Republic of Zambia

CENTRAL STATISTICAL OFFICE

POST HARVEST SURVEY

2012-2013 AGRICULTURE SEASON

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POST HARVEST SURVEY REPORT

2012/2013 AGRICULTURAL SEASON

(Small and Medium Scale Farmers)

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PREFACE

Central Statistical Office (CSO) conducts annual agricultural sample surveys covering the Small and Medium Scale Farms Sub-sector of Agriculture. Similarly, information on all Large-Scale Farms is collected during the same period when the Small and Medium Scale Farms Survey is being undertaken. The data collection activities on Small, Medium and Large Scale Farms are usually undertaken during the months of October and November of each year.

This report covers the operations of the Small and Medium Scale Farmers in the country. Information contained in this report relates to the Agricultural Season which commenced on 1st October 2012 and ended on 30th September, 2013.

An analysis of agricultural households by type of agricultural activities is presented in this report. The information presented includes, among other statistics: number of rural households and type of agricultural activity they are engaged in; crop production and input use; Livestock and Poultry rearing and use of draught power and farm equipment.

I would like to thank the Ministry of Agriculture and Cooperatives (MACO) and the Indaba Agricultural Policy Research Institute (IAPRI) for their valuable technical contribution towards the preparation and eventual undertaking of these statistical activities. In particular, I would like to thank members of staff in the Agriculture and Environment Division for having ably executed these statistical activities.

Last, but not least, we want to pay tribute to our respondents who have been supportive over the years.

John Kalumbi
DIRECTOR CENSUS AND STATISTICS

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ABBREVIATIONS/ACRONYMS

ASMIS	-	Agricultural Statistics Management Information System
CSO	-	Central Statistical Office
FAO	-	Food and Agriculture Organisation
IAPRI	-	Indaba Agricultural Policy Research Institute
MACO	-	Ministry of Agriculture and Cooperatives
MAL	-	Ministry of Agriculture and Livestock
NGOs	-	Non-GovernmentalOrganisations
PHS	-	Post Harvest Survey
PPS	-	Probability Proportional to Size
RS	-	Regional Statistician
SEAs	-	Standard Enumeration Area

EXECUTIVE SUMMARY

Below is a summary of findings from the 2012/2013 Post Harvest Survey (PHS) for the Smalland Medium Scale Farmers.

DEMOGRAPHIC CHARACTERISTICS OF THE POPULATION

- *The survey showed that there were more male -headed agricultural households (77.2 percent) than those that were female-headed (22.8 percent).*
- *The majority of agricultural household heads werein the age group 35-39 years.*
- *Over half (55.7 percent) of householdheads reported to have completed their primary school.*
- *Eastern Province recorded the highest proportion of household heads with no education at 23.2 percent.*
- *Copperbelt and Lusaka provinces recorded the highest proportions of household heads that completed high school education, at15.1 percentand 16.1 percent, respectively.*

CROP PRODUCTION

MAIZE

- *A total of 1,267,295 households, representing 88.1 percent of all agricultural households grew maize during the season.*
- *The total area planted to maize was 1,519,083 hectares during the season.*
- *Eastern Province recorded the largest area planted to maize countrywide, with 22.6 percent of total area under maize during the season.*
- *The total quantity of maize produced was 2,541,962.90 metric tonnes, with Eastern Province accounting for the largest proportion at 23.6 percent of the total.*
- *Out of the 2,541,962.90 metric tonnes of maizeproduced, 48.5 percent had been sold by the close of season.*
- *A total of 146,473.20 metric tonnes of basal and 143,465.80 metric tonnes of top dressing fertilizer were used in maize production.*

SORGHUM

- *A total of 53,899 households, representing 3.7 percent of all agricultural households grew sorghum during the season.*
- *There were 29,062.9 hectares planted to sorghum during the season.*
- *A total of 163.4 metric tonnes of basal and 160.3 metric tonnes of top dressing fertilizer were used in sorghum production.*

- *The total quantity of sorghum produced during the season was 13,227.3 metric tonnes.*

- *There were metric tonnes of basal and 160.3 metric tonnes top dressing fertilizer used in sorghum productionduring the season.*

- *Out of 13,227.3 metric tonnes of sorghum produced, 17.6 percent were sold by the close of the season.*

RICE

- *A total of 75,771 households, representing 5.3 percent of all agricultural households grew rice during the 2012/2013 Agricultural Season.*

- *The total area planted to rice by small and mediumscale farmers during the 2012/2013 Agricultural Season was 52,184.6 hectares.*

- *Countrywide, small and medium scale farmers produced 46854.7 metric tonnes of rice, of which 43.1 percent were sold by the close of the season.*

- *There were 480.5 metric tonnes basal and 350.2 metric tonnes as top dressing used in rice production.*

MILLET

- *A total of 133,699 households grew millet during the season, representing 9.3 percent of all agricultural households.*

- *The total area under cultivation of millet was 56,365.7 hectares during the season.*

- *A total of 34,542 metric tonnes of millet were produced during the season, with Northern Province accounting for41.6 percent of the total.*

- *There were 267.8 metric tonnes of basal and 197.8 metric tonnes of top dressing fertilizer that were used in the production of millet.*

- *Out of the 34,542 metric tonnes of millet produced, 24.1 percent were sold by the close of the season.*

SUNFLOWER

- *A total of 154,133 households grew sunflower during the season, representing 10.7 percent of all agricultural households.*

- *The total area planted to sunflower during the season was 75,248.7 hectares.*

- *There were 31,398.1 metric tonnesof sunflower produced during the season, with Eastern Province accounting for 77.2 percent of total production.*

- *Out of the 31,398.1 metric tonnesof sunflower produced, 28.2 percent were soldby the close of the season.*

- *A total of 295.0 metric tonnes of basal and 177.0 metric tonnes of top dressing fertilizer were used in sunflower production.*

GROUNDNUTS

- *A total of 711,452 households, representing 49.44 percent of all agricultural households grew groundnuts during the season.*
- *The total area under groundnut production was 264,018.1 hectares during the season.*
- *A total of 110,968.8 metric tonnes of groundnuts were produced during the season.*
- *Out of 110,968.8 metric tonnes of groundnuts produced, 35.9 percent were sold by the close of the season.*

SOYA BEANS

- *A total of 99,744 households, representing 6.9 percent of all agricultural households grew Soya Beans during the season.*
- *The total area planted to soya beans during the season was 54,214.8 hectares.*
- *The total quantity of soya beans was 31,891.3 metric tonnes.*
- *Out of 31,891.3 metric tonnes of soya beans produced, 66.1 percent were sold by the close of the season.*

MIXED BEANS

- *A total of 272,038 households, representing 18.9 percent of all agricultural households grew Mixed Beans during the season.*
- *The total area under cultivation of mixed beans was 108,500.4 hectares.*
- *The total quantity of mixed beans produced during theseason was 53,873.0 metric tonnes.*
- *From 53,873.0 metric tonnes of mixed beans produced countrywide, 53.2 percent were sold by the close of the season.*

VIRGINIA TOBACCO

- *A total of 8,193 households, representing 0.6 percent of all agricultural households grew viginia tobacco during the season.*
- *The total area under Virginia tobacco was 6,526.05hectares.*
- *The total quantity of Virginia tobacco produced during the season was estimated at 7,581.4 metric tonnes.*
- *A total of 6458.1 metric tonnes of Virginia tobacco were sold.*

BURLEY TOBACCO

- *A total of 9584 households, representing 0.7 percent of all agricultural households grew burley tobacco during the season.*
- *A total of 5,863.70 hectares were planted to burley tobacco during the season.*
- *The total quantity of burley tobacco produced during the season was 8,102.0 metric tonnes.*
- *There were 7873.0 metrictonnes of burley tobacco sold*

CASSAVA PRODUCTION

- *A total of 975,630 households, representing 67.8 percent of all agricultural households grew cassava during the season.*
- *A total of 378,229 households harvested raw cassava country wide of which 26,708 metric tonnes of raw cassava were sold by the close of the season.*
- *Out of the total sold (26,708 metric tonnes) Luapul Province sold the largest quantity of rawcassava, accounting for32.3 percent.*
- *A total of 42,624.79 metric tonnes of dried cassava chips were sold country wide during the agricultural season and the largest quantity (17,092.25 metric tonnes or 39 percent of the total) was from Luapula Province.*
- *A total of 47,021 households sold cassava flour during the season.*
- *There were 8,114.08 metric tonnes of cassava flour sold, of which the largest quantity (3,867.6 metric tonnes or 48 percent of thetotal) was from Northern Province.*
- *A total of 205,278 households had dry cassava in storage.*
- *The total quantity of dried cassava chips in strorage was 33,830.29 metric tonnes.*

LIVESTOCK RAISING

- *At national level, the cattle population was 2,968,940 as at 30th September 2013 compared to 2,843,312 held as at 1st October, 2012. Southern Province accounted for the highest percentage of about 39.5 percent of the total national stock. A total of 739,421 cattle were sold at a total value of K172, 671,835.30 during the season.*
- *The population of pigs as at 30th September 2013 was 1,354,388. Eastern Province accounted for the highest percentage of 46.1 percent, followed by Southern Province with 21.3 percent of the total. A total of 226,875 Pigs were sold during the season.*
- *The goat population as at 30th September 2013 was 2,655,476, of which Southern Province accounted for the highest at 32.2 percent.*
- *As at 30th September 2013, the population of sheep was 93,185. Eastern Province accounted for the highest at 31.4 percent.*

Chapter 1: BACKGROUND

1.0 Introduction

The Post-Harvest Survey for the 2012/2013 Agricultural Season was conducted during October and November of 2013. The information collected and presented in this report refers to the Agricultural Season which started on 1st October 2012 and ended on 30th September 2013. This report is based on information collected from small and medium scale farmers.

Over the period during which the Post-Harvest Surveys have been conducted, the survey questionnaire has undergone several major revisions. The purpose has been to keep abreast with the changes occurring in the agricultural sector by capturing relevant data.

1.1 Objectives of the Post-Harvest Survey (PHS)

The general objectives of the Post-Harvest Survey (PHS) include:

(i) Provision of annual agricultural data that helps facilitate comprehensive analysis of the agricultural sector's contribution to the national economy.

(ii) Development of the Agricultural Statistics Management Information System (ASMIS) to a high level such that it accommodates advances in information technology; and,

(iii) Provision of annual agricultural data that is useful for generation of performance indicators to facilitate interventions in the agriculture sector by government, donors and NGOs.

Specifically, the objectives of the survey include:

(a) Provision of actual figures pertaining to:

- Area planted to individual crops;
- Production quantities;
- Sales of produce and income realized;
- Purchase and use of agricultural inputs;
- Capital formation and other operational expenses;
- Demographic characteristics of agricultural households;
- Farming practices and soil conservation methods used;
- Access to agricultural loans; and,
- Access to market prices information and agricultural extension services in general

(b) To enhance the capacities to analyse agricultural data in the Central Statistical Office (CSO) and Ministry of Agriculture and Livestock (MAL). This is done through training and involvement of staff, at various levels, in survey data management.

(c) Development of appropriate instruments for collecting Post-Harvest Survey and other agricultural data.

Chapter 2: CONCEPTS AND DEFINITIONS

2.0 Introduction

The following concepts and definitions were used in collection of the data for the Post Harvest Survey (PHS) for the 2012/2013 Agricultural Season. Standard concepts and definitions as articulated by the Food and Agriculture Organization (FAO) were used during the survey. However, some of these concepts and definitions were modified to suit the Zambian context.

2.1 General Concepts

Qualified Respondent: A qualified respondent is an adult member of the household, who is knowledgeable about its crops, livestock, and poultry. The qualified respondent may however consult any other member of the household on different items in the questionnaire.

Household: A household consists of a group of people who normally live and eat together. These may or may not be related by blood, but make common provision for food or other essentials for living and they have only one person whom they all regard as head of the household. It may also consist of one member. A household normally occupies the whole of a housing unit or live in closely related premises.

Agricultural Household: An Agricultural household is a household in which at least one member is carrying out some agricultural activity (defined below) on the holding belonging to the household.

Agricultural Activity: An Agricultural activity is the growing of any crop and/or raising of livestock and/or raising of poultry and /or fish farming.

Head of Household: The head of the household is a person who is considered to be the head by the members of the household.

Adult Household Member: An Adult household member refers to persons who are aged 12 years and above.

Holding: A holding is all land wholly or partly operated for agricultural purposes under a single technical management. A holding may consist of one or more parcels (defined below) in one or separate areas. The parcels share the same means of production e.g. labour.

Holder: A holder is a person who exercises management control over the operations of the holding. Usually there is one holder in a household that is engaged in an agricultural activity, who may or may not be the head of the household.

Parcel: A parcel is an individual block of land in the holding, which is entirely surrounded by land and/or water that does not belong to the same holding. It may contain one or several fields growing one or different crops, or it may be left idle or fallow, or may be under pasture.

Field: A field is a piece of land usually cultivated with one crop at a time. In some cases, a number of different crops (mixture) may be grown in a single field at the same time.

Mixed Cropping: Mixed Cropping is a cultivation practice where two or more different temporary or permanent crops are grown simultaneously in the same field.

Inter-Cropping: Inter-cropping is a cultivation practice whereby a crop is planted between the rows of another crop e.g. sorghum between cotton rows, or sorghum between groundnut rows, or groundnuts between maize rows.

Area under Mixed Crops: Area under mixed crops is the area of the field in which two or more crops are grown together

Agricultural Season: Zambia's Agricultural Season extends from 1st October of one year to 30th September of the following year.

Land Preparation: Land Preparation refers to all activities undertaken to prepare the land for crop cultivation such as clearing the land, tree stumping, ploughing, etc.

Animal Draught Power: Animal Draught Power refers to the use of animals such as oxen and donkeys in any agricultural activity such as land preparation, planting, weeding and transportation.

Mechanical Power: Mechanical Power refers to the use of tractors, bulldozers, hand tractors, etc., in any agricultural activity.

Bunding: Bundingis a method of land preparation where mounds are made in the fields i.e. piling up masses of earth over the whole field in order to reduce the rate of flow of rain water.

Fallowing: Fallowing is a soil conservation method in which a piece of land is not cultivated for a number of year (s) to improve its fertility.

Recycled Seed: Recycled seed refers to the seed obtained from a hybrid seed which was planted in the previous season(s).

Local Seed: Local seed refers to traditional and indigenous seed varieties.

Hybrid Seed: Hybrid seeds refers to improved seed varieties.

2.2 General Definitions

Livestock: This includes cattle, goats, sheep, and donkeys.

Cattle: This includes bulls, oxen, tollies, cows, heifers, and calves.

Bulls: Bulls are uncastrated adult male cattle.

Oxen/Tollies: Oxen or Tollies are castrated male cattle.

Cows: Cows are female cattle that have given birth at least once. This includes female cattle that have not yet given birth but are beyond the stage of being termed heifers i.e. they are infertile.

Heifers: Heifers are female cattle that have not yet given birth and have not reached the stage of being termed cows.

Calves: Calves are both male and female cattle that are not yet weaned.

Chapter 3: SURVEY METHODOLOGY AND ORGANISTION

3.0 Introduction

Post-Harvest Surveys (PHSs) cover households engaged in crop and livestock production and other agricultural activities in order to provide data on agricultural production and practices. This chapter covers issues pertaining to sample design, questionnaire content, Training, field work, supervision and data processing. Like in all previous surveys, all districts in the country were covered during the 2012/2013 Post Harvest Survey (PHS) on sample basis. Data collection activities took place during the months of October and November 2013. The information was solicited using personal interviews with qualified respondents within the selected households in the sampled Standard Enumeration Areas (SEAs).

3.1 Sample Design

The sample design for the 2012/2013 PHS called for a probability sample of 20 agricultural households selected from 640 SEAs or clusters in which small and medium scale farming households were interviewed. The sample was selected country-wide from every district to produce nationally representative results.

