



UGANDA BUREAU OF STATISTICS



THE REPUBLIC OF UGANDA

UGANDA NATIONAL HOUSEHOLD SURVEY 2005/2006



REPORT ON THE AGRICULTURAL MODULE

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April 2007

FOREWORD

The Uganda National Household Survey (UNHS) 2005/06 is the latest in a series of household surveys that started in 1989. The survey comprised of five modules namely the Socio-economic, agriculture, Community, Price and the Qualitative Modules. This report presents the major findings based on the Agricultural module (i.e. Second Season of 2004 and the First Season of 2005). The overall objective of Agricultural Module was to collect data for estimating agricultural production namely crop production and livestock and poultry numbers.

The Module covered the household crop farming enterprise particulars (with emphasis on land, crop area, inputs, outputs and other allied characteristics). The components included- investments on land; crop areas; labour and non labour inputs for the Second Season of 2004 and the First Season of 2005; Crop Disposition; Land Rights, Disputes and Certificates; Livestock numbers ; Small Animals and Poultry numbers; Agricultural Extension Services and Technologies. The data in this report gives results for the two seasons mentioned above.

We are grateful to the Government of Uganda, the World Bank and the UK Department for International Development for the financial assistance that enabled the survey to be conducted. We would also like to acknowledge the technical backstopping provided by the Institute of Statistics and Applied Economics during the data analysis phase. Our gratitude is extended to all the field staff who worked tirelessly to successfully implement the survey and to the survey respondents who provided us the information on which this report is based. We sincerely thank the Local Governments and other stakeholders, for the unreserved support during the data collection. The Bureau is greatly indebted to these governments for the invaluable cooperation.

There is a lot of information from the survey that has not been analyzed and included in this report and yet important for policy formulation and overall planning. The Bureau would like to encourage stakeholders to utilize the rich datasets that exists in its data bank to do further analysis so as to better inform future policy debate.



John B. Male-Mukasa
Executive Director

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LIST OF ACRONYMS

Ag HHs	Agricultural Households
Ag Mod	Agricultural Module
APS	Average Plot Size
CF	Conversion Factors
CV	Coefficient of Variation
DFID	The UK Department for International Development
EA	Enumeration Area
EFMPIO	Economic and Financial Management Project II
EPRC	Economic Policy Research Center
FAO	Food and Agricultural Organization
FAS	Food and Agricultural Statistics
FMS	First Monitoring Survey
GPS	Global Positioning System
Ha	Hectares
IDP	Internally Displaced People
IHS	Integrated Household Survey
ICBT	Informal Cross Border Trade
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
Mt	Metric tons
NAADS	National Agricultural Advisory Services
NCAL	National Census of Agriculture and Livestock
NGO	Non-Government Organization
PASS	Permanent Agricultural Statistics System
PCA	Pilot Census of Agriculture 2003
PEAP	Poverty Eradication Action Plan
PHC	Population and Housing Census 2002
PMA	Plan for Modernization of Agriculture
PPS	Probability Proportional to Size
SE	Standard Errors
SMS	Second Monitoring Survey
TMS	Third Monitoring Survey
UBOS	Uganda Bureau of Statistics
UNDP	United Nations Development Organization
UNHS	Uganda National Household Survey
FIDS	Farmer Institutional Development Scheme
PEDAS	Prioritizing Enterprises to Demand for Advisory Services

EXECUTIVE SUMMARY

Due to paucity of Food and Agricultural Statistics (FAS), it was decided to include an Agricultural Module in the UNHS 2005/06. Crop surveys were included as modules in the Third Monitoring Survey (TMS) of 1995/96 and the Uganda National Household Survey 1999/00.

The results have once again demonstrated that it is possible to carry out a country wide agricultural survey through the household approach and to provide reasonably accurate estimates of area and production of major crops, livestock and poultry numbers and other characteristics at national and regional levels.

The main objective of the UNHS 2005/06 Agricultural Module was to collect high quality and timely data on the agricultural sector. In particular the module was intended to:

Give a better descriptive picture of Uganda's agricultural economy, and deeper insight into factors affecting farm incomes. These would include a better understanding of the influence of farmers' resources and marketing opportunities on farm-household income.

Provide useful guidance to decision-makers charged with implementing the Plan for Modernization of Agriculture (PMA) in line with the Poverty Eradication Action Programme (PEAP).

Provide both descriptive and analytical reports on current farm-household structure, technology use, level of land, labor and capital resources, and degree of involvement in both output and input markets.

During the first field visit (May – October 2005) agricultural production data was collected on the second season of 2004 (July – December, 2004), while the second visit (November 2005 – April 2005) collected agricultural production data of the First Season of 2005 (January – July 2005).

The data in the report is therefore categorized between Second Season of 2004 and First Season of 2005 which when combined gives results for the two seasons' data.

The UNHS 2005/06 estimated the numbers of Agricultural Households (Ag HHs) to be 4.2 million, which was 78.8 per cent of all households. This was an increase of 26 percent from the number reported in UNHS 1999/2000.

About 79 per cent of the Ag HHs owned land with 53 per cent also operating land under use rights. The results on average agricultural household (holding) size from the Second Season of 2004 show that the average holding size by region was similar to that one of the First Season of 2005. This is expected because holding characteristics data do not change fast. The national average agricultural household land under use rights was 0.4 Ha while the national average agricultural household land owned was 0.9 Ha

It could be argued that the average size of the agricultural household (holding) is the 0.9 Ha owned plus the 0.4 Ha under use rights, making a total of 1.3 Ha. However, all the earlier surveys did not specifically ask about the land under use rights. So one assumes respondents were only giving land that they owned during these earlier surveys.

The proportion of Ag HHs with land less than two hectares was about 80 per cent. About 70 per cent of the parcels were within the Enumeration Area. The parcels outside the district accounted for only one percent.

It has been established that about 50 per cent of the Ag HHs owned one parcel. Indeed about 90 per cent of the Ag HHs own three or less parcels. The distribution of sizes of parcels used was similar to that of the parcels owned.

Further, there were no significant differences in the average parcel sizes between annual and perennial crops. However, the parcels rented out, fallow and woodlots tended to be large especially in the Central Region.

Data was collected on owned land and on land with use rights. Out of the 4.2 million Agricultural Households in Uganda, 3.3 million (or 78.7 %) owned land, while another 2.2 million agricultural households (52.6 %) had access to land with only use rights.

A total of slightly above 6.4 million parcels of land were estimated to be owned giving an average number of parcels owned per Agricultural Household of two (2). In Eastern and Northern Regions, most of the parcels were inherited from the Heads of Households while for Central and Western Regions, the parcels were purchased. In addition, it was found out that there were 26.2 million plots operated during the Second Season of 2004 and 32.1 million during the First Season of 2005.

Although the Ag Mod covered many crops, this report concentrates on only nine crops namely: Maize, Finger millet, Sorghum, Rice, Beans, Groundnuts, Bananas (Food Type) Cassava, and Sweet Potatoes. Tables were generated for: plots, area and production; estimates for "within District" which are provided in this report. Information on estimates for "within Enumeration Areas (EAs)" and "outside the district" can be made available from UBOS.

The total production of maize increased by more than three fold from 0.7 million Mt to 2.4 million Mt during the period 1999/2000 to 2005/06 while Rice production increased four fold during the same period from 42,000 Mt to 180,000 Mt . Finger Millet and Sorghum registered reasonable increases. The trend for beans production showed an increase over the years 1995/96, 1999/2000, 2005/06. Banana (Food type) production showed a downward trend possibly due to the Banana Wilt Disease which might have adversely affected the crop. Cassava production also experienced a downward trend since 1995/96 and this could be due to the African Cassava Mosaic Disease that spread widely. Similarly Sweet Potatoes, production showed a downward

trend. Perhaps, poor rainfall distribution or disease or both could provide possible explanation for this performance.

The national cattle herd was estimated at 7.5 Million. Of these, nearly 1.3 million were exotic/cross and the majority (0.9 Million) were in the Western Region. The Central Region with nearly 2.0 Million indigenous cattle had the largest share of this breed. Cattle population trend showed an increase over the years.

At the national level, the number of goats, sheep and pigs was estimated at 8.1, 1.2 and nearly 1.7 million, respectively. The Western Region led in goats rearing with 2.9 million (36.3%); the Northern Region led in sheep rearing with 0.5 million (41.7%); the Central Region on the other hand led in pig rearing with 0.8 million (47.1%)

The total number of chicken was estimated at 23.5 million, of which 3.7 million (15.7 %) were exotic / cross. The local chicken/backyards were 19.8 million (84.3 %). Generally, over the years, the chicken population has been increasing except those reported in the PHC 2002 where the number was low possibly due to under-reporting.

The use of non-labour inputs is still very low especially the improved seeds which were reported by only 6.8% of all the parcels; manure 6.8%; chemical fertilizers 1.0% and the combined pesticides, herbicides, and fungicides by 3.4%.

The number of labour days for both seasons totaled to 1,263 million and hired labour constituted 116 million (9.2%) with Western Region using the highest labour days (47 million).

Out of 24.1 million crop plots, 4.7 million (19.4%) reported to have experienced rain shortage as the main cause of crop damage.

Generally, there were small increments between 2000 and 2005 for practice of three soil conservation measures namely bunds, terracing and mulching.

Agricultural extension services are still poor. Only 300,000 (7.3%) of the 4.2 million Ag HHs reported having been visited by an extension worker with the Northern Region reporting the least (14%) of those visited.

About 10 percent of the Ag HHs reported a household member having participated in a training programme organized by NAADS. In addition, about 5.4% of the Ag HHs had at least a member in Farmer Groups under NAADS.

However, it should be noted that at the time of the survey, NAADS coverage was only in 282 (29 %) out of 957 sub-counties and there was no stratification between NAADS sub-counties (or even

EAs) and non-NAADS ones. So these results are unlikely to properly reflect the coverage by NAADS even where it operates.

About 44 per cent of Ag HHs were willing to pay for information on improved varieties while 68 percent of Ag HHs had no access to information on farm management.

Finally, the most common source of information regarding improved varieties was reported by 60 percent of the farmers as by talking to other farmers.

CHAPTER ONE: INTRODUCTION

1.1 Background

As a key contributor to the monitoring framework, Uganda Bureau of Statistics (UBOS) has conducted national household surveys large-scale surveys since 1989. The surveys have had a nationwide coverage with varying objectives and core modules. The UNHS 2005/06 round of household surveys was yet another in a series conducted by UBOS.

1.2 Survey Objectives

The main objective of the Uganda National Household Survey (UNHS 2005/06) was to collect high quality and timely data on demographic, social and economic characteristics of the household population for national and international development frameworks.

The main objective of the UNHS 2005/06 Agricultural Module was to collect high quality and timely data on the farm economy. In particular the crop module was intended to:

- i) Give a better descriptive picture of Uganda's farm economy, and a deeper insight into factors affecting farm incomes so as to better understand the influence of farmers' resources and marketing opportunities on farm-household income.
- ii) Provide useful guidance to decision-makers charged with implementing the Plan for Modernization of Agriculture (PMA) and Poverty Eradication Action Programme (PEAP).
- (iii) Provide both descriptive and analytical output that should be of use to line ministries involved in PMA implementation, as well as other agencies.
- (iv) Assess the relative importance of different factors affecting farm incomes, and the priority they should be assigned in attacking the problem of low farm incomes.

1.3 Scope and Coverage

The UNHS 2005/06 covered all the districts in Uganda. Efforts were made to ensure that all clusters in each district were canvassed. The Agricultural Module covered the household crop farming enterprise particulars with emphasis on land, crop area, inputs, outputs and other allied characteristics. The components of the module included: investments on land, crop areas, labour and non labour inputs for the Second Season of 2004 and First Season of 2005, crop disposition, land rights, disputes and certificates; livestock, small animals and poultry reared or owned, expenditure on livestock and agricultural extension services and technologies.

More specifically, the following data was collected:

Objectives of
the UNHS
2005/06

UNHS
2005/2006
Agricultural
Module related
to PMA and
PEAP

UNHS 2005/06
covered all
districts of
Uganda

- Current land holdings and ownership;
- Crop plot numbers by parcels operated within the Enumeration Area (EA) and within the District;
- The data was divided between pure and mixed cropping with an indication of the percentages of the mixtures;
- Holders' pre-harvest and post-harvest estimates;
- Agricultural sales and prices at the holding level;
- The price data collection was preceded by first screening as to whether anything was sold during the past month; if so, the volume sold the last time and the price at which it was sold ; and,
- Livestock and poultry numbers.

The questionnaire used in the survey is given in the Annex 4

1.4 Earlier Food and Agricultural Statistics Collection Activities

Due to paucity of Food and Agricultural Statistics (FAS), an Agricultural Module was included in the UNHS Programme. The Agricultural Module of the 2005/06 Household survey is the third effort since the start of the household survey programme in 1989. The first and second were included in the Third Monitoring Survey (1995/96) and the UNHS 1999/2000 respectively.

UBOS also included an Agricultural Module in the 2002 Uganda Population and Housing Census (PHC). The data generated from the PHC included; number of crop-plots planted during the first agricultural season of 2002; type of crop stand; livestock and poultry numbers: (by local and exotic/improved breed) and information about fish farming.

Other UBOS activities that have provided FAS include; the Pilot Census of Agriculture (PCA) 2003 whose aim was to test methodology and Instruments, the Pilot Permanent Agricultural Statistics System (PASS 2004) which collected data on Crop Areas and Production, Livestock Numbers and Crop Utilization, and the Informal Cross Border Trade (ICBT) which collected data on cross border agricultural trade between Uganda, Kenya, Tanzania, Democratic Republic of Congo, Rwanda and the Sudan.

In addition to UBOS, the Ministry of Agriculture, Animal Industry and Fisheries collected FAS through:

- i) The Census of Agriculture 1963/1965.
- ii) Follow-up Surveys in 1967/68 & 1968
- iii) National Census of Agriculture and Livestock (NCAL), 1990/91.
- iv) Two follow-up annual sample surveys in 1991/92 and 1992/93 agricultural years.

Wherever possible and relevant, comparisons are made in the report between the UNHS 2005/06 results and these earlier sources.

1.5 Sample Design

A two stage sampling design used

A two stage sampling design¹ was used to draw the sample. At the first stage Enumeration Areas (EAs) were drawn with Probability Proportional to Size (PPS), and at the second stage, households which are the Ultimate Sampling Units were drawn using Simple Random Sampling (SRS).

10 Districts had enough EAs for their estimates

This time round, districts were not treated as separate strata as in previous household surveys. Rather, the stratification focused on rural-urban and regional levels. Thus all districts were categorized into the above classifications during the sample selection.

753 EAs selected including 30 EAs in IDP Camps

The sample of Enumeration Areas (EAs) for the UNHS 2005/06 was selected using the PHC 2002 Frame. Initially, a total of 600 EAs was selected. These EAs were allocated to each region on the basis of the population size of the region. However, in the Northern region, the number of EAs drawn was doubled. The extra EAs were to be held in reserve to allow for EA attrition due to the civil war. It was also realized that the sample in 10 districts needed to be increased to about 30 EAs to have an adequate sample size for reliable district level estimates. These changes led to drawing an extra 153 EAs.

Due to a considerable proportion of the population in Internally Displaced People (IDPs) camps, the IDPs were treated as a separate selection stratum and a sample of 30 EAs were drawn from the camps. Thus, a total of 753 EAs representing the general household population, and 30 EAs representing the displaced population were selected for the UNHS 2005/06.

The administration of the Agricultural Module in the IDP camps was restricted to only information provided by the respondents. No attempt was made to measure the size of the agricultural parcels due to the security concerns outside the IDPs.

Households stratified by area of holding

The selection of households was done using stratification by crop farming categories and by the size of the land under crops. Households were classified in four categories namely; non farming households, households with less than 2.5 acres (small-scale), households with more than two and half acres but less than five acres (medium-scale), and households with over 5 acres (large-scale). A total of 10 households were selected in each EA and the sample was proportionally allocated based on number of households per class size. Thus if all households in an EA were engaged in agricultural activities, there would be 10 households interviewed. The UNHS 2005/06 covered a sample size of 7,417 households of which 5877 were Ag HHs.

1.6 Survey Organization

1.6.1 Survey Teams

Data collected by moving teams of staff

A centralized approach to data collection was used and comprised of 15 field teams. Each team consisted of one Supervisor, one Editor, four (4) Enumerators and one Driver. Fieldwork was undertaken with the use of mobile field teams whereby work was programmed from the headquarters to all the sampled areas. The teams were recruited based on the languages mostly used in each region. In total, there were 15 Supervisors, 15 Editors, 60 Enumerators, four (4) Regional Supervisors, four (4) Senior Supervisors and 15 Drivers.

1.6.2 Number of visits to Household

First visit was for listing

Before the actual data collection started, all households/holdings in the EA were visited and listed. Section 18 of Socio-Economic Questionnaire helped to determine whether the household carried out any agricultural activity. i.e. Cultivating crops or raising livestock, poultry or fish farming at any point during the past 12 months prior to the listing exercise.

Two other visits for data collection

Two visits were made to each selected Agricultural Household in order to capture seasonality patterns in both the Socio-Economic and Agricultural Module where applicable. The visits were as follows:

i) The first visit (May-October 2005)

The Agricultural module was administered to all households that were engaged in agricultural activities to collect information for the Second Season of 2004 (July – December). In addition, the Socio-Economic Module was administered to five out of the ten selected households in each EA.

ii) Second visit (November 2005-April 2006)

The Agricultural Module was administered to all households that were engaged in agriculture to collect information for the First Season of 2005 (January – July). The Socio-Economic module was then administered to the remaining five out of the ten selected households in each EA.

The data was collected for the Second Season of 2004 and First Season of 2005. This Agricultural Module report results are for a combination of both seasons.

1.7 Data Management and Processing

Double entry employed for data quality

To ensure good quality of data, a system of double entry was used for data capture. A manual system of editing questionnaires was set-up and two office editors were recruited to further assess the consistency of the data collected. A computer program

(hot-deck scrutiny) for verification and validation was developed and operated during data processing.

Range and consistency checks were included in the data-entry program. More intensive and thorough checks were carried out using MS-ACCESS by the data processing team.

1.8 Funding

The Government of Uganda and the World Bank through the Second Phase of the Economic and Financial Management Project (EFMP II), and the Department For International Development (DFID) provided the financial support that enabled the survey to be undertaken. This was part of the six year programme that has enabled UBOS to undertake two household surveys.

1.9 Reliability of Estimates

The estimates presented in this report were derived from a scientifically selected sample and analysis of survey data was undertaken at national and regional levels. Standard Errors (SE) and Coefficients of Variations (CVs) of some of the variables have been presented in Appendix 2 to show the precision levels.

1.10 Further Analysis

A lot of data was collected during the Survey. However, a large proportion has not been analyzed and put in this report. Below are some of the highlights of the possible further analyses that need to be carried out.

1.10.1 Comparison of Area Estimates between Global Positioning System (GPS) Equipment and Farmers' Estimates

Estimates of parcel areas regardless of location were made by the farmers and then for those within EA Enumerators measured using the GPS equipment. Similarly, during the second visit, farmers made estimates of the areas of the crop plots for the First Season of 2005. Then the crop plots within the EA were supposed to be measured by the enumerators using the GPS equipment. However, in this report, only farmers' estimates are used in the analysis. This is to enable a comparison with results from earlier surveys where farmers' estimates were obtained. Analysis of the data using the two methods is therefore required.

District Estimates

Data for the 10 Districts which were over sampled has not been presented in this report. It may be possible to have estimates for the districts of Apac, Arua, Bushenyi, Mbarara, Mbale, Iganga, Kamuli, Mubende, Masaka and Mukono.

Food Balance Sheets

There have been decreases in the production of Cassava, Sweet Potatoes and Banana (Food Type) in UNHS 2005/06 in comparison with UNHS 1999/2000 and UNHS 1995/96. On the other hand, there have been increases in the production of maize, beans and rice. To determine whether there is insufficient food, it is necessary to attempt another Food Balance Sheet study.

Crop Cards

Estimation of production from own-produce is a major challenge to Agricultural Statistics. It is even more challenging for the frequently harvested crops like Cassava, Sweet Potatoes and Banana. Crop Cards were developed and administered to all sampled Households with an agricultural activity. Respondents were requested to record all harvests from own produce. The cards were distributed to respondents during the first visit and retrieved at the second visit to the household. The duration between the first and second visit was about five months.

Crop Cards were distributed to all households that reported crop farming activity. All harvests were supposed to be recorded by the respondent assisted by a Crop Card Monitor (CCM) who was recruited during the first visit to the EA and trained on how to fill the questionnaire. The CCM covered one cluster and was supposed to visit all the crop farming households at least once a week.

In a number of clusters, the crop cards were properly filled but in others the following observations were made;

The CCM did not visit the households regularly;

In some cases, purchases were also recorded;

Various units of quantities have to be converted into standard ones. These vary according to area;

There were many fruits harvested that were usually not reported by respondents during surveys; and,

Some respondents were not able to record the harvested crops.

It is however felt that, if regularly monitored, the CCM could be a better method in recording actual harvests in selected clusters. It is considered a possible source of annual data on agricultural production for a few selected variables. If the interview was done immediately or shortly after full harvest, the respondents were considered to provide accurate values of harvests and its disposition. Data on Crop Cards will be analyzed and as mentioned above, the results are expected to be disseminated in a separate report.

Stratification for NAADS

The sample design in the survey was based on getting national and regional estimates. However, in the Agricultural Seasons under reference, National Agricultural Advisory Services (NAADS) coverage was only in 282 Sub-Counties (i.e. 29% of all the Sub Counties) in Uganda. Unfortunately, no stratification was done between NAADS and non-NAADS Sub Counties (or even EAs). A post enumeration stratification of NAADS and non-NAADS sub-counties or even EAs could be attempted with a subsequent re-analysis of the data. There is however, no guarantee that there will be enough observations for the areas covered by NAADS.

1.11 Problems Encountered and Constraints

During the survey some problems and experiences related to the agricultural module were observed as outlined below:

Measuring Large Areas:

In Section 2 of the questionnaire, the grazing land e.g. in Sembabule District and some parts of Western Uganda were enormously big to measure using Global Positioning System (GPS) tool and yet in some circumstances the owners did not know the size of this grazing land nor could they accurately estimate its area. The solution given was to measure the entire piece which took a lot of time.

Timing of the two Visits:

Information collected on the two major seasons entailed the respondents to recall what took place several months back since information was collected long after the harvests. The memory lapses of the respondents led to production of more of estimated information instead of the actual especially during the first visit.

Conversion Factors:

There is need for comprehensive data on conversion factors. The units of quantities used in estimating the various crop harvests varied a lot from area to area. For example, a heap as one of the most common units of quantity for measuring cassava, vary tremendously from area to area. This requires determining Conversion Factors for each area and crop. The data on Conversion Factors collected under this survey and that earlier collected under the PCA 2003 need to be consolidated. Further more, the data on Conversion Factors for the state and condition of crops is from the 1960s. Crop utilization tables in sections 7A and 7B of the questionnaire are not reliable as information was not collected on the conditions and state of each item utilized. It is therefore not possible to convert them to some standard condition.

Problems of GPS tool use:

The Enumerators were committing an error in the beginning of the exercise regarding area measurement using the GPS tool in section 2 and area estimation in sections 4A and 4B. The GPS tool was set by Enumerators to read acres instead of recommended square meters. This could lead to conflicting information between measured and estimated areas. The problem was subsequently solved by measuring in square meters to cater for such discrepancies.

Resistance to area measurement:

Some respondents did not want their plot areas measured. So measuring land in some districts was a real challenge and in a number of cases, the communities refused to cooperate despite the intervention of the district leadership. These were not measured.

No Area Measurement in IDP Camps:

No attempt was made to measure area in the Internally Displaced People (IDP) camps. Only estimates by the farmer were taken. This was because the plots were a distance from the camp.

Under-reporting:

Under-reporting of livestock and poultry numbers still a challenge to data collectors.

Incomplete coverage:

Institutional and Private Large-Scale Farms were not covered as the UNHS is household-based.

Single Criterion used in Classification or Stratification

The classification of Ag HHs was based only on single criteria of holding size rather than the multi-criteria which was set up after PCA 2003. Application of the multi-criteria would require longer listing procedures and more intensive training of field staff.

Open Segment (i.e. Outside EA) used

A closed segment (i.e. within Enumeration Areas) is often used when data on characteristics of land is required e.g. Land areas, Crop areas, production, livestock and poultry and crop trees.

On the other hand, open segment is used when collecting economic data e.g. income, prices, farm labour and wages etc, since these characteristics mainly relate to the farm harvests.

During the survey, crop production data was collected for even parcels within District and also outside district. Similarly, livestock numbers were collected using the open segment approach.

There is need to judiciously choose either open or closed segment, basing on existing evidence vis-à-vis what theory recommends to be done since Socio-economic cross-tabulations have been carried out in order to get a comparison of the data. Crop data has also been analyzed on an open-segment basis covering the whole district rather than within the EA.

1.12 Structure of the Report

The UNHS 2005/06 Agricultural Module report is structured as follows: Chapter One presents the introduction while in chapter two; an overview of the Ag HHs characteristics is discussed. Highlights on land ownership and user rights are comprehensively addressed in chapter three. In chapter four, information on area, production and utilization of various crops are presented and in chapter five, livestock and poultry figures are discussed. Chapter six provides highlights of the labour and non labour inputs, while the detailed tables are given in the respective Annex tables.

CHAPTER TWO: AGRICULTURAL HOUSEHOLDS CHARACTERISTICS

2.1 Introduction

This Chapter gives an overview of the agricultural sector by discussing the definition, numbers, size, regional and spatial distribution of Ag HHs; plus the parcels and plots these Ag HHs operate.

2.2 Number and Regional Distribution of Ag HHs.

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

In this report the term Agricultural Household shall be used, rather than Holding, to link with the households in the Socio-economic Survey.

As shown in Table 2.1, during the UNHS 2005/06 the number of Ag HHs was estimated to be 4.2 million or 78.8 per cent of all the Households.

Of the 4.2 million Ag HHs in UNHS 2005/06, about 1.2 million or 28 percent were in the Western Region, while 0.9 million or 21 per cent were in the Northern Region.

Eastern Region had the highest proportion of households engaging in agriculture (90.6%) followed by the Western Region (88.8%) while the Central Region has the least (60.8%). The latter is possibly a reflection of the higher urbanization levels.

Definition of Agric HHs

79% of Households were engaged in agriculture

The Central Region had the least number of households engaged in agriculture

Table 2.1: Agricultural Households by Region ('000)

Region	Agricultural Households			Total Households
	Non Agricultural Households	Number	%age of HHs in Region	
Central	653	1,014	60.8	1,666
Eastern	114	1,103	90.6	1,216
Northern	167	866	83.8	1,033
Western	148	1,169	88.8	1,317
Uganda	1,081	4,151	78.8	5,233

2.3 Agricultural Households that Operate Land

The Survey collected data on Ag HHs in UNHS 2005/06 that Owned Land and/or had Use Rights on land. Table 2.2 gives the regional distribution of the Ag HHs that owned land and those with land use rights.

Table 2.2: Ag HHs that Owned land and Land operated with Use Rights

Region	Agricultural Households ('000)	Own Land		Use Rights	
		Number('000)	Percent	Number('000)	Percent
Central	1,014	632	62.3	574	56.6
Eastern	1,103	931	84.4	582	52.8
Northern	866	638	73.7	449	51.9
Western	1,169	1,065	91.1	580	49.6
Uganda	4,151	3,266	78.7	2,185	52.6

79% owned land and 53% had land use rights

About 79 per cent of the Ag HHs owned land with 53 percent also operating land under Use Rights. The two do not add to 100 percent because of multiple counting. Some households owned land and also used other land under use right.

2.4 Number of Agricultural Households

Number of Agricultural Households Increasing

The 4.2 million Ag HHs in the Ag Mod compare with 3.8 million Ag HHs (holdings) in the PHC 2002. The total number of holdings has increased from 3.2 million in the UNHS 1995/96 to 3.3 million in the UNHS 1999/2000, an increase of 3.1 per cent. The holdings increased by 27 per cent to 4.2 million in UNHS 2005/06 from the UNHS 1999/2000. This trend is indicated in Table 2.3 and Figure 2.1 below.

Table 2.3: Comparison of Agricultural Households over the Years ('000)

Region	UNHS 1995/6	UNHS 1999/2000	PHC 2002	UNHS 2005/06
Central	768	790	835	1,014
Eastern	896	922	1,041	1,103
Northern	544	718	871	866
Western	992	874	1,086	1,169
Uganda	3,200	3,300	3,833	4,151

Figure 2.1: Number of Agricultural Households

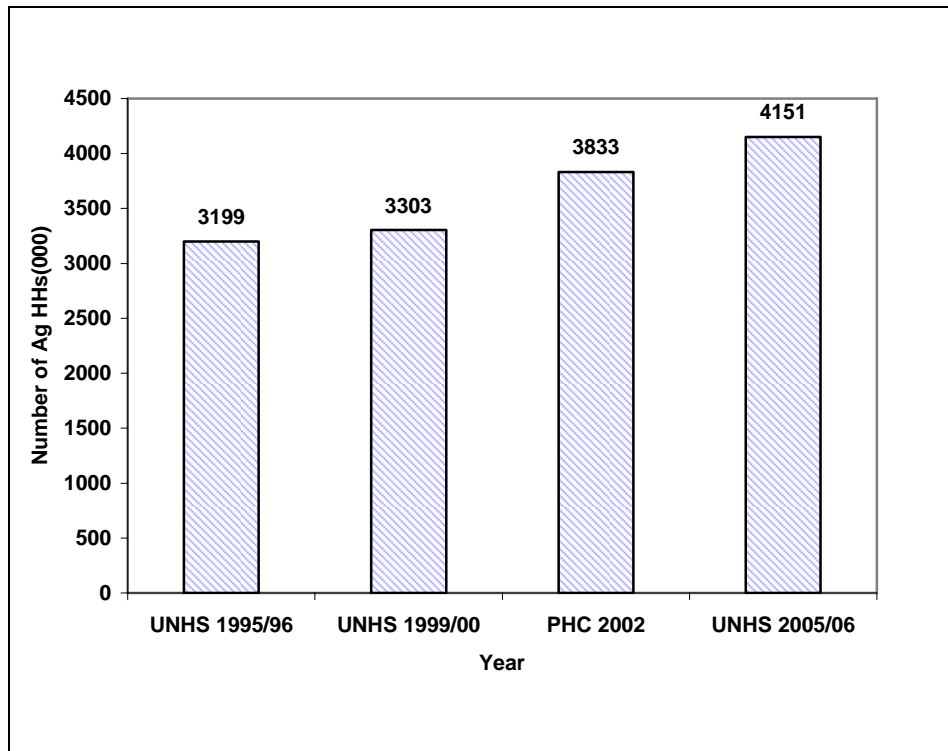


Figure 2.2: Agricultural Households by Region

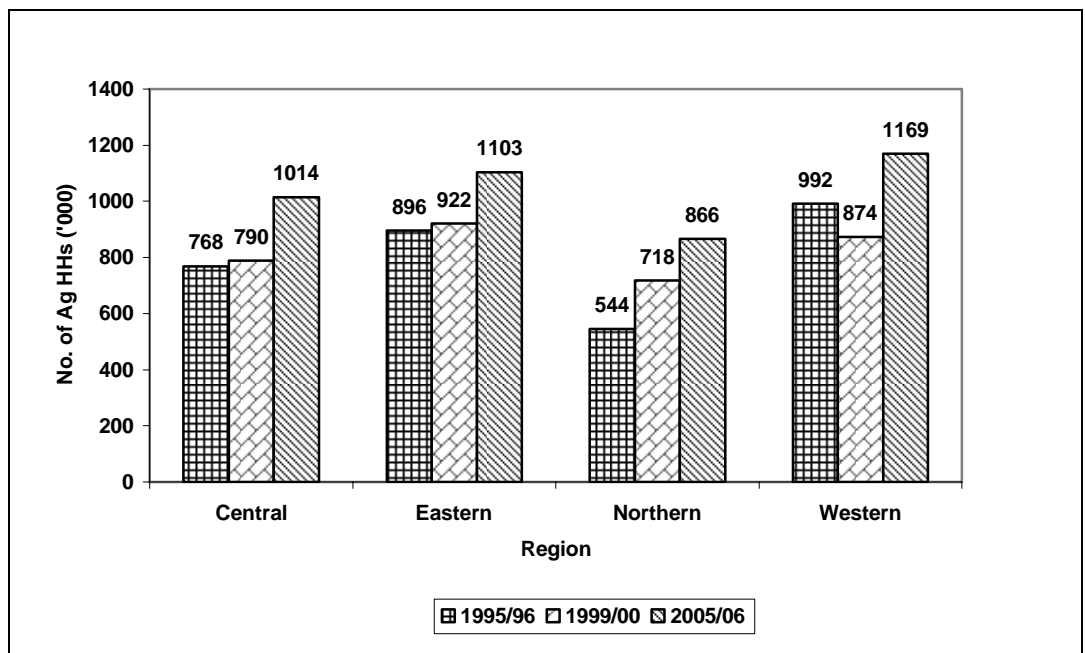


Figure 2.2 shows an increase in the Ag HHs by region between UNHS 1995/96 and 2005/06. Generally, an increasing trend is observed except for Western Region that had a drop in the number of Ag HHs.

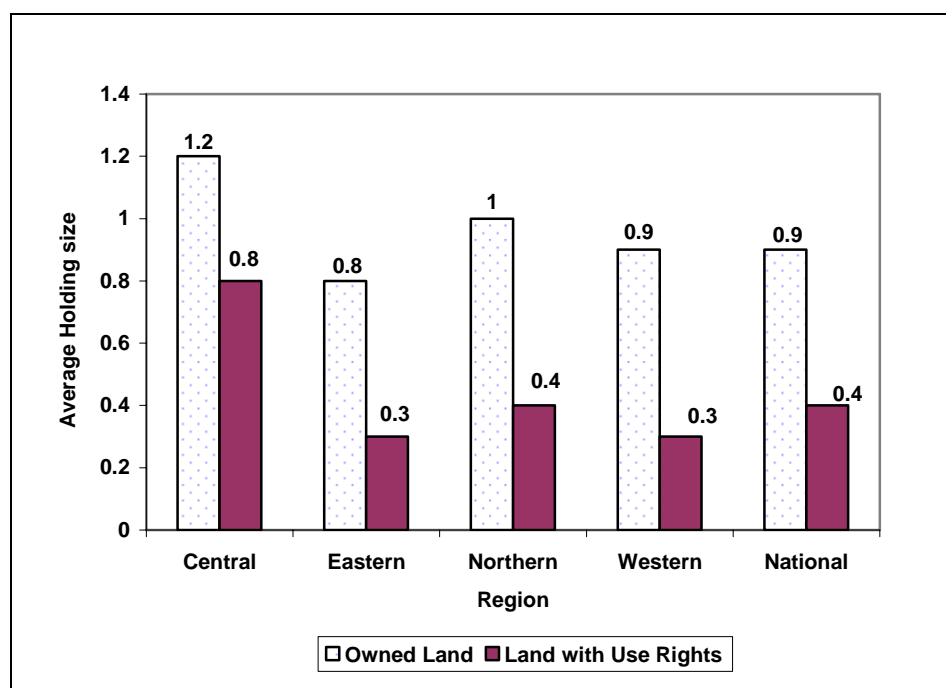
2.5 Average Holding Size

The Average Holding size is the total agricultural land operated by Ag HHs whether owned and leased-in or even borrowed minus land leased out, divided by the number of Ag HHs.

The results show that the average holding size for the Second Season of 2004 by region was similar to that for the First Season of 2005. This is expected because holding characteristics data do not change fast.

The results show that the Central Region with an average 1.2 Ha owned land had the highest size while the Eastern Region with 0.8 Ha had the smallest. Population pressure on the land in the Eastern and Western Regions has had an impact on the holding size. However, the estimate in the Central Region must have been affected by the fairly large patches of fallow land and woodlots. In all regions the land with use rights was smaller than the owned land. The average size of land under Use Rights was small for all regions ranging between 0.3 Ha in the Western and Eastern Regions to 0.4 Ha in the Central Region.

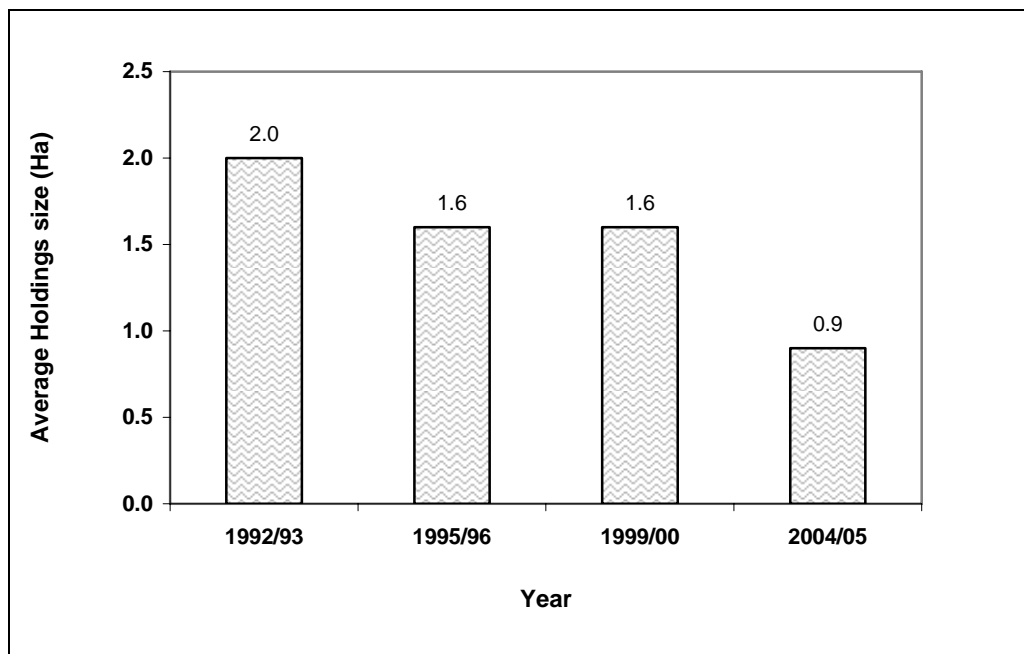
Figure 2.3: Average Holding Size (Ha) for Land Owned and Land With Use Rights (First Season of 2005) by Region



In the UNHS 1999/2000, the average holding size was estimated to be 1.6 Ha as seen in Figure 2.4. This estimate is the same as that of the 1995/96 Crop Survey. This could be due to the fact that there had been a lot of un-cultivated land and therefore population increase has not had an impact on holding sizes.

Since UNHS 1992/93, there has been a downward trend in the average Agricultural Holding size from 2.0 Ha in 1992/93 to 0.9 Ha in UNHS 2005/06. The results show that the biggest reduction was experienced during the last five years.

Figure 2.4: A Comparison of Average Agricultural Holding Size (Ha), 1992/93-2005/06



It could be argued that the average size of the Agricultural Household (holding) is the 0.9 Ha owned plus the 0.4 Ha under use rights, making a total of 1.3 Ha. However, all the earlier surveys did not specifically ask about the land under use rights so the comparison has been made on owned land.

2.6 Distribution of Agricultural Households by (Holding) Size

Tables 2.4 and 2.5 give the distribution of Ag HHs by size for the Second Season of 2004 and First Season of 2005. The proportion of Ag HHs below five acres is about 80 percent for both seasons. In addition, there is no significant difference between the distributions of sizes for the two seasons.

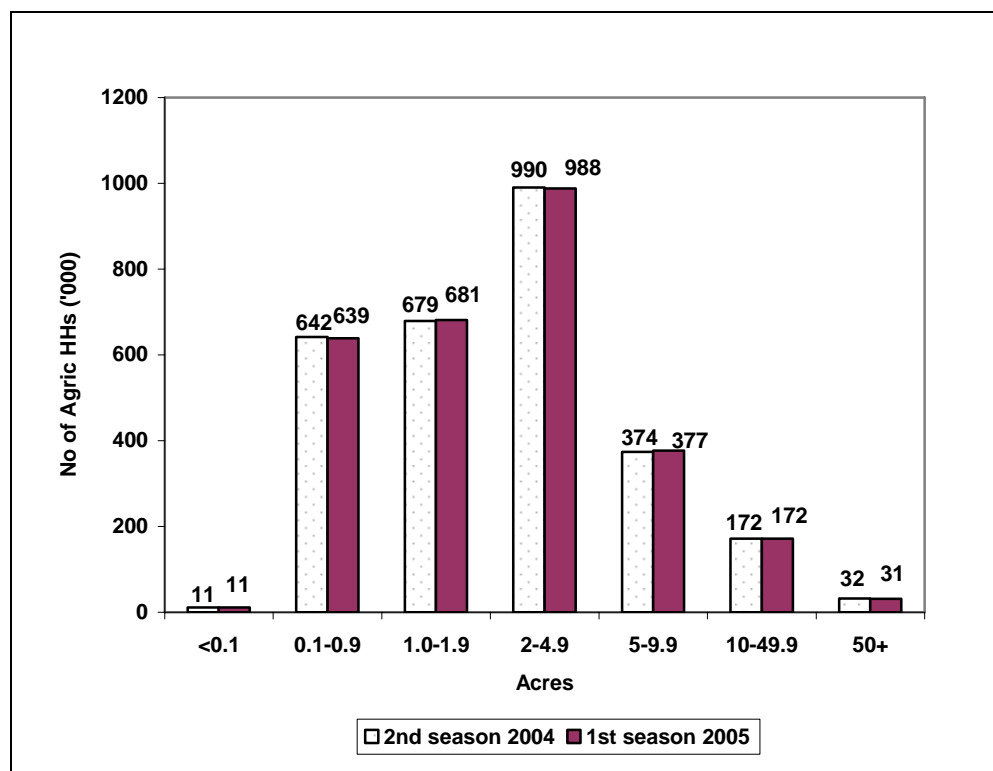
Table 2.4: Percentage Distribution of Holdings by size in Second Season of 2004 and First Season of 2005, (land owned with in EA in Acres)

Second Season 2004					
Region	Central	Eastern	Northern	Western	Total
<.0.1	0.5	0.1	0	0.8	0.4
0.1-0.9	21.5	25	14.9	23.3	22.1
1.0-1.9	22.6	25.7	18.9	24.4	23.5
2-4.9	31.1	33.3	40.7	33.3	34.1
5-9.9	15.2	11.6	17.9	10.7	13
10-49.9	7.1	3.8	6.8	6.7	5.9
50-99.9	0.8	0.4	0.5	0.3	0.5
100-499.9	0.7	0.1	0	0.4	0.3
>500	0.5	0.1	0.2	0	0.1
Total	100	100	100	100	100

First Season, 2005					
<.0.1	0.5	0.1	0	0.8	0.4
0.1-0.9	21.7	24.9	15.2	23.5	22.2
1.0-1.9	22.5	25.7	18.8	24.3	23.5
2-4.9	31.2	33.2	40.7	33.5	34.2
5-9.9	15.1	11.7	17.7	10.5	12.9
10-49.9	7.1	3.8	6.8	6.7	5.9
50-99.9	0.8	0.4	0.5	0.3	0.5
100-499.9	0.7	0.1	0	0.4	0.3
>500	0.5	0.1	0.2	0	0.1
Total	100	100	100	100	100

Note: excluding parcels rented out during the season

Figure 2.5: Agricultural Households by Total Size by Season



70% of parcels owned within EA

2.7 Agricultural HHs by Geographical Location of Parcels

The table below gives the distribution of Ag HHs by geographical location of parcels owned. About 70 percent of Ag HHs owned parcels within the EA. The Ag HHs that had parcels outside the district accounted for only one per cent. Northern Region had the highest percentage of Ag HHs that owned parcels outside the parish, and this can be due to the re-location of people to the IDP camps.

Table 2.5: Percentage Distribution of Agricultural Households by geographical location of the parcels owned

Region	Parcels inside EA/LC1	Parcel within Parish but outside EA	Parcel Outside Parish but within S/Cty	Else where in district	Other districts	Total
Central	53.8	10.6	2.5	1.5	1.4	100
Eastern	78.0	15.9	4.7	3.4	1.1	100
Northern	55.7	12.6	8.2	6.9	1.3	100
Western	86.5	17.9	4.2	2.6	0.7	100
Total	69.8	14.5	4.8	3.4	1.1	100

2.8 Parcels operated by Ag HHs

2.8.1 Owned Within the EA/LC1

Table 2.6 below gives the distribution of Ag HHs by number of parcels owned within EA/LC1. The majority of the Ag HHs 57.4 owned one parcel. The Ag HHs who owned six and above parcels were about one percent

Table 2.6: Percentage of Agricultural Households by parcels owned within the EA/LC1

Region	Parcels								Total
	1	2	3	4	5	6	7	8 +	
Central	67.92	21.25	7.69	1.70	0.73	0.43	0.06	0.22	100
Eastern	58.46	26.86	9.94	2.98	1.42	0.16	0.00	0.18	100
Northern	44.73	27.39	15.24	8.71	3.00	0.45	0.35	0.13	100
Western	56.85	24.66	10.46	3.45	2.48	1.01	0.47	0.63	100
Total	57.40	25.12	10.58	3.8	1.92	0.56	0.23	0.34	100

2.8.2 Parcels Owned Elsewhere

50% of Agric HHs own one parcel

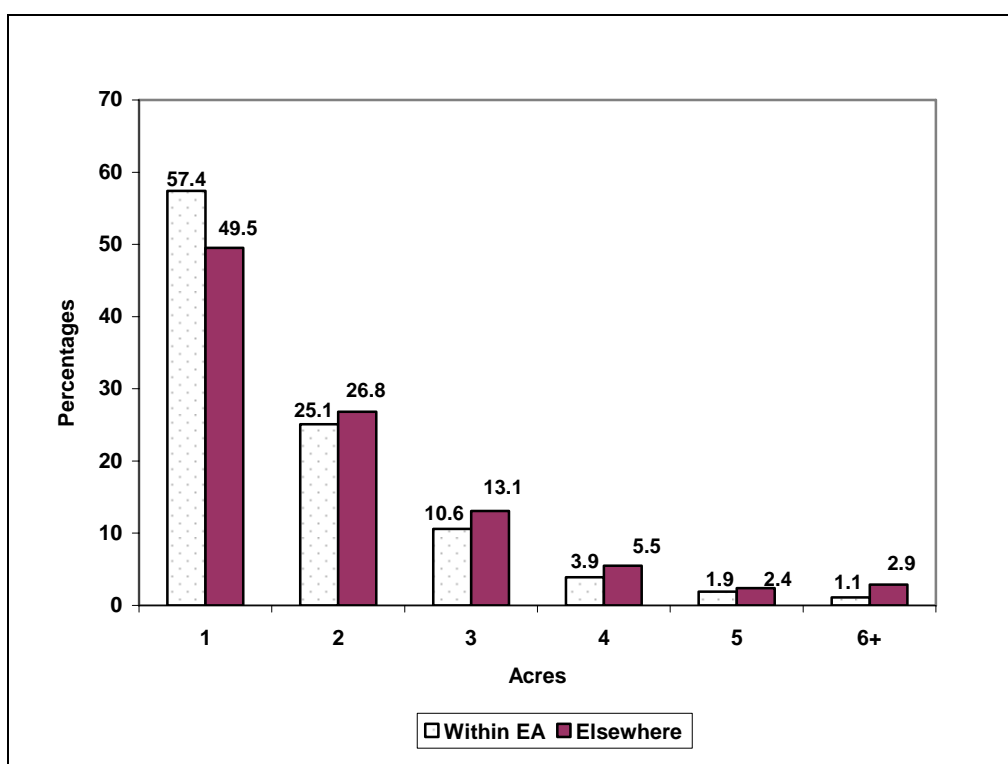
At the national level, about 50 per cent of the Ag HHs owned one parcel. Indeed about 90 per cent of the Ag HHs owned three or less parcels. The highest percentage of Ag HHs with one parcel is in the Central Region (61%). The Eastern and Western

Regions registered significantly more Ag HHs with five or more parcels. This is an indication of more land fragmentation. See Table 2.7.

Table 2.7: Percentage of Agricultural Households by number of parcels owned

Region	Parcels (%)										Total
	1	2	3	4	5	6	7	8	9	10+	
Central	61.4	25.2	9.0	2.7	0.9	0.4	0.1	0.1	0.2	0.0	100
Eastern	46.9	29.1	14.0	5.4	2.6	1.1	0.4	0.2	0.3	0.1	100
Northern	44.7	26.0	16.5	8.5	3.3	0.5	0.2	0.1	0.0	0.1	100
Western	47.7	26.3	12.6	5.4	2.7	2.2	0.8	0.9	0.4	1.0	100
Total	49.5	26.8	13.1	5.5	2.4	1.2	0.5	0.4	0.2	0.6	100

Figure 2.6: Percentage Distribution of Parcels Owned Within EA and Elsewhere



2.8.3 Parcels with Use Rights

The distribution of parcels with Use Rights is similar to that of the Parcels Owned. However, the proportion using one parcel was much higher for the parcels with Use Rights at 60 per cent. Figure 2.7 shows that there was no significant difference in the location of parcels owned and those with use rights.

Figure 2.7: Percentage Distribution of Parcels Owned and Those with Use Rights

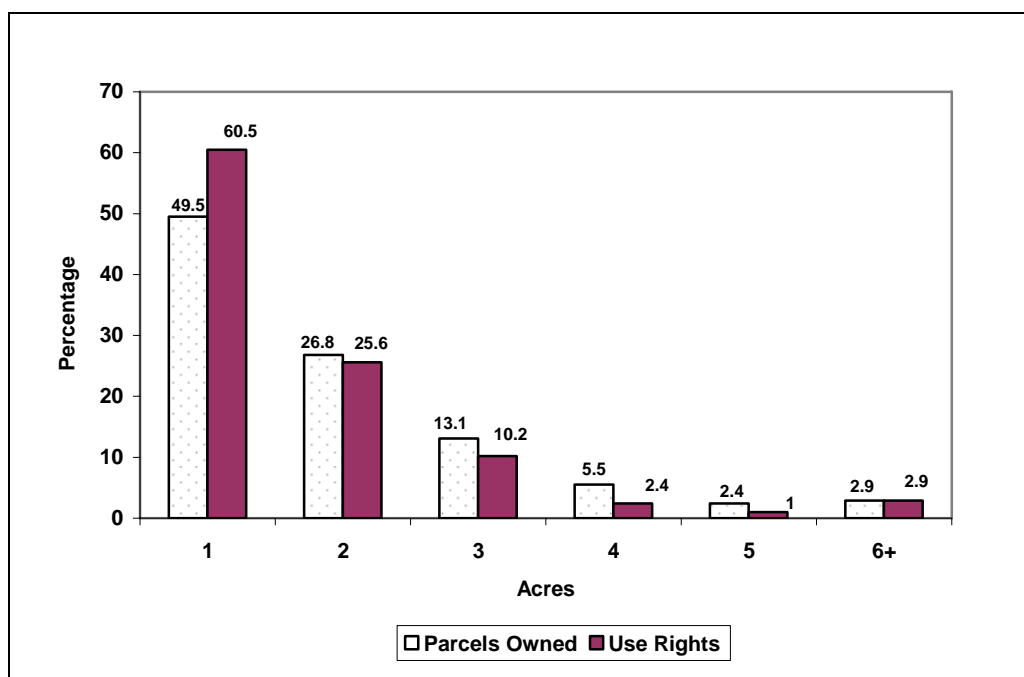


Table 2.8: Percentage of Agricultural Households by number of parcels with Use Rights

Region	Parcels								Total
	1	2	3	4	5	6	7	8	
Central	56.6	29.1	11.4	1.7	0.9	0.1	0.1	0.0	100
Eastern	56.6	27.3	11.1	3.6	1.0	0.2	0.1	0.0	100
Northern	63.1	23.4	9.6	2.4	1.0	0.5	0.0	0.0	100
Western	66.4	22.0	8.4	1.9	0.9	0.0	0.0	0.1	100
Total	60.5	25.6	10.1	2.4	2.0	0.2	0.1	0.1	100

2.9 Primary Land Use

There are no major differences in the average parcel sizes between annual and perennial crops. However, the parcels under fallow and woodlots tend to be large especially in the Central Region. On the other hand, parcels rented out were larger for the Western Region than those for the other regions.

Table 2.9: Average land size (Ha) for land owned by primary land use

	Own cultivated (annual crops)	Own Cultivated (perennial crops)	Rented- out	Fallow	Graze land	Woodlot	Other (Specify)	Missing	Total
Central	1.0	1.1	0.6	5.0	0.8	6.2	3.3	2.1	1.2
Eastern	0.9	0.4	0.8	0.0	0.9	2.8	1.7	1.0	0.8
Northern	0.8	0.7	0.6	0.0	0.8	2.2	1.2	2.4	1.0
Western	0.8	0.8	2.5	0.0	1.2	2.9	1.0	1.1	0.9
Total	0.9	0.8	1.0	5.0	0.9	3.2	1.4	1.8	0.9

After removing very large parcels,

2.10 Plots Operated by Agricultural Households

A plot is defined as a contiguous piece of land within a parcel on which a specific crop or a crop mixture is grown. A parcel may be made up of two or more plots.

2.10.1 Total Number of Plots

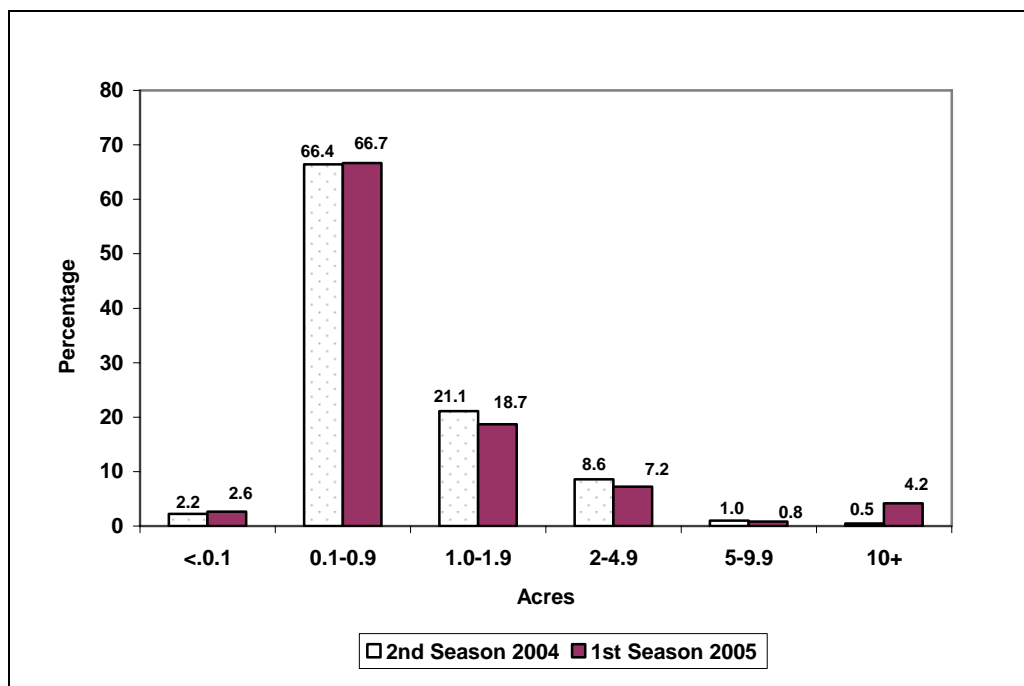
There were 26.2 million plots operated during the Second Season of 2004 and 32.1 million during the First Season of 2005. However, in the 1999/2000 Crop Survey, the total number of plots during the First Season was estimated to be about 12.8 million. This estimate was slightly lower than that of 1995/96 Crop Survey by below 5 per cent.

During UNHS 1999/2000 the total number of plots during the Second Season was estimated to be about 11.5 million. This was about 10 percent less than the total number of plots cultivated during the First Season of UNHS 1999/2000. All these mean very large increases in the number of plots for the UNHS 2005/06; increases of 151 percent over the First Season and 126 percent over the Second Season as compared to 1999/2000 UNHS seasons.

2.10.2 Plots by Size and Season

Figure 2.8, shows the distribution of the plots by size between the two seasons is similar with about 90 percent of the plots being below two acres. The modal size was between 0.1 and one acre (about 66% in both cases).

Figure 2.8: Percentage Distribution of Plots by Plot size and Season



2.11 Summary of Findings

The number of Ag HHs was estimated to be 4.2 million or 78.8 per cent of the households. This was an increase of 26 percent from the UNHS 1999/2000.

About 79 per cent of the Ag HHs owned land with 53 per cent also operating land under use rights. The results from the Second Season of 2004 show that the average holding size by region was similar to that for the First Season of 2005. This is expected because data on holding characteristics does not change quickly. The national average agricultural household land under Use Rights was 0.4 Ha which compares to 0.92 Ha national average agricultural household land owned.

