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**Comprehensive Food Security
and vulnerability Analysis
(CFSVA)**

Conducted July–August 2005

**Strengthening Emergency Needs
Assessment Capacity (SENAC)**

Republic of Uganda: Comprehensive Food Security and Vulnerability Analysis (CFSVA)

Prepared by Patrick Vinck, VAM consultant

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**Uganda:
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Patrick Vinck

CONTENTS

Executive Summary	11
Introduction	13
Part 1 - Study Objectives and Methodology	15
1.1 Objectives.....	15
1.2 Concepts and Framework	15
1.3 Survey Instruments.....	16
1.4 Survey Sites and Sampling Procedures	17
1.5 Data Collection	19
1.6 Data Entry and Statistical Analysis	19
1.7 Limitations to the Study	19
Part 2 - Overview of Sustainable Development and Food Security in Uganda	21
2.1 General Historical and Political Context	21
2.2 Macro-Economic Overview	22
2.3 Population, Poverty and Livelihoods	23
2.3.1 Human Capital.....	23
2.3.2 Governance and Social Capital.....	26
2.3.3 Natural Capital and Agricultural Production.....	27
2.4 Poverty Reduction and Food-Security Public Policies	29
2.5 Sources of Food Insecurity and Vulnerability	30
Part 3 - Survey Results	31
3.1 Demographics of the Respondents	31
3.1.1 Size and Composition	31
3.2 Livelihood Groups.....	32
3.2.1 Analysis Methodology of Livelihood Data	32
3.2.2 Livelihood Groups Description	32
3.2.3 Demographics of Livelihood Groups	34
3.3 Socioeconomic Characteristics	35
3.3.1 Education	35
3.3.2 Health.....	36
3.3.3 Knowledge of HIV/AIDS.....	37
3.3.4 Housing and Amenities	38
3.3.5 Access to Community Services.....	39
3.4 Food Availability and Household-Level Agricultural Production	40
3.4.1 Agricultural Production.....	40
3.4.2 Food Sources and Diversity	43
3.4.3 Productive Assets	45
3.4.4 Income Sources and Access to Credit	47
3.4.5 Household Expenditure.....	50
3.5 External Shocks and Coping Mechanisms	51
3.5.1 Migration and Exposure to Violence.....	51
3.5.2 Exposure to Shocks, and Coping Mechanisms.....	53
3.5.3 Food and Non-Food Assistance.....	55
3.6 Food Utilization and Nutrition Status	57
3.6.1 Women's Maternal Care, Health and Nutrition	57
3.6.2 Children Nutrition and Health	60
Part 4 - Household Food Security and Vulnerability Profiling	67
4.1 Household Food Consumption Profiling	67
4.1.1 Frequency of Consumption and Dietary Diversity.....	67
4.1.2 Analysis Methodology of Food Consumption Data	67
4.1.3 Household Food Consumption Groups and Profiles	68
4.1.4 Food Sources Across Consumption Profiles	69
4.1.5 Geographic Distribution of Consumption Profiles	69
4.1.6 Distribution of Consumption Profiles across Livelihood Groups.....	70
4.2 Household Access Profiling	71
4.2.1 Food Access Profiles Concept and Methodology	71
4.2.2 Household Access Groups.....	71
4.2.3 Geographic Distribution of Access Profiles	72

4.2.4 Distribution of Access Profiles Across Livelihood Groups.....	72
4.3 Household Food Security Profiling	73
4.3.1 Household Food Security Profiling Concept and Methodology	73
4.3.2 Geographic Distribution of Food Security and Vulnerability Profiles	74
4.3.3 Distribution of Food Security Profiles Across Livelihood Groups	75
4.3.4 Household Food Security and Vulnerability Profiles and Malnutrition	75
4.3.5 Selected Indicators in Relation to Food Security Profiles	76
4.3.6 Threat to Food Security – The Case of the Avian Flu	77
Part 5 - Livelihood Food Security and Vulnerability Summary Profiles	81
Part 6 - Geographic Food Security and Vulnerability Summary Profiles	85
Part 7 - Recommendations for Programme Interventions	93
7.1 Summary Findings	93
7.2 Priority Areas	94

FIGURES AND TABLES

Figures

Figure 1.2-1: Food Security and Vulnerability Conceptual Framework	15
Figure 1.4-1: Strata and Sampled Districts—Uganda CFSVA	18
Figure 2.2-1: Structure of the Economy	22
Figure 2.3-1: Evolution of Crude Birth Rate and Crude Death Rate	23
Figure 2.3-2: Lorenz Curve	25
Figure 2.3-3: General Seasonal and Agricultural Calendar for Uganda	27
Figure 2.3-4: Crop Distribution in Uganda (1)	28
Figure 2.3-5: Crop Distribution in Uganda (2)	28
Figure 2.3-6: Livestock Distribution in Uganda	28
Figure 3.1-1: Sample Distribution and Respondents' Demographics	31
Figure 3.2-1: Geographic Distribution of Livelihood Groups	34
Figure 3.3-1: Household Head Educational Achievement	35
Figure 3.3-2: Percentage of HH with 6 or more people per room	38
Figure 3.3-3: Number of Meals Consumed by Adults by Strata	44
Figure 3.3-4: Number of Meals Consumed by Adults by Livelihood Group	44
Figure 3.3-5: Household Food Sources	45
Figure 3.3-6: Animals Ownership by Strata (% of Households)	46
Figure 3.3-7: Animal Ownership by Livelihood Group	47
Figure 3.3-8: Type of Animals Owned by Livelihood Groups	47
Figure 3.3-9: Average Annual Income (in Ugandan Shilling) and Income Sources by Strata	48
Figure 3.3-10: Average Annual Income (in Ugandan shilling) and Income Sources by Livelihood Profile	49
Figure 3.3-11: Average Composition of Household Monthly Expenditures and Food Expenditures	50
Figure 3.3-12: % of Food Expenditure by Strata	51
Figure 3.3-13: Composition of Household Expenditure by Livelihood Groups	51
Figure 3.4-1: Crop Production Diversity by Strata	40
Figure 3.4-2: Crop Production Diversity by Livelihood	41
Figure 3.4-3: Storage System by Strata	43
Figure 3.4-4: Storage System by Livelihood	43
Figure 3.5-1: Proportion of Displaced HH per Strata	52
Figure 3.5-2: Displacement Among Livelihood Groups	52
Figure 3.5-3: Reported Exposure to Shocks by Strata	53
Figure 3.5-4: Food Aid Recipients	55
Figure 3.6-1: Mothers' Section Sample Distribution and Respondents Demographics	57
Figure 3.6-2: Pregnancy and Breastfeeding by Age Group	58
Figure 3.6-3: Geographic Distribution of Mother's Undernourishment	60
Figure 3.6-4: Mother's nutrition status	60
Figure 3.6-5: % Underweight Mothers by hand washing practice	60
Figure 3.6-6: Stunting - Geographic (<-2s.d. and <-3s.d.) and Age Distribution	62
Figure 3.6-7: Distribution of Stunting Across Livelihood Groups	62

Figure 3.6-8: Wasting - Geographic (<-2s.d. and <-3s.d.) and Age Distribution	63
Figure 3.6-9: Distribution of Wasting Across Livelihood Groups	63
Figure 3.6-10: Malnourished - Geographic (<-2s.d. and <-3s.d.) and Age Distribution	64
Figure 3.6-11: Distribution of Underweight Across Livelihood Groups	64
Figure 3.6-12: Child Size at Birth and Nutritional Status.....	64
Figure 4.1-1: Food Sources by Food Consumption Group.....	69
Figure 4.1-2: Geographic Distribution of Household Food Consumption Profile	70
Figure 4.1-3: Distribution of Consumption Profiles Across Livelihood Groups	70
Figure 4.2-1: Geographic Distribution of Access Profiles	72
Figure 4.2-2: Distribution of Access Profiles Across Livelihood Groups	73
Figure 4.3-1: Geographic Distribution of Food Security Profiles	74
Figure 4.3-2: Food Security and Livelihood	75
Figure 4.3-3: F. S. Profiles and Stunting	75
Figure 4.3-4: F. S. Profiles and Wasting.....	75
Figure 4.3-5: F. S. Profiles and Underweight.....	75
Figure 4.3-6: Food Security and Household Head Education	76
Figure 4.3-7: Food Security and Head of Household Spouse Education	76
Figure 4.3-8: Food Security and Acreage	77
Figure 4.3-9: Food Security and Cattle ownership.....	77
Figure 4.3-10: Food Security and Chicken Ownership	78
Figure 4.3-11: Displacement and Food Insecure Status.....	78
Figure 4.3-12: Poultry Flock Size by Household.....	77
Figure 4.3-13: Flock Size by Household Across Income Brackets.....	78
Figure 4.3-14: Chicken Ownership and Food Security	78
Figure 4.3-15: Meat Consumption across poultry ownership and income brackets	78
Figure 4.3-16: Flock as Proportion of Annual Income.....	79

Tables

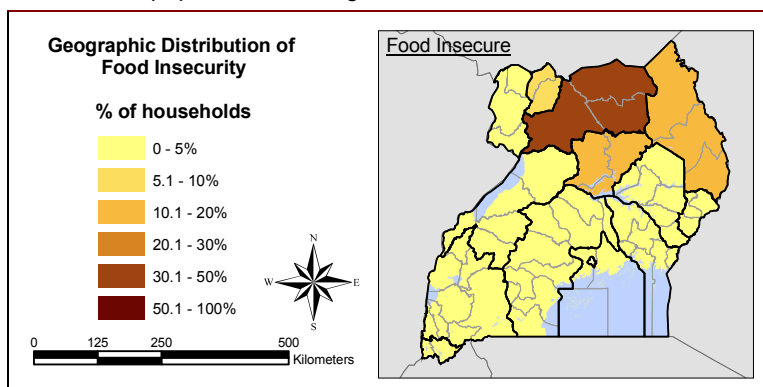
Table 1.4-1: Clusters by Region and Districts	18
Table 2.3-1: Uganda GRICS Score, 1996 -2004	26
Table 3.2-1: Household Livelihood Groups.....	33
Table 3.3-1: Gross Enrollment Ratio	36
Table 3.5-1: Beneficiary per Food Aid Sources	56
Table 3.6-1: Hand Washing Practices	59
Table 3.6-2: Children Sample	61
Table 4.1-1: Household Food Consumption group and Profiles.....	68
Table 4.2-1: Household Access Groups	71
Table 4.3-1: Household Food Security Profiles	73

EXECUTIVE SUMMARY

This report presents the findings of a Comprehensive Food Security and Vulnerability Analysis (CFSVA) of rural Uganda. This baseline assessment was justified by the important ongoing food security interventions in the country, the limited or outdated pre-crisis food security information at both the national and household levels and the uncertain future in Uganda. It is based on secondary data and the analysis of a national household survey (2,987 households) carried out July–August 2005. Secondary data were used to define 14 homogeneous strata with regard to agro-ecological factors. A representative multi-stage sampling procedure was used to select households within each stratum. One stratum, Kampala, was not surveyed, as this exercise focused on rural households. The primary objective of this CFSVA was to obtain a better understanding of food insecurity and vulnerability among Ugandan rural households at the sub-regional level. Some of the main findings of this research are:

- **Food insecurity and vulnerability are highly prevalent in Uganda.** Five percent of the rural households were found to be food insecure, 31% are highly vulnerable and 19% moderately vulnerable.
- **Food insecurity and vulnerability are present everywhere in Uganda but vary regionally.** Only in the Central Lake stratum were no households classified as food insecure. However, in that stratum, vulnerable households still accounted for 19% of the population. Among the most food insecure are:

The Acholi strata, with 33% of the households food insecure and 38% vulnerable, the Karimojong, with respectively 18% and 46% food insecure and vulnerable, and the Lango strata, with 12% food insecure and 37% vulnerable. Vulnerability was also found to be very high in the Teso-Dhola strata (3% food insecure, 53% vulnerable) and the Kiiga strata (1% food insecure, 60% vulnerable).



- **Food insecurity and vulnerability are prevalent among all livelihood groups but vary across strategies.** The analysis of selected household characteristics led to define 11 livelihood strategies or groups in rural Uganda. Marginal livelihoods (mainly Acholi strata) and Remittance Dependents (mainly Kiiga strata) are found to have higher percentage of food insecure and vulnerable. Five other groups—pastoralists, agro-brewers, agriculturalists, agro-labourers, and agro-traders—are considered vulnerable and four are considered most food secure: employees-agriculturalists, agro-pastoralists, fishers, hunter gatherers and agro-artisans.
- **Causes and “food-insecurity profiles” vary geographically.** Among the most food insecure and vulnerable, the Acholi and Lango strata are affected mainly by insecurity that reduces food availability and the household’s ability to access (financially and geographically) food. In the Karimojong and Teso-Dhola strata, insecurity as well as exposure to repeated external shocks (drought) are the likely explanation of food insecurity and vulnerability. In the Kiiga strata, access indicators are relatively good but diet diversity remains poor. Cultural factors may explain a traditionally less diverse diet.
- **Several socio-economic indicators are strongly correlated with food-security status.** While the gender of the household head seemed to have little influence on food-security status, the age of the household head, the household size and the level of education of both the household head and the spouse were found to have a significant impact. Some indicators related to access to productive resources were found to positively influence food-security status (acreage, ownership of cattle and poultry). Among shocks, the level of violence in the north of the country was also found to have a significant impact, especially when it related to displacements. Other shocks, such as price fluctuations of food, crop pests and diseases, were also found to have an impact. The livelihood strategy adopted by households and their geographic distribution were also found to be related to the food-insecurity status.
- **Malnutrition among children is more pronounced in the north.** Wasting is very high in the Karimojong and Acholi strata, maybe related to the uni-modal agricultural season in the north. High stunting in the Kiiga strata indicates chronic problems. Malnutrition in Uganda can be attributed to food insecurity, to health- and hygiene-related factors and to economic status.

- **Recommendations for food and non-food interventions** were developed based on these findings. They include the establishment of a monitoring system for vulnerable households, the development of an integrated strategy to address the conflict in the north and the source of the food insecurity, and targeted interventions elsewhere.

INTRODUCTION¹

Over the last two decades, Uganda has accomplished an impressive turnover of its economy, transforming itself from devastation to a success story. Economic reforms, foreign aid, debt relief and private cash flows supported an average 6.8% growth of the GDP from 1990 to 2003. Yet amid slowing economic growth and declining terms of trade affecting the agricultural sector, this macro-economic success story is hindered by concerns over sustainability and social and regional distribution of the wealth and localized conflicts. The country remains one of the poorest in the world. Per capita income in 2004 was estimated to be about US\$250. Furthermore, progresses toward other dimensions of sustainable human development, such as education and health, appear to be much slower. Life expectancy at birth remains low and has even decreased over the last decade: 43 years in 2002, compared with 47 years in 1990. Similarly, infant and child mortality have not improved much over the same period and stay at around 81 and 140 per 1,000 live births, respectively. Food insecurity and vulnerability among the population is of particular concern. According to World Bank figures, child malnutrition has not decreased over the last decade, with 23% of the under-5 children being underweight.

Factors identified in Uganda as causes of food insecurity are mostly associated with *food availability*.² These include unreliable climatic conditions (e.g., droughts, floods), low productivity, crop and animal pests and diseases and declining soil fertility. Food insecurity is also an effect of the conflicts and insecurity in the northern region. Yet, little is understood with regard to the role of *food access* – the ability of a household to acquire adequate amounts of food (e.g., financial access) and *food utilization* – the intra-household use of the food accessible and the individual's ability to absorb and use nutrients (e.g., health factors). For example, prevalence of stunting is remarkably high in the western region, an area usually considered food secure.³

Addressing food insecurity and vulnerability requires a reliable information base and an understanding of the context of food insecurity and vulnerability at both the national and household level. To the author's best knowledge, there is no comprehensive national information on food insecurity and vulnerability at the household level. Recent studies⁴ have focused on secondary analysis of data from the Uganda Bureau of Statistics (UBOS), such as the Uganda National Household Survey (UNHS) 1992/1993, 1999 and 2002/2003. These studies contribute greatly to the understanding of changes in food security and vulnerability over time. Yet they are unable to capture information such as exposure to risks and use of coping mechanisms, which are not available in existing database. The geographic coverage of such studies is further limited due to limited accessibility to conflict areas at the time of data collection. Qualitative information has also been exploited to define livelihood zones⁵. While the livelihood study was not available at the time of design and implementation of this Comprehensive Food Security and Vulnerability Analysis (CFSVA), the newly released data will help us frame our discussion.

The purpose of the Uganda CFSVA is to complement the information available to the government of Uganda, the World Food Programme (WFP) and other partners. This report presents the analysis of a nationwide assessment of 2,987 households conducted from July to August 2005. This assessment focuses on rural Uganda. While urban food insecurity and vulnerability exist in Uganda, as is often the case in sub-Saharan Africa, most of the population's poor live in rural areas (86% of Ugandans live in rural areas). The study was designed by WFP to be both systematic and comprehensive. The data were collected by trained researchers from the Institute of Public Health at Makerere University and by that university's faculty of Agriculture, under the supervision of WFP. The data analysis, interpretation and write-up of the present report were conducted by WFP.

