average can thus be estimated in the same way as a ratio, where the variable X takes the value = 1 for all units.