The sampling frame of Standard Enumeration Areas (SEAs) for the PHS was constructed using the 2010 Census of Population and Housing data. Within each district, the SEAs were stratified by predominant crop in order to ensure a representative sample of each crop. The SEAs were then sorted by geographic codes to ensure that geographic distribution of the SEAs is also representative. The sampling frame included all rural SEAs. In addition, urban SEAs, which had 70 percent or more agricultural households according to the Census, were included in the frame. Thus all the 74 districts in the 2010 census frame were included in the sample.

A two stage random stratified cluster sampling method was used. The primary sampling units (PSUs) defined for the PHS sample, were individual SEAs. Therefore, at the first stage, a proportionally allocated number of PSUs which are standard enumeration areas, in each province and district was selected using Probability Proportional to Size (PPS) selection procedure. The measure of size for the selection of SEAs with PPS within each stratum was the number of agricultural households enumerated in the 2010 Census of Population and Housing. A sample of 680 SEAs or clusters was drawn from about 25, 632 SEAs which made up the agricultural sampling frame.

3.1.1 Selection of Primary Sampling Units

The procedure for selecting the Primary Sampling Units is outlined as follows:

1. Cumulating the measures of size (agricultural households enumerated in 2010 census) down the ordered list of SEAs within the stratum. The final cumulated measure of size is the total number of agricultural households enumerated in the frame for the stratum (M_h).

2. Calculating the sampling interval for stratum h (I_h), by dividing M_h by the total number of SEAs to be selected in stratum h (n_h), based on the sample allocation $I_h = M_h/n_h$.

3. Selecting a random number (R_h) between 0 and I_h.

4. Identifying the sample SEAs in stratum h by the following selection numbers:

$$S_{hi} = R_h + [I_h \times (i-1)], \text{ rounded up,}$$

where i = 1, 2, 3, …, n_h

The i-th selected SEA is the one with a cumulated measure of size closest to S_{hi} but not less than S_{hi}.

3.1.2 Household Sample

The sampling frame for selecting the secondary sampling units (SSUs) which are households was constructed by listing all the households in the sampled SEAs. In order to identify agricultural households which were eligible for participation in the PHS, the households were asked questions relating to crop production, livestock and poultry production. If the household was not engaged in any of the agricultural activities mentioned, the household was excluded from the listing frame for the selection of sample households for the PHS. The reason for excluding the non-agricultural households is to improve the efficiency of the sampling frame for crop and livestock production and other agricultural characteristics.

To improve the precision of the survey estimates, the agricultural households were stratified in three (3) categories- A, B and C, based on total area under crops, presence of some specified crops and on numbers of cattle, goats, and chickens raised.

The selection procedure was specified using the following defined terms:

N = total number of households listed in the sample SEA

N_A = number of households listed in category A within the sample SEA

N_B = number of households listed in category B within the sample SEA

N_C = number of households listed in category C within the sample SEA

n_A = number of sample households selected in category A within the sample SEA

n_B = number of sample households selected in category B within the sample SEA

n_C = number of sample households selected in category C within the sample SEA

The following steps were used to allocate the 20 sample households by category within each sample SEA:

(1) If N_C was less than or equal to 10, all the N_C households in Category C were selected with certainty at the second sampling stage (that is, $n_C = N_C$).

(2) If N_C was greater than 10, only10 households in Category C were selected (systematically with a random start) at the second sampling stage (that is, $n_C = 10$).

(3) After determining the number of sample households in Category C (n_C), the remaining number of sample households in the SEA (20 - n_C) was divided by 2, and rounded up. This was the number of sample households to be selected in Category B (n_B) if it was less than or equal to N_B; otherwise, $n_B = N_B$.

(4) The number of sample households in Category A (n_A) was determined as the remainder: $n_A = 20 - n_B - n_C$

Using this procedure, a minimum of 5 sample households was selected in Category B when there are 5 or more households listed in this category. In cases where there were 10 households selected in Category C, there would be 5 sample households in Category B and 5 sample households in Category A.

A number of households were selected from each category using the systematic random sampling method, coming up with a total of twenty sample households in each Sample SEA.

3.2 PHS Questionnaire Content

The PHS questionnaire is designed to collect data on demographic characteristics of members of the household and various agricultural themes. All usual members of the household and their characteristics such as age sex, marital status and education are listed under the Demographic Characteristics of members of households section. Screening of members who were 12 years and older whether they participated in crop, livestock or poultry production in the agricultural season is included in the same section.

Included in the agricultural sections of the questionnaire are topics such as farmland use, crop management, own crop stocks and sales, income and remittances, cost of production, storage facilities for grains, cassava production and marketing, fruits, vegetables and sugarcane production and sales, dry season irrigation and wetland production, livestock poultry and fish production, milk and eggs production and sales, access to extension services and farmer training, household production and assets/implements and distance to selected services and infrastructure.

3.3 Training of Field Staff

Officers from both Central Statistical Office (CSO) and Ministry of Agriculture and Livestock (MAL) conducted training of supervisors and enumerators. Regional Statisticians/Provincial Statistical Officers assisted them in the task. Training of field staff involved use of instructions manual which guided participants on interviewing techniques and field procedures. Mock interviews were conducted between participants within the training venue and later field practices were conducted with real respondents outside sampled areas prior to implementation of PHS field work. The master trainers played a major role in the training of staff.

3.4 Fieldwork and Field Supervision

The overall field work force was 9 Regional Statisticians, 20 Master Trainers, 60 supervisors and 340 enumerators. Master trainers travelled to all provinces to observe initial implementation of the fieldwork. The objective was to ensure that all the field procedures and that survey instruments were being administered correctly. The trainers checked samples of completed questionnaires for errors, and discussed any problems with field teams.

Field supervisors collaborated with the Provincial staff in order to deal with any logistical problems arising in the field. They also maintained regular communication with their survey Master trainers. Master Trainers also assisted in the supervision of fieldwork. These were drawn from CSO and the Ministry of Agriculture and Livestock (MAL).

The Agriculture and Environment Division under the Central Statistical Office (CSO) was responsible for planning and executing of the 2012/2013 Post Harvest Survey.

The Regional Statistician in each province oversaw the field work through regular communication with Master Trainers and Field Supervisors.

3.5 Data Processing and Analysis

Supervisors and some enumerators based at provincial headquarters edited the questionnaires. The edited questionnaires were entered on micro computers using the software package CSPro®. Data capturing was accomplished at each provincial centre. Staff in Agriculture and Environment Division based at CSO headquarters did further data processing. Consistency checks on the output of the raw data, with reference to the source documents, were applied before weighted tables at district and provincial levels were produced. The software used for analysis was statistical Package for Social Sciences, SPSS®.

3.6 Estimation Procedure

3.6.1 Sample Weights

Sampling weights were required to ensure actual representation of the sample at national level. The general procedure for calculating the weights made use of sampling probabilities at first-stage selection of SEAs and probabilities of selecting the households. The weights of the sample are equal to the inverse of the probabilities of selection.

$$P_{hi}^{1} = \frac{a_h M_{hi}}{\sum_i M_{hi}}$$

Where:

P_{hi}^{1} = the first selection probability of SEAs

a_h = is the number of SEAs selected in stratum *h (district)*

M_{hi} = is the size of the i^{th} SEA in stratum *h* (agricultural households according to the Census frame)

$\sum_i M_{hi}$ = The total size of the stratum h

At household selection level which is the second stage of selection, households are categorized by the agricultural strata A, B and C as earlier alluded. The probabilities of selection are calculated for each category separately. Therefore three category final weights are calculated by multiplying each one with the first stage weights.

The selection probability of the household in each category was calculated as follows:

$$P_{hi}^{2} = \frac{n_{hi}}{N_{hi}}$$

Where:

P_{hi}^{2} = the second selection probability of the household

n_{hi} = the number of households selected from the i^{th} SEA of h^{th} stratum

N_{hi} = Total number of households listed in a given category in an SEA

Therefore, the SEA specific sample weight was calculated as follows:

$$W_i = \frac{1}{P_{hi}^1 x P_{hi}^2}$$

W_i, which is the inverse of the product of the 2 selection probabilities, is called the PPS sample weight.

3.6.2 Estimation Process

In order to correct for differential representation, all estimates generated from the PHS survey data were weighted expressions. Therefore, if $\mathbf{y_{hij}}$ is an observation on variable **Y** for the h**th** household in the **i**th SEA of the j**th** stratum, then the estimated total for the j**th** stratum is expressed as follows:

$$Y_{jT} = \sum_{i=1}^{a_j} w_{ij} \sum_{h=1}^{n_j} y_{hij}$$

Where:

Yj_T = the estimated total for the j^{th} stratum
i = 1 to a_j: the number of selected clusters in the stratum
h = 1 to n_j: the number of sample households in the stratum

The national estimate is given by:

$$Y_T = \sum_{j=1}^{mj} Y_{jT}$$

Where:

Y_T = the provincial total estimate
j = 1 to mj: the total number of strata in this case mj=20; (the rural/urban and the 10 provinces)

Chapter 4: DEMOGRAPHIC AND AGRICULTURAL CHARECTERISTICS OF HOUSEHOLDS

4.0 Introduction

This chapter gives a summary of demographic and agricultural characteristics of households engaged in agricultural activities in the 2012/2013 season. Some of the demographic characteristics highlighted are the household heads by sex, age group, education level, agricultural household size, as well as the marital status of household heads.

4.1 Demographic Characteristics

This chapter highlights general characteristics of households engaged in agricultural activities such as crop production, livestock rearing and poultry raising. Cross tabulations were done with other variables such as education, marital status as well as household size.

4.1.1 Household Heads by Sex

Table 4.1 shows the distribution of agricultural households by province and sex of household head.There were a total of 1,438,927 heads of agricultural households.Male-headed agricultural households accounted for 77.2 percent while female-headed households constituted 22.8 percent. At provincial level, Muchinga and Northern provinces had the highest proportion of male-headed agricultural households (81.3 percent) each, followed by Lusaka Province at 79.8 percent. Western Province reported the lowest proportion of male-headed agricultural households (69.5 percent).

Table 4.1: Percentage Distribution of Agricultural Household Heads by Sex of Headand Province, Zambia 2012/2013

Province	Sex of Household Head					
	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Central	130,044	79.7	33,091	20.3	163,135	100
Copperbelt	59,757	76.1	18,780	23.9	78,537	100
Eastern	201,944	75.4	65,989	24.6	267,932	100
Luapula	117,709	77.5	34,215	22.5	151,924	100
Lusaka	35,496	79.8	8,967	20.2	44,463	100
Muchinga	96,532	81.3	22,148	18.7	118,680	100
Northern	142,500	81.3	32,683	18.7	175,182	100
North-western	80,991	79.5	20,834	20.5	101,825	100
Southern	143,904	75.5	46,781	24.5	190,685	100
Western	101,904	69.5	44,659	30.5	146,564	100
Total Zambia	**1,110,781**	**77.2**	**328,146**	**22.8**	**1,438,927**	**100**

4.1.2 Household Heads by Five Year Age Group

Table 4.2 shows that most of the heads of agricultural households were in the age group 35-39 years, representing 14.5 percent.Luapula Province had the highest proportion of agricultural households in this age group, at 18.0 percent.

Table 4.2: Percentage Distribution of Heads of Agriculture Households by Five Year Age Groups and Province, Zambia 2012/2013

Age Group	Province										Total
	Central	Copperbelt	Eastern	Luapula	Lusaka	Muchinga	Northern	Northwestern	Southern	Western	
10 -14	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	0.3	0.2	0.2	0.2	0.5	0.6	0.4	0.3	0.3	0.4	0.3
20-24	2.5	4.3	4.0	2.6	3.5	5.4	5.5	3.8	5.5	3.2	4.1
25-29	11.9	7.1	11.7	8.2	8.6	12.1	10.1	12.8	12.0	11.6	10.9
30-34	12.6	8.4	13.7	13.3	10.9	14.3	15.0	14.0	13.7	12.3	13.2
35-39	14.4	11.7	16.2	18.0	12.1	14.6	13.1	12.0	13.9	14.5	14.5
40-44	13.7	12.4	13.9	11.7	12.5	12.6	13.5	14.6	13.8	11.3	13.1
45-49	11.2	12.2	10.1	13.4	10.7	11.8	10.2	9.5	9.6	9.3	10.6
50-54	7.7	8.9	7.3	7.7	11.5	7.0	8.7	9.6	7.6	7.4	7.9
55-59	7.2	8.4	6.5	8.0	8.7	5.8	6.1	6.5	6.5	6.7	6.8
60-64	5.6	6.3	5.8	4.7	8.5	4.7	5.0	4.8	3.2	6.9	5.3
65-69	4.3	7.5	4.0	5.1	3.5	3.1	4.1	4.6	5.0	5.9	4.6
70-74	3.8	6.5	3.4	3.3	4.7	3.3	4.1	3.8	3.0	5.1	3.9
75-79	2.6	2.4	1.7	2.0	1.4	2.4	1.9	1.7	3.0	2.8	2.2
80+	2.2	3.7	1.4	1.6	2.9	2.3	2.3	2.1	3.0	2.9	2.3
Percent	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	100.0
Total	**163,135**	**78,537**	**267,932**	**151,924**	**44,463**	**118,680**	**175,182**	**101,825**	**190,685**	**146,564**	**1,438,927**

4.1.3 Education Status of Heads of Agricultural Households

Table 4.3 shows the percentage distribution of heads of agricultural households by highest level of education completed. Overall, 55.7 percent of the household heads reported to have completed primary school. Household heads that completed high school accounted for 9.4 percent and 13.3 percent reported never to have attended school at all.

Table 4.3: Percentage Distribution of Heads of Agricultural Households by Province and Highest Level of Education Completed, Zambia 2012/2013

Province	Number of Household Heads	Highest Education Level Completed								Total Percent
		None	Primary	Basic	High School	A-Level	College/ University	Certficate/ Diploma	achelors Degree and Above	
Central	163,135	9.5	56.0	22.3	9.3	0.2	1.6	1.1	0.0	100
Copperbelt	78,537	10.1	45.5	25.6	15.1	0.2	0.5	2.6	0.4	100
Eastern	267,932	23.2	54.6	13.1	7.1	0.1	0.2	1.3	0.4	100
Luapula	151,924	8.6	61.2	19.2	7.9	0.0	1.0	2.0	0.2	100
Lusaka	44,463	11.3	39.9	19.0	16.1	0.0	1.8	7.6	4.4	100
Muchinga	118,680	9.7	53.2	22.2	11.0	0.0	1.4	2.6	0.0	100
Northern	175,182	9.6	63.2	18.8	6.9	0.0	0.4	1.0	0.1	100
Northwestern	101,825	14.8	50.4	20.3	11.1	0.0	1.3	1.6	0.5	100
Southern	190,685	11.5	55.5	18.4	11.1	0.0	0.9	2.1	0.3	100
Western	146,564	14.9	58.6	14.9	9.0	0.0	0.6	1.9	0.1	100
Total Zambia	**1,438,927**	**13.3**	**55.7**	**18.5**	**9.4**	**0.1**	**0.9**	**1.9**	**0.4**	**100**

Analysis by province shows that Northern Province had the highest percentage of agricultural household heads with primary school education. Eastern Province recorded the highest proportion of agricultural household heads with no education at 23.2 percent.

Lusaka and Copperbelt provinces recorded the highest proportions of agricultural household heads that completed high school.

4.1.4 Size of Agricultural Households

Table 4.4 shows the percentage distribution of agricultural households by household sizeand province. During the season, there were 1,438,927 agricultural households. At national level, most agricultural households had 4 to 6 household members, representing 41.6 percent of the total.

Agricultural households with 10 or moremembers accounted for 10.4 percent. Southern province had the highest percentage of households with 10 or more members.