¹ Statistics from the World Bank, www.worldbank.org

² *Food availability* is defined as the amount of food physically available to a household. See, for example, Bahiigwa (1999), *Household Food Security in Uganda, an Empirical Analysis*, Economic Policy Research Center, for a discussion of food availability and food security in Uganda.

³ See, for example, EPRC (forthcoming), *Understanding Food Insecurity in Uganda*.

⁴ Ibid.

⁵ FewNet livelihood initiative supported by WFP.

Part 1 - STUDY OBJECTIVES AND METHODOLOGY

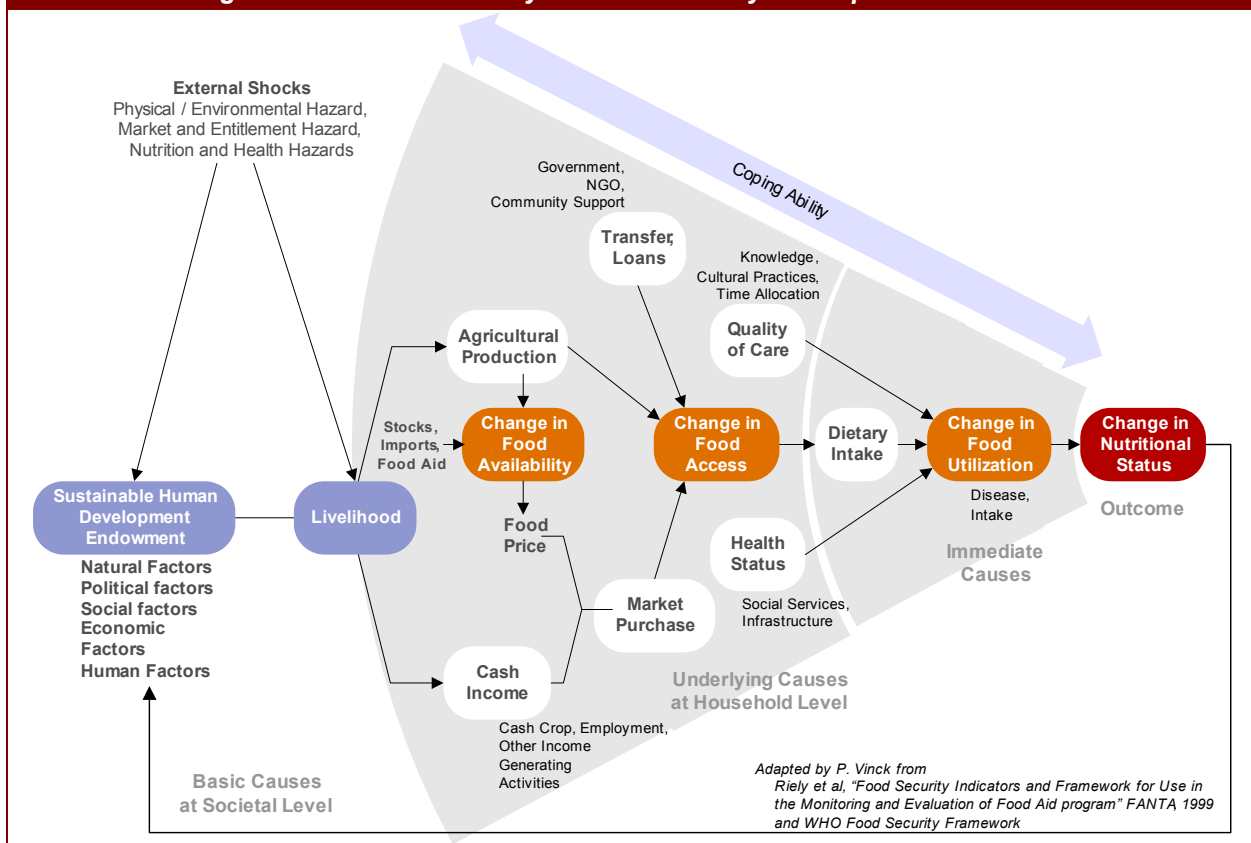
1.1 Objectives

The general objective of the Uganda CFSVA was to provide a baseline assessment of food insecurity and vulnerability in rural households of Uganda in a non-emergency setting,⁶ including the characterization of who are the food insecure, how many are there, where do they live, why are they food insecure and what intervention is appropriate to reduce their food insecurity and vulnerability. The specific objectives of the Uganda CFSVA are to:

- provide information on food security and nutritional status in rural Uganda;
- document the resources accessible to rural households and their resource allocation, including the livelihood and income-earning activities pursued at the household level;
- assess rural communities' exposure to crises and the coping mechanisms they use;
- when possible, examine the evolution of food insecurity and vulnerability over time;
- evaluate the context (education, health, social structure) and future risks for food security and livelihoods;
- establish a typology and geographic distribution of food-insecure and vulnerable households; and
- recommend appropriate food and non-food programme interventions to address both contextual and structural problems that affect food security in rural Uganda.

1.2 Concepts and Framework

Figure 1.2-1: Food Security and Vulnerability Conceptual Framework



While it is not within the scope of this document to provide a theoretical discussion of food-security concepts, the following framework will guide the discussion. According to the 1996 World Food Summit, "Food security exists when all people, at all times, have physical, social and economic access to sufficient,

⁶ One could argue that northern Uganda is an emergency setting. However, whatever the classification, "emergency" or "non-emergency" populations affected by two decades of conflict undoubtedly experience a lot of problems.

*safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.*⁷ Food Security is understood as a multidimensional function of (1) food availability, the amount of food physically available to a household; (2) food access, the ability of a household to acquire adequate amounts of food; and (3) food utilization, the intra-household use of the food accessible and the individual's ability to absorb and use nutrients.

Vulnerability is the second important concept used in this report. It can be defined as *"the probability of an acute decline in food access, or consumption, often in reference to some critical value that defines minimum levels of human well-being."*⁸ As Figure 1.2-1: Food Security and Vulnerability Conceptual Framework illustrates, vulnerability is not only a function of the probability, frequency and intensity of exposure to external shocks, such as drought or conflicts, but also the ability or inability of a given household to cope with external shocks. This ability to cope is in turn a function of underlying causes at the household level and basic causes at the societal level, such as poverty. Vulnerability is therefore a highly dynamic concept that changes over time.

Food insecurity and *vulnerability* are distinct concepts yet they overlap significantly. Not all vulnerable households are food insecure. In fact, every household has some degree of vulnerability. In this discussion, we will focus on vulnerable households that are nearly or already food insecure.

1.3 Survey Instruments

Literature review, secondary data analysis and primary data collection were used to provide a nationwide assessment of food security and vulnerability in Uganda. The literature review and secondary data analysis were conducted to identify gaps in the understanding of food security and vulnerability and to contextualize and validate the results of the primary data collection. Two different instruments were used during primary data collection: a household questionnaire⁹ and a community questionnaire.¹⁰

1. The household questionnaire was designed to collect quantitative data in 11 areas: (1) demographics, (2) contextual information, (3) housing and facilities, (4) assets, (5) income, (6) expenditures, (7) food sources and consumption, (8) shocks and food security, (9) HIV/AIDS, (10) maternal health and nutrition (11) child health and nutrition. The instrument was a structured questionnaire using open-ended questions. Response options were provided to the enumerators but were not read to the respondents. For several questions, respondents were allowed to provide more than one response.
2. Measurements of the height and weight of mothers and children were included in the household questionnaire to assess nutritional status. Standard locally produced height boards for adults and children were used to measure height. UNICEF SECA 890 electronic scales were used to weigh mothers and children.
3. The community questionnaire was structured, open ended and designed to collect qualitative information on (1) demographics, (2) migration, (3) transportation, (4) water and sanitation, (5) education, (6) health, (7) market information, (8) agriculture and animal husbandry, (9) livelihoods, and (10) assistance and food aid. The community questionnaire was intended to contextualize the information collected at the household level. The resulting instrument was a structured, open-ended questionnaire. Response options were not systematically provided to the enumerators. Rather, the enumerators were asked to record exactly what respondents had to say.

The questionnaires were designed in a participatory manner that involved representatives from various agencies active in food security in Uganda. Because of the multiplicity of languages in Uganda, the instruments were not translated into the local languages. Proficiency in both English and the local language of the area being surveyed was one of the criteria for the selection of enumerators. While this may be considered a limitation to the study (e.g., different interviewers may translate the same question in a different way), the relative simplicity of the questions limited the risk of misinterpretation. Prior to the launch of the survey, the instruments were piloted among local experts, randomly selected individuals and a random sample of participants in a non-study site. Necessary revisions were made after each pilot stage.

⁷ FAO (2002), *The State of Food Insecurity in the World 2001*, Rome.

⁸ WFP VAM (2002), VAM Standard Analytical Framework, Role and Objectives of VAM Activities to Support WFP Food-Oriented Interventions.

⁹ Annex 1 of this document.

¹⁰ Annex 2 of this document.

1.4 Survey Sites and Sampling Procedures

The Uganda CFSVA sought to characterize household food insecurity and vulnerability at the sub-regional level. Published data in Uganda are usually aggregated at the regional level (five regions: Kampala, central, eastern, northern, and western). However, regions are relatively large and heterogeneous with regard to livelihoods, poverty, food security and vulnerability indicators. Since it was impossible to cover and be representative at the district level (currently 56, and proposed increase to more than 80) within a reasonable budget and data collection time, an alternative stratification method was used.

At the time of the survey, little information on livelihoods or food economy zoning was available. As an alternative, the secondary data analysis provided a basis for identifying clusters of districts. Information from the Uganda National Household Survey 2002/2003 and information on household consumption groups was integrated with additional information on land cover, length of growing period and population density to create homogeneous aggregates of districts.¹¹ Administrative boundaries were then taken into account to ensure that the data collected for each cluster of districts or each stratum could also be used to provide figures at the regional level. Three districts (Kayunga, Kaberamaido and Nakasongola) were regrouped in a different way than that suggested by the secondary data analysis, to facilitate administrative-level aggregates. This approximation was accepted because the information used to develop the original clusters was not representative at the district level.

A multi-stage sampling procedure was used to select households within each stratum. Because a large number of strata were defined (13) and because those strata were designed to be homogeneous, within each stratum, one third of the districts, with a minimum of two districts per stratum, was sampled proportionate to population size using 2002 census data. Figure 1.4-1 presents a map of the resulting 14 strata. The hatch marks highlight the districts that were sampled. The sampling procedure was logistically sounder than a simple random sampling of villages. Strata 14 (Kampala) was not surveyed, as this exercise focused on rural households. Within the selected districts and for each stratum, 20 rural sub-counties were randomly selected proportionate to size. No population data were available at a lower-aggregated level (e.g., villages), so within each sub-county, one village (or camp, where applicable) was randomly selected from a comprehensive list of villages and camps. Annex 3 presents the list of sub-counties and villages that were sampled.

Because comprehensive lists of all the households were not systematically available, interviewers were randomly assigned to "zones" of relative size within the villages or camps, as identified by village or camp leaders. The interviewers were directed to the center of each zone, where they randomly selected a direction in which to walk, and then selected every other household within that area. In each selected household, one adult (at least 15 years or older) was selected to be interviewed. When a selected household or individual was unable to participate, the next available household, or another individual within the selected household, was selected.

The minimum target sample size for each stratum was 200, for a total of 2,600 households. Sample size was determined using the difference-in-proportion formula and was adjusted for design effect due to stratification and multi-stage cluster sampling, using α of 5%, a level of precision of 10% and a design effect of 2. The assumed power was .80. During the data collection, 838 households were empty or refused to participate. Data collection took place from July 29, 2005, to August 29, 2005. The final sample size obtained was 2,987 households. Using the complex sample module of EpiInfo, the average design effect was estimated at 1.5, and the margin of error was within 3%.

¹¹ WFP, Secondary Data Analysis for Uganda, 2005

Figure 1.4-1: Strata and Sampled Districts - Uganda CFSVA



Table 1.4-1: Clusters by Region and Districts

Region	Strata	Stratum Name	Districts
northern Region	1	Karimojong	<u>Kotido</u> , <u>Moroto</u> , <u>Nakapiripirit</u>
	2	Acholi	<u>Gulu</u> , <u>Kitgum</u> , <u>Pader</u>
	3	Madi	<u>Adjumani</u> , <u>Moyo</u>
	4	Arua	<u>Arua</u> , <u>Nebbi</u> , <u>Yumbe</u>
	5	Lango	<u>Apac</u> , <u>Lira</u>
eastern Region	6	Teso-Dhola	<u>Kabermaido</u> , <u>Katakwi</u> , <u>Kumi</u> , <u>Pallisa</u> , <u>Soroti</u> , <u>Tororo</u>
	7	Gisu-Sebei	<u>Kapchorwa</u> , <u>Sironkho</u> , <u>Mbale</u>
	8	Greater Busoga	<u>Bugiri</u> , <u>Busia</u> , <u>Iganga</u> , <u>Jinja</u> , <u>Kamuli</u> , <u>Mayuge</u>
Central Region	9	Central Lake	<u>Kalangala</u> , <u>Mukono</u> , <u>Wakiso</u>
	10	Greater Buganda	<u>Kayunga</u> , <u>Nakasongola</u> , <u>Luwero</u> , <u>Kiboga</u> , <u>Mubende</u> , <u>Mpigi</u> , <u>Sembabule</u> , <u>Masaka</u> , <u>Rakai</u>
western Region	11	Bunyoro	<u>Kyenjojo</u> , <u>Bundibugyo</u> , <u>Kibaale</u> , <u>Hoima</u> , <u>Masindi</u>
	12	Ankole	<u>Bushenyi</u> , <u>Kabarole</u> , <u>Kamwenge</u> , <u>Kanungu</u> , <u>Kasese</u> , <u>Mbarara</u> , <u>Ntungamo</u> , <u>Rukungiri</u>
	13	Kiiga	<u>Kabale</u> , <u>Kisoro</u>
	14	Kampala	Kampala (not sampled)

1.5 Data Collection

A standardized consent form was used to secure the participation of selected individuals. Participation was voluntary, and respondents did not receive any money or compensation for participating. Names were not recorded. Because of the diversity of ethnicity and language in Uganda, 18 teams of 7 experienced staff members were trained to use the various questionnaires and to perform the measurements. Supervisors were trained by WFP centrally in Kampala over five days. Enumerators were trained centrally or at the district level over a three- to four-day period. Training included a general overview on how to conduct interviews and practice sessions with the questionnaire and on taking measurements. Each team reflected the ethnic and language composition of the surveyed areas and presented a diversity of age and gender. Data collection was implemented by two local partners, the Institute of Public Health at Makerere University (northern and eastern regions) and the Faculty of Agriculture at Makerere University (central and western region), under the supervision of WFP.

1.6 Data Entry and Statistical Analysis

Data entry for the household and community questionnaires was operated by Makerere University. Double data entry was used for the household questionnaire. Data entry used an Access database developed by WFP. Statistical analysis was conducted by WFP in Uganda and Rome. Principal component analysis was done using SPSS. SPSS and ADDATI 5.2c were used to conduct PCA and clustering analysis. Nutritional indicators were calculated using EpiInfo EPINUT. All other analysis was done using SPSS.

1.7 Limitations to the Study

While the study was conducted in the most rigorous manner possible, some limitations must be acknowledged.

On representativity: Data were collected to be representative at the sub-regional level (clusters of districts or strata). Strata were created to achieve a relative homogeneity within clusters, but variability within clusters remains high. Data can be used for comparison across strata but not within. As is always the case with large-scale surveys, sampling errors due to multi-stage sampling and ecological fallacy need to be acknowledged in interpreting the results. One should be cautious about drawing conclusions on an individual's food security and vulnerability from aggregated data. Additional research to refine targeting should be conducted before any programmes are implemented.

On the questionnaire: Because of the multiplicity of languages in Uganda, the instruments were not translated into local languages. All the enumerators had to be fluent in both English and the local language of the area surveyed. On-the-spot translation by an enumerator might have caused errors. However, both intensive training on the use of the questionnaire and the relative simplicity of the concepts used contributed to reducing any potential bias or misinterpretation of the questions.

On data collection: Because of the random nature of the site selection, a few areas surveyed were difficult to access, for either logistical (e.g., roads) or security reasons. These concerns may have limited the time available to the enumerators to conduct their interviews. In most cases, however, the interviews were conducted without any time pressure.

On data quality: Inaccurate recall and quantitative estimates may have affected the quality of the results. The enumerators were trained to facilitate such recalls and estimates through various methods (e.g., event calendars, proportional piling). Also, in some cases, social desirability¹² and expectations (e.g., food aid) may have affected the responses and set patterns, especially in areas frequently surveyed, such as northern Uganda. The use of a consent form emphasizing that no direct benefit was to be expected, the anonymous character of the survey and the fact that the survey was not associated with aid programming contributed to mitigate this bias. Information on diseases and other health problems are self-reported and were not necessarily confirmed by medical diagnosis.