The average size of the agricultural holding is the 0.9 Ha owned plus the 0.4 Ha under use rights, making a total of 1.3 Ha. However, all the earlier surveys did not specifically ask about the land under use rights. So one assumes respondents were only giving land owned during these earlier surveys.

The proportion of agricultural holdings below two hectares was about 80 per cent. About 70 per cent of the parcels were within the EA and the parcels outside the district accounted for only one percent.

At the national level, about 50 per cent of the Ag HHs owned one parcel and about 90 percent of the Ag HHs owned three or less parcels. The distribution of parcels used is similar to that of the parcels owned. Further, there were no significant differences in

the average parcel sizes between annual and perennial crops. However, the parcels rented out, fallow and woodlots tended to be larger especially in the Central Region.

There were 26.2 million plots operated during the Second Season of 2004 and 32.1 million during the First Season of 2005.

CHAPTER THREE: LAND OWNERSHIP AND UTILISATION

3.1 Introduction

This Chapter covers Land Owned and Land with Use Rights; Land Characteristics and Rights; and, Land Titles, Certificates; and Disputes.

3.2 Land Ownership and Use Rights

It is important to know total land available and how much is being utilized for agricultural farming activities. During the Ag Mod 2004/05 included in the UNHS 2005/06, data was collected on Owned Land and on Land with Use Rights. This section discusses the parcels Owned and those with Use Rights.

3.2.1 Land Operated

Out of about 4.2 million Ag HHs (Ag HHs) in Uganda, 3.3 million (or 78.7%) owned land. Another 2.2 million Ag HHs (52.6%) had access to land with only Use Rights.

The Western Region reported the highest ownership of land at 91.1 percent as shown in table 3.1. This was followed by the Eastern Region (84.4%) and the Central Region had the lowest percentage (62.3%). The possible explanation for the Central Region is that most households on Mailo land believe they do not own the land.

The share of Ag HHs with Use Rights was more evenly distributed across regions with no major differences. The percentage of the households that had Use Rights was only slightly higher in the Central Region compared to the other regions.

Table 3.1: Number of Agricultural Households by Land Ownership and Use Rights by Region ('000)

Region	Agricultural Households 2004/5	Agricultural Households without land	Own Land		Use Rights	
			Number	%age of Ag HHs	Number	%age of Ag HHs
Central	1,014	382	632	62.3	574	56.6
Eastern	1,103	172	931	84.4	582	52.6
Northern	866	228	638	73.7	449	51.9
Western	1,169	104	1,065	91.1	580	49.6
Uganda	4,151	885	3,266	78.7	2185	52.6

79% of Agric. Households owned land, 53% had use rights

3.2.2 Number of Agricultural Parcels Owned

A total of about 6.4 million parcels of land were estimated to be owned as shown in Table 3.2. The Central Region had the smallest number (1.0 Million) while the Western Region had the biggest number totaling to 2.3 Million.

When these results are compared with those of UNHS 1999/2000, at the national level, there was a significant increase in the number of parcels owned from about 4.8 million to about 6.4 million. This could be as a result of a number of factors; one being that people have recognized the importance of owning land and have therefore been able to buy the land that they could have been operating under other arrangements and others have even moved a step further and obtained land titles. Another factor could be land fragmentation caused by increased population pressure on the land.

There was a significant increase in the number of parcels owned for all the regions except the Central Region. In the Central Region the number of parcels owned declined probably due to urbanization or the fact that landlords have made people more aware that they do not own what they previously thought they owned.

Table 3.2: Parcels of Land Owned by Region ('000)

Region	1999/2000	%	2005/2006	%
Central	1,093	22.7	1,008	15.7
Eastern	1,279	26.5	1,823	28.4
Northern	923	19.1	1,304	20.3
Western	1,530	31.7	2,281	35.6
Uganda	4,825	100	6,416	100

3.2.3 Ownership of Parcels by Sex of Ag HH head

As tables 3.3 and 3.4 show, the parcels owned by male-headed households are almost 5.0 million (77.4%). The Central Region had the highest proportion (26.8%) of the parcels owned by female-headed households

Table 3.3: Number of Parcels owned and Percentage by sex of the head of Ag HHs by Region ('000)

Region	Male headed		Female Headed		Total	
	Number	%	Number	%	Number	% (region)
Central	738	73.2	270	26.8	1,008	15.71
Eastern	1,449	79.5	375	20.5	1,823	28.42
Northern	1,000	76.7	304	23.3	1,304	20.32
Western	1,783	78.2	498	21.8	2,281	35.56
Uganda	4,969	77.4	1,447	22.6	6,416	100.00

3.2.4 Agricultural Households owning Parcels

There were more female-headed Ag HHs that owned parcels in Central Region (28.4%), followed by the Northern region with 25.4 as shown in Table 3.4. For the Central Region, this could reflect more empowerment of women, urbanization, more financially able women and more knowledgeable on the importance of owning land which can enable one for example to use it as security. For the Northern Region, this could be a result of the war.

Table 3.4: Number of Ag HHs and Percentage that own parcels by sex of the household head ('000)

Region	Male headed		Female Headed		Total	
	Number	%	Number	%	Number	% (region)
Central	453	71.6	179	28.4	632	19.4
Eastern	720	77.3	211	22.7	931	28.5
Northern	478	74.6	163	25.4	638	19.5
Western	825	77.4	241	22.6	1,065	32.6
Uganda	2,476	75.7	794	24.3	3,266	100

The average number of parcels per Ag HH was about two. There was a very small difference in the average number of parcels per Ag HH between male-headed and female-headed households for the Central and Western Regions as shown in Table 3.5.

Overall, 3 in every 4 parcels were owned by males

Average number of parcels per Ag HH was 2.0

Table 3.5: Average Number of Parcels owned per Ag HH by sex of the Household head

Region	Male Headed	Female Headed	Total
Central	1.6	1.5	1.6
Eastern	2.0	1.8	2.0
Northern	2.1	1.9	2.0
Western	2.2	2.1	2.1
Uganda	2.0	1.8	2.0

3.2.5 Land with Use Rights

The 3.5 million parcels with Use Rights in Table 3.6 were operated by 2.2 million Ag HHs in Table 3.7 giving an average of 1.6 parcels per Ag HH shown in Table 3.8. There were more parcels with Use Rights operated by male headed Ag HHs (73.7% compared to 26.3%). Details are provided in Tables 3.6 and 3.7.

Average number of parcels with use right per Ag HHs was 1.6

Table 3.6: Number of parcels and Percentage with use rights by sex of the head of Ag HHs ('000)

Region	Male Headed		Female Headed		Total	
	Number	%	Number	%	Number	% (region)
Central	617	66.4	312	33.6	928	26.7
Eastern	790	81.6	178	18.4	968	27.9
Northern	491	69.9	211	30.1	703	20.2
Western	662	75.5	214	24.5	876	25.2
Uganda	2,559	73.7	915	26.3	3,475	100

As in the case of owned parcels, the same regions i.e. Central and Northern regions had the higher female-headed percentage of households operating parcels with User Rights.

Table 3.7: Number of Ag HHs and Percentage with use rights parcels by sex of the household head ('000)

Region	Male Headed		Female Headed		Total	
	Number	%	Number	%	Number	% (Region)
Central	387	67.5	186	32.5	574	26.3
Eastern	471	81.0	111	19.0	582	26.6
Northern	319	71.0	131	29.0	449	20.6
Western	445	76.7	135	23.3	580	26.6
Uganda	1,622	74.2	563	25.8	2,185	100

The average number of parcels with Use Rights operated by each Ag HH was the same for both male and female-headed households.

Table 3.8: Average Number of Use Rights parcels operated by each Ag HH by sex of the household head

Region	Male Headed	Female Headed	Total
Central	1.6	1.7	1.6
Eastern	1.7	1.6	1.7
Northern	1.5	1.6	1.6
Western	1.5	1.6	1.5
Uganda	1.6	1.6	1.6

3.3 Location of Parcels

Out of the 6.4 million owned parcels, 5 million (78%) parcels which is the majority, were within the EA; followed by the parcels within the parish (13.9%). This was the case for all regions. It should be noted however that for the Northern Region, almost 15 percent of the parcels were outside the parish. This may have been as a result of the fact that most of the respondents were in IDP camps and there was therefore some probability of a household having parcels far away from the EA as shown in Tables 3.9 and 3.10.

4 in 5 of parcels owned were within EA

Table 3.9: Number of parcels Owned by location, by Region ('000)

Region	With In	Outside EA, In Parish	Outside Parish, in Sub-county	In District	Other District	Total
Central	812	122	37	20	15	1,006
Eastern	1,405	267	78	56	17	1,822
Northern	972	142	90	85	14	1,302
Western	1,808	361	62	36	9	2,276
Uganda	4,997	891	268	197	55	6,406

Table 3.10: Percentage distribution of parcels Owned by location by Region.

Region	Location					Total
	Within EA	Outside EA in parish	Outside parish, in Sub-county	In district	In other district	
Central	80.7	12.1	3.7	2.0	1.5	100
Eastern	77.1	14.7	4.3	3.1	0.9	100
Northern	74.7	10.9	6.9	6.5	1.1	100
Western	79.4	15.9	2.7	1.6	0.4	100
Uganda	78.0	13.9	4.2	3.1	0.9	100

About 57% parcels with Use Right were within EA

For the parcels with Use Rights, about 2 million (56.9%) out of 3.5 million were within the EA. In the case of parcels outside the EA but in the same parish, the percentages were significantly higher for parcels where the Ag HH just have Use Right (30.5%) compared to 13.9% for the parcels owned. This pattern is similar at the regional level. See Tables 3.11 – 3.12.

Table 3.11: Number of parcels with Use Rights by location by Region ('000).

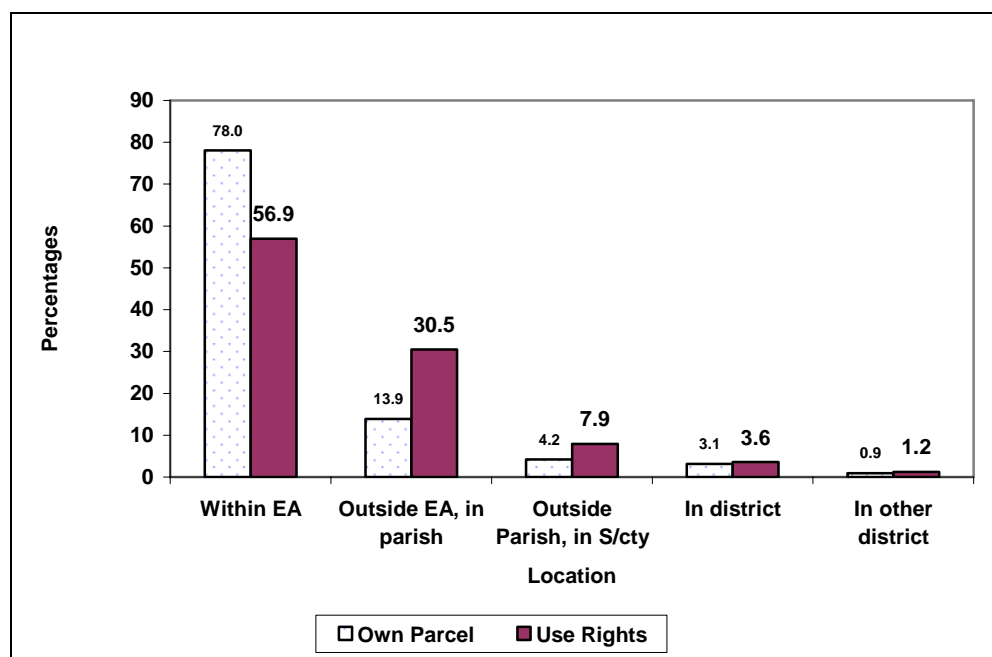
Region	Location					Total
	Within EA	Outside EA in parish	Outside parish, in Sub-county	In district	In other district	
Central	670	204	33	15	7	928
Eastern	556	280	76	44	10	968
Northern	283	261	108	40	9	703
Western	463	312	58	26	14	876
Uganda	1,972	1,058	274	124	40	3,475

Table 3.12: Percentage distribution of parcels with Use Rights by location by Region.

Region	Location					Total
	Within EA	Outside EA in parish	Outside parish, in Sub-county	In district	In other district	
Central	72.2	22.0	3.6	1.6	0.8	100
Eastern	57.6	29.0	7.9	4.6	1.0	100
Northern	40.3	37.2	15.4	5.7	1.3	100
Western	53.0	35.7	6.6	3.0	1.6	100
Uganda	56.9	30.5	7.9	3.6	1.2	100

The percentage of parcels within the EA was significantly higher for the parcels that were owned (78%) compared to the parcels with Use Rights (56.9%)

Figure 3.1: Comparison of Percentage Distribution of Owned and Use Rights Parcels by Location



3.4 Parcels by Land Tenure System

Within EA distribution pattern of parcels owned and with Use Rights was same

The distribution of parcels within the EA by land tenure system for both parcels Owned and those where the holder had just Use Rights was not different from the general distribution of all the parcels. At the advent of land-titling, Freehold titles were given to churches and schools only. Indeed, no freehold titles have been given out in the recent past. It therefore seems that many tenants on freehold land, particularly in Western Region wrongly gave their mode of land tenure as Freehold. Tenants only have use rights, bequeathing and transfer rights. This has to taken into account in subsequent analysis.

Table 3.13: Number of Parcels Owned and with Use Rights by the land tenure system ('000)

	Land tenure system					Total
	Freehold	Leasehold	Mailo	Customary	Other	
Within EA						
Owned	227	52	721	3,967	27	4,995
Use Rights	72	66	619	1,172	38	1,968
All Parcels						
Owned	293	65	898	5,117	32	6,406
Use Rights	137	117	858	2,291	62	3,465

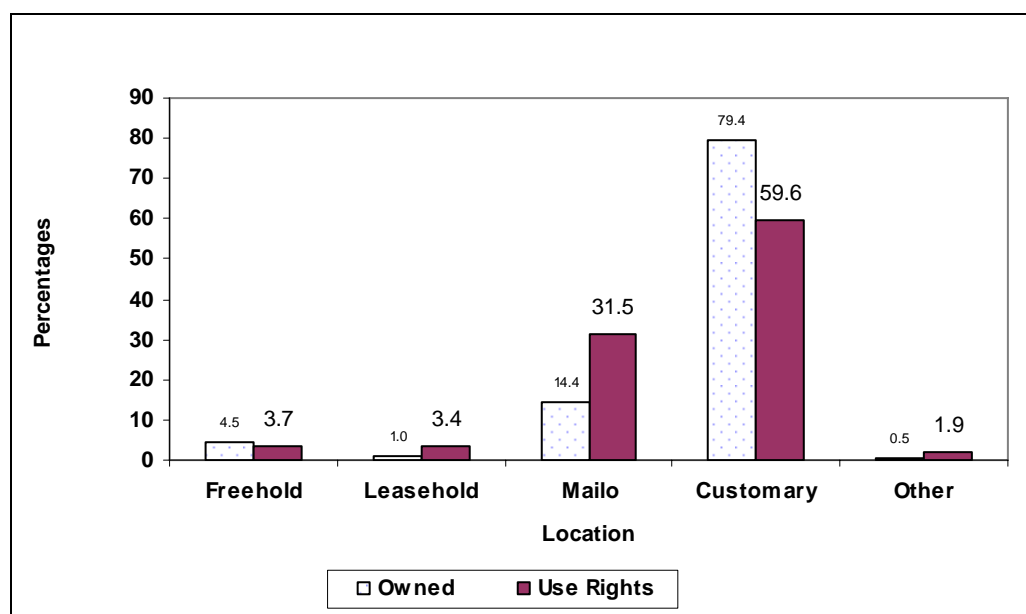
Comparison of the percentage distribution parcels Owned and those with Use Rights by land tenure system within EA and for all parcels is similar as shown in Table 3.14 below.

Table 3.14: Percentage Distribution of Parcels Owned and with Use Rights by land tenure system

	Land tenure system					Total
	Freehold	Leasehold	Mailo	Customary	Other	
Within EA						
Owned	4.5	1.0	14.4	79.4	0.5	100
Use Rights	3.7	3.4	31.5	59.6	1.9	100
All Parcels						
Owned	4.6	1.0	14.0	79.9	0.5	100
Use Rights	4.0	3.4	24.8	66.1	1.8	100

Figure 3.2 gives a graphic representation of the comparison of the percentage distribution of parcels Owned and those with Use Rights within the EA. That of all parcels is similar.

Figure 3.2: Percentage distribution parcels Owned and with Use Rights by Land Tenure System within EA.



3.5 Parcel Acquisition Method

Most owned parcels within EA were acquired by inheritance from head

Most of the parcels (53.6%) were obtained through inheritance, more specifically from the head. However, regional analysis shows that for the Central and Western regions, most of the parcels were purchased (58.7% and 47.0%, respectively). This could be an indication that households in these regions have more purchasing power than their counterparts in the other two regions. For the Eastern and Northern regions, most of the parcels were obtained through inheritance from the head of the Ag HH as shown in Table 3.15

Table 3.15: Distribution of Parcels Owned within EA by Method of Acquisition by Region ('000)

Region	Purchased	Inherited From Head	Inherited From Spouse	Cleared	Other	Total
	%	%	%	%	%	%
Central	58.7	37.2	2.8	0.3	1.0	100
Eastern	38.9	56.2	4.2	0.6	0.1	100
Northern	6.4	78.6	12.3	2.4	0.5	100
Western	47.0	45.6	3.8	2.8	0.8	100
Total	38.7	53.6	5.4	1.7	0.6	100

Most owned parcels within EA were inherited from Head's family

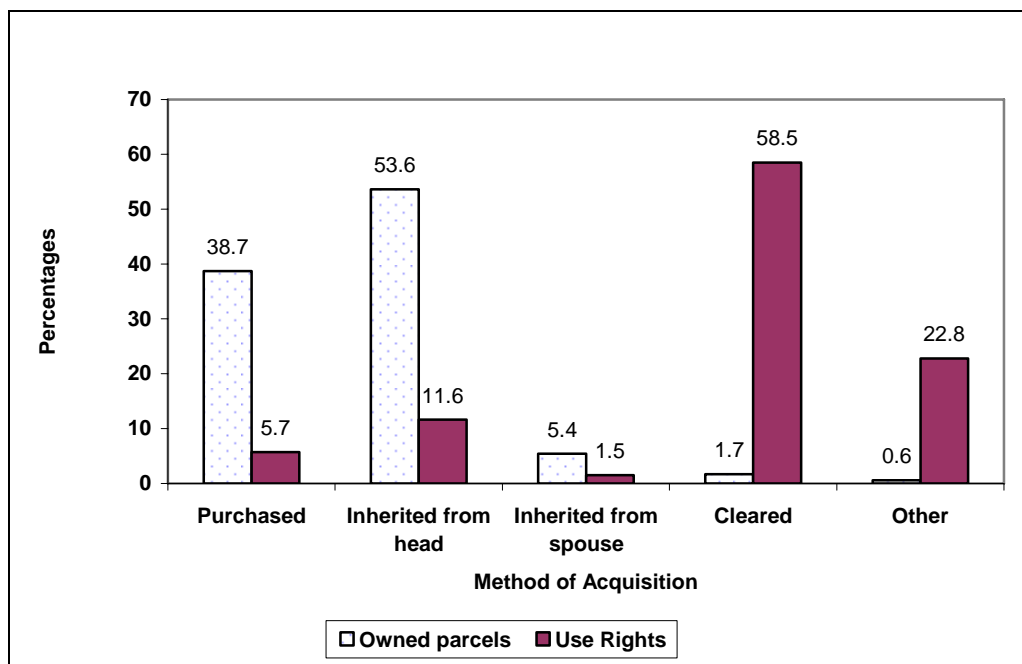
The parcels where the holder just has Use Rights, most of the parcels were acquired by merely clearing the land (58.5%) and this is very common in the Eastern, Northern and Western regions where most of the parcels were under a customary arrangement. This was followed by acquiring parcels through "other" means (22.8%) and then those acquired through inheritance from the head's family (11.6%) as shown in Table 3.16.

Table 3.16: Distribution of Parcels with Use Rights within EA by Method of Acquisition by Region ('000).

Region	Purchased		Inherited from head's family		Inherited from spouse's family		Cleared		Other		Total	
	No:	%	No:	%	No	%	No:	%	No	%	No:	%
Central	103	15.6	138	20.9	13	2.0	234	35.5	172	26.1	659	100
Eastern	-	-	38	7.1	3	0.6	401	74.5	96	17.8	538	100
Northern	2	0.7	33	11.8	13	4.7	181	64.9	50	17.9	279	100
Western	5	1.1	16	3.5	0	0.0	316	69.0	121	26.4	458	100
Total	110	5.7	224	11.6	29	1.5	1,131	58.5	440	22.8	1934	100

Figure 3.3 clearly demonstrates the differences in the methods of acquisition between owned parcels and those with Use Rights, the former are mainly inherited (53.6%), purchased (38.7%) while the latter, land is mainly cleared (58.5%)

Figure 3.3: Methods of Acquisition of Parcels (Within EA)



3.6 Primary Land Use of Parcels

3.6.1 Primary Land Use by Season

For the Second Season of 2004 (Table 3.17), most of the parcels owned were cultivated with annual crops (52.4%), followed by those parcels under perennial crops (28.6%) in Uganda and the pattern was the same for all regions except the Northern region. For the Northern region the percentage of parcels under perennial crops was very small (2.4%). This is clearly because the region grows very few perennial crops. The same region also had a significantly big percentage of parcels under fallow which is as expected given the insurgency in some of the areas in the North. The Western region had the highest percentage of parcels reserved as grazing land (3.5%) to cater for the intensive livestock keeping activities in the area.

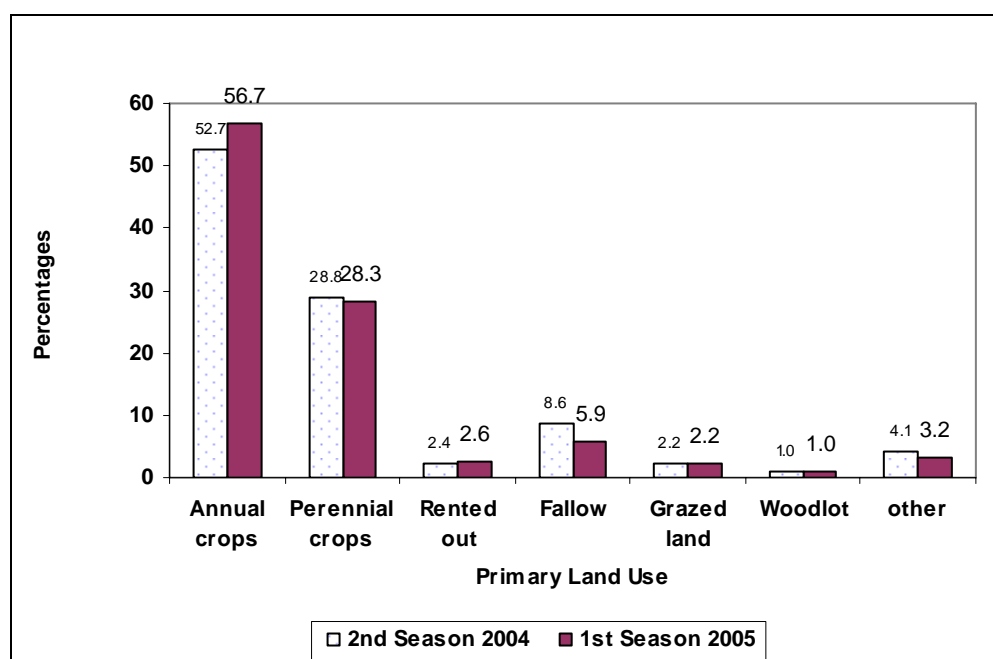
Table 3.17: Percentage distribution of all parcels owned by Primary Land Use by Region during Second Season of 2004 and First Season 2005

Region	Primary use of parcel								
	OCAC	OCP	RO	Cultivated by mailo tenant	Fallow	GL	WL	Other	Total
Central									
2 nd Season 2004	44.3	43.6	3.1	0.2	2.5	2.2	0.8	3.2	100
1 st Season 2005	45.3	43.3	3.8	0.1	2.2	2.3	0.9	2.2	100
Eastern									
2 nd Season 2004	59.6	23.1	4.2	0.0	6.9	1.1	0.6	4.6	100
1 st Season 2005	66.6	22.2	4.1	0.0	2.4	1.2	0.5	3.0	100
Northern									
2 nd Season 2004	61.4	2.5	1.7	0.0	24.1	1.4	0.5	8.5	100
1 st Season 2005	67.8	2.3	1.9	0.0	18.0	1.3	0.4	8.3	100
Western									
2 nd Season 2004	46.0	42.2	1.0	0.0	3.7	3.6	1.8	1.7	100
1 st Season 2005	47.4	41.5	1.2	0.0	3.6	3.6	1.7	1.0	100
Uganda									
2 nd Season 2004	52.7	28.8	2.4	0.0	8.6	2.2	1.0	4.1	100
1 st Season 2005	56.7	28.3	2.6	0.0	5.9	2.2	1.0	3.2	100

OCAC - Own Cultivated Annual Crops, OCP- Own Cultivated Perennial Crops, RO - Rented Out, GL- Grazing Land, WL - Wood Lot

The situation during the First Season of 2005 was almost the same as in the Second Season of 2004 except in the case of land under fallow which was significantly less for the Eastern and Northern regions as shown in Table 3.17 and Figure 3.4. The percentage of parcels under annual crops also slightly increased for the First Season of 2005 for all regions.

Figure 3.4: Primary Land Use for Owned Parcels by Season



3.6.2 Primary Use of Parcels Owned Within the EA

Within the EA, the distribution of parcels by primary use was not very different for both seasons. The only difference was that for the Second Season of 2004, the percentage of parcels under perennial crops was slightly higher than that under the annual crops for the Central and Western Regions.

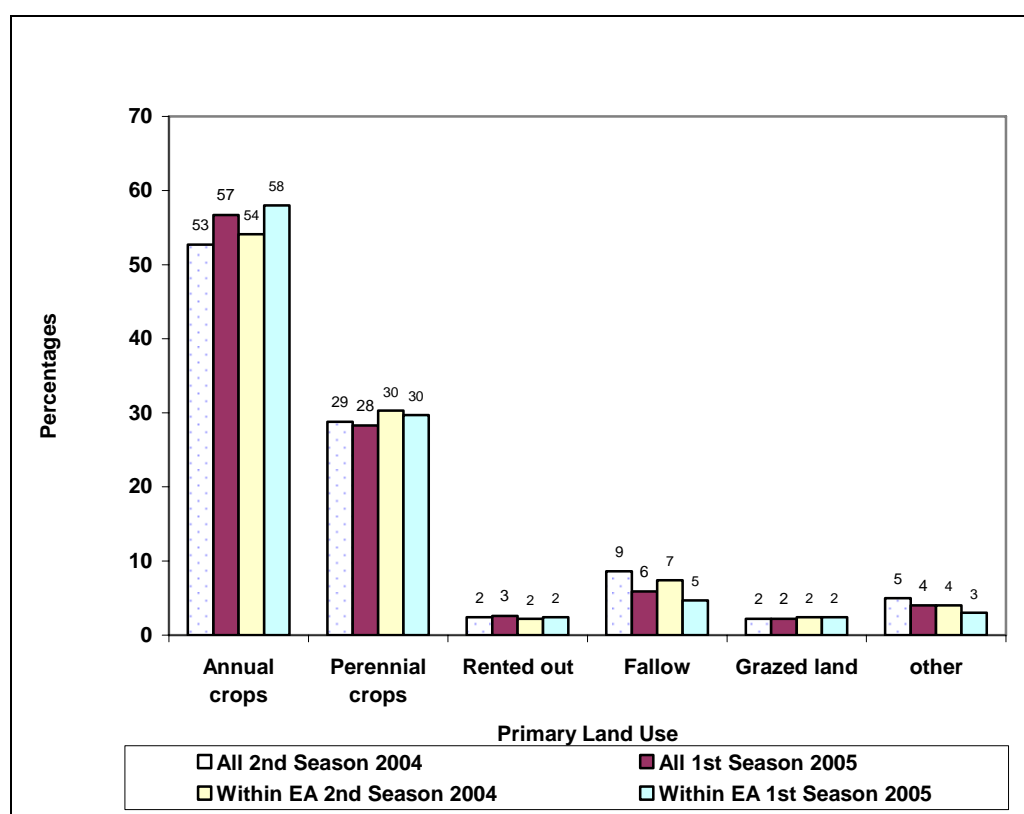
Table 3.18: Percentage of parcels (within EA) by Primary Use by Region during Second Season of 2004 and First Season of 2005

Region	Primary use of parcel							Total
	OCAC	OCPC	RO	Fallow	GL	WL	Other	
Central								
2 nd Season 2004	43.3	45.3	3.2	2.4	2.4	0.7	2.7	100
1 st Season 2005	44.3	44.6	3.8	2.0	2.3	0.9	2.1	100
Eastern								
2 nd Season 2004	63.1	21.9	3.7	5.9	1.1	0.4	3.9	100
1 st Season 2005	69.5	20.6	3.4	1.9	1.2	0.4	3.0	100
Northern								
2 nd Season 2004	67.5	2.6	2.0	22.6	1.9	0.5	3.2	100
1 st Season 2005	74.7	2.7	2.3	15.4	1.6	0.4	2.9	100
Western								
2 nd Season 2004	44.7	45.2	0.7	2.7	3.8	1.6	1.3	100
1 st Season 2005	46.3	44.5	0.9	2.4	3.8	1.6	0.6	100
Uganda								
2 nd Season 2004	54.1	30.3	2.2	7.4	2.4	0.9	2.7	100
1 st Season 2005	58.0	29.7	2.4	4.7	2.4	0.9	2.0	100

OCAC - Own Cultivated Annual Crops, OCPC- Own Cultivated Perennial Crops, RO - Rented Out, GL- Grazing Land, WL - Wood Lot

Figure 3.5 compares Primary Use of all parcels owned against Parcels owned within EA for both seasons. For annual crops, there appear no significant differences between all parcels and within EA parcels and for the same seasons. However First Season of 2005 had a slightly higher percentage for annual crops than the Second Season of 2004. This could be attributed to the higher number of parcels put to annual crops during the First Season of 2005 in the Eastern and Northern regions.

Figure 3.5: Distribution of All Parcels by Primary Use



Notes: Woodlots constitute 1% of the category "other".

3.7 Land Characteristics and Rights

Data was collected on soil quality, main source of water for parcel, topology of parcel, distances of parcel from homestead, land rights, rights to rent out land, rights to plant trees, etc. These results are given in this section. The parcels Owned and those with Use Rights were combined in all subsequent analyses.

3.7.1 Soil Quality

In total 46.2 percent of the parcels in Uganda had soils of fair quality followed by 43.0 percent with good soils. The Central Region had the highest percentage of parcels (19.1%) with poor soils and the Northern Region had the highest percentage of parcels (55.7%) with good soils as shown in Table 3.19 below.

Table 3.19: Percentage distribution of Parcels by quality of soil by Region

Region	Quality of soil in the parcel			Total
	Good	Fair	Poor	
Central	34.2	46.7	19.1	100
Eastern	38.0	52.4	9.6	100
Northern	55.7	37.8	6.5	100
Western	45.0	45.6	9.4	100
Uganda	43.0	46.2	10.8	100

3.7.2 Main Source of Water for Parcels

On the whole, 96 percent of the parcels in Uganda depend on rain as their main source of water while 3% parcels were using swamps/wetlands as their main water source (2.9%) and only 1% was using irrigation as their main source of water.

Of the parcels that had irrigation as their main water source, the Central Region had the highest percentage of 44.5 percent, followed by the Western region with 38.9 percent, the Eastern region with 13.6 percent and the Northern region with the lowest percentage (3.0%) as shown by Tables 3.20A and 3.20B. Of the parcels that had swamps or wetlands as the main water source, the Eastern Region had a significantly high percentage of 39.4, followed by the Western Region with 25.4 percent, the Northern Region with 19 percent and the Central Region with the lowest percentage (16.2%) as shown in Tables 3.20A and 3.20B.

Table 3.20A: Percentage distribution of parcels by main water source

Region	Main Water Source			Total
	Irrigation	Rainfall	Swamp/Wetland	
Central	2.0	95.6	2.4	100.0
Eastern	0.4	95.5	4.1	100.0
Northern	0.1	97.1	2.8	100.0
Western	1.1	96.6	2.3	100.0
Total	0.9	96.2	2.9	100.0

Notes: () - Row percentages
Not bracketed - Column percentages

Table 3.20B: Percentage distribution of parcels by Region

Region	Main Water Source			Total
	Irrigation	Rainfall	Swamp/Wetland	
Central	44.5	19.4	16.2	19.5
Eastern	13.6	28.1	39.4	28.3
Northern	3.0	20.5	19.0	20.3
Western	38.9	32.0	25.4	31.9
Total	100.0	100.0	100.0	100.0

3.7.3 Topology of Parcel

Most of the parcels in the Eastern and Northern Regions are on flat land. In the Central and Western Regions, most of the parcels are on gentle slopes. The Details are given in Annex A3, Table A3.25

3.7.4 Distance of Parcels from Homestead

Almost 64 percent of the parcels in Uganda were in a distance of less than one km from the homestead. The scenario was the same for all regions with 71 percent of the parcels in the Central region, 67 percent of the parcels in the Eastern Region, 52 percent of the parcels in the Northern Region and 62 percent of the parcels in the Western Region falling in a distance of less than one km from the homestead. The Northern Region had the lowest percentage of parcels within one kilometer.

This was not surprising given the fact that most of the farmers (holders) were in IDP camps and had to move distances to the different parcels.

Table 3.21: Percentage Distribution of parcels by their distance from the homestead by Region.

Region	Distance from the homestead (km)					Total
	<1	1- <3	3<5	5 to <10	10 +	
Central	71.3	16.2	7.1	2.4	3	100
Eastern	67.2	20.6	6.9	2.6	2.7	100
Northern	52.2	26.1	12.2	4.9	4.6	100
Western	62.4	24	7.9	3.7	2	100
Uganda	63.4	21.9	8.3	3.4	3	100

3.7.5 Land Rights

This Sub-section discusses the following land rights: Rights to Sell; Bequeath; Rent Out Land; Use for Loan; Plant Trees; Use Parcel as a Loan Security. In addition, Amount of money one can borrow using the parcel as a loan and Who Usually Worked on the Parcel.

(i) Rights to Sell

Table 3.22 shows that about 37 percent of the parcels could not be sold because the holders had no rights to sell (Only 17 percent of the parcels could be sold by the holders without anybody's approval). However, for 31.4 per cent of the parcels, the holders had to seek approval from the spouse and children before selling their land.

In the Central, Eastern and Northern Regions, for most of the parcels, the holders had no rights to sell Ownership or Use Rights. However, for the Western Region 51 percent of the parcels required approval from the spouse and children before selling ownership or use rights. The relatively higher percentages for the Eastern (17.4%) and Northern (19.8%) where approval had to be obtained from the extended family may have a lot to do with the customary tenure system in these regions.

Table 3.22: Percentage distribution of parcels by rights to sell Ownership or Use Rights by Region

Region	Rights to sell Ownership or Use Rights							Total
	WAAP	WASC	WAEF	WALA	WALO	No right	Others	
Central	21.5	26	9.3	0.5	1.3	40.9	0.4	100
Eastern	16.3	27.8	17.4	0.9	1.7	35.8	0.1	100
Northern	20.6	11.2	19.8	1.2	0.6	46.3	0.3	100
Western	11.9	50.9	7.1	0.3	0.5	29	0.3	100
Uganda	16.8	31.4	13	0.7	1	36.8	0.3	100

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

The Heads of the Agricultural Household (Ag HHs) had most of the Land Ownership or Use Rights (7.5 million parcels or 76%), followed by the Head and Spouse jointly (about 1.4 million parcels or 14.5%) as shown in Table 3.23. However when it came to rights to sell land, it is interesting to note that for the majority of the parcels (about 3.6 million parcels or 36.7%), the operators did not have the right to sell the land which may imply that most of the operators actually just had Use Rights or to make matters worse, were just squatters. This was followed by joint approval by the Household Head, Spouse and Children (for about 3.1 million parcels) before land could be sold.

Table 3.23: Number of Parcels by Rights to sell land by Person with Ownership or Use Rights ('000)

	WAAP	WASC	WAEF	WALA	WALO	No right	Others	Total
Head	1,469	2,165	1,122	62	75	2,540	21	7,455
Spouse	46	152	35	1	12	333	-	579
Head and spouse jointly	114	751	71	4	7	474	1	1,421
Other hh members	10	6	37	-	5	127	-	186
other	8	8	12	-	2	126	5	161
Total	1,647	3,082	1,278	66	101	3,601	26	9,801

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

(ii) Rights to Bequeath

The cases where the holder had no right to bequeath (3.5 million or 35.7%) was the highest followed by 'With approval from Spouse and Children' (2.8 million or 28.6%). It was only for 2.2 million parcels or 22.4 percent where no approval was required as shown in Table 3.24.

Table 3.24: Number of Parcels by Rights to bequeath by Person with Ownership or Use Rights ('000)

	WAAP	WASC	WAEF	WALA	WALO	No right	Others	Total
Head	1,985	1,957	967	45	33	2,449	20	7,456
Spouse	64	134	31	-	6	344	-	579
Head and spouse jointly	145	737	62	3	6	467	-	1,421
Other HH Members	19	4	28	-	2	132	-	186
Other	11	8	12	-	-	125	5	161
Total	2,223	2,840	1,100	48	48	3,517	24	9,801

- without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

(iii) Rights to Rent Out Land

The percentage distribution of rights to rent out the parcels was similar to the one for rights to sell Ownership or Use Rights at both the national and regional levels. That is, most holders did not have rights to rent the parcels to someone else (34.4%); followed by those who had to get approval from the spouse and children (31.0%). However in the case where the respondent did not need approval from anybody, the percentages were higher than in the case of rights to sell land. This is most likely because renting is a much less permanent arrangement than selling.

Table 3.25: Percentage Distribution of Parcels by Rights to Rent the Parcel to Someone Else.

Rights to rent the parcel to someone else.								
Region	WAAP	WASC	WAEF	WALA	WALO	No right	Others	Total
Central	29.5	24.6	7.0	0.1	0.8	37.7	0.3	100
Eastern	25.5	29.0	10.1	0.4	0.9	34.0	0.1	100
Northern	31.6	13.1	13.6	0.2	0.3	41.0	0.1	100
Western	16.5	48.2	5.2	0.1	1.0	28.7	0.3	100
Uganda	24.7	31.0	8.6	0.2	0.8	34.4	0.2	100

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

There was also a significant number of parcels (about 2.4 million parcels or 24.5%) where those who had Land Ownership or User Rights did not need anybody's approval to rent out land as shown in Table 3.26. It is also noted that the parcels where there was no right to rent out were high (3.4 million or 34.7%).

Table 3.26: Number of Parcels with Rights to Rent Out land by Person with Ownership or Use Rights ('000)

	WAAP	WASC	WAEF	WALA	WALO	No right	Others	Total
Head	2,113	2,165	751	21	52	2,339	15	7,456
Spouse	70	144	23	-	12	330	-	579
Head and spouse jointly	195	720	44	2	9	451	-	1,421
Other hh members	25	6	21	-	2	132	-	186
other	17	8	7	-	3	122	5	161
Total	2,420	3,044	846	22	78	3,374	20	9,802

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

(iv) Rights to use for Loan

The same pattern is reflected in the distribution of parcels by rights to bequeath or to use the parcel as a loan. However it should be noted that the numbers of parcels where the holder had no right to use the parcel for a loan are significantly higher than for the other rights already discussed. This may have a lot to do with Ownership of Titles or Certificates for the parcels, indicating that most holders do not have legal ownership of the parcel.

Table 3.27: Number of Parcels with Rights to Use for Loan by Person with Ownership or Use Rights ('000)

	WAAP	WASC	WAEF	WALA	WALO	No right	Others	Total
Head	1,687	1,858	721	20	20	3,075	51	7,433
Spouse	43	123	29	1	2	376	2	576
Head And Spouse Jointly	164	649	41	-	6	549	9	1,419
Other Hh Members	10	5	18	-	1	150	-	184
Other	12	7	6	-	2	132	2	160
Total	1,916	2,643	814	21	30	4,283	65	9,772

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

(v) Right to Plant Trees

Unlike the rights to sell Ownership or Use Rights or to rent it to someone else, for the highest percentage of parcels at both the national and regional levels, no approval was needed to plant trees. For the Western region however, for a relatively high percentage of parcels (31.9%), the holders required approval from the spouse and children and only 38 percent of the parcels could plant trees without anybody's approval.

Table 3.28: Percentage Distribution of Parcels by rights to plant Trees by Region

Region	WAAP	WASC	WAEF	WALA	WALO	No right	Others	Total
Central	56.8	10.6	2.5	0.0	1.5	28.5	0.1	100
Eastern	50.3	15.0	2.9	0.0	1.7	29.7	0.2	100
Northern	58.7	5.5	3.7	0.2	0.7	31.1	0.1	100
Western	37.7	31.9	2.8	0.0	2.5	24.7	0.3	100
Total	49.3	17.6	2.9	0.1	1.7	28.1	0.2	100

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

The decision to plant trees does not appear to require serious considerations because as can be seen from Table 3.29 for the majority of the parcels (about 4.8 million or 49%), the operators did not have to get approval from anybody else. This was followed by those who had no rights to plant trees (for about 2.8 million parcels or 28%) and then those who had to get approval from the spouse and children (1.7 million parcels or 18%).

Table 3.29: Number of Parcels with Rights to Plant Trees by Person with Ownership or Use Rights ('000)

	WAAP	WASC	WAEF	WALA	WALO	No right	Others	Total
Head	3,820	1,347	244	10	114	1,907	14	7,457
spouse	171	98	13	-	20	274	2	579
Head and spouse jointly	746	278	18	1	26	353	-	1,421
Other hh members	57	2	10	-	3	113	-	185
Other	37	3	4	-	6	106	5	160
Total	4,832	1,728	289	11	169	2,753	20	9,802

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

(vi) Rights to Use Parcel as a Loan Security

Table 3.30 shows that for almost 44 percent the holders had no right to use parcels as a loan security. Also, for 27 percent, the parcel could only be used as loan security after approval of the spouse and children. It was only 30 percent of the parcels where no approval was required.

Table 3.30: Percentage Distribution of Parcels by Rights to use Parcel as a Loan Security by Region.

Region	Rights to rent the parcel to someone else.	Total
--------	--	-------

	WAAP	WASC	WAEF	WALA	WALO	No right	Others	
Central	20.2	17.8	5.5	0.2	0.8	54.3	1.1	100
Eastern	22.6	25.6	10.8	0.3	0.2	40.3	0.2	100
Northern	24.4	9.9	14.7	0.3	0.2	49.8	0.7	100
Western	13.5	44.8	3.8	0.2	0.1	36.9	0.7	100
Total	29.6	27.0	8.3	0.2	0.3	43.8	0.7	100

WAAP - without anybody approval, WASC - with approval from spouse and children, WAEF - with approval from extended family, WALA - with approval from local authority, WALO - With approval from the landlord/owner

(vii) Amount of money one can borrow using the parcel as a Security

The average amount of money one can borrow using the parcel as collateral is, as expected, higher for the urban parcels given the value one attaches to them if he/she is to sell. For the urban parcels, those on leasehold had the highest average value of about 9.7 million US\$hs, followed by those on mailo land (about 6.3 million shillings) and then those on freehold (about 2.9 million shillings). In the case of rural parcels, those on freehold had the highest value on average (about 1.9 million shillings), followed by those on leasehold (1.0 million shillings) and then those on mailo land (1.0 million shillings) as shown in Table 3.31.

Table 3.31: Average amount one can borrow using the Parcel as a Loan Security by Rural/Urban by Land Tenure System ('000)

Location	Land Tenure System					Total
	Freehold	Leasehold	Mailo	Customary	Other	
Urban	2,868	9,721	6,253	1,877	12,700	2,873
Rural	1,903	1,014	1,004	738	1,053	832
Total	2,093	5,738	1,310	852	1,985	1,044

(viii) Who usually worked on the Parcel

At the national level, most of the parcels were worked on by the head of the household (36.0%) or by both the head and the spouse (35.6%) followed by those worked on by the spouse (20.4%). In the Central and Eastern regions, most of the parcels were worked on by the household head followed by those worked on by both the head and the spouse. In the Northern and Western regions, the pattern is reversed with most parcels being worked on by both the household head and spouse followed by those where it was only the household head that worked on the parcel. In the Northern Region it was not common for the spouse to work alone as shown in Table 3.32.

Table 3.32: Percentage distribution of Parcels by who works on the Parcel by Region.

Location	Who Works on Parcel	Total
----------	---------------------	-------

	Head	Spouse	Both	Other hhd member	Other	
Central	39.0	17.5	31.3	4.4	7.7	100
Eastern	37.5	22.4	34.3	2.4	3.4	100
Northern	40.9	8.9	43.0	3.5	3.7	100
Western	29.6	27.8	34.6	4.1	3.9	100
Total	36.0	20.4	35.6	3.6	4.4	100

3.8 Land Title, Certificates and Disputes

3.8.1 Parcels with Titles/Certificates

The ownership of land titles and Certificates was very low with 94.9 percent of the parcels having no Titles. The Central Region had the highest percentage (12.4) of parcels with Certificates of Title. This could have been mainly due to the presence of the Mailo land Tenure System. A summary of the findings are given in Table 3.33.

Table 3.33: Percentage distribution of Parcels with/without Certificates by Region

Region	Certificate of title	Certificate of customary ownership	Certificate of occupancy	No document	Total
Central	12.4	0.5	0.3	86.8	100.0
Eastern	1.3	0.6	0.2	97.9	100.0
Northern	1.8	0.7	0.0	97.5	100.0
Western	2.8	1.2	0.5	95.6	100.0
Total	4.1	0.8	0.3	94.9	100.0

3.8.2 Land Disputes

The percentage of parcels that had disputes was relatively small at about seven (7) percent of all parcels at the national level. All regions had less than eight percent with Western region having the lowest percentage of parcels that had disputes.

Table 3.34: Percentage distribution of Parcels by ever having a land dispute over Ownership/Use Rights by Region

Region	Ever had land disputes		Total
	Yes	No	
Central	8.1	91.9	100
Eastern	7.0	93.0	100
Northern	6.7	93.3	100
Western	5.1	94.9	100
Total	6.5	93.5	100

Most of the parcels with disputes had the most recent disputes after 1999. The exception is Western region which had 20 per cent of the recent disputes starting before 1999.

Table 3.35: Percentage Distribution of Years in which most recent Dispute Started

	Before 1990	1991-1999	2000-2003	2004	2005	Total
Central	5.3	18.1	29.3	23.1	24.2	100
Eastern	6.7	16.5	31.0	27.3	18.5	100
Northern	7.1	11.7	25.8	27.5	27.9	100
Western	20.4	17.4	22.5	18.7	21.0	100
Total	9.8	16.1	27.4	24.2	22.5	100

The majority of the disputes were with the spouse's family member both at the national level (93.9%) and at the regional level. The Western Region had 95 percent of the disputes with the spouse's family member, closely followed by the Northern Region with 94 percent, the Eastern region with 93 percent and the Central Region with 92 percent. The other significant differences to note were with the Central region regarding disputes with the landlord (2.3%) compared to the contribution from other regions to this category (with landlords) and then the Northern Region regarding disputes with other relative as seen in Table 3.36.

Table 3.36: Percentage Distribution of parcels with whom they had disputes by Region.

Region	With whom did you have the dispute									Total
	Head	SFML	LL	S/M	OR	Tenants	RPLO	Politician s/ Govt	Others	
Central	1	91.9	2.3	0.4	0.8	0.1	1.4	0.5	1.6	100
Eastern	1.1	93.4	0.1	0.2	1.7	0	1.2	0.3	1.9	100
Northern	1	93.8	0.1	0.6	2.7	0.1	0.6	0	1.1	100
Western	0.8	95.4	0.2	0.5	0.7	0	0.9	0	1.5	100
Total	1	93.9	0.5	0.4	1.4	0.1	1	0.2	1.5	100

Head – Head's family member, SFML- Spouse's family member Landlord, LL – Land Lord, S/M – Squatter / Migrants OR- Other Relatives, RPLO - Relatives of Previous land Owners

At both the national (66.6%) and regional levels most disputes had been resolved, with the Northern Region having the highest percentage of disputes resolved (70.5%), followed by the Eastern Region (68.4%), the Western Region (67.2%) and the Central Region with 60.2 percent of the disputes resolved. For the Central Region it means that almost 40 percent of the land disputes remain unresolved. This may have a lot to do with land tenure systems pertaining in the regions as well as existence of acceptable (e.g. cultural) ways of solving these disputes as shown in Table 3.37.

Table 3.37: Percentage distribution of whether the dispute was resolved by Region

Region	Was the dispute resolved		Total
	Yes	No	
Central	60.2	39.8	100
Eastern	68.4	31.6	100
Northern	70.5	29.5	100
Western	67.2	32.8	100
Total	66.6	33.4	100

3.9 Summary of Findings

During UNHS 2005/06, data was collected on owned land and on land with use rights. There were a total of about 4.2 million Ag HHs in Uganda. Of these 3.3 million (or 78.7%) owned land while 2.2 million Ag HHs (52.6%) had access to land with only use rights.

A total of slightly above 6.4 million parcels of land were estimated to be owned in the UNHS Agricultural Module survey. These results show a significant increase in the number of parcels owned from about 4.8 million in the UNHS 1999/2000.

The average number of parcels owned per agricultural household was about two (2). There was a very small difference in the average number of parcels per household between male-headed and female-headed households for the Central and Western regions. A total of 2.2 million Ag HHs had use rights for 3.5 million parcels implying an average of 1.6 parcels per agricultural household. There were more male headed Ag HHs with land use rights.

The majority of the parcels were within the enumeration area of the agricultural household's dwelling house; followed by the parcels within the parish. This was the case for all regions. The distribution of parcels by location at the national level was not very different between the parcels that were owned and those where the holders just had use rights. Most of the parcels were within the enumeration areas.

The distribution of parcels within the enumeration area by land tenure system for both parcels owned and those where the holder has just use rights is not different from the general distribution of all the parcels. That is, the Central region had most of its parcels on mailo land whereas for the other regions most of the parcels were under a customary arrangement.

Most of the parcels were obtained through inheritance most specifically from the head. However regional analysis shows that for the Central and Western regions, most of the parcels were purchased (60.5% and 50.2% respectively). While, for the

Eastern and Northern regions, most of the parcels were obtained through inheritance from the head of the household.

For the Second Season of 2004, most of the parcels owned were cultivated with annual crops (52.4%), followed by those parcels under perennial crops (28.6%). The situation was almost the same for the first season of 2005 except for the land under fallow which was significantly less for the Eastern and Northern regions.

In the Central, Eastern and Northern regions, the most expensive land when selling was under leasehold, whereas for the Western Region it was Mailo land.

The Central Region had the highest percentage of parcels (19.1%) with poor soils and the Northern Region had the highest percentage of parcels (55.7%) with good soils. In total 46.2 percent of the parcels in Uganda had soils of fair quality followed by 43.0 percent with good soils.

All regions had their main source of water being rainfall. Most of the parcels in the Eastern and Northern regions were on flat land. In the Central and Western regions, most of the parcels were on gentle slopes.

Almost 64 percent of the parcels in Uganda were in a distance of less than 1 km from the homestead. The heads of the household had most of the land ownership or Use Rights (for about 7.5 million parcels), followed by the head and spouse jointly (about 1.4 million parcels). The distribution of rights to rent out land were the same as for rights to sell land except that there was also a significant number of parcels (about 2.4 million parcels) where those who had land ownership or user rights did not need anybody's approval to rent out land.

Western Region recorded the highest percentage (36%) of parcels with Certificate of Title followed by the Central Region (32%); the Eastern recorded least (13%).

The percentage of parcels that have had disputes is relatively small at 6.5% of all parcels at the national level. Most of the parcels with disputes had the most recent disputes after 1999. The majority of the disputes were with the spouse's family member both at the national level (93.9%) and at the regional level. At both the national (66.6%) and regional levels most disputes had been resolved.

CHAPTER FOUR: AREA AND PRODUCTION OF MAJOR CROPS

4.1 Introduction

Information was collected on both area and production of crops during the Second Season of 2004 and the First Season of 2005.

Mostly grown crops were: Maize, Beans, Cassava and Banana (Food)

The crops grown by most Ag HHs (Ag HHs) were: Maize, Beans, Cassava and Bananas. This is shown by the fact that each one was grown by at least 3 million households. The total estimated number of Ag HHs was 4.2 million which means that Maize, Beans, Cassava and Banana (Food-type) were grown by: 85.8, 80.8, 74.3 and 73.1 percent of total Ag HHs, respectively. These were followed by Sweet Potatoes and Coffee with about 2 and 1.7 million Ag HHs (or 47.4 and 41.6 %) respectively. The same pattern was observed for the different regions except for the Northern Region where Sorghum and Simsim replaced Sweet Potatoes and Coffee.

Most Ag HHs in the Eastern, Western & Central grew Maize, Banana & Cassava

In terms of some selected crops, Cassava and Sweet Potatoes were grown mostly by the Central Region with 23.3 and 15.7 percent of the total Ag HHs respectively; Maize was grown mostly by the Eastern Region with 29.7 percent of the Ag HHs. In the case of Sorghum, the Northern Region grew it mostly with 6 percent; Finger Millet, Beans and Banana (Food-type) were mostly grown by Ag HHs in the Western Region with percentages of 11.3, 34.3 and 30.2, respectively as Table 4.1 shows.

It is observed that the total number of Ag HHs that grew crops grouped under "Others", was 4.7 million is greater than 4.2 million. The explanation for this is that there was multiple counting as a result of the Ag HHs that grew several crops being counted several times.

Table 4.1: Number and Percentage of Ag HHs by type of Crop Produced by region ('000)

Crop	Region									
	Central		Eastern		Northern		Western		Total	
	No:	%	No:	%	No:	%	No:	%	No:	%
Banana (Food)	1,031	24.8	729	17.6	23	0.6	1,253	30.2	3,036	73.1
Cassava	966	23.3	847	20.4	546	13.2	726	17.5	3,084	74.3
Maize	953	23	1,231	29.7	363	8.7	1,015	24.5	3,560	85.8
Beans	873	21	719	17.3	335	8.1	1,425	34.3	3,352	80.8
Coffee all	708	17.1	570	13.7	24	0.6	427	10.3	1,728	41.6
Sweet Potatoes	650	15.7	603	14.5	152	3.7	564	13.6	1,969	47.4
Banana beer	299	7.2	146	3.5	6	0.1	509	12.3	961	23.2
Groundnut	156	3.8	194	4.7	163	3.9	261	6.3	774	18.6
Banana sweet	144	3.5	110	2.6	17	0.4	222	5.3	494	11.9
Irish potatoes	53	1.3	4	0.1	3	0.1	185	4.5	244	5.9
Finger Millet	35	0.8	78	1.9	108	2.6	467	11.3	688	16.6
Sorghum	25	0.6	146	3.5	248	6	209	5	628	15.1
Soya Bean	10	0.2	71	1.7	7	0.2	21	0.5	109	2.6
Cocoa	6	0.1	2	0	-	-	52	1.3	61	1.5
Simsim	2	0	34	0.8	204	4.9	6	0.1	247	6
Cotton	2	0	229	5.5	118	2.8	59	1.4	408	9.8
Tea	1	0	-	-	-	-	12	0.3	13	0.3
Field Peas	-	-	8	0.2	43	1	2	0	53	1.3
Pigeon Peas	-	-	7	0.2	27	0.7	1	0	35	0.8
Others	1,211	29.2	1,221	29.4	1,014	24.4	1,209	29.1	4,654	112.1

A comparison between regions is shown in Table 4.2. The Eastern Region led in the percentage of Ag HHs (34.6) that grew Maize, 65.1 for Soya Beans, and 56.2 for Cotton. Regarding Cassava, sweet Potatoes, and Coffee (All), the Central Region had most of the Ag HHs with 31.3, 33.0, and 40.9 percent respectively. The Northern Region had the highest percentage of Ag HHs that grew Simsim, Pigeon Peas, and Sorghum at 82.5, 77.1 and 39.5 percent respectively. The Western Region led in the percentage of Ag HHs for the following crops: Irish Potatoes (75.9), Beans (42.5), Banana – Food and Groundnuts (33.7).