Table 4.4: Percentage Distribution of Agricultural Households by Household Size and Province, Zambia 2012/2013

Province	Household Size				Total Percent	Agricultural Households
	1 - 3	4 - 6	7 - 9	10+		
Central	12.6	37.9	35.8	13.7	100	163,135
Copperbelt	20.7	42.9	28.3	8.1	100	78,537
Eastern	13.3	44.8	32.4	9.5	100	267,932
Luapula	16.2	42.9	32.7	8.2	100	151,924
Lusaka	19.0	40.3	33.0	7.7	100	44,463
Muchinga	16.8	40.4	35.4	7.4	100	118,680
Northern	14.0	44.8	35.2	6.1	100	175,182
North-western	10.7	37.9	36.5	15.0	100	101,825
Southern	12.9	39.5	31.6	16.1	100	190,685
Western	17.8	42.3	30.2	9.6	100	146,564
Total Zambia	**15.0**	**41.6**	**33.0**	**10.4**	**100**	**1,438,927**

4.1.5 Marital Status of Heads of Agricultural Households

Table 4.5 shows the distribution of heads of agricultural households by marital status and province. There were more monogamously married persons (69.8 percent) than those that were in polygamous marriages (8.2 percent), widowed (12.4 percent), divorced (5.6 percent), single (2.7percent), separated (1.2 percent) or cohabiting (0.1 percent).

North-western Province had the highest proportion of household heads in monogamous marriages, at 76.1 percent.

Table 4.5: Percentage Distribution of Household Head by Marital Status and Province, Zambia 2012/2013									
Province	Number of Household Heads	Marital status							Percent
		Single (never married)	Monogamously married	Polygamously married	Divorced	Widowed	Separated	Cohabiting	
Central	163,135	2.7	72.2	5.7	4.8	12.6	2.0	0.0	100.0
Copperbelt	78,537	3.5	72.3	1.4	5.3	16.1	1.4	0.0	100.0
Eastern	267,932	1.4	71.7	8.6	5.9	11.9	0.4	0.0	100.0
Luapula	151,924	1.9	73.6	4.9	5.6	12.5	1.5	0.0	100.0
Lusaka	44,463	2.1	74.2	1.4	6.2	13.9	2.2	0.0	100.0
Muchinga	118,680	2.7	74.2	7.8	2.8	11.5	0.9	0.0	100.0
Northern	175,182	1.6	70.6	10.5	2.9	12.8	1.5	0.1	100.0
North-western	101,825	2.4	76.1	4.3	6.5	10.0	0.7	0.0	100.0
Southern	190,685	1.5	61.1	19.1	5.4	11.8	1.0	0.0	100.0
Western	146,564	8.3	59.7	5.7	11.3	12.9	1.1	0.9	100.0
Total Zambia	**1,438,927**	**2.7**	**69.8**	**8.2**	**5.6**	**12.4**	**1.2**	**0.1**	100.0

Copperbelt Province had the largest percentage of widowed household heads, accounting for16.1 percent of household heads. Western Province recorded the largest percentage of household heads that were divorced at 11.3 percent of the total in the province.

Chapter 5: CROP PRODUCTION

5.0 Introduction

During the 2012/2013 Post-Harvest Survey, data was collected on crops produced, area planted, fertilizer used, quantity produced and quantity sold. This chapter covers maize, sorghum, rice, millet, sunflower, groundnuts, soya beans, mixed beans and tobacco production in all provinces. Crop production is carried out by small and medium-scale farmers mainly as a source of food and income.

5.1 Maize

Maize is a cereal crop which is a member of the grass family Poacea. It is widely grown in Zambia in a range of agro ecological zones and it is Zambia's staple food. Production and sales are recorded in dried grain form.

5.1.1 Households Growing Maize

Table 5.1 shows the distribution of households growing maize by province. There were a total of 1,267,296 households which grew maize during the season. Eastern Province had the highest number of households that grew maize, representing 20.9 percent. Southern and Central provinces accounted for 14.4 and 12.5 percent, respectively. Lusaka Province recorded the smallest proportion of 3.3 percent.

Table 5.1: Percentage Distribution of Households Growing Maize by Province, Zambia 2012/2013

Province	Number of Households	Percent
Central	157,999	12.5
Copperbelt	74,890	5.9
Eastern	265,089	20.9
Luapula	96,122	7.6
Lusaka	41,379	3.3
Muchinga	101,577	8.0
Northern	124,455	9.8
Northwestern	87,882	6.9
Southern	183,081	14.4
Western	134,822	10.6
Total Zambia	**1,267,296**	**100.0**

5.1.2 Area Planted to Maize and Fertilzer Applied

Table 5.2 shows the distribution of area under maize and fertilizer appplied by province. The table shows that the total area under maize was 1,519,083.6 hectares. Southern Province recorded the largest area with 25.0 percent, followed by Eastern Province at 22.6 percent. Luapula Province recorded the lowest proportion at 3.0 percent.

Table 5.2: Distribution of Area Planted to Maize (Hectares) and Fertilizer Applied (Metric Tonnes) by Province, Zambia 2012/2013						
Province	Area planted		Fertilizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	233,165.8	15.3	18,591.6	12.7	17,711.1	12.3
Copperbelt	85,847.9	5.7	10,151.1	6.9	9,881.8	6.9
Eastern	343,087.0	22.6	27,260.4	18.6	26,428.2	18.4
Luapula	45,310.3	3.0	14,011.4	9.6	14,081.6	9.8
Lusaka	52,731.4	3.5	6,373.8	4.4	6,321.7	4.4
Muchinga	83,361.9	5.5	15,158.2	10.3	14,934.2	10.4
Northern	105,696.5	7.0	24,645.7	16.8	24,648.3	17.2
Northwestern	69,985.8	4.6	9,558.5	6.5	9,438.7	6.6
Southern	379,433.9	25.0	18,341.1	12.5	17,726.5	12.4
Western	120,463.1	7.9	2,381.4	1.6	2,293.8	1.6
Total Zambia	**1,519,083.6**	**100.0**	**146,473.2**	**100.0**	**143,465.9**	**100.0**

A total of 146,473.2 metric tonnesof basal and 143,465.9 metric tonnes of top dressing fertilizer was applied to maize fields. Eastern Province accounted for the largest proportion of fertilizer applied, with 18.6 percent of basal and 18.4 percent of top dressing, followed by Northern Province with 16.8 percent of basal and 17.2 percent of top dressing. Western Province used the least amount of fertilizer with 1.6 percent of basal and 1.6 percent of top dressing.

5.1.3 Maize Production and Sales

Table 5.3 shows the total quantity of maize produced during the season was 2,541,963.0 metric tonnes. Eastern Province accounted for 23.6 percent, followed by Southern Province with 17.1 percent. Western Province recorded lowest at 3.3 percent.

Table 5.3: Distribution of Quantity of Maize Produced and Quantity Sold in Metric Tonnes by Province, Zambia 2012/2013				
Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	401,985.6	15.8	200,918.8	16.3
Copperbelt	178,658.6	7.0	100,634.4	8.2
Eastern	600,078.1	23.6	223,742.0	18.2
Luapula	114,078.6	4.5	72,118.1	5.9
Lusaka	108,262.8	4.3	52,803.8	4.3
Muchinga	230,841.2	9.1	130,897.4	10.6
Northern	256,749.5	10.1	166,305.6	13.5
Northwestern	133,543.0	5.3	63,632.6	5.2
Southern	434,767.1	17.1	190,750.1	15.5
Western	82,998.5	3.3	29,798.4	2.4
Total Zambia	**2,541,963.0**	**100.0**	**1,231,601.2**	**100.0**

Out of the 2,541,963.0 metric tonnes of maize produced, 1,231,641.2 metric tonnes were sold representing 48.5 percent. Eastern Province recorded the highest quantity of maize sold at 18.2 percent, followed by Central Province which accounted for 16.3 percent. Southern Province accounted for 15.5 percent.

5.2 Sorghum

Sorghum is a cereal crop which is mainly consumed as a food and is also used in the brewing industry. Production and sales are recorded in threshed grain form.

5.2.1 Households Growing Sorghum

Table 5.4 shows the distribution of households growing sorghum by province. The table futher shows that a total of 53,899 households grew sorghum during the season. Southern Province had the highest proportion of 25.6 percent.Muchinga and Western provinces accounted for 23.8 percent and 21.0 percent, respectively. Eastern Province recorded the smallest proportion, accounting for 2.4 percent.

Table 5.4: Percentage Distribution of Households Growing Sorghum by Province, Zambia 2012/2013

Province	Number of Households	Percent
Central	2,331	4.3
Copperbelt	2,195	4.1
Eastern	1,318	2.4
Luapula	1,518	2.8
Lusaka	1,558	2.9
Muchinga	12,824	23.8
Northern	3,463	6.4
Northwestern	3,584	6.6
Southern	13,807	25.6
Western	11,301	21.0
Total Zambia	**53,899**	**100.0**

5.2.2 Area Planted to Sorghum and Fertilizer Applied

Table 5.5 shows the distribution of area planted to sorghum and fertilizer applied by province. A total of 29,062.8 hectares were planted to sorghum during the season. Southern Province had the largest area accounting for 46.8 percent followed by Western and Muchinga provinces with 17.9 percent and 13.4 percent, respectively. Eastern Province recorded the smallest area, accounting for 2.0 percent.

Table 5.5: Distribution of Area Planted to Sorghum (Hectares) and Fertilizer Applied (Metric Tonnes) by Province, Zambia 2012/2013

Province	Area Planted		Fertilizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	1,305.4	4.5	0.0	0.0	0.0	0.0
Copperbelt	841.2	2.9	4.6	2.8	6.9	4.3
Eastern	572.0	2.0	11.4	7.0	11.4	7.1
Luapula	589.5	2.0	53.2	32.6	53.2	33.2
Lusaka	952.7	3.3	0.0	0.0	0.0	0.0
Muchinga	3,896.0	13.4	0.0	0.0	0.0	0.0
Northern	738.3	2.5	0.0	0.0	0.0	0.0
Northwestern	1,363.3	4.7	2.9	1.8	0.0	0.0
Southern	13,599.2	46.8	41.4	25.3	38.8	24.2
Western	5,205.2	17.9	49.9	30.5	49.9	31.1
Total Zambia	**29,062.8**	**100.0**	**163.4**	**100.0**	**160.2**	100.0

A total of 163.4 metric tonnes of basal and 160.2 metric tonnes of top dressing fertilizer were used in sorghum production. Luapula Province accounted for the highest amount of fertilizer applied to sorghum fields, representing 32.6 percent of basal and 33.2 percent of top dressing. Western Province accounted for 30.5 percent of basal and 31.1 percent top dressing while Southern Province accounted for 25.3 percent basal and 24.2 percent top dressing.

5.2.3 Sorghum Production and Sales

Table 5.6 shows that the total quantity of sorghum produced during the season was 13,227.3 metric tonnes. Muchinga and Southern provinces recorded the highest quantity produced, accounting for 36.2 percent and 30.3 percent, respectively. Lusaka Province produced the smallest quantity, representing 0.8 percent.

Table 5.6: Distribution of Quantity of Sorghum Produced and Quantity Sold in Metric Tonnes by Province, Zambia 2012/2013

Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	418.1	3.2	176.7	7.9
Copperbelt	521.5	3.9	118.9	5.3
Eastern	550.7	4.2	421.1	18.9
Luapula	430.8	3.3	63.2	2.8
Lusaka	101.9	0.8	91.3	4.1
Muchinga	4,793.5	36.2	252.6	11.3
Northern	495.7	3.7	82.1	3.7
Northwestern	1,071.3	8.1	250.3	11.2
Southern	4,005.2	30.3	701.8	31.5
Western	838.6	6.3	71.6	3.2
Total Zambia	**13,227.3**	**100**	**2229.6**	**100.0**

There were 2,229.6 metric tonnes of sorghum sold during the season. Southern and Eastern provinces had the highest quantities sold, accounting for 31.5 percent and 18.9 percent, respectively. Luapula Province recorded the smallest quantity sold, accounting for 2.8 percent.

5.3 Rice

Rice is produced in large quantities mainly in Northern and Western provinces. It is cultivated in well watered areas especially river valleys with swamps, plains or marshlands. Rice is produced as a source of food and income.Production and sales relate to paddy rice (rice in husks).

5.3.1 Households Growing Rice

Table 5.7 shows the distribution of households growing rice by province. A total of 75,771 households grew rice during the season. Western Province recorded the largest number, accounting for 40.7 percent, followed by Northern and Muchinga provinces at 20.4 and 19.3 percent, respectively.

Table 5.7: Percentage Distribution of Households Growing Rice by Province, Zambia 2012/2013		
Province	**Number of Households**	**Percent Share**
Central	47	0.1
Copperbelt	82	0.1
Eastern	5,719	7.5
Luapula	6,423	8.5
Lusaka	74	0.1
Muchinga	14,657	19.3
Northern	15,474	20.4
Northwestern	2,489	3.3
Southern	0	0.0
Western	30,806	40.7
Total Zambia	**75,771**	**100.0**

5.3.2 Area Planted to Rice and Fertilizer Applied

Table 5.8 shows the distribution of area planted to rice and fertilizer applied by province. The total area planted to rice was 52,184.6 hectares. Western Province accounted for the largest proportion at 51.6percent, followed by Northern Province at 25.6percent whereas Muchinga province recorded 13.2 percent. The rest of the provinces collectively accounted for less than 10.0 percent of the total.

Table 5.8: Distribution of Area Planted to Rice (Hectares) and Fertilizer Applied (Metric Tonnes) by Province, Zambia 2012/2013						
Province	**Area Planted**		**Fertilizer Applied**			
			Basal dressing		**Top dressing**	
	Hectares	**Percent**	**Metric tonnes**	**Percent**	**Metric tonnes**	**Percent**
Central	9.0	0.0	15.4	3.2	15.4	4.4
Copperbelt	36.6	0.1	0.0	0.0	0.0	0.0
Eastern	2,133.7	4.1	29.5	6.1	15.0	4.3
Luapula	2,158.6	4.1	41.6	8.7	41.6	11.9
Lusaka	20.4	0.0	0.0	0.0	0.0	0
Muchinga	6,898.1	13.2	45.0	9.4	39.9	11.4
Northern	13,364.8	25.6	131.8	27.4	106.1	30.3
Northwestern	638.1	1.2	120.4	25.1	36.2	10.3
Western	26,925.3	51.6	96.7	20.1	96.0	27.4
Total Zambia	**52,184.6**	**100.0**	**480.4**	**100.0**	**350.2**	**100.0**

A total of 480.4 metric tonnes of basal and 350.2 metric tonnesof top dressing were used in rice production. Northern Province accounted for the largest amount of fertilizer used with 131.8 tonnesof basal and 106.1 tonnes of top dressing.

5.3.3 Rice Production and Sales

Table 5.9 shows the distribution of quantity of rice produced and quantity sold by province. The total quantity of rice produced was 46,854.7 metric tonnes. Western Province registered the largest proportion of rice produced at 41.6percent of total rice production.Northern and Muchinga provinces produced 32.9 and 15.7 percent, respectively. The remaining provinces contributed 9.7 percent to total production.

Table 5.9: Distribution of Quantity of Rice Produced and Quantity Sold in Metric Tonnes by Province, Zambia 2012/2013				
Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	15.2	0.0	-	-
Copperbelt	18.6	0.0	-	-
Eastern	1,300.8	2.8	28.5	0.1
Luapula	2,473.8	5.3	1,216.9	6.0
Lusaka	6.1	0.0	0.5	0.0
Muchinga	7,343.0	15.7	2,305.3	11.4
Northern	15,435.5	32.9	9,061.3	44.9
Northwestern	770.1	1.6	309.9	1.5
Southern	-	-	-	-
Western	19,491.6	41.6	7,246.8	35.9
Total Zambia	46,854.7	100.0	20,169.2	100.0

A total of 20,169.2 metric tonnes of rice were sold during the season. Northern Province recorded the largest quantity of rice sold at 44.9 percent.Western Province accounted for 35.9 percent and MuchingaProvince accounted for 11.4 percent, whereas the remaining provinces collectively sold 7.6 percent.

5.4 Millet

Millet is widely grown throughout the country but its production is predominant in Northern and Muchinga provinces. It is used in the preparation of local brews countrywide and is also sold for income. Millet production and sales are reported in threshed grain form.