On nutritional data: The CFSVA collected nutrition data (anthropomorphic measurements). The sampling procedure did not follow the generally accepted standards of collecting data on all the women and children in a household, often using a 30x30 design. Within a household, only one woman and her children were selected for participation. Some bias toward households with only one mother may appear. Few households, however, had more than one eligible participant (mother) for the nutrition section.

¹² When a respondent answers in a way that he or she thinks will please the interviewer or will result in direct benefits to him or her.

Part 2 - OVERVIEW OF SUSTAINABLE DEVELOPMENT AND FOOD SECURITY IN UGANDA

2.1 General Historical and Political Context

At the time of its independence in 1962, Uganda had many elements of a success story: relatively well developed education and health systems and a strong economy supported by agricultural, textile and copper exports,¹³ as well as an emerging industrial sector. But the country had also inherited a strong north-south divide. Economic mismanagement and political turmoil roughly along ethnic lines quickly undermined the country's potential for development. In 1971, the first president, Obote, was overthrown by Colonel Idi Amin. Over the next decade, the situation further deteriorated. In 1980, Obote returned to power until he was overthrown in 1985 by the UNLA.¹⁴ In 1986 the movement of Yoweri Museveni, the NRA/M,¹⁵ took power from the UNLA, which subsequently took refuge in the northern region (Acholi).

By the time Yoweri Museveni took power, decades of civil war and poor economic performance had plagued the country. Most of the infrastructure and manufacturing sector were decimated, and inflation was raging. The political violence and human rights violations under the Obote and Amin regimes saw more than 300,000 killings. The situation quickly turned around under Museveni's leadership. Changes in macro-economic policies were introduced, including liberalization, diversification and intensification of agriculture toward commercial agriculture and reinforcement of export-oriented economic growth.¹⁶ Results were surprisingly rapid. GDP growth averaged 7% through the 1990s. The share of the population below the national poverty line fell from 56% in 1992 to 35% in 1999,¹⁷ a unique achievement among developing countries. On the political side, Museveni instituted the Movement System, a no-party system that welcomes all who wish to contribute to building the future of the country on a new basis. On the international scene, the transformation of Uganda was unanimously applauded. Uganda was the first country to qualify for the Heavily Indebted Poor Country (HIPC) Debt Initiative and was involved early in the Poverty Reduction Strategy Paper (PRSP) process. The country further benefits from major support from foreign countries.

But the apparent success of Uganda hides numerous challenges to its sustainable development. In the period since Museveni took power in 1986, there have been 14 separate insurgencies in Uganda¹⁸ (see Box 1). Unequal distribution of the benefits of the economic growth dramatically affected the rural poor. Agricultural growth is slower than population growth,¹⁹ a major threat to rural development. The next presidential elections are scheduled for 2006. For the first time in decades, political parties will be allowed to participate. At the same time, the constitution was changed to allow third presidential mandates, therefore allowing President Museveni to participate in a third election.

Box 1 - Violence and Insurgencies in Uganda

Brutal rebel activities in northern Uganda over the last 19 years (the Lord's Resistance Army – LRA) have caused major disruption in the region and the displacement of an estimated 1.6 million people. These people now live in harsh conditions in dozens of squalid camps throughout the countryside. In the west of the country, activities of the Allied Democratic Forces (ADF), and sometimes of Hutu militia, are linked to instability and conflict in neighboring countries (Sudan, Democratic Republic of Congo). Uganda has further been involved in the DRC conflict. In the northeast, Karimojong warriors cause a lot of disruption and insecurity through banditry (with no political motives).

¹³ Xiaobo Zhang, *Security is like Oxygen*, IFPRI, 2004

¹⁴ Ugandan regular army

¹⁵ National Resistance Army / Movement. The NRA insurgency began in 1981 over alleged frauds in presidential elections.

¹⁶ Byrnes, Rita M. (ed.) 1992. *Uganda A Country Study*, Library of Congress: Washington D.C. pp. 49-51

¹⁷ Shenggen Fan, Xiaobo Zhang, and Neetha Rao, *Public Expenditure, Growth and Poverty Reduction in Rural Uganda*, IFPRI, 2004

¹⁸ Liu Institute for Global Issues, May 2005 "Northern Ugandan-Human Security Update: Pursuing Peace and Justice: International and Local Initiatives," Conflict and Development Programme

¹⁹ Based on a calculation by the author of the average growth of the agricultural production index, FAO data form 1990 to 2004

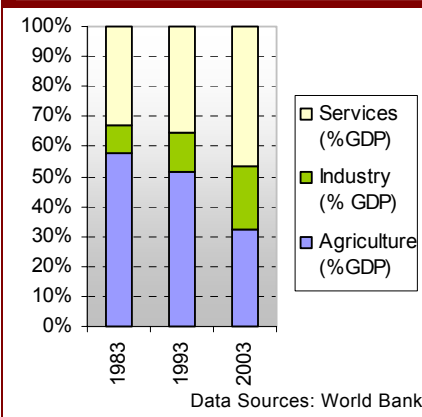
2.2 Macro-Economic Overview

Uganda is among the poorest countries in the world, with a per capita GDP of US\$250 and a per capita GDP PPP²⁰ estimated at US\$1,457, lower than the sub-Saharan countries average. However, in 2005, Uganda qualified as a low middle-income country, ranking 178th out of 208 countries (GNI PPP- World Bank Data). Uganda has seen its GDP significantly increase over the last decade, making it a success story in Africa. Its GDP grew an average of 6.8% from 1990 to 2003. However GDP growth has slowed down in recent years, and in 2002–2003, the GDP grew by only 4.7%.

2.2.1.1 Structure of the Economy and Agriculture

The economic success of Uganda is reflected in the accelerating transformation of the structure of its economy over the last two decades. This structural shift is fuelled by an expansion in the transformation industry (e.g., processing and export of commodities such as coffee, fish and cut flowers) as well as in tourism and services. As a result, the structure of the labour force is also changing. Nevertheless, while agriculture contributed to roughly only 33% of the GDP in 2003, it still accounted for 70% of employment.²¹ 73.9% of households were considered engaged in agricultural activities in 2002, and 68.1% depended mainly on subsistence agriculture. Slow growth and declining terms of trade are the main challenges to the Ugandan agricultural sector

Figure 2.2-1: Structure of the Economy



First, from 1990 to 2003, the value of gross domestic agricultural production rose by only 3.9%, a growth slower than the overall growth of the economy. Agricultural production rose on average by 2.6% from 1990 to 2004 (FAO Index), which is slower than the overall economic growth and slower than the population growth (about 3%). Second, declining terms of trade for agriculture is a major problem. The ratio of food crop prices to other consumer goods prices in the Uganda Consumer Price Index fell by 19% between 2000 and 2003.²² Between 2000 and 2003, farmers' incomes fell and the proportion of farming households in poverty rose from 39% to 49%.²³

2.2.1.2 Trade

Uganda's exports amounted to less than 10% of the GDP in 2003. However, still in 2003, the value of imports was more than twice the value of exports, at 25% of the GDP. In fact Uganda has run a chronic trade deficit since 1979. Furthermore, barter terms of trade²⁴ decreased for Uganda and were at 87 in 2002, compared with the reference year (100) in 1995, likely an indication of the declining terms of trade for agricultural products (e.g., coffee), which represent a majority of exports.

While Uganda has eliminated most limitations on import quantities, tariffs and licenses remain. Additional constraints to international trade include the fact that Uganda is a landlocked country. Nevertheless, membership in free-trade areas such as the Common Market for eastern and Southern Africa (COMESA), IGAD or EAC should foster trade and export growth. Uganda is also part of the Nile Basin Initiative and has adopted the World Trade Organization (WTO) custom-valuation agreement.

2.2.1.3 External Equilibrium

The total external debt of Uganda has more than doubled over the last decade. In 1990 it was US\$2.583 billion. In 2003, it amounted to US\$4.553 billion, roughly 73% of the GNI, and more than the regional average. The present value of the debt in 2003 was equivalent to 33% of the GDP or 241% of the export of goods and services. Most of the debt is public or publicly guaranteed, and two thirds of the debts comprise IBRD loans (at market rate) and IDA credits (concessional rates) as a result of debt-relief programmes (multilateral). Uganda was the first country to qualify for the HIPC Debt Initiative Decision Point, which helped to alleviate the burden of the substantial external debt and to make progress on inflation,

²⁰ Gross national income adjusted for purchasing power parity – World Bank Data.

²¹ Estimated from the Uganda National Household Survey 2002/2003 (UNHS), Uganda Bureau of Statistics (UBOS).

²² *Uganda Poverty Eradication Plan (PEAP)* – Poverty Reduction Strategy Paper 2005.

²³ Ibid.

²⁴ The barter terms of trade are the ratio of the export price index to the corresponding import price index measured relative to the base year.

privatization, and GDP growth in the following years through poverty-reduction activities. As discussed earlier, the chronic trade imbalance of Uganda is likely to explain the country's high external debt. The debt service related to this massive flow of borrowed money has, however, decreased over the last decade, and is currently (2003) at 0.9% of the GNI. In comparison, the government spends about 2% on health expenditures.

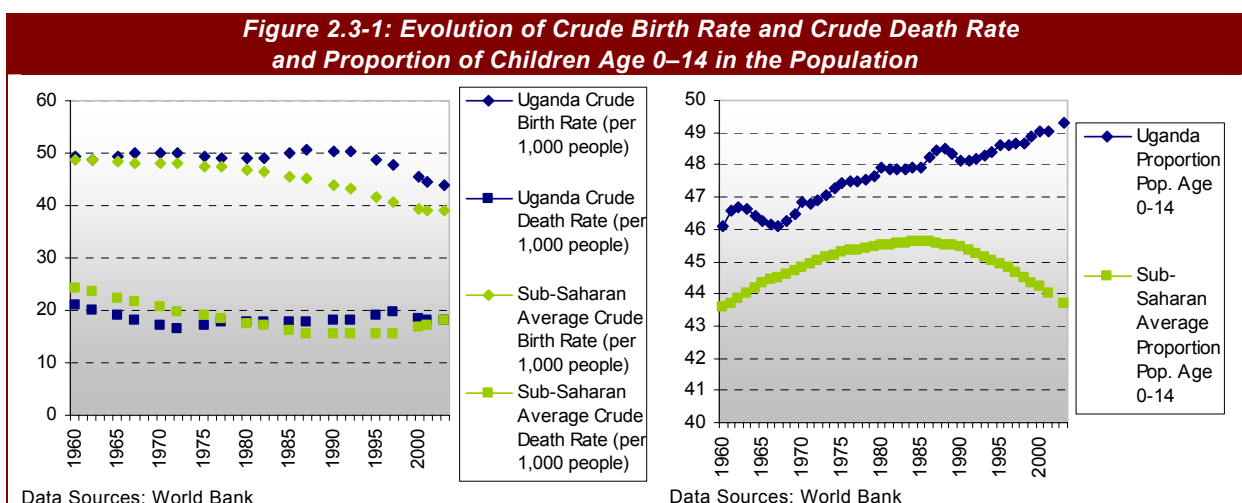
2.2.1.4 ODA and FDI

The Uganda economy is highly dependent on official development assistance (ODA) and official aid, totaling the equivalent of 15.6% of the GNI in 2003, up from 9.9% in 1998. This aid dependency ratio is much higher than the regional average. ODA clearly outpaces foreign direct investment (FDI), which amounted in 2003 to a mere 3.1%. FDI, however, has been growing fast over the last decade and is the main contributor to the total net private capital flow to Uganda. Gross domestic savings amounted to 6.5%. Investments are therefore limited in Uganda, with roughly two thirds being foreign investments.

2.3 Population, Poverty and Livelihoods

2.3.1 Human Capital

2.3.1.1 The Demographic Challenge



Covering an area of about 200,000 km², Uganda has a population of approximately 25.3 million (2002/2003). The population density averages 126 inhabitants per square kilometer, with the north being less densely populated and mostly rural (88% of the population). According to census data,²⁵ the population growth rate averaged 3.4% per year between 1991 and 2002. The latest World Bank estimate is 2.9% for 1990–2003, with a prediction of 2.9% for 2003–2015. The population of Uganda is in fact growing faster than that of the average sub-Saharan country. Uganda is far from having achieved a demographic transition toward low birth rate and low death rate. As Figure 2.2 illustrates, the crude birth rate, at 44 births per 1,000 in 2003, remains higher than the average sub-Saharan country and has only recently begun to decrease. The crude death rate has remained relatively stable over the last few decades, at 18 deaths per 1,000 in 2003. As a result, the population of Uganda is extremely young, with children 0–14 years old representing about half the population, much more than the regional average. This means that an increase in the labour force as a percentage of the total population (e.g., to spur economic development) is not to be expected, as it is at the regional level. Furthermore, the dependency ratio in Uganda remains high for an average household size of 5.1 individuals.²⁶ Life expectancy at birth remains low in Uganda, at 43 years in 2003, a decrease from 1990 (47 years).

Uganda presents one of the most diverse compositions in the world. Thirteen out of the 56 recognized ethnicities represent about 80% of the population and include the Baganda (17.1%), Iteso, Basoga, Banyankore, Banyaruanda, Bakiga, Lango, Bagisu, Acholi, Lugbara, Banyoro, Batoro and Karamojong.

²⁵ UBOS, 2002 op. cit.

²⁶ Ibid.

Ethnicity and a north-south divide have been directly or indirectly associated with the numerous conflicts that have plagued the country over the last decades.

2.3.1.2 Education

Poverty and inequality are both an outcome and a causal factor of low education and low health performance. According to the 2005 Human Development Report, the adult literacy rate is 68.9% (2003) and the combined enrollment ratio (primary, secondary and tertiary) is 74% in 2002/2003, above the sub-Saharan countries average. The Universal Primary Education (UPE) government programme has largely contributed to increasing enrollment in primary schools, but gender disparities still exist. A total of 76% of men are literate versus 61% of women. The number of pupils per teacher in primary education remains high, at 53.

2.3.1.3 Health

Health expenditure in 2003 accounted for only 2.1% of total government expenditure. Public spending on health amounted to 2.1% of the GDP.²⁷ Both figures are higher in neighboring countries such as Kenya, Tanzania and Rwanda, indicating less investment in the health sector in Uganda. This is likely an explanation of the lack of progress in health indicators achieved over the last decade and the earlier-mentioned decrease in life expectancy. Similarly, infant and child mortality have not improved much over the same period, staying at around 81 and 140 per 1,000 live births, respectively,²⁸ among the highest in the world. Maternal mortality indicators have also deteriorated, and the government is currently preparing an Infant and Maternal Mortality Strategy to address this issue.

As in many other African countries, malaria is one of the main causes of morbidity in Uganda. Malaria and fever account for more than half the reported illnesses. Only 11% of the population reported the use of mosquito nets. Respiratory infections were reported at 12%, and intestinal infections or diarrhea at 11%. Diarrhea prevalence is estimated at 1.2%. Yet, because of low accessibility, up to 67% of the population does not use government health facilities.²⁹ According to the World Bank (data for 2002), only 56% of the population has access to safe water and only 43% has access to improved sanitation facilities. Child immunization rates (82% for measles and 81% for DPT) are relatively good, and much higher than the regional average, 61% and 59%, respectively. The main exception to the poor health performance is HIV/AIDS. Uganda is often held up as one of the HIV/AIDS success stories, with the prevalence rate significantly decreasing, from 18.5% in 1992 to 6.2% in 2004.³⁰

2.3.1.4 Nutrition³¹

Child nutrition will be discussed in this section as children are the most vulnerable to malnutrition. Stunting measures the reduction in linear growth as a result of inadequate diet and health.

Table 2.3-1: Child Nutrition Indicators in Rural Uganda

Stunting (<2SD)	Severely stunted (<3SD)	Wasting or acute malnutrition	Underweight children	Anemia (<11g/dl)	Severe anemia	Vitamin A deficiency (<0.7µmol/l).
38.6%	15%	4%	22.5%	64%	7%	27.9%

Stunting and severe stunting are highest in the western region (47.8% and 20.1%, respectively). The prevalence of child wasting or acute malnutrition, measured by the weight-to-height ratio compared with a reference is also high, at 4%, up from 1.9% in 1988—again the highest in the western region (4.3%). Anemia is an indicator of deficiency in iron bioavailability in the average diet. It can also be caused by malaria or parasitic worm infections. Only 57.5% of the children consumed food rich in vitamin A in the six months prior to the survey (DHS). The lowest figure was for the western region, at 48.4%.

²⁷ United Nation Development Programme UNDP, *Human Development Report (HDR)*, 2005.

²⁸ UBOS, *Demographic and Health Survey DHS 2000/2001*.

²⁹ UBOS, *UNHS 2002* op. cit.