Table 4.2: A Comparison of Percentage Distribution of Ag HHs by type of crop produced by Region

Crop	Region									
	Central		Eastern		Northern		Western		Total	
	No:	%	No:	%	No:	%	No:	%	No:	%
Maize	953	26.8	1,231	34.6	363	10.2	1,015	28.5	3,560	100
Finger Millet	35	5.1	78	11.3	108	15.8	467	67.8	688	100
Sorghum	25	4.0	146	23.2	248	39.5	209	33.3	628	100
Beans	873	26.0	719	21.5	335	10.0	1,425	42.5	3,352	100
Pigeon Peas	-	0.0	7	20.5	27	77.1	1	2.4	35	100
Groundnut	156	20.1	194	25.1	163	21.1	261	33.7	774	100
Simsim	2	0.9	34	14.0	204	82.5	6	2.6	247	100
Soya Bean	10	9.6	71	65.1	7	6.3	21	19.0	109	100
Cassava	966	31.3	847	27.5	546	17.7	726	23.5	3,084	100
Sweet Potatoes	650	33.0	603	30.6	152	7.7	564	28.6	1,969	100
Irish potatoes	53	21.7	4	1.4	3	1.0	185	75.9	244	100
Banana (Food)	1,031	34.0	729	24.0	23	0.8	1,253	41.3	3,036	100
Banana (Beer)	299	31.1	146	15.2	6	0.7	509	53.0	961	100
Banana (Sweet)	144	29.3	110	22.4	17	3.3	222	45.0	494	100
Coffee all	708	40.9	570	33.0	24	1.4	427	24.7	1,728	100
Others	1,211	26.0	1,221	26.2	1,014	21.8	1,209	26.0	4,654	100

4.2 Production (Mt) and Area (Ha) of major crops

Data was collected on crop area and production by farmers' estimates

Data on crop production estimates was obtained by asking farmers for all the production they obtained from all agricultural parcels in the district. It is worth-noting that since data collection for the Second Season of 2004 was carried out during 2005, it was impossible to ask for area and production within EA. On the other hand, it was reasonable to ask for data within district and outside the district. The levels at which the data was collected are shown in Table 4.3.

Table 4.3: Data collection level (on crop area and production) during the Second Season of 2004 and First Season of 2005

Level	2nd season		1st season	
	2004		2005	
	Area	Production	Area	Production
1) Within EA	No	No	Yes	Yes
2) Within District	Yes	Yes	Yes	Yes
3) Outside District	Yes	Yes	Yes	Yes

Three levels at which data was collected

The production which is reported was obtained from level 2 in Table 4.3 above. Level (1) above could not be chosen since there were no estimates for area and production for the Second Season of 2004 and therefore, it would be impossible to compare data between the Second Season of 2004 and the First Season of 2005.

Level (3) above could not be chosen because the proportions of area and production from this level were found to be extremely small.

Area provided is pure and mixed

The area reported is a summation of the area under pure and mixed stand because data on production was based on all area where the crop was grown regardless of crop stand. However, tables on area by crop stand (i.e. Pure or Mixed) are available in Annex 4.

Area under mixed stand was converted into its pure stand equivalent

Data by region is given in the appendix Tables. Similarly for each chart and graph the data is given in Annex 4. For crops in mixed plots, an estimate of the proportion of the crop in the mixture was collected by the Enumerators observing the crops. These proportions were used to convert the mixed plot area to its equivalent in pure stand. These computed areas were then added to the pure stand areas to get the total areas under the crop.

4.2.1 Maize

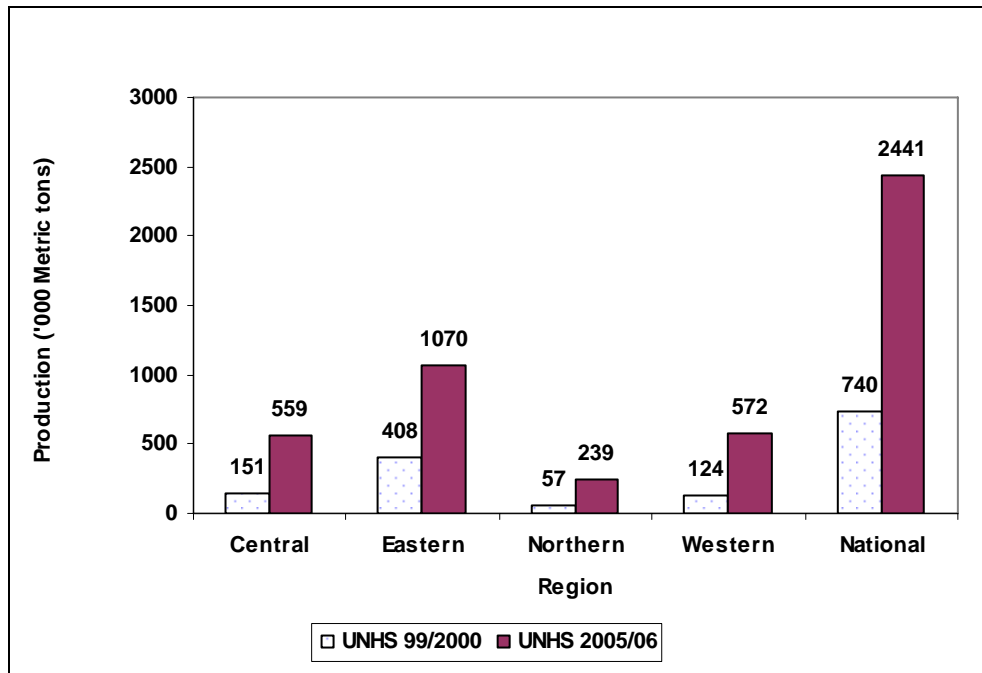
Eastern Region led with 42% of Maize Production

The National production of maize during the period under reference was 2.4 million metric tons (Mt), which came from an estimated area of 1,539,000 hectares (Ha). It is observed from Figure 4.1 that the Eastern Region had the highest production of 1,070,000 Mt, which was 44 percent of the national production. The lowest production was reported by the Northern Region; it was 239,000 Mt and this accounted for 10 percent of national production

Area under maize increased substantially.

There was a dramatic increase of area under maize from 665,000 Ha during UNHS 1999/2000 to 1, 539,000 Ha during the UNHS 2005/06 Ag Mod, an increase of 131.4 percent.

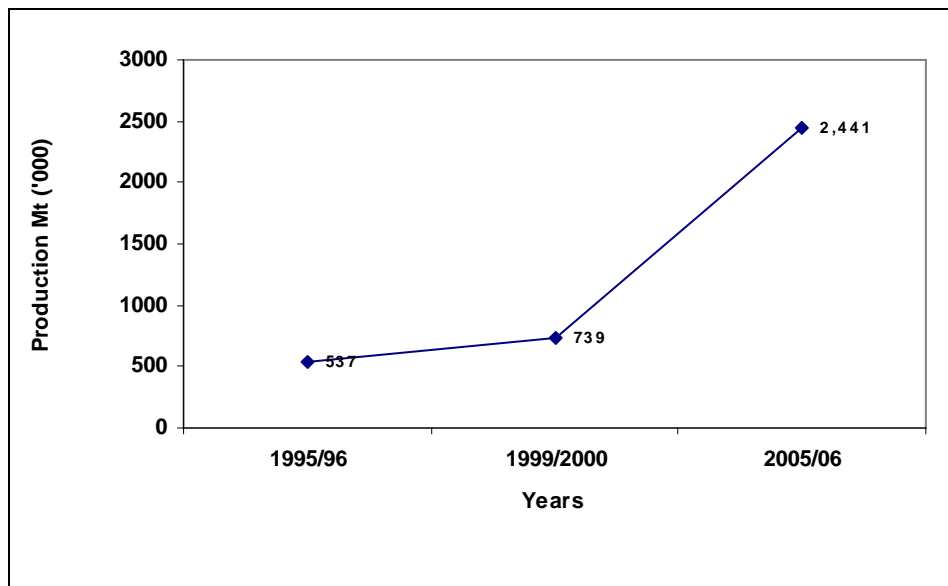
Figure 4.1: Production of Maize by Region



Source: UNHS 1999/2000 Report

Generally, there has been an increasing trend in the production of Maize between UNHS 1995/96 and UNHS 2005/06, but with a sharp rise between the latest two rounds of the Surveys shown in Figure 4.2.

Figure 4.2: Maize Production Trend UNHS 1995/96 –2005/06



Source: UNHS 1995/1996 and 1990/2000 Reports

4.2.2. Finger Millet

Western region led in Finger Millet Production

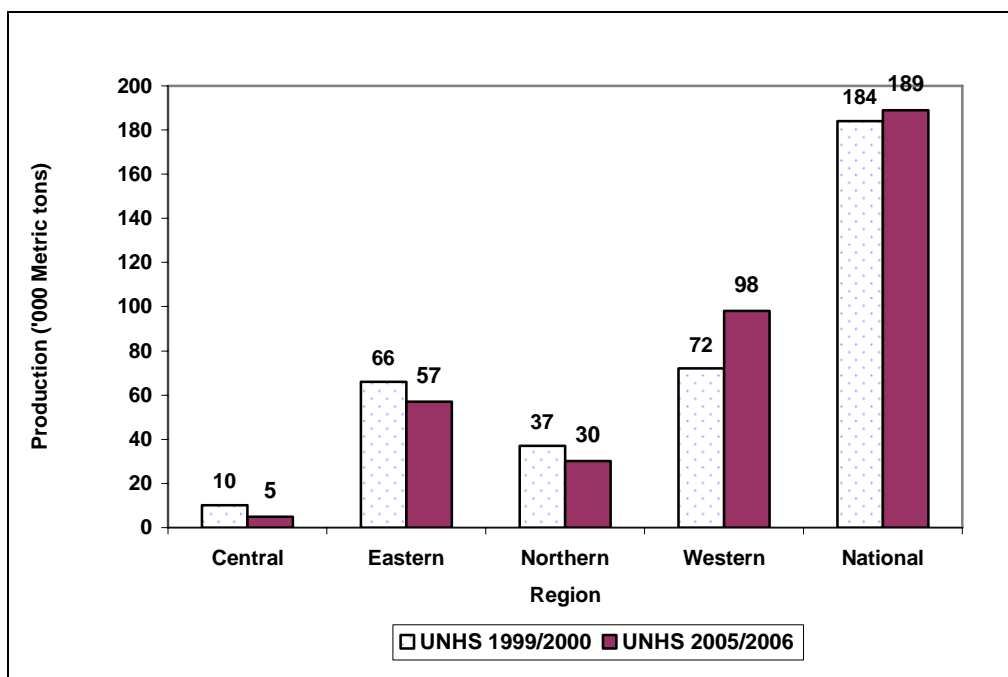
The total production of finger millet was estimated at 189,000 Mt arising from an area of 262,000 Ha. Figure 4.3 indicates that the Western Region with 98,000 Mt had the highest production of Finger Millet and accounted for 52 percent of the total

production. The Central Region reported the lowest production (5,000 tonnes) accounting for only 2.6 percent of the national production.

**Dramatic increase
due to Western
Region**

It is also observed that although there were regional reductions in the production of Finger millet in Central (Note that the estimate for the First Season had a high CVs, Annex 2: SE22), Eastern and Northern Regions between 1999/2000 and 2005/06, the dramatic increase in Western Region was enough to explain the rise in the total production of the crop (from 184,000 Mt to 189,000 Mt) in the years under reference as shown in Figure 4.3

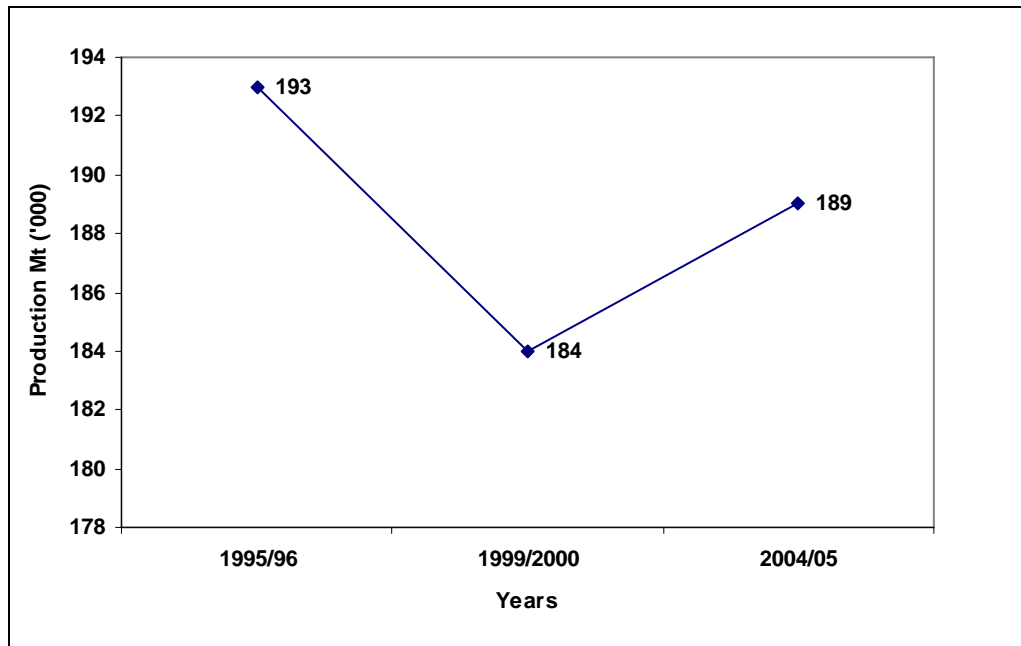
Figure 4.3: Production of Finger Millet by Region



Source: UNHS 1999/2000 Report

Between 1999/2000 and 2005/06, there was an increase in the production as seen in Figure 4.4. However, the finger Millet production is still lower than what it was in the UNHS 1995/96.

Figure 4.4: Finger Millet Production Trend UNHS 1995/96 – 2005/06



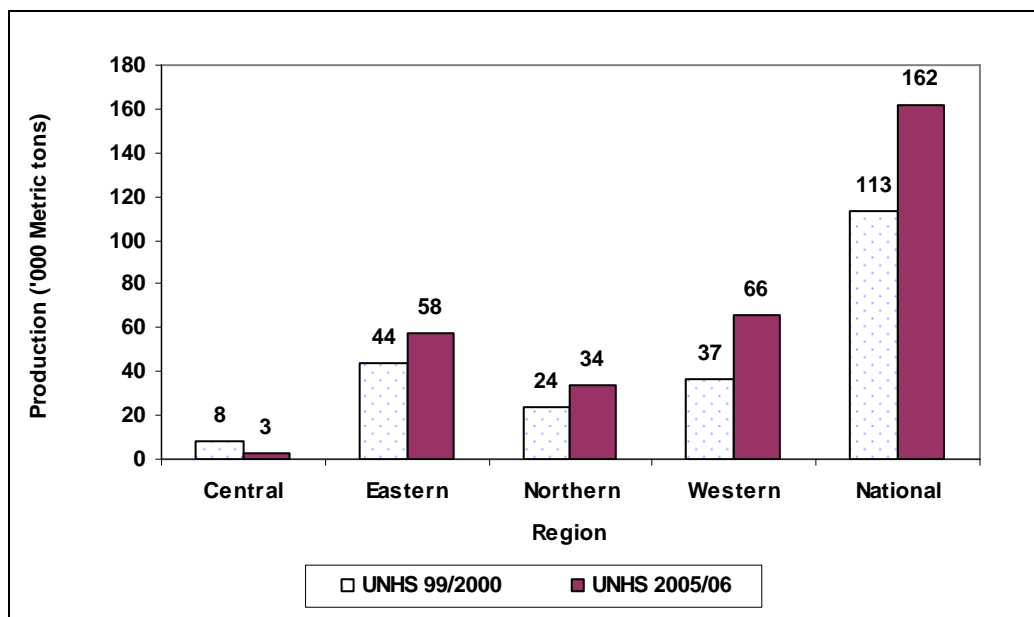
Source: UNHS 1995/96 and 1999/2000 Respective Reports

4.2.3. Sorghum

The estimated production of sorghum was 162,000 Mt on an area of about 328,000 Ha. At regional level, sorghum was predominant in both the Eastern (58,000 Mt) and Western (66,000 Mt) Regions as seen in Figure 4.5. The production in the Eastern and Western Regions accounted for 36 and 41 percent of total production, respectively. Only 3,000 tons or 2 percent of the total Sorghum production was produced in the Central Region.

Eastern Region topped Sorghum production

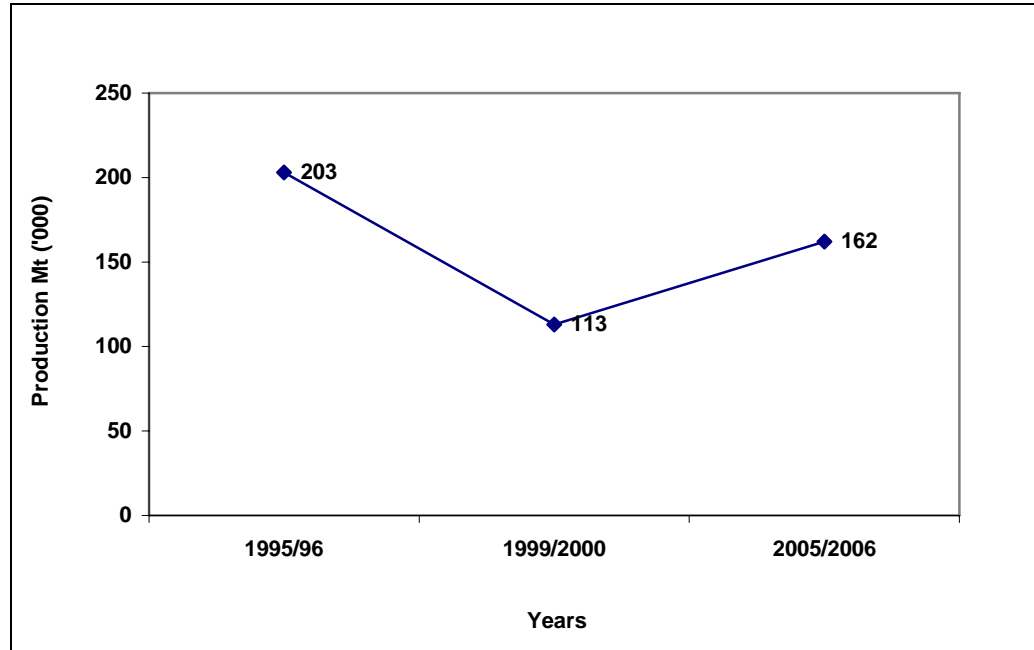
Figure 4.5: Production of Sorghum by Region



Only Central Region recorded a Sorghum production fall.

Besides the Central Region which registered a fall in the production of Sorghum from (8,000 to 3,000 Mt) between UNHS 1999/2000 and UNHS 2005/06, the other three regions recorded increases between the years and were responsible for the overall increase in the total production (from 113,000 Mt to 162,000 Mt) between the referenced years. See figure 4.5 and 4.6

Figure 4.6: Sorghum Production Trend UNHS 1995/96 – 2005/06



Source: UNHS 1995/96 and 1999/2000 Reports

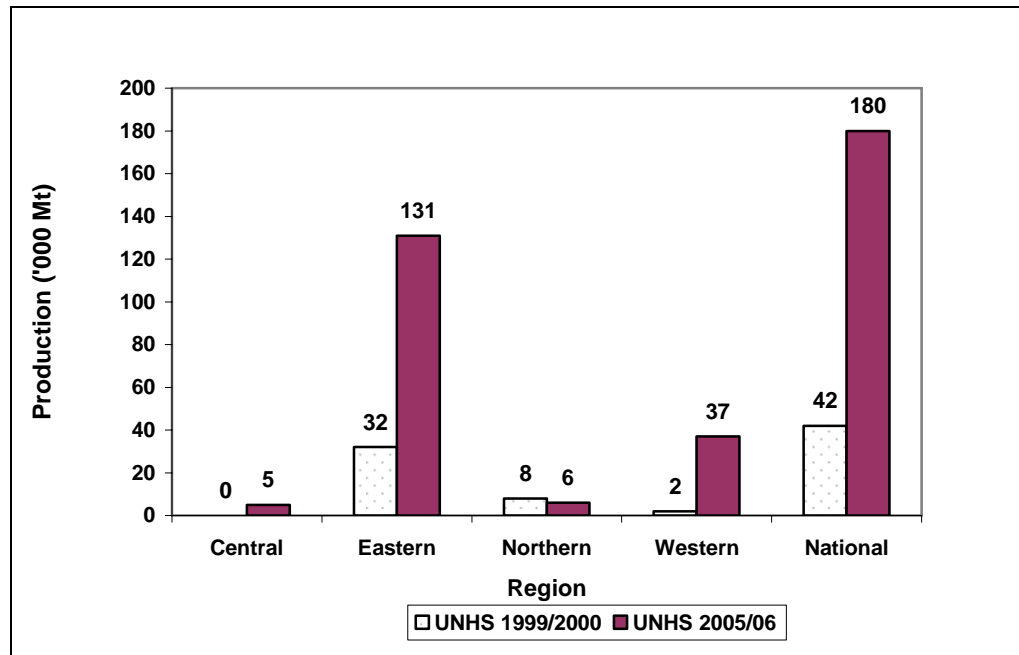
4.2.4. Rice

Rice Production increased more than four-folds. Eastern Region was responsible for 73%

The total output of rice was 180,000 Mt from an area of 107,437 Ha in UNHS 2005/06, which shows a dramatic increase from 42,000 Mt recorded in UNHS 1999/2000. The production of the crop was almost a one region affair, with the Eastern Region producing 131,000 Mt (or 72.8% of total rice production) while the other three regions produced only 49,000 Mt (27.2% of output). However, the increases in the Central and Western Regions are most likely to be as a result of the introduction of up-land Rice in the country. It should be noted that the CVs for production estimates were high for the Central and Western Regions both for the Second Season of 2004 and First Season of 2005. Regarding area, the CVs were high for the Central, Northern and Western Regions in 2004 and; Central and Western Regions in 2005.

The Central Region consistently produced the least amount of rice both in 1999/2000 and 2005/06 with less than one percent and less than three percent respectively as shown in Figure 4.7

Figure 4.7: Production of Rice by Region



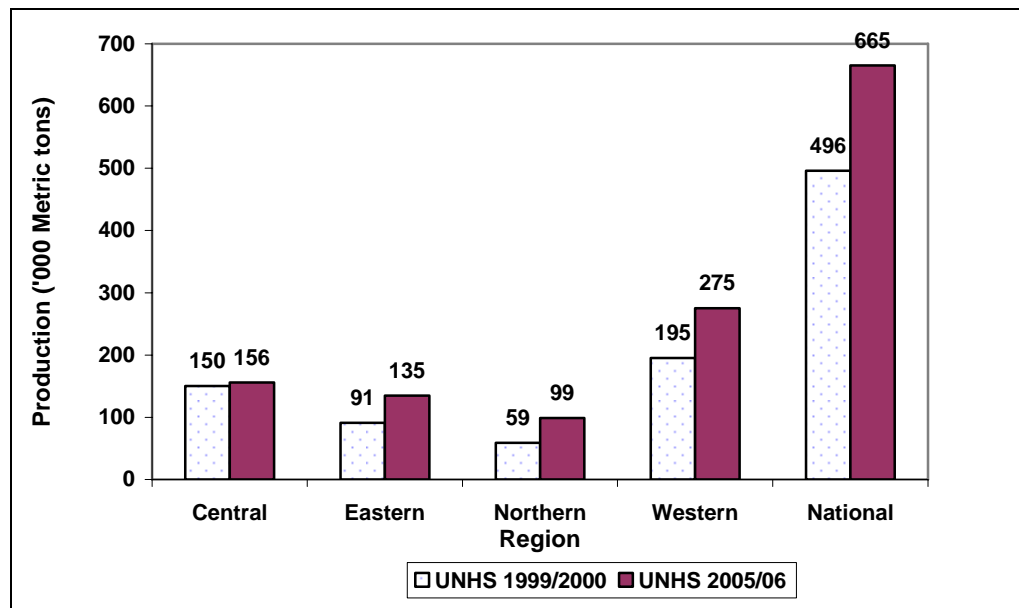
Source: UNHS 1999/2000

4.2.5 Beans

Western Region topped beans production

The national production of Beans was estimated at 665,000 Mt in 2005/06 from an area of about 872,000 Ha. This shows an increase of 169,000 Mt (or 34.1%) from 496,000 Mt in 1999/2000. In 2005/06, the Western Region produced the highest tonnage of Beans (275,000 Mt or 41.4%) followed by the Central with 156,000 Mt (or 23.5%). It is worth noting that all the four regions had increases in Beans production between 1999/2000 and 2005/06 with the Northern Region (Note that the estimate for the First Season of 2005 had a high CV) having the highest increase of 67.8 percent. The Central Region had the least increase of 4 percent as shown in Figure 4.8.

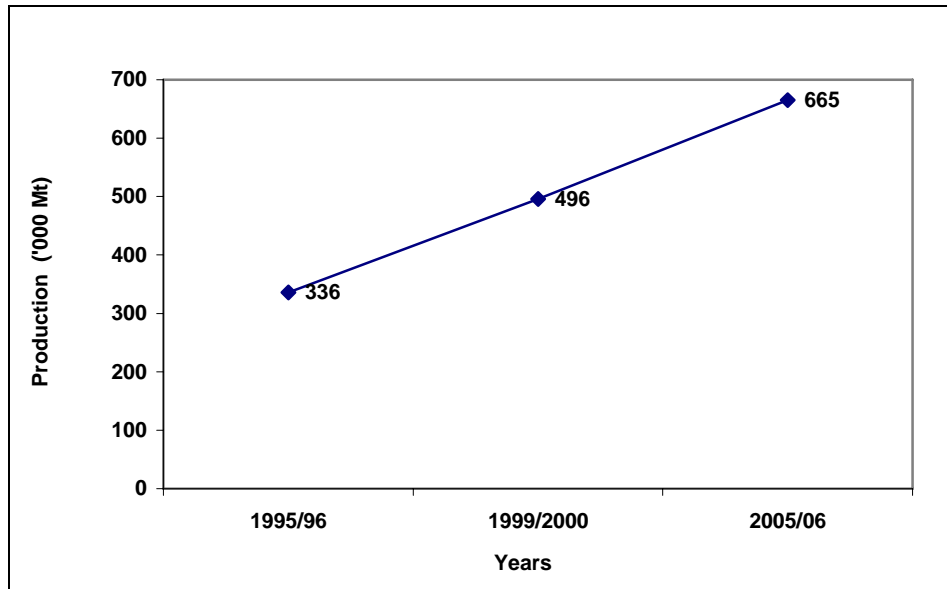
Figure 4.8: Production of Beans by region



Source: UNHS 1995/96 and 1999/2000 Reports

There has generally been an increasing trend in Bean production between 1995/96 and 2005/06. Beans registered an increase in production from 336,000 Mt in 1995/96 to 496,000 Mt in 1999/2000 and 665,000 Mt in 2005/06. See figure 4.9

Figure 4.9: Beans Production Trend UNHS 1995/96 – 2005/06



Source: UNHS 1999/2000 Report

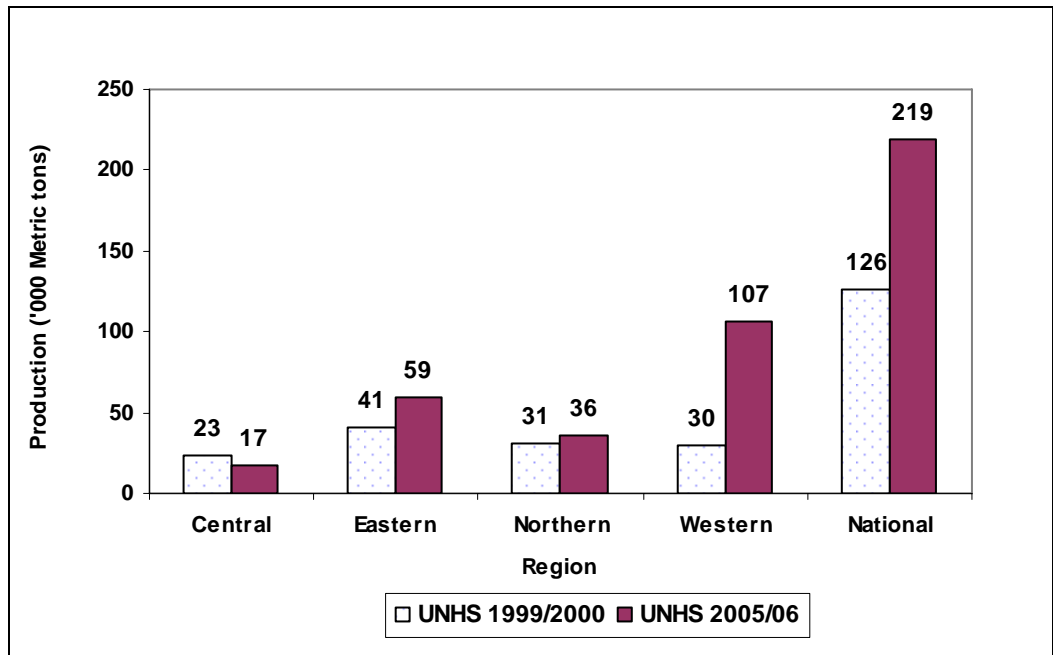
4.2.6 Groundnuts

The total production of Groundnuts in UNHS 2005/06 was estimated to be 219,000 Mt from an area of about 283,000 Ha. This was an increase of 74 percent from the 126,000 Mt produced in 1999/2000.

The Western Region produced the highest amount of Groundnuts (107,000 Mt) and the Central Region had the least production of 17,000 Mt (7.8%). All other regions registered increases in production between 1999/2000 and 2005/06, the Central Region had a drop of 6,000 Mt (26.1% drop) as given in figure 4.10.

Western Region led in Groundnuts production

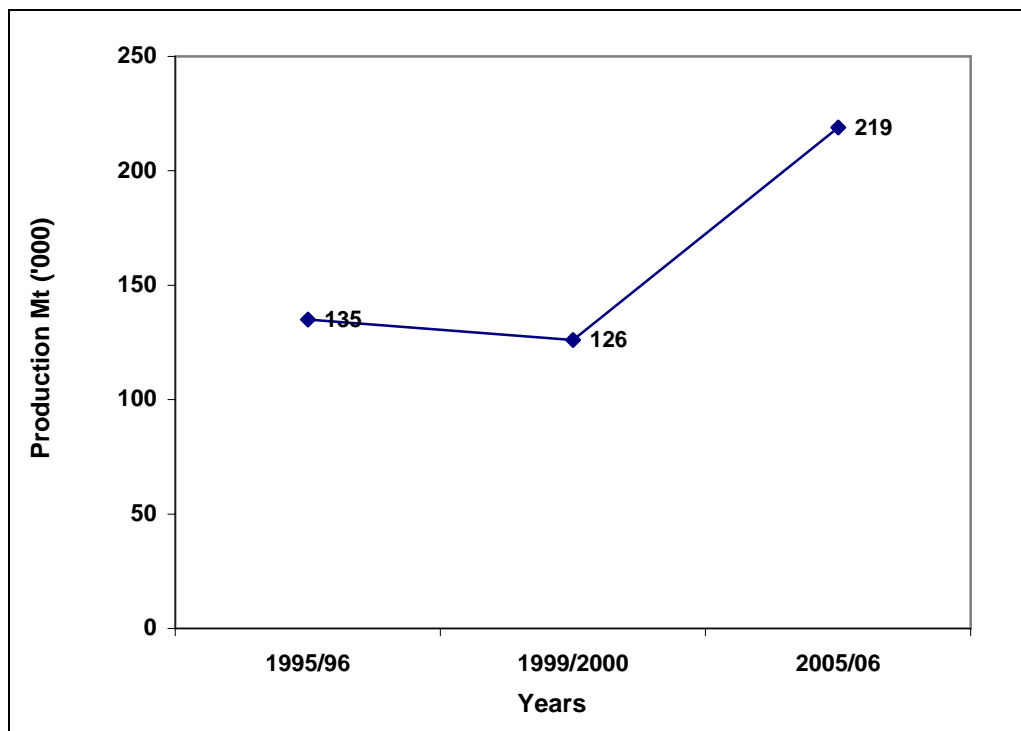
Figure 4.10: Production of Groundnuts by Region



Source: UNHS 1999/2000 Report

Nationally, there was a drop of 9,000 Mt (or 6.7%) in the Groundnuts production between 1995/1996 and 1999/2000. On the other hand the crop registered an increase of 93,000 Mt (nearly 73.8%) between 1999/2000 and 2005/06. See figure 4.11.

Figure 4.11: Groundnuts Production Trend UNHS 1995/96 – 2005/06



Source: UNHS 1995/96 and 1999/2000 Reports

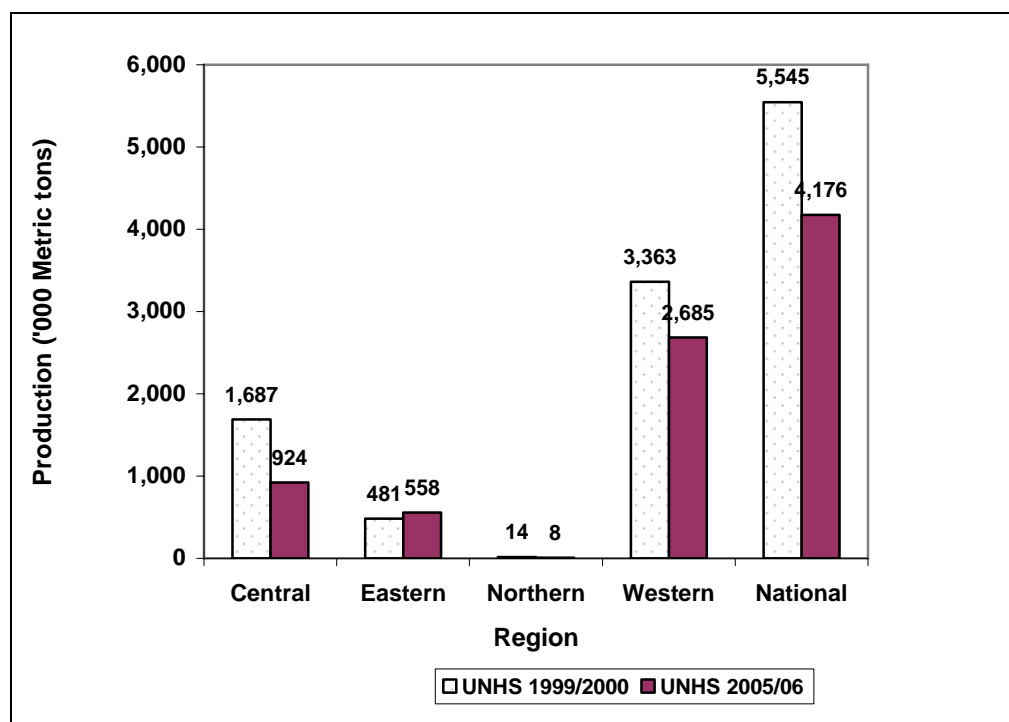
4.2.7 Banana (Food Type)

Although there are three types of Bananas grown namely: Bananas (Food), Bananas (Sweet) and Bananas (Beer), the write-up in this section only covers the Banana (Food type). Data on the other two types is in the Annex 4 tables.

Only Eastern Region recorded an increase,

The total production of Banana (Food Type) was 4,176,000 Mt (the CV was high for the Northern Region production estimate of the Second Season of 2004) out of an estimated area of 1,112,000 Ha (the Northern Region estimate for the area under this crop for the Second Season of 2004 had a high CV). The Eastern Region was the only one that registered a production increase; the other three regions recorded output drops between 1999/2000 and 2005/06 as shown in Figure 4.12.

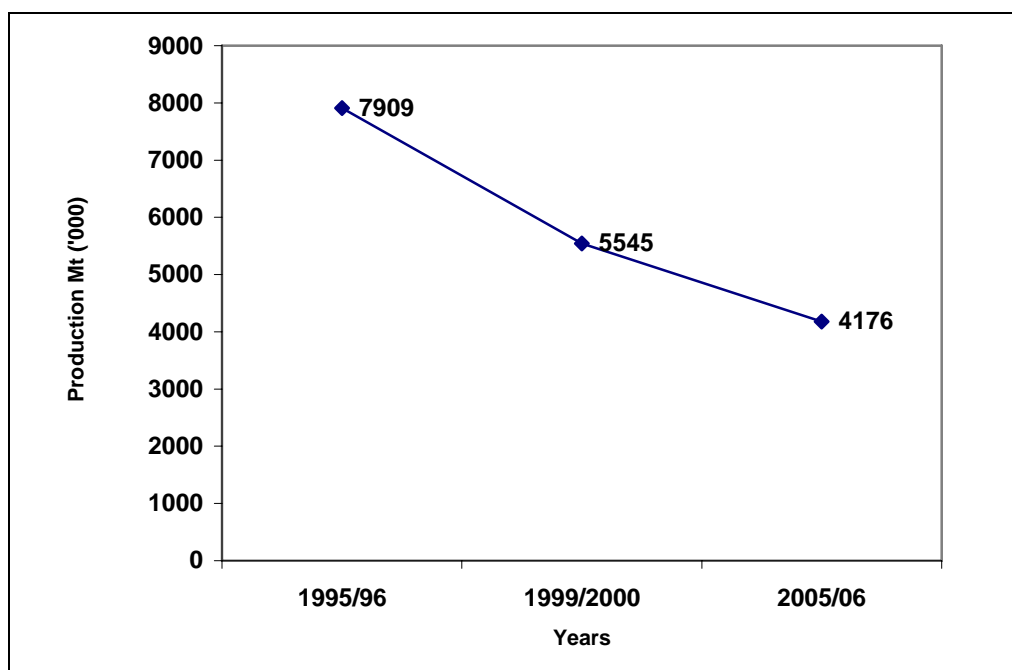
Figure 4.12: Production of Banana (Food Type) by Region



Source: 1999/2000 UNHS

Since 1995/1996, Banana (Food Type) has been registering a downward trend. For example the drop between 1995/1996 and 1999/2000, and, 1999/2000 and 2005/06 was 2,364,000 Mt (or 29.9%) and 1,369,000 Mt (or 23.7%) respectively as shown in Figure 4.13. Over the period, the country has experienced some unstable rainfall. This coupled with Banana Wilt Disease, could mainly be responsible for the fall in production.

Figure 4.13: Banana (Food Type) Production Trend UNHS 1995/96 – 2005/06



Source: 1995/96 and 1999/2000 UNHS

4.2.8 Cassava

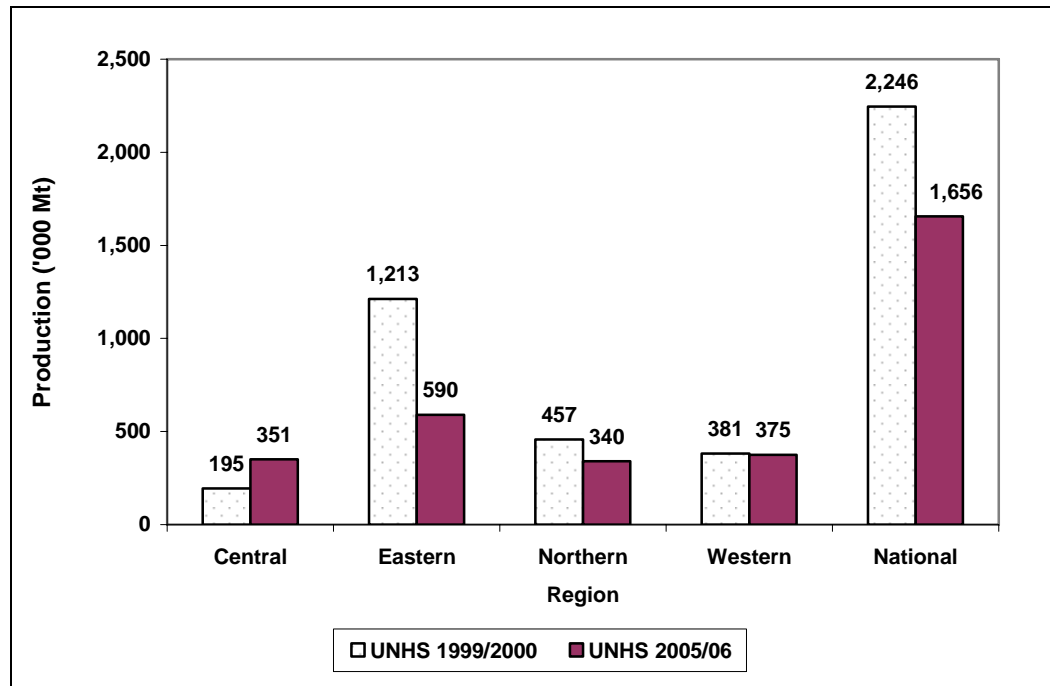
Cassava was largely produced by the Eastern Region

The total output of cassava in 2005/06 was estimated to be 1,656,000 Mt from an area of 1,070,000 Ha. This output was about 26.3 percent lower than 2,246,000 tons produced in 1999/2000. The crop was largely produced in the Eastern Region with 590,000 Mt (35.6%); the Northern Region produced the least amount (340,000 Mt or 20.5%).

Only the Central Region recorded an increase

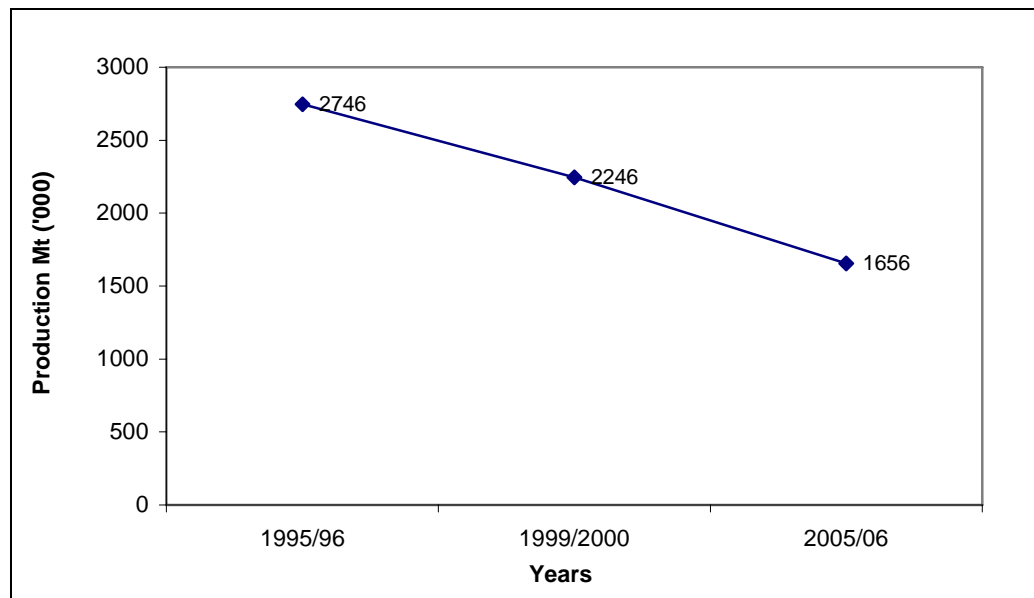
Unlike the Central Region which registered an increase of 156,000 Mt, the other three regions recorded decreases between 1999/2000 and 2005/06, with the Eastern Region having a substantial drop of about 623,000 Mt (51.4%). The possible explanation for this drop could be mainly due to the effect of Cassava Mosaic Disease well as Cassava Streak Disease or introduction of other crops with more value and less bulky. The details on production are shown in Figure 4.14.

Figure 4.14: Production of Cassava by Region



There has been a downward trend of cassava production since UNHS 1995/1996. This is shown by production of 2,246,000 Mt in 1995/1996, 2,246,000 Mt in 1999/2000 and 1,656,000 Mt in UNHS 2005/06. The drop was 22.3 percent between 1995/1996 and 1999/2000. On the other hand the drop in production between 1999/2000 and 2005/06 was 26.3 percent. The performance of production trend is shown in Figure 4.15

Figure 4.15: Cassava Production Trend UNHS 1995/96 – 2005/06



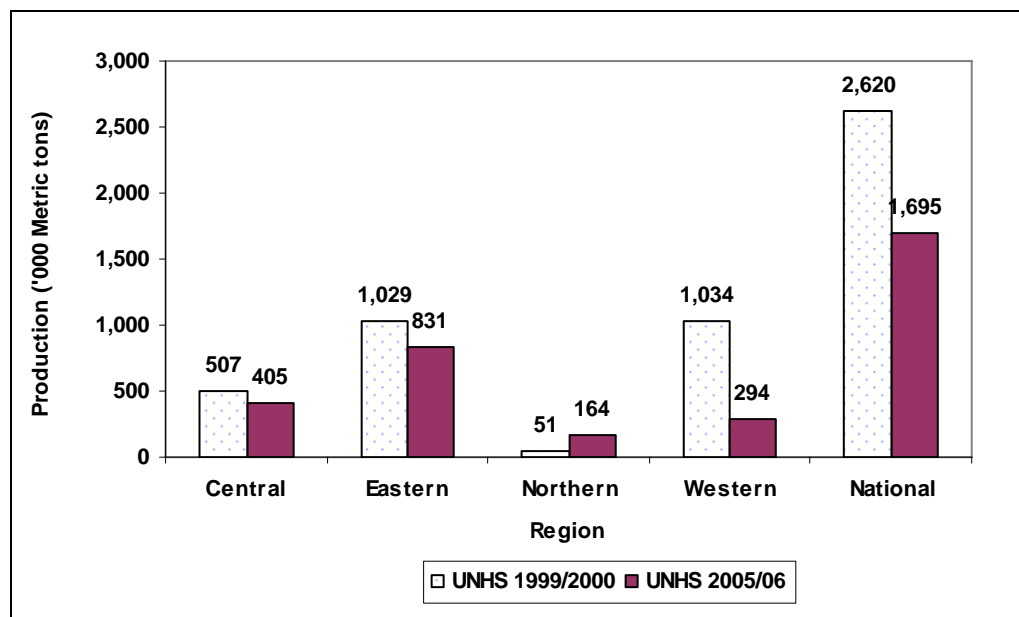
4.2.9 Sweet Potatoes

During 2005/06, the production of Sweet Potatoes was 1,695,000 Mt from an estimated area of 672,000 Ha. In 1999/2000, the production was 2,620,000 Mt, which was a drop.

All regions except Northern registered a decrease

It is observed that with the exception of the Northern Region (which registered an increase), each of the remaining regions recorded a drop in production. The Eastern Region produced the highest quantity of 831,000 Mt, and this was 49.0 percent of the total production. This was followed by the Central Region with 405,000 Mt (or 23.9%). The least quantity of 164,000 Mt (or 9.7%) was produced by the Northern Region.

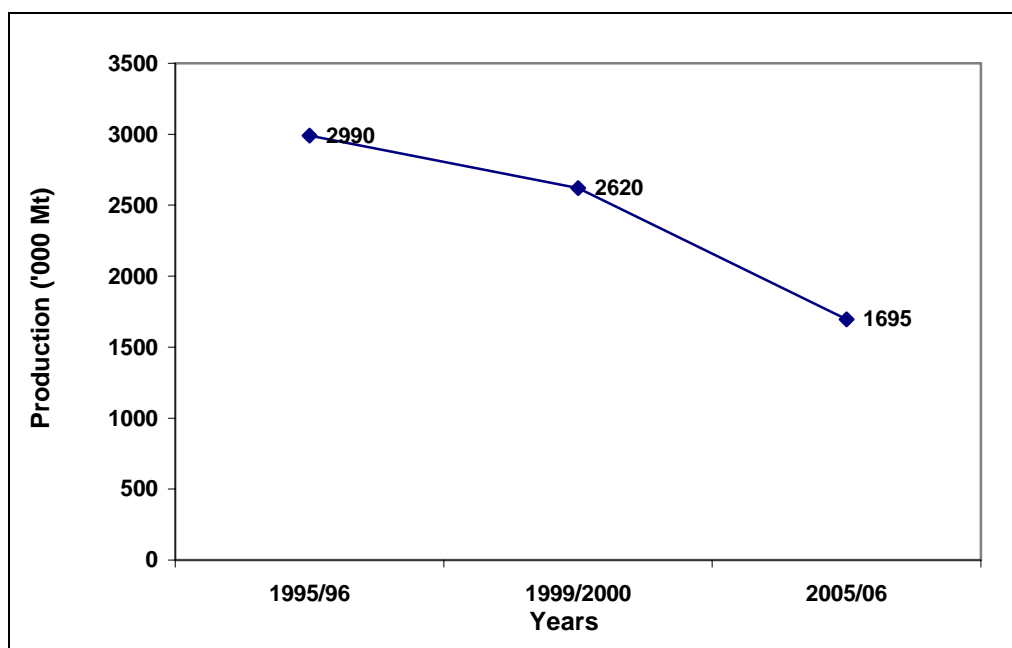
Figure 4.16: Production of Sweet Potatoes by Region



Sweet Potatoes registered a downward trend

Like Cassava, Sweet potatoes registered a downward trend since 1995/96. The drop between 1995/1996 and 1999/2000, and, between 1999/2000 and 2005/06 was 370,000 Mt (or 12.4%) and 925,000 Mt (or 35.5%) respectively as shown in Figure 4.17

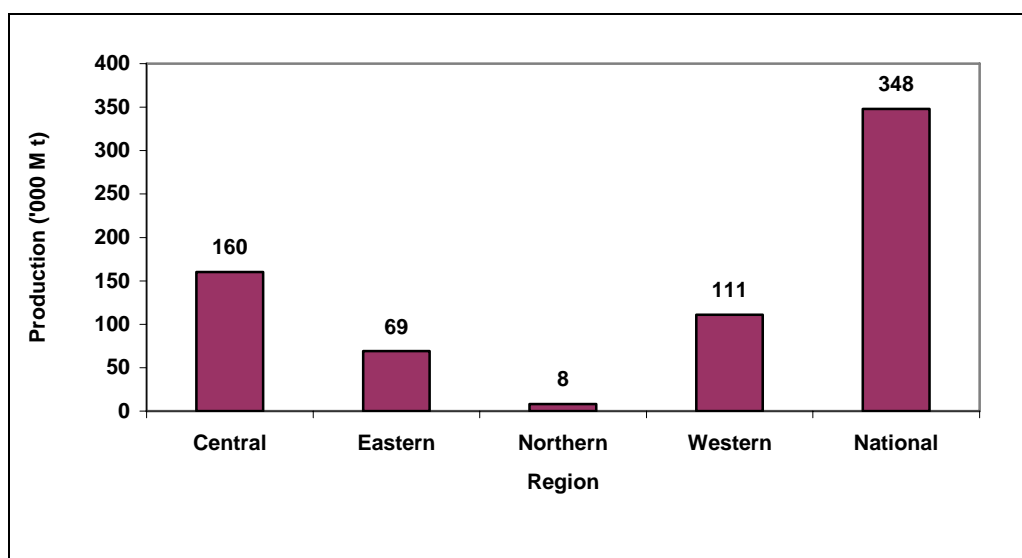
Figure 4.17: Sweet Potatoes Production Trend UNHS 1995/96 – 2005/06



4.2.10 Coffee (All)

The estimated production from the UNHS 2005/06 was 348,000 Mt (CVs were high for Northern Region both in the Second Season of 2004 and First Season of 2005; and in the case of the Central Region for the First Season of 2005) from an estimated area of 573,000 Ha (CVs high for Western Region during the First Season of 2005 and for the Northern Region, both seasons). The production by each region is shown in Figure 4.18.

Figure 4.18: Production of Coffee (All) by Region



4.3 Sales

Data was collected on sales of crops as shown in Table 4.4. The general trend of the proportion of crop sales to output increased in 2005/06 compared with that of

1999/2000. The exceptions were Banana (Food type) and Cassava. The reason for Cassava and Banana (Food-type) falls in terms of proportions sold could be that due to high demand for household consumption, relatively big amounts were retained for domestic consumption. The Sale proportions for the different crops over the period 1995/96 to 2005/06 are shown in Table 4.4.

Table 4.4: Proportion of Crop Sales to Output 1999/2000 – 2005/06

Crop type	1995/96	1999/2000	2005/06
Maize	44	14	52
Finger Millet	18	4	29
Sorghum	23	6	18
Beans	31	9	16
Field Peas	31	-	20
Pigeon Peas	19	-	11
Groundnuts	21	-	27
Simsim	-	-	41
Soya Beans	60	-	80
Cassava	16	61	23
Sweet Potatoes	6	25	26
Irish Potatoes	48	-	13
Banana (Food Type)	17	44	32
Banana (Beer Type)	55	15	29
Banana (Sweet Type)	40	41	50

Note: - NA means Not available/covered during the survey

4.4 Crop Disposition (Utilization)

Apart from the sales, which are already discussed above, data was also collected on crop utilization, disposition. This had other components namely quantity:

- For processed food;
- Given to landlords or proprietor;
- Already consumed;
- Still stored; and,
- Wasted after harvest.

Quantity wasted after harvest was obtained as a product of percent waste and estimated production for each of the crops covered. For each of the crops, a comparison was made between two estimates of production: one derived from the summation of the quantities under utilization and the other one directly estimated from quantities provided by the respondents.

Ideally, the two should have been equal but were not. The difference between them was due to the fact that in the case of the farmers production estimate, condition and

state were provided which helped in applying Conversion Factors. On the other hand, in the case of production derived from the components of utilization, with the exception of sold quantities whose condition and state had been stated, the rest of the components did not have them. Hence the estimated production from the respondents was lower than the estimate derived from different utilization components.

Mention of the causes of the difference has been made above, for purposes of providing important lessons in future, so that the data accuracy can be improved.

4.5 Crop Plots, Area and Average Plot Sizes (APS)

Average plot size obtained by a division of Area (ha) by number of Plots

This section deals with average plot sizes (APSs) which are computed from area (Ha) and number of plots. The approach was to divide area (obtained by a summation of area under pure and computed mixed stand) by number of plots (a summation of plots under pure and mixed stand). Crops covered in this section are: Maize, Finger Millet, Sorghum, Beans, Groundnuts, Cassava, Sweet Potatoes, Irish Potatoes and Banana (Food-type), among others. Tables 4.5 – 4.11 formed the basis for providing the data and information on Crop Area, Plots and APSs.

Table 4.5: Average Plot sizes (Ha) 2005/06

Crop	Crop Area ¹ (Ha) ('000)	Number of Plots ² ('000)	Average plot size (Ha)
Maize	1,539	8,422	0.18
Finger millet	262	1,353	0.19
Sorghum	328	1,678	0.20
Beans	873	6,599	0.13
Field peas	27	127	0.22
Pigeon peas	22	192	0.12
Groundnuts	283	1,851	0.15
Simsim	109	430	0.25
Soya beans	31	229	0.14
Cassava	1,070	7,376	0.15
Sweet potatoes	672	4,704	0.14
Irish potatoes	47	494	0.10
Banana (food-type)	1,112	6,214	0.18
Banana beer	299	1,943	0.15
Banana sweet	66	999	0.07
Coffee all	572	3,505	0.16
Tea	40	27	1.48
Cocoa	54	134	0.40
Cotton	200	484	0.41
Tobacco	24	102	0.23

Notes: ¹. Total of pure and imputed mixed crop areas

². Both Pure and mixed

<p>Nearly 60% of plots were in First Season 2005</p>	<p>4.5.1 Maize</p> <p>The total number of plots under Maize was estimated to be 8,422,000. Of these, 3,523,000 (41.8%) were in the second season of 2004 and 4,899,000 (58.2%) were in the First Season of 2005.</p>
<p>Maize APS registered a decrease</p>	<p>Total estimated area under the crop was 1,539,000 Ha, implying that the APS was 0.18 Ha. During 1995/96 and 1999/2000 the APS was estimated at 0.20 and 0.28 Ha. This means that there has been a drop in the APS. One of the major explanations for this could be that the number of Ag HHs is increasing and yet the area with maize growing potential is relatively fixed. This explanation could be applicable to other similar observation on the APSs of other crops.</p>
<p>Plots were about equal in 2004 and 2005</p>	<p>4.5.2 Finger Millet</p> <p>The total number of plots under Finger Millet was estimated to be 686,000 during the second season of 2004 and 667,000 in the First Season of 2005. The total for these two seasons was 1,353,000. APS was estimated at 0.19 Ha which was lower than 0.27 Ha in 1995/96 and 0.32 Ha during 1999/2000.</p>
<p>There was a fall in APS</p>	
<p>APS fell from 0.27 (1995 & 1999) to 0.2 Ha to 2005/06</p>	<p>4.5.3 Sorghum</p> <p>The total number of plots under Sorghum was estimated to be 1,678,000 of which 644,000 (38.4%) were in the Second Season of 2004 and 1,034,000 (61.6%) were in the First Season of 2005. The APS was 0.20 Ha compared with 0.27 Ha recorded for both 1995/96 and 1999/2000.</p>
<p>A fall from 0.21 Ha to 0.13 Ha</p>	<p>4.5.4 Beans</p> <p>During the Second Season of 2004, the number of plots under beans was 3,313,000 (50.2%). For the First Season of 2005, the number was 3,287,000 (49.8%). The APS was 0.13 Ha. Once more, this was smaller than 0.17 Ha recorded in 1995/96 and 0.21 Ha in 1999/2000.</p>
<p>Decreased APS from 0.25 Ha to 0.15 Ha</p>	<p>4.5.5 Groundnuts</p> <p>The Groundnut crop was grown on 1,851,000 plots of which 772,000 and 1,079,000 were in the Second Season of 2004 and First Season of 2005 respectively; their respective percentages were 41.7 percent and 58.3 percent. The average plot size was 0.15 Ha, a fall from 0.25 Ha in 1999/2000.</p>
<p>APS fell from 0.26 Ha to 0.15 Ha</p>	<p>4.5.6 Cassava</p> <p>In terms of number of plots, Cassava with 7,376,000 was the second most important crop after Maize. Of these, 3,073,000 (41.7%) were in the Second Season of 2004 and 4,303,000 (58.3%) were in the First Season of 2005. The APS size was 0.15 Ha down from 0.26 Ha in 1999/2000.</p>

APS decreased from 0.16 Ha to 0.14 Ha

4.5.7 Sweet Potatoes

The total number of plots under Sweet Potatoes was estimated to be 4,704,000 of which 1,945,000 (41.3%) were in Second Season of 2004 and 2,759,000 (58.7%) were in the First Season of 2005. The average plot size was 0.14 Ha which was the same as recorded in 1995/96. However, the APS was 0.16 in 1999/2000.