5.4.1 Households Growing Millet

Table 5.10 shows the distribution of households growing millet by province. A total of 133,698 households grew millet during the season. Northern Province had the largest number of households that grew millet, accounting for 35.1 percent. Muchinga Province accounted for 25.7 percent, whereas Western province accounted for16.9 percent. The rest of the provinces recorded less than eight percent each.

Table 5.10: Percentage Distribution of Households Growing Millet by Province, Zambia 2012/2013		
Province	Number of Households	Percent Share
Central	10,354	7.7
Copperbelt	782	0.6
Eastern	2,120	1.6
Luapula	6,735	5.0
Lusaka	44	0.0
Muchinga	34,400	25.7
Northern	46,941	35.1
Northwestern	1,877	1.4
Southern	7,891	5.9
Western	22,554	16.9
Total Zambia	**133,698**	**100.0**

5.4.2 Area planted to Millet and Fertilizer Applied

Table 5.11 shows the distribution of area planted to millet and fertilizer applied. The total area under millet was 56,365.7 hectares. Northern Province recorded the largest area at 30 percent, followed by Western Province at 21.2 percent. Muchinga and Southern provinces recorded 18.0 and 14.9 percent, respectively. Copperbelt, Eastern, Luapula, Lusaka, and Northwestern provinces each recorded less than four percent.

Table 5.11: Distribution of Area Planted to Millet (Hectares) and Fertilizer Applied (Metric Tonnes) by Province, Zambia 2012/2013

Province	Area Planted		Fertilizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric tonnes	Percent	Metric tonnes	Percent
Central	5,401.1	9.6	0.0	0.0	0.0	0.0
Copperbelt	227.6	0.4	0.0	0.0	0.0	0.0
Eastern	966.3	1.7	0.0	0.0	0.0	0.0
Luapula	2,034.8	3.6	0.0	0.0	0.0	0.0
Lusaka	11.0	0.0	0.0	0.0	0.0	0.0
Muchinga	10,131.1	18.0	87.5	32.7	54.6	27.6
Northern	16,911.6	30.0	152.2	56.8	130.8	66.2
North-western	303.4	0.5	0.0	0.0	0.0	0.0
Southern	8,414.4	14.9	28.1	10.5	12.3	6.2
Western	11,964.4	21.2	0.0	0.0	0.0	0.0
Total Zambia	**56,365.7**	**100.0**	**267.8**	**100.0**	**197.7**	**100.0**

A total of 267.8 metric tonnesof Basal dressing and 197.7 metric tonnesof top dressing fertilizer were used in millet production. Northern Province accounted for the largest quantity representing 56.8percent of basal and 66.2 percent of top dressing. Muchinga Province used 32.7 percent of basal and 27.6 percent of top dressing, whereas Southern Province used 10.5 percent of basal and 6.2 percent of top dressing.

5.4.3 Millet Production and Sales

Table 5.12 shows the distribution of quantity of millet produced and quantity sold by province. The total quantity of millet produced during the season was 34,542 metric tonnes. Northern Province accounted for the largest at 41.6 percent. Muchinga, Southern and Western provinces accounted for 26.2 percent, 9.5 and 7.8 percent, respectively.

Table 5.12: Distribution of Quantity of Millet Produced and Quantity Sold in Metric Tonnes by Province, Zambia 2012/2013				
Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	2,338.6	6.8	465.0	5.6
Copperbelt	208.7	0.6	117.8	1.4
Eastern	383.7	1.1	22.1	0.3
Luapula	1,946.1	5.6	670.5	8.1
Lusaka	6.2	0.0	0.0	0.0
Muchinga	9,041.2	26.2	2,152.6	25.9
Northern	14,386.6	41.6	4,702.1	56.6
Northwestern	251.6	0.7	89.7	1.1
Southern	3,272.3	9.5	0.6	0.0
Western	2,707.0	7.8	90.5	1.1
Total Zambia	**34,542.0**	**100.0**	**8,310.9**	**100.0**

Out of the 34,542.0 metric tonnes of millet produced, 8,310.9 metric tonnes were sold, representing 24.1 percent. Northern Province accounted for the largest quantity sold at 56.6 percent. Muchinga and Central provinces accounted for 25.9 and 5.6 percent, respectively.

5.5 Sunflower

Sunflower is an oil-producing seed widely grown in the country.Production and sales are recorded in dried seed form.

5.5.1 Households Growing Sunflower

Table 5.13 shows the distribution of households growing sunflower by province. A total of 154,135 households grew sunflower. Eastern Province accounted the highest with 74.7percent of the total, whereas Southern Province accounted for 13.7 percent. The rest of the provinces recorded less than 5 percent each.

Table 5.13: Percentage Distribution of Households Growing Sunflower by Province, Zambia 2012/2013		
Province	Number of Households	Percentage
Central	3,268	2.1
Copperbelt	51	0.0
Eastern	115,110	74.7
Luapula	89	0.1
Lusaka	688	0.4
Muchinga	6,115	4.0
Northern	7,391	4.8
North-western	329	0.2
Southern	21,072	13.7
Western	22	0.0
Total Zambia	**154,135**	**100.0**

5.5.2 Area Planted to Sunflower and Fertilizer Applied

Table 5.14 shows the distribution of area planted to sunflower and fertilizer applied by province. The total area planted to sunflower was 75,248.7 hectares. Eastern Province had the largest area accounting for 68.4 percent of the total, while Southern Province accounted for 20.8 percent. The remaining provinces recorded less than 5 percent each.

Table 5.14: Distribution of Area Planted to Sunflower (Hectares) and Fertilizer Applied (Metric Tonnes) by Province, Zambia 2012/2013

Province	Area Planted		Fertilizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	2,658.2	3.5	6.1	2.1	6.1	3.4
Copperbelt	44.6	0.1	0.0	0.0	0.0	0.0
Eastern	51,465.7	68.4	28.1	9.5	28.1	15.9
Luapula	5.5	0.0	0.0	0.0	0.0	0.0
Lusaka	348.3	0.5	23.8	8.1	4.6	2.6
Muchinga	1,540.0	2.0	115.6	39.2	126.0	71.2
Northern	3,365.3	4.5	102.5	34.7	7.0	4.0
North-western	136.9	0.2	0.0	0.0	0.0	0.0
Southern	15,641.2	20.8	18.9	6.4	5.1	2.9
Western	43.0	0.0	0.0	0.0	0.0	0.0
Total Zambia	**75,248.7**	**100.0**	**295.0**	**100.0**	**176.9**	**100.0**

A total of 295.0 metric tonnes basal and 176.9 metric tonnes top dressing fertilizer were used in sunflower production. Muchinga Province accounted for the largest quantity of fertilizer used, representing 39.2 percent of basal and 71.2 percent of top dressing.

5.5.3 Sunflower Production and Sales

Table 5.15 shows the distribution of quantity of sunflower produced and quantity sold by province. The total quantity of sunflower produced was 31398.2 metric tonnes. Eastern Province recorded the largest amount, accounting for 77.2 percent of total while Southern Province accounted for 12.2 percent. The remaining provinces recorded less than 4 percent of total each.

Table 5.15: Distribution of Quantity of Sunflower Produced and Quantity Sold in Metric Tonnes by Province, Zambia 2012/2013

Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	1,177.4	3.7	607.5	2.7
Copperbelt	4.4	0.0	0.0	0.0
Eastern	24,245.0	77.2	8,245.0	97.2
Luapula	0.5	0.0	0.0	0.0
Lusaka	123.0	0.4	0.0	0.0
Muchinga	739.9	2.4	0.0	0.0
Northern	1,174.2	3.7	0.0	0.0
North-western	55.3	0.2	0.0	0.0
Southern	3818.7	12.2	0.0	0.0
Western	59.8	0.2	0.0	0.0
Total Zambia	**31,398.2**	**100.0**	**8,852.5**	**100.0**

There were 8,852.5 metric tonnes of sunflower sold during the season. Eastern Province sold the largest quantity, accounting for 97.2 percent of the total, while Central Province accounted for 2.7 percent.

5.6 Groundnuts

Groundnuts are marketed in shelled as well as unshelled form. For statistical reporting, the concept of shelled groundnuts is adopted.

5.6.1 Households Growing Groundnuts

Table 5.16 shows the distribution of groundnut-growing households by province. A total of 711,452 households grew groundnuts during the season. Eastern Province recorded the highest number of households that grew groundnuts, accounting for 25.5 percent of the total. Lusaka Province recorded the smallest proportion, accounting for 1.3 percent of the groundnut- growing households.

Table 5.16: Percentage Distribution of Households Growing Groundnut by Province, Zambia 2012/2013

Province	Number of Households	Percent
Central	67,338	9.5
Copperbelt	35,998	5.1
Eastern	181,101	25.5
Luapula	88,228	12.4
Lusaka	9,543	1.3
Muchinga	69,422	9.8
Northern	104,924	14.7
North-western	36,506	5.1
Southern	83,919	11.8
Western	34,473	4.8
Total Zambia	**711,452**	**100.0**

5.6.2 Area Planted to Groundnuts and Fertilizer Applied

Table 5.17 shows the area planted to groundnuts and fertilizer applied by province. A total of 264,018 hectares were planted to groundnuts during the season. The largest area was recorded in Eastern Province accounting for 29.0 percent followed by Southern Province with 16.7 percent. Northern and Central provinces accounted for 12.1 percent and 11.1 percent respectively, while Lusaka Province recorded the smallest area accounting for 1.3 percent of the total.

Table 5.17: Distribution of Area Planted to Groundnuts (Hectares) and Fertilizer Applied (Metric Tinnes) by Province, Zambia 2012/2013						
Province	Area Planted		Fertilizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	29,324.0	11.1	53.1	7.4	10.4	2.3
Copperbelt	12,391.4	4.7	151.7	21.3	85.7	18.7
Eastern	76,561.7	29.0	30.9	4.3	30.9	6.7
Luapula	22,532.8	8.5	18.1	2.5	18.1	3.9
Lusaka	3,319.0	1.3	0.0	0.0	0.0	0.0
Muchinga	18,862.4	7.1	132.4	18.6	112.2	24.4
Northern	32,014.4	12.1	146.0	20.5	146.0	31.8
North-western	12,076.0	4.6	176.1	24.7	53.6	11.7
Southern	44,119.0	16.7	3.3	0.5	0.7	0.2
Western	12,817.4	4.9	1.4	0.2	1.4	0.3
Total Zambia	**264,018.1**	**100.0**	**713.0**	**100.0**	**459.0**	**100**

A total of 713.0 metric tonnesof basal and 459.0 metric tonnes of top dressing fertilizer were used in groundnut production. Northwestern Province recorded the largest quantity of basal dressing fertilizer accounting for 24.7 percent whereas Northern Province recorded the largest quantity of top dressing fertilizer accounting for 31.8 percent. Western Province accounted for 0.2 percent of basal and 0.3 percent of top dressing fertilizer.

5.6.3 Groundnut Production and Sales

Table 5.18 shows the distribution of quantity of groundnut produced and quantity sold by province.The total quantity of groundnuts produced during the season was 110,968.9 metric tonnes. Eastern Province produced the largest quantity of groundnuts, accounting for 28.6 percent of total. Northern Province accounted for 13.9 percent of the total, followed by Luapula and Central provinces with 11.9 and 10.5 percent, respectively. Southern Province recorded 10.4 percent, whereas each of the remaining provinces accounted for less than 7.0 percent of total.

Table 5.18: Distribution of Quantity of Groundnuts Produced and Quantity of Groundnuts Sold by Province, Zambia 2012/2013				
Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	11,633.8	10.5	5455.4	13.7
Copperbelt	7,036.5	6.3	3756.1	9.4
Eastern	31,750.2	28.6	8517.1	21.4
Luapula	13,168.0	11.9	5483.0	13.7
Lusaka	1,042.8	0.9	251.6	0.6
Muchinga	9,676.0	8.7	3145.4	7.9
Northern	15,389.6	13.9	5781.0	14.5
North-western	6,680.6	6.0	3500.1	8.8
Southern	11,567.8	10.4	2906.5	7.3
Western	3,023.6	2.7	1083.0	2.7
Total Zambia	**110,968.9**	**100.0**	**39879.2**	**100.0**

There were 39879.2 metric tonnes of groundnuts sold, accounting for 35.9 percent of the total quantity produced. Eastern Province recorded the largest quantity sold accounting for 21.4 percent of the total, whereas Lusaka Province recorded the lowest quantity accounting for 0.6 percent.

5.7 Soya Beans

Soya Bean is a species of legumes native to East Asia widely grown for its edible bean which has numerous uses. Production of soya beans is carried out throughout the country, andproduction and sales are recorded in dried seed form.

5.7.1 Households Growing Soya Beans

Table 5.19 shows the distribution of households growing soyabeans by province. There were a total of 99,744 households that grew soya beans during the season. Eastern Province recorded the largest proportion, accounting for 34.6 percent of the total, whereas Western Province recorded the smallest proportion, accounting for 1.2 percent.

Table 5.19: Percentage Distribution of Households Growing Soya Beans by Province, Zambia 2012/2013

Province	Number of Households	Percent
Central	20,061	20.1
Copperbelt	4,769	4.8
Eastern	34,462	34.6
Luapula	4,136	4.1
Lusaka	1,490	1.5
Muchinga	10,234	10.3
Northern	13,623	13.7
North-western	3,408	3.4
Southern	6,369	6.4
Western	1,192	1.2
Total Zambia	**99,744**	**100.0**

5.7.2 Area Planted to Soya Beans and Fertilizer Applied

Table 5.20 shows the distribution of area planted to soya beans and fertilizer applied by province. The area planted to soya beans during the season was 54,214.8 hectares. Eastern and Central provinces had the largest proportions of area planted to soya beans accounting for 33.9 percent and 33.5 percent respectively while Western Province had the smallest area, accounting for 0.8 percent of the total.

Table 5.20: Distrbution of Area Planted to Soya Beans (Hectares) and Fertilizer Applied (Metric Tonnes) by Province, Zambia 2012/2013						
Province	Area Planted		Fertilizer Applied			
			Basal dressing		Top dressing	
	Hectare	Percent	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	18,148.1	33.5	306.8	56.3	42.0	24.4
Copperbelt	2,155.8	4.0	85.2	15.6	44.0	25.6
Eastern	18,364.7	33.9	31.4	5.8	31.4	18.3
Luapula	689.0	1.3	3.3	0.6	0.0	0.0
Lusaka	1,361.0	2.5	24.4	4.5	0.0	0.0
Muchinga	3,970.4	7.3	15.4	2.8	17.3	10.1
Northern	3,840.0	7.1	51.0	9.4	31.1	18.1
North-western	1,311.8	2.4	2.3	0.4	0.0	0.0
Southern	3,926.5	7.2	18.1	3.3	6.1	3.5
Western	447.5	0.8	7.2	1.3	0.0	0.0
Total Zambia	**54,214.8**	**100.0**	**545.1**	**100.0**	**171.9**	**100.0**

There were 545.1 metric tonnes of basal and 171.9 metric tonnes of top dressing fertilizer used in soya beans production. Out of the total amount of fertilizer used, Central Province accounted for 56.3 percent basal and 24.4 percent top dressing. This was followed by Copperbelt Province with 15.6 percent basal and 25.6 percent top dressing fertilizer.

5.7.3 Soya Beans Production and Sales

Table 5.21 shows the distribution of quantity of soya beans produced and quantity sold by province. A total of 31,891.3 metric tonnes of soya beans were produced during the season. Eastern Province produced the largest amount of soya beans accounting for 40.6 percent of the total, followed by Central Province with 27.9 percent. Western Province recorded the smallest quantity of soya beans produced accounting for 0.6 percent of total production.