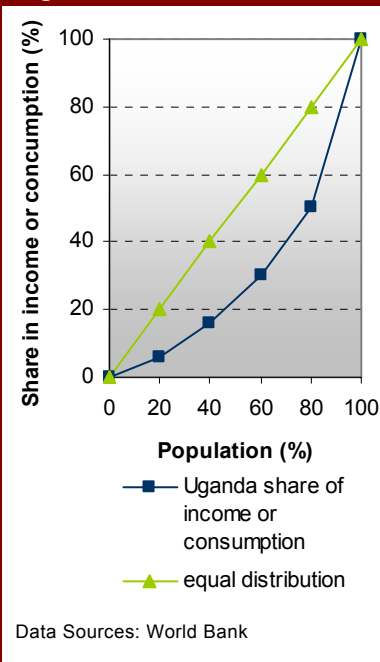
³⁰ UNDP, *Ugandan Human Development Report, UHDR* 2005.

³¹ UBOS, *UNHS 2002* op. cit. Children are <5 years.

2.3.1.5 Poverty and Inequality

Uganda remains one of the poorest countries in the world, both in economic terms and according to human development indicators. According to the 2005 Human Development Report (UNDP), Uganda ranks 144th out of 177 countries on the Human Development Index and just qualify as a medium human development country (based on 2003 data). The Human Development Index is a composite indicator based on health performance (life expectancy), education (enrolment ratio) and the economy (GDP at PPP). The strong economic growth has partially been translated into progress toward sustainable human development and poverty reduction. The proportion of Ugandans living in absolute poverty (Ugandan benchmark) decreased from 56% in 1992 to 35% in 2000. However, since 2000, poverty has risen to 38%. Furthermore, given the rapid population growth, the number of people living in absolute poverty has, in fact, increased since 1992. In addition, poverty is unequally distributed in Uganda, with, for example, 63% of the population in the north living below the poverty line. Looking at the international poverty line, 96.6% of the population lives with less than US\$2 a day and 84.9% with less than US\$1. The poverty gap is also high, at 69.2% and 45.6%, respectively, indicating not only that Ugandans are poor but also that poverty is deep. Income inequality is also very high, with a GINI index of 43% (2003),³² somewhat equivalent to that of Kenya (1997) but with an increase from 39% in 2000.

Figure 2.3-2: Lorenz Curve



The richest 10% of the population's share in income or consumption is 16 times higher than that of the poorest 10% of the population, and this inequality is increasing. This is further illustrated by the shape of the Lorenz Curve for Uganda. The Lorenz Curve shows the distribution of the share of the income/consumption per fraction of the population. For example, the poorest 20% of the population share only 5.9% of all the income/expenditure. The farther away the curve is from the straight line, the more unequal the distribution of income and expenditure. Poor performances in the agricultural sector are likely to be one of the sources of increased poverty and inequality.

2.3.1.6 Urban-Rural and Gender Poverty Bias

Uganda is not a widely urbanized country, with 88% of the population being rural. Strong inequalities exist between rural and urban populations for most human development indicators. Literacy is 30% lower in rural areas, as is access to safe water and the proportion of underweight children (23.65 in rural areas versus 12.4% in urban areas).³³ Recent data³⁴ further suggest that female-headed households in Uganda are not poorer than male-headed households. However, a closer look at the data shows that specific groups of women are indeed poorer. Households headed by widows as well as household headed by married women (husband absent or living with other wife - polygamous) are indeed poorer. Structural reasons are likely to create a gender poverty bias. Female-headed households have less land than male-headed households.³⁵ Women participate in the labour market less and earn lower wages than their male counterparts. Their educational achievement is generally lower than that of men (e.g., 61% of females are literate versus 71% of males). Furthermore, women remain more likely to have HIV/AIDS than men, representing about 60% of the adults living with HIV/AIDS.³⁶

2.3.1.7 Other vulnerable groups and sources of inequality

Orphans: An estimated 14% of children under 18 have lost at least one parent, and 3% have lost both. Loss of one parent is often due to HIV/AIDS (for 20%) or to conflict-related issues. Orphans are usually

³² UBOS Data.

³³ UNDP 2005, op. cit.

³⁴ UBOS; UNHS 2002/3, op. cit.

³⁵ PRSP, 2005, op. cit.

³⁶ UNDP, 2002, Uganda Human Development Report, 2002, The Challenge of HIV/AIDS, Maintaining the Momentum of Success.

taken care of by family members or relatives, but while few studies exist, it is suggested that orphans usually start working earlier than other children, and male orphans are poorer than the national average.³⁷

IDPs and Refugees: Decades of conflict in various regions of Uganda, and in neighboring countries, have created massive population movements and disruption of the socio-economic fabric. In the northern districts of Gulu, Kitgum and Pader, virtually all the population lives in camps under extremely harsh conditions. The conflict with the LRA has created an estimated 1.6 million IDPs. Further displacement takes place due to banditry in the Karimojong area, often reinforced by migration due to droughts. Displacement caused by insecurity is a major source of vulnerability for the affected households. Another estimated 185,000 Sudanese have sought refuge in the north (mainly northwest). The conflict in eastern Congo (DRC) has also displaced about 20,000 refugees into western Uganda.

Regional Disparities: As outlined in various sections of this discussion, achievement toward sustainable human development shows great disparities across regions of Uganda. Typically the northern region has performed the worst (66% of the population lives under the poverty line there), while the central region is the main driving force of development.

HIV/AIDS: As in many countries, HIV/AIDS is likely to be a source of vulnerability for affected households, for example because of the human and financial burden of taking care of affected individuals.

2.3.2 Governance and Social Capital

Over the last decade, Uganda has made significant progress toward democracy. The presidential election of 2001 was generally seen as fair, albeit in a no-party system, by the international community. Despite numerous discontents at the national level, the High Court validated the result. Yet, more needs to be done. According to the 2005 Freedom Index,³⁸ Uganda's score for political rights and civil liberties is, respectively, 5 and 4, on a scale of 1 to 7 (with 1 being the highest level of freedom and 7 the lowest). Overall, the country is classified as relatively free. The advent of multi-party country elections through a referendum in 2005 is seen as major progress toward political liberties. However, the recent constitutional amendment to remove presidential term limits, political pressure against opponents and the announced candidacy of President Museveni to his own succession are all seen as serious concerns. In the recent months, freedom of the media has been constrained for "national security" reasons, and has included the arrest of journalists. Civil-society groups are still administered under the nongovernmental organization (NGO) Act and are subject to control through registration requirements.

Corruption remains a major constraint and is rampant in Uganda. According to the 2005 Corruption Perception Index (CPI),³⁹ Uganda ranks 117th out of 159 countries, with an overall score of 2.5, lower than the average for Africa (2.86) and much lower than the world average (4.11). Concerns about corruption and misallocation of resources have, for example, led to a temporary withdrawal of the Global Fund from Uganda. The Global Fund recently announced that Uganda would again qualify to access funds given the steps taken by the government to remodel the administration in charge. Relatively poor performance in corruption is also seen in the World Bank's Governance Research Indicator Country Snapshot (GRICS).⁴⁰

Table 2.3-2: Uganda GRICS Score, 1996–2004

	2004		1996	
	Score	Percentile	Score	Percentile
Voice and accountability	-0.64	30.6	-0.77	24.2
Political stability	-1.27	10.7	-1.47	10.3
Government effectiveness	-0.43	38.5	-0.38	43.8
Regulatory quality	0.07	54.7	-0.02	54.1
Rule of law	-0.79	25.6	-0.76	33.7
Control of corruption	-0.71	30.0	-0.92	18.9

Scores range between -2.5 and 2.5, with the higher being the better score Percentile: 1–100, indicates the % of countries that perform the worst Source: World Bank Data

Globally, the GRICS index shows relatively low performances. Only 10.7% of the countries performed worse than Uganda on political stability, and 18.9% and 24.2% for control of corruption and voice and accountability, respectively. Rule of law is also relatively poor, which likely indicates a lack of independence and poor performance by the judicial system. However, for all the indicators except government effectiveness and rule of law, performances improved between 1996 and 2004.

³⁷ PRSP, 2005, op. cit.

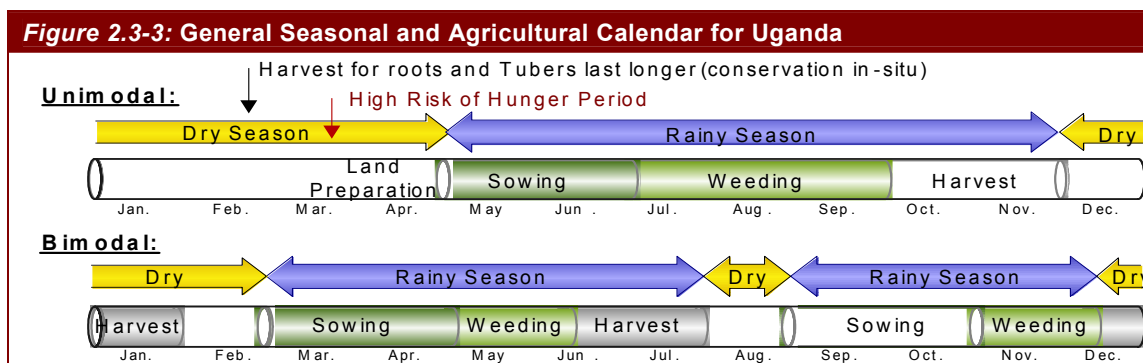
³⁸ www.freedomhouse.org

³⁹ The CPI is compiled by Transparency International, see www.transparency.org

⁴⁰ See <http://www.worldbank.org/wbi/governance/bycountry.html> for 2004 data.

2.3.3 Natural Capital and Agricultural Production

2.3.3.1 Climate and Agricultural Calendar



Two rainfall systems can be distinguished: unimodal in the north, and bimodal in the rest of the country. In the north, rainfall ranges between 900 and 1,300 mm per year. The northeast is more sensitive to drought. The longer dry season influences the range of crops cultivated (e.g., not favorable to banana). It further creates a higher vulnerability to seasonal hunger and supports extensive cattle rearing. In the rest of the country, the bimodal distribution of rain allows for two harvests per year. Rainfall is slightly higher, ranging from 1,200 mm to 1,500 mm per year and is well distributed. Temperature does not vary widely throughout the year or geographically, with an average temperature of 25°C.

2.3.3.2 Land

Uganda is often described as having some of the most fertile land in the region. According to FAO, about one quarter of the land in Uganda is considered agricultural land, at 5.1 million hectares and another 2.1 million hectares under permanent cultivation. Only 9,000 hectares are irrigated. There is therefore a lot of potential for agricultural extension. Yet, land degradation, including erosion and loss of fertility, challenge this common assumption. The economic cost of erosion has been estimated at 11% of the GDP,⁴¹ and constitutes a major obstacle to sustainable development. While land availability is not a problem at the macro level, regional disparities exist. In the western, central and eastern regions, demographic pressure leads to fragmentation and exploitation of marginal lands. In the north, insecurity has limited access to land.

Land tenure is organized into four systems:

1. customary: traditional system ranging from individual to communal ownership;
2. leasehold: 49- to 99-year lease;
3. freehold: individual ownership, often leads to fragmentation of the parcels due to inheritance; and
4. mailo: limited form of freehold that recognizes tenants' rights.

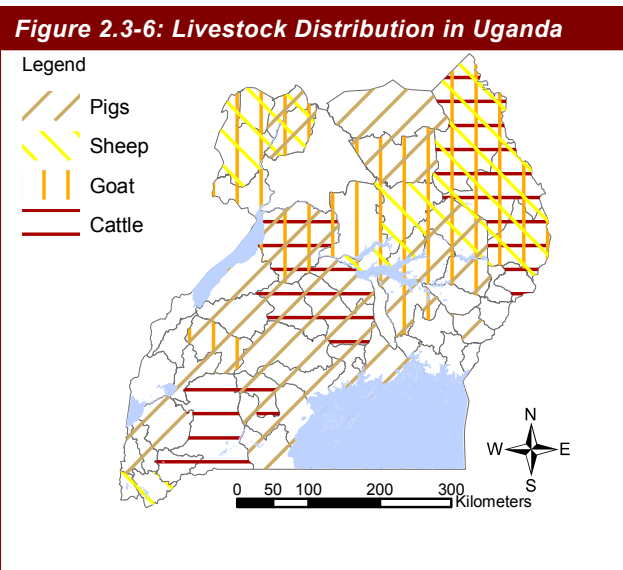
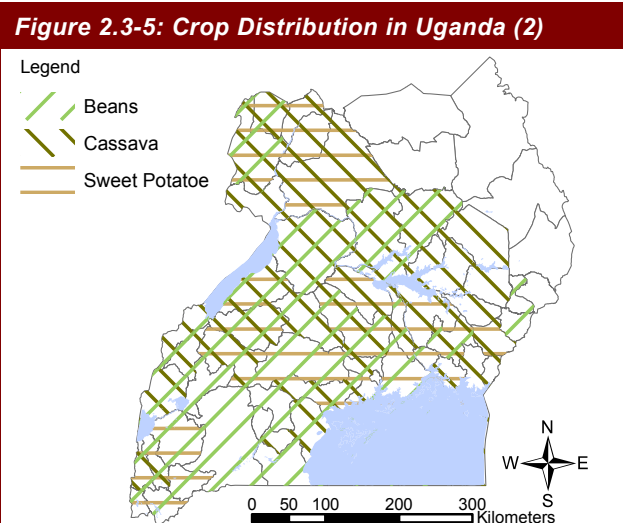
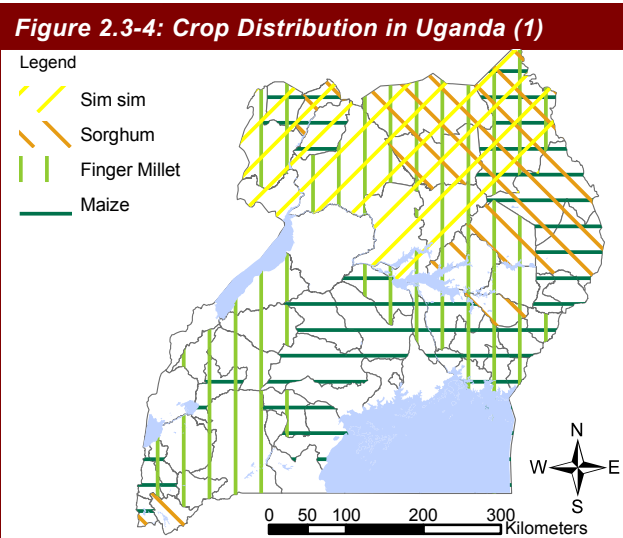
⁴¹ Yaron, Moyini et al. *The Contribution of Environment to Economic Growth and Structural Transformation*, ENR Working Group, PEAP 2003.

2.3.3.3 Agricultural Production

As outlined in the previous section, agriculture is a major component of the Ugandan economy, accounting for about 33% of the GDP and over 70% of employment. According to FAO data, agricultural production, measured by the Agricultural Index, rose on average by 2.6% from 1990 to 2004, which is slower than the overall economic growth and slower than the population growth (about 3%). Overall productivity is low-subsistence oriented and includes little use of inputs (e.g., improved seeds, fertilizers, and mechanization). While the country is self-sufficient at the macro-level,⁴² this trend is a serious threat to future food security. Furthermore, geographic distribution of food availability is highly unequal. In the south, banana, cassava and sweet potatoes are planted and harvested year long. In the north, the irregular and unimodal character of the rainfall pattern leads to the cultivation of more drought-resistant annuals, such as sorghum, finger millet, simsim and cassava. Cash crops include tobacco and cotton. Overall, during the first season of 2002,⁴³ 93% of the agricultural plots were used to cultivate bananas (matooke), beans, sweet potatoes, coffee, groundnuts, simsim, sorghum, finger millet and maize. Only 6% of the plots were used for other crops.

Figure 2.3-4: Crop Distribution in Uganda (1) and Figure 2.3-5: Crop Distribution in Uganda (2) presents maps of the geographical distribution of the main agricultural production in Uganda. These maps were derived using self-reported information on agricultural production from the agricultural module of the 2002 census. The areas are composed of the districts with the highest three quintiles of number of plots per household for each crop for the first season of 2002. It is important to note that these are based on actual area planted and not on agro-ecological potential. In the northeast, for example, tubers are rarely cultivated for security reasons (they are stolen from the field), as well as for agro-ecological limitations in some areas.

Similarly, Figure 2.3-6: Livestock Distribution in Uganda is based on FAO data and represents the districts with the highest three quintiles of number of animals within each household. Ownership of fowl (poultry, duck, etc.) is not represented but is generally more widespread in the northeast. It is also in the northeast that ownership of cattle is the highest.



⁴² See for example food balance sheet produced by FAO for 2002 and after.

⁴³ UBOS, *Agricultural module of the 2002 Census*.