APS decreased from 0.16 Ha to 0.10 Ha

4.5.8 Irish Potatoes

This crop was grown on 494,000 plots (CVs for the estimated plots were high for the Eastern Region (both Seasons) and, the Northern Region (First Season of 2005)) of which 237,000 (48.0%) were in the Second Season of 2004 and 256,000 (52.0%) were in the First Season of 2005. The average plot size rose from 0.14Ha in 1995/96 to 0.16Ha in 1999/2000 and dropped to 0.10 Ha in 2005/06.

Only banana (Food type) covered

4.5.9 Banana (Food-type)

The total number of plots under this crop was 6,214,000. It is observed that from the point of plot number, this crop was the fourth most important after Maize, Cassava, and, Beans. During the second season of 2004, the number of plots was 2,993,000 (48.2%) and 3,221,000 plots or 51.8 percent for the First Season of 2005. The average plot size was 0.18 Ha.

A fall in APS from 0.26 Ha to 0.18 Ha

For 1995/96 and 1999/2000, the average plot size was 0.24 and 0.26 Ha respectively; it is worth-noting however that for 1995/96, this average was computed for all types of banana (i.e. Food, Beer and Sweet). In general, the APS is decreasing.

4.5.10 Coffee (All)

The estimated total number of plots was 3,505,000 (CVs for the Northern Region for both seasons were high). They were almost equally divided between the two seasons. The APS was 0.16 Ha.

4.6 Summary of Findings

Although many crops were covered in the survey, the focuses on nine crops namely: Maize, Finger Millet, Sorghum, Rice, Beans, Ground nuts, Bananas (Food Type), Cassava, and Sweet Potatoes and Coffee (All). For the other crops, either Cvs were high or observations few or both and therefore could not be reported on. Estimates of plots, area and production were computed for the data within District and are the ones provided in this report. Estimates from within Enumeration Areas (EAs) and outside the district can be accessed in UBOS.

The findings show that production for Bananas (Food-Type), Cassava and Sweet Potatoes registered a drop compared with quantities produced in 1999/2000. For Bananas (Food-Type), Banana Wilt Disease is likely to have affected the production.

In the case of Cassava, both the Cassava Mosaic Disease and Streak Disease may have adversely impacted on its production. Regarding Sweet Potatoes, poor rainfall distribution could have been a major factor in reducing production.

However, Maize, Sorghum, Finger Millet, Beans and Groundnuts registered increases compared with the quantities produced in the UNHS 1999/2000.

The CVs for crop production were generally higher than for both crop plots and area. About half of the crops had CVs higher than 40% or less than 25 observations or both namely: Field Peas, Pigeon Peas, Simsim, Soya Beans, Banana (Beer), Tea, Tobacco, Cocoa, Cotton and Groundnuts. It was the widely grown crops that had acceptable CVs.

It can therefore be concluded that for some crops it is necessary to use other methods of data collection other than the one used in Household Surveys. Such crops include tea, tobacco, cocoa, cotton and to some extent coffee. The current approach to use bottlenecks in the marketing chain may offer better data.

For the food crops whose estimates had high CVs, either the sample size should be increased, or there is need to construct and use appropriate Sampling Frames.

CHAPTER FIVE: LIVESTOCK AND POULTRY NUMBERS

5.1 Introduction

The survey collected information on livestock, poultry and other related animals owned by the household, on earnings from the sale of such animals, expenditures on purchases, and in general on the dynamics of such animals over the reference period.

It is worth noting that the reference periods varied for different subsections; cattle and pack animals figures were collected using a 12 months recall period, while small stock (i.e. Goats, Sheep and Pigs) had a reference period of 6 months. In addition, poultry and other related animals had a reference period of 3 months prior to the survey date.

In addition, data on livestock/poultry was collected regardless of whether the livestock/poultry were inside or outside the Enumeration Area (EA). This approach to data collection could have a bearing on the numbers compared with collection confined to within selected EAs. The tendency with this approach would be to overestimate the numbers.

5.2 Cattle Rearing

5.2.1 Distribution of Ag HHs that reared Indigenous Cattle

Out of 10
Agricultural
HHs 3 reared
indigenous
Cattle

The survey findings show that out of the approximately 4.2 million Ag HHs, there were about 1.1 million Ag HHs with Indigenous Cattle, which was 26.8 percent. This implies that the majority of the Ag HHs (73.2%) do not rear this type of cattle.

Eastern Region
recorded highest
number of Ag HHs
with indigenous
cattle

Out of the 1.1 million Ag HHs that reported rearing Indigenous Cattle, 37.6 percent were in the Eastern Region followed by the Central Region (25.6%). The Western Region recorded the least percentage (15.8%) Ag HHs as shown in Table 5.1.

Table 5.1: Number of Agric HHs with indigenous Cattle ('000)

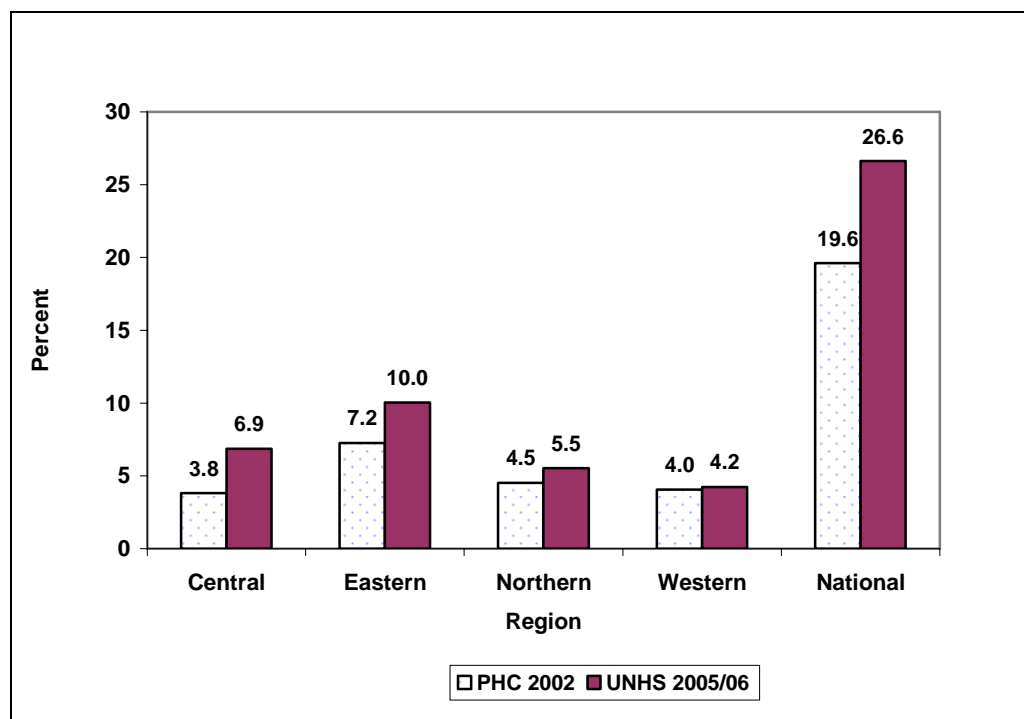
Region	Number of Agricultural Households:	
	With	(%)
Central	285	25.8
Eastern	416	37.7
Northern	229	20.7
Western	175	15.8
Total	1,106	100

Eastern and
Central recorded
reasonable
increases

A comparison of households that reared indigenous cattle at the national level shows that there was an increase from 19.6 percent in PHC 2002 to 26.6 percent in UNHS

2005/06 as given in Figure 5.1. The Central and the Eastern regions registered percentage increases from 3.8 to 6.9 and from 7.2 to 10.0 respectively but the increases in the Northern and Western Regions were minor. This small increase in the Northern Region could be attributed to the civil strife which prevailed in the region.

Figure 5.1: Percentage distribution of Ag HHs with Indigenous Cattle between 2002 PHC and UNHS 2005/06



Source: PHC 2002

5.2.2 Distribution of Ag HHs that reared Exotic Cattle

Western Region had highest number of Ag HHs for Exotic cattle

Table 5.2 shows that the Western Region had the highest number of Ag HHs (91,000) with Exotic Cattle; this constituted 44.4 percent of all the Ag HHs (205,000). This seems to be consistent with what has been going on in terms of farmers up-grading their herds. The Eastern and the Central Regions had about equal 26 percent each. The Northern Region had the smallest number (about 5,000) which was 2.4 percent. The within region distribution shows that about 95 percent of Ag HHs were not involved in rearing Exotic Cattle.

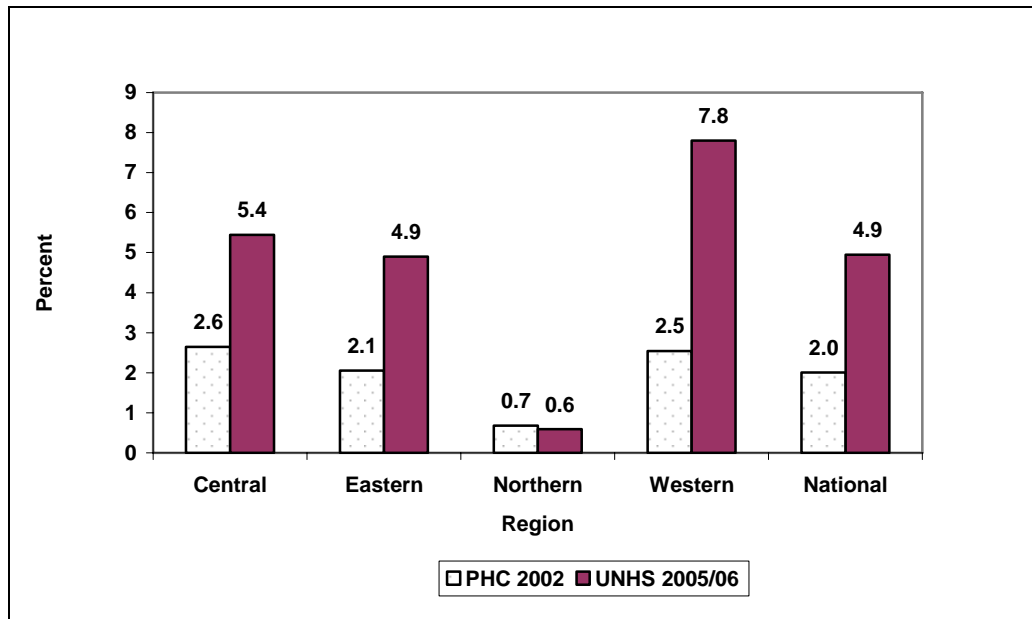
Table 5.2: Number of Ag HHs with and without Exotic Cattle ('000)

Region	With	(%)
Central	55	26.8
Eastern	54	26.3
Northern	5	2.4
Western	91	44.4
Total	205	100

Western Region recorded the highest increase

The findings show that at the national level there was a percentage increase in Ag HHs with Exotic Cattle from 2.0 percent in the PHC 2002 to 4.9 percent in the UNHS 2005/06 as shown in Figure 5.2. The Western Region had a significant increase from 2.5 percent in PHC 2002 to 7.8 percent in UNHS 2005/06. There was a decrease from 0.7 to 0.6 percent in the Northern Region.

Figure 5.2: Percentage distribution of Agric. HHs with Exotic Cattle between PHC 2002 and UNHS 2005/06



5.2.3 Number of Cattle

The national herd was 7.5 million composed of 1.3 million (or 17.3%) Exotic/Cross Cattle and 6.2 million (or 82.7%) Indigenous Cattle.

Central Region had most Indigenous cattle

The Central Region led in Indigenous Cattle with nearly 2 million (31.5%) followed by the Eastern Region with 1.6 million (25.5%). The Northern and Western regions had 1.3 million (20.3%) and 1.4 million (22.6%) respectively. It is observed that the Northern Region which was expected to have the highest number of cattle had the least. The following factors may have led to this, namely:

Possible causes of low number for Northern Region

- The civil strife in the Acholi sub region
- Possible under reporting especially in the Karamoja sub region

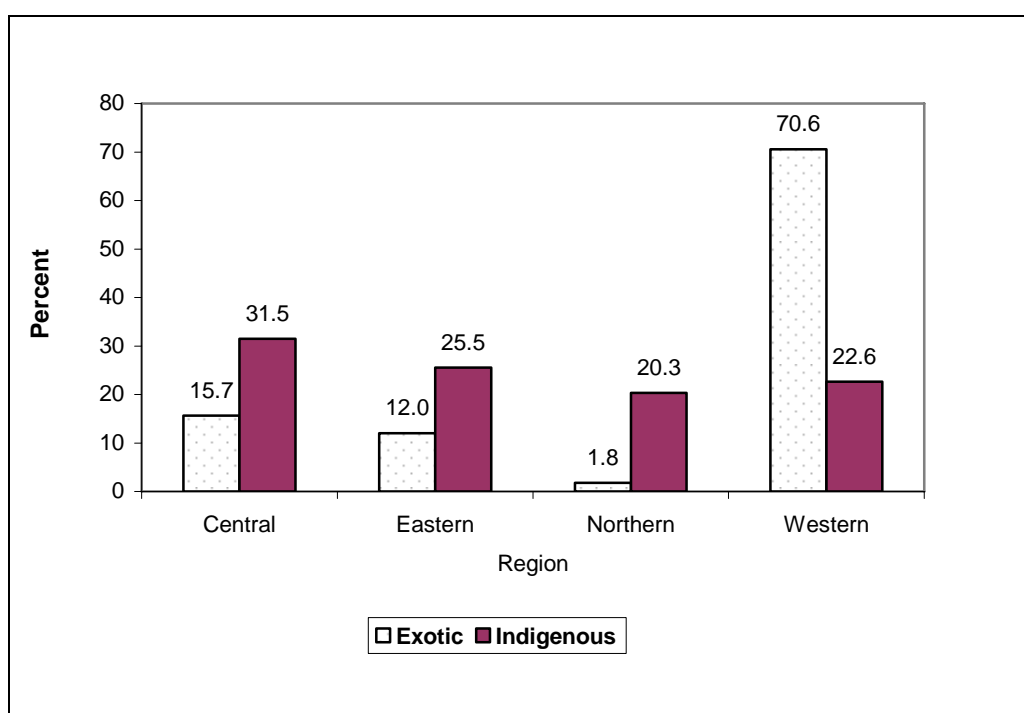
Western Region had most Exotic Cattle

Out of the 1.3 million Exotic/Cross cattle, the Western Region had the highest number (890,000), which was 70.5 percent of all Exotic/Cross Cattle as shown in Table 5.3 and Figure 5.3. The Central Region was next with 198,000 (or 15.7%). The Northern Region had the least number of Exotic Cattle (22,000) representing only 1.8 percent.

Table 5.3: Cattle Number by Breed and Region, UNHS 2005/06 ('000)

Region	Exotic		Indigenous		Total	
	Number	%	Number	%	Number	%
Central	198	15.7	1976	31.5	2174	20.9
Eastern	151	12.0	1601	25.5	1752	23.3
Northern	22	1.8	1273	20.3	1295	17.2
Western	890	70.5	1419	22.6	2309	30.7
Total	1,262	100	6269	100	7531	100

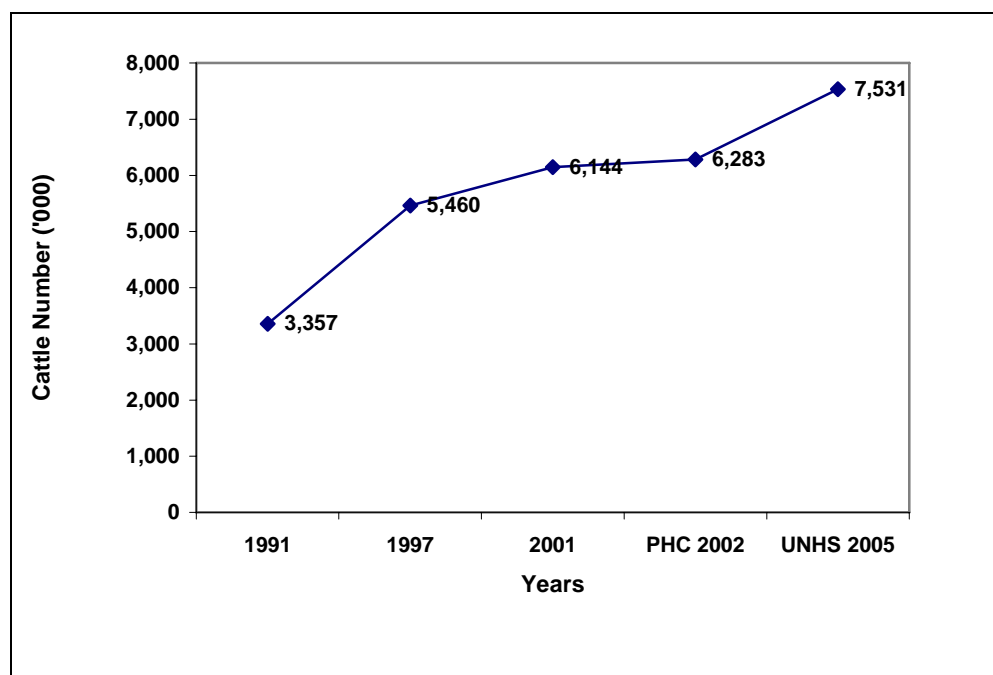
Figure 5.3: Percentage distribution of Cattle number by breed and region



5.2.4 Cattle Trend over the Years

Although different methods of data collection were used between 1991 and 2005/2006, there is a general trend of cattle herd increase from 3.4 million in 1991 to 7.5 million in 2005. This is shown in Figure 5.4

Figure 5.4: Trend in Cattle Numbers ('000)



5.3 Goat rearing

5.3.1 Distribution of Ag HHs that Reared Goats

Only 43% of Agricultural HHs reared goats

Table 5.4 shows that the number of Ag HHs that reared indigenous goats was about 1.8 million out of the total 4.2 million Ag HHs, which was 42.8 percent. The Western Region led with 31.3 percent, followed by the Eastern Region with 28.9 percent. The Central Region had the least percentage of 18.2.

Table 5.4: Number of Ag HHs with and without Indigenous Goats ('000)

Region	Number of Agricultural Households	
	With	(%)
Central	326	18.2
Eastern	516	28.9
Northern	386	21.6
Western	559	31.3
Total	1,788 (100)	100

5.3.2 Exotic Goats

Below 2% of Ag HHs reared Exotic Goats

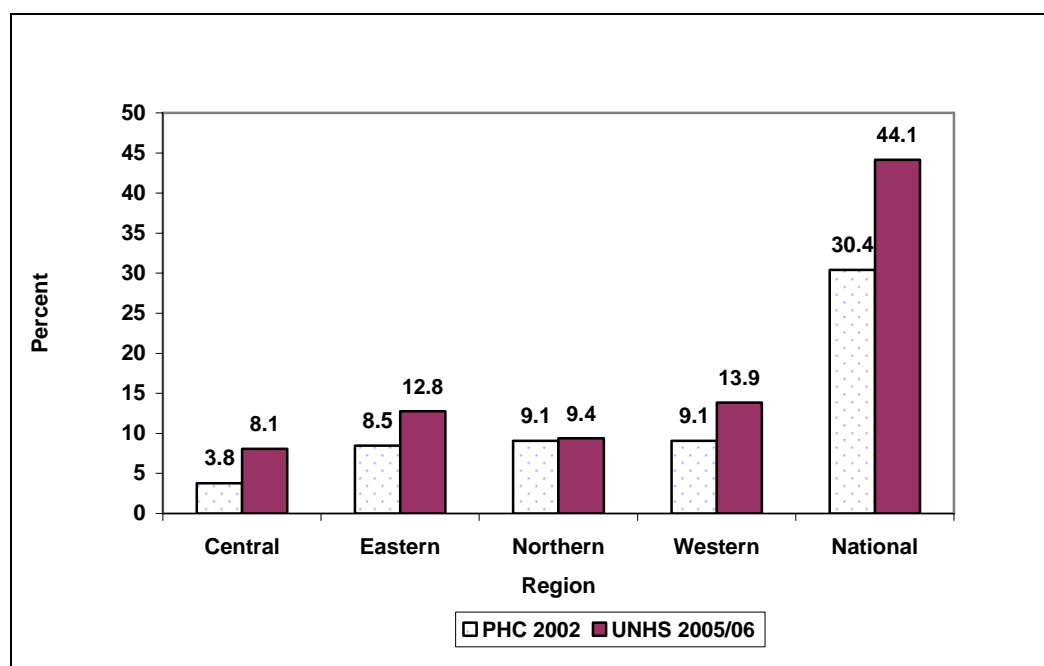
Seventy-seven thousand out of the 4.2 million Ag HHs, reared exotic goats; this was 1.9 percent of the Ag HHs as given in Table 5.5. Out of the 77,000 Ag HHs that reared exotic goats, the Western Region had the highest percentage of 46.9, followed by the Eastern Region with 24.3. The Northern Region registered the least percentage of 6.5.

Table 5.5: Number of Ag HHs with and without Exotic Goats ('000)

Region	Number of Ag HHs	
	With	(%)
Central	17	22.3
Eastern	19	24.3
Northern	5	6.5
Western	36	46.9
Total	77	100

The number of Ag HHs that reared exotic goats increased from 30.4 percent in PHC 2002 to 44.1 percent in the UNHS 2005/06 as shown in Figure 5.5. The increases ranged from 3.8 to 8.1 percent for Central Region and 9.1 to 13.9 percent for Western Region.

Figure 5.5: Percentage distribution of Ag HHs with Exotic Goats between 2002 PHC and UNHS 2005/06



5.3.3 Number of Goats

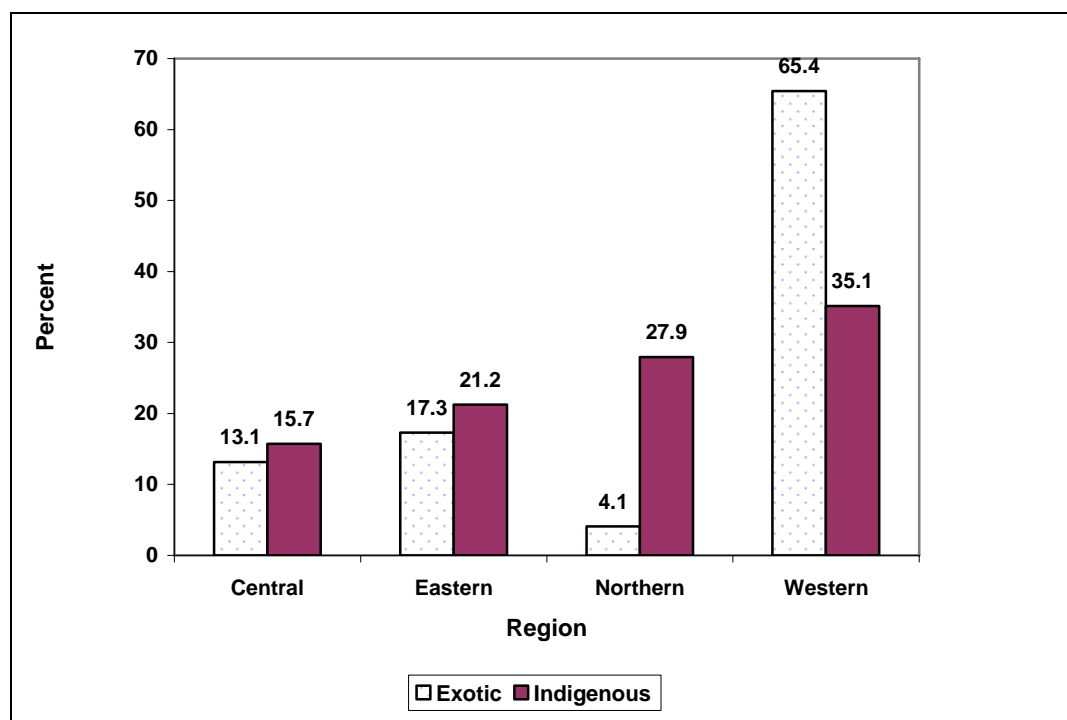
Western Region had the highest number of goats.

The estimated number of goats was 8.1 million for Uganda as given in Table 5.6. Out of this, 0.3 million (or 3.9%) were exotic goats. It will be recalled that Uganda took practical steps to import exotic goats from a number of countries for example South Africa. The Western Region with 208,000 out of 318,000 exotic goats had 65.4 percent. The Northern Region had the least number of 13,000 (4.1%). The distribution by region shows that out of 8.1 million the Western Region had 2.3 million (36.3%) followed by the Northern Region with 2.2 million (26.9%). Figure 5.6 also shows that the Western Region dominated in both Exotic and Indigenous Goats.

Table 5.6: Number of goats by Breed and Region ('000)

Region	Exotic		Indigenous		Total	
	Number	%	Number	%	Number	%
Central	42	13.1	1220	15.7	1262	15.6
Eastern	55	17.3	1647	21.2	1702	21.1
Northern	13	4.1	2167	27.9	2180	26.7
Western	208	65.4	2725	35.1	2934	36.3
Total	318	100	7759	100	8078	100

Figure 5.6: Percentage distribution of Goats number by Breed and Region

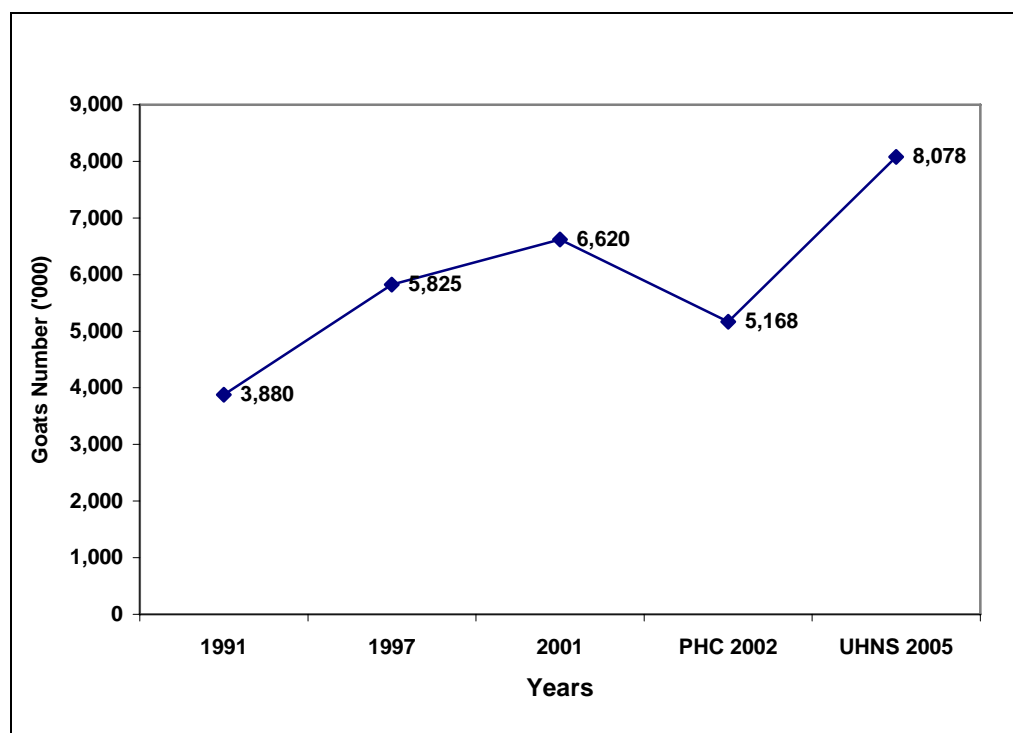


Understated
number during
PHC 2002

5.3.4 Goats Trend over the Years ('000)

The goat herd has increased over the years from the 3.9 million in Statistical Abstract 1991 to 8.1 million in UNHS 2005/06. It is observed that the PHC 2002 figure decreased; this could have been attributed to the respondents understating the numbers during the census.

Figure 5.7: Trend in Goat Numbers ('000)



5.4 Sheep Rearing

5.4.1 Distribution of Ag HHs that reared Sheep

Less than 8 %
Agric HHs
reared Sheep.

The total number of Ag HHs that reared sheep was estimated at 0.3 million out of 4.2 Ag HHs. This was about 7.9 percent of all the Ag HHs.

Western Region
dominated in
rearing sheep

Out of the total Ag HHs that reared sheep (326,000), the Western Region had the highest percentage of 39.6 percent, followed by the Northern Region with 28.8 percent and the Eastern Region had the least of 15.3 percent. This is shown in Table 5.7.

Table 5.7: Number of Agricultural Households with and without Sheep ('000)

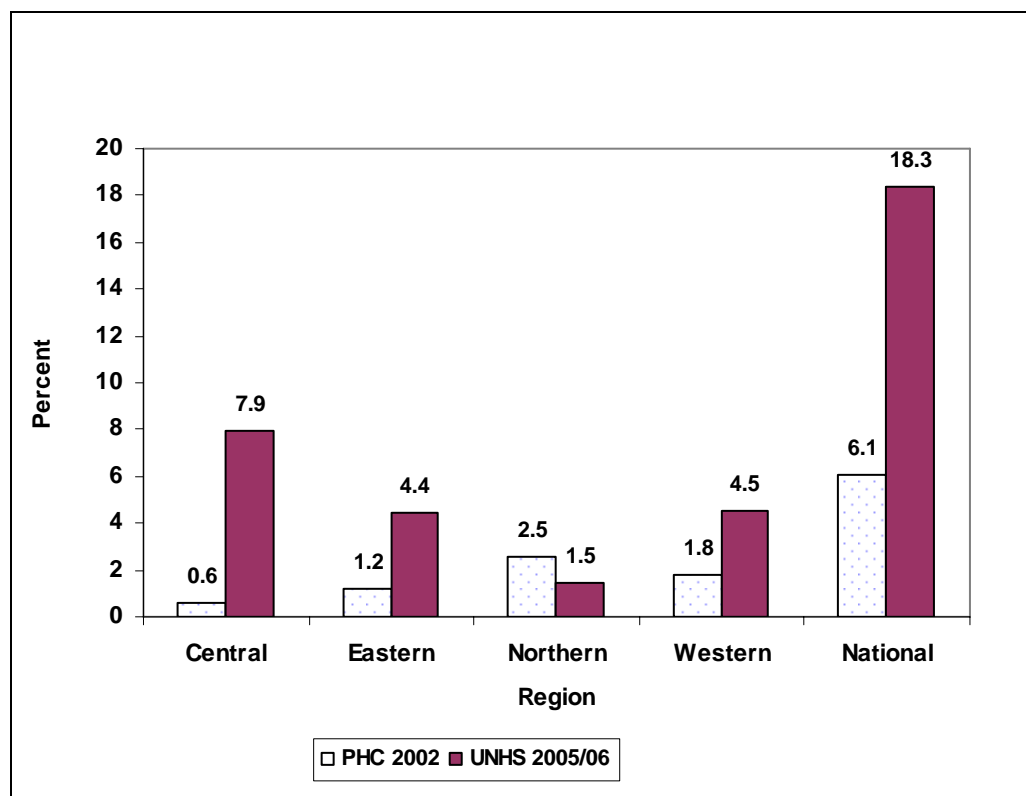
Region	Number of Agricultural Households		Total
	With out	With (%)	
Central	961	53	1,014
Eastern	1,053	50	1,103
Northern	772	94	866
Western	1,040	129	1,169
Total	3,825	326	4,151

Only the Northern
Region had sheep
number reduction

The share of Ag HHs that kept sheep increased from 6.1 percent in PHC 2002 to 18.3 percent UNHS 2005/06 as shown in Figure 5.8. The increases ranged from 0.6 to 7.9 percent for the Central Region and from 1.8 to 4.5 percent for the Western Region.

Unlike other regions, the Northern Region had the Ag HHs that kept sheep reducing from 2.5 to 1.5 percent between 2002 PHC and UNHS 2005/06.

Figure 5.8: Percentage distribution of Ag HHs with Sheep between 2002 PHC and UNHS 2005/06



5.4.2 Number of Sheep

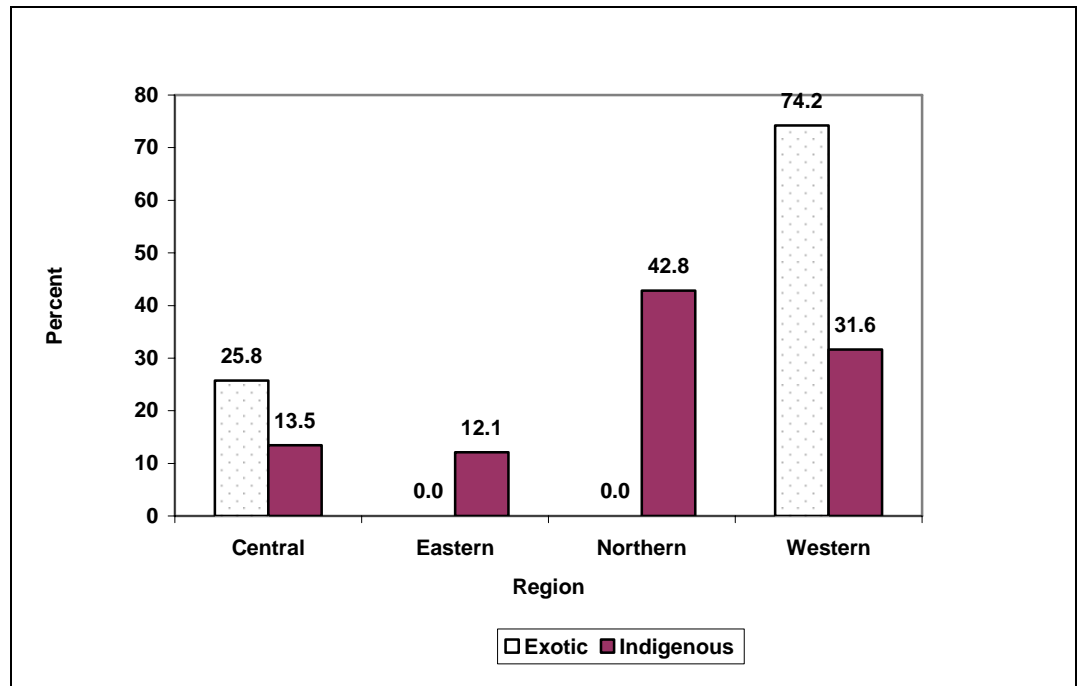
The Sheep flock reduced from 1.6 Million in 2002 to 1.2 Million in 2005

The national sheep flock from the survey was estimated at 1,217,000. This was a fall from 1,555,000 recorded during the PHC 2002. The Northern Region registered a big fall from 1,181,000 in PHC 2002, to 512,000 in UNHS 2005/06. It is possible that the civil strife may have had a bearing on this. In spite of this big decrease, the Northern Region was rearing 42.8 percent followed by the Western Region with 378,000 (31.6%). Exotic sheep were estimated nationally at 21,000 (1.7%) of the national flock. With nearly 16,000, the Western region had 76.2 percent of the exotic sheep. The distribution of exotic and indigenous goats by region is shown in Table 5.8 and Figure 5.9.

Table 5.8: Number of Sheep by breed and Region ('000)

Region	Exotic		Indigenous		Total
	Number	%	Number	%	
Central	5	23.8	161	13.5	166
Eastern	-	-	145	12.1	145
Northern	-	-	512	42.8	512
Western	16	76.2	378	31.6	394
Total	21	100	1,196	100	1,217

Figure 5.9: Percentage distribution of Sheep by Breed and Region

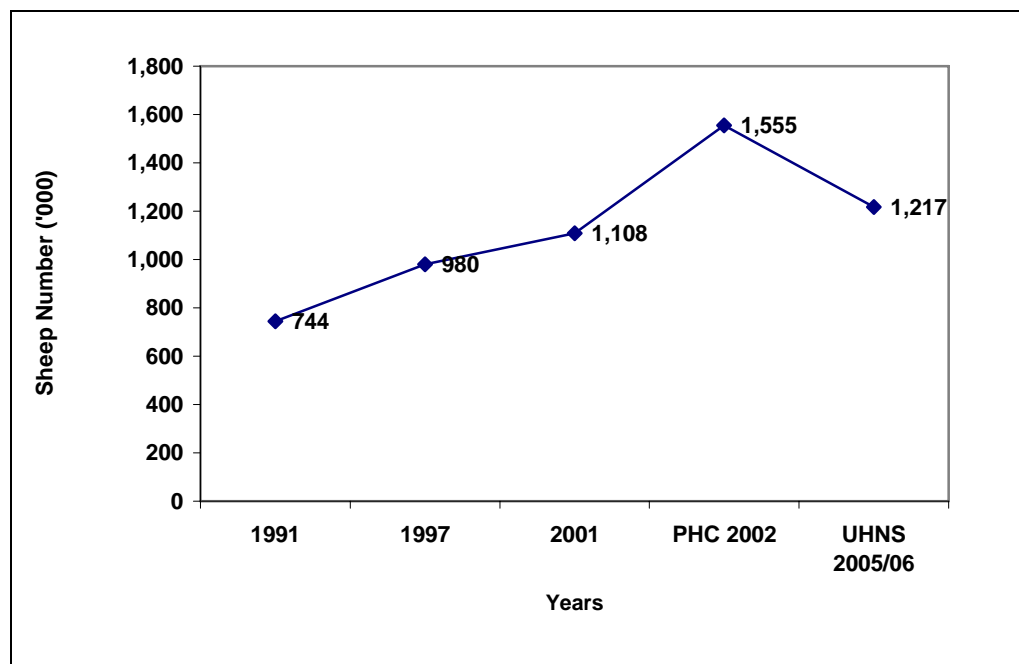


Northern region had the biggest reduction possibly due Civil strife

Trend in Sheep Numbers ('000)

The sheep flock trend over the years shows a general increase although there was a fall in the estimate from the UNHS 2005/06 as given in Figure 5.10. This seems to have come as a result of a substantial fall in the estimate of the Northern Region, where the biggest proportion of the national flock is expected to be. It is possible that the respondents grossly under-stated the number. Another contributing factor could be that the flock size was reduced due to the civil strife in the sub-region.

Figure 5.10: Sheep Trend ('000)



5.5 Distribution of Ag HHs that reared Pigs, by region

5.5.1 Pigs

There were nearly 0.8 million Ag HHs that reared pigs out of the 4.2 million country-wide. This constituted 18.3 percent of all Ag HHs.

Central region had the highest number of Agric. HHs with pigs

The regional distribution was dominated by the Central Region with 329,000 (43.29%) Ag HHs rearing pigs as shown in Table 5.9. This number is backed by an observation that pork consumption is more common in the region than in any other region. The Central Region was followed by the Western Region with 187,000 (24.5%). On the other hand, the Northern Region had the least number of Ag HHs rearing pigs (61,000 or 8.0%).

Table 5.9: Number of Ag HHs with Pigs ('000)

Region	Number of Agricultural Households:	
	Number	%
Central	329	43.2
Eastern	185	24.3
Northern	61	8.0
Western	187	24.5
Total	761	100

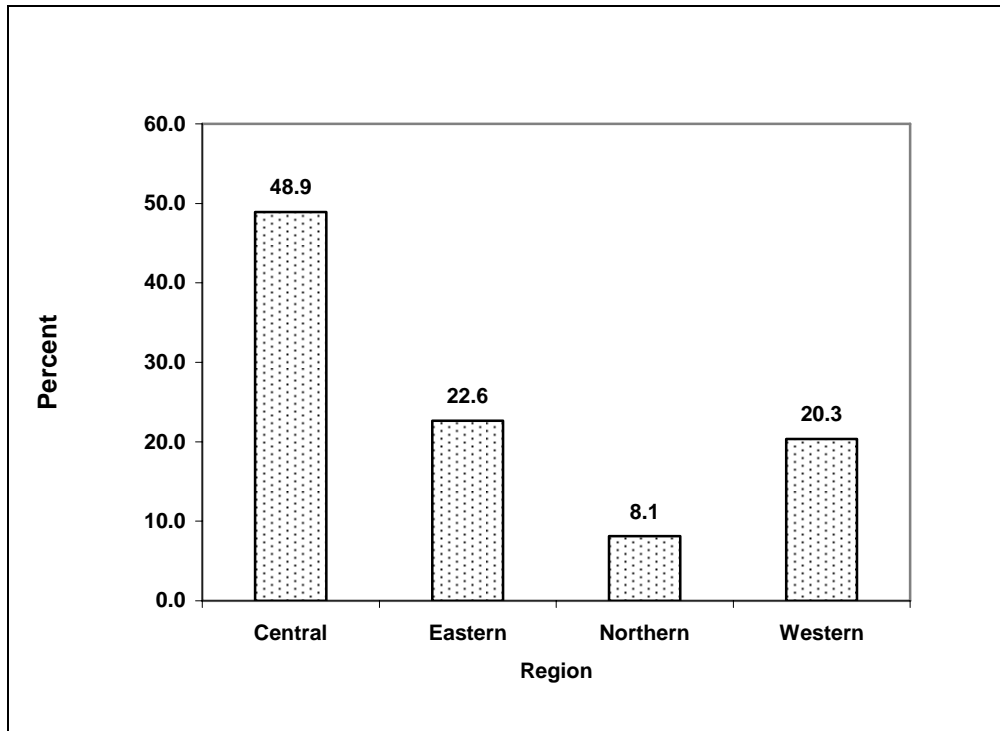
5.5.2 Numbers of Pigs

The number of pigs for Uganda was estimated to be 1,707,000 which was a substantial increase from 773,000 recorded during PHC 2002 as given in Table 5.10 and Figure 5.11. With 835,000, the Central Region had 48.9 percent of the pigs, followed by the Eastern region with 387,000 (22.7%). The Northern Region had the least number of 138,000 (8.1%).

Table 5.10: Number of Pigs UNHS 2005/06 ('000)

Region	Number of Pigs
Central	835
Eastern	387
Northern	138
Western	347
Total	1,707

Figure 5.11: Percentage Distribution of Pigs by Region

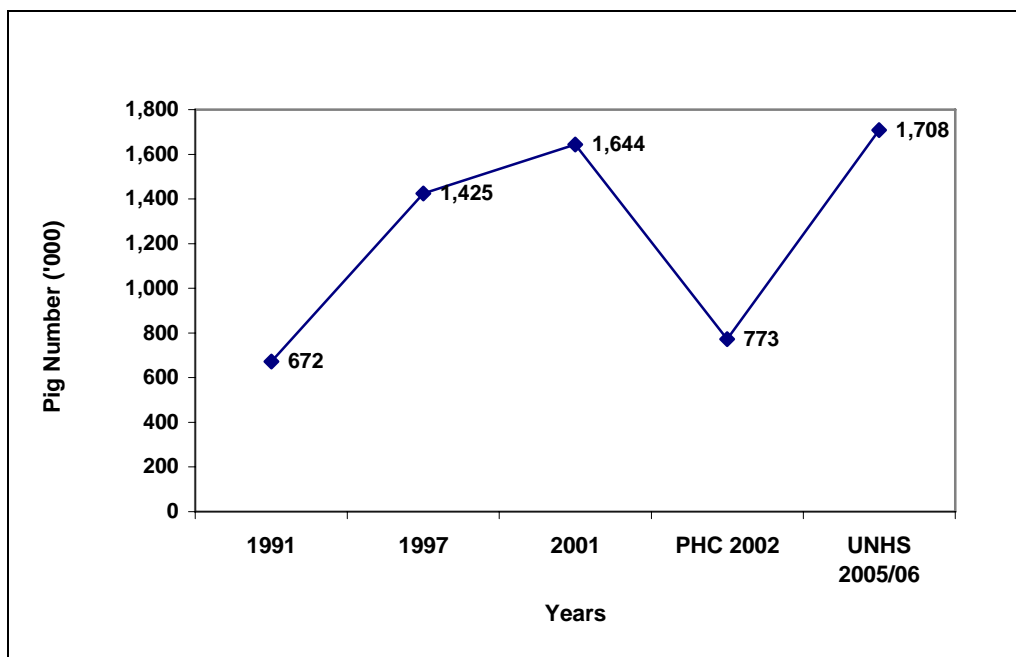


5.5.3 Trend in Pig Numbers ('000)

A fall was recorded only in PHC 2002

In general, the number of pigs has been increasing except for PHC 2002 where there was a drastic fall from 1.6 million (Statistical Abstract) to 0.8 million pigs (PHC 2002) as shown in Figure 5.12. It is highly probable that there must have been some under-reporting by respondents in PHC 2002.

Figure 5.12: Pigs Trend ('000)



5.6 Poultry Keeping

5.6.1 Distribution of Ag HHs that kept local Chicken (Back-yard), by Region

It was established that out of the approximately 4.2 million Ag HHs, there were about 2.3 million Ag HHs with local Chicken, which was 55.2 percent. Out of the 2.3 million Ag HHs that reported keeping back-yard chicken, the Eastern Region had the highest number (745,330) which was 32.5 percent of national total as shown in Table 5.11. Next to the Eastern Region was the Western Region with 548,220 (23.9%). The Northern Region had the least number (461,742) of Ag HHs rearing back-yard chicken (462,000) representing 20.2 percent.

Table 5.11: Number of Ag HHS with and without Local Chicken (Back-yard), UNHS 2005/06 ('000)

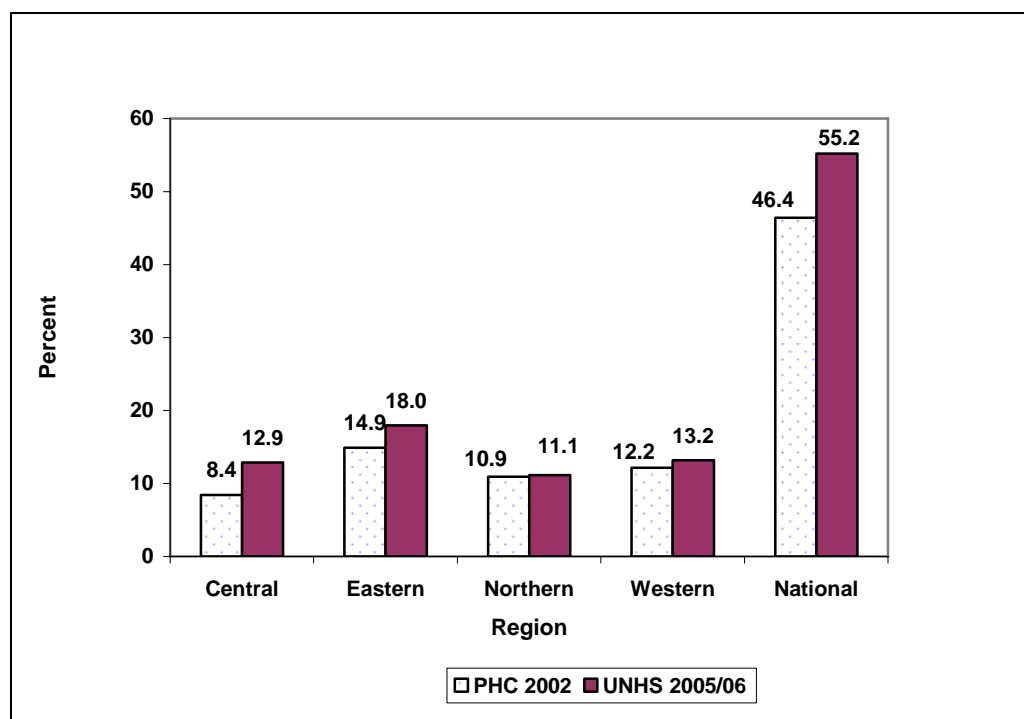
Region	Number of Ag HHs with:	
	Number	%
Central	536	23.4
Eastern	745	32.5
Northern	462	20.2
Western	548	23.9
Total	2,291	100

5.6.2 Local Chicken in PHC 2002 and UNHS 2005/06

A comparison of Ag HHs that kept local Chicken at the national level shows that there was a general increase from 46.4 percent in PHC 2002 to 55.2 percent in UNHS 2005/06 as shown in Figure 5.13. The Eastern region registered a percentage increase from 14.9 to 18.0, followed by the Western Region which had a percentage increase from 12.2 to 13.2.

Ag HHs with local chicken increased from 46.2% to 55.2%

Figure 5.13: Percentage distribution of Ag HHs with Local Chicken between PHC 2002 and UNHS 2005/06



5.6.3 Exotic/cross Chicken

Out of 4.2 million Ag HHs, there were 44,000 Ag HHs that kept exotic/cross chicken. The number constituted 1.1 percent of all Ag HHs.

Central region led with 52% of Agric. HHs with exotic/ cross chicken

The Central Region had the highest number of Ag HHs (23,000) with exotic/cross chicken; this constituted 52.3 percent of all the Ag HHs (44,000) that was engaged in this activity as shown in Table 5.12. It is common knowledge that the demand for table birds and eggs is highest in the Central Region where most of the big hotels/restaurants are located. In light of this, it is not therefore surprising that the highest number of the Ag HHs rearing exotic/cross chicken was found in this region.

There was no big difference between the Eastern and Western Regions as each had 18.2 percent. The Northern Region recorded the least number of 5,000 (11.3%).

Table 5.12: Number of Ag HHs with and without exotic/cross Chicken, UNHS 2005/06 ('000)

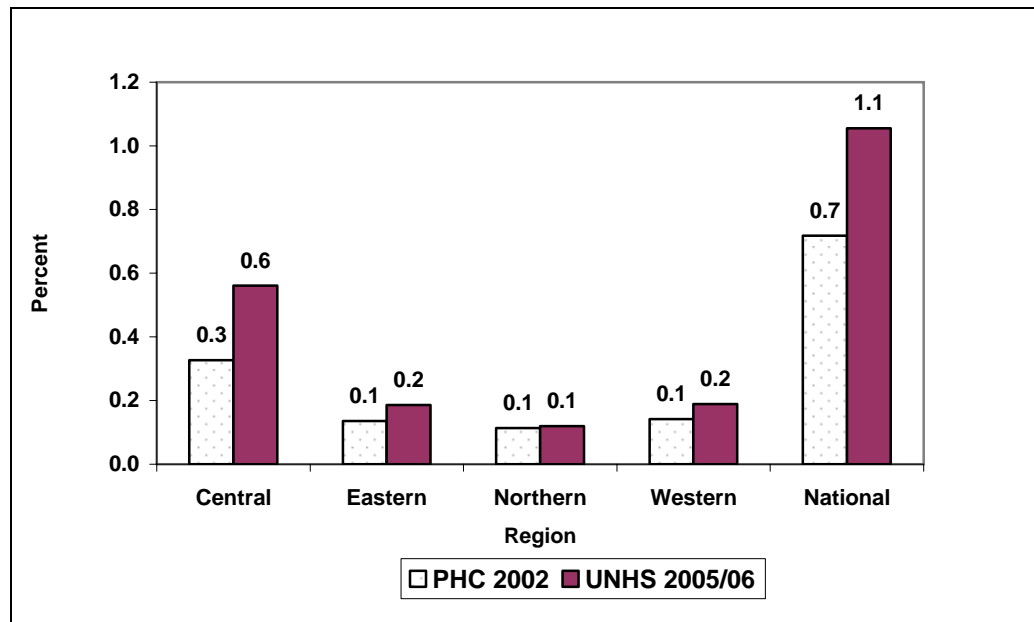
Region	Number of Agricultural Households	
	Number	%
Central	23	52.3
Eastern	8	18.2
Northern	5	11.3
Western	8	18.2
Total	44	100

A comparison of Ag HHs that kept exotic/cross Chicken at the national level shows that there was a small increase from 0.7 percent in PHC 2002 to 1.1 percent in UNHS 2005/06.

Western & Eastern Region had similar % age change

The Central Region registered a percentage change from 0.3 to 0.6 as shown in Figure 5.14. The Western and Eastern Regions had a similar percentage change, from 0.1 to 0.2. For the Northern Region, there was no percentage change.

Figure 5.14: Percentage distribution of Ag HHs with exotic/cross Chicken between 2002 PHC and UNHS 2005/06



5.6.4 Number of Chicken

Chicken number was about 24 Million

The national chicken flock, which was 23.5 million composed of 3.7 million (15.8%) exotic/cross Chicken and 19.8 million (84.2%) back-yard.

Regarding back-yard Local Chicken, the Eastern Region had the highest share of nearly 7.4 million birds (37.3%). The Central and Northern regions followed closely with 4.3 million (21.7%) and 4.2 million (21.3%) respectively. The Western Region with 3.9 million had the least number of Local Chicken among the four regions.

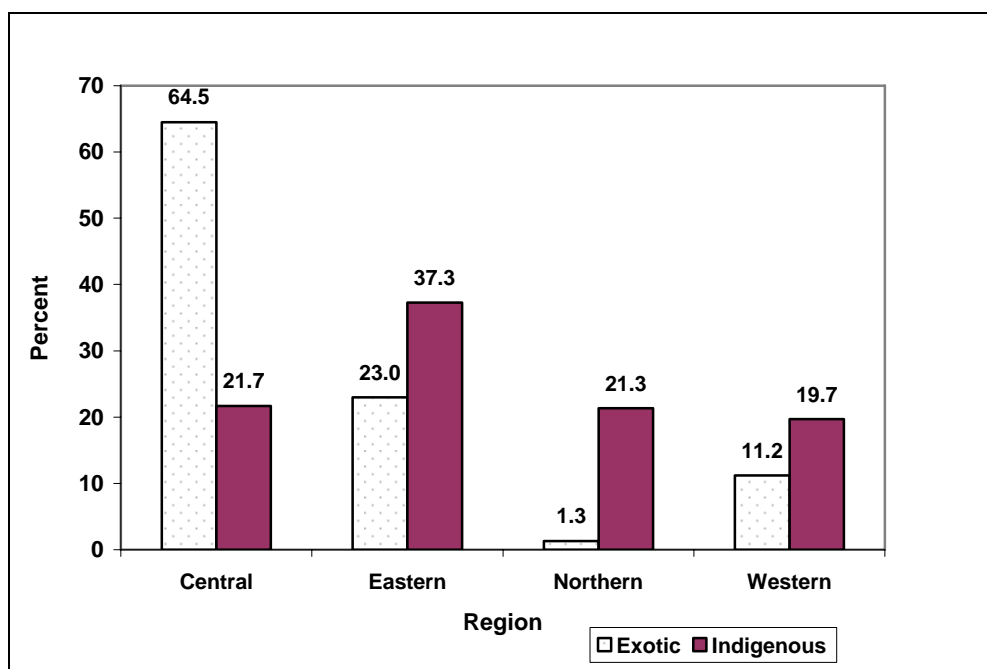
Central Region had 2/3 of exotic chicken

Out of the 3.7 million exotic/cross chicken national wide, the Central Region had the biggest number with 2.4 million (64.5%) and the Northern Region had the least with 0.05 million (1.3%) as shown in Table 5.13 and Figure 5.15.