Table 5.21: Distribution of Quantity of Soya Beans Produced and Quantity Sold in Metric Tonnes by Province, Zambia, 2012/2013				
Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	8,888.2	27.9	6,860.5	32.6
Copperbelt	1,593.7	5.0	1,137.7	5.4
Eastern	12,945.3	40.6	8,673.3	41.2
Luapula	322.5	1.0	94.5	0.4
Lusaka	734.0	2.3	640.6	3.0
Muchinga	2,508.9	7.9	812.0	3.9
Northern	2,703.8	8.5	1,734.6	8.2
North-western	815.6	2.6	522.4	2.5
Southern	1,185.6	3.7	457.8	2.2
Western	193.7	0.6	124.5	0.6
Total Zambia	**31,891.3**	**100.0**	**21,057.9**	**100.0**

There were 21,057.9 metric tonnes of soya beans sold during the season, representing 66.1 percent. Eastern and Central provinces sold the largest quantities, representing 41.2 percent and 32.6 percent, respectively while Western and Luapula provinces recorded the lowest quantities of soya beans sold, accounting for 0.6 percent and 0.4 percent, respectively.

5.8 Mixed Beans

Mixed beans include all kinds of beans except soya beans and ground (round) beans. Households produce mixed beans for food and income.

5.8.1 Households Growing Mixed Beans

Table 5.22 shows the distribution of households growing mixed beans by province. A total of 272,038 households grew mixed beans during the season. Northern Province recorded the largest proportion of mixed beans-growing households, accounting for 34.9 percent of the total. Muchinga, Luapula and North-western provinces accounted for 17.1 percent, 11.4 percent and 10.3 percent respectively, whereas each of the remaining provinces accounted for less than 8 percent of the total.

Table 5.22: Percentage Distribution of Households Growing Mixed Beans by Province, Zambia 2012/2013

Province	Number of Households	Percent
Central	18,701	6.9
Copperbelt	12,167	4.5
Eastern	21,480	7.9
Luapula	30,903	11.4
Lusaka	2,081	0.8
Muchinga	46,622	17.1
Northern	95,049	34.9
North-western	27,947	10.3
Southern	14,431	5.3
Western	2,658	1.0
Total Zambia	**272,039**	**100.0**

5.8.2 Area Planted to Mixed Beans and Fertilizer Applied

Table 5.23 shows the distribution of area planted to mixed beans and fertilizer applied by province. The total area under mixed beans was 108,500.5 hectares. Northern Province had the largest area planted to mixed beans accounting for 49.0 percent of total. Muchinga, North-western and Luapula provinces accounted for 14.2 percent, 8.4 percent and 7.4 percent respectively. Lusaka and Western provinces had the smallest proportions of area planted to mixed beans accounting for 0.8 percent and 0.6 percent, respectively.

Table 5.23: Distribution of Area Planted to Mixed Beans (Hectares) and Fertilizer Applied (Metric Tonnes) by Province, Zambia 2012/2013						
Province	Area Planted		Fertilizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	6,357.8	5.9	32.1	3.1	4.4	0.6
Copperbelt	2,721.8	2.5	156.5	15.1	30.3	4.1
Eastern	6,475.0	6.0	0.0	0.0	0.0	0.0
Luapula	8,020.6	7.4	0.0	0.0	0.0	0.0
Lusaka	905.0	0.8	11.3	1.1	0.0	0.0
Muchinga	15,447.7	14.2	362.0	34.8	362.3	48.7
Northern	53,158.0	49.0	317.7	30.6	255.1	34.3
North-western	9,067.5	8.4	56.3	5.4	56.3	7.6
Southern	5,715.6	5.3	103.7	10.0	36.1	4.8
Western	631.5	0.6	0.0	0.0	0.0	0.0
Total Zambia	**108,500.5**	**100.0**	**1,039.6**	**100.0**	**744.5**	**100.0**

A total of 1,039.6 metric tonnes of basal and 744.5 metric tonnes of top dressing fertilizer were used in mixed beans production. Muchinga Province recorded the largest quantities accounting for 34.8 percent of basal and 48.7 percent of top dressing whereas Northern Province accounted for 30.6 basal and 34.3 percent top dressing.

5.8.3 Mixed Beans Production and Sales

Table 5.24 shows the distribution of quantity of mixed beans produced and quantity sold by province. The total quantity of mixed beans produced was 53,872.9 metric tonnes. Northern Province accounted for the largest proportion of mixed beans produced, representing 52.1 percent of the total. Muchinga produced 12.1 percent of the total while each of the remaining provinces recorded less than 10 percent of the total.

Table 5.24: Distribution of Quantity of Mixed Beans Produced and Quantity Sold in Metric Tonnes by Province, Zambia 2012/2013				
Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	2,910.8	5.4	1,548.2	5.4
Copperbelt	1,956.0	3.6	799.0	2.8
Eastern	3,316.7	6.2	1,188.1	4.1
Luapula	4,390.6	8.1	2,277.6	7.9
Lusaka	178.5	0.3	119.9	0.4
Muchinga	6,520.8	12.1	2,310.4	8.1
Northern	28,042.6	52.1	17,250.2	60.2
North-western	5,262.6	9.8	2,938.1	10.2
Southern	1,098.0	2.0	221.2	0.8
Western	196.3	0.4	12.3	0.0
Total Zambia	**53,872.9**	**100.0**	**28,665.1**	**100.0**

There were 28, 665.1metric tonnes of mixed beans sold during the season. Northern Province sold the largest quantity of mixed beans accounting for 60.2 percent. North-western Province accounted for 10.2 percent of the total sold whereas the remaining provinces sold less than 9 percent each.

5.9 Virginia Tobacco

Tobacco is a stimulant crop used mainly for cigarette production. In Zambia we have two types of tobacco which are of commercial importance, namely Virginia and Burley tobacco.

5.9.1 Households Growing Virginia Tobacco

Table 5.25 shows the distribution of households growing Virginia tobacco by province. A total of 8,192 households grew Virginia tobacco during the season. Southern Province recorded the largest proportion of Virginia tobacco-growing households, accounting for 40.3 percent of the total. Eastern, Central and Western provinces accounted for 22.4 percent, 20.7 percent and 16.1 percent, respectively.

Table 5.25: Percentage Distribution of Households Growing Virginia Tobacco by Province, Zambia 2012/2013

Province	Number of Households	Percent
Central	1,694	20.7
Eastern	1,838	22.4
Muchinga	35	0.4
Southern	3,302	40.3
Western	1,323	16.1
Total Zambia	**8,192**	**100.0**

5.9.2 Area Planted to Virginia Tobacco and Fertilizer Applied

The total area under Virginia tobacco was 6,526.5 hectares. The largest area under Virginia tobacco was recorded in Southern Province accounting for 45.0 percent, followed by Eastern and Western Province with 22.9 percent and 16.9 percent respectively.

Table 5.26: Distrubtion of Area Planted to Virginia Tobacco (Hectares) and Fertilizers Applied (Metric Tonnes) by Province, Zambia 2012/2013

Province	Area planted		Fertlizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric Tonnes	Per cent	Metric Tonnes	Percent
Central	979.4	15.0	435.4	22.3	407.7	26.1
Eastern	1,494.0	22.9	619.6	31.7	467.2	30.0
Muchinga	14.2	0.2	0.0	0.0	0.0	0.0
Southern	2,936.9	45.0	583.7	29.9	538.3	34.5
Western	1,102.0	16.9	316.2	16.2	146.6	9.4
Total Zambia	**6,526.5**	**100.0**	**1,954.9**	**100.0**	**1,559.8**	**100.0**

A total of 1,954.9 metric tonnes of basal and 1,559.8 metric tonnes of top dressing fertilizer were used to produce Virginia tobacco. Eastern province recorded the largest quantity of basal dressing fertilizer accounting for 31.7 percent. Southern Province recorded the largest quantity of top dressing fertilizer accounting for 34.5 percent.

5.9.3 Virginia Tobacco Production and Sales

The total quantity of Virginia tobacco produced during the season was estimated at 7,581.4 metric tonnes. Southern province accounted for the largest proportion of Virginia tobacco produced with 48.7 percent, followed by Eastern and Western provinces with 23.7 percent and 14.7 percent respectively.

Table 5.27: Distribution of Quantity of Virginia Tobacco Produced and Qunitity Sold in Metric Tonnes by Province, Zambia 2012/2013

Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	974.9	12.9	837.0	13.0
Eastern	1,793.7	23.7	1495.7	23.2
Muchinga	10.5	0.1	0.0	0.0
Southern	3,691.3	48.7	3215.1	49.8
Western	1,111.0	14.7	910.3	14.1
Total Zambia	**7,581.4**	**100**	**6458.1**	**100.0**

A total of 6458.1 metric tonnes of Virginia tobacco were sold. Southern Province sold the largest quantity accounting for 49.8 percent. Eastern Province accounted for 23.2 percent while Western and Central provinces accounted for 14.1 and 13.0 percent respectively.

5.10 Burley Tobacco

Burley Tobacco is mainly air-cured and is preferred by most Zambian tobacco producers. Survey results showed that the majority of burley tobacco was produced in Eastern province.

5.10.1 Households Growing Burley Tobacco

Table 5.28 shows the distribution of households growing burley tobacco. A total of 9,584 households grew burley tobacco during the season. Eastern Province recorded the largest proportion of burley tobacco-growing households, accounting for 93.8 percent of the total. Central, Western and Muchinga provinces accounted for 2.6 percent, 2.5 percent and 1.1 percent, respectively.

Table 5.28: Percentage Distribution of Households Growing Burley Tobacco by Province, Zambia 2012/2013

Province	Number of Households	Percent
Central	249	2.6
Eastern	8,993	93.8
Muchinga	101	1.1
Western	241	2.5
Total Zambia	**9,584**	**100.0**

5.10.2 Area Planted to Burley Tobacco

Table 5.29 shows the distribution of area planted to burley tobacco and fertilizer applied by province. A total of 5,863.7 hectares were planted to burley tobacco during the season. The largest area was recorded in Eastern province at 95.0 percent followed by Central and Western provinces at 2.1 percent each.

Table 5.29: Distribution of Area Planted to Burley Tobacco (Hectares) and Fertilizers Applied (Metric Tonnes) by Province, Zambia 2012/2013						
Province	Area planted		Fertlizer Applied			
			Basal dressing		Top dressing	
	Hectares	Percent	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	124.3	2.1	0.0	0.0	0.0	0.0
Eastern	5,571.9	95.0	2,108.5	94.7	1,930.2	98.8
Muchinga	46.8	0.8	0.0	0.0	0.0	0.0
Western	120.7	2.1	117.4	5.3	24.1	1.2
Total Zambia	**5,863.7**	**100.0**	**2,225.9**	**100.0**	**1,954.3**	**100.0**

A total of 2,225.9 metric tonnes of basal and 1,954.3 metric tonnes of top dressing fertilizer were applied to burley tobacco during the season. The largest proportions of fertilizer were recorded in Eastern province at 94.7 percent basal and 98.8 percent top dressing, while Western Province accounted for 5.3 percent basal and 1.2 percent top dressing.

5.10.3 Burley Tobacco Production and Sales

The total quantity of burley tobacco produced during the season was 8,102.0 metric tonnes. Much of the burley tobacco was produced in Eastern Province, accounting for 96.9 percent of the total whereas Muchinga Province at 0.5 percent.

Table 5.30: Distribution if Quantity of Burley Tobacco Produced and Qunitity Sold in Metric Tonnes by Province, Zambia 2012/2013				
Province	Quantity Produced		Quantity Sold	
	Metric Tonnes	Percent	Metric Tonnes	Percent
Central	66.6	0.8	66.6	0.8
Eastern	7,852.0	96.9	7755.3	98.5
Muchinga	43.8	0.5	40.8	0.5
Western	139.5	1.7	10.4	0.1
Total Zambia	**8,102.0**	**100.0**	**7873.0**	**100.0**

There were 7873.0 metrictonnes of burley tobacco sold. Eastern Province sold the largest quantity accounting for 98.5 percent of the total.

Chapter 6: CASSAVA PRODUCTION & MARKETING

6.0 Introduction

Cassava is a perennial woody shrub with an edible root, which grows in tropical and subtropical areas of the world. It is brought to the market in several forms i.e. tubers, chips, and flour.

Cassava is a staple food grown in many parts of the country especially in Northern, Luapula and Western provinces. Cassava growing is being encouraged in other parts of the country for food security reasons, as it is a drought-resistant and less expensive crop to manage.

6.1 Households Growing Cassava

Table 6.1 shows the distribution of cassava-growing households and area under cassava by province. During the 2012-2013 Agricultural Season, a total of 975, 630 households grew cassava. Northern and Luapula provinces recorded the highest number of cassava growing households, accounting for 34.0 percent and 30.4 percent of the total, respectively. Lusaka and Southern provinces recorded the lowest number of cassava growing households, accounting for less than 1percent each.

Table 6.1: Percentage Distribution of Households Growing Cassava and Area Under Cassava by Province, Zambia 2012/2013

Province	Household Growing Cassava		Area Under Cassava	
	Number	Percent	Hectares	Percent
Central	21,683	2.2	9,193.5	2.5
Copperbelt	11,080	1.1	3,875.2	1.0
Eastern	6,506	0.7	1,925.0	0.5
Luapula	296,557	30.4	98,264.4	26.4
Lusaka	446	0.0	89.8	0.0
Muchinga	88,776	9.1	33,969.6	9.1
Northern	331,686	34.0	121,978.2	32.8
North-western	126,227	12.9	47,827.2	12.9
Southern	924	0.1	984.7	0.3
Western	91,745	9.4	53,933.9	14.5
Total Zambia	**975,630**	**100.0**	**372,041.5**	**100.0**

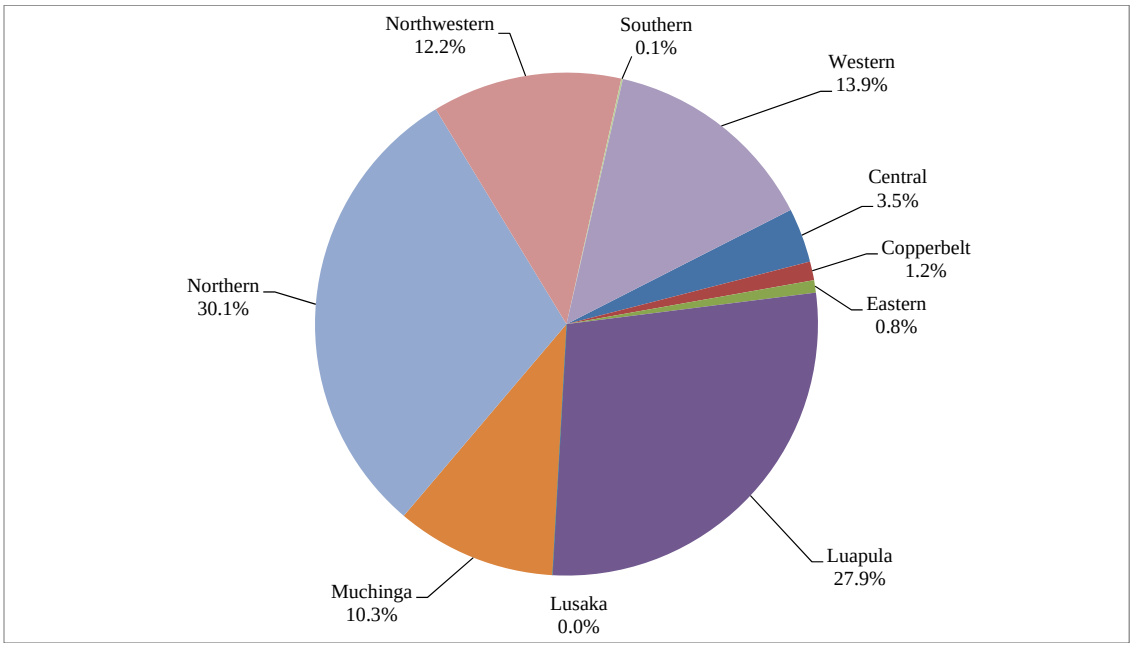
The total area under cassava during the agricultural season was estimated at 372,041.5 hectares. Northern Province recorded the largest area under cassava, accounting for 32.8 percent of the total while Eastern, Lusaka and Southern provinces had area under cassava accounting for less than 1 percent each.