2.4 Poverty Reduction and Food-Security Public Policies

Since 1997 and the Local Government Act, Uganda has undertaken a process of decentralization toward local governments at the district level. There are currently 56 districts with an additional 11 proposed. Under this framework, the main role of the central government is the formulation of national policies and the monitoring of implementation of those policies and of standards. Ministries further provide technical advice to the local authorities. Among the initiatives of the central government toward poverty reduction and food security are:

1. The Poverty Eradication Action Plan (PEAP). The PEAP is revised every three years. The current PEAP emphasizes five components: (1) economic management, (2) improved production, competitiveness and incomes, (3) security, conflict resolution and disaster management, (4) good governance, and (5) human development.
2. The Plan for Modernization of Agriculture (PMA) The PMA is one of the frameworks designed by the government to implement the PEAP. It focuses on the transformation of agriculture from subsistence to commercial and on increased rural incomes.
3. The National Agricultural Advisory Service (NAADS)⁴⁴ seeks within the PMA framework to facilitate the transfer of knowledge and information to farmers through a local demand-driven system.
4. An integrated Food Security and Nutrition Strategy has been published (March 2005) and is currently being implemented.

The PEAP is recognized by the World Bank and the International Monetary Fund (IMF) as the Ugandan PRSP. Furthermore, Uganda is a pilot country for the World Bank's Comprehensive Development Framework and was the first country to receive debt relief from the World Bank and the IMF under the HIPC Debt Initiative.

⁴⁴ www.naads.or.ug

2.5 Sources of Food Insecurity and Vulnerability

Based on the above discussion, the following factors of vulnerability can be identified:

- Socio-Political**
 - Ethnic and religious diversity⁴⁵
 - History of conflict (ADF, LRA), including regional conflicts and those among pastoral communities
 - Poor governance performance and political instability (2006 elections)
 - Corruption
- Population**
 - Demographic growth, high dependence ratio and population of 0–14 years
 - High density leading to pressure on natural resources in some areas
 - IDPs (1.6 million) and refugees (185,000 from Sudan, 20,000 from DRC)
 - Life expectancy low and worsening
 - Health: high infant mortality rate
 - Education: high pupil-to-teacher ratio
- Social**
 - Rising poverty (in absolute numbers) and inequality
 - Only 52% with access to improved water sources
 - Poor access to education
 - Poor access to health services
 - Limited access to market for both purchase and selling of goods. Lack of information leads to poor terms of trade at the farm level
- Economic**
 - Slowdown in economic growth
 - Structure of the economy: ongoing structural transformation but little change in employment, which remains predominantly agricultural
 - Low terms of trade for agriculture
 - Dependence on foreign aid
- Agriculture**
 - Low productivity (rain fed, subsistence oriented)
 - Land tenure system leading to smaller plots, while vast tracts of land go unused
 - Low level of technology and use of inputs, including improved seeds
 - Low access to extension services
 - Limited added value to agricultural production (e.g., transformation)
- Environmental**
 - Deforestation and land degradation due to demographic pressures and/or IDPs
 - Overuse of rivers and lakes (fishing)
 - Rainfall pattern (drought)

The rest of this work will attempt to examine the influence of these factors at the household level. The first part will consist in a descriptive analysis of the survey results. Then we will attempt to create households profiles first based predominantly on the access dimension of food security and second on the livelihood dimension. A causal analysis of food security at the household level will be explored. Finally, key findings will be summarized and lead to recommendations.

⁴⁵ Risk factor identified by CIFP– *Uganda, A Risk Assessment*, Country Indicators for Foreign Policy, 2005.

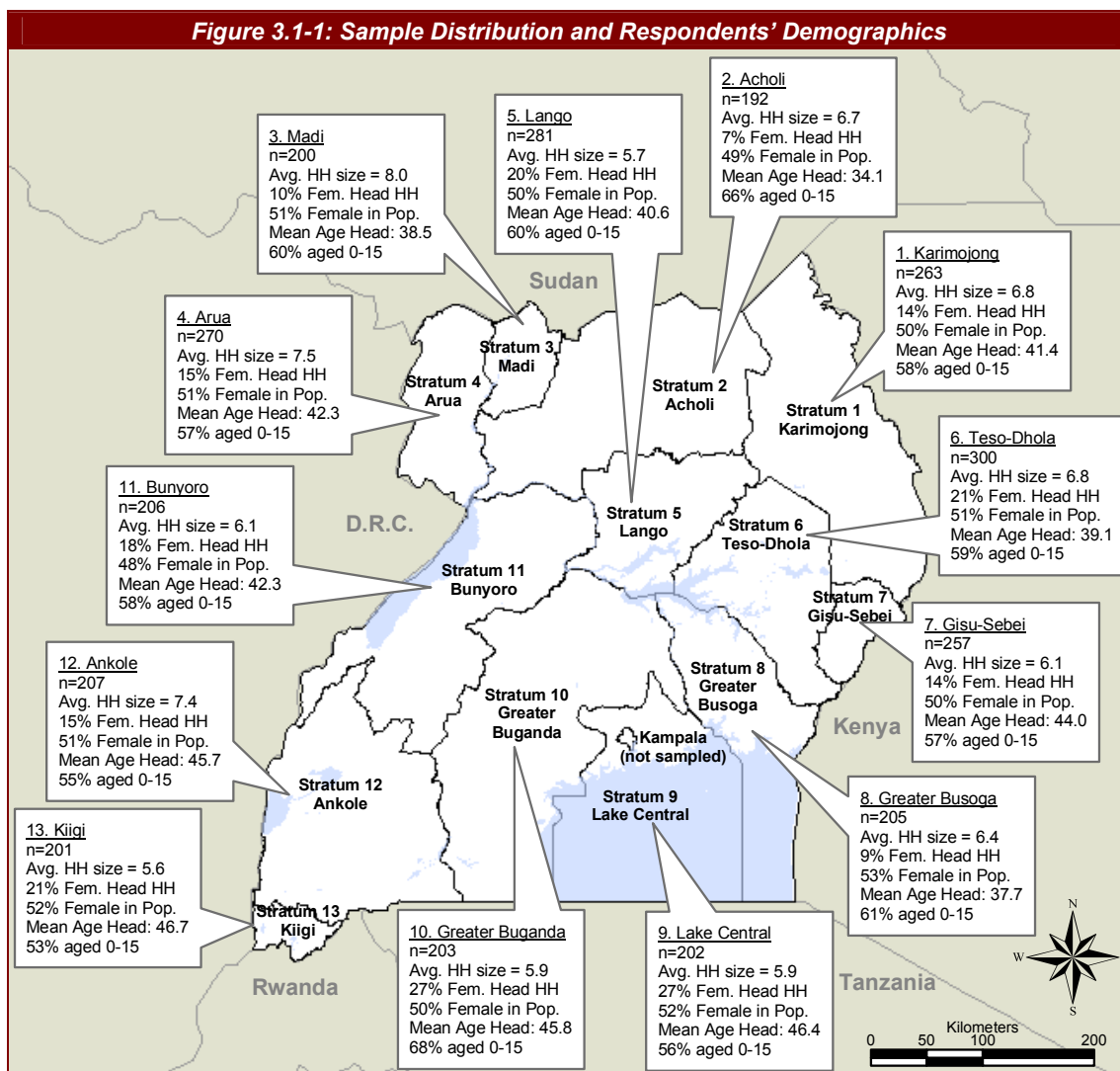
Part 3 - SURVEY RESULTS

This section presents a descriptive analysis of the findings of the household- and community-based questionnaires. It is organized into themes, or factors, as they relate to food insecurity and vulnerability as illustrated in Figure 1.2-1: Food Security and Vulnerability Conceptual Framework. In this section we will successively explore (1) livelihoods, (2) food access, (3) food availability, (4) shocks and coping mechanisms, and (5) food utilization and nutritional status. Based on those data, household profiles will be developed and discussed in Part 4. The margin of error associated with the data presented is within 3%. Analysis was weighed to provide regional and national averages.

3.1 Demographics of the Respondents

3.1.1 Size and Composition

A total of 2,987 household interviews were conducted during the data-collection process. Figure 3.1-1: Sample Distribution and Respondents' Demographics summarizes demographics information. The average household size was 6.5 individuals, slightly above the findings of the 2002/2003 UNHS but consistent with census data. Households were remarkably larger in the northwest (strata 3 and 4, at 8 and 7.5, respectively) and in the west (strata 12, at 7.4). Households were smaller in the Greater Buganda and Lake Central area (5.9). Percentage of female-headed households averaged 18% but varied widely and was the highest in the central region (Lake Central and Greater Buganda, at 27%). Based on the household composition information, the female-to-male ratio in the population is close to 1:1, with slightly more women than men.



The population was further found to be very young. The 0–15-year-olds represented on average 59% of the population. This was even higher in the Acholi stratum, where the 0–15 represented up to 66% of the population. This is likely an outcome of the conflict that caused a demographic gap among the 20–29-year-olds.⁴⁶ The 0–15 fraction of the population was also found to be very high in the Greater Buganda strata, possibly as a result of the HIV/AIDS pandemic that has dramatically affected that region. As a result, the dependency ratio is higher in those areas. The majority (78%) of the household heads described themselves as being in marital relationships (married or partnered). Another 12% declared themselves to be widows or widowers. Among all the households, 18% were in polygamous relationships. Polygamy was more prevalent in the northern and eastern regions.

3.2 Livelihood Groups

One of the objectives of the CFSVA was to describe household food insecurity and vulnerability based on household characteristics rather than attempt to rank and cluster geographically different situations of food insecurity. As our conceptual framework illustrates in Figure 1.2-1: Food Security and Vulnerability Conceptual Framework, households' livelihood strategies have a direct impact on food availability, food access, and ultimately food security. Selected information collected through the household questionnaires was used to group households into livelihood categories.⁴⁷ Livelihood groups and geographic clusters will be used to frame our discussion of the various dimensions of food security explored hereafter.

3.2.1 Analysis Methodology of Livelihood Data

Multivariate statistical techniques — principal component analysis (PCA)⁴⁸ followed by cluster analysis⁴⁹ — were conducted to analyse simultaneously variables related to livelihoods and to group (cluster) together households that shared a particular livelihood pattern. Six main sets of answers from the household questionnaire were used:

1. What do you or members of your households currently rely on to sustain your life?
2. What are your household's main income activities throughout the year?
3. Information on food sources (own production; hunting, fishing, gathering; purchase; gift, borrowing; food aid).
4. Animal ownership (logarithm for normalization).
5. Variety of crop production (four categories – cereals, pulses, roots and tubers and cash crops), (logarithm for normalization).
6. Percentage of crop production that is self-consumed (three categories – cereals, pulses and roots and tubers).

Thirteen components were obtained by the PCA. Those thirteen components maintained 50% of the variance of the original data set, which is above the generally accepted level (40%). Cluster analysis was conducted on those 13 components and led to the identification of 11 livelihood groups.

3.2.2 Livelihood Groups Description

Based on the methodology just described, 11 groups of households characterized by their different livelihood patterns were identified. While nearly all the groups, with the exception of the IDPs, depended largely on agriculture to sustain their lives, distinctions could be made based on secondary (and sometimes principal) activities. These 11 groups are briefly described below. A more detailed description will follow the discussion of the survey results. Most livelihood groups are present in the entire country; the geographic distribution mentioned in the table indicates the stratum where an important fraction of the communities use that livelihood. Figure 3.2-1: Geographic Distribution of Livelihood Groups, maps the geographic distribution of livelihood groups. Figure 3.3.10 shows the differences between the groups

⁴⁶ See for example northern Uganda IDP Study by FAFO, forthcoming. http://www.fafo.no/ais/africa/uganda/Uganda_ppt_pres.pdf

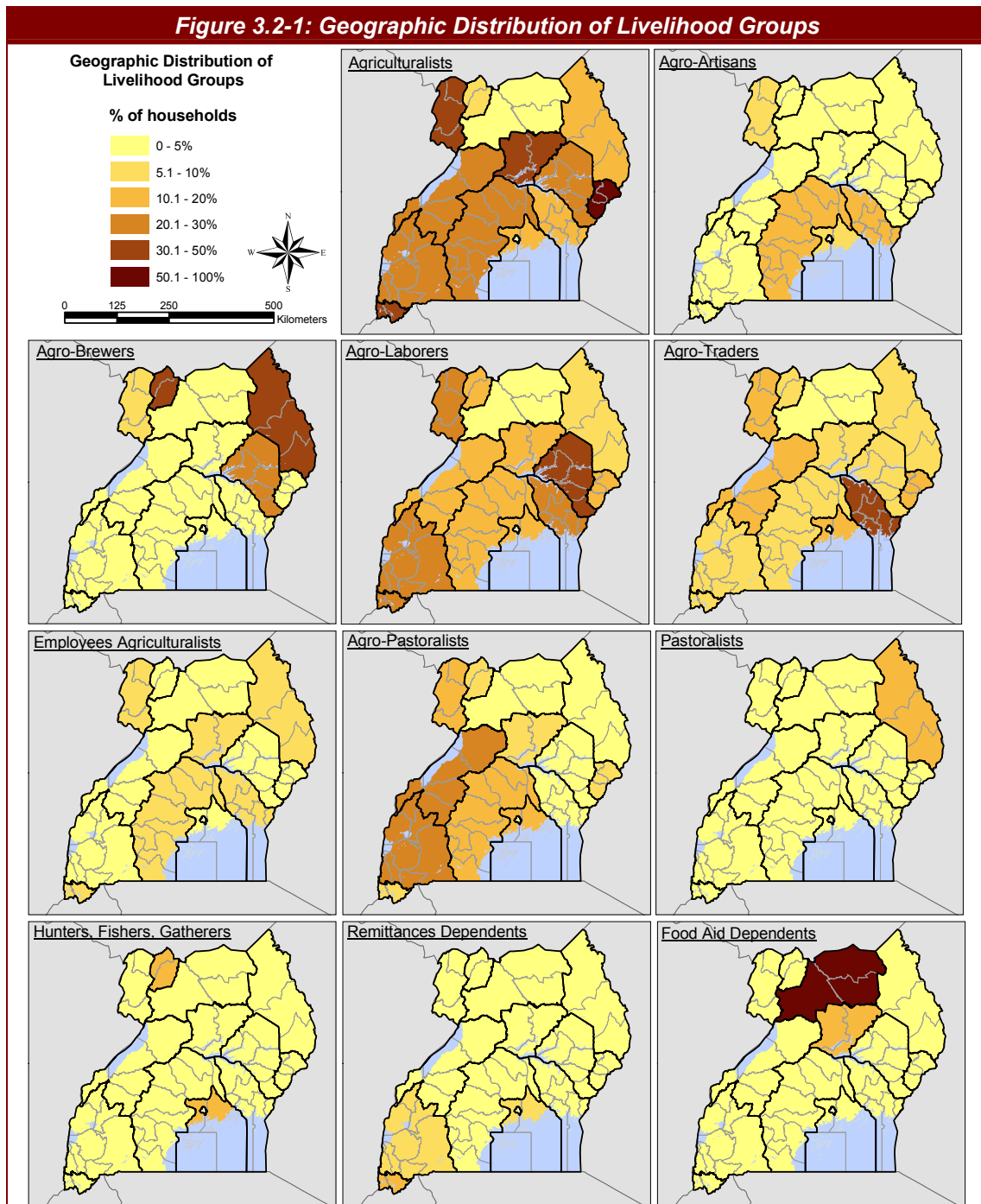
⁴⁷ An as-yet-unpublished livelihood zoning study initiated by the Ministry of Agriculture, FEWS, WFP and other stakeholders was made available at the time of analysis of the data. However, that initiative focuses on cropping patterns. The livelihood analysis proposed here, on the other hand, focuses on the activities and means used by households to sustain their lives.

⁴⁸ PCA conducted with SPSS. Rotation method is varimax with Kaiser Normalization. For a detailed discussion of Principal Component Analysis, see WFP, 2005

⁴⁹ The advantage of running a cluster analysis on principal components and not on the original variables is that we cluster according to the main dimensions of the underlying variables. Usually one of the main purposes of PCA is to reduce the dimensionality of the data set, removing principal components that have little explanatory power.