Table 5.13: Number of Chicken by breed and region ('000)

Region	Exotic		Local Chicken/ Backyard		Total
	Number	%	Number	%	
Central	2,398	64.5	4291	21.7	6,689
Eastern	854	23.0	7382	37.3	8,236
Northern	49	1.3	4227	21.3	4,276
Western	416	11.2	3905	19.7	4,322
Total	3,717	100	19,806	100	23,523

Figure 5.15: Percentage distribution of Chicken number by breed and region

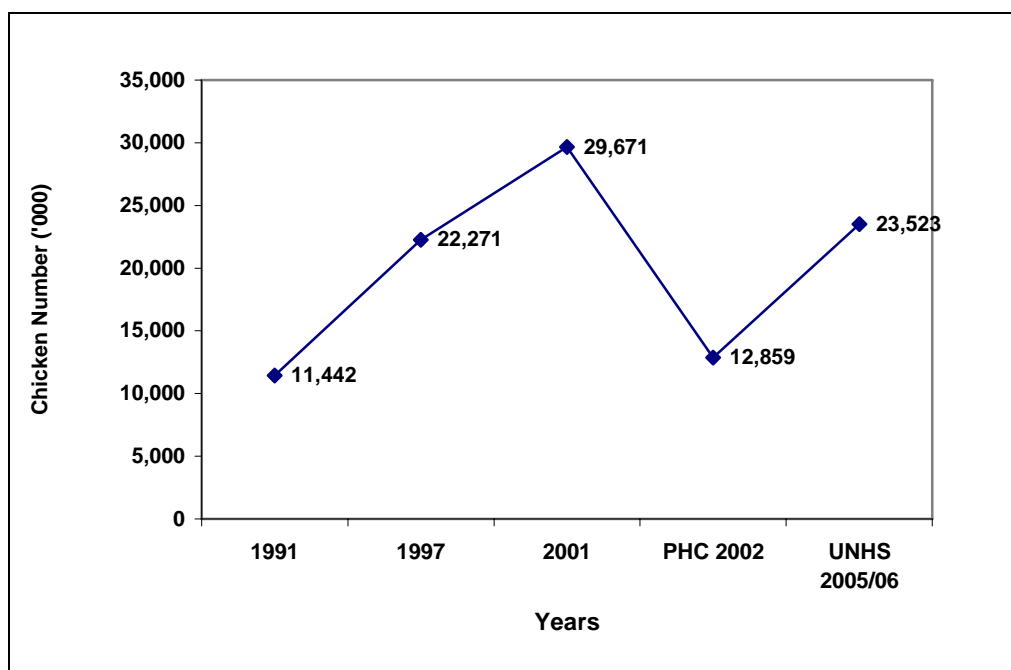


5.6.5 Chicken Trend over the Years

Over the year there was a general increase

Although there was a general increase in the number of chicken (exotic plus local) between 1991 and 2005/06 from 11.4 to 23.5 million, a sharp fall in the number was observed in PHC, 2002. It should be noted however, that the trend data does not come from similar methods of data collection. This could partly explain some of the differences as shown in Figure 5.16. There were most likely understating of chicken numbers in the PHC 2002, particularly the young ones.

Figure 5.16: Chicken Trend ('000)



5.7 Other Livestock

Data was also collected on Ag HHs with and numbers of Rabbits, Beehives, Turkeys, Ducks, Geese and other birds. There was an estimated number of 222,000 Rabbits (CVs high for Eastern and Northern Region); Turkeys were estimated to be 292,000 (CVs high for Northern & Western Regions); Ducks were estimated to be 816,000 (i.e. 215,000, 147,000, 276,000 and 178,000, for the Central, Eastern, Northern and Western Regions respectively); Gees were 260,000 (CVs were high for the Central and Western Regions); the estimate for Beehives was 241,000 (CVs were high for the Central Region).

5.8 Summary of Findings

The national cattle herd was estimated at 7.5 million. Of these, nearly 1.3 million were exotic/cross and the majority (0.9 million) were in the Western Region. The Central Region with nearly 2.0 million indigenous cattle had most of this breed. The Cattle trend shows an increase over the years.

The national goat herd was estimated at 8.1 million. Nearly 3.0 million were found in the Western Region, which led in goat rearing. It is observed that the goat herd over the years shows an upward trend.

The sheep flock at national level was 1.2 million out of which only 21,000 were exotic/cross. The reduction in the number can be explained by the reduction for the Northern Region, where sheep are reared mostly. In general the sheep flock showed an increase.

The pigs were estimated to be nearly 1.7 million at national level. With 835,000 (49.1%) the Central Region had most pigs. The Northern Region had 138,000 (or 8.1%). The National trend showed an increase in pig population over the years.

The total number of chicken was 23.5 million, of which 3.7 million (15.7%) were exotic /cross and the local chicken/ backyard were 19.8 million (84.3%). Generally, over the years, the chicken population has shown an upward trend except for PHC 2002 where the number was low. The 2001 figure is very high and this is because there was a different method of getting the estimate from that one used in UNHS 2005/06.

CHAPTER SIX: AGRICULTURAL INPUTS AND EXTENSION SERVICES

6.1 Introduction

This chapter presents information on labour and non-labour inputs used in both the Second Season of 2004 and the First Season of 2005. The labour inputs section details the total cost of labour including in-kind payments, the average cost for labour by region, overall number of labour days etc. The non-labour inputs include, among others: improved seeds, manure, chemical fertilizers, pesticides, herbicides or fungicides.

6.2 Non-labour Inputs

Generally, there was a low use of Non-Labour Inputs as shown in Table 6.1. The survey findings show that the use of Improved Seeds is generally low. In the First Season of 2005, about 94 percent of the parcels planted with crops used Local Seeds leaving a paltry 6 per cent using Improved Seeds.

During 2005 1st season 94% of parcels used Local Seed

The Eastern Region had the highest percentage of parcels (about 12%) using Improved Seeds while the Western Region had the lowest of 2.2 percent.

Eastern region led in the use of Improved Seed

Application of Manure is also still low with only 6.8 percent of the parcels in Uganda using it. The Western Region had the highest application rate of 9.6 percent while the Northern Region had the lowest application rate of 0.5 per cent.

Only 6.8% of parcels used manure & Western Region led with 9.6%

About one percent of the parcels in Uganda had Chemical Fertilizers used on them. The Central Region had the highest percentage of 1.3 per cent and the Western Region had the lowest application rate of 0.6 per cent.

The use of Pesticides, Herbicides or Fungicides was highest in the Central Region with 4.8 percent of the parcels applying them and was lowest in the Western Region with 1.5 percent. At the national level, only 3.4 percent of the parcels applied these inputs.

At the national level, only 3.4% used Pesticides, Herbicides & Fungicides

Table 6.1: Use of Agricultural Inputs (% of parcels)

Region	Improved Seeds	Manure	Chem. Fert.	Pest+herb+fung
Central	5.5	8.7	1.3	4.8
Eastern	11.9	4.1	1.1	4.7
Northern	7.6	0.5	0.7	2.6
Western	2.2	9.6	0.6	1.5
Total	6.3	6.8	1.0	3.4

Generally values were lower in the 2nd season 2004 than in 1st season 2005

Overall, the reported values of non-labour inputs were lower in the Second Season of 2004 compared with the First Season of 2005. This was the case with seeds and seedlings as well as pesticides/herbicides. However, Manure registered a decline as a result of a decrease in average value in Eastern, Northern and Central Regions. Average value of chemical fertilizers for those Ag HHs (Ag HHs) utilizing them stayed more or less the same for both seasons except for the Central Region as shown in Tables 6.2 and 6.3.

Table 6.2: Average value of Non-Labour Inputs used in crop farming Second Season of 2004 ('000 shs)

	Central	Eastern	Northern	Western	Uganda
Purchased seeds and seedlings	12	11	6	8	9
Chemical fertilizers	49	25	41	54	37
Pesticides, herbicides	18	12	8	15	14
Manure	59	10	9	49	48

Table 6.3: Average value of Non-Labour Inputs used in crop farming: First Season of 2005 ('000 shs)

Type of Input	Region				Uganda
	Central	Eastern	Northern	Western	
Purchased seeds and seedlings	13	15	6	10	11
Chemical fertilizers	21	25	41	54	37
Pesticides, herbicides	19	10	7	42	18
Manure	26	6	1	63	34

6.3 Labour Inputs

6.3.1 Number of Labour Days

The number of Labour Days for the Second Season of 2004 and the First Season of 2005 totaled 1,263 million with Hired Labour Days as 116 million (9%) while 1,147 million (91%) was household supplied as shown in Table 6.4 and Figure 6.1 . The Western Region registered the highest amount of both hired labour days 47 million which constituted 3.7 percent of total labour days. Each of The Central and the Northern Regions registered the smallest percentage of hired labour days (1.7%). Both the Eastern and Western Regions had about the same number of labour days which was 28.6 percent.

Hired Labour was only 9.2% of all labour used

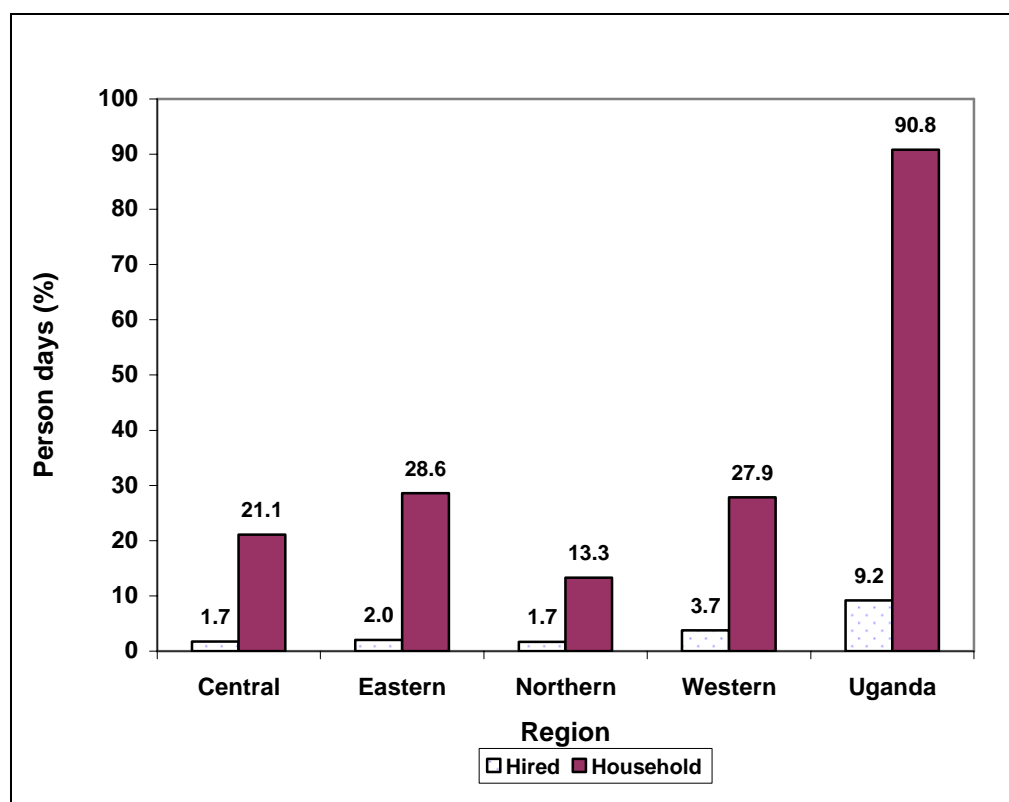
The Western region had the highest hired labour days (47 Million)

The reported Household Labour Days were a sum of labour supplied by adult males, adult females and children. A detailed break-down can be obtained on request. Another aspect of labour whose data can be accessed on request is the type exchanged with other Ag HHs.

Table 6.4: Distribution of Labour Days for the Second season of 2004+ First Season of 2005 (millions)

Region	Hired	Household labour	Total
Central	22	266	288
Eastern	26	361	387
Northern	21	168	189
Western	47	352	399
Total	116	1,147	1,263

Figure 6.1: Composition of Labour Days, UNHS 2005/06



6.3.2 Cost of Labour

The total cost of labour including in kind payments for Second Season of 2004 amounted to USH. 118 billion while that for First Season of 2005 amounted to USH. 85 billion giving a total of USH. 203.0 billion for the 2 seasons as shown in Table 6.5

A

Table 6.5A: Distribution of Cost of Labour including in Kind Payment by Season and Region (Billion shs.)

Region	Total cost of Labour for Agricultural Households for:		Total
	Second Season, 2004	First Season, 2005	
Central	33.2	23.3	56.5
Eastern	21.7	21.9	43.6
Northern	16.3	10.1	26.4
Western	46.5	30	76.5
Total	117.7	85.3	203

Average cost of labour was higher in 2nd season 2004 than in 1st season 2005

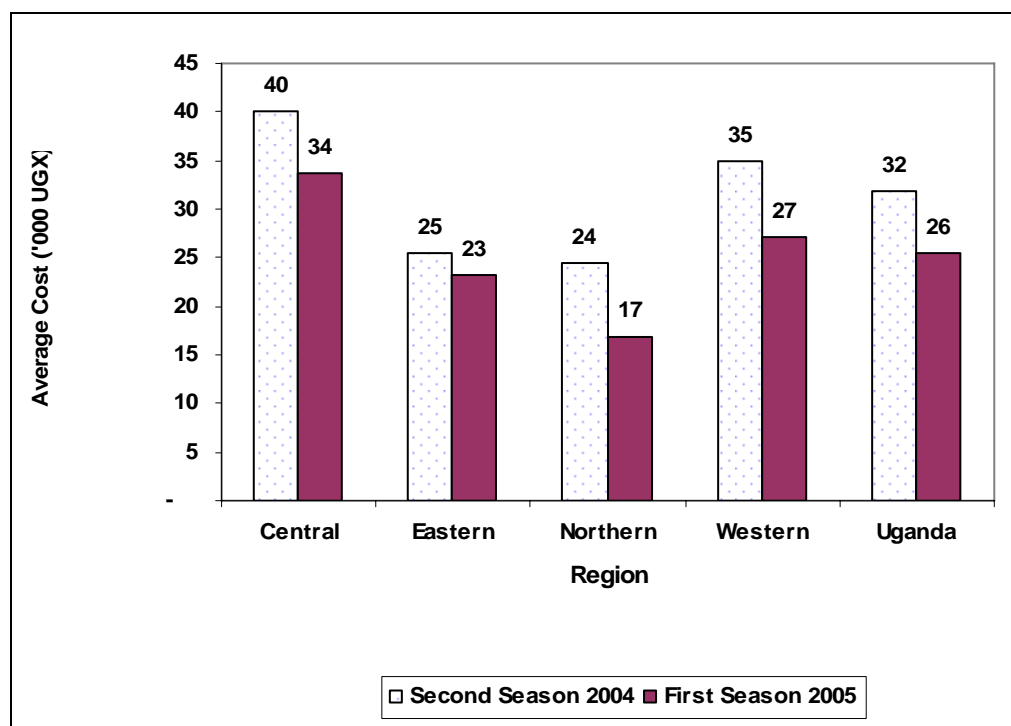
Central Region reported the highest average cost

It is observed that in general, the Average Cost of labour was higher during the Second Season of 2004 compared with that of First Season of 2005. In addition, the national average cost for labour dropped from USH. 32,000 in the Second Season of 2004 to USH. 26,000 in the First Season of 2005. The Central Region reported the highest average cost of labour amounting to 40,000 shillings and 34,000 shillings for Second Season of 2004 and First Season of 2005 respectively as shown in Table 6.5B and Figure 6.2.

Table 6.5B: Average Cost of Labour including in Kind Payment by Season and Region ('000 shs.)

Region	Average cost of Labour for Ag HHs for:	
	Second Season, 2004	First Season, 2005
Central	40	34
Eastern	25	23
Northern	24	17
Western	35	27
Total	32	26

Figure 6.2: Distribution of Average Labour Cost by Season and Region (shs.)



Adult females contributed more for seed bed preparation and sowing

6.3.3 Labour Days for Preparation and Sowing

In general, female adults contributed more labour days (5.8) towards the seedbed preparation and sowing in the Second Season of 2004 and 4.7 in First Season of 2005 as compared to male adults with 4.0 during both seasons as shown in Table 6.6 and Figure 6.3.

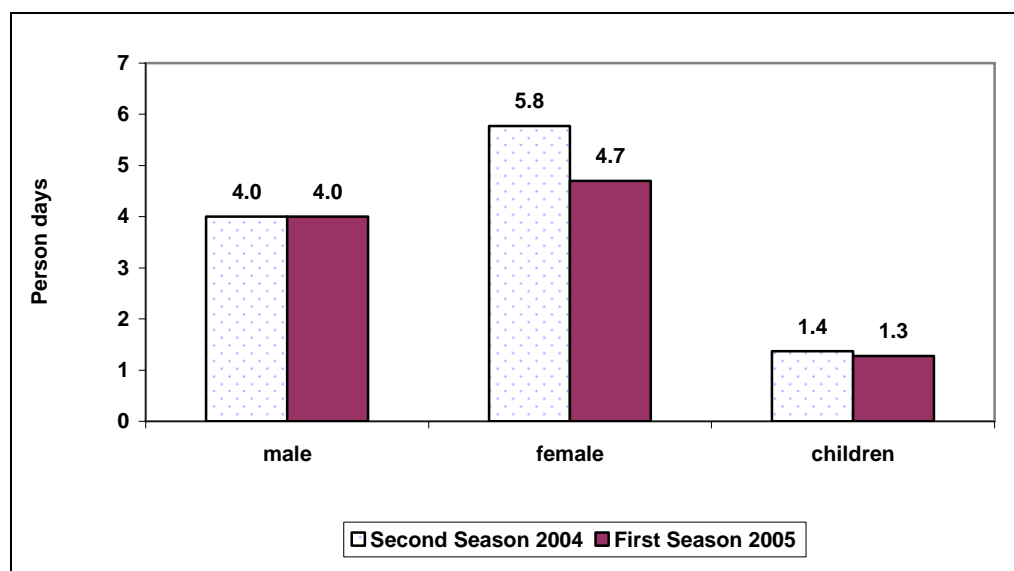
Females and Children in the Western & Eastern Region respectively contributed more labour in both seasons

The survey results show that female adults from Western Region contributed significantly more labour hours (7.1) in Second Season of 2004 and 5.2 in the First Season of 2005, followed by females from the Eastern Region with 5.5 in Second Season of 2004 and 5.0 in the First Season of 2005. In addition, the children from Eastern Region contributed more labour days (2.1) in the Second Season of 2004 and 1.8 in the First Season of 2005 towards preparation and sowing activities.

Table 6.6: Distribution of Labour Days for Seedbed Preparation and Sowing by Sex and Region

Region	Second Season of 2004			First Season of 2005		
	Male Adult	Female Adult	Child	Male Adult	Female Adult	Child
Central	3.6	5.5	1.4	3.6	4.4	1.3
Eastern	4.1	5.5	2.1	4.1	5.0	1.8
Northern	3.5	3.9	1.0	3.5	3.7	1.1
Western	4.5	7.1	0.9	4.5	5.2	0.8
Uganda	4.0	5.8	1.4	4.0	4.7	1.3

Figure 6.3: Labour Days for Seedbed Preparation or Sowing



Male adults dominated in labour for inputs application

6.3.4 Labour Days for Application of Inputs

The survey results reveal that limited labour days are used for application of Fertilizer, Manure, Irrigation, and Pesticides etc. In general, males dominate input application as shown in Table 6.7 and Figure 6.4. It is worth noting that in the First Season of 2005, the Labour Days for this activity fell by about a half of those reported in the Second Season of 2004 for all groups.

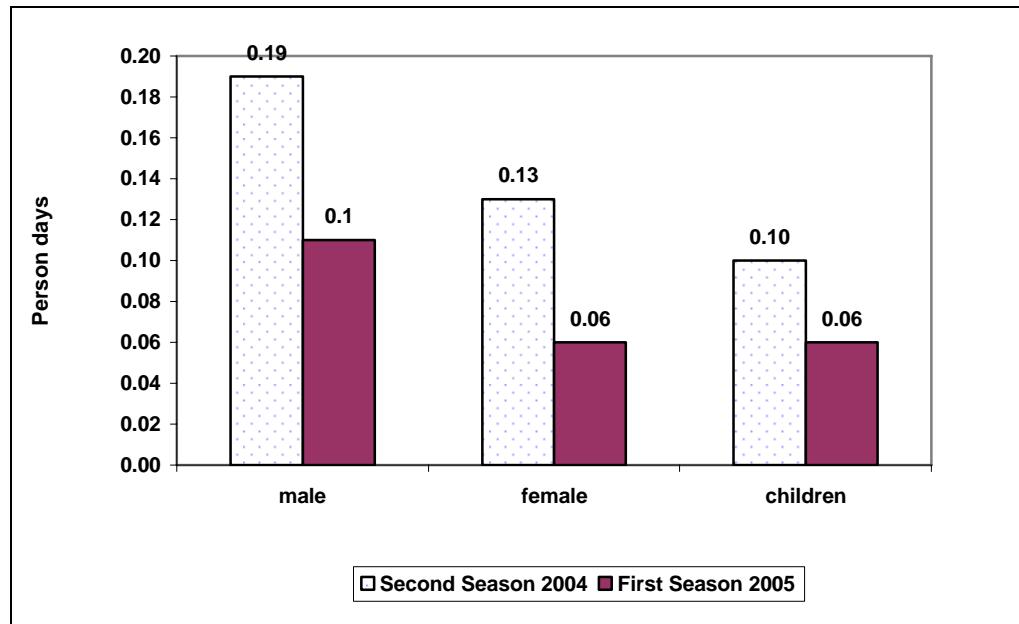
Central Region reported highest number of Labour Days

It is observed that in general, the Central Region reported the highest number of Labour Days for this activity for all groups for both seasons. The Northern Region on the other hand had the least number of Labour days.

Table 6.7: Distribution of Labour Days for Application of Inputs by Sex and Region

Region	Second Season of 2004			First Season of 2005		
	Male adult	Female adult	Child	Male adult	Female adult	Child
Central	0.30	0.19	0.25	0.23	0.12	0.13
Eastern	0.20	0.14	0.06	0.11	0.06	0.04
Northern	0.06	0.03	0.03	0.03	0.02	0.01
Western	0.16	0.12	0.05	0.07	0.06	0.04
Uganda	0.19	0.13	0.10	0.11	0.06	0.06

Figure 6.4: Labour Days for Application of Inputs



6.3.5 Labour Days for Weeding or Pruning

Females supplied more labour Days for weeding or pruning

Overall, female adults reported supplying more labour days for Weeding or Pruning process (5.6) in Second Season of 2004 and 4.7 in First Season of 2005 compared to male adults with 3.2 in Second Season of 2004 and 2.7 in First Season of 2005 respectively. Children provided the least labour days (1.5) in Second Season of 2004 declining to about 1.4 in the First Season of 2005 as shown in Table 6.8.

Eastern Region females reported highest number of Labour days for this activity

Female adults from Eastern Region reported the highest number of Labour Days for both seasons i.e. 6.4 in Second Season of 2004 and 5.7 in First Season of 2005, followed by the Western Region with 6.3 in Second Season of 2004 and 4.8 in First Season of 2005. Males from Eastern Region also reported more Labour Days for weeding or pruning for both seasons compared to other Regions.

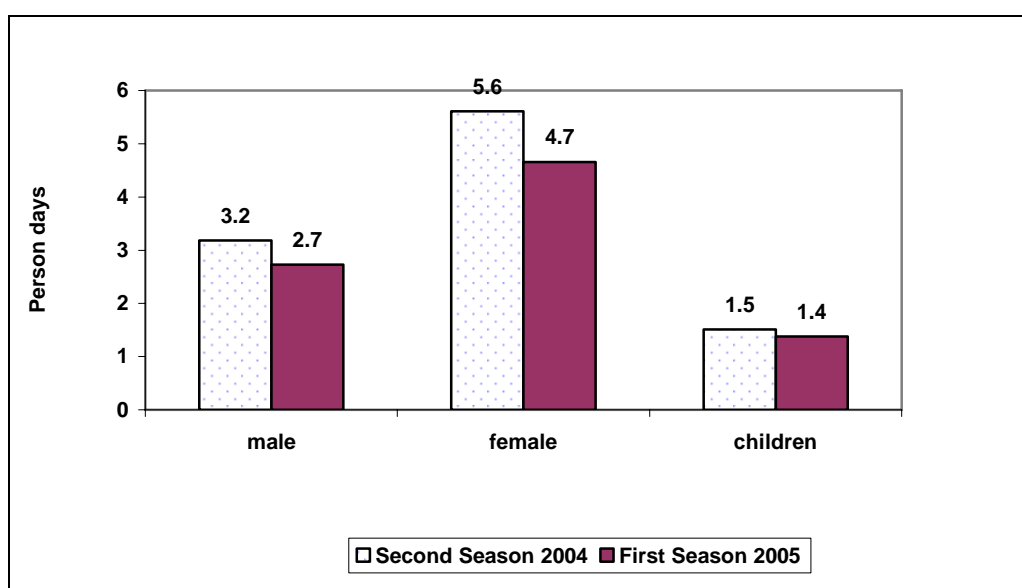
Children from Eastern Region supplied more Labour hours than those from elsewhere

The survey results show that children from Eastern Region supplied more labour days for weeding (i.e. 2.3) in the Second Season of 2004 and 2.1 in the First Season of 2005 compared to other regions as shown in Table 6.8 and Figure 6.5. This was about the same labour hours supplied by male adults from Northern Region. However, this low contribution of male adults in this region could be attributed to insurgency in the region in which there was limited activity and a high dependence on relief aid.

Table 6.8: Distribution of Labour Days for Weeding or Pruning by Sex and Region

Region	Second Season of 2004			First Season of 2005		
	Male Adult	Female Adult	Child	Male Adult	Female Adult	Child
Central	2.7	4.7	1.6	2.2	3.9	1.4
Eastern	4.1	6.4	2.3	3.6	5.7	2.1
Northern	2.2	4.3	1.1	2.2	3.7	1.1
Western	3.2	6.3	1.0	2.6	4.8	0.8
Uganda	3.2	5.6	1.5	2.7	4.7	1.4

Figure 6.5: Labour Days for Weeding or Pruning



6.3.6 Labour Days for Harvesting

Females dominated in the supply of labour Days for harvesting

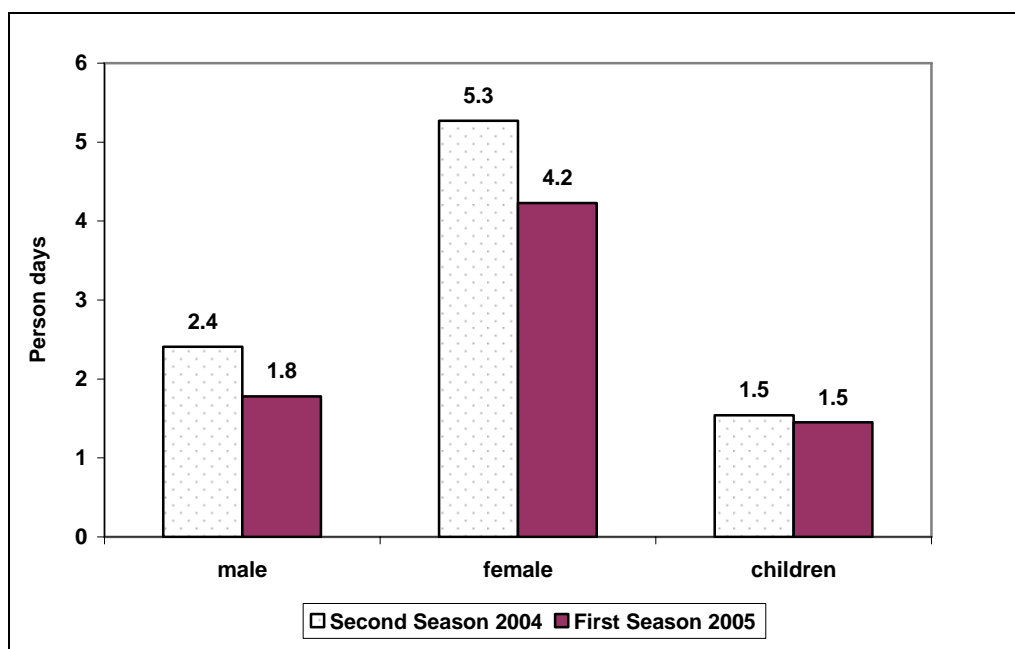
Harvesting is one of the most important activities in the crop production process during an agricultural year. The survey results show that this activity was dominated by females supplying more than double the Labour Days compared to male adults for both seasons as clearly shown in Table 6.9 and Figure 6.6. Overall, the contribution of children was limited to below 2 Labour Days. This could be explained by an observation that children tend to be mainly engaged in transporting or ferrying the harvest home or to the drying grounds.

In general, the distribution of Labour days showed more labour days being used in the Second Season of 2004 than for the First Season of 2005 for all the different agricultural activities covered.

Table 6.9: Distribution of Labour Days for Harvesting by Sex and Region

Region	Second Season of 2004			First Season of 2005		
	Male Adult	Female Adult	Child	Male Adult	Female Adult	Child
Central	2.1	4.2	1.7	1.5	3.4	1.5
Eastern	2.5	5.9	1.8	2.0	5.0	1.9
Northern	1.8	4.0	1.5	1.6	4.2	1.6
Western	2.8	6.2	1.2	1.9	4.1	1.0
Uganda	2.4	5.3	1.5	1.8	4.2	1.5

Figure 6.6: Labour Days for Harvesting



6.4 Main Causes of Crop Damage

The total number of Crop Plots was estimated to be 24.1 million. Out of 24.1million crop plots at national level, there were 13.8 million (57%) crop plots that were reported having not experienced any crop damage. Of the 10.3 million plots which suffered damage, 4.7 million crop plots (or 19%) reported rain shortage as the main cause as shown in Table 6.10. Perhaps this is not surprising as the distribution of precipitation in recent years has become unfavorable to agricultural activities. Crop Disease was reported as another cause by 2.4 million (10%) of the Crop Plots.

19.4% of crop plots had their crops damaged by rain shortage

Table 6.10: Distribution of Crop Plots by main Cause of Crop Damage, by Region ('000)

Number of Crop Plots by main cause of crop damage ('000)							
Region	RS	Floods	CD	ID	AD	Other*	Total damaged
Central	1.3	0.0	1.0	0.3	0.1	0.4	3.1
Eastern	1.2	0.1	0.8	0.6	0.4	0.3	3.4
Northern	0.9	0.0	0.2	0.1	0.1	0.1	1.4
Western	1.3	0.1	0.4	0.1	0.2	0.3	2.4
Uganda	4.7	0.2	2.4	1.1	0.8	1.1	10.3

*Note: RS for Rain shortage; CD for Crop Diseases; ID for Insect Damage; AD for Animal Damage; *Others include Bird damage, Stealing etc*

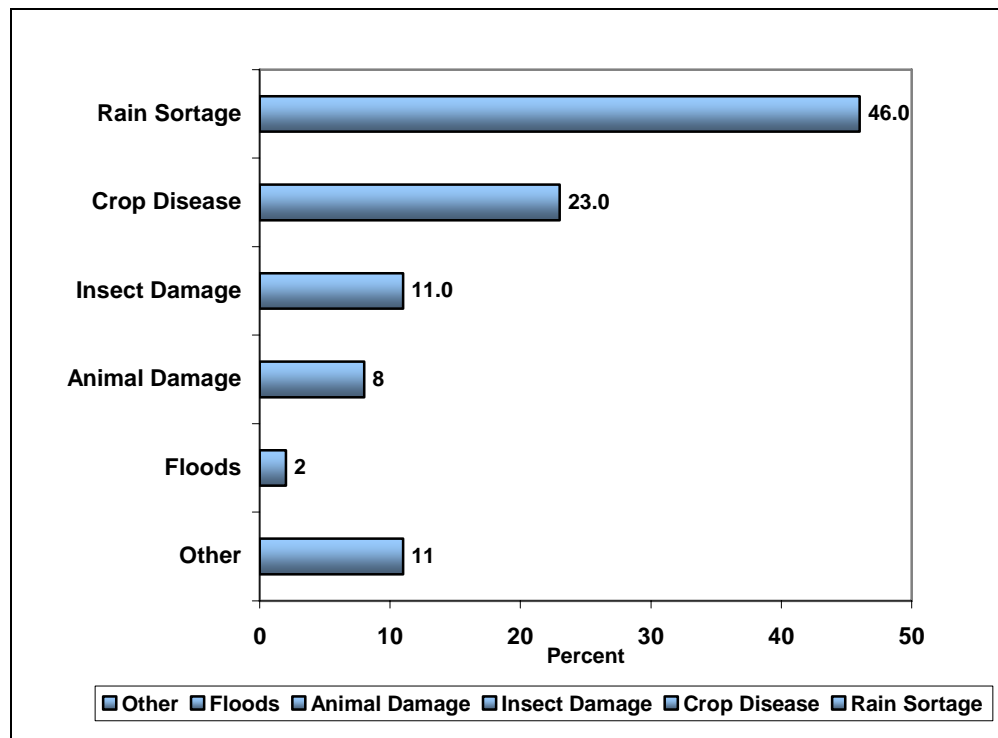
At the national level, rain shortage was the major cause of crop damage reported by 46 percent of plots in the First Season of 2005. The Northern and Western Regions had 64 and 54 percent respectively of the plots reporting crops damage as shown in Table 6.11. It should also be noted that a significant number of plots in the Eastern Region had their crops damaged by crop disease (24%) and insects (18%).

The Central Region registered the highest percentage of plots whose crops were damaged by crop diseases in the First Season of 2005 as shown in Table 6.11 and Figure 6.7. This may have been due to Banana Wilt Disease, Coffee Wilt Disease and Cassava Mosaic Disease.

Table 6.11: Percentage Distribution of Plots by Main Causes of Crop Damage (First Season of 2005) by Region

Region	Rain shortage	Floods	Crop disease	Insect damage	Animal damage	Others	Total
Central	42	0	32	10	3	13	100
Eastern	35	3	24	18	12	9	100
Northern	64	0	14	7	7	7	100
Western	54	4	17	4	8	13	100
Total	46	2	23	11	8	11	100

Figure 6.7: Major Causes of Crop Damage



6.5 Soil Conservation Measures

The total number of agricultural parcels covered was estimated to be 9.8 million. However, it is worth-noting that for each type of Soil Conservation Measure, the number of agricultural parcels varied due to missing cases.

This survey therefore sought information regarding each and every single parcel that the respondent household had access to (owned and/or operated). Information regarding the practice by Ag HHs of soil and water conservation measures (Bunds, terracing, mulching) both on the date of the survey and 5 years prior (ending March 2001) was collected.

Information was collected on Bunds, Terracing and mulching

Generally, the survey results show that there were marginal increments for almost all the conservation practices covered at the regional and national levels (See Table 6.12 and figure 6.8 respectively). On the other hand, it is significant to note that there was a marginal decrease in mulching and terracing in the Central Region.

In general small increments between 2000 and 2005 for the 3 practices

The Eastern Region recorded the highest use of bunds at 13.8 and 14.2 percent of the Agricultural parcels in 2000 and 2005 respectively. This could be attributed to the generally flat nature of the landscape (the plateau type). Terracing was practiced most in the Western Region with 8.7 and 9.1 percent of the agricultural parcels reporting their use in 2002 and 2005 respectively. This can be attributed to the generally hilly nature of the region. Mulching was predominant too in the Western

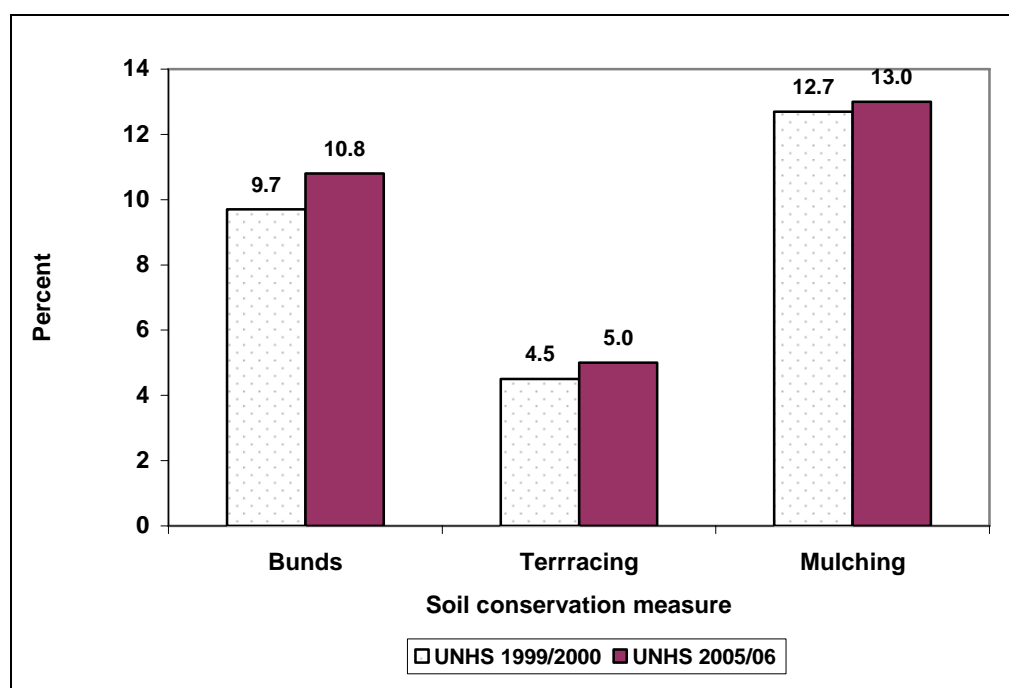
Bunds more common in the Eastern region

Region followed by the Central Region and this could mainly be attributed to the growing of Bananas and Coffee both of which require mulching.

Table 6.12: Percentage of Agricultural Parcels that used various Soil Conservation Measures by Region (2000, 2005):

Region	Bunds		Terracing		Mulching	
	2000	2005	2000	2005	2000	2005
Central	9.20	10.14	3.48	3.32	17.10	15.69
Eastern	13.77	14.18	2.84	3.17	6.53	7.66
Northern	1.54	1.72	0.23	0.33	2.19	2.15
Western	11.20	13.29	8.73	9.05	21.28	22.35
Uganda	9.65	10.75	4.46	4.59	12.71	13.03

Figure 6.8: Distribution of Parcels by Use of Soil Conservation Measures



6.6 Extension Services

This section sought information from Ag HHs on Extension Services delivery. A respondent was asked whether the Agricultural household had been visited by an Extension Worker twelve months prior to the date of the survey. Further, the section sought information on the following:

- Participation of Agricultural Household members in NAADS training programmes;
- Membership of an Agricultural Household member in a farmers' group under Farmer Institutional Development Scheme under NAADS;

Participation of Agricultural Household members in Prioritizing Enterprises to Demand for Advisory Services (PEDAS) under NAADS training programmes; and,

Knowledge of heads of Ag HHs and their spouses regarding changes in the land Tenure System brought by the 1998 Land Act.

6.6.1 Access to Extension Services

The number of Ag HHs that responded to the question was 4.2 million as shown in Table 6.13. Out of this, 303,000 (7.3%) indicated having been visited by an Extension Worker during the 12 Months that preceded the survey. Out of 303,000 that reported having been visited by an Extension Worker, the Western Region recorded the highest number (105,000) or 34.7 percent followed by the Eastern Region with 87,000 (28.8%). The Northern Region had the least number of Ag HHs (42,000 or 14.0%) visited by the Extension Workers. This may be a reflection of the insurgency in the Region, which has affected most of the services.

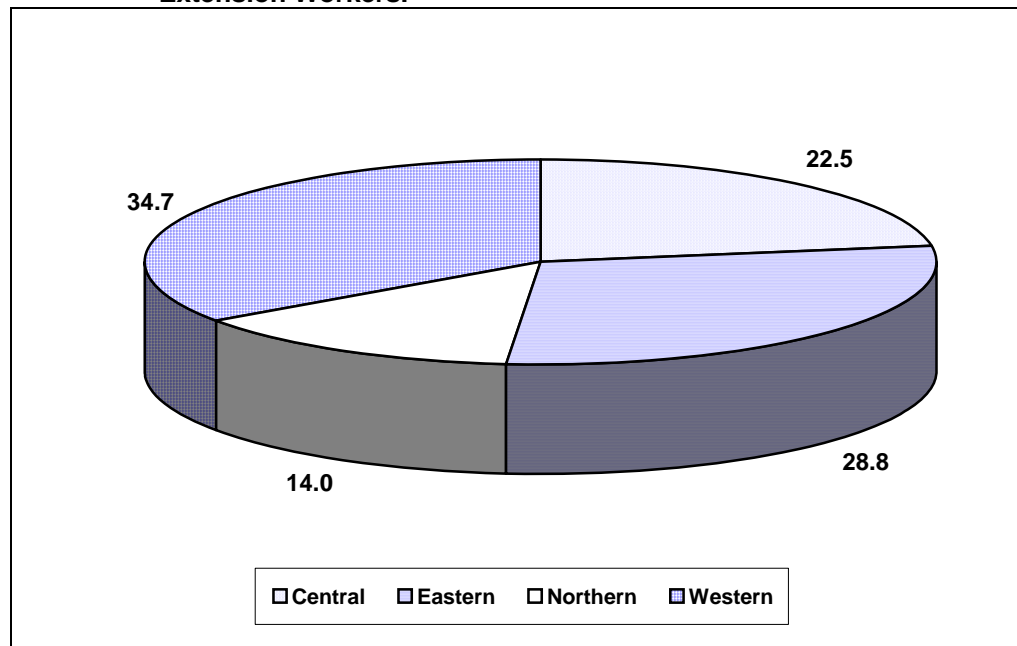
Only 7.5% of the Agricultural Households reported having been visited by Ext. worker

The Northern Region had the least Ag HHs (14%)

Table 6.13: Distribution of Agricultural Households visited/not visited by Extension Workers. ('000)

Region	Agricultural households that responded	
	Yes	(%)
Central	68	22.5
Eastern	87	28.8
Northern	42	14.0
Western	105	34.7
Total	303	(100)

Figure 6.9: Percentage Distribution of Agricultural Households visited by Extension Workers.



Participation of Agricultural Household members in any training program organized by NAADS

The National Agricultural Advisory Services (NAADS) programme under the Ministry of Agriculture, Animal industry and Fisheries was created under the Plan for Modernisation of Agriculture (PMA) to support government efforts in poverty reduction. The NAADS programme is responsible for provision of agricultural advice to farmers. It empowers farmers, particularly the poor, women and youth, to demand for agricultural advice that will improve production, productivity and profitability for their agricultural enterprises. The agricultural advice may include better management practices, market information, new technologies and where to access inputs. The NAADS programme enables farmers to demand the advice they need and to contract people to provide it.

In the UNHS 2005/06, information was collected on the participation of Ag HH members in any training program organized by NAADS. The results reveal that only 9% of the 4.2 million Ag HHs reported having participated in a training program organized by NAADS. This has a great bearing on the number of households that responded positively to programs under NAADS i.e. the levels of participation were low. The Western and Eastern regions presented higher percentages which may have a lot do with coverage of NAADS activities.

With 114,000 Ag HHs (32.0%), the Western Region had the highest number, followed by the Eastern Region with 100,000 Ag HHs (28.1%) as shown in Table 6.14 and Figure 6.10.

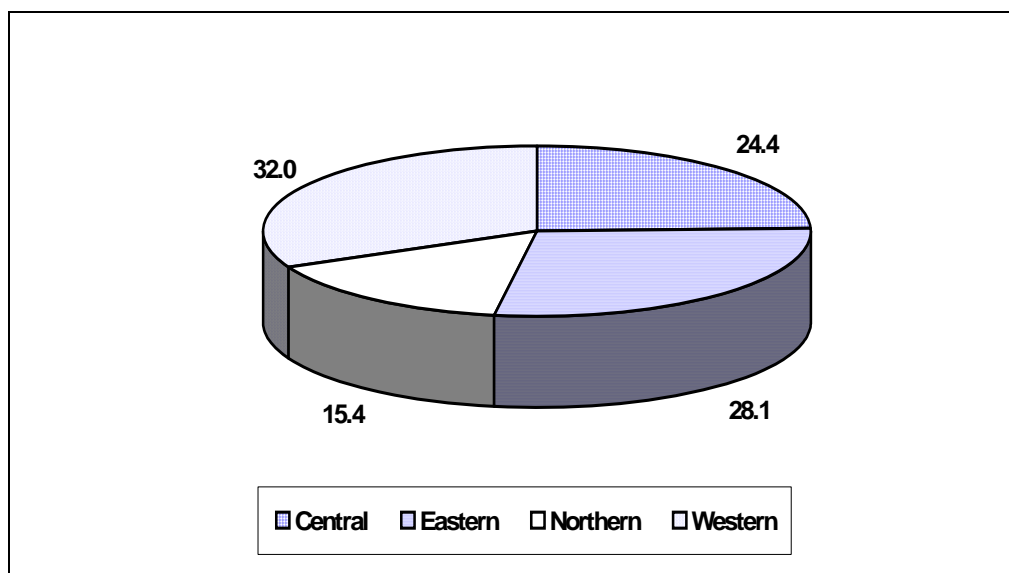
Only 9% of the Agric. HHs had a HH member having participated in NAADS training Programme

Western Region led in reporting with 32% of the 356,000 HHs

Table 6.14: Distribution of Ag HHs with a member having attended a NAADS training program ('000s)

Region	Agricultural households that responded:	
	Yes	(%)
Central	87	24.4
Eastern	100	28.1
Northern	55	15.4
Western	114	32.0
Total	356	100

Figure 6.10: Percentage Distribution of Agricultural Households with a member having attended a NAADS training program



Membership of Agricultural Household members under the FIDS of NAADS

Information on Agricultural Household members having members of the Farmers' Groups under the Farmer Institutional Development Scheme (FIDS) of NAADS was also sought.

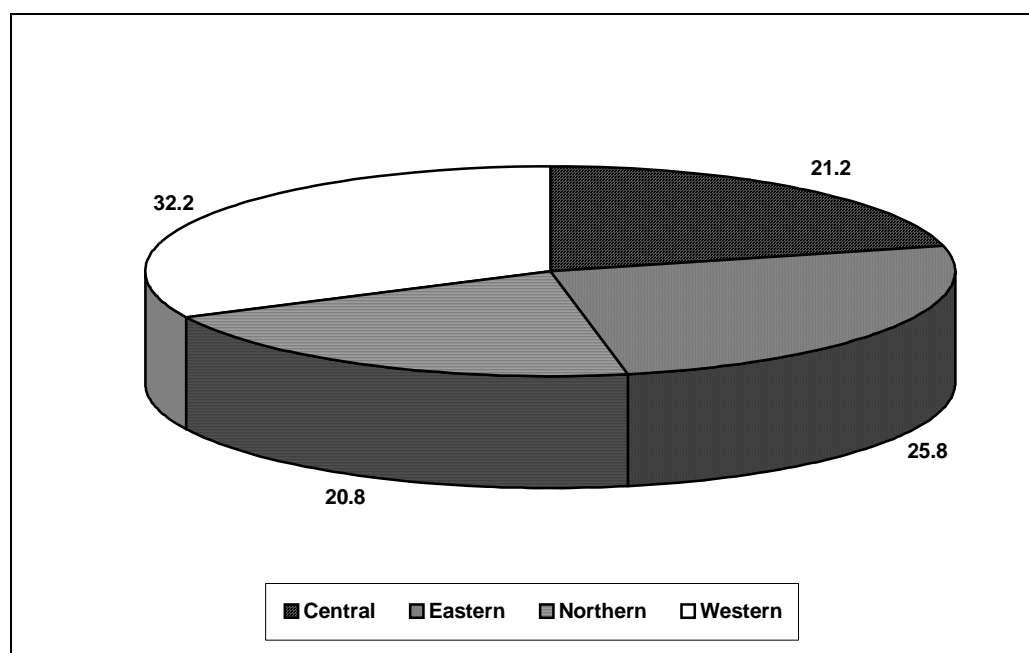
5.4 % of Ag HHs had at least a member in Farmer Groups under NAADS

The survey results reveal that 5.4% reported having at least one of its members involved in a farmers' group under NAADS as shown in Table 6.15 and Figure 6.11. The Western Region had the highest percentage of Ag HHs 32.2% that reported having at least one of its members involved in the farmers group under this scheme. The Central and Northern Regions had the least 21.2% and 20.8% respectively.

Table 6.15: Membership of Agricultural Households members under the FIDS of NAADS ('000)

Region	Agricultural households that responded	
	Yes	(%)
Central	47	21.2
Eastern	57	25.8
Northern	46	20.8
Western	71	32.2
Total	220	100

Figure 6.11: Percentage distribution of Membership of Agricultural Households members under the FIDS of NAADS



3.4 % of Ag HHs reported a member in enterprise prioritisation

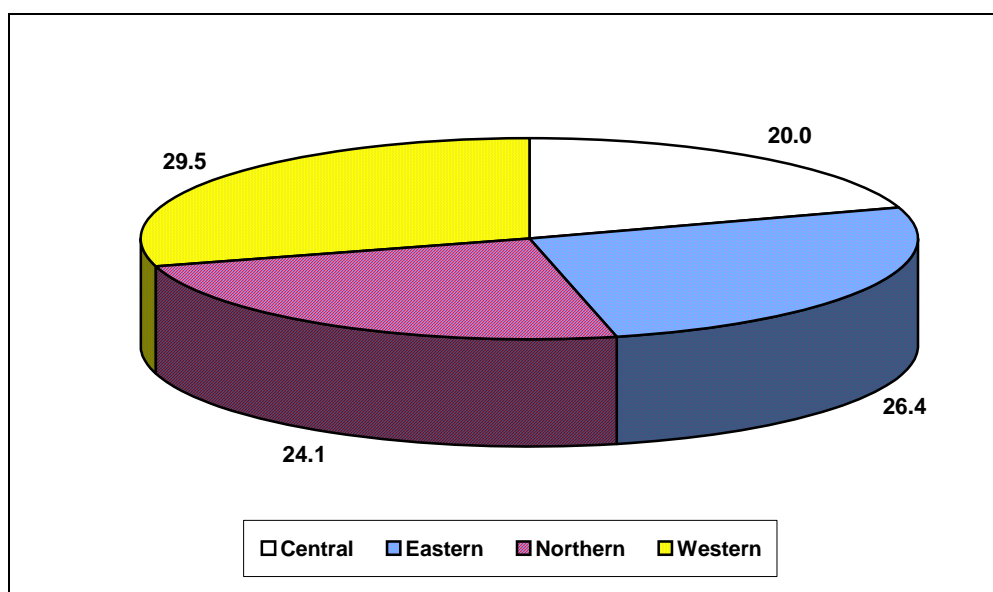
Participation of Ag HH members in PEDAS under NAADS programs.

Information was sought from Ag HH members on their participation in Prioritizing Enterprises to Demand for Advisory Services (PEDAS) under NAADS programs. The results revealed that 3.4% reported involvement of at least one of its members in prioritization of enterprises as indicated in Table 6.16 and Figure 6.12. Out of these, the Western Region topped with 29.5 percent followed by the Eastern Region with 26.4 percent.

Table 6.16: Distribution of Agricultural Household member participation in PEDAS under NAADS programs. ('000s)

Region	Agricultural households that responded	
	Yes	(%)
Central	28	20.4
Eastern	36	26.4
Northern	33	24.1
Western	41	29.5
Total	138	100

Figure 6.12: Percentage distribution of Agricultural Household member participation in PEDAS under NAADS programs.



15.3% pf Agric. HHs reported heads as having knowledge on Land Tenure System

6.6.5 Knowledge of Heads of Ag HHs about changes in the Land Tenure System

Information was sought about changes in the land tenure system brought by the 1998 Land Act. Close to 628,000 (15.3%) Ag HHs reported having knowledge about the

changes as shown in Table 6.17 and Figure 6.13. The Central Region with 234,000 (37.3%) had the highest proportion of heads of Ag HHs who were aware of the changes in land tenure system, followed by the Eastern Region with 213,000 or (33.9%). On the other hand, only 8 percent of the Ag HHs reported spouses of Ag HHs heads as being aware of the land tenure system changes as shown in Table 6.18 and Figure 6.14.

Table 6.17: Number of Heads of Agricultural Households with Knowledge of about changes in the Land Tenure System ('000)

Region	Agricultural households that responded	
	Yes	(%)
Central	234	37.3
Eastern	213	33.9
Northern	81	12.9
Western	100	15.9
Total	628	100

Figure 6.13: Percentage distribution of Agricultural Households Heads regarding Knowledge about changes in land tenure system

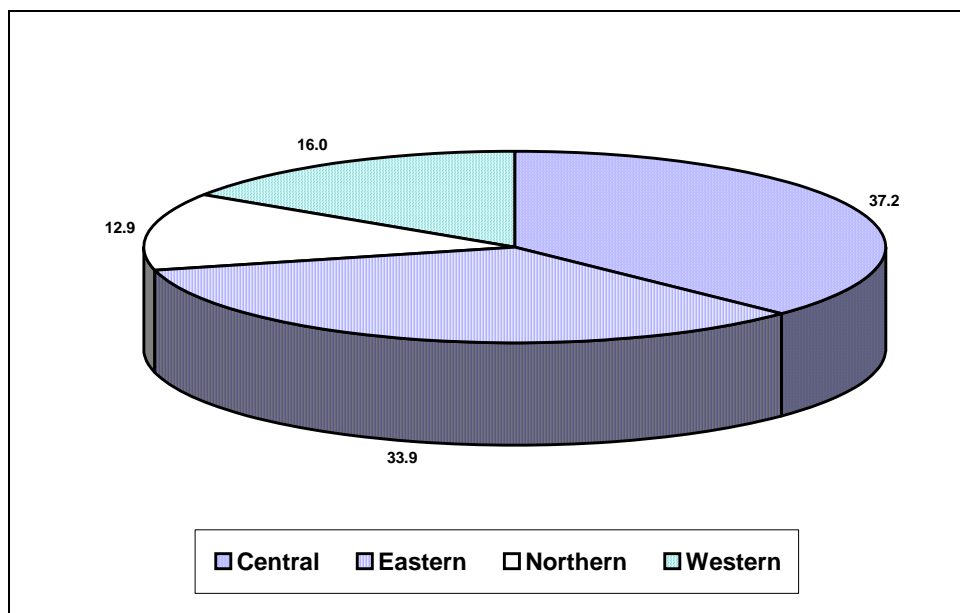
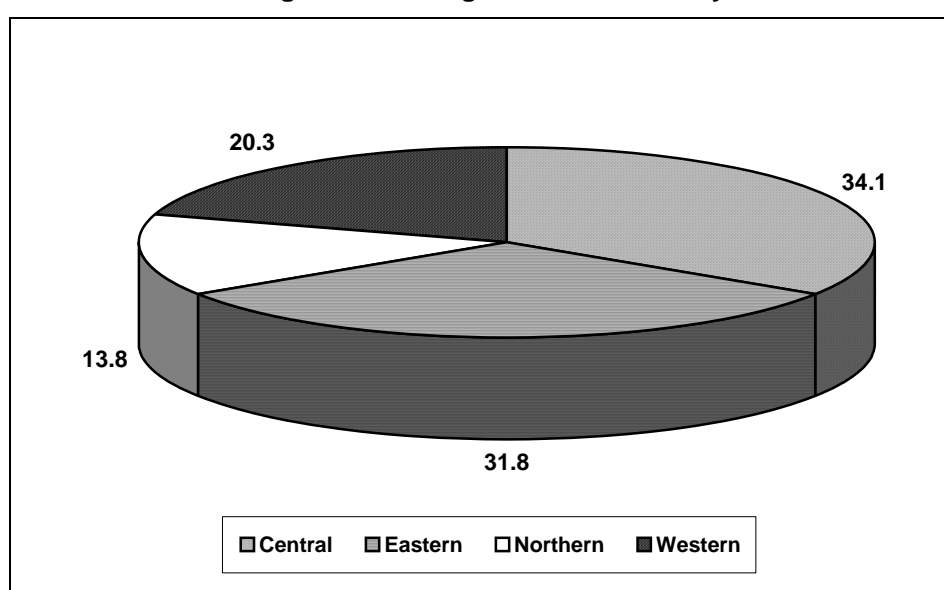


Table 6.18: Number of Spouses in Ag HHs with Knowledge about changes in the Land Tenure System ('000)

Region	Agricultural households that responded	
	Yes	(%)
Central	109	34.1
Eastern	102	31.8
Northern	44	13.8
Western	65	20.3
Total	320	100

Figure 6.14: Percentage distribution of Ag HHs Heads' Spouses regarding Knowledge about changes in land tenure system



6.7 Access to and Demand for Agricultural Technology

This section sought information from Ag HHs on the adoption of Agricultural Technologies. It should be noted that information regarding access to specific Agricultural Technology was recorded regardless of whether the Ag HHs had access to extension service or not. The types of technology for which information was sought included Soil Fertility Management, Crop Protection, Farm Management, Improved Produce Quality/Varieties, On-Farm Storage (Post Harvest), Improved Individual and Group Marketing as well as Disease Control measures.

6.7.1 Change of Practices in Past Five Years

About 1 million (24%) Ag HHs reported having changed their practices with respect to use of Improved Produce Quality/ Varieties during the five years preceding the survey date as shown in Table 6.19. The majority were from the Eastern Region (431,000 44.2%). The Central Region had the highest number of Ag HHs at 279,000 (30.6%) who changed Soil Fertility Management practice. In addition, the Central Region reported the highest number of Ag HHs that practiced Disease Control at 310,000

24% of Agric. HHS reported having used improved varieties

(40.1%). The Northern Region recorded the least number of Ag HHs that reported changing their practices with respect to all technologies.