6.2 Cassava Production and Sales

During the 2012/2013 Agricultural Season, There were 378,229 households that reported to have harvested cassava, and the largest proportion of these households was recorded in Northern Province at 30.1 percent of the total. Luapula Province had the second largest proportion at 27.9 percent of the households which harvested cassava. Western Province was the third with 13.9 percent, while Northwestern and Muchinga provinces recorded 12.2 and 10.3 percent, respectively. The rest of the provinces recorded less than 4.0 percent each.

Table 6.2: Percentage Distribution of Households that Harvested Cassava, Households that Sold Raw Cassava, and Quantity Sold by Province, Zambia 2012/2013						
Province	Households that Harvested Cassava		Households that Sold Raw Cassava		Raw Cassava Sold (Metric Tonnes)	
	Number	Percent	Number	Percent	Number	Percent
Central	13,250	3.5	3,617	7.0	751.4	2.8
Copperbelt	4,651	1.2	2,459	4.7	1672.6	6.3
Eastern	3,170	0.8	1,790	3.4	743.2	2.8
Luapula	105,366	27.9	10,265	19.7	8626.2	32.3
Lusaka	184	0.0	126	0.2	56.7	0.2
Muchinga	38,905	10.3	6,016	11.6	1934.0	7.2
Northern	113,700	30.1	17,290	33.3	7521.4	28.2
Northwestern	46,043	12.2	6,114	11.8	4015.0	15.0
Southern	460	0.1	203	0.4	55.6	0.2
Western	52,500	13.9	4,107	7.9	1332.1	5.0
Total Zambia	**378,229**	**100.0**	**51,987**	**100.0**	**26,708.2**	**100.0**

Figure 6.1: Percentage Distribution of Households that Harvested Cassava by Province, Zambia 2012/2013



6.3 Raw Cassava Sales

A total of 51,987 households reported to have sold raw cassava during the season. Northern and Luapula provinces accounted for 33.3 and 19.7 percent of the household that sold raw cassava, respectively. Northwestern and Muchinga provinces recorded 11.8 and 11.6 percent, respectively, while each of the remaining provinces recorded less than 8 percent of the total number of households that sold raw cassava.

The total quantity of raw cassava sold during the 2012/2013 Agricultural Season was 26,708 metric tonnes. Luapula Province recorded the largest amount sold with 32.3 percent of the total quantity sold, followed by Northern Province with 28.2 percent. Northwestern Province was third with 15 percent of raw cassava sold. Lusaka and Southern Provinces recorded the lowest quantity of raw cassava sold with 2 percent each.

6.4 Sales of Cassava Chips

Table 6.3 shows the distribution of households that sold dry cassava chips and quantity of cassava chips sold by province. A total of 149,391 households sold cassava chips during the 2012/2013 Agricultural Season. Most of the households that sold cassava chips were recorded in Northern and Luapula Provinces, representing 34.4 and 28.5 percent, respectively. Northwestern Province recorded the third largest proportion (12.4 percent) of households that sold cassava chips, while Muchinga Province recorded 10.7 percent. Each of the remaining provinces recorded less than 10 percent of the households.

In addition, an estimated 42,624.79 metric tonnes of dried cassava chips were sold countrywide. Luapula Province sold the largest quantity with 40.1 percent, while Northern Province recorded 29.6 percent.

Table 6.3: Percentage Distribution of Households that Sold Dry Cassava Chips and Quantity Sold by Province, Zambia 2012/2013

Province	Households that Sold Dried Cassava Chips		Dried Cassava Chips Sold	
	Number	Percent	Metric tonnes	Percent
Central	5027	3.4	842.2	2
Copperbelt	1736	1.2	353.0	0.8
Eastern	0	0.0	0.0	0.0
Luapula	42544	28.5	17092.3	40.1
Lusaka	0	0.0	0.0	0.0
Muchinga	15959	10.7	3875.8	9.1
Northern	51431	34.4	12637.4	29.6
North-western	18507	12.4	4753.4	11.2
Southern	163	0.1	18.8	0.0
Western	14023	9.4	3052.0	7.2
Total Zambia	**149390**	**100.0**	**42624.9**	**100.0**

6.5 Cassava Flour Sales

Table 6.4 shows the distribution of households that sold cassava flour and quantity sold by province. An estimated 47,021 households sold cassava flour during the 2012/2013 Agricultural Season. Northern Province recorded the largest quantity of cassava flour (3867.61 metric tonnes) that was sold during the 2012-2013 Agricultural Season, while Luapula Province sold 2770.75 metric tonnes.

Table 6.4: Number and Percentage Distribution of Households that Sold Cassava Flour and Quantity Sold by Province, Zambia 2012/2013

Province	Households that Sold Cassava Flour		Cassava Flour Sold in Tonnes	
	Number	Percent	Number	Percent
Central	1,678	3.6	405.8	5.0
Copperbelt	74	0.2	8.5	0.1
Luapula	18,140	38.6	2,770.8	34.1
Muchinga	5,421	11.5	800.7	9.9
Northern	19,497	41.5	3,867.6	47.7
North-western	1,623	3.5	211.1	2.6
Western	588	1.3	49.6	0.6
Total Zambia	**47,021**	**100.0**	**8,114.1**	**100.0**

Northern Province recorded the largest proportion of households that sold cassava flour, with 41.5 percent of the total. Luapula Province had the second largest proportion of. 38.6 percent, while Muchinga Province had 11.5 percent of the households that sold cassava flour. The rest of the provinces had less than 4.0 percent of the households selling flour.

6.6 Dry Cassava in Storage

Table 6.5 shows the distribution of households that had dry cassava in storage and quantity sold by province. A total of 205278 households were reported to have dry cassava in storage. Of these households, 35.3 percent was recorded from Northern Province, 28.2 percent from Luapula Province and 14.1 percent from Northwestern Province. About 12.0 percent of the households were recorded from Muchinga province while less than 6.0 percent of the households were recorded from each of the remaining provinces.

Table 6.5: Percentage Distribution of Households that had Dry Cassava in Storage and Quantity Sold by Province, Zambia 2012/2013

Province	Households with Dry Cassava in Storage		Tonnes of Cassava Chips Stored	
	Number	Percent	Number	Percent
Central	7,089	3.5	706.6	2.1
Copperbelt	2,422	1.2	350.4	1.0
Eastern	74	0.0	14.4	0.0
Luapula	57,965	28.2	12,341.5	36.5
Muchinga	24,675	12.0	3,018.1	8.9
Northern	72,401	35.3	11,792.3	34.9
North-western	29,034	14.1	4,165.4	12.3
Southern	163	0.1	16.0	0.0
Western	11,455	5.6	1,425.8	4.2
Total Zambia	**205,278**	**100.0**	**33,830.5**	**100.0**

About 33,830.5 metric tonnes of dried cassava chips were reported to be in storage. Luapula Province had the largest quantity of cassava chips in storage, with 12341.5 metric tonnes. Northern Province was second with 11792.3 metric tonnes, while Eastern had the lowest with 14.4 metric tonnes. No quantities of stored cassava chips were recorded from Lusaka provinces.

Chapter 7: LIVESTOCK RAISING

7.0 Introduction

Livestock is among the major sources of income through the sale of live animals and livestock products such as meat and milk.Data collected in the 2012/2013 PHSincluded: type of livestock, number raised, number slaughtered, number sold and the value of sales.

7.1 Cattle

7.1.1 Households Raising Cattle

Table 7.1 shows the number of cattle held as at the opening of the season (1st October, 2012) and as at the close of the season (30th September, 2013). The table shows that 339,372 households reported raising cattle. Eastern Province reported the largest number representing 31.9 percent followed by Southern Province (29.8 percent).The smallest number of cattle was reported in Luapula Province, accounting for 0.8 percent.

Table 7.1: Distribution of Households Raising Cattle and Number of Cattle Raised by Province, Zambia 2012/2013

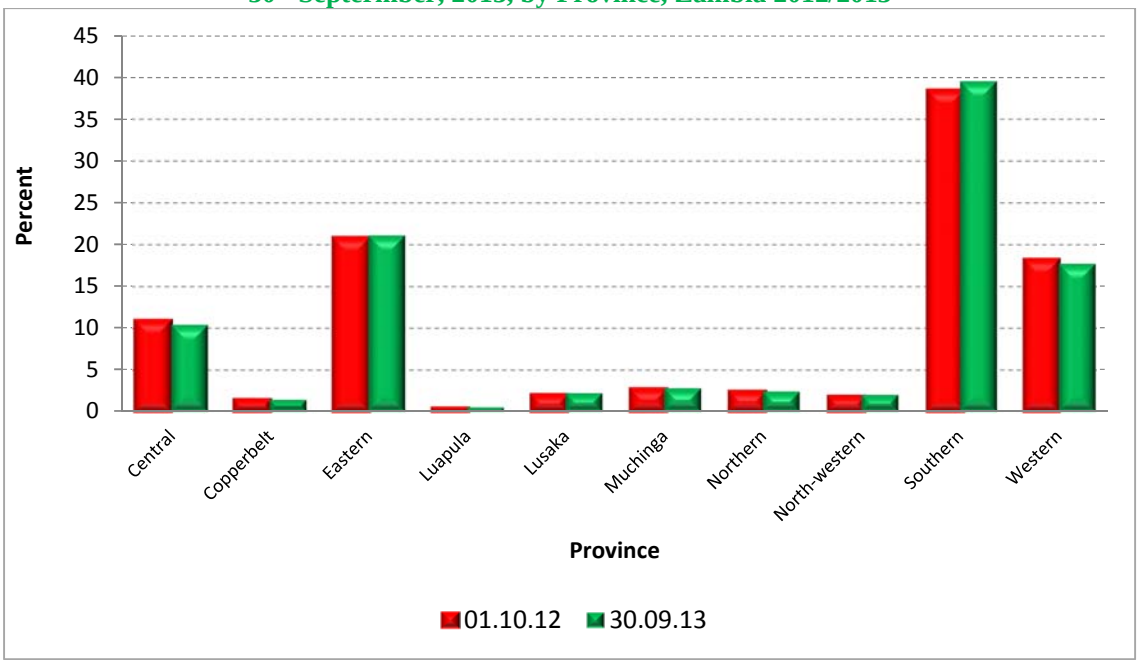
Province	Cattle Raising Households		Cattle Held on 1st October, 2012		Cattle Held on 30th September, 2013	
	Number	Percent	Number	Percent	Number	Percent
Central	43,265	12.7	313,916	11.0	310,193	10.4
Copperbelt	5,754	1.7	43,141	1.5	40,294	1.4
Eastern	108,277	31.9	593,925	20.9	626,100	21.1
Luapula	2,698	0.8	14,603	0.5	15,427	0.5
Lusaka	5,732	1.7	59,737	2.1	64,170	2.2
Muchinga	10,382	3.1	78,271	2.8	83,698	2.8
Northern	14,751	4.3	70,772	2.5	71,833	2.4
North-western	7,772	2.3	55,157	1.9	59,433	2.0
Southern	101,189	29.8	1,093,458	38.5	1,173,606	39.5
Western	39,552	11.7	520,331	18.3	524,187	17.7
Total Zambia	**339,372**	**100.0**	**2,843,311**	**100.0**	**2,968,941**	**100.0**

7.1.2 Number Cattle Raised

Table 7.1 further shows that the cattle population as at 30th September, 2013 was 2,968,941 compared to 2,843,311 that were held as at 1st October, 2012, representingan increase of 4.4 percent over the season. The raising of cattle was reported in all provinces in Zambia. The largest number of cattle was recorded in Southern Province which accounted for 39.5 percent. Luapula Province had the smallest number of cattle accounting for 0.5 percent.

In Southern Province, the cattle population increased by 7.3 percent, from1,093,458 in 2012 to 1,173,606 in 2013. Slight increases in the population of cattle were also recorded in Eastern, Lusaka and Northwestern provinces whereas Central, Copperbelt, Northern and Western provinces recorded reductions.

Figure 7.1: Percentage Distribution of the Number of Cattle held on 1st October, 2012 and on 30th Septermber, 2013, by Province, Zambia 2012/2013



7.1.3 Cattle Slaughtered

Table 7.2 shows the percentage distribution of cattle slaughtered by type of cattle and province. The number of cattle slaughtered during the season was 25,284. Cows accounted for the largest proportion of cattle slaughtered with 44.1 percent followed by trained oxen with 14.6 percent.

Central Province recorded the largest number of cattle slaughtered (5,685 animals) or 22.5 percent, followed by Eastern Province with 4,941 animals while the smallest number of cattle slaughtered (467) was recorded in Luapula Province.

Table 7.2: Percentage Distribution of Cattle Slaughtered by Province, Zambia 2012/2013

Province	Total Cattle Slaughtered	Total Percent	Type of Cattle Slaughtered						
			Cows	Heifers	Bulls	Untrained Oxen	Trained Oxen	Tollies/Steers	Calves
Central	5,685	100.0	53.1	11.1	13.6	3.3	17.5	0.0	1.4
Copperbelt	799	100.0	33.0	20.4	21.4	0.0	25.2	0.0	0.0
Eastern	4,941	100.0	73.9	4.2	2.9	2.5	16.6	0.0	0.0
Luapula	467	100.0	66.9	0.0	19.6	0.0	0.0	13.5	0.0
Lusaka	1,587	100.0	23.6	39.5	8.5	22.6	1.0	4.7	0.0
Muchinga	2,115	100.0	41.6	13.2	39.4	1.7	4.2	0.0	0.0
Northern	2,325	100.0	42.4	10.9	11.5	16.1	10.6	8.5	0.0
Northwestern	1,990	100.0	34.6	0.0	44.0	8.6	12.8	0.0	0.0
Southern	3,934	100.0	13.8	31.8	3.1	29.9	12.8	5.3	3.3
Western	1,440	100.0	30.8	16.6	1.0	11.3	38.8	1.6	0.0
Total Zambia	**25,284**	**100.0**	**44.1**	**14.4**	**13.6**	**10.2**	**14.6**	**2.2**	**0.8**

7.1.4 Number of Cattle Sold

The percentage distribution of cattle sold by type and province is shown in Table 7.3. A total of 739,421 cattle were sold during the season. Trained oxen accounted for the largest number of cattle sold with 57.4 percent, followed by untrained oxen and cows with 30.9 and 7.4 percent, respectively.

At provincial level, Western Province recorded the largest number of cattle sold (650,701) while the smallest number (615) was recorded in Luapula Province.

Table 7.3: Percentage Distribution of Cattle Sold by Province, Zambia 2012/2013

Province	Total Cattle Sold	Total Percent	Type of Cattle Sold						
			Cows	Heifers	Bulls	Untrained Oxen	Trained Oxen	Tollies/ Steers	Calves
Central	11,417	100	23.9	5.6	24.4	9.2	28.0	5.3	3.5
Copperbelt	2,640	100	31.9	27.5	18.5	10.9	10.1	0.0	1.1
Eastern	14,123	100	42.5	11.3	12.3	7.8	20.3	5.7	0.2
Luapula	615	100	35.4	4.6	60.0	0.0	0.0	0.0	0.0
Lusaka	7,755	100	20.1	3.4	60.0	7.0	7.5	1.0	0.9
Muchinga	4,360	100	49.6	14.4	35.5	0.5	0.0	0.0	0.0
Northern	2,852	100	40.8	15.3	16.0	0.0	27.9	0.0	0.0
North-western	991	100	30.0	0.0	43.6	8.6	17.8	0.0	0.0
Southern	43,968	100	41.8	7.0	5.4	11.3	24.0	8.4	2.0
Western	650,701	100	3.3	0.1	0.3	33.9	62.4	0.0	0.0
Total Zambia	**739,421**	**100**	**7.4**	**1.1**	**2.3**	**30.9**	**57.4**	**0.7**	**0.2**

7.1.5 Value of Cattle Sales

The total value of proceeds from the sale of cattle was estimated at K172,671,835.3. The value of cow sales accounted for 32.3 percent of the total, followed by the value of trained oxen sales which accounted for 31.4 percent.