Table 3.2-1: Household Livelihood Groups

Livelihood Group	% of HH in the sample (n=2987)	% of HH in the population (weighted)	Short Description	Geographic Distribution
1. Agriculturalists	26% (n=775)	26%	Agriculturalists live nearly exclusively off agricultural production, both for self-consumption and crop sale (about the only source of income).	All regions
2. Agro-Artisans	4% (n=130)	6%	Agro-Artisans' main source of income is from skilled labour (artisan). Agricultural production remains an important source of income and is also used for self-consumption.	Mainly Greater Buganda, Central Lake, Greater Busoga
3. Agro-Brewers	11% (n=323)	7%	Agro-Brewers are agriculturalists with low incomes complemented by brewing activities as well as sale of natural resources (e.g., firewood).	Mainly Karimojong, Teso-Dhola and Madi
4. Agro-Labourers	19% (n=558)	21%	Agro-Labourers have a similar profile to those, with higher income from agricultural activities. Their income is complemented by earnings from unskilled labour (e.g., agricultural work). The higher income also leads to a higher role of purchase in their food source.	All regions except Karimojong and Acholi (fewer than 6% of the households there)
5. Agro-Traders	10% (n=295)	11%	Agro-Traders have high income earned mainly through the sale of crops and through other trading and commercial activities. Purchase is an important source of food.	Arua, Busoga, Central Lake, Buganda, Bunyoro
6. Employees Agriculturalists	5% (n=152)	5%	Employees Agriculturalists have a high income earned mainly through wages and salaries (employees). Their livelihood also includes additional income and self-consumption from their agricultural production.	All regions (few)
7. Agro-Pastoralists	9% (n=275)	12%	The Agro-Pastoralists have a similar profile to that of Agriculturalists, but their overall income is generally higher and includes earnings from the sale of animals and animal products. They own goats, sheep, pigs and cattle.	Mainly Arua and central and western region, except Kiiga
8. Pastoralists	1% (n=32)	0.4%	The Pastoralists have a similar profile to that of Agro-Pastoralists but their animal raising is more intensive. They earn less from crop sales, although they do have access to land. They own sheep, goats, bulls and cows in larger quantities.	Mainly in Karimojong strata. Some in Teso-Dhola.
9. Hunters, Fishers, Gatherers	4% (n=116)	3%	Hunter, Fishers, and Gatherers are agriculturalists with low income complemented by various activities. They are the only group who depends on hunting, fishing and gathering as food sources. That source is complemented by purchase. They consume little from their own production.	Mainly Madi and Lake Central
10. Remittance Dependents	3.5% (n=106)	4%	Remittances and kinship are main sources of income for this group. Gifts and borrowing is an important source of food as well.	Mainly Kiiga and Lake Central. Few in all regions.
11. Marginal livelihoods	7% (n= 222)	5%	Households with marginal livelihoods depend mainly on external assistance to sustain their lives. They own land but generally small parcels. They own few or no animals. Their income activities are varied but generally bring very little income.	Mainly Acholi; some in Lango strata



3.2.3 Demographics of Livelihood Groups

Looking at the demographics of the different livelihood groups yields interesting findings. Female-headed households were found to be significantly more numerous among the Remittance Dependents than in other groups ($p < 0.005$), with 45% of female-headed households belonging to that group. The household size of the Hunters, Fishers and Gatherers and Remittance Dependents was significantly lower ($p < 0.005$) than those of the other groups, at 5 individuals per household, for a national average of 6.5. Inversely, household size of Agro-Pastoralists was significantly ($p < 0.005$) larger, at more than 8 individuals per household. A similar trend was observed among Pastoralists, but the sample size is not sufficient to detect a significant difference. Finally, the average age of the household head was found to be significantly higher than other groups among Remittance Dependents, at 52.5 years. This is likely to explain the higher number of female-headed households and the smaller household size. Inversely, the age of the household head was found to be lower among Fishers, Hunters and Gatherers than among other groups, at 35, which also could explain the smaller household size among that group.

3.3 Socioeconomic Characteristics

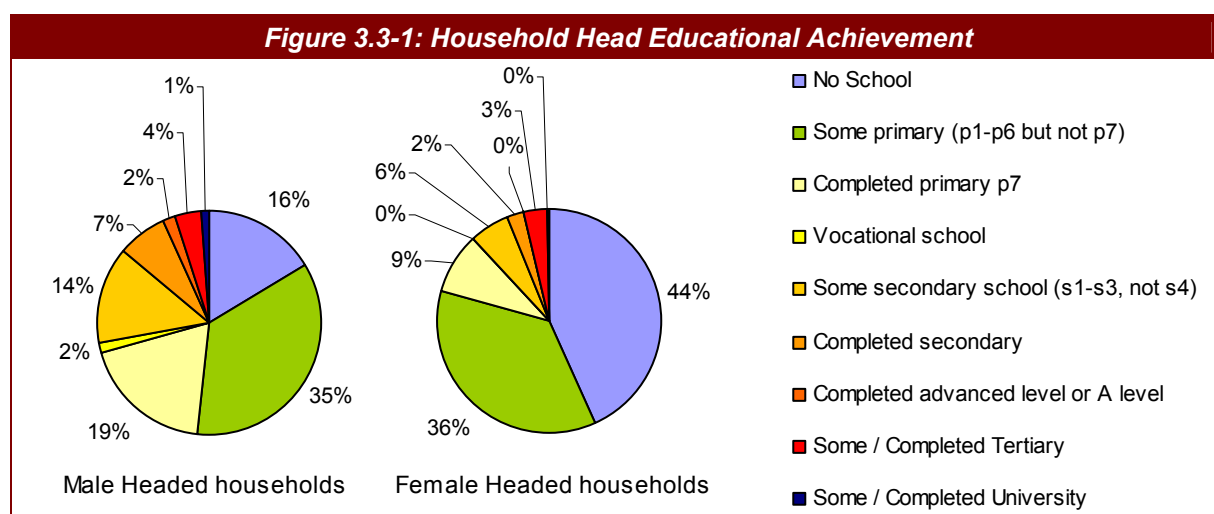
In this section, variables related to food access are explored both in terms of geographic distribution and variation among livelihood groups.

3.3.1 Education

Education is a critical dimension of sustainable human development, affecting the ability of a household to access food. Households were asked about the level of education of the household head and spouse as well as the enrollment in primary, secondary and university education of the children in the household. The official primary school age is 6–12. Secondary education is for children aged 13–18. It is important to note that the gross primary school enrollment ratio reported here is the ratio of the number of children enrolled in primary school (regardless of age) to the number of children aged 6–12. The same definition applies for the gross secondary school enrollment ratio.

3.3.1.1 Literacy

Respondents were asked about the literacy status of the head of the household and his/her spouse. On average, 75% of the household heads were identified as being able to read and write simple messages. However, among female-headed households, only 51% of the heads were able to read and write simple messages. Lower literacy among women was further illustrated by the fact that only 52% of the spouses of household heads were able to read and write simple messages. A similar trend was observed when looking at educational achievement. Figure 3.3-1: Household Head Educational Achievement, presents the national aggregated data on educational achievement of household heads. Overall, 21% of the household heads never attended any type of formal education. Disaggregating by gender, 43.1% of the female heads of household never attended school, while 16.3% of the male heads of household never attended school. Also, 30% of the spouses never attended school.



In terms of livelihood, education was found to be lower among Remittance Dependents, which is likely explained by the higher proportion of female-headed households in that group as well as among Pastoralists. Employees Agriculturalists were found to be the most educated, with 96% of the heads of those households having, at the minimum, completed primary education. Education was also higher among Agro-Traders and Agro-Artisans, with at least 67% of heads having completed primary school, compared with 43% for the national average. Geographically, education and literacy status varied and were found to be highest in Greater Busoga, Lake Central and Greater Buganda areas (central region and bordering) and lowest in the Karimojong area.

3.3.1.2 Access to Schools

The ability of and constraints facing households to access primary school education were assessed through the community questionnaire. About half the communities sampled had a primary school on location (in the village). The average time needed to travel to school was 15 minutes, for an average distance of roughly 2 km. Distances were found to be generally longer in the central and western regions, as well as in the Karimojong and Arua strata. For all the clusters, constraints to access school were mainly financial hardship (cost for uniforms and school fees), lack of infrastructure and lack of qualified teachers. In the northern and

western regions, the lack of interest of parents and children was also frequently mentioned, indicating that education is not seen as a priority. The Lake Central stratum was specific because it is composed of many islands. For the island communities, distance to school is the farthest, which often causes children to go to expensive boarding schools.

3.3.1.3 School Enrollment and Absenteeism

Findings from the household questionnaire indicate that a high percentage of children aged 13 or older are still enrolled in primary school. Gross primary school enrollment is over 100% in all the clusters and averages 122.7%. However, the causes of delay in primary education were not explored in this survey.

Table 3.3-1: Gross Enrollment Ratio

	% Gross Enrollment
Primary School Gross Enrollment	127
Secondary School Gross Enrollment	29

Gross primary enrollment was lowest in the Karimojong area (still 99%). Overall, 73% of the households had children enrolled in primary school, with on average 2.8 children enrolled per household. The number of households with children enrolled was lowest in the Karimojong area (only 55% of the households). The overall high number of children enrolled illustrates the importance of the population aged 0–15 in Uganda.

Table 3.3-2: School Attendance and Reasons for Missing School

School missed for 1 week over last 6 months	Reasons for missing school						
	Sickness	Lack of money	Work	Sibling care	General	Refuse to go to school	Insecurity
35%	67%	67%	8%	5%	1%	6%	2%

Work-related absenteeism was especially a problem in the northern and eastern regions. For 6% of the households, children simply refused to go to school, likely a reflection of the lack of importance given to education by adults. Insecurity was a problem in the Lango and Teso-Dhola regions. While the Acholi region is generally considered more insecure, there was less absenteeism there because schools are generally found within IDP camps, where most of the population lives, and possibly because of the presence of school feeding programs operated by WFP. Enrollment was not assessed by gender. However, findings from the community questionnaire do not suggest a strong gender bias in terms of access to primary education.

Among livelihood groups, since Hunters, Fishers, Gatherers have smaller households; they also have less children aged 6–12 and moreover, a smaller proportion of children are enrolled. The other groups showed little differentiation with regard to enrollment. Reasons for absenteeism were also relatively similar across livelihood groups, except that work-related absenteeism was higher among Agro-Artisans and Agro-Traders. In those groups, work of different types was the reason for absenteeism in 20% of the households, compared with 13% for the national average. Among those two livelihood groups, it is likely that children contribute more often to adults' work.

The gross secondary enrollment ratio is relatively low, averaging 29%. The ratio was highest in the central region, Lake Central and Greater Buganda region, with gross secondary enrollment at 38% and 39%, respectively. It was the lowest in the northern region, especially Karimojong and Lango, 11.3% and 14.4%, respectively. Few households had children enrolled at the university level (average 2%), but those that did were located predominately in the central and western regions.

3.3.2 Health

In the absence of collection of diagnosed information on members' health status from the selected households, the assessment of the health status must be cautious. It is, however, an important factor that can affect both food utilization and food access.

3.3.2.1 Chronic Illnesses, Disability and Mortality

The reported figures for disability, chronic illness and death in the household within the last 6 months are high, with an average of 30% of households reporting at least one member with a disability and 10% reporting the head of the household being chronically ill. Death of a household member was reported by 10% of households. Chronic illness showed no specific distribution geographically or among livelihood groups. However, death was more frequently reported in the Acholi cluster, at 20%, two times higher than the national average. Death was also found to be higher among two livelihood groups: Marginal Livelihoods,

located mainly in the Acholi region and Remittance Dependents. These figures could imply a relatively important strain on the household (e.g., time and financial resources used to take care of the sick and disabled, reduced manpower). The nature of the chronic diseases and disability were self-reported and provided no conclusive information in the absence of a medical diagnostic.

3.3.2.2 Main Health Problems

Findings from the community questionnaires give a general overview of the main health problems reported by communities. Among the adults and in all clusters, malaria was identified as the main issue. The second and third main issues most frequently reported among adults are diarrhea and respiratory infections (although this may often have been simply cough). The same applies for children with in addition frequent reported skin diseases. Again, in the absence of a diagnostic, interpretation of those data must be cautious and are only illustrative. Malnutrition was mentioned as a health problem only among adults in the Karimojong stratum. Among children, malnutrition was more frequently reported in the northeast (Acholi and Karimojong) as well as in the western region. HIV/AIDS and/or other sexually transmitted diseases were identified as problems among adults in most regions except the northwest (Arua, Madi) and to a lesser extent in the Lango and Gisu-Sebei (with HIV/AIDS mentioned by some communities). Lack of awareness is likely to explain those figures. HIV/AIDS was seldom mentioned when respondents were asked about health problems among children.

3.3.2.3 Access to Health Facilities

Additionally, the ability and constraints to accessing health facilities were explored through the community questionnaire. Among the selected communities, the average traveling time and distance to a health facility was roughly 47 minutes and about 5 km. However, 30% of the communities had access to a health facility on location (in the village). Distance to a health facility was more than 5 km for one quarter of the communities, and traveling time was more than 1 hour for one third of the communities. Distances were found to be generally longer in the western region as well as in the Karimojong, and Gisu-Sebei strata. In all the clusters, health facilities functioned regularly, and basic health consultation and antenatal care were free of charge (except for drugs). Nevertheless few strata had doctors on location. The main constraints associated with the health services in all the clusters were lack of drugs and lack of qualified practitioners (resulting in long lines at the health facilities). Where the distance to the facility was the longest (see above), lack of transportation and infrastructure were also identified as major constraints.

3.3.3 Knowledge of HIV/AIDS

Uganda is often referred to as a success story in the fight against HIV/AIDS. The strategy pursued in Uganda emphasized prevention and awareness, as illustrated by the 100% positive response to the question "Have you heard of an illness called AIDS?" This high level of awareness, however, is not translated into actual knowledge of how the disease is spread and what can be done to avoid getting it.

As many as 8% said there was no way to avoid HIV/AIDS and 7% said they did not know if there were ways to avoid getting it. Among those who responded positively to knowing how to avoid getting HIV/AIDS (85%), 35% mentioned abstaining from sex, 30% mentioned using condoms, and 25% mentioned being faithful and having only one sex partner. Five percent mentioned avoiding sex with prostitutes and 6% said not to have sex with people who had multiple sexual partners. No one mentioned avoiding sex with individuals injecting drugs or who had had blood transfusions. Three percent said to avoid having an injection. No respondents mentioned avoiding kissing, sharing food or touching someone affected by HIV/AIDS. Avoiding mosquito bites or seeking protection from traditional healers were not mentioned either. Ten percent said to avoid sharing a razor. Among all the respondents (not just those who had heard of HIV/AIDS), 82% said it was possible to have HIV/AIDS but look healthy. As many as 85% knew someone who either had the disease or had died from the disease. On mother-to-child transmission, only 67% said that the disease could be transferred from a mother to a child. Among all respondents, 60% said that HIV/AIDS could be transmitted from a mother to a child during pregnancy, 77% during delivery and 65% through breastfeeding.

At the community level, group discussion could report HIV/AIDS as a health problem among adults and/or children. It was frequently mentioned among adults and seldom among children. HIV/AIDS was not mentioned in the northwest (Arua, Madi), likely because of lack of awareness. Elsewhere, the importance of the impact of HIV/AIDS may have been overstated due to sensitization campaigns.

3.3.4 Housing and Amenities

3.3.4.1 Housing Type and Ownership

A large majority of the sampled households reported owning their dwellings. Dwelling ownership is 75% or above in all the clusters except in the Acholi region (22%), as a result of internal displacement due to the conflict in northern Uganda. There, most households have in fact built their own dwelling but do not own the land on which it is built. However, in the Acholi region as well as elsewhere, the majority of the households does not pay rent but live there for free. In Greater Busoga, dwelling ownership is 75%, and more than 20% of the population rents their dwelling. In terms of livelihood, the Marginal Livelihoods rarely own their dwellings (28%). Dwelling ownership is also lower among Employees Agriculturalists and Hunters, Fishers, Gatherers.

Single-family houses or apartments of concrete or brick are most common in Greater Busoga, Lake Central and Greater Buganda and accounted for 50 to 60% of the dwellings there. There, concrete floors are frequently used (29 to 43%). Elsewhere, mud houses are the most common, accounting for over 90% of the dwellings. Walls of mud houses are predominantly made of mud bricks (60 to 80%) in the Acholi, Madi, Lango and Teso-Dhola. Wood is used only for the walls in Gisu-Sebei (20%) and Kiiga (10%). Galvanized iron is the main material used for the roofs in the central and western region (63 to 92%). Elsewhere (east and north), straw is predominantly used (70 to 95%).

The ratio of the number of people sleeping in the dwelling to the number of sleeping rooms averaged 3 and 9% of the households with six or more individuals per room. Those figures vary widely geographically and were generally found to be higher in the eastern and northern regions. The ratio is the highest in the Acholi region, at 4.2 people per sleeping room and 19.3% of the households with six people or more per sleeping room.

In terms of livelihood groups, shelters and mud houses were most common (over 90%) among Marginal Livelihoods, Pastoralists, and Hunters, Fishers, Gatherers. Employees Agriculturalists more frequently (43%) had houses made of concrete or brick. Employee agriculturalists were also less likely to own their dwellings (only 63% of ownership).