Table 6.19: Number of Ag HHs that have changed practices by type of technology ('000)

Region	SFM	CP	FM	IPQ	OFS	IIGM	DC
Central	279	217	123	263	67	71	217
Eastern	246	191	102	431	115	74	310
Northern	133	78	48	125	57	52	91
Western	254	174	142	155	91	101	156
Uganda	912	660	415	974	330	298	774

Note: SFM – Soil Fertility Mgt, CP – Crop Protection, FM - Farm Management IPQ – Improved Produce Quality / Variety, Disease Control – DC, OFS- On-farm storage (post harvest), IIGM - Improved Individual& group marketing

6.7.2 Extent to which good information could improve production

Out of the 4.2million Ag HHs, 2.7 million or 65.9 percent reported that good information on improved produce quality/varieties would “very much” improve their production as shown in Table 6.20. The same observation was recorded by 2.6 million Ag HHs representing (63.4 percent) regarding Soil Fertility Management.

Table 6.20: Number of Ag HHs by extent to which good information on type of technology could improve production ('000)

	Very much	Somewhat	Hardly	Not at all	Don't Know	Total
Soil fertility management	2,602	1,022	167	126	135	4,052
Crop protection	2,367	1,190	203	151	142	4,054
Farm management	1,966	1,171	339	292	282	4,050
Improved produce quality	2,652	954	149	154	138	4,047
On-farm storage (post-harvest)	1,910	1,133	346	374	283	4,046
Improved individual and group marketing	1,964	1,123	320	336	304	4,048
Disease control	2,342	986	192	291	233	4,044

6.7.3 Willingness to pay for Information

43.9% of the Ag HHs were willing to pay for information on improved varieties

Respondents were asked whether they were willing to pay for information regarding various technologies. Out of the 4.2 million Ag HHs, 1.8 million constituting 43.9 per cent were willing to pay for information on Improved Produce Quality/Varieties; the response on Soil Fertility Management was similar as shown in Table 6.21. Ag HHs were least willing to pay for On-Farm Storage (30.9%).

Table 6.21: Number of Ag HHs according to willingness to pay for information by type of technology ('000).

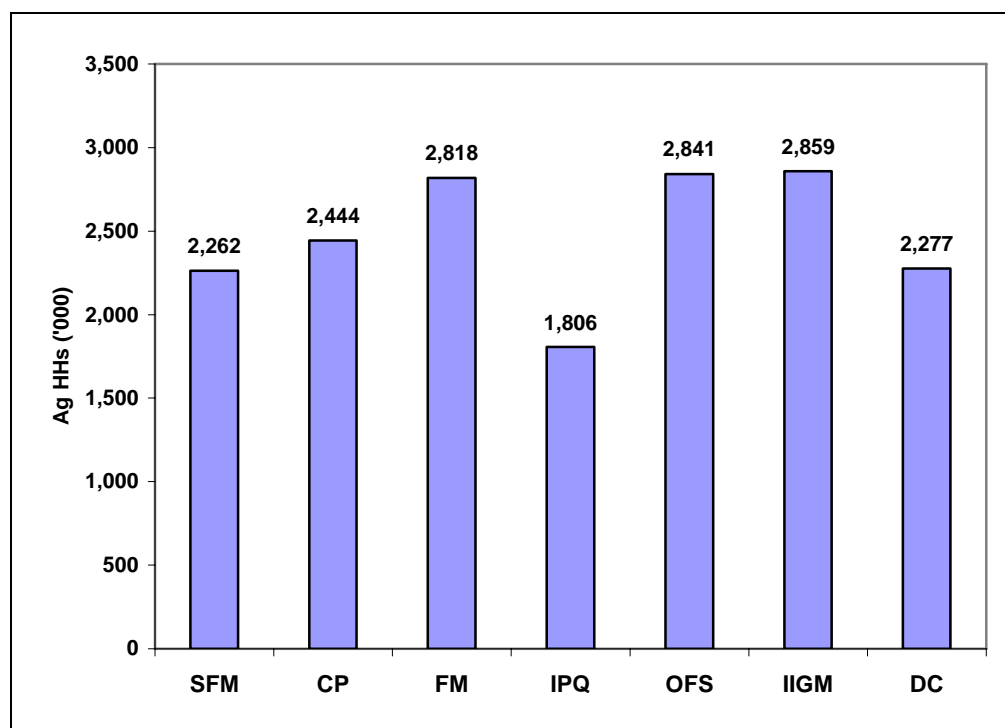
	Yes	No	Total
Soil fertility management	1,775	2,279	4,054
Crop protection	1,604	2,451	4,055
Farm management	1,328	2,722	4,051
Improved produce quality	1,813	2,234	4,046
On-farm storage (post-harvest)	1,251	2,795	4,046
Improved individual and group marketing	1,270	2,778	4,049
Disease control	1,657	2,388	4,045

6.7.4 Access to information

Majority of Ag HHs had no access to information

The majority of Ag HHs had no access to information as shown in Figure 6.15 Improved Individual and Group Marketing, On Farm Storage (Post Harvest Management) and Farm Management were the technologies reported by the highest number of Ag HHs, each of them with more than 2.8 million (68.3%) out of about 4.1 million, with No Access to information.

Figure 6.15 Number of Ag HHs with no access to Information by Technology ('000).



Note: SFM – Soil Fertility Mgt, CP – Crop Protection, FM - Farm Management, IPQ – Improved Produce Quality / Variety, DC- Disease Control, OFS - On-Farm Storage (Post Harvest), IIGM - Improved Individual & Group Marketing

Talking to Other Farmers most common

Talking to Other Farmers and Mass Media were the most common modes of accessing information on various technologies as shown in Table 6.22. NAADS and Government Extension were the next modes of accessing information for the various technologies in that order.

Table 6.22: Number of Ag HHs by mode of access to Information by type of Technology ('000).

Technology	Through regular Govt extension	NAADS	Mass media	Talk to other farmers	Others	Total
Soil Fertility Management	169	206	744	608	62	1,789
Crop Protection	153	178	639	581	54	1,605
Farm management	132	145	499	405	46	1,227
Improved produce quality	164	206	779	1,002	87	2,238
On-farm storage (post-harvest)	91	115	435	521	35	1,197
Improved individual and group marketing	95	114	442	483	48	1,182
Disease control	188	135	649	727	64	1,763

6.8 Farmers' Knowledge about Agricultural Technology

6.8.1 Improvement of Soil Fertility

39% of Ag HHs indicated beans improved soil fertility

The survey sought information on farmers' knowledge about Agricultural Technology. Out of 5 crops namely Maize, Cassava, Beans, Sorghum and Banana, farmers were asked to indicate which of the crops improved soil fertility by capturing nutrients; making food and putting it back to the soil. The current extension staff advice is that Beans improve Soil Fertility by capturing nutrients. The survey results indicated that out of the 4.1 million farmers that responded, about 1.6 million (39.0 %) stated it was Beans that could improve soil fertility; this was followed by Cassava (716,000 or 17.7%) and Maize (689,000 or 17.0%) as shown in Table 6.23. It is noted that 409,000 (10.1%) of Ag HHs didn't know at all. At the regional level, the Northern Region (259,000 or 36.2%) had most Ag HHs reporting Cassava as the most leading crop in Improvement of Soil Fertility.

Table 6.23: Distribution of Ag HHs according to crop that can Improve Soil Fertility ('000)

Region	Maize	Cassava	Beans	Sorghum	Matooke	Don't Know	Total
Central	192	56	400	18	161	139	967
Eastern	207	320	370	24	78	89	1,089
Northern	158	259	241	119	30	38	844
Western	131	81	589	96	116	142	1,155
Total	689	716	1,600	256	385	409	4,055

6.8.2 Cassava Planting Methods

68.3% of Ag HHs preferred planting Cassava horizontally

Horizontally planted sticks were reported as the most preferred cassava planting method by Ag HHs because of its better yields. This is generally consistent with the extension advice although the highest yield is from horizontally crossed planted sticks. Out of the 4.1 million Ag HHs who responded, 2.8 million (68.3%) preferred this method while 829,000 (20.2%) preferred the vertically planted sticks as shown in Table 6.24. A paltry 4 percent did not know while 7 percent preferred both methods. Out of the 829,000 Ag HHs that preferred vertically planted sticks, the majority, 306,000 or 36.9 percent were from Western Region while 248,000 constituting 29.9 percent were from Central Region. It is observed that horizontally planted sticks method is almost as equally practiced in all regions.

Table 6.24: Distribution of Ag HHs according to preference of Cassava Planting Method by region ('000)

Region	Vertically Planted Sticks	Horizontally Planted	Both	Don't Know	Total
Central	248	634	57	29	967
Eastern	180	730	142	36	1,089
Northern	95	648	47	54	844
Western	306	778	31	40	1,155
Total	829	2,790	277	159	4,055

6.8.3 Susceptibility of crops to pests

39 % of Ag HHs reported late planting as main cause for susceptibility of crops to pests and disease

Late season planting was the reason advanced by 1.6 million Ag HHs (39.0%) out of 4.1 million as the major method which increases susceptibility of crops to pests and diseases followed by mulching with 559,000 (13.8%) as shown in Table 6.25. This is consistent with the extension advice because late season planting makes the plant susceptible to disease. It is however, worth noting that more than a third of the Ag HHs expressed ignorance of methods that increase susceptibility of crops to pests.

Table 6.25: Distribution of Ag HHs according to methods that increase Susceptibility of crops to pests and diseases ('000)

Region	Mulching	Adequate pruning	Use of recommended amount of fertilizers	Late season planting	Dk	Total
Central	127	68	31	418	323	967
Eastern	147	120	60	326	436	1089
Northern	137	33	22	313	340	844
Western	148	55	12	541	397	1153
Total	559	275	126	1598	1496	4053

6.8.4 Crop Rotation

About 54% of Ag HHs preferred maize to follow beans in a rotation

Maize other than Groundnuts and Soya Bean was preferred by most Ag HHs to follow Beans in a rotation. A total of 2.2 million (53.7%) out of 4.1million Ag HHs would prefer Maize to follow Beans in a rotation as shown in Table 6.26. The crop least preferred to follow Beans in a rotation is Soya beans represented by about 488,000 Ag HHs (12.0%). This is consistent with the extension advice. Groundnuts were reported by more than 200,000 (4.9%) Ag HHs in each of the regions as a crop more suitable to follow beans in a rotation.

Table 6.26: Distribution of Ag HHs according to crop to follow Beans in rotation ('000)

Region	G-nuts	Soya beans	Maize	Don't Know	Total
Central	231	76	506	153	966
Eastern	219	162	629	78	1,089
Northern	233	112	447	51	843
Western	289	138	633	93	1,153
Total	973	488	2,216	375	4,051

6.8.5 Best Results for Bananas

About two thirds (2.7 million) of the 4.1 million Ag HHs interviewed reported that bananas should be left with a total of three (3) plants in each stool (stand) in order to achieve best results and this is clearly in line with the extension advice. About 475,000 or 11.6 percent out of 4.1 million Ag HHs thought of one plant per stand while 634,000 or 15.5 percent did not know as shown in Table 6.27. The Northern Region was responsible for the high percentage (44.2%) of those that did not know. This is clearly because the crop is not common in the region.

Approx. 66% wanted 3 plants per stool

Table 6.27: Distribution of Ag HHs according to the number of plants per stool of Bananas ('000)

Region	1	3	10	15	Don't know	Total
Central	109	716	47	2	93	966
Eastern	61	788	80	8	152	1088
Northern	156	327	68	14	280	844
Western	150	835	54	5	109	1153
Total	475	2666	248	29	634	4051

6.8.6 Most common pest on Bananas

The survey sought information on the most common pest on Bananas. Banana Weevil was correctly reported as the most common pest on bananas by 2.4 million Ag HHs (58.5%) out of 4.1 million, followed by Fruit Bores with 346,000 constituting 8.5 percent as shown in Table 6.28. Banana Weevil was most cited in the Central and Western Regions while Fruit Bores were most reported in the Eastern and Northern Region.

58.5% of Ag HHs reported Banana weevil as most common pest on Bananas

Table 6.28: Distribution of Ag HHs according to most common pest on Bananas ('000)

	Banana Weevils	Fruit Bores	Leaf Miners	Don't Know	Total
Central	681	55	33	199	967
Eastern	518	141	80	348	1,088
Northern	265	106	31	442	843
Western	909	44	27	175	1,155
Total	2,372	346	171	1,163	4,053

6.8.7 Application of Di Ammonium Phosphate (DAP)

80% of the Ag HHs did not know the recommended rate of DAP application

Respondents were asked about the recommended quantity for DAP that has to be applied per hill/hole when planting maize. Out of the 4.1 million Ag HHs, 3.3 million (80.4%) did not know while 661,000 Ag HHs or 16.3 percent suggested one bottle top which is the recommended application. Western Region had the highest number of Ag HHs of about 1.0 million (25.7%) that did not know, followed by Eastern Region with 790,000 farmers (19.3%) as shown in Table 6.29.

Table 6.29: Distribution of Ag HHs according to recommended quantity of DAP to apply when planting maize ('000)

	One Bottle Top	One Kg	One Gram	Don't Know	Total
Central	191	6	11	757	965
Eastern	267	6	23	790	1087
Northern	128	16	32	669	844
Western	75	18	13	1045	1152
Total	661	47	79	3261	4047

6.9 Farmers' Knowledge about Improved varieties

About 54 % of the Ag HHs stated maize as most well known of all improved varieties

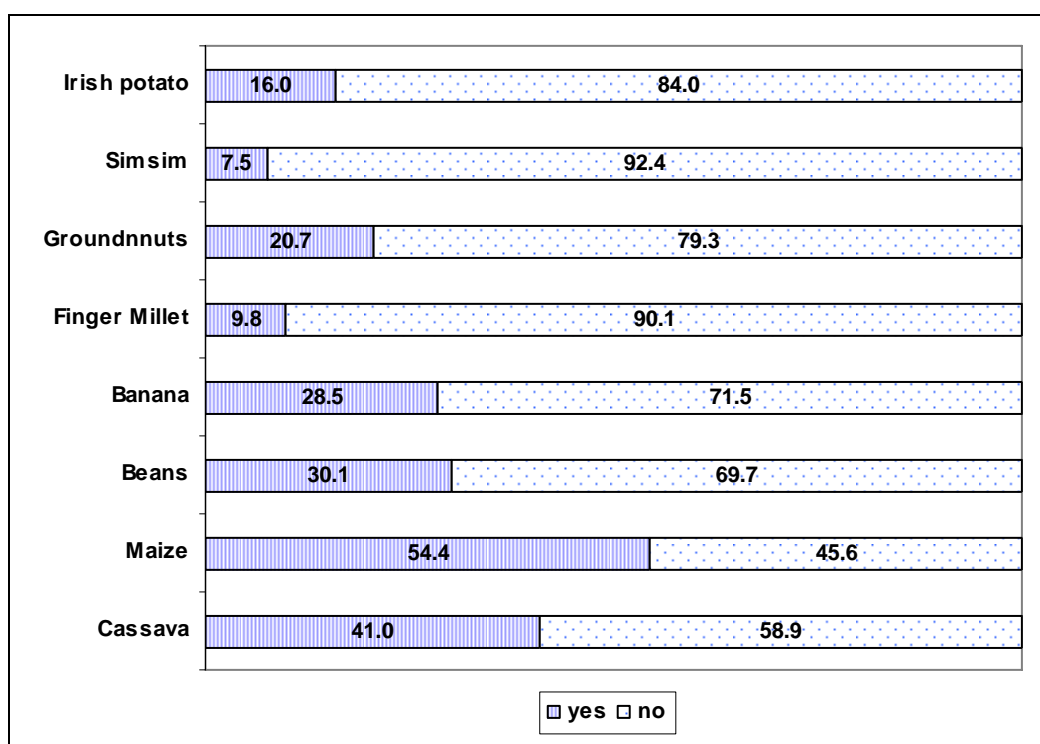
6.9.1 Knowledge about the variety

High yielding (7000kg/ha) and high quality protein maize variety known by 2.2 million (53.7%) Ag HHs out 4.1, is the most well known of all improved varieties under study in the survey, followed by high yielding and resistant Mosaic, Cassava, then disease resistant and high yielding, beans. High yielding (800-1000 kg/ha) Simsim was the least known by Ag HHs that participated in the study. See table 6.30 and Figure 6.16

Table 6.30: Distribution of Ag HHs by knowledge of Improved Variety ('000)

Variety	Yes	(%)
Cassava	1,664	41.0
Maize	2,204	54.4
Beans	1,222	30.1
Banana	1,154	28.5
Finger Millet	398	9.8
Groundnuts	838	20.7
Simsim	304	7.5
Irish potato	648	16.0

Figure 6.16 Percentage Distribution of Ag HHs according to Knowledge of improved varieties.



There were about 1.5 Million Ag HHs for maize

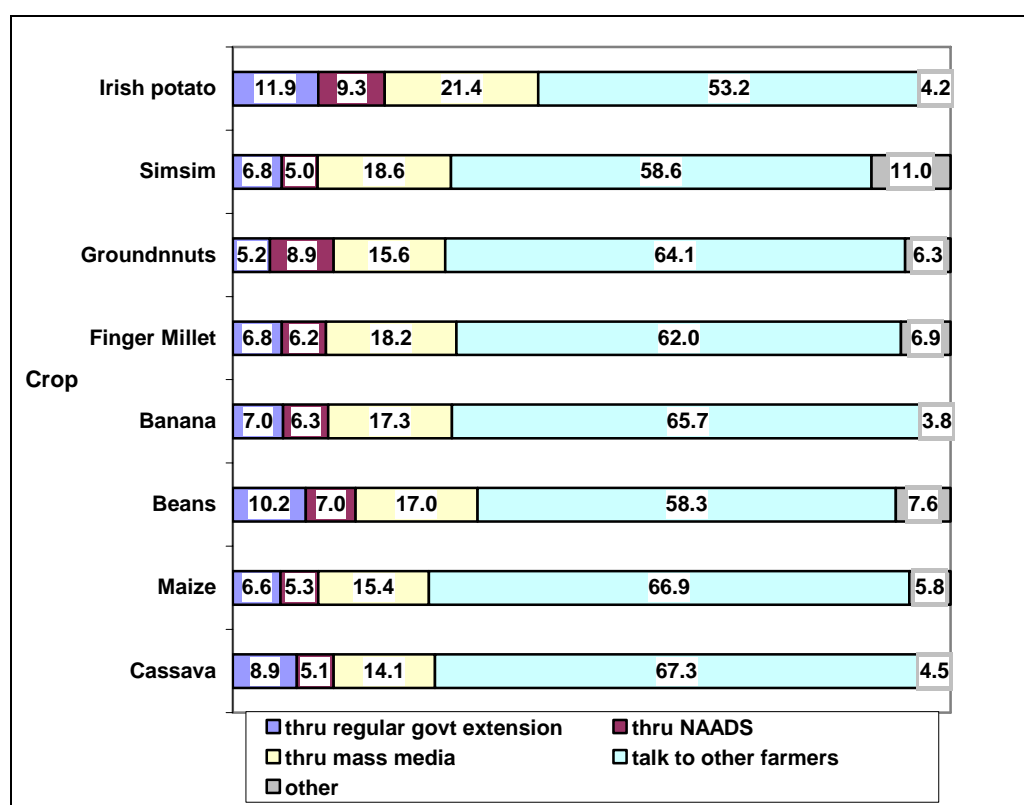
6.9.2 Source of Information

The most common source of information for all crops countrywide was by talking to 'Other Farmers' (67%) Table 6.31 and Figure 6.17. The Mass Media ranked second among the common sources of information. Although Government Extension seemed to still be a more popular source of information than NAADS, this was not the case with Groundnuts.

Table 6.31: Distribution of Ag HHs with knowledge of variety according to Information source ('000).

Improved variety	Thru Regular Gov't Extension	Thru NAADS	Thru Mass Media	Talk To Other Farmers	Other	Total Who Know Variety
Cassava	148	85	235	1,120	76	1,664
Maize	146	116	340	1,475	127	2,204
Beans	124	85	207	712	93	1,222
Banana	81	72	199	758	44	1,154
Finger Millet	27	25	72	247	28	398
Groundnuts	43	75	130	537	53	838
Simsim	21	15	57	178	33	304
Irish potato	77	60	139	345	27	649

Figure 6.17 Percentage Distribution of Ag HHs according to Information Source by Crop.



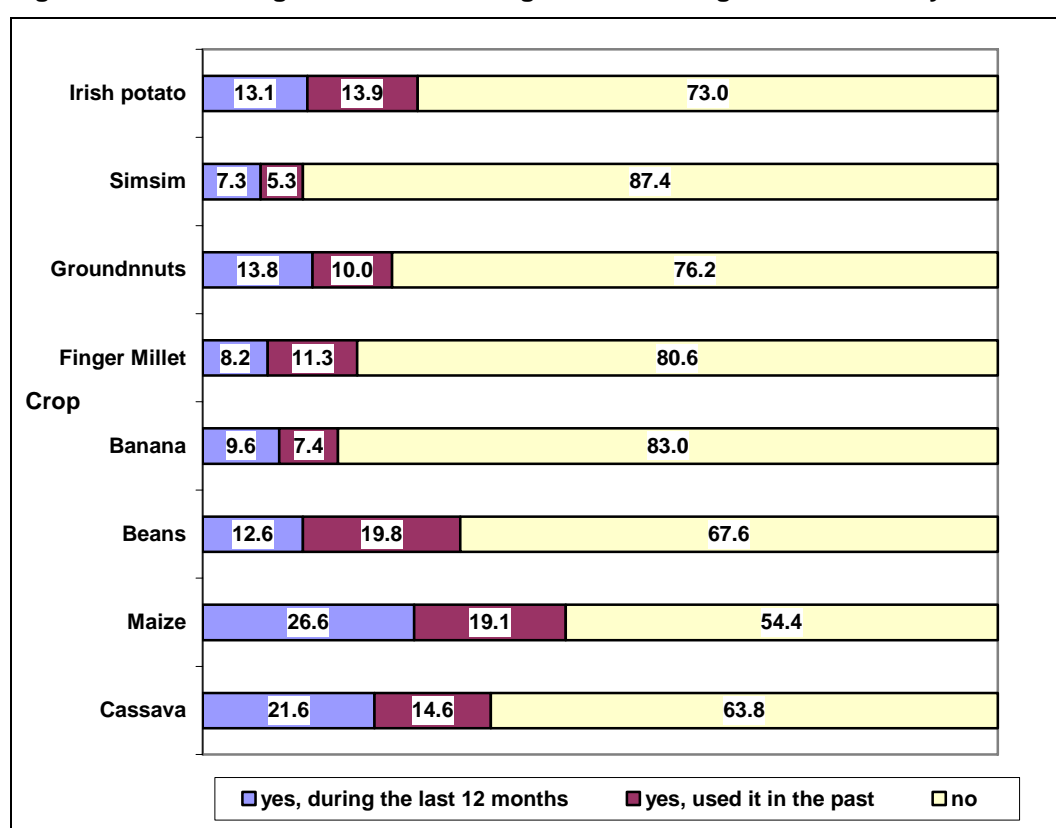
6.9.3 Use of variety

The majority of Ag HHs interviewed had not used each of the improved varieties under study especially for Simsim (87.4%), Bananas (83.0%) and Finger Millet with 80.6%. Maize, Cassava and Groundnuts were the most used varieties respectively as shown in Table 6.32 and Figure 6.18

Table 6.32: Percentage Distribution of Ag HHs that had ever used variety

Improved variety	yes, during the last 12 months	yes, used it in the past	no	Total
Cassava	21.6	14.6	63.8	100
Maize	26.6	19.1	54.4	100
Beans	12.6	19.8	67.6	100
Banana	9.6	7.4	83.0	100
Finger Millet	8.2	11.3	80.6	100
Groundnuts	13.8	10.0	76.2	100
Simsim	7.3	5.3	87.4	100
Irish potato	13.1	13.9	73.0	100

Figure 6.18 Percentage Distribution of Ag HHs according to use of variety



6.10 Summary of Findings

At the national level, the use of non-labour inputs is still very low with improved seeds being used by 6.8 percent of the entire parcels; Manure 6.8 percent; Chemical Fertilizers 1.0 percent and Pesticides, Herbicides and Fungicides by 3.4 percent.

The number of Labour Days for both seasons totaled 1,263 million and Hired Labour constituted 116 million (9.2%) with Western Region supplying the highest Labour Days (47 million).

Rain Shortage was reported as the main cause of crop damage affecting 4.7 million crop plots (19.4%) out of the estimated 24.2 million crop plots.

There were generally small increments between 2000 and 2005 for practice of 3 soil conservation measures namely bunds, terracing and mulching.

Only 300,000 (7.3%) of the 4.1 million Ag HHs reported having been visited by an extension worker with the Northern Region reporting the least.

About 10 per cent of the Ag HHs reported having a household member that participated in a training programme organized by NAADS. In addition about 5.4% of the Ag HHs had at least a member in Farmer groups under NAADS.

Few heads of households (15.3%) reported being knowledgeable on the changes in the Land Tenure System brought about by 1998 Land Act.

About 44 per cent of Ag HHs were willing to pay for information on improved varieties while 68 percent of Ag HHs had no access to information on farm management.

Finally, the most common source of information reported by 60 percent of the farmers is by talking to other farmers.

List of References

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- UBOS, Population and Housing Census, Agricultural Module 2002
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- Statistics Department, MFPED; The Integrated Household Survey (IHS) 1992/93
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- Ministry of Agriculture, Animal Industry and Fisheries; Uganda National Census of Agriculture and Livestock (UNCAL) 1990/91
- Ministry of Agriculture; Census of Agriculture, 1963/65

ANNEXES

Annex 1: Appendix Tables

Annex 2: Standard Errors

Annex 3: Glossary of Agricultural Module Terms

Annex 4: Questionnaires

Annex 1: Tables

A2.1: Percentage of agricultural households by number of parcels that are within the ea/lc1 and are the owned by the households

Region	1	2	3	4	5	6	7	8 Plus	Total
Central	67.9	21.3	7.7	1.7	0.7	0.4	0.1	0.2	100
Eastern	58.5	26.9	9.9	3.0	1.4	0.2	0.0	0.2	100
Northern	44.7	27.4	15.2	8.7	3.0	0.5	0.4	0.1	100
Western	56.9	24.7	10.5	3.5	2.5	1.0	0.5	0.6	100
Total	57.4	25.1	10.6	3.9	1.9	0.6	0.2	0.3	100

A2.2: Number of agricultural households by number of parcels owned ('000)

Region	Parcels										Total
	1	2	3	4	5	6	7	8	9	10+	
Central	388.3	159.1	57.1	17.3	5.8	2.3	0.7	0.3	1.2	0.0	632.0
Eastern	436.3	270.7	130.7	50.1	23.7	10.6	3.7	2.0	2.4	0.8	930.9
Northern	286.3	166.4	105.9	54.7	20.9	3.4	1.4	0.9	0.0	0.6	640.5
Western	508.3	280.5	134.2	57.0	29.0	23.5	8.9	9.1	4.2	10.5	1065.3
Total	1619.2	876.7	427.9	179.1	79.4	39.9	14.7	12.3	7.8	18.3	3268.8

A2.3: Number of agricultural households by number of parcels Used (Elsewhere) ('000)

Region	Parcels								Total
	1	2	3	4	5	6	7	8	
Central	325.0	167.3	65.2	9.8	5.2	0.7	0.5	0.0	573.8
Eastern	329.4	158.6	64.7	21.0	5.9	1.4	0.6	0.2	581.7
Northern	283.4	105.2	43.3	10.8	4.4	2.3	0.0	0.0	449.4
Western	384.9	127.4	48.9	11.0	5.5	0.2	0.0	2.2	580.0
Total	1322.7	558.5	222.1	52.6	20.9	4.5	1.1	2.3	2184.9

A2.4: Number of plots by plot size, Second Season of 2004 ('000)

Region	<.0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500	Total
Central	213.3	4951.9	1269.2	587.4	65.4	30.3	2.4	4.0	0.6	7124.4
Eastern	105.5	4524.6	1654.0	523.5	52.9	27.8	2.1	1.9	0.0	6892.2
Northern	41.1	1999.5	1126.4	399.1	62.6	14.7	0.5	1.2	1.0	3646.1
Western	227.6	5945.2	1474.9	740.8	86.5	28.1	4.5	3.2	0.0	8510.8
Total	587.5	17400.0	5524.5	2250.8	267.3	100.8	9.5	10.3	1.6	26200.0

Only Central and Northern regions reported plots above 500 acres

A2.5: Number of plots by plot size, First Season of 2005 ('000)

Region	Plot Area (Acres) ('000)									Total
	<0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500	
Central	313.7	5713.8	1298.3	614.5	65.7	25.0	2.4	6.9	480.1	8520.4
Eastern	167.4	6476.0	1918.3	591.8	50.8	23.9	3.1	1.4	240.1	9472.8
Northern	65.7	2765.6	1324.2	403.6	56.9	14.4	1.8	1.8	203.5	4837.5
Western	301.0	6410.6	1469.5	714.3	87.4	28.8	3.4	2.7	299.3	9317.0
Total	847.8	21400.0	6010.3	2324.3	260.8	92.0	10.8	12.9	1223.0	32100.0

A2.6: Number of plots by plot size, Second Season of 2004 of 2004 excluding fallow and grazing land and woodlots ('000)

Region	<0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500	Total
Central	109.4	2915.0	823.2	372.3	36.2	19.4	1.8	1.4	11.4	4289.9
Eastern	89.5	3451.1	1242.8	386.0	32.2	18.7	1.3	0.8	36.6	5259.1
Northern	25.9	1270.8	695.6	239.4	38.5	9.8	0.5	0.6	14.2	2295.3
Western	173.2	4591.0	1232.0	604.7	67.5	16.5	2.6	2.4	59.8	6749.6
Total	397.9	12200.00	3993.5	1602.5	174.4	64.4	6.2	5.2	122.0	18600.0

A2.7: Agricultural Households by total size (f.ext) - holding size (land owned with in ea) excluding parcels rented out Second Season of 2004 land use

Region	Parcels									Missing	Total
	<0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500		
Central	2.6	117.3	123.1	169.2	83.0	38.5	4.5	3.8	2.5	1.2	545.7
Eastern	0.6	214.3	220.5	285.3	99.6	32.7	3.2	0.8	0.8	1.7	859.6
Northern	0.1	71.8	91.3	196.3	86.2	32.6	2.6	0.0	1.0	0.6	482.4
Western	8.0	235.8	246.4	336.7	108.0	68.0	3.3	4.2	0.0	0.9	1011.3
Total	11.3	639.2	681.2	987.5	376.8	171.8	13.6	8.8	4.3	4.4	2899.0

A2.8: Households by geographical location of the parcels (Number and percentages) ('000)

Region	Parcels only inside ea/lc1	Parcel within the parish	Parcel outside parish	With in district	Other districts	Total	Total Agricultural hhs	Total Number of households
Central	546	107	25	15	14	707	1,014	1,666
Eastern	860	175	52	37	12	1,136	1,103	1,216
Northern	482	109	71	60	11	734	866	1,033
Western	1,011	210	49	30	9	1,309	1,169	1,317
Total	2,899	601	197	143	46	3,886	4,151	5,233

A2.9: Number of households by number of parcels that are within the ea/lc1 and are the owned by the hh

Region	1	2	3	4	5	6	7	8 Plus	Total
Central	371	116	42	9	4	2	0	1	546
Eastern	503	231	85	26	12	1	-	2	860
Northern	216	132	74	42	14	2	2	1	482
Western	575	249	106	35	25	10	5	6	1,011
Total	1,664	728	307	112	56	16	7	10	2,899

A3.1: Number of parcels owned by location ('000)

Region	With In EA	Outside EA, In Parish	Outside Parish, In Scounty	In District	Other District	Missing	Total
Central	812	122	37	20	15	2	1,008
Eastern	1,405	267	78	56	17	1	1,823
Northern	972	142	90	85	14	2	1,304
Western	1,808	361	62	36	9	5	2,281
Total	4,997	891	268	197	55	10	6,416

A3.2: Number of parcels by location (Use Rights) ('000)

Region	With In EA	Outside EA, In Parish	Outside Parish, In Scounty	In District	Other District	Missing	Total
Central	670	204	33	15	7	-	928
Eastern	556	280	76	44	10	2	968
Northern	283	261	108	40	9	1	703
Western	463	312	58	26	14	3	876
Total	1,972	1,058	274	124	40	7	3,475

A3.3: Number of owned parcels by the land tenure system (within EA) ('000)

Region	Land tenure system					Missing	Total
	Freehold	Leasehold	Mailo	customary	Other		
Central	17	30	703	39	23	-	812
Eastern	54	5	6	1,337	2	-	1,405
Northern	8	4	-	959	0	1	972
Western	149	13	13	1,632	2	1	1,808
Total	227	52	721	3,967	28	1	4,997

A3.4: Number of use rights parcels by the land tenure system (within EA) ('000)

	Land tenure system						Total
	Freehold	Leasehold	Mailo	customary	Other	Missing	
Central	6	28	604	11	16	4	670
Eastern	16	15	6	507	13	-	556
Northern	6	12	1	262	4	-	283
Western	45	12	8	392	6	-	463
Total	72	66	619	1,172	38	4	1,972

A3.5: Total area of parcels by Land tenure system in acres - F.est both seasons ('000)

Region	Cost per parcel	Averages size by parcel		Value for rent F.est	Freehold	Leasehold	Mailo	Customary	Other	Total
		size by parcel (acres) GPS	size by parcel (acres) F.est							
Central	3,460	2.6	4.2	165	2,975	53	14	61	93	3,197
Eastern	1,396	2.0	2.1	86	453	66	41	42	29	631
Northern	893	3.3	2.6	71	480	63	49	92	10	694
Western	2,260	1.5	2.7	145	452	129	71	32	25	711
Total	1,924	2.2	2.7	116	4,361	312	174	228	158	5,233

A3.6: Total area of parcels by Land tenure system in acres - GPS both seasons

Region	Total area
Central	309,766
Eastern	400,720
Northern	488,662
Western	299,284
Total	1,498,432

A3.7: Number of parcels by primary land use during the second cropping season 2004 (within EA) ('000)

Region	Own cultivated (annual crops)	Own Cultivated (perennial crops)	Rented-out	Fallow	Grazed land	Woodlot	Other (Specify)	Missing	Total
Central	347	363	26	19	19	6	22	11	812
Eastern	883	307	52	82	16	5	55	5	1,405
Northern	655	25	19	219	18	5	31	1	972
Western	804	814	12	48	68	29	24	8	1,808
Total	2,688	1,509	109	368	120	45	133	25	4,997

A3.8: Number of parcels by primary land use during the first cropping season 2005 (within EA)
('000)

Primary use of the parcel during the first visit									
Region	Own cultivated (annual crops)	Own Cultivated (perennial crops)	Rented-out	Fallow	Grazed land	Woodlot	Other (Specify)	Missing	Total
Central	359	361	31	16	19	7	16.9	2.2	811.9
Eastern	975	289	48	27	17	5	42.0	2.1	1404.9
Northern	724	26	22	149	16	4	28.6	2.3	972.0
Western	835	804	16	44	68	28	10.4	3.5	1808.4
Total	2892.9	1480.5	117.3	234.73	120.3	44	97.8	10.0	4997.2

A3.9: Number of owned parcels by parcel size (farmers' estimate in acres) ('000)

Region	<0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500	Total
Central	5.3	239.3	215.6	239.5	67.4	34.5	4.0	3.2	3.1	811.9
Eastern	3.7	508.5	416.4	371.8	68.2	28.7	4.0	0.8	2.9	1,404.9
Northern	2.6	274.1	334.6	278.8	60.4	18.3	1.7	-	1.5	972.0
Western	28.1	801.3	458.4	373.0	78.9	61.0	3.2	3.7	0.8	1,808.4
Total	39.6	1,823.2	1,425.0	1,263.1	274.9	142.5	12.9	7.7	8.4	4,997.2

A3.10: Households by total size (farmers' estimates) - holding size (with in EA) excluding parcels rented out Second Season of 2004 ('000)

Region	<0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500	Missing	Total
Central	3	117	123	169	83	39	5	4	3	1	546
Eastern	1	214	221	285	100	33	3	1	1	2	860
Northern	0	72	91	196	86	33	3	-	1	1	482
Western	8	236	246	337	108	68	3	4	-	1	1,011
Total	11	639	681	988	377	172	14	9	4	4	2,899

A3.11: Households by total size (f.est) - holding size (with in EA) excluding parcels rented out First Season of 2005 ('000)

Region	<0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500	Missing	Total
Central	3	118	122	170	82	39	5	4	3	1	546
Eastern	1	214	221	285	101	33	3	1	1	-	860
Northern	0	73	91	196	85	33	3	-	1	1	482
Western	8	237	245	338	106	68	3	4	-	3	1,011
Total	11	642	679	990	374	172	14	9	4	5	2,899

**A3.12: Households by total size (f.est) - holding size (with in ea) excluding parcels rented out
First Season of 2005**

Region	<0.1	0.1-0.9	1.0-1.9	2-4.9	5-9.9	10-49.9	50-99.9	100-499.9	>500	Missing	Total
Central	0.48	21.60	22.44	31.18	15.03	7.06	0.83	0.70	0.46	0.22	100
Eastern	0.08	24.93	25.75	33.19	11.70	3.81	0.37	0.09	0.10	0.00	100
Northern	0.01	15.16	18.82	40.70	17.70	6.75	0.53	0.00	0.20	0.12	100
Western	0.79	23.41	24.19	33.40	10.46	6.72	0.32	0.41	0.00	0.29	100
Total	0.39	22.15	23.43	34.13	12.89	5.93	0.47	0.30	0.15	0.16	100

A3.13: Number of parcels by average selling price per acre ('000)

	<500	500-999	1000-1999	2000-2999	3000-3999	4000-9999	10000+	missing	total
Central	318	223	220	103	27	72	37	8	1,008
Eastern	535	501	478	160	46	69	27	5	1,823
Northern	861	195	124	51	22	30	16	4	1,304
Western	585	436	587	288	115	182	79	9	2,281
Total	2,299	1,355	1,409	602	211	354	159	27	6,416

A3.14: Number of owned parcels by land tenure ('000)

Region	Land tenure system					Missing	Total
	Freehold	Leasehold	Mailo	customary	Other		
Central	18	35	876	50	26	2	1,008
Eastern	71	5	7	1,737	2	1	1,823
Northern	12	5	-	1,284	0	2	1,304
Western	192	20	15	2,045	3	5	2,281
Total	293	65	898	5,117	32	10	6,416

A3.15: Average land value (owned parcels) per acre in shs by tenure system (Selling) ('000)

Region	Freehold	Leasehold	Mailo	Customary	Other	Total
Central	4,901	6,971	4,426	1,930	3,191	4,366
Eastern	3,890	16,900	2,587	2,160	225	2,269
Northern	2,522	31,400	-	1,450	2,000	1,573
Western	7,778	8,086	43,200	2,687	800	3,422
Total	6,434	9,923	5,052	2,191	2,763	2,866

A3.16: Average land value (owned parcels) per acre in shs by tenure system (Renting) ('000)

	Freehold	Leasehold	Mailo	customary	Other	Total
Central	285	2,034	324	207	144	372
Eastern	602	848	74	132	15	152
Northern	141	3,554	-	140	100	152
Western	516	918	5,046	141	200	211
Total	507	1,709	400	138	139	208

A3.17: Average land value (use rights parcels) per acre in shs by tenure system (Willing to Pay)
('000)

Region	Freehold	Leasehold	Mailo	Customary	Other	Total
Central	609	9,863	1,148	205	2,762	1,422
Eastern	1,118	553	743	573	1,959	627
Northern	1,019	1,511	250	541	194	586
Western	658	696	1,801	643	466	660
Total	809	3,407	1,153	594	1,839	871

A3.18: Average land value (use rights parcels) per acre in shs by tenure system sale of use rights

Region	Freehold	Leasehold	Mailo	Customary	Other	Total
Central	168	567	786	193	196	750
Eastern	75	70	2	182	307	174
Northern	243	306	-	134	152	142
Western	659	282	607	89	1,155	208
Total	473	345	774	144	334	437

A3.19: Number of Parcels by soil/land quality ('000)

Region	Good	Fair	Poor	Total
Central	654	895	365	1,914
Eastern	1,057	1,457	267	2,780
Northern	1,107	752	129	1,988
Western	1,405	1,425	295	3,126
Total	4,223	4,529	1,056	9,808

A3.20: Main water source ('000)

Region	Irrigated	Rain fall	Swamp/wetland	Total
Central	38	1,830	47	1,914
Eastern	12	2,652	114	2,777
Northern	3	1,931	55	1,989
Western	33	3,017	73	3,123
Total	85	9,430	289	9,803

A3.21: Topology of the parcel ('000)

Region	Hilly	Flat	Gentle slope	Steep Slope	Valley	Others	Total
Central	255	550	985	43	77		1,911
Eastern	142	1,670	853	67	47	1	2,780
Northern	45	1,419	461	31	26	1	1,983
Western	633	958	1,154	197	179	3	3,125
Total	1,075	4,597	3,454	338	330	5	9,798

A3.22: Number of Parcels ('000) by Distance from Homestead (Km)

Region	<1	1-3	3-5	5-10	10+	Total
Central	1,364	310	136	46	59	1,914
Eastern	1,869	572	192	72	76	2,781
Northern	1,038	519	243	97	92	1,989
Western	1,952	749	247	116	63	3,127
Total	6,223	2,150	818	331	290	9,812

A3.23: Number of Parcels with Rights to sell ownership or use rights

Region	Without anybody's approval	With approval from spouse and children	With approval from extended family	With approval from local authority	With approval from landlord/owner	No rights	Others	Total
Central	412,253	498,449	177,861	9,841	24,570	783,496	8,018	1,914,488
Eastern	454,269	772,065	484,907	24,167	47,086	995,717	2,261	2,780,471
Northern	408,648	222,472	393,785	24,472	12,117	920,181	6,498	1,988,173
Western	371,703	1,590,835	221,123	7,717	17,039	905,934	9,654	3,124,006
Total	1,646,874	3,083,820	1,277,675	66,197	100,811	3,605,329	26,432	9,807,138

A3.24: Number of Parcels with Rights to beneath Ownership or use rights

Region	Without anybody's approval	With approval from spouse and children	With approval from extended family	With approval from local authority	With approval from landlord/owner	No rights	Others	Total
Central	375,380	146,899	4,551		5,719	756,558	7,321	1,913,126
Eastern	535,523	750,159	437,004	25,623	15,345	1,014,281	2,261	2,780,195
Northern	568,168	239,220	321,736	12,306	13,759	827,086	5,898	1,988,173
Western	502,996	1,477,444	194,226	5,998	13,283	923,425	8,964	3,126,336
Total	2,223,384	2,842,203	1,099,865	48,477	48,106	3,521,350	24,444	9,807,830

A3.25: Number of Parcels with Rights to rent it to some one else

Region	Without anybody's approval	With approval from spouse and children	With approval from extended family	With approval from local authority	With approval from landlord/owner	No rights	Others	Total
Central	564,499	470,287	133,732	2,373	16,252	721,341	6,004	1,914,488
Eastern	710,533	806,787	279,801	10,607	24,657	944,554	3,254	2,780,195
Northern	628,713	260,448	270,484	5,056	6,428	814,632	1,428	1,987,190
Western	516,370	1,506,995	161,598	3,997	30,555	897,043	8,964	3,125,523
Total	2,420,116	3,044,517	845,616	22,034	77,893	3,377,570	19,651	9,807,396

A3.26: Number of Parcels with Rights to plant trees

Region	Without anybody's approval	With approval from spouse and children	With approval from extended family	With approval from local authority	With approval from landlord/owner	No rights	Others	Total
Central	1,087,395	202,715	47,331	341	28,856	544,464	2,292	1,913,394
Eastern	1,399,622	418,233	80,257	5,048	46,493	824,831	5,711	2,780,195
Northern	1,167,929	109,304	72,877	4,484	14,568	617,583	1,428	1,988,173
Western	1,177,285	998,348	88,841	950	79,053	770,490	10,555	3,125,523
Total	4,832,231	1,728,600	289,306	10,823	168,970	2,757,368	19,986	9,807,285

A3.27: Number of Parcels with Rights to use it as a loan security

	Without anybody's approval	With approval from spouse and children	With approval from extended family	With approval from local authority	With approval from landlord/owner	No rights	Others	Total
Central	384,080	339,511	105,194	3,474	15,775	1,033,786	21,565	1,903,385
Eastern	626,523	710,445	299,385	7,258	5,481	1,116,304	6,985	2,772,381
Northern	484,609	195,612	291,116	5,540	4,623	987,925	14,537	1,983,961
Western	420,644	1,398,331	118,546	4,773	4,456	1,149,414	21,836	3,118,000
Total	1,915,856	2,643,899	814,241	21,046	30,334	4,287,429	64,922	9,777,727

A3.28: Average amount one can borrow using the owned parcel as a loan by region (shs)

	Freehold	Leasehold	Mailo	customary	Other	Total
Central	440,145	912,859	1,283,005	657,864	2,117,486	1,253,337
Eastern	964,149	28,700,000	995,515	593,123	600,000	788,323
Northern	2,011,667	2,326,410		490,858	800,000	529,295
Western	2,834,118	1,538,440	3,147,487	1,398,792	858,333	1,541,619
Total	2,093,206	5,737,780	1,310,087	851,603	1,985,238	1,044,208

A3.29: Average amount one can borrow using the owned parcel as a loan by rural/urban (shs)

	Freehold	Leasehold	Mailo	customary	Other	Total
Urban	2,867,788	9,720,604	6,253,184	1,877,146	12,700,000	2,872,561
Rural	1,902,820	1,013,966	1,003,877	737,675	1,052,650	831,702
Total	2,093,206	5,737,780	1,310,087	851,603	1,985,238	1,044,208

A3.30: Who has ownership and use rights to the parcel (estimates are Parcels)

Region	Head	Spouse	Both	Other Hh Member	Other	Total
Central	1,563,241	125,245	152,503	37,008	35,934	1,913,930
Eastern	2,304,078	174,106	199,804	41,337	60,885	2,780,210
Northern	1,574,889	84,928	285,894	28,606	12,411	1,986,727
Western	2,015,036	194,312	783,595	78,703	51,406	3,123,052
Total	7,457,244	578,591	1,421,796	185,653	160,635	9,803,919

A3.31: Who works on this parcel (estimates are Parcels)

Region	Head	Spouse	Both	Other Hh Member	Other	Total
Central	746,681	335,725	599,812	84,804	146,908	1,913,930
Eastern	1,041,098	620,969	953,459	66,286	94,210	2,776,021
Northern	809,857	177,130	851,878	69,510	73,506	1,981,881
Western	924,906	867,927	1,078,650	128,151	121,635	3,121,269
Total	3,522,542	2,001,751	3,483,798	348,751	436,259	9,793,101

A3.32: Distribution of Parcels by type of Manager

	Head	Spouse	Both	Other Hh Member	Other	Total
Central	1,114,988	282,916	422,326	49,195	42,397	1,911,823
Eastern	1,670,450	370,505	638,139	37,335	62,012	2,778,442
Northern	1,057,064	211,798	643,308	28,782	35,493	1,976,445
Western	1,506,198	755,838	778,386	53,557	20,810	3,114,789
Total	5,348,700	1,621,057	2,482,159	168,870	160,712	9,781,499

A3.33: Ever had any land disputes over ownership/Use Rights on this Parcel

Region	Yes	No	Total
Central	154,171	1,740,557	1,894,729
Eastern	192,599	2,553,473	2,746,072
Northern	131,241	1,838,488	1,969,729
Western	156,786	2,939,040	3,095,826
Total	634,797	9,071,558	9,706,355

A3.34: In which year did the most recent dispute start (estimates are Parcels)

Region	before 1990	1991-1999	2000-2003	2004	2005	Total
Central	8,147	27,775	45,110	35,462	37,262	153,756
Eastern	12,828	31,432	59,076	52,129	35,308	190,773
Northern	9,356	15,416	33,808	36,057	36,604	131,241
Western	31,867	27,251	35,209	29,281	32,766	156,374
Total	62,198	101,873	173,204	152,928	141,940	632,143

A3.35: With whom (col 11) (estimates are Parcels)

	Head's family member	Spouse's family member	Landlord	Squatter/ Migrants	Other relative	Tenants	Relative s of previous land owners	Politicians/Go vt	Others	Total
Central	18,954	1,744,289	44,159	7,150	14,400	2,796	27,552	8,996	30,163	1,898,461
Eastern	29,768	2,571,836	2,955	4,475	47,638	1,336	32,648	9,221	52,389	2,752,266
Northern	19,519	1,873,193	1,325	11,532	54,896	1,649	11,252	376	22,744	1,996,486
Western	24,842	2,968,356	4,882	14,453	21,641	800	26,812	950	46,900	3,109,636
Total	93,084	9,157,673	53,320	37,611	138,575	6,582	98,264	19,543	152,197	9,756,848

A3.36: Number of all parcels by Primary Land Use during the Second Season of 2004 by Region ('000)

Region	OCAC	OCPC	RO	Cultivated by mailo	Fallow	GL	WL	Other (specify)	Missing
Central	439	432	31	2	25	22	8	32	17
Eastern	1083	419	77	0	125	20	10	83	6
Northern	797	32	22	0	313	18	6	111	4
Western	1042	956	23	0	84	81	40	38	17
Total	3361	1838	153	2	548	142	64	264	45

OCAC - Own Cultivated Annual Crops, OCPC- Own Cultivated Perennial Crops, RO - Rented Out, GL- Grazing Land, WL - Wood Lot

A3.37: Number of all parcels owned by Primary Land Use during the First Season of 2005 ('000)

Region	OCAC	OCPC	RO	Fallow	GL	WL	Other	Missing	Total
Central	454	434	38	22	23	9	22	6	1,008
Eastern	1,212	403	75	43	21	10	55	4	1,823
Northern	880	30	25	233	17	5	108	6	1,304
Western	1,078	942	28	82	82	39	23	9	2,281
Total	3,624	1,809	166	380	143	63	207	24	6,416

OCAC - Own Cultivated Annual Crops, OCPC- Own Cultivated Perennial Crops, RO - Rented Out, GL- Grazing Land, WL - Wood Lot

A3.38: Number of Parcel with Formal Certificate of Title or Customary Certificate of Title of Ownership

Region	Certificate of title	Certificate of customary ownership	Certificate of occupancy	No document	Total
Central	235,412	9,858	5,970	1,645,759	1,896,999
Eastern	34,997	17,594	4,566	2,693,102	2,750,260
Northern	36,455	12,846	970	1,924,888	1,975,158
Western	88,232	35,804	14,155	2,968,282	3,106,473
Total	395,096	76,102	25,662	9,232,031	9,728,890

A4.1: Crop area (Ha) by stand for the Second Season of 2004 (CENTRAL) - Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	104,972	72,926	177,898
Finger millet	3,205	2,788	5,993
Sorghum	1,614	2,044	3,658
Beans	24,126	79,963	104,089
Groundnuts	7,194	10,004	17,198
Simsim	132	27	159
Soya beans	530	312	842
Cassava	36,103	58,262	94,365
Sweet potatoes	70,664	17,050	87,714
Irish potatoes	3,066	2,679	5,745
Banana (Food Type)	81,935	101,992	183,927
Banana (Beer Type)	45,492	24,023	69,515
Banana (Sweet Type)	3,053	7,056	10,109
Coffee (All)	32,698	74,650	107,348
Rice	2,054	-	2,054

A4.2: Crop area (Ha) by stand for the Second Season of 2004 (EASTERN) - Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	166,058	116,049	282,107
Finger millet	9,123	8,026	17,149
Sorghum	26,386	4,924	31,310
Beans	34,407	61,430	95,837
Groundnuts	18,575	15,170	33,745
Simsim	4,910	1,755	6,665
Soya beans	2,727	5,242	7,970
Cassava	119,426	50,967	170,393
Sweet potatoes	98,486	20,527	119,013
Banana	25,908	61,649	87,557
Banana beer	3,362	9,144	12,506
Banana sweet	721	6,343	7,064
Coffee all	18,370	56,725	75,095
Rice	25,284	-	25,284

A4.3: Crop area (Ha) by stand for the Second Season of 2004 (NORTHERN) – Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	47,655	33,780	81,435
Finger millet	16,037	11,377	27,414
Sorghum	38,835	21,771	60,606
Beans	26,791	44,646	71,437
Groundnuts	17,057	14,305	31,362
Simsim	57,766	15,944	73,710
Cassava	90,256	31,520	121,776
Sweet potatoes	22,334	384	22,718
Banana	1,542	1,185	2,727
Coffee all	1,971	1,879	3,850
Rice	3,697	-	3,697
Total			

A4.4: Crop area (Ha) by stand for the Second Season of 2004 (WESTERN) – Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	72,031	69,842	141,873
Finger millet	59,778	24,405	84,183
Sorghum	29,420	7,839	37,259
Beans	52,212	120,747	172,959
Groundnuts	22,835	14,372	37,207
Cassava	36,802	46,617	83,419
Sweet potatoes	81,263	6,245	87,508
Irish potatoes	11,780	5,719	17,499
Banana	105,720	177,064	282,784
Banana beer	32,219	33,952	66,171
Banana sweet	1,298	12,301	13,599
Coffee all	30,960	34,966	65,926
Rice	12,688	-	12,688
Total			

A4.5: Crop area (Ha) by stand for the Second Season of 2004 (UGANDA) – Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	390,716	292,597	683,313
Finger millet	88,142	46,596	134,738
Sorghum	96,254	36,579	132,833
Beans	137,536	306,786	444,322
Field peas	7,479	2,687	10,166
Pigeon peas	3,142	2,594	5,736
Groundnuts	65,660	53,850	119,510
Sim-sim	63,875	18,080	81,955
Soya beans	6,201	7,802	14,003
Cassava	282,587	187,365	469,952
Sweet potatoes	272,747	44,206	316,953
Irish potatoes	15,412	8,411	23,823
Banana (food-type)	215,104	341,890	556,994
Banana beer	81,296	67,332	148,628
Banana sweet	5,972	26,264	32,236
Coffee all	84,000	168,218	252,218
Rice	43,723	-	43,723

A4.6: Crop area (Ha) by stand for the First Season of 2005 (CENTRAL) – Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	71,866	85,926	157,792
Finger millet	2,492	2,473	4,965
Sorghum	2,206	2,330	4,536
Beans	17,917	74,352	92,269
Groundnuts	5,231	9,406	14,637
Cassava	40,283	63,590	103,873
Sweet potatoes	70,865	28,805	99,670
Irish potatoes	1,906	2,000	3,906
Banana	76,790	105,569	182,359
Banana beer	37,530	24,439	61,969
Banana sweet	2,641	7,654	10,295
Coffee all	38,930	75,635	114,565
Rice	2,301	-	2,301
Total			

A4.7: Crop area (Ha) by stand for the First Season 2005 (EASTERN) – Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	213,652	188,702	402,354
Finger millet	34,203	48,073	82,276
Sorghum	32,356	18,327	50,683
Beans	6,688	78,370	85,058
Groundnuts	32,442	32,998	65,440
Sim-sim	2,046	2,786	4,832
Soya beans	1,830	4,128	5,958
Cassava	119,581	73,849	193,430
Sweet potatoes	117,648	13,525	131,173
Banana	20,700	66,230	86,930
Banana beer	3,018	12,160	15,178
Banana sweet	550	6,340	6,890
Coffee all	15,168	70,748	85,916
Rice	49,373	-	49,373

A4.8: Crop area (Ha) by stand for the First Season 2005 (NORTHERN) - Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	65,707	65,959	131,666
Finger millet	7,746	21,208	28,954
Sorghum	46,472	30,702	77,174
Beans	34,316	48,965	83,281
Pigeon peas	4,488	10,108	14,596
Groundnuts	15,543	26,743	42,286
Sim-sim	11,863	9,278	21,141
Soya beans	1,464	5,070	6,534
Cassava	134,455	55,207	189,662
Sweet potatoes	29,988	832	30,820
Banana (Food-Type)	1,366	1,250	2,616
Banana beer	274	167	441
Coffee all	1,764	2,292	4,056
Rice	6,887	-	6,887

A4.9: Crop area (Ha) by stand for the First Season of 2005 (WESTERN) - Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	93,168	71,036	164,204
Finger millet	8,558	2,818	11,376
Sorghum	52,438	9,894	62,332
Beans	61,132	106,708	167,840
Groundnuts	24,767	16,499	41,266
Cassava	60,201	52,676	112,877
Sweet potatoes	80,400	12,900	93,300
Irish potatoes	13,346	5,944	19,290
Banana	107,271	175,389	282,660
Banana beer	32,254	40,786	73,040
Banana sweet	758	11,812	12,570
Coffee (all)	79,521	36,112	115,633
Rice	5,153	-	5,153