At provincial level, Southern Province received the highest amount (K73,815,873.64) from cattle sales, of which 35.9 percent was from sales of trained oxen and 28.3 percent was from sales of cows. Central Province received the value of K25,544,515.24 in total, of which 29.9 percent was from the sales of trained oxen and 29.2 percent from the sales of bulls while the sale of cows accounted for 21.6 percent of the total.

Table 7.4: Percentage Distribution of Value of Cattle Sales by Province, Zambia 2012/2013

Province	Value of Cattle Sold ZMW ('000)	Total Percent	Type of Cattle						
			Cows	Heifers	Bulls	Untrained Oxen	Trained Oxen	Tollies/Steers	Calves
Central	25,544.52	100	21.6	3.6	29.2	10.4	29.9	2	3.3
Copperbelt	5,655.10	100	33	15.2	20.1	11.4	20.1	0	0.1
Eastern	22,770.78	100	43.9	7.7	13.5	7.1	23.5	4.4	0
Luapula	987.21	100	25.2	4.3	70.5	0	0	0	0
Lusaka	5,975.32	100	40.1	6	14.3	19.2	18.5	1.2	0.6
Muchinga	6,505.48	100	59.2	7.4	32.3	1.1	0	0	0
Northern	5,236.52	100	40.7	16.7	11.4	0	31.2	0	0
North-western	3,818.63	100	78.3	0	13	0	8.7	0	0
Southern	73,815.87	100	28.3	6.6	6.9	12.4	35.9	7.8	1.9
Western	22,362.40	100	25.9	3.2	17.1	6.1	47	0.8	0
Total Zambia	172,671.84	**100**	**32.3**	**6.3**	**14.7**	**9.6**	**31.4**	**4.4**	**1.3**

Table 7.5 shows that out of the total value of cattle sales K172,671,835.3, Southern Province, accounted for 42.7 percent, followed by Eastern and Western provinces with 13.2 percent and 13.0 percent, respectively.

Out of the total value cow sales K55, 704,166.6, Southern Province recorded the highest, accounting for 37.5 percent, followed by Eastern Province with 17.9 percent while Western Province recorded 10.4 percent.

Table 7.5: Percentage Distribution of Value of Cattle Sales by Province, Zambia 2012/2013

Province	Total Cattle	Cows	Heifers	Bulls	Untrained Oxen	Trained Oxen	Tollies/ Steers	Calves
Central	14.8	9.9	8.4	29.5	15.9	14.1	6.7	36.1
Copperbelt	3.3	3.4	7.9	4.5	3.9	2.1	0.0	0.3
Eastern	13.2	17.9	16.0	12.1	9.7	9.9	13.3	0.4
Luapula	0.6	0.4	0.4	2.7	0.0	0.0	0.0	0.0
Lusaka	3.5	4.3	3.3	3.4	6.9	2.0	0.9	1.6
Muchinga	3.8	6.9	4.4	8.3	0.4	0.0	0.0	0.0
Northern	3.0	3.8	8.0	2.3	0.0	3.0	0.0	0.0
North-western	2.2	5.4	0.0	2.0	0.0	0.6	0.0	0.0
Southern	42.7	37.5	45.0	20.1	55.1	48.9	76.8	61.7
Western	13.0	10.4	6.5	15.1	8.2	19.4	2.3	0.0
Total Percent	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Total Zambia	**172,671,835.3**	**55,704,166.6**	**10,895,230.6**	**25,364,362.9**	**16,655,175.4**	**54,216,604.0**	**7,520,286.0**	**2,316,009.8**

7.2 Pigs

7.2.1 Households Raising Pigs

Table 7.6 shows the distribution of pig-raising households and the number of pigs raised by province. During the 2012/2013 Agricultural Season, about 249,358 households reported to be raising pigs country-wide and Eastern Province recorded the highest number of such, accounting for 45.1 percent of the total, followed by Southern Province with a proportion of 20.9 percent while Lusaka Province had the smallest number of pig raising households accounting for 1.1 percent of the total.

Table 7.6: Percentage Distribution of Pigs Raised by Province, Zambia 2012/2013

Province	Pig Raising Households		Pigs Held on 1st October, 2012		Pigs Held on 30th September, 2013	
	Number	Percent	Number	Percent	Number	Percent
Central	12,869	5.2	60,843	4.2	71,116	5.3
Copperbelt	7,757	3.1	75,015	5.2	72,048	5.3
Eastern	112,516	45.1	715,411	49.6	624,281	46.1
Luapula	12,536	5.0	40,735	2.8	39,928	2.9
Lusaka	2,739	1.1	111,786	7.8	33,372	2.5
Muchinga	12,844	5.2	56,023	3.9	58,694	4.3
Northern	19,908	8.0	78,317	5.4	68,240	5.0
North-western	8,485	3.4	33,579	2.3	53,252	3.9
Southern	52,053	20.9	231,883	16.1	288,816	21.3
Western	7,651	3.1	37,779	2.6	44,642	3.3
Total Zambia	**249,358**	**100.0**	**1,441,371**	**100.0**	**1,354,389**	**100.0**

7.2.2 Number of Pigs Raised

The population of Pigs as at 30th September 2013 was estimated at 1,354,389 compared to 1,441,371 that were held at 1st October 2012, which is a decrease of about 6.0 percent. The raising of Pigs was reported in all the nine provinces of Zambia.

Survey results show that Eastern Province recorded the highest number accounting for 46.1 percent of the total pigs raised, followed by Southern Province with 21.3 percent. Lusaka Province had the lowest number of pigs raised, which accounted for 2.5 percent.

Eastern Province recorded the largest percentage of pigs in the country, accounting for 49.6 percent as at 1st October, 2012 and 46.1 percent as at 30th September, 2013.

7.2.3 Number of Pigs Slaughtered

Table 7.7 shows the distribution of pigs slaughtered by province. The table further shows that an estimated 112,193 Pigs were slaughtered during the 2012/2013 Agricultural Season. The highest number of slaughtered Pigs was recorded in Eastern Province accounting for 41.7 percent of the total while Northern Province accounted for 15.1 percent, followed by Copperbelt Province with 12.1 Percent.

Table 7.7: Percentage Distribution of Pigs Slaughtered by Province, Zambia 2012/2013

Province	Number	Percent
Central	6,196	5.5
Copperbelt	13,544	12.1
Eastern	46,794	41.7
Luapula	6,829	6.1
Lusaka	2,139	1.9
Muchinga	8,009	7.1
Northern	16,918	15.1
North-western	3,632	3.2
Southern	5,875	5.2
Western	2,256	2.0
Total Zambia	**112,193**	**100.0**

7.2.4 Number of Pigs Sold

An estimated 226,874 pigs were sold during the 2012/2013 Agricultural Season. The highest number was recorded in Eastern Province which accounted for 27.6 percent of the total pigs sold, followed by Southern Province with 26.7 percent.

Table 7.8: Percentage Distribution of Pigs Sold by Province, Zambia 2012-/013					
Province	Pig Sales		Value of Pig Sales		Mean cost per animal
	Number	Percent	ZMW ('000)	Percent	ZMW
Central	15,009	6.6	3,751.50	7.7	249.95
Copperbelt	21,475	9.5	6,449.67	13.2	300.33
Eastern	62,562	27.6	10,826.29	22.1	173.05
Luapula	8,073	3.6	1,827.45	3.7	226.37
Lusaka	6,574	2.9	4,471.13	9.1	680.12
Muchinga	11,949	5.3	2,417.37	4.9	202.31
Northern	19,650	8.7	3,804.15	7.8	193.60
North-western	6,488	2.9	1,473.81	3	227.16
Southern	60,519	26.7	10,827.36	22.1	178.91
Western	14,575	6.4	3,173.14	6.5	217.71
Total Zambia	**226,874**	**100.0**	**49,021.86**	**100.0**	**216.07**

7.2.5 Value of Pig Sales

The value of proceeds from sales of pigs was estimated at K49 million. Eastern and Southern provinces accounted for 22.1 percent each, of the total value of sales followed by Copperbelt Province with 13.2 percent. North-western Province recorded the lowest value of sales accounting for 3.0 percent.

Lusaka Province recorded the highest average cost per animal of about K680 whereas Eastern Province recorded the lowest average cost per animal with K173.

7.3 Goats

7.3.1 Households Raising Goats

Table 7.9 shows the distribution of goat-raising households and the number of goats raised by province. A total of 400,897 households raised goats during the 2012/2013 Agricultural season. The largest proportion of these households was recorded in Southern Province which accounted for 21.4 percent of the total.

Table 7.9: Percentage Distribution of Goats Raised by Province, Zambia 2012/2013						
Province	Households Raising Goats		Goats Held on 1st October, 2012		Goats Held on 30th September, 2013	
	Number	Percent	Number	Percent	Number	Percent
Central	60,491	15.1	443,875	17.6	481,550	18.1
Copperbelt	15,831	3.9	138,704	5.5	117,093	4.4
Eastern	66,685	16.6	368,477	14.6	362,593	13.7
Luapula	40,680	10.1	183,602	7.3	175,420	6.6
Lusaka	10,265	2.6	80,864	3.2	82,651	3.1
Muchinga	29,760	7.4	144,303	5.7	143,270	5.4
Northern	51,138	12.8	221,827	8.8	209,632	7.9
North-western	35,004	8.7	203,002	8.0	204,160	7.7
Southern	85,593	21.4	722,366	28.6	853,830	32.2
Western	5,450	1.4	20,746	0.8	25,277	1.0
Total Zambia	**400,897**	**100.0**	**2,527,766**	**100.0**	**2,655,476**	**100.0**

7.3.2 Number of Goats Raised

The Goat population as at 30th September 2013 was estimated at 2,655,476, indicating an increase of about 5.1 percent compared to 2,527,766 that was recorded in October 2012. The raising of Goats was reported in all the nine provinces of Zambia.

Survey results show that Southern Province accounted for the highest number of goats raised accounting for 32.2 percent of the total followed by Central Province with 18.1 percent while Western Province had the lowest number which accounted for 1.0 percent.

7.3.3 Number of Goats slaughtered

An estimated 223,071 Goats were slaughtered during the 2012/2013 Agricultural Season. The highest number of slaughtered goats was recorded in Northern Province which accounted for 20.1 percent. Western Province had the smallest number of slaughtered goats accounting for 0.2 percent of the total.

Table 7.10: Percentage Distribution of Goats Slaughtered by Province, Zambia 2012/2013

Province	Goats slaughtered	
	Number	Percent
Central	36,385	16.3
Copperbelt	14,386	6.4
Eastern	26,091	11.7
Luapula	23,655	10.6
Lusaka	7,754	3.5
Muchinga	19,215	8.6
Northern	44,826	20.1
North-western	19,736	8.8
Southern	30,597	13.7
Western	426	0.2
Total Zambia	**223,071**	**100.0**

7.3.4 Number of Goats sold

An estimated 362,112 Goats were sold during the 2012-2013 Agricultural Season. The highest number of Goats sold was recorded in Southern Province which accounted for 23.1 percent of the total Goats sold. Central and North-western provinces accounted for 21.5 percent and 10.6 percent respectively, while Western Province had the smallest number of goats sold accounting for 0.7 percent.

Table 7.11: Percentage Distribution of Goats Sold by Province, Zambia 2012.2013					
Province	Goat Sales		Value of Goat Sales		Mean Cost per Animal
	Number	Percent	ZMW ('000)	Percent	ZMW
Central	77,703	21.5	12,337.6	22.7	158.8
Copperbelt	31,741	8.8	4,688.7	8.6	147.7
Eastern	30,955	8.5	3,882.2	7.2	125.4
Luapula	30,907	8.5	5,853.3	10.8	189.4
Lusaka	11,253	3.1	1,422.9	2.6	126.4
Muchinga	21,977	6.1	3,079.6	5.7	140.1
Northern	33,073	9.1	4,921.1	9.1	148.8
North-western	38,238	10.6	5,734.7	10.6	150.0
Southern	83,752	23.1	12,147.2	22.4	145.0
Western	2,513	0.7	199.0	0.4	79.2
Total Zambia	**362,112**	**100.0**	**54,266.3**	**100.0**	**149.9**

7.3.5 Value of Goat Sales

The value of proceeds from sales of Goats sold in the 2012-2013 Agricultural Season was estimated at K54.3million. At the end of the season, Central Province accounted for 22.7 percent of the total followed by Southern Province with 22.4 percent.

Luapula Province recorded the highest average cost per animal of about K189, while Western Province recorded the lowest average cost per animal of K79.20.

7.4 Sheep

7.4.1 Households Raising Sheep

There were 16,643 sheep-raising households during the season. The largest percentage of these was recorded in Eastern Province, which accounted for 32.1 percent of the total. Southern Province accounted for 26.8 percent while Lusaka Province had the smallest number of sheep raising households, accounting for 0.5 percent.

7.4.2 Number of Sheep Raised

Table 7.12 shows the distribution of sheep-raising households and the number of sheep raised by province. The population of sheep as at 30th September 2013 was estimated at 93,185 compared to 103,477 that were held on 1st October 2012, indicating a decrease of about 9.9 percent. The raising of Sheep was reported in all the provinces of Zambia.

Table 7.12: Percentage Distribution of Sheep Raised by Province, Zambia 2012/2013						
Province	Households Raising Sheep		Sheep held on 1st October, 2012		Sheep held on 30th September, 2013	
	Number	Percent	Number	Percent	Number	Percent
Central	783	4.7	3,018	2.9	4,954	5.3
Copperbelt	1,146	6.9	7,571	7.3	6,753	7.2
Eastern	5,347	32.1	31,601	30.5	29,301	31.4
Luapula	921	5.5	3,783	3.7	3,506	3.8
Lusaka	75	0.5	437	0.4	524	0.6
Muchinga	607	3.6	2,674	2.6	2,309	2.5
Northern	2,272	13.7	16,251	15.7	9,538	10.2
North Western	767	4.6	6,447	6.2	8,449	9.1
Southern	4,465	26.8	29,097	28.1	26,650	28.6
Western	260	1.6	2,598	2.5	1,202	1.3
Total Zambia	**16,643**	**100.0**	**103,477**	**100.0**	**93,185**	**100.0**

Survey results show that Eastern Province accounted for the highest number of sheep raised, accounting for 31.4 percent of the total sheep raised followed by Southern Province with 28.6 percent. Lusaka Province recorded the smallest number of sheep raised, accounting for 0.6 percent.

7.4.3 Number of Sheep Slaughtered

A total of 6, 476 Sheep were slaughtered during the 2012/2013 Agricultural Season. The highest number of slaughtered Sheep was recorded in Northern Province which accounted for 24.5 percent of the total sheep slaughtered followed by Southern Province with 15.2 percent. The lowest number was recorded in Central Province which accounted for 2.6 percent while Lusaka Province recorded no slaughters.

Table 7.13: Percentage Distribution of Sheep Slaughtered by Province, Zambia 2012/2013		
Province	Number	Percent
Central	169	2.6
Copperbelt	499	7.7
Eastern	722	11.1
Luapula	342	5.2
Lusaka	0	0.0
Muchinga	326	5.0
Northern	1,584	24.5
North-western	986	15.2
Southern	940	14.5
Western	909	14.0
Total Zambia	**6,476**	**100.0**

7.4.4 Number of Sheep Sold

An estimated 10,976 Sheep were sold during the 2012/2013 Agricultural Season. At the end of the season, the highest number of Sheep sales was recorded in Southern Province which accounted for 51.7 percent of the total sales, while the lowest was recorded in Lusaka Province which accounted for 1.2 percent.