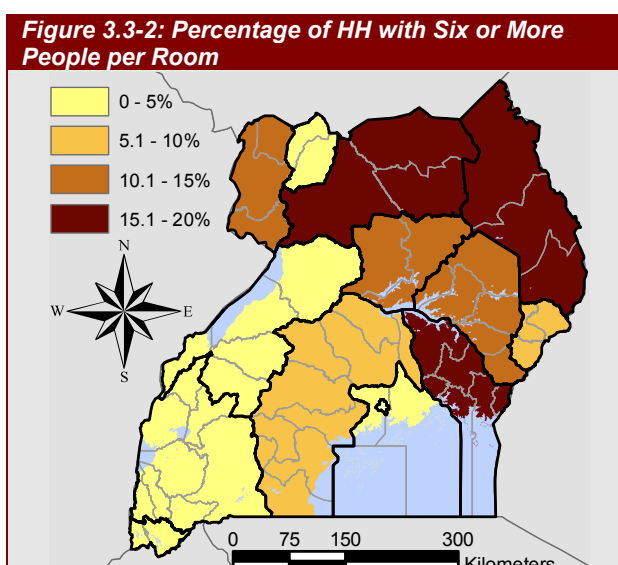
Ownership was also found to be significantly lower among Marginal Livelihoods and Hunter, Fisher, Gatherers, with about 60% of households owning their dwellings. The percentage of households with six or more individuals per sleeping room varied little among livelihood groups, with the exception of the Marginal Livelihoods (20% of households).

3.3.4.2 Energy Sources

In all the clusters, charcoal is about the only source of energy for cooking. Only in cluster 8 is kerosene used by 31% of households. Kerosene, oil or gas lamps are the main sources for lighting. Households in the central region (Lake Central and Greater Buganda) have more frequent access to electricity (10%). In the Karimojong area, access to lighting is a major problem; More than 50% of households reported no sources of lighting. A corresponding figure is found among livelihood groups, with the Pastoralists, located mainly in the Karimojong area, having the lowest access to lighting (42% with access).

3.3.4.3 Water

Households were asked about their ability to access water during both the rainy and the dry season. On average, over 64% of households accessed protected sources⁵⁰ during the dry season but only 55% did so during the rainy season. Open sources (rain, rivers, ponds, and lakes) were used more frequently during the rainy season. Access to water sources takes an average of 19 minutes. However, there are great regional



⁵⁰ Protected sources include public tap, tubewell/borehole with pump, protected dug well or spring, vendor.

disparities. In the north and east, protected sources prevailed; however, the community questionnaires indicated that water availability was generally found to be insufficient and or irregular, especially in the Karimojong and Acholi strata. In the stratum of the central and western region, water sources were rarely protected. Ponds, lakes or rivers were the main sources in Bunyoro and Ankole strata (respectively 32% and 57%). Sources were multiple in the other central and western strata. Rain was a major source of water during the rainy season, especially in the central region (Lake Central and Greater Buganda for 34% and 45% of households, respectively). In the central and western regions, water was generally found to be regularly available, albeit not always sufficient.

3.3.4.4 Sanitation

Most households had access to pit latrines (76%). However, in the Karimojong and Teso-Dhola areas, the use of none or bush/streams remains very frequent (77% and 47% of households, respectively). This is fairly consistent with the findings of the community questionnaires. Tradition, low affordability or costs and lack of sensitization are the main reasons for households not using other types of latrines. In the Acholi and Madi strata, low accesses to land as well as poor soil conditions (e.g., sandy soil) that prevent digging were also mentioned as reasons not to use latrines. Finally, mobile toilets⁵¹ are available mainly in camp settings (5% to 7% of households in the Acholi and Lango areas). Agro-Brewers and Pastoralists were the two livelihood groups among whom sanitation practices were the poorest, with respectively 36% and 83% of households within those groups using no latrines or using bush/streams.

3.3.5 Access to Community Services

3.3.5.1 Roads and Means of Transport

Over all, the closest road for 90% of the households was either a community or a feeder road.⁵² Only in the Acholi stratum were the households more frequently (67%) located near a trunk road (murrum), likely due to the fact that IDPs camps, rather than better infrastructure, are located along such roads. Distance to the road was the highest for the households in the Karimojong area and in the western region, at more than 10 minutes on average (more than 23 minutes in the Ankole stratum). For 50% of the selected households, the major constraint to the use of those roads was perceived as the poor maintenance of the infrastructure. In the Karimojong and Lango strata, insecurity was mentioned by 11.5% of households. In the Acholi stratum, insecurity was the main problem for 68% of households. Lack of transportation means was frequently mentioned in the central and western regions. In the Ankole and Kiiga strata, it was mentioned as the major constraint by 25.5% and 34.2% of households, respectively. Motorized transportation (motorbikes, cars, buses) constitutes the main means of transportation only in the central region. This changes across regions, from 16.5% to 21.5% of households. Most households mentioned traveling predominately on foot (average of 69%). Use of bicycles was relatively frequent (21%) but varied across clusters, from 5.4% (Karimojong) to 51.7% (Greater Busoga). Among livelihood groups, fewer Agro-Trader, Agro-Artisan and Employees Agriculturalist households traveled on foot than households with other livelihood strategies.

3.3.5.2 Access to Market

During the household interview, respondents were asked what type of market they most often frequented and how often they did so. Small daily markets were most commonly used by 25% of households. However, they were predominantly used by households located in the northern region (Karimojong, Acholi and Madi, from 40% to over 90%). In the Lango, Teso-Dhola and Gisu-Sebei strata, weekly village market were most frequently used (over 50%). Overall, across clusters, weekly village markets were used by 35% of households. Commercial centers and shops were on average used by 35% of households, and mainly in the Greater Busoga, Lake Central and Greater Buganda strata (over 60% of households). Frequency of the visits varied accordingly, with more frequent visits to small daily markets and less frequent visits to shops and commercial centers. The average traveling time to the markets most frequently accessed by the households was 31 minutes for 3.4 km. Distance was found to be the longest in the Karimojong, Madi and Arua strata (north) as well as in the western region.

According to the findings of the community questionnaire, markets in the western region, though distant, offered a relatively large diversity of products, including non-local food and non-food items. A similar

⁵¹ Mobile toilets.

⁵² Trunk roads run from district to district, feeder roads run from county to county.

diversity was found in markets in the central region. Elsewhere (northern and eastern regions), markets generally offered local foods and non-food items. In the Acholi stratum, markets generally offered only local food products, likely as a result of the low purchasing power in the camps as well as insecurity on the road, which hinders the transportation of goods. The communities were further asked what constraints they faced when commercializing their own production. In the central region and to a lesser extent in the western regions and Lango stratum, commercialization through commercial agents visiting the village or nearby villages was frequent. Use of local and distant markets, however, remained predominant. Distant markets were used mainly in the Karimojong area. The low prices offered for households' products was cited as the main problem, and possibly illustrates the low terms of trade for agricultural products. This could also be due to high transportation costs, which reduce what the middleman is ready to pay at the farm gate, in addition to poor market information. Across the country, problems of transportation and storage were also found to be major constraints to the commercialization of household production.

3.4 Food Availability, Income Sources and Expenses

3.4.1 Agricultural Production

3.4.1.1 Household-level agricultural production

As discussed in the section on access to land (see 3.3.7.1), more than 88% of the households had access to land. Only in the Acholi stratum was access to land very low, with about 20% of the households having access to agricultural/farming land. To further understand agricultural production at the household level, the survey asked households to identify the main crops they cultivated. They were free to name up to eight crops. The diversity and type of crops produced affect both the overall availability and access capacity of a household. The production diversity was assessed based on the number of crops identified by the households. Diversity of production increases households' resilience to shocks that can affect various crops differently (e.g., loss of commercial value, crop pest or disease, climatic shock). Diversity of production is also likely to lead to diversity of diet, which in turn has been correlated with better food security and nutritional outcomes.

As Figure 3.4-1: Crop Production Diversity by Strata illustrates, the least diversity of crop production is found in northern Uganda among those who have access to land. In the Karimojong and Acholi strata, more than 23% to 24% of the households with access to land cultivate only one or two crops (generally cereals). There, very few households cultivate more than five crops. As mentioned above, note that in the Acholi region, only 20% of the households have access to land. In the Lango stratum, among those who cultivate, about 12% of the households cultivate less than two crops. And less than half the households cultivate more than five. The situation is better in northwestern Uganda (Madi and Arua), where more than 50% of the households cultivate five or more crops. Diversity is relatively low in the Teso-Dhola and Gisu-Sebei strata of the eastern region. In the central and western regions, diversity is generally higher, with 75% to 80% of the households cultivating four crops or more. Crop production diversity showed less variation across livelihood groups but was generally found to be lower among Pastoralists, Marginal Livelihoods and Hunter, Fisher, Gatherers.

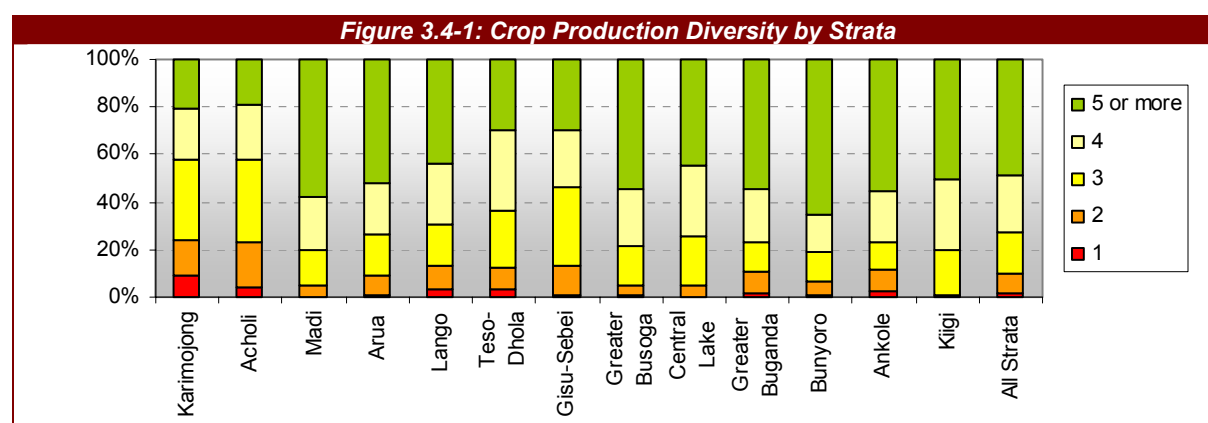
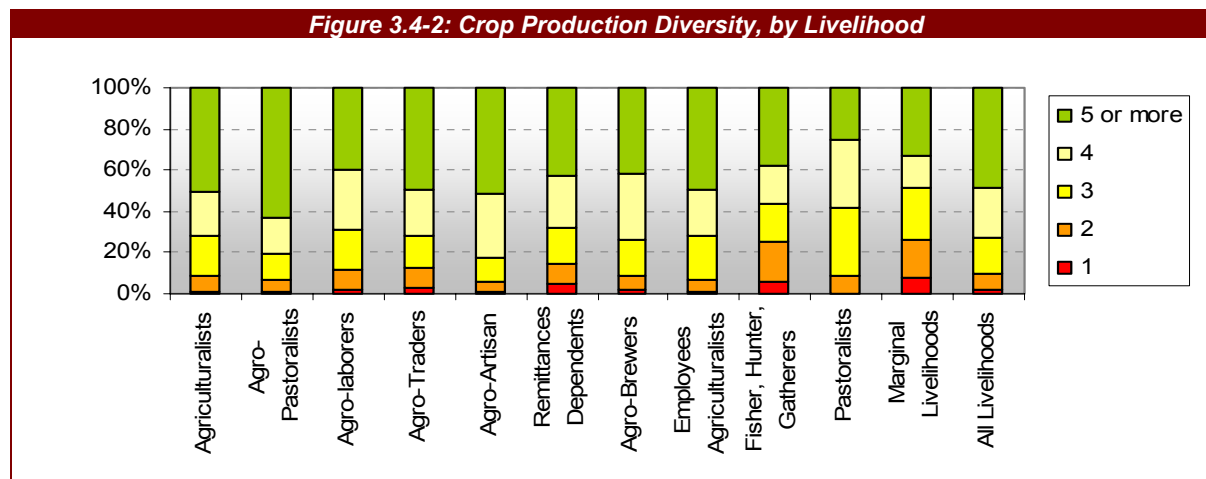


Figure 3.4-2: Crop Production Diversity, by Livelihood

Looking at the four main crops cultivated by the households with access to land, maize was the most widely produced crop, with 64% of the selected households identifying the cereal as one of their four main crops. Two roots and tubers were among the four main crops, with cassava (overall second main crop) and sweet potatoes (overall fourth main crop), cited among the four main crops by 58% and 46% of the households, respectively. The third main crop is kidney beans, which are cultivated by 48% of the households. However, the main crops cultivated varied greatly by region.

In the northern region, cereals (maize and sorghum) were generally the main culture. In the Karimojong area, cereals, mainly sorghum, were nearly the only type of crops cultivated. In the other areas of the northern region, cassava or sweet potatoes were among the main crops cultivated. The community questionnaire indicated that roots and tubers were not cultivated in the Karimojong stratum because of theft in the field. For the same reason, roots and tubers are less cultivated in the Acholi stratum. Still in the northern region, groundnuts and sim sim complete the list of the main crops cultivated (Madi, arua and Lango). In the Acholi and Lango strata, kidney beans are cited among the four main crops by 44% and 75% of the households, respectively, possibly as a result of seed distribution as conflict/post-conflict assistance (Acholi) as well as by tradition (Lango). Overall, the northern region further shows that few households had cash crops (coffee, tea, tobacco, sugarcane) among their main crops and that matooke (banana) was not cultivated in the area. Inversely, simsim is cultivated nearly exclusively in the northern region.

In the eastern region, the Teso-Dhola stratum follows a pattern relatively similar to that discussed for the northern region, with cereals (sorghum), cassava, sweet potatoes and groundnuts. Maize was less frequently mentioned among the four main crops (only 14% of the households) and sorghum was the main cereal (76% of the households). In the other areas – Gisu Sebei and Greater Busoga – the main difference from the northern region and Teso Dhola was that sorghum was not widely cultivated among the four main crops (less than 10% of the households) and beans were more important. Matooke was also mentioned by 47% of the households in Gisu-Sebei. Also, in Greater Busoga, cash crops are among the main crops cultivated by up to 16% of the households. In the central region, cereals again are most important, with maize being the most cultivated (60% in Lake Central and 82% in Greater Uganda). Roots and tubers were equally important, cultivated by about every household among their four main crops. Matooke was mentioned among the main crops by 28% of the households in Lake Central and 53% in Greater Buganda. Beans were also among the four main crops for 70% and 81% of the households in the Lake Central and Greater Buganda strata, respectively.

In the western region, beans were widely cultivated among the main crops (from 78% to 90% of the households). The main cereal was maize, except in the Kiiga stratum, where it was sorghum (mentioned by 85% of the households). The Kiiga stratum must also be singled out for the importance of Irish potatoes, a main crop for 59% of the households. Matooke is among the four main crops for 68% of the households in the Bunyoro stratum, 40% in the Ankole stratum and 23% in the Kiiga stratum. Finally, coffee was important in the Ankole stratum, where it was mentioned among the four main crops by 22% of the households.

3.4.1.2 Evolution of the agricultural production

According to FAO (see Figure 3.4-3: Cereal Production in Uganda below), the evolution of cereal production in Uganda over the last ten years shows an increase of 24% in per capita production, which is high in

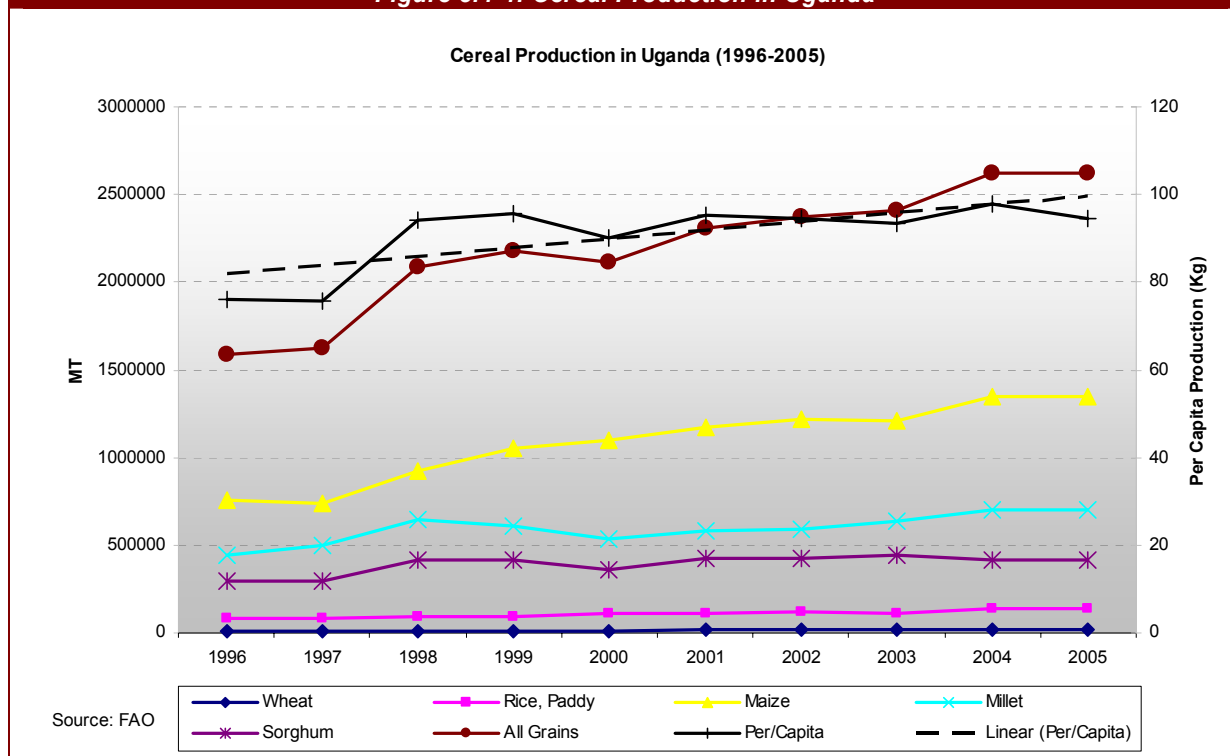
comparison to that of neighboring countries. The most significant rise in cereal production is in maize, which almost doubled over ten years (+78%). The general tendency shows an augmentation of production of 65% for all grains cultivated in Uganda, while the population increased in the last ten years by 33%.