A4.10: Crop area (Ha) by stand for the First Season of 2005 (UGANDA) - Within District

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	444,392	411,624	856,016
Finger millet	52,999	74,572	127,571
Sorghum	133,472	61,252	194,724
Beans	120,052	308,395	428,447
Pigeon peas	4,974	11,538	16,512
Groundnuts	77,982	85,646	163,628
Sim-sim	14,823	12,568	27,391
Soya beans	4,764	12,503	17,267
Cassava	354,519	245,323	599,842
Sweet potatoes	298,901	56,062	354,963
Irish potatoes	15,504	7,944	23,448
Banana	206,128	348,438	554,566
Banana beer	73,076	77,553	150,629
Banana sweet	5,448	28,403	33,851
Coffee all	135,383	184,786	320,169
Tobacco	16,201	-	16,201
Rice	63,714	-	63,714

A4.11: Crop Area in Ha (Within District), by Region for the Second Season of 2004 ('000)

Crop	Area in Ha				Total
	Central	Eastern	Northern	Western	
Maize	177,898	282,107	81,435	141,873	683,313
Finger millet	5,993	17,149	27,414	84,183	134,738
Sorghum	3,658	31,310	60,606	37,259	132,833
Beans	104,089	95,837	71,437	172,959	444,322
Field peas		2,511	7,420	235	10,166
Pigeon peas		657	5,046	33	5,736
Groundnuts	17,198	33,745	31,362	37,207	119,510
Simsim	159	6,665	73,710	1,420	81,955
Soya beans	842	7,970	963	4,227	14,003
Cassava	94,365	170,393	121,776	83,419	469,952
Sweet potatoes	87,714	119,013	22,718	87,508	316,953
Irish potatoes	5,745	174	405	17,499	23,823
Banana	183,927	87,557	2,727	282,784	556,994
Banana beer	69,515	12,506	437	66,171	148,628
Banana sweet	10,109	7,064	1,464	13,599	32,236
Coffee all	107,348	75,095	3,850	65,926	252,218
Rice	2,054	25,284	3,697	12,688	43,723

A4.12: Crop Area in Ha (Within District), by Region for the First Season of 2005 ('000)

Crop	Area in Ha				Total
	Central	Eastern	Northern	Western	
Maize	157,792	402,354	131,666	164,204	856,016
Finger millet	4,965	82,276	28,954	11,376	127,571
Sorghum	4,536	50,683	77,174	62,332	194,724
Beans	92,269	85,058	83,281	167,840	428,447
Field peas		496	16,693	82	17,272
Pigeon peas	435	1,359	14,596	122	16,512
Groundnuts	14,637	65,440	42,286	41,266	163,628
Simsim	361	4,832	21,141	1,057	27,391
Soya beans	553	5,958	6,534	4,221	17,267
Cassava	103,873	193,430	189,662	112,877	599,842
Sweet potatoes	99,670	131,173	30,820	93,300	354,963
Irish potatoes	3,906	106	146	19,290	23,448
Banana	182,359	86,930	2,616	282,660	554,566
Banana beer	61,969	15,178	441	73,040	150,629
Banana sweet	10,295	6,890	4,095	12,570	33,851
Coffee all	114,565	85,916	4,056	115,633	320,169
Rice	2,301	49,373	6,887	5,153	63,714

A4.13: Crop Area in Ha (Within District), by Region for the Second Season of 2004 + First Season of 2005 - UGANDA) ('000)

	Area in Ha				Total
	Central	Eastern	Northern	Western	
Maize	335,690	684,461	213,101	306,077	1,539,329
Finger millet	10,958	99,425	56,368	95,559	262,309
Sorghum	8,194	81,993	137,780	99,591	327,557
Beans	196,358	180,895	154,718	340,799	872,769
Field peas	0	3,007	24,113	317	27,438
Pigeon peas	435	2,016	19,642	155	22,248
Groundnuts	31,835	99,185	73,648	78,473	283,138
Simsim	520	11,497	94,851	2,477	109,346
Soya beans	1,395	13,928	7,497	8,448	31,270
Cassava	198,238	363,823	311,438	196,296	1,069,794
Sweet potatoes	187,384	250,186	53,538	180,808	671,916
Irish potatoes	9,651	280	551	36,789	47,271
Banana	366,286	174,487	5,343	565,444	1,111,560
Banana beer	131,484	27,684	878	139,211	299,257
Banana sweet	20,404	13,954	5,559	26,169	66,087
Coffee all	221,913	161,011	7,906	181,559	572,387
Rice	4,355	74,657	10,584	17,841	107,437

A4.14: Number of Crop Plots by stand (Within District) in the Second Season of 2004 (CENTRAL)

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	209,398	724,652	934,049
Finger Millet	18,557	14,851	33,408
Sorghum	13,821	10,507	24,328
Beans	126,059	730,626	856,684
Groundnuts	45,595	107,425	153,021
Soya Beans	3,920	5,677	9,597
Cassava	206,100	746,316	952,416
Sweet Potatoes	451,649	182,455	634,104
Irish Potatoes	24,968	24,194	49,162
Banana (Food Type)	267,749	742,881	1,010,630
Banana (Beer)	108,942	183,332	292,274
Banana (Sweet)	9,717	131,606	141,323
Coffee (All)	115,114	581,913	697,027
Rice	7,990	-	7,990

**A4.15: Number of Crop Plots by stand (Within District) in the Second Season of 2004
(EASTERN)**

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	438,823	771,560	1,210,382
Finger Millet	31,396	45,234	76,630
Sorghum	92,007	51,615	143,622
Beans	118,681	584,224	702,905
Groundnuts	79,183	110,808	189,992
Sim-sim	14,449	19,802	34,251
Soya Beans	10,463	60,413	70,876
Cassava	396,936	436,865	833,801
Sweet Potatoes	527,820	67,054	594,875
Banana (Food Type)	122,722	595,311	718,033
Banana (Beer)	21,289	123,389	144,678
Banana (Sweet)	4,035	105,014	109,049
Coffee (All)	73,970	487,409	561,379
Cotton			226,657
Rice	55,309	-	55,309

**A4.16: Number of Crop Plots by stand (Within District) in the Second Season of 2004
(NORTHERN)**

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	153,757	230,022	383,779
Finger Millet	49,181	68,385	117,566
Sorghum	129,502	141,247	270,749
Beans	97,372	256,043	353,415
Field Peas	26,677	17,850	44,527
Pigeon Peas	5,915	23,808	29,724
Groundnuts	76,241	99,154	175,395
Sim-sim	144,807	73,860	218,667
Cassava	330,427	240,476	570,903
Sweet Potatoes	156,866	6,462	163,328
Banana (Food Type)	6,805	17,579	24,384
Banana (Sweet)	5,596	11,680	17,276
Coffee (All)	11,176	14,454	25,630
Rice			

**A4.17: Number of Crop Plots by stand (Within District) in the Second Season of 2004
(WESTERN)**

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	155,934	839,104	995,037
Finger Millet	301,090	157,157	458,247
Sorghum	140,967	64,492	205,459
Beans	274,745	1,125,056	1,399,801
Groundnuts	114,602	138,939	253,541
Soya Beans	5,849	14,481	20,329
Cassava	181,073	535,082	716,155
Sweet Potatoes	471,567	80,992	552,559
Irish Potatoes	109,967	72,129	182,096
Banana (Food Type)	341,640	898,304	1,239,944
Banana (Beer)	86,346	415,448	501,794
Banana (Sweet)	5,331	214,347	219,678
Coffee (All)	101,607	322,959	424,566
Rice	33,651		33,651

**A4.18: Number of Crop Plots by stand (Within District) in the Second Season of
2004(UGANDA)**

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	957,911	2,565,337	3,523,248
Finger Millet	400,223	285,627	685,851
Sorghum	376,297	267,862	644,158
Beans	616,856	2,695,950	3,312,806
Field Peas	33,685	21,314	54,999
Pigeon Peas	9,332	27,963	37,294
Groundnuts	315,621	456,326	771,948
Sim-sim	164,246	97,233	261,479
Soya Beans	23,597	83,987	107,585
Cassava	1,114,535	1,958,740	3,073,275
Sweet Potatoes	1,607,902	336,963	1,944,865
Irish Potatoes	140,467	96,958	237,425
Banana (Food Type)	738,916	2,254,076	2,992,992
Banana (Beer)	220,157	725,313	945,470
Banana (Sweet)	24,679	462,647	487,326
Coffee (All)	301,866	1,406,735	1,708,602
Rice	116,905		116,905

A4.19: Number of Crop Plots by stand (Within District) in the First Season of 2005 (CENTRAL)

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	177,301	955,065	1,132,366
Finger Millet	10,053	15,875	25,928
Sorghum	15,636	17,536	33,172
Beans	91,955	739,130	831,085
Groundnuts	35,349	126,429	161,778
Sim-sim	1,437	8,925	10,362
Soya Beans	1,041	8,313	9,354
Cassava	250,288	959,261	1,209,549
Sweet Potatoes	554,275	317,838	872,112
Irish Potatoes	17,640	28,409	46,049
Banana (Food Type)	248,231	845,860	1,094,091
Banana (Beer)	97,371	213,992	311,363
Banana (Sweet)	7,849	144,286	152,134
Coffee (All)	107,554	620,101	727,655
Rice	11,718	-	11,718

A4.20: Number of Crop Plots by stand (Within District) in the First Season of 2005 (EASTERN)

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	505,787	1,571,127	2,076,914
Finger Millet	133,696	304,918	438,614
Sorghum	133,118	222,866	355,984
Beans	26,845	731,442	758,286
Groundnuts	115,600	258,353	373,952
Sim-sim	9,701	62,313	72,013
Soya Beans	5,587	47,354	52,941
Cassava	455,170	753,499	1,208,669
Sweet Potatoes	725,831	133,396	859,227
Banana (Food Type)	107,663	667,766	775,429
Banana (Beer)	18,745	137,503	156,247
Banana (Sweet)	1,906	121,160	123,066
Coffee (All)	66,198	533,052	599,249
Cotton	17,246	13,315	30,561
Rice	133,063	-	133,063

**A4.21: Number of Crop Plots by stand (Within District) in the First Season of 2005
(NORTHERN)**

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	208,214	504,249	712,463
Finger Millet	28,947	112,829	141,776
Sorghum	114,310	187,222	301,532
Beans	112,008	294,726	406,734
Field Peas	11,995	48,529	60,525
Pigeon Peas	14,297	113,386	127,683
Groundnuts	65,409	172,206	237,615
Sim-sim	32,672	48,751	81,422
Soya Beans	4,947	21,130	26,077
Cassava	499,776	432,437	932,212
Sweet Potatoes	234,880	7,799	242,680
Banana (Food Type)	5,856	18,042	23,898
Banana (Beer)	3,023	3,144	6,168
Banana (Sweet)	5,006	16,443	21,449
Coffee (All)	10,207	16,578	26,785
Cotton	6,087	28,065	34,152
Tobacco	58,440	1,321	59,761
Rice	33,393	-	33,393

A4.22: Number of Crop Plots by stand (Within District) in the First Season of 2005 (WESTERN)

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	176,162	800,680	976,842
Finger Millet	36,611	24,321	60,932
Sorghum	251,242	91,930	343,171
Beans	301,329	989,118	1,290,448
Groundnuts	136,857	169,343	306,200
Soya Beans	5,494	27,453	32,947
Cassava	254,716	697,666	952,382
Sweet Potatoes	615,362	169,852	785,215
Irish Potatoes	112,520	93,460	205,980
Banana (Food Type)	380,640	946,562	1,327,201
Banana (Beer)	87,566	435,695	523,262
Banana (Sweet)	2,752	212,003	214,754
Coffee (All)	101,922	341,110	443,033
Cotton	6,414	3,103	9,518
Tobacco	9,416	4,402	13,818
Rice	19,168	-	19,168

A4.23: Number of Crop Plots by stand (Within District) in the First Season of 2005 (UGANDA)

Crop	Crop Stand		Total
	Pure	Mixed	
Maize	1,067,465	3,831,121	4,898,585
Finger Millet	209,307	457,943	667,250
Sorghum	514,306	519,553	1,033,859
Beans	532,137	2,754,416	3,286,553
Field Peas	14,265	57,474	71,739
Pigeon Peas	18,160	136,825	154,985
Groundnuts	353,215	726,331	1,079,546
Sim-sim	45,634	123,201	168,835
Soya Beans	17,069	104,250	121,319
Cassava	1,459,949	2,842,863	4,302,812
Sweet Potatoes	2,130,348	628,886	2,759,234
Irish Potatoes	134,328	121,868	256,197
Banana (Food Type)	742,390	2,478,230	3,220,620
Banana (Beer)	206,706	790,334	997,039
Banana (Sweet)	17,512	493,891	511,404
Coffee (All)	285,881	1,510,842	1,796,722
Cotton	30,646	44,483	75,129
Tobacco	70,502	8,638	79,141
Rice	197,342	-	197,342

A4.24: Number of Crop Plots (Within District), by Region for the Second Season of 2004

Crop	Number of Crop plots				Total
	Central	Eastern	Northern	Western	
Maize	934,049	1,210,382	383,779	995,037	3,523,248
Finger millet	33,408	76,630	117,566	458,247	685,851
Sorghum	24,328	143,622	270,749	205,459	644,158
Beans	856,684	702,905	353,415	1,399,801	3,312,806
Field peas		8,038	44,527	2,433	54,999
Pigeon peas		6,739	29,724	832	37,294
Groundnuts	153,021	189,992	175,395	253,541	771,948
Simsim	2,153	34,251	218,667	6,408	261,479
Soya beans	9,597	70,876	6,783	20,329	107,585
Cassava	952,416	833,801	570,903	716,155	3,073,275
Sweet potatoes	634,104	594,875	163,328	552,559	1,944,865
Irish potatoes	49,162	3,486	2,682	182,096	237,425
Banana	1,010,630	718,033	24,384	1,239,944	2,992,992
Banana beer	292,274	144,678	6,725	501,794	945,470
Banana sweet	141,323	109,049	17,276	219,678	487,326
Coffee all	697,027	561,379	25,630	424,566	1,708,602
Cotton	1,500	226,657	124,161	56,875	409,193
Tobacco	2,768	-	1,777	18,348	22,893

A4.25: Number of Crop Plots (Within District), by Region for the First Season of 2005

Crop	Number of Crop plots				Total
	Central	Eastern	Northern	Western	
Maize	1,132,366	2,076,914	712,463	976,842	4,898,585
Finger millet	25,928	438,614	141,776	60,932	667,250
Sorghum	33,172	355,984	301,532	343,171	1,033,859
Beans	831,085	758,286	406,734	1,290,448	3,286,553
Field peas		7,928	60,525	3,286	71,739
Pigeon peas	6,157	14,843	127,683	6,302	154,985
Groundnuts	161,778	373,952	237,615	306,200	1,079,546
Simsim	10,362	72,013	81,422	5,037	168,835
Soya beans	9,354	52,941	26,077	32,947	121,319
Cassava	1,209,549	1,208,669	932,212	952,382	4,302,812
Sweet potatoes	872,112	859,227	242,680	785,215	2,759,234
Irish potatoes	46,049	3,273	895	205,980	256,197
Banana	1,094,091	775,429	23,898	1,327,201	3,220,620
Banana beer	311,363	156,247	6,168	523,262	997,039
Banana sweet	152,134	123,066	21,449	214,754	511,404
Coffee all	727,655	599,249	26,785	443,033	1,796,722
Tea	593			13,681	14,273
Cocoa	4,872	3,315		65,143	73,330
Cotton	899	30,561	34,152	9,518	75,129
Tobacco	3,451	2,110	59,761	13,818	79,141

A4.26: Number of Crop Plots ('000) (Within District), by Region for the Second Season of 2004 + First Season of 2005, for Uganda)

Crop	Number of Crop plots				Total
	Central	Eastern	Northern	Western	
Maize	2,066,415	3,287,296	1,096,242	1,971,879	8,421,833
Finger millet	59,336	515,244	259,342	519,179	1,353,101
Sorghum	57,500	499,606	572,281	548,630	1,678,017
Beans	1,687,769	1,461,191	760,149	2,690,249	6,599,359
Field peas	0	15,966	105,052	5,719	126,738
Pigeon peas	6,157	21,582	157,407	7,134	192,279
Groundnuts	314,799	563,944	413,010	559,741	1,851,494
Simsim	12,515	106,264	300,089	11,445	430,314
Soya beans	18,951	123,817	32,860	53,276	228,904
Cassava	2,161,965	2,042,470	1,503,115	1,668,537	7,376,087
Sweet potatoes	1,506,216	1,454,102	406,008	1,337,774	4,704,099
Irish potatoes	95,211	6,759	3,577	388,076	493,622
Banana	2,104,721	1,493,462	48,282	2,567,145	6,213,612
Banana beer	603,637	300,925	12,893	1,025,056	1,942,509
Banana sweet	293,457	232,115	38,725	434,432	998,730
Coffee all	1,424,682	1,160,628	52,415	867,599	3,505,324
Tea	1,186			26,069	27,253
Cocoa	10,950	5,360		117,251	133,561
Cotton	2,399	257,218	158,313	66,393	484,322
Tobacco	6,219		61,538	32,166	102,034

A4.27: Average Plot sizes (Ha) 1995/96 - 2005/06

Crop	Average Plot Size		
	1995/96	1999/2000	2005/06
Maize	0.26	0.29	0.18
Finger millet	0.27	0.32	0.19
Sorghum	0.27	0.27	0.20
Beans	0.17	0.21	0.13
Field peas	0.15	0.27	0.22
Pigeon peas	0.23	0.24	0.12
Groundnuts	0.20	0.25	0.15
Sim-sim	0.18	0.30	0.25
Soya beans	0.22	0.25	0.14
Cassava	0.19	0.26	0.15
Sweet potatoes	0.14	0.16	0.14
Irish potatoes	0.14	0.16	0.10
Banana (food-type)	0.24*	0.26	0.18
Banana beer		0.29	0.15
Banana sweet		0.15	0.07
Coffee all	NA	NA	0.16
Tea	NA	NA	1.48
Cocoa	NA	NA	0.40
Cotton	NA	NA	0.41
Tobacco	NA	NA	0.23

* Although the average plot size is indicated for Banana (Food type), the computation included all Banana types
NA = Not Available

A4.28: Output of Major Seasonal Crops (Metric Tons) 2nd Season 2004 within District, UNHS 2005/2006

Crop	Central	Eastern	Northern	Western	Total
Maize	355,378	365,391	92,268	359,732	1,172,769
Finger Millet	3,374	11,569	12,898	91,569	119,410
Sorghum	1,676	15,249	19,826	31,719	68,470
Beans	77,866	46,696	32,377	137,891	294,831
Groundnuts	8,881	24,466	19,160	25,474	77,980
Sim-sim	42	520	19,511	737	20,810
Soya Beans	3,268	5,409	1,600	2,342	12,620
Cassava	182,182	267,119	149,304	201,221	799,826
Sweet Potatoes	194,320	442,304	95,344	141,551	873,519
Irish Potatoes	22,323	667	179	72,705	95,874
Banana	566,420	374,426	5,170	1,463,382	2,409,398
Banana beer	403,410	16,992	958	293,245	714,605
Banana sweet	20,899	12,671	1,412	38,894	73,876
Coffee all	80,020	39,808	1,446	56,433	177,706
Rice	1,861	40,338	3,853	31,728	77,780

A4.29: Output of Major Seasonal Crops (Metric Tons) First Season of 2005, UNHS 2005/2006

Crop	Central	Eastern	Northern	Western	Total
Maize	203,990	705,042	147,212	212,143	1,268,388
Finger Millet	1,516	45,243	16,878	6,154	69,790
Sorghum	1,719	43,240	14,627	34,320	93,906
Beans	78,358	88,527	66,725	136,749	370,358
Groundnuts	8,147	34,553	16,849	81,203	140,752
Cassava	168,786	322,872	190,648	174,112	856,419
Sweet Potatoes	210,826	389,116	69,023	152,551	821,515
Banana (Food)	357,720	183,906	3,094	1,221,699	1,766,419
Banana (Beer)	76,192	10,715	751	245,884	333,542
Banana (Sweet)	14,116	6,010	1,815	35,688	57,629
Coffee (All)	80,066	28,324	6,553	54,149	169,092
Rice	3,232	91,104	2,637	5,041	102,014

A4.30: Output (2nd SEASON 2004 + 1st SEASON 2005) of Major Crops in Metric tons, UNHS 2005/2006

Crop	Central	Eastern	Northern	Western	Total
Maize	559,368	1,070,433	239,480	571,875	2,441,157
Finger Millet	4,890	56,812	29,776	97,723	189,200
Sorghum	3,395	58,489	34,453	66,039	162,376
Beans	156,224	135,223	99,102	274,640	665,189
Groundnuts	17,028	59,019	36,009	106,677	218,732
Cassava	350,968	589,991	339,952	375,333	1,656,245
Sweet Potatoes	405,146	831,420	164,367	294,102	1,695,034
Banana (Food)	924,140	558,332	8,264	2,685,081	4,175,817
Banana (Beer)	479,602	27,707	1,709	539,129	1,048,147
Banana (Sweet)	35,015	18,681	3,227	74,582	131,505
Coffee (All)	160,086	68,132	7,999	110,582	346,798
Rice	5,093	131,442	6,490	36,769	179,794

A5.1: Distribution of Ag HHs that reared Indigenous cattle between PHC 2002 and UNHS 2005/06 by Region.

REGION	PHC 2002		UNHS 2005/06	
	Households with Indigenous Cattle	Total number of Agricultural Households	Households with Indigenous Cattle	Total number of Agricultural Households
Central	146,351	835,209	284,974	1,013,854
Eastern	277,853	1,041,083	416,449	1,102,628
Northern	172,940	871,149	228,865	865,810
Western	155,051	1,086,044	175,348	1,169,091
Total	752,195	3,833,485	1,105,636	4,151,383

A5.2: Distribution of Ag HHs that reared Exotic cattle between PHC 2002 and UNHS 2005/06 by Region.

REGION	PHC 2002		UNHS 2005/06	
	Households with Exotic Cattle	Total number of Agricultural Households	Households with Exotic Cattle	Total number of Agricultural Households
Central	22,075	835,209	55,157	1,013,854
Eastern	21,408	1,041,083	53,981	1,102,628
Northern	5,909	871,149	5,109	865,810
Western	27,617	1,086,044	91,185	1,169,091
Total	77,009	3,833,485	205,432	4,151,383

A5.3: Cattle numbers ('000), 1991 – 2005/06

Year	1991	1997	2001	PHC 2002	UNHS 2005/06
Number	3,357	5,460	6,144	6,283	7,531

A5.4: A comparison of the Number of Agricultural Households with goats, between PHC 2002 and UNHS 2005/06

REGION	PHC 2002		UNHS 2005/06	
	Households with goats	Total number of Agricultural Households	Households with goats	Total number of Agricultural Households
Central	145,736	835,209	335,310	1,013,854
Eastern	324,747	1,041,083	531,111	1,102,628
Northern	347,573	871,149	390,135	865,810
Western	347,833	1,086,044	575,750	1,169,091
Total	1,165,889	3,833,485	1,832,305	4,151,383

A5.5: Goats numbers ('000), 1991 – 2005/06

Year	1991	1997	2001	PHC 2002	UNHS 2005/06
Number	3880	5825	6620	5168	8,078

A5.6: A comparison of the Number of Agricultural Households with Sheep, between PHC 2002 and UNHS 2005/06

REGION	PHC 2002		UNHS 2005/06	
	Households with sheep	Total number of Agricultural Households	Households with sheep	Total number of Agricultural Households
Central	24,059	835,209	52,979	1,013,854
Eastern	44,866	1,041,083	50,037	1,102,628
Northern	96,993	871,149	94,136	865,810
Western	67,832	1,086,044	129,163	1,169,091
Total	233,750	3,833,485	326,315	4,151,383

A5.7: Sheep numbers ('000), 1991 – 2005/06

Year	1991	1997	2001	PHC 2002	UNHS 2005/06
Number	744	980	1108	1555	1,217

A5.8: A comparison of the Number of Agricultural Households with Pigs, between PHC 2002 and UNHS 2005/06

REGION	PHC 2002		UNHS 2005/06	
	Households with pigs	Total number of Agricultural Households	Households with pigs	Total number of Agricultural Households
Central	143,888	835,209	328,939	1,013,854
Eastern	78,815	1,041,083	184,654	1,102,628
Northern	38,781	871,149	60,774	865,810
Western	109,421	1,086,044	187,055	1,169,091
Total	370,905	3,833,485	761,421	4,151,383

A5.9: Pig numbers ('000), 1991 – 2005/06

Year	1991	1997	2001	PHC 2002	UNHS 2005/06
Number	672	1425	1644	773	2,356

A5.10: A comparison of the Number of Agricultural Households with local Chicken, between PHC 2002 and UNHS 2005/06

Region	PHC 2002		UNHS 2005/06	
	Households with local chicken	Total number of Agricultural Households	Households with local chicken	Total number of Agricultural Households
Central	323,225	835,209	535,956	1,013,854
Eastern	571,554	1,041,083	745,330	1,102,628
Northern	418,151	871,149	461,742	865,810
Western	465,913	1,086,044	548,220	1,169,091
Total	1,778,843	3,833,485	2,291,248	4,151,383

A5.11: A comparison of the Number of Agricultural Households with exotic/cross Chicken, between PHC 2002 and UNHS 2005/06

REGION	PHC 2002		UNHS 2005/06	
	Households with exotic/cross chicken	Total number of Agricultural Households	Households with exotic/cross chicken	Total number of Agricultural Households
Central	12,528	835,209	23,287	1,013,854
Eastern	5,205	1,041,083	7,732	1,102,628
Northern	4,355	871,149	4,950	865,810
Western	5,430	1,086,044	7,845	1,169,091
Total	27,518	3,833,485	43,813	4,151,383

A5.12: Chicken numbers ('000), 1991 – 2005/06

Year	1991	1997	2001	PHC 2002	UNHS 2005/06
Number	11,442	22,271	29,671	12,859	23,523

A5.13: Number of Agricultural Households with or without Rabbits

Region	Without	With	Total UNHS 2005/06
Central	1,000,086	13,768	1,013,854
Eastern	1,094,486	8,042	1,102,628
Northern	861,284	4,526	865,810
Western	1,149,761	19,330	1,169,091
Total	4,105,717	45,666	4,151,383

A5.14: Number of Agricultural Households with or without Beehives

Region	Without	With	Total UNHS 2005/06
Central	1,009,573	4,282	1,013,854
Eastern	1,089,922	12,706	1,102,628
Northern	840,222	25,588	865,810
Western	1,146,278	22,813	1,169,091
Total	4,085,995	65,388	4,151,383

A5.15: Number of Agricultural Households with or without Turkeys

Region	Without	With	Total UNHS 2005/06
Central	1,002,641	11,213	1,013,854
Eastern	1,043,131	59,497	1,102,628
Northern	862,269	3,541	865,810
Western	1,166,394	2,697	1,169,091
Total	4,074,435	76,948	4,151,383

A5.16: Number of Agricultural Households with or without Ducks

Region	Without	With	Total UNHS 2005/06
Central	970,898	42,957	1,013,854
Eastern	1,069,780	32,848	1,102,628
Northern	811,648	54,162	865,810
Western	1,120,326	48,765	1,169,091
Total	3,972,651	178,732	4,151,383

A5.17: Number of Agricultural Households with or without Geese and other birds

Region	Without	With	Total UNHS 2005/06
Central	1,010,948	2,906	1,013,854
Eastern	1,086,179	16,449	1,102,628
Northern	847,146	18,665	865,810
Western	1,166,866	2,225	1,169,091
Total	4,111,139	40,244	4,151,383

A5.18: Number of Agricultural Households with or without Rabbits

Region	Without	With	Total UNHS 2005/06
Central	1,000,086	13,768	1,013,854
Eastern	1,094,586	8,042	1,102,628
Northern	861,284	4,526	865,810
Western	1,149,761	19,330	1,169,091
Total	4,105,717	45,666	4,151,383

A5.19: Number of Turkeys, Ducks, Geese and Other Birds

Type	Central	Eastern	Northern	Western	Total
Turkeys	37,415	231,806	9,573	13,596	292,389
Ducks	214,690	146,549	276,092	178,070	815,401
Geese & other birds	8,597	144,888	99,107	11,320	263,912

A6.1: Distribution of Plots according to type of seeds used in the First Season of 2005, by Region

Region	local		improved		Total	
	Number	Percent	Number	Percent	Number	Percent
Central	6,282,816	94.51	365,302	5.49	6,648,118	100
Eastern	5,753,304	88.09	777,995	11.91	6,531,299	100
Northern	2,680,390	92.38	221,223	7.62	2,901,612	100
Western	8,168,728	97.85	179,131	2.15	8,347,859	100
Total	22,900,000	93.85	1,543,651	6.33	24,400,000	100

A6.2: Distribution of Plots according to Application of Manure First Season of 2005 by Region

Region	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
Central	588,746	8.72	6,160,351	91.28	6,749,096	100
Eastern	270,342	4.09	6,340,496	95.91	6,610,838	100
Northern	13,452	0.45	3,008,820	99.55	3,022,272	100
Western	804,688	9.63	7,555,310	90.37	8,359,999	100
Total	1,677,228	6.79	23,100,000	93.52	24,700,000	100

A6.3: Distribution of Plots according to Application of Chemical Fertilizers First Season of 2005 by Region

Region	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
Central	88,084	1.30	6,664,713	98.70	6,752,798	100
Eastern	73,785	1.12	6,541,978	98.88	6,615,763	100
Northern	21,505	0.71	3,002,503	99.29	3,024,008	100
Western	53,429	0.64	8,289,806	99.36	8,343,235	100
Total	236,804	0.96	24,500,000	99.19	24,700,000	100

A6.4: Distribution of Plots according to Application of Pesticides, Herbicides or Fungicides First Season of 2005 by Region

Region	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
Central	326,531	4.83	6,429,101	95.17	6,755,632	100
Eastern	312,435	4.73	6,298,442	95.27	6,610,877	100
Northern	79,749	2.64	2,939,785	97.36	3,019,534	100
Western	124,243	1.49	8,221,845	98.51	8,346,088	100
Total	842,957	3.41	23,900,000	96.76	24,700,000	100

A6.5: Average number of Labor days by activity, Sex and region (Second Season of 2004)

Region	Prepare or sow			inputs application			Weed or prune			harvest crops			Other household members person days
	male adult	female adult	child	male adult	female adult	child	male adult	female adult	child	male adult	female adult	child	
Central	3.60	5.45	1.42	0.30	0.19	0.25	2.71	4.67	1.59	2.12	4.15	1.70	11.06
Eastern	4.06	5.50	2.14	0.20	0.14	0.06	4.09	6.35	2.28	2.52	5.87	1.79	7.88
Northern	3.52	3.86	1.03	0.06	0.03	0.03	2.20	4.34	1.11	1.81	4.04	1.53	17.44
Western	4.45	7.08	0.86	0.16	0.12	0.05	3.23	6.26	1.01	2.80	6.17	1.24	8.62
Total	4.00	5.77	1.37	0.19	0.13	0.10	3.18	5.61	1.51	2.41	5.27	1.54	11.75

A6.6: Average number of Labor days by activity, Sex and region (First season 2005)

Region	Prepare or sow			inputs application			Weed or prune			harvest crops			Other household members person days
	male adult	female adult	child	male adult	female adult	child	male adult	female adult	child	male adult	female adult	child	
Central	3.60	4.36	1.34	0.23	0.12	0.13	2.24	3.89	1.37	1.54	3.39	1.45	6.79
Eastern	4.06	4.97	1.80	0.11	0.06	0.04	3.59	5.69	2.07	1.99	5.02	1.90	7.35
Northern	3.52	3.71	1.10	0.03	0.02	0.01	2.18	3.73	1.06	1.60	4.16	1.56	10.59
Western	4.45	5.24	0.77	0.07	0.06	0.04	2.56	4.75	0.84	1.85	4.14	0.96	6.59
Total	4.00	4.70	1.26	0.11	0.06	0.06	2.73	4.66	1.36	1.78	4.23	1.45	8.23

A6.7: Distribution of Parcels by Status of practice of bunds (soil, Stone or grass) by Region on Enumeration Day

Region	Yes		No		Total	
	Number	%	Number	%	Number	%
Central	193,839	10.14	1,717,369	89.86	1,911,208	100
Eastern	392,723	14.18	2,377,374	85.82	2,770,097	100
Northern	31,109	1.72	1,775,529	98.28	1,806,638	100
Western	419,374	13.29	2,735,884	86.71	3,155,258	100
Total	1,037,045	10.75	8,606,156	89.25	9,643,201	100

A6.8: Distribution of Parcels by Status of practice of bunds (soil. Stone or grass) practice 2000 by Region

Region	Yes		No		Total	
	Number	%	Number	%	Number	%
Central	153,091	9.20	1,511,755	90.80	1,664,846	100
Eastern	337,517	13.77	2,113,725	86.23	2,451,242	100
Northern	26,847	1.54	1,711,993	98.46	1,738,839	100
Western	340,611	11.20	2,700,045	88.80	3,040,655	100
Total	858,066	9.65	8,037,518	90.35	8,895,582	100

A6.9: Distribution of Parcels by Status of practice of terracing on date of Enumeration by Region

Region	Yes		No		Total	
	Number	%	Number	%	Number	%
Central	63,495	3.32	1,846,751	96.68	1,910,245	100
Eastern	87,577	3.17	2,679,159	96.83	2,766,736	100
Northern	5,945	0.33	1,800,693	99.67	1,806,638	100
Western	285,477	9.05	2,870,062	90.95	3,155,539	100
Total	442,494	4.59	9,196,665	95.41	9,639,158	100

A6.10: Distribution of Parcels by Status of practice of terracing in 2000 by Region

Region	Yes		No		Total	
	Number	%	Number	%	Number	%
Central	57,968	3.48	1,609,801	96.52	1,667,769	100
Eastern	69,505	2.84	2,380,906	97.16	2,450,411	100
Northern	3,986	0.23	1,735,140	99.77	1,739,126	100
Western	265,729	8.73	2,777,584	91.27	3,043,314	100
Total	397,187	4.46	8,503,431	95.54	8,900,620	100

A6.11: Distribution of Parcels by Status of practicing mulching on date of Enumeration by Region

Region	Yes		No		Total	
	Number	%	Number	%	Number	%
Central	299,725	15.69	1,609,984	84.31	1,909,709	100
Eastern	211,743	7.66	2,554,079	92.34	2,765,822	100
Northern	38,853	2.15	1,767,785	97.85	1,806,638	100
Western	705,073	22.35	2,449,102	77.65	3,154,174	100
Total	1,255,394	13.03	8,380,950	86.97	9,636,343	100

A6.12: Distribution of Parcels by Status of practicing mulching by Region in 2000

Region	Yes		No		Total	
	Number	%	Number	%	Number	%
Central	284,781	17.10	1,380,122	82.90	1,664,902	100.00
Eastern	159,567	6.53	2,282,948	93.47	2,442,514	100.00
Northern	38,146	2.19	1,700,252	97.81	1,738,399	100.00
Western	647,677	21.28	2,396,367	78.72	3,044,044	100.00
Total	1,130,171	12.71	7,759,689	87.29	8,889,859	100.00

A6.13: Distribution of Labour Days (Hired and Household Labour) by season

	Second Season of 2004		First Season of 2005		Total	
	Number	%	Number	%	Number	%
Hired	62,600,000	10.16233766	53,400,179	8.252228	116,000,179	9.183767125
Household labour	553,400,000	89.83766234	593,700,000	91.74777	1,147,100,000	90.81623287
Total	616,000,000	100	647,100,179	100	1,263,100,179	100

A6.14: Distribution of total Labour Days (Hired and Household Labour) by Region (Second Season of 2004 and First Season of 2005)

Region	Hired	%	Household labour	%
Central	21,869,226	18.9	266,000,000	23.2
Eastern	25,600,000	22.1	361,000,000	31.5
Northern	21,230,953	18.3	168,100,000	14.7
Western	47,300,000	40.8	352,000,000	30.7
Total	116,000,179	100.0	1,147,100,000	100.0

A6.15: Number and average man days of hired labour (Second Season of 2004)

Region	Total	mean
Central	13,800,000	16.74
Eastern	11,500,000	13.46
Northern	14,400,000	21.55
Western	24,000,000	18.14
Total	63,600,000	17.36

A6.16: Distribution of Total and Average Cost of Labor including in kind Payment by Region (Second Season of 2004)

Region	Total	mean
Central	33,200,000,000	39,999.01
Eastern	21,700,000,000	25,425.95
Northern	16,300,000,000	24,411.74
Western	46,500,000,000	34,871.46
Total	118,000,000,000	31,941.72

A6.17: Number and average man days of hired labour (First Season of 2005)

Region	Total	mean
Central	8,169,830	11.91
Eastern	14,900,000	15.79
Northern	7,125,861	11.83
Western	23,300,000	21.02
Total	53,500,000	16.01

**A6.18: Distribution of Total and average cost of Labour including in Kind Payment by Region
(First Season of 2005)**

	Total	mean
Central	23,300,000,000	33,723
Eastern	21,900,000,000	23,225
Northern	10,100,000,000	16,780
Western	30,000,000,000	27,124
Total	85,400,000,000	25,529

A6.19: Distribution of Households according to crops that can improve soil fertility by Region

Region	Maize	Cassava	Beans	Sorghum	Matooke	Don't know	Total
Central	192,046	56,357	400,301	18,001	161,469	139,141	967,315
Eastern	206,964	320,132	370,094	23,675	78,485	89,482.40	1,088,832
Northern	158,393	258,824	240,636	118,741	29,504	37,959.10	844,056
Western	131,285	80,989	588,530	95,720	115,804	142,331	1,154,659
Total	688,688	716,302	1,599,562	256,137	385,260	408,913	4,054,862

A6.20: Distribution of Households according to cassava planting methods by Region

Region	vertically planted sticks	horizontally planted	both	Don't know	Total
Central	248,277	633,786	56,500.80	28,750.40	967,315
Eastern	180,304	729,841	142,393	36,293.10	1088832
Northern	94,758	647,946	47,406.70	53,945.20	844,056
Western	306,280	777,572	31,046.10	39,760.30	1154659
Total	829,620	2789147	277,347	158,749	4054862

A6.21: Distribution of Households according to methods that increase Susceptibility of crops to pests and diseases by Region

Region	Mulching	Adequate pruning	Use of recommended amount of fertilizer	Late season planting	Don't know	Total
Central	126,705	67662	31323	418,244	323,381	967,315
Eastern	146,802	119736	60315	326,388	435,590	1088832
Northern	137,260	32644	22107	312,583	339,463	844,056
Western	148,170	54916	12392	540,571	397,143	1153191
Total	558,937	274958	126137	1597786	1495578	4053395

A6.22: Distribution of Households according to crop to follow beans in rotation by Region

Region	Groundnuts	Soya beans	Maize	Don't know	Total
Central	231495	75931	506011	152872	966308
Eastern	219475	162117	629382	77858	1088832
Northern	232691	112117	447293	51387	843487
Western	288938	137739	633231	93036	1152945
Total	972598	487904	2215918	375152	4051572

A6.23: Distribution of Households according to best results for bananas by Region

Region	One	Three	Ten	Fifteen	Don't Know	Total
Central	108,505	715873	46748	2,270.88	93,228.80	966,625
Eastern	60,718	787721	80051	7,494.40	151,847	1087832
Northern	155,671	327208	67500	14,118.60	279,558	844,056
Western	150,260	834978	53871	4,786.25	109,063	1152958
Total	475,155	2665780	248170	28,670.10	633,697	4051472

A6.24: Distribution of Households according to most common pest on bananas by Region

Region	Banana weevils	Fruit Borers	Leaf Miners	Don't Know	Total
Central	680,782	55,225.10	32,643.20	198,665	967,315
Eastern	517,877	141,154	80,236	348,214	1087481
Northern	265,092	105,537	30,859.60	441,853	843,342
Western	908,664	44,310.40	27,033.70	174,650	1154659
Total	2372415	346,226	170,773	1163382	4052796

A6.25: Distribution of Households according to recommended quantity of DAP to apply when planting maize by Region

Region	One Bottle Top	One Kilogram	One Gram	Don't Know	Total
Central	191,175	5,884.65	10,866.40	757,143	965,069
Eastern	267,046	6,371	22,954.90	790,257	1086629
Northern	127,642	16,038	31,816.60	668,560	844,056
Western	74,868.50	18,466.80	13,353.50	1044595	1151283
Total	660,731	46,760.50	78,991.40	3260555	4047038

A6.26: Distribution of Households by knowledge of Variety

Variety	Yes	%	No	%
Cassava	1,664,144.0	41.1	2,389,468.0	59.0
Maize	2,203,910.0	54.3	1,853,732.0	45.7
Beans	1,221,754.0	30.2	2,826,917.0	69.8
Banana	1,153,561.0	28.5	2,900,051.0	71.5
Finger Millet	398,475.0	9.8	3,654,654.0	90.2
Groundnuts	837,770.0	20.7	3,214,868.0	79.3
Simsim	303,706.0	7.5	3,747,335.0	92.5
Irish potato	648,464.0	12.8	4,406,046.0	87.2

A6.27: Percentage Distribution of Households with knowledge of Variety according to Information Source

Improved variety	thru regular gov't extension	thru NAADS	thru mass media	talk to other farmers	other	Total who Know variety
Cassava	8.9	5.1	14.1	67.3	4.5	1664144
Maize	6.6	5.3	15.4	66.9	5.8	2203910
Beans	10.2	7.0	17.0	58.3	7.6	1221754
Banana	7.0	6.3	17.3	65.7	3.8	1153561
Finger Millet	6.8	6.2	18.2	62.0	6.9	398475
Groundnuts	5.2	8.9	15.6	64.1	6.3	837770
Simsim	6.8	5.0	18.6	58.6	11.0	303706
Irish potato	11.9	9.3	21.4	53.2	4.2	648464

A6.28: Percentage Distribution of Households that have ever used variety

Improved variety	yes, during the last 12 months	yes, used it in the past	no	Ever used variety
Cassava	21.6	14.64	63.76	1662747
Maize	26.57	19.08	54.35	2200807
Beans	12.59	19.78	67.63	1219673
Banana	9.6	7.41	82.99	1153561
Finger Millet	8.15	11.29	80.56	398475
Groundnuts	13.81	9.99	76.2	834018
Simsim	7.29	5.32	87.39	303706
Irish potato	13.14	13.89	72.97	647418

Annex 2: Sampling Errors

Household survey findings are usually estimates based on a sample of households selected using appropriate sample designs. Estimates are affected by two types of errors; sampling and non sampling errors.

Non Sampling errors result from wrong interpretation of results; mistakes in recording of responses, definitional problems, improper recording of data, etc and are mainly committed during the implementation of the survey.

Sampling errors, on the other hand, arise because observations are based on only one of the many samples that could have been selected from the same population using the same design and expected size. They are a measure of the variability between all possible samples. Sampling errors are usually measured using Standard Errors (SE). SE is the square root of the variance and can be used to calculate confidence intervals for the various estimates.

In addition, sometimes it is appropriate to measure the relative errors of some of the variables and the Coefficient of Variation (CV) is one such measure. It is the quotient of the SE divided by the mean of the variable of interest.

The SE and CVs were computed using STATA software. These take into account the multi-stage nature of the survey design in computing SE. The results below indicate the SE and CVs computed for the selected variables in the report. The SEs and CVs are presented for national regional and rural-urban levels

Given below are the SEs and CVs for some of the major variables in the Agricultural Module 2004/5. The results clearly show that for a number of the variables there are acceptable CVs. However, where the number of observations were relatively small especially for relatively rare events, the CVs are very high.

More specifically, the following conclusions can be made:

Ag HHs:

The CVs are acceptable for the numbers of Ag HHs, even at regional level;

Crop Plot numbers and Crop area:

The CVs for the plot numbers and crop area are acceptable for most crops except for field peas, tea, cocoa and tobacco. These had very few observations which is explainable for tea where the survey excluded institutional and large estates and tea is mostly grown on tea estates;

Crop Production: (excluding: Tea, Tobacco, Cocoa, Cotton and Coffee)

The CVs for crop production had generally higher CVs than both crop plots and area. Indeed about half of the crops had CVs higher than 20% namely: field peas, pigeon peas, soya beans, irish potatoes, banana (beer), tea, tobacco, cocoa, cotton, groundnuts and rice. It was the widely grown crops that had acceptable CVs.

Tea, Tobacco, Cocoa, Cotton, and, Coffee Production

It can therefore be concluded that for some crops it is still necessary to use other methods of estimating production other than at the Ag HHs level. Such crops include tea, tobacco, cocoa, cotton and to some extent coffee.

Cattle:

At the National level the CVs for the Exotic Calves, Exotic Bulls and Oxen, Exotic Heifers and Calves, Indigenous Bulls and Oxen and Indigenous Heifers and Cows are acceptable, a reflection of high reliability of estimates for them.

Similarly at regional level, Eastern Region had acceptable CVs for Indigenous Calves, Indigenous Bulls and Oxen and Indigenous Heifers and Cows; for the Northern Region, it was Indigenous Bulls and Oxen; for the Western Region, all categories of Cattle except Indigenous Heifers and Cows had acceptable CVS.

Goats

At the national level Exotic Female Goats, Local Goats had acceptable CV; the same was true for all regions.

Sheep

At the national level Local Sheep had acceptable CVs. Western Region had acceptable CVs for Local Sheep.

Pigs

At the national level, the numbers had acceptable CVs. All the regions had acceptable CVs except the Western Region.

Poultry

Backyard Chicken is the only chicken category that had acceptable CVs at the national and regional levels.

To get proper estimates for exotic animals (cows, sheep, goats and) and chicken, requires either to: Substantially increase the sample size to get adequate observations; or Construct appropriate sampling frames for each category and therefore conduct specialized studies.

SE 1: Standard Errors (SE)

	Estimate	Linearized	[95% Confidence Interval]		CV	Observations
		Std. Err.	Lower	Upper		
Households						
Total	5,224,107	82,133	5,062,852	5,385,362	1.6	7,417
Central	1,666,454	57,321	1,553,913	1,778,995	3.4	2,100
Eastern	1,208,009	29,797	1,028,539	1,156,894	2.5	1,923
Northern	1,033,006	25,148	813,613	916,040	2.4	1,624
Western	1,316,637	44,043	1,082,431	1,254,316	3.4	1,770
Agricultural Households/Holdings						
Total	4,151,383	223,017	3,710,493	4,592,273	5.4	5,907
Central	1,013,854	103,066	810,100	1,217,609	10.2	1,417
Eastern	1,102,628	100,062	904,813	1,300,443	9.1	1,644
Northern	865,810	50,184	766,599	965,021	5.8	1,367
Western	1,169,091	163,476	845,910	1,492,272	14.0	1,479
Number of plots - Second Season of 2004, Uganda						
Maize	3,523,983	209,761	3,109,300	3,938,666	6.0	4,931
Finger millet	685,851	59,191	568,835	802,867	8.6	893
Sorghum	644,159	60,276	524,997	763,320	9.4	966
Beans	3,313,541	217,670	2,883,223	3,743,859	6.6	4,563
Field peas	54,999	11,201	32,854	77,143	20.4	89
Pigeon peas	37,294	6,154	25,128	49,461	16.5	52
Groundnuts	771,948	60,574	652,196	891,699	7.9	1,105
Simsim	261,480	27,691	206,737	316,222	10.6	418
Soya beans	107,585	13,592	80,714	134,456	12.6	156
Cassava	3,073,275	190,454	2,696,761	3,449,789	6.2	4,384
Sweet potatoes	1,944,865	128,209	1,691,405	2,198,325	6.6	2,738
Irish potatoes	237,425	44,808	148,843	326,007	18.9	299
Banana	2,992,992	183,332	2,630,558	3,355,426	6.1	4,026
Banana beer	945,470	108,802	730,375	1,160,565	11.5	1,231
Banana sweet	487,326	36,492	415,184	559,468	7.5	668
Coffee (all)	1,708,602	109,842	1,491,452	1,925,751	6.4	2,361
Cotton	409,193	44,329	321,558	496,829	10.8	592
Tobacco	22,893	8,139	6,804	38,982	35.6	27
Rice	116,905	16,816	83,662	150,148	14.4	163

SE2: Number of plots - Second Season of 2004, Uganda

	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	934,785	84,878	761,893	1,107,676	9.1	1,324
Finger millet	33,408	7,454	18,224	48,592	22.3	48
Sorghum	24,328	7,144	9,776	38,880	29.4	34
Beans	857,419	83,649	687,033	1,027,806	9.8	1,219
Groundnuts	153,021	19,612	113,072	192,969	12.8	215
Cassava	952,416	87,022	775,159	1,129,673	9.1	1,332
Sweet potatoes	634,105	63,498	504,763	763,446	10.0	889
Irish potatoes	49,162	8,270	32,316	66,007	16.8	70
Banana	1,010,630	100,365	806,194	1,215,067	9.9	1,416
Banana beer	292,274	28,734	233,745	350,802	9.8	423
Banana sweet	141,323	17,272	106,141	176,505	12.2	213
Coffee (all)	697,027	74,664	544,941	849,113	10.7	1,000
Rice	7,990	3,053	1,771	14,209	38.2	1,636

SE3: Number of plots - Second Season of 2004, Eastern Region

	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	1,210,382	83,007	1,042,036	1,378,728	6.9	1,754
Finger millet	76,630	15,415	45,367	107,893	20.1	111
Sorghum	143,622	34,282	74,096	213,149	23.9	216
Beans	702,905	37,654	626,540	779,271	5.4	1,039
Groundnuts	189,992	20,977	147,448	232,535	11.0	291
Simsim	34,251	7,065	19,923	48,579	20.6	53
Soya beans	70,876	10,646	49,284	92,467	15.0	101
Cassava	833,801	111,819	607,021	1,060,581	13.4	1,221
Sweet potatoes	594,875	46,866	499,825	689,924	7.9	840
Banana	718,033	43,638	629,531	806,536	6.1	1,013
Banana beer	144,678	15,784	112,667	176,690	10.9	197
Banana sweet	109,049	11,770	85,179	132,919	10.8	155
Coffee (all)	561,379	51,313	457,312	665,447	9.1	786
Cotton	226,657	38,077	149,432	303,881	16.8	313
Rice	55,309	9,159	36,733	73,885	16.6	81

SE4: Number of plots - Second Season of 2004, Northern Region

	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	383,779	30,715	321,425	446,134	8.00	611
Finger millet	117,566	22,226	72,446	162,686	18.90	170
Sorghum	270,749	31,886	206,018	335,481	11.78	470
Beans	353,415	27,336	297,920	408,910	7.73	543
Field peas	44,527	10,440	23,333	65,722	23.45	73
Pigeon peas	29,724	5,602	18,352	41,096	18.85	42
Groundnuts	175,395	17,614	139,637	211,152	10.04	278
Simsim	218,667	26,442	164,987	272,347	12.09	355
Soya beans	6,783	2,685	1,333	12,233	39.58	13
Cassava	570,903	42,845	483,923	657,883	7.50	943
Sweet potatoes	163,328	18,908	124,944	201,712	11.58	295
Banana	24,384	7,366	9,430	39,338	30.21	38
Banana sweet	17,276	3,695	9,775	24,777	21.39	30
Coffee (all)	25,630	7,713	9,972	41,288	30.09	47
Rice	117,566	22,226	72,446	162,686	18.90	170

SE5: Number of plots - Second Season of 2004, Western Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	995,037	162,882	665,300	1,324,774	16.4	1,242
Finger millet	458,247	49,672	357,690	558,804	10.8	564
Sorghum	205,459	36,251	132,072	278,846	17.6	246
Beans	1,399,801	185,990	1,023,285	1,776,318	13.3	1,762
Groundnuts	253,541	48,030	156,309	350,772	18.9	321
Soya beans	20,329	7,450	5,247	35,412	36.7	26
Cassava	716,155	116,827	479,651	952,658	16.3	888
Sweet potatoes	552,559	94,969	360,304	744,814	17.2	714
Irish potatoes	182,096	41,781	97,514	266,677	22.9	219
Banana	1,239,944	140,061	956,406	1,523,483	11.3	1,559
Banana beer	501,794	98,651	302,085	701,503	19.7	600
Banana sweet	219,678	28,324	162,339	277,016	12.9	270
Coffee all	424,566	59,858	303,390	545,742	14.1	528
Cotton	56,875	16,045	24,394	89,356	28.2	80
Rice	33,651	12,334	8,683	58,620	36.7	40

SE6: Number of plots – First Season of 2005, Uganda

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	4,902,499	261,270	4,385,987	5,419,012	5.3	7,040
Finger millet	667,807	79,283	511,070	824,545	11.9	977
Sorghum	1,035,442	113,097	811,857	1,259,027	10.9	1,490
Beans	3,290,202	198,027	2,898,718	3,681,687	6.0	4,521
Field peas	72,222	11,951	48,595	95,848	16.6	110
Pigeon peas	154,985	16,544	122,279	187,691	10.7	214
Groundnuts	1,080,343	85,240	911,829	1,248,857	7.9	1,554
Simsim	168,835	18,676	131,915	205,755	11.1	247
Soya beans	121,319	13,778	94,081	148,557	11.4	165
Cassava	4,309,458	259,050	3,797,335	4,821,582	6.0	6,206
Sweet potatoes	2,768,175	162,405	2,447,112	3,089,238	5.9	3,867
Irish potatoes	256,916	49,926	158,216	355,615	19.4	318
Banana	3,222,385	189,157	2,848,435	3,596,335	5.9	4,328
Banana beer	997,039	114,189	771,295	1,222,783	11.5	1,310
Banana sweet	511,404	35,737	440,755	582,053	7.0	706
Coffee (all)	1,797,520	112,345	1,575,422	2,019,617	6.3	2,489
Cotton	75,129	12,620	50,181	100,078	16.8	105
Tobacco	79,141	12,694	54,046	104,235	16.0	114
Rice	197,342	19,886	158,028	236,656	10.1	281

SE7: Number of plots – First Season of 2005, Central Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	1,132,366	84,352	960,546	1,304,186	7.5	1,650
Finger millet	25,928	7,440	10,774	41,082	28.7	35
Sorghum	33,172	6,936	19,043	47,301	20.9	49
Beans	833,779	64,851	701,682	965,876	7.8	1,209
Groundnuts	161,778	19,382	122,298	201,259	12.0	235
Cassava	1,210,147	91,707	1,023,346	1,396,947	7.6	1,740
Sweet potatoes	873,300	62,808	745,364	1,001,235	7.2	1,256
Irish potatoes	46,049	8,331	29,079	63,019	18.1	69
Banana	1,095,055	96,558	898,374	1,291,737	8.8	1,548
Banana beer	311,363	30,853	248,517	374,208	9.9	461
Banana sweet	152,134	17,960	115,550	188,718	11.8	231
Coffee (all)	727,655	73,590	577,757	877,553	10.1	1,054

SE8: Number of plots – First Season of 2005, Eastern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	2,078,369	152,018	1,770,063	2,386,676	7.3	3,004
Finger millet	439,172	70,876	295,429	582,914	16.1	630
Sorghum	357,567	76,319	202,786	512,348	21.3	523
Beans	758,286	36,338	684,589	831,984	4.8	1,111
Groundnuts	374,750	62,148	248,707	500,793	16.6	577
Simsim	72,013	11,542	48,606	95,421	16.0	106
Soya beans	52,941	6,648	39,459	66,424	12.6	74
Cassava	1,213,390	155,726	897,563	1,529,218	12.8	1,773
Sweet potatoes	862,471	63,392	733,906	991,037	7.4	1,221
Banana	775,429	45,313	683,530	867,328	5.8	1,092
Banana beer	156,247	17,874	119,997	192,498	11.4	213
Banana sweet	123,066	11,685	99,368	146,764	9.5	175
Coffee (all)	600,047	50,322	497,988	702,105	8.4	838
Cotton	30,561	8,270	13,788	47,334	27.1	43
Rice	133,063	15,593	101,438	164,688	11.7	188

SE9: Number of plots – First Season of 2005, Northern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	713,180	49,001	613,702	812,657	6.9	1,179
Finger millet	141,776	15,176	110,967	172,585	10.7	229
Sorghum	301,532	30,252	240,116	362,947	10.0	495
Beans	406,734	37,194	331,226	482,242	9.1	594
Field peas	61,007	10,973	38,732	83,283	18.0	92
Pigeon peas	127,683	14,072	99,116	156,250	11.0	175
Groundnuts	237,615	21,246	194,484	280,747	8.9	361
Simsim	81,422	12,768	55,502	107,343	15.7	120
Soya beans	26,077	5,483	14,945	37,208	21.0	38
Cassava	932,812	54,675	821,815	1,043,809	5.9	1,490
Sweet potatoes	245,262	16,832	211,092	279,433	6.9	386
Banana	23,898	7,374	8,928	38,868	30.9	37
Banana sweet	21,449	4,290	12,740	30,158	20.0	36
Coffee (all)	26,785	8,114	10,314	43,257	30.3	49
Cotton	34,152	7,958	17,996	50,308	23.3	50
Tobacco	59,761	10,906	37,620	81,902	18.3	90
Rice	33,393	7,399	18,372	48,413	22.2	51