Table 7.14: Percentage Distribution of Sheep Sold by Province, Zambia 2012/2013					
Province	Sheep Sales		Value of Sheep Sales		Mean Cost per Animal
	Number	Percent	ZMW ('000)	Percent	ZMW
Central	202	1.8	20.07	1.0	99.35
Copperbelt	377	3.4	52.14	2.5	138.30
Eastern	840	7.7	146.88	7.0	174.86
Luapula	422	3.8	88.48	4.2	209.67
Lusaka	132	1.2	19.75	0.9	149.63
Muchinga	1,397	12.7	244.64	11.6	175.12
Northern	1,212	11.0	294.53	14.0	243.01
North-western	490	4.5	243.90	11.6	497.75
Southern	5,677	51.7	954.15	45.2	168.07
Western	227	2.1	45.45	2.2	200.21
Total Zambia	**10,976**	**100.0**	2,109.98	**100.0**	192.24

7.4.5 Value of Sheep Sales

In the 2012/2013 Agricultural Season the value of proceeds from sales of Sheep was estimated at K2.1million. Southern Province accounted for 45.2 percent of the total sheep sold while Lusaka Province had the lowest value of sales which accounted for 0.9 percent.

Northwestern Province recorded the highest average cost per animal of K497.75 whereas Cental Province had the lowest average cost per animal of K99.35.

7.5 Donkeys

7.5.1 Households Raising Donkeys

Countrywide, a total of 3,213 households raised donkeys during the season. Southern Province recorded the largest proportion of such, accounting for 48.1 percent of the total.

7.5.2 Number of Donkeys Raised

Table 7.15 shows the distribution of households raising donkeys and the number of donkeys raised by province. The number of donkeys raised during the 2012-2013 Agricultural Season increased by 14.8 percent from 12,030 at the start of the season to 13,813 by the end of the season. The raising of donkeys was reported in all the provinces except Muchinga.

Survey results show that, Southern Province accounted for the highest number of donkeys raised, accounting for 55.0 percent of the total donkey population followed by Eastern Province with 17.0 percent.

Table 7.15: Percentage Distribution of Donkeys Raised by Province, Zambia 2012/2013						
Province	**Households Raising Donkeys**		**Donkeys held on 1st October, 2012.**		**Donkeys held on 30th September, 2013.**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Central	458	14.3	1,829	15.2	1,604	11.6
Copperbelt	184	5.7	665	5.5	355	2.6
Eastern	248	7.7	833	6.9	2,353	17.0
Luapula	148	4.6	295	2.5	0	0.0
Lusaka	95	3.0	390	3.2	286	2.1
Muchinga	0	0.0	0	0.0	0	0.0
Northern	33	1.0	66	0.5	66	0.5
North-western	71	2.2	281	2.3	157	1.1
Southern	1,544	48.1	5,998	49.9	7,592	55.0
Western	431	13.4	1,671	13.9	1,399	10.1
Total Zambia	**3,213**	**100.0**	**12,030**	**100.0**	**13,813**	**100.0**

Chapter 8: LIVESTOCK MANAGEMENT

8.0 Introduction

Livestock management refers to all activities pertaining to the control and organisation of livestock production. It is a very important aspect in raising livestock because the output depends on the management system employed. This chapter highlighethe reasons farmers give for keeping a particular type of livestock and methods through which they keep the livestock healthy and productive. This includes several management practices such as de-worming, vaccination and tick-control.

8.1 Cattle

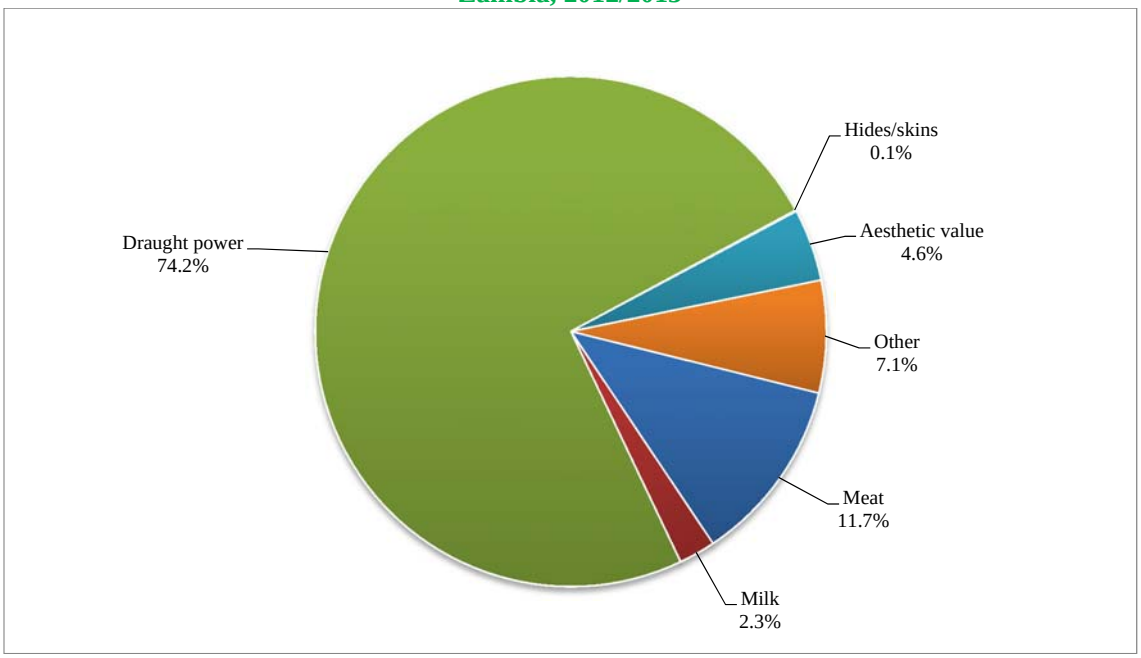
8.1.1 Purposes of Raising Cattle

The distribution of households raising Cattle that gave reason for raising cattle is shown in Table 8.1 and Figure 8.1. During the 2012/2013 Agricultural Season, a total number of 334,809 agricultural households responded to questions of livestock management. Agricultural households raise cattle for different purposes among which are: provision of meat, milk, draught power, skins, for aesthetic value and others. A large proportion of responding agricultural households (74.2 percent), raised cattle for draught power followed by those who raised cattle for meat at 39,246 (11.7 percent).Very few of the agricultural households raised cattle for hides/skins with only 266 (0.1 percent).

Table 8.1: Distribution of Households Raising Cattle that Gave Reason for Raising Cattle by Reason, Zambia 2012/2013

Reason	Agricultural Households Raising Cattle	
	Responding Household	Percent
Meat	39,246	11.7
Milk	7,778	2.3
Draught power	248,358	74.2
Hides/skins	266	0.1
Aesthetic value	15,317	4.6
Other	23,844	7.1
Total	**334,809**	**100.0**

Figure 8.1: Percentage Distribution of Household Raising Cattles by Reason for Raising Cattle, Zambia, 2012/2013



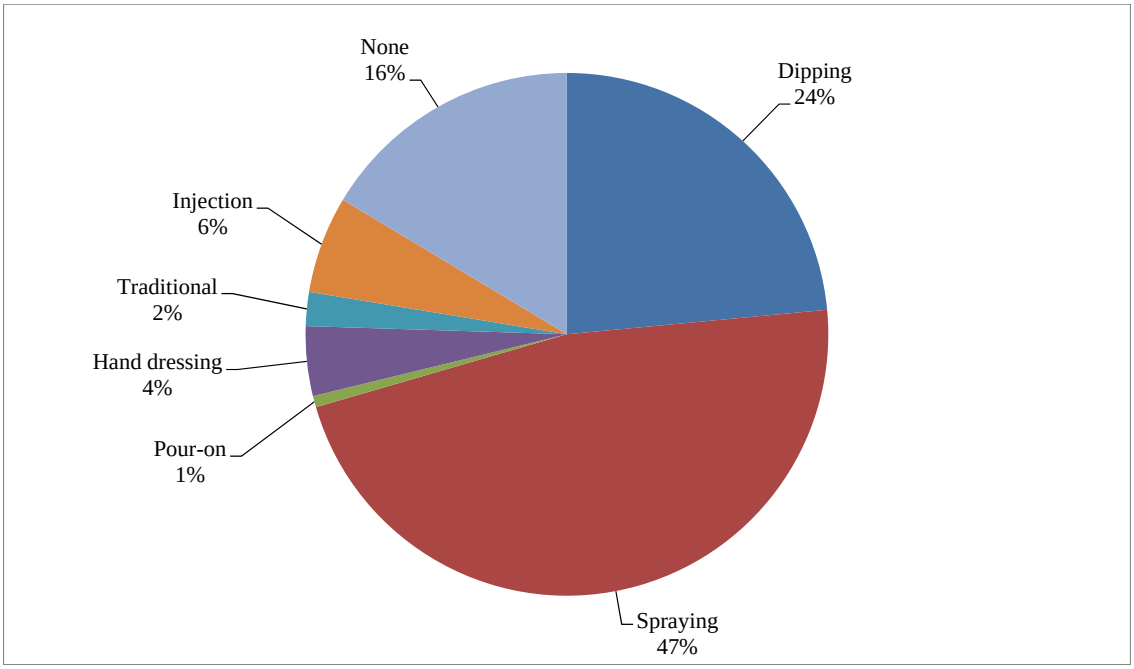
8.1.2 Tick Control Methods

Tick control on cattle is done in many different ways such as dipping, spraying, pour-on, hand dressing, traditional, injection just to mention but a few. From the total number of 334,809 households raising cattle that responded to questions of livestock management, 47 percent used spraying as a tick control method. This was followed by those who used dipping at 23.5 percent. The administration of injections as a tick control method was used by six percent of the household. The least used tick control method was 'pour-on' used by 0.7 percent of the cattle-raising households that responded.

Table 8.2: Distribution of Households Raising Cattle by Tick Control Method Used, Zambia 2012/2013

Tick Control Method	Households Using Method	
	Number	Percent
Dipping	78,591	23.5
Spraying	157,363	47.0
Pour-on	2,459	0.7
Hand dressing	14,277	4.3
Tradition	7,166	2.1
Injection	20,175	6.0
None	54,779	16.4
Total	**334,809**	**100.0**

Figure 8.2: Distribution of Households Raising Cattle by Tick Control Method Used, Zambia 2012/2013



8.1.3 Challenges faced by Cattle Raising Households

There are a number of challenges faced by households that raise cattle. During the 2012-2013 Agricultural Season, challenges reported were diseases, lack of livestock extension services, inadequate pasture, distance to water points, distance to dip tanks, lack of credit facilities, lack of market, theft, lack of access to veterinary drugs and distance to service centres. Diseases were reported to be the greatest challenge faced by 194,545 (58.1 percent) household followed by inadequate pasture reported by 25,287 (7.6 percent) of the households.

Table 8.3: Distribution of Households Raising Cattle by Challenges Faced in Raising Cattle, Zambia 2012/2013

Challenges Faced	Number	Percent
Disease	194,545	58.1
Lack of livestock extension services	16,096	4.8
Inadequate pasture	25,287	7.6
Distance to water points	16,103	4.8
Distance to dip tanks	7,052	2.1
Lack of credit	2,820	0.8
Lack of market	594	0.2
Lack of handling facilities(crash pens)	3,183	1.0
Theft	3,646	1.1
Lack of access to veterinary drugs	12,832	3.8
Distance to service centres	1,776	0.5
None	47,278	14.1
Other	3,554	1.1
Not Stated	44	0.0
Total	**334,809**	**100.0**

8.1.4 Sources of Drugs and Vaccines

Table 8.4 shows the percentage distribution of cattle-raising households by source of Vaccine and drugs. During the 2012/2013 Agricultural Season, 194,545 (or 58.1 percent of the 334,809 reporting) reported having cattle that were infected and 167,992 (86.4 percent) households managed to treat their cattle. A total of 167,992 cattle- raising households gave information on the sources of the drugs and vaccines they used to treat their cattle. Veterinary departments were the major sources of drugs cited by 69,023 (41.1 percent) households followed by Traders (37 percent) of cattle raising households.

Table 8.4: Percentage Distribution of Households Raising Cattle by Source of Vaccine and Drugs, Zambia 2012/2013

Source of Drugs and Vacinnes	Households with infected Cattle	
	Number	Percent
Another Farmer	19,371	11.5
Veterniary Department	69,023	41.1
Trader	62,075	37.0
NGOs	9,083	5.4
Other	8,440	5.0
Total	**167,992**	**100.0**

8.1.5 Production Systems

Farmers raising cattle use various types of production systems, namely industrial-intensive, semi-intensive, extensive/pastoral, free-range and backyard systems.

Industrial-Intensive is a commercial method of raising livestock, which often requires a high level of intensive management (Zero grazing). Semi-intensive is a commercial method of raising livestock that combines free-range and supplementary feeding. In extensive/pastoral, animals are allowed to graze on natural pastures without supplementary feeding, while in free-range, animals are left to fend for themselves. In backyard system, animals are raised within the premises of the residence and food is brought to them.

During the 2012/2013 Agricultural Season, the free-range production system was found to have been the most widely used as 181,090 (54.1 percent) of the responding households. This was followed by extensive/pastoral system used by 107,640 (32.1 percent) households.

Table 8.5: Distribution of Households Raising Cattle by Production System, Zambia 2012/2013

Production System	Household Reporting	
	Number	Percent
Industrial - intensive	7,146	2.1
Semi-intensive	30,597	9.1
Extensive/pastoral	107,640	32.1
Free-range	181,090	54.1
Backyard	8,207	2.5
Not Stated	129	0.0
Total	**334,809**	100.0

Chapter 9: HOUSEHOLD AGRICULTURAL ASSETS

9.0 Introduction

This chapter presents information on the types of assets and number of households owning them, number of assets in working condition as at the opening of the season and at the close of the season and the average resell value of the assets as determined by the main respondent.

9.1 Type of Assets and Number of Households Owning Assets

Table 9.1 shows the distribution of agricultural households owning assets by type of asset, number owned, condition of the assets, number owned, and resell value of the assets. The most common types of assets that households owned during the 2012/2013Agricultural Season were hoes, bicycles, radios, solar panels, ploughs, television sets and sprayers. However, other assets such as hand driven tractors, rump press/oil expeller and tractors were owned by a few number of households.

Table 9.1: Distribution of Agricultural Households Owning Assets by Type of Asset, Number Owned and Resell Value of the Assets, Zambia 2012/2013

Assets	Number of Households Reporting	Number of Assets in working condition on 1st Oct 2012	Number of Assets in Working Condition as at30th September, 2013	Average Price if Sold (ZMW)
Ploughs	314,495	444,364	445,780	1,036.48
Harrows	2,348	64,861	68,116	1,246.80
Cultivators	2,958	55,358	51,978	1,322.04
Rippers	1,107	28,301	28,842	830.27
Tractors	93	3,802	3,599	32,074.60
Hand driven tractor	349	1,953	2,068	1,490.51
Scotch carts	8,343	125,520	121,510	18,721.17
Water pumps	9,946	25,721	24,354	17,344.07
Trucks/Lorries	2,099	7,220	5,400	93,577.31
Pick-ups/ Vans/Cars	11,99	36,023	29,988	39,021.72
Motorcycles	15,874	39,884	37,503	4,168.46
Bicycles	596,180	1,126,069	1,069,816	698.57
Hammer mills	3,757	25,624	24,434	17,873.06
Hand hammer mills	542	16,268	15,810	898.68
Rump press/ Oil expeller	39	3,345	3,244	539.42
Sprayers	12,531	284,020	275,206	642.60
Sheller	1,774	14,646	10,792	1,557.53
Radio	146,990	996,142	963,159	1,601.31
Television	5,373	292,186	285,100	417.44
Treadle pump	222	26,165	26,833	574.81
Solar panel	7,084	583,021	587,295	1,501.42
Hoe	287,106	5,535,839	5,676,269	24.46
Castration equipment	1,606	51,605	51,051	161.70

9.1.1 Households Owning Ploughs

The total number of households owning ploughs was 314,495. The number of ploughs that households had in working condition as at 1st October 2012 were 444,364 and by 30th September, 2013, 445,780 were reported to be working condition. The average resell value of ploughs was K1, 036.48.

9.1.2 Households Owning Hoe

From Table 9.1, the number of households that reported owning hoes during the season was 287,106. As at 1st October, 2012, 5,535,839hoes were in working condition. As at 30th September, 2013, 5,676,269 hoes were in working condition. The average resell value of a hoe was K24.48.

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