SE10: Number of plots – First Season of 2005, Western Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	978,585	181,911	610,325	1,346,844	18.59	1207
Finger millet	60,932	13,674	33,250	88,614	22.44	83
Sorghum	343,171	71,830	197,760	488,583	20.93	423
Beans	1,291,403	181,918	923,130	1,659,676	14.09	1607
Groundnuts	306,200	44,871	215,364	397,036	14.65	381
Soya beans	32,947	10,141	12,418	53,477	30.78	37
Cassava	953,109	169,197	610,587	1,295,632	17.75	1203
Sweet potatoes	787,142	134,802	514,249	1,060,034	17.13	1004
Irish potatoes	206,699	49,853	105,776	307,621	24.12	244
Banana	1,328,002	158,681	1,006,771	1,649,234	11.95	1651
Banana beer	523,262	109,911	300,758	745,765	21.01	626
Banana sweet	214,754	28,577	156,903	272,606	13.31	264
Coffee (all)	443,033	67,907	305,563	580,503	15.33	548
Cotton	9,518	3,506	2,421	16,614	36.83	11
Tobacco	13,818	5,490	2,704	24,933	39.73	15
Rice	19,168	6,504	6,002	32,335	33.93	25

SE11: Crop area in Ha – Second Season of 2004, Uganda

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	683,314	50,578	583,324	1,958,258	7.4	4,904
Finger millet	134,739	11,360	112,281	392,993	8.4	889
Sorghum	132,833	16,859	99,503	415,407	12.7	954
Beans	444,322	27,049	390,849	1,244,488	6.1	4,525
Field peas	10,167	2,488	5,247	37,716	24.5	88
Pigeon peas	5,736	1,333	3,100	20,931	23.3	51
Groundnuts	119,510	9,171	101,380	344,101	7.7	1,093
Simsim	81,955	9,880	62,422	253,719	12.1	416
Soya beans	14,003	2,283	9,489	46,291	16.3	155
Cassava	469,952	38,787	393,272	1,366,581	8.3	4,349
Sweet potatoes	316,952	28,423	260,762	932,855	9.0	2,716
Irish potatoes	23,823	4,368	15,188	81,144	18.3	298
Banana	556,995	38,700	480,488	1,583,756	7.0	4,005
Banana beer	148,628	20,208	108,677	471,447	13.6	1,226
Banana sweet	32,235	3,044	26,216	95,635	9.4	666
Coffee (all)	252,218	20,687	211,322	732,786	8.2	2,347
Cotton	184,444	37,704	109,906	647,455	20.4	585
Tobacco	7,391	2,818	1,820	32,404	38.1	27
Rice	43,723	8,346	27,224	60,222	19.1	162

SE12: Crop area in Ha – Second Season of 2004, Central Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	177,899	28,634	119,574	236,224	16.1	1,318
Finger millet	5,993	2,096	1,724	10,262	35.0	48
Beans	104,089	12,626	78,370	129,809	12.1	1,212
Groundnuts	17,198	2,896	11,299	23,097	16.8	214
Cassava	94,365	11,355	71,235	117,495	12.0	1,327
Sweet potatoes	87,714	10,224	66,889	108,538	11.7	887
Irish potatoes	5,746	1,423	2,846	8,645	24.8	70
Banana	183,928	23,117	136,839	231,016	12.6	1,410
Banana beer	69,514	9,195	50,785	88,243	13.2	422
Banana sweet	10,110	1,411	7,236	12,983	14.0	211
Coffee (all)	107,347	14,856	77,086	137,608	13.8	997

SE13: Crop area in Ha – Second Season of 2004, Eastern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	282,107	23,333	234,785	329,429	8.3	1,746
Finger millet	17,149	3,920	9,200	25,099	22.9	111
Sorghum	31,310	8,742	13,581	49,039	27.9	213
Beans	95,837	6,475	82,705	108,968	6.8	1,033
Groundnuts	33,744	4,819	23,970	43,518	14.3	286
Simsim	6,665	2,418	1,762	11,569	36.3	52
Soya beans	7,970	1,321	5,292	10,648	16.6	100
Cassava	170,393	33,139	103,184	237,602	19.5	1,210
Sweet potatoes	119,013	15,113	88,362	149,664	12.7	835
Banana	87,556	8,083	71,164	103,949	9.2	1,007
Banana beer	12,506	1,761	8,935	16,077	14.1	196
Banana sweet	7,064	988	5,060	9,068	14.0	155
Coffee (all)	75,095	8,330	58,200	91,990	11.1	782
Cotton	104,904	36,428	31,024	178,783	34.7	309
Rice	25,284	5,243	14,650	35,917	20.7	81

SE14: Crop area in Ha – Second Season of 2004, Northern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	81,435	9,367	62,419	100,450	11.5	605
Beans	71,437	14,220	59,890	82,984	19.9	534
Groundnuts	31,362	10,404	22,914	39,810	33.2	274
Simsim	73,710	22,829	55,172	92,249	31.0	354
Cassava	121,775	24,681	101,733	141,817	20.3	934
Sweet potatoes	22,718	7,296	16,793	28,642	32.1	283
Irish potatoes	405	939	(358)	1,167	232	4

SE15: Crop area in Ha – Second Season of 2004, Western Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	141,873	34,154	72,733	211,014	24.1	1,235
Finger millet	84,182	9,289	65,378	102,987	11.0	562
Sorghum	37,259	8,419	20,215	54,303	22.6	246
Beans	172,959	22,646	127,115	218,802	13.1	1,746
Groundnuts	37,207	5,991	25,078	49,335	16.1	319
Cassava	83,419	15,878	51,274	115,563	19.0	878
Sweet potatoes	87,508	22,226	42,515	132,502	25.4	711
Irish potatoes	17,499	4,169	9,059	25,938	23.8	219
Banana	282,784	30,436	221,169	344,399	10.8	1,552
Banana beer	66,171	18,163	29,402	102,940	27.5	597
Banana sweet	13,599	2,506	8,525	18,672	18.4	270
Coffee (all)	65,926	11,999	41,635	90,217	18.2	521

SE16: Crop area in Ha – First Season of 2005, Uganda

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	857,001	62,027	734,378	979,624	7.24	7,011
Finger millet	127,794	15,834	96,491	159,097	12.39	975
Sorghum	194,975	30,174	135,324	254,627	15.48	1,483
Beans	428,979	26,230	377,124	480,834	6.11	4,503
Pigeon peas	16,513	2,037	12,485	20,541	12.34	214
Groundnuts	163,788	16,279	131,605	195,971	9.94	1,550
Simsim	27,391	4,563	18,371	36,412	16.66	247
Soya beans	17,267	2,900	11,533	23,001	16.80	163
Cassava	601,923	43,295	516,333	687,514	7.19	6,184
Sweet potatoes	356,296	20,340	316,085	396,508	5.71	3,847
Irish potatoes	23,520	4,884	13,864	33,175	20.77	317
Banana	554,742	38,508	478,616	630,869	6.94	4,312
Banana beer	150,629	22,006	107,124	194,133	14.61	1,307
Banana sweet	33,851	3,412	27,105	40,597	10.08	705
Coffee (all)	320,808	58,159	205,831	435,784	18.13	2,474
Cotton	15,832	2,978	9,944	21,720	18.81	105
Tobacco	16,210	3,422	9,446	22,974	21.11	112
Rice	63,714	8,165	47,572	79,857	12.82	281

SE17: Crop area in Ha – First Season of 2005, Central Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	157,792	22,425	112,113	203,471	14.2	1,648
Finger millet	4,965	1,846	1,205	8,725	37.2	35
Sorghum	4,536	1,815	839	8,232	40.0	49
Beans	92,418	9,562	72,941	111,895	10.4	1,207
Groundnuts	14,637	2,341	9,868	19,406	16.0	235
Cassava	103,945	11,520	80,479	127,410	11.1	1,736
Sweet potatoes	99,860	8,703	82,133	117,587	8.7	1,251
Irish potatoes	3,906	1,041	1,786	6,026	26.7	69
Banana	182,456	22,706	136,205	228,706	12.4	1,546
Banana beer	61,969	8,000	45,674	78,265	12.9	461
Banana sweet	10,296	1,592	7,054	13,537	15.5	231
Coffee (all)	114,565	15,475	83,044	146,086	13.5	1,051

SE18: Crop area in Ha – First Season of 2005, Eastern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	403,040	44,168	313,462	492,617	11.0	2,982
Finger millet	82,499	16,690	48,650	116,348	20.2	629
Sorghum	50,934	15,086	20,339	81,530	29.6	521
Beans	85,057	5,429	74,046	96,069	6.4	1,105
Groundnuts	65,599	16,095	32,958	98,241	24.5	575
Simsim	4,832	1,213	2,371	7,293	25.1	106
Soya beans	5,958	1,089	3,749	8,168	18.3	73
Cassava	195,234	35,953	122,318	268,150	18.4	1,764
Sweet potatoes	131,811	12,542	106,374	157,248	9.5	1,214
Banana (Food)	86,930	7,932	70,844	103,017	9.1	1,086
Banana (beer)	15,179	4,360	6,335	24,022	28.7	213
Banana sweet	6,890	1,047	4,766	9,014	15.2	175
Coffee (all)	86,554	17,517	51,028	122,080	20.2	834
Cotton	6,417	2,327	1,697	11,137	36.3	43
Rice	49,373	7,300	34,569	64,177	14.8	188

SE19: Crop area in Ha - First Season of 2005, Northern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	131,809	14,240	102,901	160,718	10.8	1,179
Finger millet	28,953	3,852	21,134	36,773	13.3	228
Sorghum	77,174	21,109	34,321	120,027	27.4	494
Beans	83,281	8,512	66,000	100,561	10.2	593
Pigeon peas	14,597	1,902	10,736	18,457	13.0	175
Groundnuts	42,286	4,493	33,164	51,408	10.6	360
Simsim	21,142	4,241	12,532	29,751	20.1	120
Soya beans	6,535	1,939	2,599	10,470	29.7	38
Cassava	189,722	12,966	163,400	216,045	6.8	1,488
Sweet potatoes	31,134	2,746	25,559	36,709	8.8	386
Banana	2,616	1,039	507	4,725	39.7	36
Cotton	5,614	1,346	2,882	8,346	24.0	50
Tobacco	12,496	2,997	6,412	18,579	24.0	89
Rice	6,887	1,632	3,575	10,199	23.7	51

SE20: Crop area in Ha - First Season of 2005, Western Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	164,360	39,810	83,768	244,952	24.2	1,202
Finger millet	11,377	2,994	5,316	17,438	26.3	83
Sorghum	62,331	15,878	30,189	94,474	25.5	419
Beans	168,223	22,418	122,840	213,605	13.3	1,598
Groundnuts	41,266	5,618	29,894	52,638	13.6	380
Cassava	113,022	23,144	66,169	159,875	20.5	1,196
Sweet potatoes	93,491	14,382	64,376	122,606	15.4	996
Irish potatoes	19,362	4,813	9,617	29,106	24.9	243
Banana	282,740	30,463	221,071	344,409	10.8	1,644
Banana beer	73,039	20,287	31,971	114,108	27.8	623
Banana sweet	12,570	2,007	8,508	16,632	16.0	263

SE 21: Production of Crops (Metric tons) - Second Season of 2004, Uganda

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	1,170,000	126,000	923,000	1,420,000	10.8	4,420
Finger millet	119,000	14,300	91,200	148,000	12.0	770
Sorghum	68,500	10,100	48,400	88,500	14.7	792
Beans	295,000	21,300	253,000	337,000	7.2	4,614
Field peas	3,161	1,003	1,178	5,144	31.7	86
Pigeon peas	3,062	971	1,142	4,983	31.7	59
Groundnuts	78,000	10,500	57,200	98,700	13.5	1,026
Simsim	20,800	2,451	16,000	25,700	11.8	351
Soya beans	12,600	3,601	5,502	19,700	28.6	140
Cassava	800,000	73,500	654,000	945,000	9.2	2,896
Sweet potatoes	874,000	70,000	735,000	1,010,000	8.0	2,317
Irish potatoes	95,900	27,800	40,900	151,000	29.0	272
Banana	2,410,000	219,000	1,980,000	2,840,000	9.1	3,407
Banana beer	715,000	200,000	318,000	1,110,000	28.0	967
Banana sweet	73,900	10,200	53,800	94,000	13.8	589
Coffee (all)	179,000	18,700	143,000	216,000	10.5	1,699
Rice	77,800	22,800	32,800	123,000	29.3	166

SE22: Production of Crops (Metric tons) - Second Season of 2004, Central Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	355,000	58,000	237,000	474,000	16.3	1,367
Finger millet	3,374	1,156	1,019	5,729	34.3	47
Sorghum	1,676	646	359	2,992	38.6	30
Beans	77,900	7,612	62,400	93,400	9.8	1,350
Groundnuts	8,881	1,506	5,812	11,900	17.0	204
Cassava	182,000	21,600	138,000	226,000	11.9	864
Sweet potatoes	194,000	26,500	140,000	248,000	13.7	746
Irish potatoes	22,300	6,651	8,776	35,900	29.8	70
Banana	566,000	121,000	321,000	812,000	21.4	1,192
Banana sweet	20,900	5,424	9,852	31,900	26.0	180
Coffee (all)	80,000	13,900	51,700	108,000	17.4	711
Rice	1,861	1,010	(197)	3,920	54.3	12

SE23: Production of Crops (Metric tons) - Second Season of 2004, Eastern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	364,000	37,400	288,000	440,000	10.3	1,246
Finger millet	11,600	2,436	6,628	16,500	21.0	98
Sorghum	15,200	3,819	7,504	23,000	25.1	188
Beans	46,700	3,539	39,500	53,900	7.6	788
Groundnuts	24,500	7,671	8,909	40,000	31.3	259
Simsim	520	157	202	838	30.2	45
Soya beans	5,409	1,346	2,679	8,140	24.9	86
Cassava	267,000	43,900	178,000	356,000	16.4	825
Sweet potatoes	442,000	54,200	332,000	552,000	12.3	724
Banana	374,000	111,000	150,000	599,000	29.7	806
Banana beer	17,000	2,861	11,200	22,800	16.8	171
Banana sweet	12,700	4,228	4,095	21,200	33.3	140
Coffee (all)	41,400	5,032	31,200	51,600	12.2	530
Rice	40,300	13,200	13,500	67,200	32.8	78

SE24: Production of Crops (Metric tons) - Second Season of 2004, Northern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	92,300	15,100	61,600	123,000	16.4	513
Finger millet	12,900	2,180	8,472	17,300	16.9	144
Sorghum	19,800	2,829	14,100	25,600	14.3	384
Beans	32,400	3,390	25,500	39,300	10.5	459
Field peas	2,748	1,006	706	4,790	36.6	70
Pigeon peas	2,115	730	634	3,597	34.5	47
Groundnuts	19,200	2,928	13,200	25,100	15.3	248
Simsim	19,500	2,365	14,700	24,300	12.1	298
Soya beans	1,600	985	(398)	3,599	61.5	12
Cassava	149,000	23,400	102,000	197,000	15.7	502
Sweet potatoes	95,300	15,400	64,100	127,000	16.2	268
Banana sweet	1,412	558	279	2,544	39.5	26
Cotton	24,000	4,276	15,300	32,700	17.8	168
Rice	3,853	1,496	816	6,889	38.8	29

SE25: Production of Crops (Metric tons) - Second Season of 2004, Western Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	360,000	103,000	152,000	568,000	28.6	1,294
Finger millet	91,600	13,800	63,600	119,000	15.1	481
Sorghum	31,700	8,813	13,900	49,600	27.8	190
Beans	138,000	19,200	99,100	177,000	13.9	2,017
Groundnuts	25,500	6,066	13,200	37,800	23.8	315
Cassava	201,000	48,200	104,000	299,000	24.0	705
Sweet potatoes	142,000	29,200	82,500	201,000	20.6	579
Irish potatoes	72,700	26,900	18,300	127,000	37.0	194
Banana	1,460,000	142,000	1,180,000	1,750,000	9.7	1,382
Banana beer	293,000	62,500	167,000	420,000	21.3	471
Banana sweet	38,900	7,393	23,900	53,900	19.0	243
Coffee (all)	56,400	11,300	33,500	79,300	20.0	424
Cotton	33,100	10,800	11,400	54,900	32.6	59
Rice	31,700	17,900	(4,473)	67,900	56.5	47

SE 26: Production of Crops (Metric tons) - First Season of 2005, Uganda

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	1,270,000	183,000	906,000	1,630,000	14.4	4,975
Finger millet	69,800	9,876	50,300	89,300	14.2	714
Sorghum	93,900	17,800	58,700	129,000	19.0	949
Beans	370,000	59,800	252,000	489,000	16.2	4,268
Field peas	1,434	481	484	2,384	33.5	57
Pigeon peas	5,925	922	4,102	7,749	15.6	173
Groundnuts	141,000	54,600	32,700	249,000	38.7	1,268
Simsim	5,905	1,139	3,653	8,157	19.3	165
Soya beans	7,275	1,468	4,372	10,200	20.2	133
Cassava	856,000	114,000	632,000	1,080,000	13.3	2,919
Sweet potatoes	822,000	52,000	719,000	924,000	6.3	2,675
Irish potatoes	58,700	17,000	25,200	92,200	29.0	251
Banana	1,770,000	128,000	1,510,000	2,020,000	7.2	3,550
Banana beer	334,000	52,100	231,000	436,000	15.6	929
Banana sweet	57,600	6,638	44,500	70,800	11.5	563
Coffee (all)	169,000	39,300	91,400	247,000	23.3	1,480
Rice	102,000	31,900	39,000	165,000	31.3	218

SE27: Production of Crops (Metric tons) - First Season of 2005, Central Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	204,000	30,400	142,000	266,000	14.9	1,257
Sorghum	1,719	447	809	2,629	26.0	42
Beans	78,400	17,200	43,300	113,000	21.9	1,168
Groundnuts	8,147	1,453	5,186	11,100	17.8	204
Cassava	169,000	15,800	137,000	201,000	9.4	802
Sweet potatoes	211,000	26,100	158,000	264,000	12.4	773
Irish potatoes	11,600	3,433	4,658	18,600	29.6	64
Banana	358,000	70,500	214,000	501,000	19.7	1,142
Banana beer	76,200	13,900	47,800	105,000	18.2	279
Banana sweet	14,100	2,637	8,745	19,500	18.7	181
Coffee (all)	80,100	37,400	3,832	156,000	46.7	568
Rice	3,232	2,291	(1,436)	7,899	70.9	16

SE28: Production of Crops (Metric tons) - First Season of 2005, Eastern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	705,000	164,000	373,000	1,040,000	23.3	1,656
Finger millet	45,200	9,306	26,400	64,100	20.6	421
Sorghum	43,200	15,400	12,000	74,500	35.7	340
Groundnuts	34,600	8,590	17,100	52,000	24.8	425
Simsim	831	194	438	1,225	23.3	71
Soya beans	2,946	821	1,281	4,612	27.9	58
Cassava	323,000	104,000	113,000	533,000	32.2	816
Sweet potatoes	389,000	35,900	316,000	462,000	9.2	856
Banana	184,000	24,500	134,000	234,000	13.3	738
Banana beer	10,700	2,361	5,926	15,500	22.1	136
Banana sweet	6,010	1,190	3,596	8,424	19.8	100
Coffee (all)	28,300	4,042	20,100	36,500	14.3	474
Rice	91,100	30,700	28,900	153,000	33.7	136

SE29: Production of Crops (Metric tons) - First Season of 2005, Northern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	147,000	45,200	55,400	239,000	30.8	842
Finger millet	16,900	2,806	11,200	22,600	16.6	202
Sorghum	14,600	2,929	8,682	20,600	20.1	319
Field peas	1,326	405	504	2,148	30.5	45
Pigeon peas	5,598	873	3,825	7,370	15.6	149
Groundnuts	16,800	2,624	11,500	22,200	15.6	266
Simsim	4,691	1,033	2,594	6,788	22.0	82
Soya beans	3,200	1,128	910	5,490	35.3	28
Cassava	191,000	19,800	150,000	231,000	10.4	505
Sweet potatoes	69,000	7,622	53,600	84,500	11.1	323
Banana	3,094	1,181	697	5,490	38.2	30
Rice	2,637	727	1,162	4,113	27.6	36

SE30: Production of Crops (Metric tons) - First Season of 2005, Western Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Maize	212,000	55,200	100,000	324,000	26.04	1220
Finger millet	6,154	1,258	3,608	8,700	20.44	64
Sorghum	34,300	9,030	16,000	52,600	26.33	248
Beans	137,000	27,100	81,900	192,000	19.78	1894
Soya beans	1,010	345	311	1,708	34.17	32
Cassava	174,000	39,700	93,800	254,000	22.82	796
Sweet potatoes	153,000	26,900	98,000	207,000	17.58	723
Irish potatoes	46,500	17,100	11,900	81,200	36.77	180
Banana	1,220,000	108,000	1,000,000	1,440,000	8.85	1640
Banana beer	246,000	51,500	142,000	350,000	20.93	508
Banana sweet	35,700	6,134	23,300	48,100	17.18	260
Coffee (all)	54,100	11,100	31,700	76,600	20.52	412
Rice	5,041	1,875	1,244	8,837	37.20	30

SE31: Cattle and pack animals, Uganda

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic calves	363,067	48,557	267,067	459,067	13.4	181
Exotic bulls and oxen	164,182	25,118	114,522	213,842	15.3	125
Exotic heifer and cows	734,326	104,414	527,894	940,758	14.2	256
Indigenous calves	1,410,470	167,690	1,078,938	1,742,002	11.9	869
Indigenous bulls and oxen	1,216,164	115,212	988,383	1,443,945	9.5	866
Indigenous heifer and cows	3,638,180	563,641	2,523,831	4,752,529	15.5	1,335

SE32: Cattle and pack animals, Central Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic calves	67,094	26,275	13,573	120,615	39.2	42
Exotic bulls and oxen	30,557	9,722	10,753	50,360	31.8	28
Exotic heifer and cows	99,981	23,981	51,133	148,829	24.0	62
Indigenous calves	504,562	138,020	223,426	785,699	27.4	241
Indigenous bulls and oxen	290,463	70,293	147,282	433,644	24.2	197
Indigenous heifer and cows	1,180,893	465,434	232,836	2,128,951	39.4	296

SE33: Cattle and pack animals, Eastern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic calves	45,278	13,078	18,755	71,801	28.9	43
Exotic bulls and oxen	17,043	4,414	8,091	25,995	25.9	24
Exotic heifer and cows	88,959	21,757	44,834	133,084	24.5	72
Indigenous calves	362,772	60,050	240,986	484,558	16.6	328
Indigenous bulls and oxen	425,705	77,016	269,510	581,899	18.1	313
Indigenous heifer and cows	812,735	136,663	535,571	1,089,900	16.8	509

SE34: Cattle and pack animals, Northern Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Indigenous calves	262,552	66,109	128,345	396,760	25.2	166
Indigenous bulls and oxen	311,615	36,840	236,826	386,403	11.8	250
Indigenous heifer and cows	714,960	175,388	358,904	1,071,016	24.5	320

SE35: Cattle and pack animals, Western Region

Crop	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic calves	247,832	39,110	168,588	327,077	15.8	94
Exotic bulls and oxen	109,385	22,616	63,561	155,208	20.7	69
Exotic heifer and cows	532,985	99,730	330,913	735,057	18.7	116
Indigenous calves	280,584	42,061	195,361	365,807	15.0	134
Indigenous bulls and oxen	188,382	39,854	107,631	269,134	21.2	106
Indigenous heifer and cows	950,259	240,123	463,725	1,436,794	25.3	211

SE36: Small animals, Uganda

Animal	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic male goats	81,950	19,757	42,893	121,008	24.1	58
Exotic female goats	236,489	48,882	139,852	333,126	20.7	90
Local male goats	1,934,534	142,002	1,653,806	2,215,261	7.3	1,481
Female local goats	5,822,903	377,195	5,077,215	6,568,591	6.5	2,468
Local male sheep	338,165	37,729	263,577	412,752	11.2	277
Local female sheep	857,987	86,581	686,822	1,029,152	10.1	418
Pigs	1,707,922	125,975	1,458,877	1,956,966	7.4	1,078

SE37: Small animals, Central Region

Animal	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic male goats	13,607	4,665	4,105	23,109	34.3	18
Exotic female goats	28,251	9,097	9,721	46,780	32.2	17
Local male goats	336,246	55,856	222,470	450,022	16.6	262
Female local goats	883,558	129,301	620,182	1,146,934	14.6	439
Local male sheep	41,333	11,222	18,474	64,192	27.2	43
Local female sheep	119,569	30,353	57,742	181,396	25.4	66
Pigs	835,296	75,927	680,638	989,954	9.1	475

SE38: Small animals, Eastern Region

Animal	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic male goats	13,154	4,634	3,755	22,552	35.2	15
Exotic female goats	41,965	9,578	22,539	61,390	22.8	27
Local male goats	426,823	56,616	312,001	541,646	13.3	415
Female local goats	1,220,530	154,256	907,685	1,533,376	12.6	724
Local male sheep	39,258	11,100	16,747	61,769	28.3	43
Local female sheep	105,478	31,664	41,259	169,696	30.0	67
Pigs	386,705	56,806	271,497	501,913	14.7	267

SE39: Small animals, Northern Region

Animal	Estimate	Std. Err.	Lower	Upper	CV	Observations
Local male goats	584,582	68,372	445,780	723,385	11.7	430
Female local goats	1,582,168	206,231	1,163,498	2,000,838	13.0	627
Local male sheep	148,533	35,684	76,089	220,976	24.0	113
Local female sheep	363,668	89,740	181,485	545,851	24.7	149
Pigs	138,423	20,780	96,237	180,609	15.0	101

SE40: Small animals, Western Region

Animal	Estimate	Std. Err.	Lower	Upper	CV	Observations
Exotic male goats	52,985	18,404	15,728	90,242	34.7	22
Exotic female goats	155,061	46,614	60,695	249,427	30.1	40
Local male goats	586,882	109,342	365,532	808,232	18.6	374
Female local goats	2,136,646	289,728	1,550,124	2,723,169	13.6	678
Local male sheep	109,041	25,907	56,596	161,486	23.8	78
Local female sheep	269,272	49,548	168,967	369,577	18.4	136
Pigs	347,498	77,364	190,884	504,113	22.3	235

SE41: Poultry and Others, Uganda

Poultry	Estimate	Std. Err.	Lower	Upper	CV	Observations
Rabbits	221,524	42,297	137,906	305,142	19.1	63
Backyard chicken	19,800,000	1,160,133	17,500,000	22,100,000	5.9	3,270
Layers	2,725,178	969,250	809,039	4,641,318	35.6	23
Turkeys	292,389	55,657	182,359	402,419	19.0	118
Ducks	815,401	105,590	606,658	1,024,144	13.0	266
Gees and other birds	259,848	48,782	163,409	356,288	18.8	64

Bee hives	240,710	39,552	162,518	318,903	16.4	95
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SE42: Poultry and Others, Central Region

Poultry	Estimate	Std. Err.	Lower	Upper	CV	Observations
Rabbits	81,371	24,290	31,893	130,849	29.9	20
Backyard chicken	4,291,428	385,575	3,506,037	5,076,819	9.0	756
Turkeys	37,415	10,800	15,416	59,414	28.9	16
Ducks	214,690	59,312	93,876	335,504	27.6	58

SE43: Poultry and Others, Eastern Region

Poultry	Estimate	Std. Err.	Lower	Upper	CV	Observations
Backyard chicken	7,381,998	760,814	5,838,996	8,925,001	10.3	1,101
Turkeys	231,806	54,523	121,229	342,383	23.5	92
Ducks	146,549	40,869	63,664	229,434	27.9	51
Gees and other birds	144,888	37,295	69,250	220,526	25.7	23
Bee hives	38,894	14,600	9,285	68,504	37.5	18

SE44: Poultry and Others, Northern Region

Poultry	Estimate	Std. Err.	Lower	Upper	CV	Observations
Backyard chicken	4,227,275	240,197	3,739,648	4,714,901	5.7	738
Ducks	276,092	57,449	159,464	392,721	20.8	98
Gees and other birds	99,107	30,359	37,475	160,739	30.6	33
Bee hives	76,148	19,392	36,781	115,516	25.5	40

SE45: Poultry and Others, Western Region

Poultry	Estimate	Std. Err.	Lower	Upper	CV	Observations
Rabbits	80,986	27,161	26,002	135,970	33.5	22
Backyard chicken	3,905,487	742,962	2,401,439	5,409,534	19.0	675
Ducks	178,070	48,309	80,273	275,866	27.1	59
Bee hives	104,945	28,925	46,389	163,501	27.6	31

Annex 3: Glossary of Agricultural Module Terms

Agricultural holding: This is an economic unit of agriculture production under single management comprising of all livestock kept and all land used wholly or partly for agriculture purposes without regard to title, legal form or size. There exists a one-to-one relationship between the Ag HHs and the Agricultural Holdings.

Certificate: It refers to a written or a printed and signed document that specifies the registered interests or claims against the right to own, use or occupy land or parcel. The document should be issued by and registered with government authorities e.g. the commissioner for registration, the land board or the recorder (the office registering land and giving certificates).

Certificate of customary ownership: Is given to any person or group of persons who own land under a customary system to recognize and guarantee his/her interest in the land board. It states that the customary rights on the land it refers to the person or the persons named on it. This certificate gives the owner the rights to:

- Rent the land or part of it for a limited period of time (leasing)
- Allow a person to use the land or rent it for a limited period of time.
- Give the land or part of it as security or guarantee for a debt or money borrowed.
- Divide the land or part of it.
- Sell the land or a portion of it if the certificate of customary ownership allows.
- Give away the land by will.

Certificate of occupancy: Is a document issued to a tenant on land on which he/she is not the owner or lessens. It clearly states the interests or claims of the tenant/occupant, a tenant with a certificate of occupancy can:

- Give away, sublet, give as security or create rights to another person to use the land and do anything on the land.
- Pass it on to other people such as spouse, children, relative or friend after his/her death but, Before dealing with the land in any way, the tenant by occupancy will apply to the owner in a standard asking for permission to be allowed to deal with the land.

Customary tenure: Is a traditional method of owning land .Each community has traditionally developed a system of owning land. It may be owned either by the community, clan families or individuals. Individuals can have ownership rights to land either of the above mentioned tenure systems. Person who owns land under these systems, except customary tenure, is entitled to possess a certificate of title. But a certificate of customary ownership is given is given to a person or a group of persons who owned land under customary system. A detailed discussion and definitions of the different forms of certificates is provided in the section that deals with land rights, certificates and disputes. Land owned under these arrangements should be recorded in part A.

Certificate of title: refers to the written or a printed and signed document that is an official record of an agreement concerning the ownership of land or parcel. It registers the right to own the land. Interests that can be entered in the register of titles are free hold, lease and mailo ownership. Customary ownership and occupancy of land belonging to someone else are not considered in the registration of titles. The title gives the owner the right of using and developing the land for any purpose, entering into any dealings (selling, renting and giving it out as security) allowing other people to use it and giving away the land by will.

Disease control: refers to the eradication and control of livestock, poultry and other domesticated animal

Exotic: Refers to livestock introduced in the country from abroad e.g. Holstein Friesian, jersey and Guernsey.

Extension workers: These are individuals employed by the government or non-governmental organizations who work as an agricultural development agents for contacting and demonstrating improved farming methods to farmers. They are responsible for organising, disseminating, guiding and introducing technical methods in agricultural production directly to farmers and for facilitating farmers coming into contact with cultivation methods to promote agricultural production.

Farm management: refers to the operation and organization of the farm thus what farmers do to manipulate resources and situation to achieve their goals, e.g. in Uganda, it may refer to the mixture of crop diversification, rotation and introduction (where adequate water and soils are available) of small vegetable gardens, fruit orchard and forage production for livestock.

Free hold tenure: Is ownership of land for an unlimited period. It means that this person can pass on this land to another person after one's death. The owner of a freehold title has full powers to use and do anything with the land as long as it's not against the law.

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

Household: Group of people who had been eating their meals together for at least 6 months of the 12 months, preceding the interview, other categories of household members even though they had lived less than 6 months in the past twelve months included:

Infants who were born less than 6 months old.

Newly married who had been living together for less than 6 months.

Students and seasonal workers who had been living in or as part of another household.

Other persons living together for less than 6 months but who were expected to live in the household permanently (or for longer duration).

Another group considered was of farm workers and other such individuals who lived and took meals with the household were to be identified as household members even though they might not have been blood relatives with the household head.

The last consideration was that of persons who had lived in the household for more than 6 months of the 12 months but had permanently left the household (divorced or dead) neither were nor considered as members of the household. A household could be constituted of:

A man and his wife/wives and children, father/mother, nephew and other relatives or non relatives

Single persons.

A couple or several couples with or without children.

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

Improved individual and group marketing: refers to improvement in marketing systems and opportunities for both farm produce and input. Support services can include the provision of market, infrastructure, supply of market information and other advisory services on marketing at an individual or group level.

Improved produce quality: refers to the practices that improve the quality of output and hence leading to increased sales and income for example the use of high quality or improved seeds.

Indigenous cattle: refers to livestock of local types e.g. the Ankole long horned cattle, Zebu, Nganda type of cattle.

Land dispute: Is a disagreement over land rights, boundaries or users, a land dispute occurs where the specific individuals or collective interests relating to land are in conflict.

Land owned: This is land area possessed by the household for which the household has title or certificate of ownership. It also includes land, which the household can reasonably expect to eventually possess title or certificate of ownership, and land, which has been operated for many years by the same household without any other claims being made.

Leasehold tenure: Is a way of owning interest in land based on the agreement with the owner of the land allowing another person to take possession and use the land to the exclusion of any one else for a specified or limited period of time usually five, forty nine, ninety nine years.

Mailo tenure: This was created by the 1900 agreement. It is ownership of land formerly given to the baganda chiefs mainly. It is similar to free hold system except that tenants on mailo land have security of tenure.

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

On-farm storage (post-harvest): refers to storage facilities between the maturity period and time of final consumption so that the quality doesn't deteriorate during the storage period and it is secure against pests, disease and physical loss.

Pack Animal: A pack animal is a beast of burden used by humans as means of transporting materials by attaching them so their weight bears on the animal's back e.g. mules, horses, camels, elephants. The term may be applied to either an individual animal or a species so employed.

Parcel: It is a contiguous piece of land with identical tenure and physical characteristics. It is entirely surrounded by land with other tenure or physical characteristics or infrastructure examples include roads, water, forest etc not forming part of the holding.

Plot: This is defined as a contiguous piece of land within a parcel on which a specific crop or a crop mixture is grown. A parcel may be made up of two or more plots.

Primary Land Use (PLU): describes the most important use to which the land (parcel) was put e.g. if a parcel had both annual crops and perennial crops occupying 30% and 70% respectively during the period under reference, then the PLU was perennial crops.

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

Reference period: you need to be careful with the reference period. The reference periods cover the second cropping season of 2004(july-december2004) and first cropping of 2005(January-june2005).

Segment:

There are three concepts that have been found useful in associating agriculture activity with area frames.

- (i) Open-segment
- (ii) Closed-segment
- (iii) Open-closed (or weighted) segment.

A segment: is a piece of land or area bonded by recognizable cadastral (natural) or man-made features; e.g. roads, rivers, forests.

In the **open-segment** the farms headquarters located inside the segment boundaries are considered a sampling unit. All agriculture activities are associated with headquarters regardless of whether the activity is inside the segment boundaries.

The **Closed-segment** associates agriculture activity with the segment itself. It includes all that lies inside the segment and excludes all that which does not.

The **Weighted segment** is a combination of the two in that agriculture activities associated with the farms, any part of which lies within the segment is attributed to the segment according to the fraction of farm areas that is inside the segment. The headquarters are inside the segment.

Closed segment is often used when data on characteristics of land is required, e.g. land areas, crop area, yield, livestock and poultry numbers, number of trees etc. Generally the open segment is used when collecting economic data e.g. income, prices, farm labour and wages etc., since these characteristics mainly relate to the farm headquarters.

Soil fertility management: Refers to agricultural practices to improve and restore the productivity of the soil. It includes practices such as crop rotation, application of crop residue, manuring, incorporation of weeds, terraces etc.

Use rights: This refers to the case where the person has the right to use and benefit to the land belonging to someone else as long as the land is not damaged in any way. Use rights mainly involve arrangements between the tenant occupying or using the land and the owner of the land. The most common types of tenants in Uganda are lawful and bonafide occupants on free hold, lease hold or mailo land. The former refers to a person staying on land with the permission of the owner and making some payments to the owner in return. The latter refers to the person who has stayed on and used the land or improved the land for a minimum of 12 months without being challenged or asked to leave by the owner before the date of 8th October 1995, these tenants are entitled to apply for certificate of occupancy.

Individuals can also be given a license to occupy or use the land on short-term basis, say, for one season by the owner of the land. For the purposes of this survey squatters are assumed to only have one use right on the land they are occupying without the consent of the owner.

Therefore, information on land occupied under any of these arrangements should be collected in part B.

The following table provides the link between different tenure regimes, ownership and use rights and formal certificates.

	Registerable interest	Type of certificate	Type of right
1	Mailo / Free hold /Lease hold	Certificate of title	Ownership right
2	customary	Certificate of customary ownership	Ownership right
3	Lawful/Bona fide occupant	Certificate of occupancy	Use/occupancy right
4	Short term rental/license	None	Use/occupancy right

Annex 4: Questionnaires



UGANDA BUREAU OF STATISTICS



THE UGANDA NATIONAL HOUSEHOLD SURVEY 2005/06

AGRICULTURE QUESTIONNAIRE

SECTION 1A: IDENTIFICATION PARTICULARS										
1. DISTRICT:										
2. SUB-STRATUM: (Urban = 1, Rural = 3)										
3. COUNTY:										
4. SUB-COUNTY:										
5. PARISH:										
6. EA:										
7. HOUSEHOLD SER. NO.:										
8. SAMPLE NO.:										
9. HOUSEHOLD CODE:										
10. NAME OF HOUSEHOLD HEAD:										
11. LOCATION ADDRESS OF HOUSEHOLD:										

THIS SURVEY IS BEING CONDUCTED BY THE UGANDA BUREAU OF STATISTICS UNDER THE AUTHORITY OF THE UGANDA BUREAU OF STATISTICS ACT, 1998.

THE UGANDA BUREAU OF STATISTICS
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Section 2: Current Land Holdings
Part A: Land Owned by the Household: WITH OWNERSHIP RIGHTS

We would like to ask some questions about all the land owned (including grazing and fallow land) by this household during the last completed season (2nd season 2004: July – December 2004) and the current cropping season (1st Season of 2005: Jan. – June 2005). Please include land belonging to this household that was rented or lent out to another household. **INTERVIEWER: PLEASE NOTE THAT THIS CATEGORY REFERS TO LAND THAT THE HOUSEHOLD HAS OWNERSHIP RIGHTS.**

During the last completed cropping season (2nd Season of 2004: July – Dec. 2004) and the current cropping season (1st Season of 2005: Jan. – June 2005), has any member of your household owned any agricultural land including woodlots and forest land with ownership rights?

1= YES
2= NO (>> PART B)

P A R C E L I D	Parcel Name COMPLETE THIS COLUMN FOR ALL PARCELS THEN ASK COLUMN 5-15 FOR EACH PARCEL BEFORE GOING TO THE NEXT PARCEL. COLUMN 4 IS FILLED IN AFTER THE INTERVIEW.	Size of this parcel in acres?		Location 1= Within the EA/LC1 2= Outside EA but within same Parish 3= Outside Parish but within the Sub County 4= Elsewhere in the district 5= Other district	Tenure system 1= Freehold 2= Leasehold 3= Mailo 4= Customary 5= Other (specify)	How did you acquire this parcel? 1= Purchased 2= Inherited or gift from head's family 3= Inherited or gift from spouse's family 4= Cleared 5= Other (specify)	In which year did you first acquire this parcel?	If you were to sell this parcel of land (with investment) today, how much could you sell it for?	Would you be willing to sell this parcel at that price? 1= Yes 2= No	If you were to rent this parcel of land today, how much could you rent it out for two seasons (12 months)?	What was or is the primary use of the parcel during the two cropping seasons?		If 13= 3 or 13=4	
		GPS with two decimal digits	Farmer estimation with two decimal digits								2 nd cropping season 2004	1 st cropping season 2005	How much rent did you or will you receive (if sharecropped –out give the estimated cash value) during the two seasons?	How much land does the tenant own in total in this EA? 1= No land 2= Less than 2.5 acres 3= 2.5 acres and more 4= Don't know
2	3	4	5	6	7	8	9	10	11	12	13a	13b	14	15
01														
02														
03														
04														
05														
06														
07														
08														
09														
10														

GPS Coordinates

	Parcel ID				Parcel ID				Parcel ID				Parcel ID			
36 N																
UTM																

Part B: LAND THAT THE HOUSEHOLD HAS ACCESS THROUGH USE RIGHTS

INTERVIEWER: PLEASE NOTE THAT THIS CATEGORY REFERS TO LAND THAT THE HOUSEHOLD HAS ONLY USER RIGHTS.

During the last completed cropping season (2nd Season of 2004: July – Dec. 2004) and the current cropping season (1st Season of 2005: Jan. – June 2005), has access (use rights) to agricultural land including woodlots and forest land belonging to someone else?

1= YES

2= NO (>> SECTION 3)



P A R C E L I D	Parcel Name COMPLETE THIS COLUMN FOR ALL PARCELS THEN ASK COLUMN 5-16 FOR EACH PARCEL BEFORE GOING TO THE NEXT PARCEL. COLUMN 4 IS FILLED IN AFTER THE INTERVIEW.	Size of this parcel in acres?		Location 1= Within the EA/LC1 2= Outside EA but within same Parish 3= Outside Parish but within the Sub County 4= Elsewhere in the district 5= Other district	Tenure system 1= Freehold 2= Leasehold 3= Mailo 4= Customary (specify) 5= Other (specify)	How did you acquire this parcel? 1= Purchased 2= Inherited or gift from head's family 3= Inherited or gift from spouse's family 4= Agreement with land/use rights owner 5= Without agreement with land/use rights owner 6= Other (specify)	If 8=4, how much rent did you or will you pay to the land owner during the two cropping seasons? WRITE '0' IF NONE.	For how long have you been in continued possession of this parcel (number of years)? In years	Would you be willing to buy full ownership right to this parcel? 1= Yes 2= No (>> 13)	How much are you willing to pay for it (including the investment on it)?	Do you have to renew your use rights to this parcel at least once a year? 1= Yes (>> 15) 2= No	For how much could you sell the use right to this parcel?	What was or is the primary use of the parcel during the two cropping seasons?		If 15=3, how much rent did you or will you receive (if sharecropped –out give the estimated cash value) during the two cropping seasons?
		GPS with two decimal digits	Farmer estimation with two decimal digits										2 nd cropping season 2004	1 st cropping season 2005	
2	3	4	5	6	7	8	9	10	11	12	13	14	15a	15b	16
21															
22															
23															
24															
25															
26															
27															
28															

GPS Coordinates

	Parcel ID					Parcel ID					Parcel ID					Parcel ID									
36N																									
UTM																									

Section 7A: Disposition of Crops: Second Crop Season 2004 (July – December 2004)

FIRST VISIT

I would now like to ask about your harvest from crops that were planted during the last completed season. Please provide the following information related to quantity of [CROP] harvested and sold – planted in the past agricultural season (Second Crop Season of 2004).

L I N E N U M B E R	Crop		How much [...] did you harvest during the second season of 2004 and in what condition/state?					How much of the [...] you harvested during the second season of 2004 was sold and in what condition/state?		What was the total value of the sale of [...]?	Who bought the largest part?	How much of the [...] harvested during the second season of 2004 was used to produce processed food products for sale and for animal feed?	How much of the [...] harvested during the second season of 2004 did you give to the landlord or proprietor?	How much of the [...] harvested during the second season of 2004 has already been consumed by members of your household?	How much of the [...] harvested during the second season of 2004 is still being stored by your household?	What percentage of the [...] harvested during the second season of 2004 did you lose or waste after harvest?	What was the producer price during the second season of 2004 (using the unit of measure reported in column (3a))?
	Crop name	Code	Unit code	Quantity	Condition/state code	Conversion factor into kg?	What share of the harvest was from parcels outside the district? (%)	Quantity	Condition/state code	UShs.	1= Government/LC organization 2= Private trader in local market/village 3= Private trader in district market 4= Consumer at market 5= Neighbor/Relative 6= Other (specify)					(%)	UShs.
	2a	2b	3a	3b	3c	3d	3e	4a	4b	5	6	7	8	9	10	11	12
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	

Section 7B: Disposition of Crops: First Crop Season 2005 (January – June 2005)

SECOND VISIT

I would now like to ask about your harvest from crops planted during the last completed season. Please provide the following information related to quantity of [CROP] harvested and sold – planted in the past agricultural season (First Crop Season of 2005).

L I N E N U M B E R	Crop		How much [...] did you harvest during the first season of 2005 and in what condition/state?					How much of the [...] you harvested during the first season of 2005 was sold and in what condition/state?		What was the total value of the sale of [...]?	Who bought the largest part?	How much of the [...] harvested during the first season of 2005 was used to produce processed food products for sale and for animal feed?	How much of the [...] harvested during the first season of 2005 did you give to the landlord or proprietor?	How much of the [...] harvested during the first season of 2005 has already been consumed by members of your household?	How much of the [...] harvested during the first season of 2005 is still being stored by your household?	What percentage of the [...] harvested during the first season of 2005 did you lose or waste after harvest?	What was the producer price during the first season of 2005 (using the unit of measure reported in column (3a))?
	Crop name	Code	Unit code	Quantity	Condition/state code	Conversion factor into kg?	What share of the harvest was from parcels outside the district? (%)	Quantity	Condition/state code	US\$.	1= Government/LC organization 2= Private trader in local market/village 3= Private trader in district market 4= Consumer at market 5= Neighbor/Relative 6= Other (specify)					(%)	US\$.
	2a	2b	3a	3b	3c	3d	3e	4a	4b	5	6	7	8	9	10	11	12
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	

Section 8: Land Characteristics and Rights

Ask the following questions on every single parcel identified in Section 2 in the same order - **all the parcels in Section 2, Part A and B.**

P A R C E L I D	What soil type/land quality is this parcel?			Distance from homestead in km?	Do you or any other member of your household have the following rights to this parcel?	Who has the ownership or use rights to this parcel?	Who usually (mainly) works on this parcel?	Who mainly manages/controls the output from this parcel among the household members?
	1= Good 2= Fair 3= Poor			IF HOMESTEAD FARM, WRITE 0	<p style="text-align: center;">CODE</p> 1= Without anybody's approval 2= With approval from spouse and children 3= With approval from extended family 4= With approval from local authority 5= With approval from the landlord/owner 6= No right 7= Other (specify)	1= Head 2= Spouse 3= Head and spouse jointly	USE THE SAME CODE AS 12	USE THE

					To sell ownership or use rights?	To bequeath ownership or use rights?	To rent it to someone else?	To plant tree crops?	To use it as a loan security? If code 6, skip go to 12	How much money (in U. Shs.) can you borrow using this parcel as a loan security?	4= Other household members 5= Other		SAME CODE AS 12

1			4	5	6	7	8	9	10	11	12	13	14

Section 10: Livestock Ownership

Part A: Cattle and Pack Animals

Has any member of your household raised or owned cattle and pack animals during the last 12 months?

1= YES

2= NO (>> PART B)

Type of Livestock	Livestock code	During the last 12 months, has any member of your household raised or owned any [...]? 1= Yes 2= No (>> NEXT ANIMAL)	How many of [...] are owned by your household now? Number owned now (present at your farm or away) IF ZERO, GO TO 7.	If you would sell one of the [...] today, how much would you receive from the sale?	How many did you own exactly 12 months ago (present or away)?	During the last 12 months, how many were born or graduated to?	During the last 12 months, how many were received as gift?	During the last 12 months, how many died, got lost?	During the last 12 months, how many were given as gifts?	Did you buy any [...] to raise during the last 12 months?		Did you sell any [...] during the last 12 months?		How many were slaughtered in the last 12 months?
										Number bought IF NONE WRITE 0, GO TO 14	Total purchase value of all bought INCLUDING VALUE OF IN-KIND PAYMENTS	Number sold IF NONE WRITE 0, GO TO 16	Total sales value of all sold INCLUDING VALUE OF IN-KIND PAYMENTS	
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
EXOTIC/CROSS														
Calves	1													
Bulls and Oxen	2													
Heifer and Cows	3													
INDIGENOUS														
Calves	4													
Bulls and Oxen	5													
Heifer and Cows	6													
Donkeys	7													
Mules	8													

Section 10:...Cont.

Part B: Small Animals

Has any member of your household raised or owned small animals during the last 6 months?

1= YES
2= NO (>> PART C)

Type of Livestock	Livestock code	During the last 6 months, has any member of your household raise or owned any [...]? 1= Yes 2= No (>> NEXT ANIMAL)	How many of [...] are owned by your household now? Number owned now (present at your farm or away) IF ZERO, GO TO 7.	If you would sell one of the [...] today, how much would you receive from the sale?	How many did you own exactly 6 months ago (present or away)?	During the last 6 months, how many were born?	During the last 6 months, how many were received as gift?	During the last 6 months, how many died, got lost?	During the last 6 months, how many were given as gifts?	Did you buy any [...] to raise during the last 6 months?		Did you sell any [...] during the last 6 months?		How many were slaughtered in the last 6 months?
										Number bought IF NONE WRITE 0, GO TO 14	Total purchase value of all bought INCLUDING VALUE OF IN-KIND PAYMENTS	Number sold IF NONE WRITE 0, GO TO 16	Total sales value of all sold INCLUDING VALUE OF IN-KIND PAYMENTS	
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
EXOTIC/IMPROVED														
Male goats	13													
Female goats	14													
Male sheep	15													
Female sheep	16													
LOCAL														
Male goats	17													
Female goats	18													
Male sheep	19													
Female sheep	20													
Pigs	21													

Section 10:...Cont.

Part C: Poultry and Others

Has any member of your household raised or owned poultry, bees or other domesticated birds during the last 3 months?

1= YES
2= NO (>> SECTION 11)

Type of Livestock	Livestock code	During the last 3 months, has any member of your household raise or owned any [...]? 1= Yes 2= No (>> NEXT ANIMAL)	How many of [...] are owned by your household now? Number owned now (present at your farm or away) IF ZERO, GO TO 7.	If you would sell one of the [...] today, how much would you receive from the sale?	How many did you own exactly 3 months ago (present or away)?	During the last 3 months, how many were born?	During the last 3 months, how many were received as gift?	During the last 3 months, how many died, got lost?	During the last 3 months, how many were given as gifts?	Did you buy any [...] to raise during the last 3 months?		Did you sell any [...] during the last 3 months?		How many were slaughtered in the last 3 months?
										Number bought IF NONE WRITE 0, GO TO 14	Total purchase value of all bought INCLUDING VALUE OF IN-KIND PAYMENTS	Number sold IF NONE WRITE 0, GO TO 16	Total sales value of all sold INCLUDING VALUE OF IN-KIND PAYMENTS	
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Rabbits	31													
Backyard chicken	32													
Parent stock for broilers	33													
Parent stock for layers	34													
Layers	35													
Pullet chicks	36													
Growers	37													
Broilers	38													
Turkeys	39													
Ducks	40													
Geese and other birds	41													
Beehives	42													

SECTION 11: Livestock Expenditure and Income

Part A: IN THE LAST 12 MONTHS, have you had any of the following expenditures related to livestock?

Type of Expenditure	Expenditure code	Did you spend any on [...]? 1= Yes 2= No (>> NEXT TYPE)	Cash value (if in kind, give estimated cash value)
1	2	3	4
hired labour for herding	1		
Livestock/poultry feed	2		
veterinary services/medicine	3		
other expenses	4		

Part B: What was the total production and gross income from the sale of household's animal products in THE LAST 12 MONTHS unless specified?

Type of Product	Product code	Production			Sales			
		Did you produce any [...]? 1= Yes 2= No (>> NEXT TYPE)	Quantity	Unit code	Did you sell any [...]? 1= Yes 2= No (>>NEXT TYPE)	Quantity	Unit code	Total revenue obtained from the sale of [...]? Include estimated cash value of in-kind payments.
1	2	3	4	5	6	7	8	9
meat (EXCLUDE LIVE ANIMALS)	101							
hides/skins	102							
butter/cheese	103							
milk/cream	104							
dung cakes	105							
Eggs (LAST THREE MONTHS)	106							
Honey (LAST SIX MONTHS)	107							
Fish (LAST SIX MONTHS)	108							

Did you get any income from hiring out oxen/donkey/mule during the last 12 months?

1= Yes

2= No (>> NEXT SECTION)

11. If yes, how much did you get? Cash value (if in kind, give estimated cash value)

Section 12: Agricultural Technology and Extension Services

Part A: Access to Extension Services

Has this household been visited by an extension worker during the past 12 months?

- 1= Yes
2= No (>> 3)

How many times did any agricultural extension worker visit your household during the past 12 months?

Times

Has any member of your household participated in a training program organized by NAADS?

- 1= Yes
2= No

Is any member of your household a member of farmers' group under farmer institutional development scheme of NAADS?

- 1= Yes
2= No (>> 6)

Has any member of your household participated in prioritizing enterprises to demand for advisory services under NAADS programs?

- 1= Yes
2= No

Does the head of the household know about the changes in the land tenure system brought by the 1998 Land act?

- 1= Yes
2= No

Does the spouse of the head know about the changes in the land tenure system brought by the 1998 Land act?

- 1= Yes
2= No

Part B: Access to and Demand for Agricultural Technology

Irrespective of whether or not you had access to extension, indicate access to specific agricultural technology in the table below

Type of technology	Code	Have you changed your practices with respect to [...] during the last 5 years (since March 2001)?	How much could good information on [...] improve your production?	Would you be willing to pay for it?	How much?	Do you have access to information with respect to [...]?	How do you evaluate the usefulness of the information with respect to [...]?	Compared with March 2001, would you say that your access to information with respect to [...] is
1	2	3	4	5	6	7	8	9
Crop production and marketing								
Soil fertility management	1							
Crop protection	2							
Farm management	3							
Improved produce quality /varieties	4							
On-farm storage (post-harvest)	5							
Improved individual and group marketing	6							
Animal production								
Disease control	7							

Part C: Quiz to Test Farmers' Knowledge about Agricultural Technology

Which of the following crops improve soil fertility by capturing nutrients; making food and putting it back to the soil?

- Maize
- Cassava
- Beans
- Sorghum
- Matooke
- Don't know

2. Which of the following cassava planting methods provides better yields?

- Vertically planted sticks
- Horizontally planted sticks
- Both
- Don't know

3. Which of the following methods increase susceptibility of crops to pests and diseases?

- Mulching
- Adequate pruning
- Use of recommended amount of fertilizer
- Late season planting
- Don't know

4. Which of the following crops would follow beans better in a rotation?

- Groundnuts
- Soya beans
- Maize
- Don't know

5. For best results banana should be left with a total _____ plants in each stool (stand)?

- One
- Three
- Ten
- Fifteen
- Don't know

_____ is the most common pest on bananas?

- Banana weevils
- Fruit borers
- Leaf miners
- Don't know

What is the recommended quantity of DAP that has to be applied per hill/hole when planting maize?

- One bottle top
- One Kilogram
- One gram
- Don't know

Part D: Knowledge Test on Improved Varieties

Description of improved variety	Code	Do you know the [...] variety? 1= Yes 2= No (>> NEXT CROP)	Information source 1 = Through regular government extension 2 = Through NAADs 3 = Through mass media 4= Talk to other farmers 5= Other (specify)	Have you ever used this variety? 1= Yes, during the last 12 months 2= Yes, used it in the past 3= No
1	2	3	4	5
Cassava – high yielding and resistant mosaic	1			
Maize – high yielding (7000 kg/ha) and high quality protein	2			
Beans – disease resistant and high yielding	3			
Banana – high yielding Matooke	4			
Finger millet – high yielding varieties (2300 – 2800 kg/ha) with good food and brewing qualities	5			
Groundnuts – high yielding (3000 kg/ha), resistant to rosette and tolerant to draught	6			
Simsim – high yielding (800-1000 kg/ha)	7			
Irish potato – high yielding	8			