To acquire a sense of change over time, the community questionnaire collected information on the perceived evolution of agricultural production over the last five years. Only in the eastern region (Teso-Dhola, Gisu-Sebei, Greater Busoga) and most notably so in cluster Greater Busoga did communities report increased yields. The adoption of technologies and improved seeds were seen as the main sources of increased production. Better extension services and market are likely to have played a major role. However, in Teso-Dhola, problems of insecurity and drought reduced the positive impact of diversification and better practices. There, loss of fertility further led to a decline in productivity for about half the communities, while the other half reported an increase.

In the rest of the country, agricultural production was seen at best as stable and more frequently as declining. In the Karimojong stratum, overall production over the last five years was seen as stable but irregular because of climatic instability (drought). In the Acholi and Lango strata, most exposed to the LRA conflict, insecurity was the major problem, reducing access to fields and hence, because of households' inability to take care of the crops, productivity. It was also associated with a reduction in the variety of crops that can be cultivated (less diversity). In the Madi and Arua strata, rainfall pattern was the main problem, although production there was seen as stable. There, communities reported a move toward cash crops and short-cycle crops (more resistant/tolerant) as well as the introduction of new varieties (mainly cereals).

In the central region, drought and crop pests and diseases affected production. In Greater Buganda, loss of fertility was the main problem, leading to a decline in production. Land pressure due to urbanization was also perceived in both Greater Buganda and Lake Central. In the western region, some communities reported a positive move toward more market-oriented agriculture, including intensification and diversification (e.g., the introduction of cash crops such as vanilla and coffee), especially in the Bunyoro and Ankole strata. Nevertheless, most communities experienced a decrease in production because of declining fertility, due to soil erosion, land shortage, and induced landslides. Some varieties had been introduced but they were judged insufficient and did not meet expectations in terms of production.

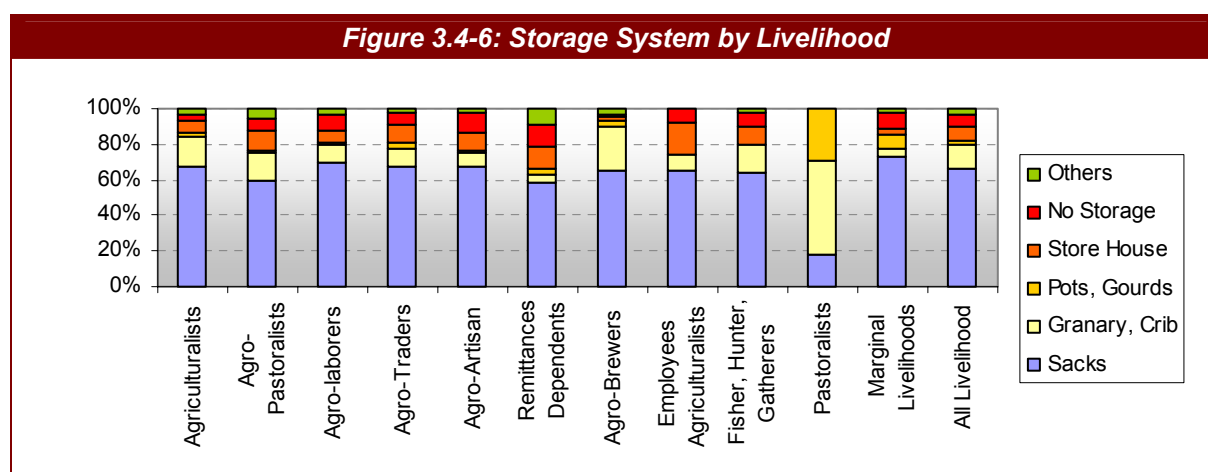
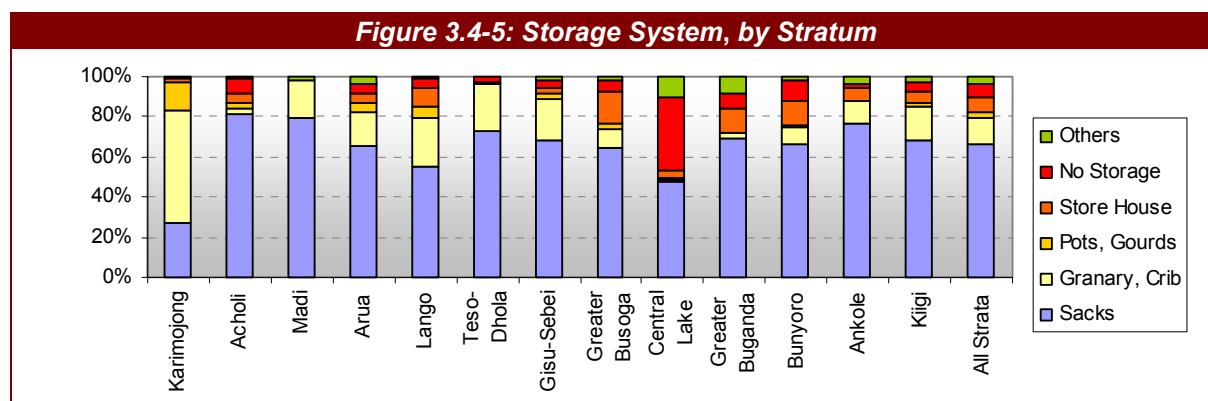
Figure 3.4-4: Cereal Production in Uganda



3.4.1.3 Storage

Post-harvest loss, although poorly understood in Uganda, is generally thought to be high. In a first approach, households were asked how they usually stored their cereals. Information on storage was further

collected at the community level. Most communities declared that granaries were progressively being replaced by alternative storage systems, either because of theft in the granaries (e.g., in the northern region) or because of increased losses due to poor storage. The only stratum where the use of granaries was predominant for traditional reasons was the Karimojong area. Elsewhere, sacks are most commonly used, and were generally kept in the house for security reasons. Storehouses were most frequent in the central region and in Greater Busoga, likely because of a more trade-oriented agriculture and better access to extension and commercialization services. In the Lake Central stratum, the response “no storage” was frequent because of the limited agricultural production in specific areas of that cluster, which is composed mainly of fishing communities. With regard to roots and tubers, these were generally kept in situ (in the field) and harvested according to consumption needs. The insecurity in the north has reduced the cultivation of such crops because of frequent theft in the field. Use of various storage systems showed less variation across livelihood groups, except among Pastoralists, who used predominantly granaries.



3.4.2 Food Sources and Diversity

3.4.2.1 Diet Diversity and Frequency of Consumption

Food sources and diet diversity are analysed in more detail in Part 4 - and are used to define household profiles. This section presents a rapid overview of diet diversity indicators. Diet diversity, measured by the number of different foods from different food groups consumed by a household, and frequency of consumption, are good proxy indicators of the access dimension of food security and nutritional intake. In a first approach, respondents were asked the number of meals both adults and children (<15) had eaten on the day prior to data collection. The average reported number of meals for adults was two, and varied across clusters. It was less than two in the northern region (Karimojong, Acholi, Madi, Arua, Lango) and Teso-Dhola strata and above two in the rest of the country. Overall, among adults 16% of the households had one or fewer meals the day before the survey, 51% had two and 33% ate three or more times. The number of meals children consumed approximates that of adults. Again, geographic disparities exist. About 60% of the households had one meal or fewer the day before in the Karimojong area, while that figure fell to about 10% or less in the central and western regions and in greater Busoga.

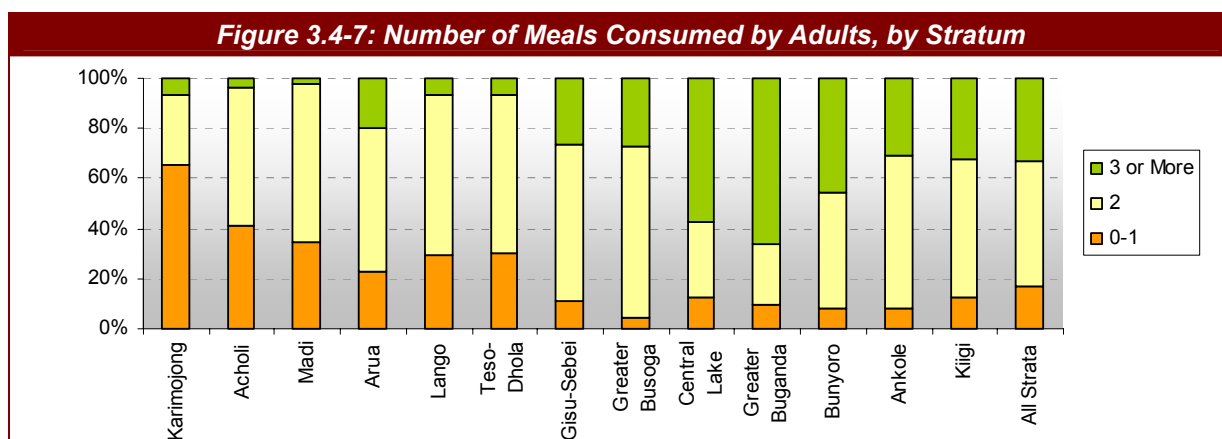
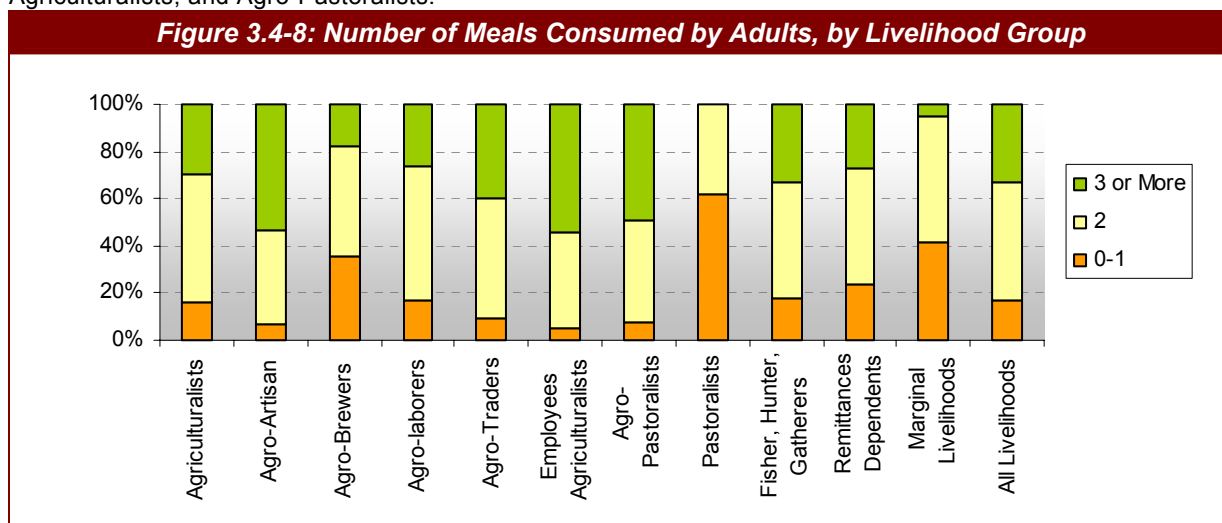


Figure 3.4-8: Number of Meals Consumed by Adults, by Livelihood presents the same results but disaggregated by livelihood groups. Among Pastoralists, Agro-Brewers, Remittance Dependents and Marginal Livelihoods, more than 20% of the households ate one or fewer meals the day before the interview. More than 50% of the households had three or more meals among Agro-Artisans, Employee Agriculturalists, and Agro-Pastoralists.



In addition to meal frequency, households were asked how many times they ate specific food items over the last week. Maize is the most frequently consumed cereal, at an average frequency of three days a week, except in the northern region, where other cereals (e.g., sorghum) are more frequently consumed. Roots and tubers are also less frequently consumed in the north. Less than 1% of the households in the Karimojong stratum and about 4% in the Acholi stratum consumed roots and tubers daily, while this figure is over 20% in the central and western regions. This is likely due to (1) insecurity that limits the cultivation of roots and tubers, as they cannot be left in the field (due to the threat of theft) and (2) to the unimodal rainfall pattern in the north that limits the production, while in the rest of the country, tubers and roots can virtually be harvested all year long (bimodal rainfall pattern). Matooke is also consumed more frequently in the central and western region, for agro-ecological reasons.

Beans, other vegetables and groundnuts, sim sim⁵³ are consumed on average two to four days a week. No clear geographic pattern appears in food consumption for those items. Consumption of fish and meat is overall very low (about once a week). Consumption of fish is more frequent in clusters with large access to lakes, including Lake Victoria (Greater Busoga, Lake Central) Lake Kyoga (Teso-Dhola) and Lake Albert (Arua). Consumption of fish is likely to be specific to a community livelihood (e.g., fishing communities). Given the multi-stage random sampling of the communities, caution must be exercised in interpreting the results. Oil, fat and butter (as a whole) and sugar are consumed on average three days a week. Overall,

⁵³ Sesame

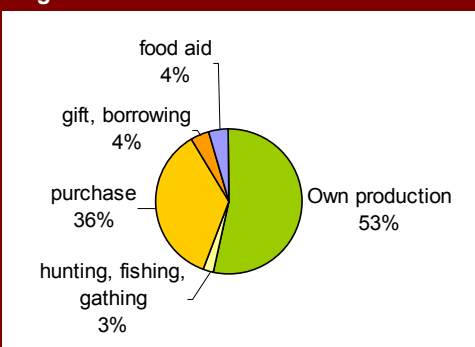
milk is consumed on average twice a day and is more frequently consumed in the central and western regions.

Differences were further found across livelihood groups. Marginal Livelihoods and Pastoralists ate maize, roots and tubers, matooke, and fruits less frequently than did other groups but ate cereals (e.g. sorghum) more frequently than other groups. Pastoralists ate meat and animal products (e.g., milk) more frequently than did other groups. Frequency of consumption of beans, peas, sim sim, and other vegetables showed little variation among livelihood groups.

3.4.2.2 Food Sources

Households were asked to specify the main sources of the food items they consumed and to provide a general estimate of the proportion of various sources in their usual diet. Figure 3.4-9: Household Food Sources represents the average result for the entire country. As could be expected in communities predominantly oriented toward subsistence agriculture, and given that the survey focused on rural areas, *own production* represents the main source for the various food items (53%). Second is *purchase*, the source of roughly 36% of the food consumed. No clear differences and patterns emerged between clusters, except for the Acholi stratum where, food aid was the source of up to 54% of the food consumed by a household.

Figure 3.4-9: Household Food Sources



Among livelihood groups, Agriculturalists and Agro-Pastoralists obtained more than 60% of their food through their own production. For the other livelihood groups, that figure was around 50%, except for the Hunter, Fisher, Gatherers (18%) and Marginal Livelihoods (12%). Hunter, Fisher, Gatherers logically depended more frequently on hunting, fishing and gathering (27% of their food) as well as on purchase (52%). Marginal Livelihoods received 58% of their food from external aid. When asked if they had purchased food on credit or borrowed food in the last six months, 40% of the households answered positively. Similarly, about 36% mentioned that they were currently in debt because of obtaining credit to buy food or from borrowing food.

Food sources were further explored for specific food items. Maize was more often obtained through *own production* (53% of the households) than through purchase (42% of the households), while the main source for rice was through purchase (89% of the households). For 68% of the households, own production was the main source of roots and tubers; 28% of households obtained these through purchase. For beans, peas, and other vegetables, own production and purchase contributed equally. Fish, meat, eggs, oil, fat and butter, sugar, and milk were predominantly purchased. Sources for specific items further varied across clusters and livelihood groups. A detailed household profiling based on food consumption and sources is discussed in Part 4.

3.4.3 Productive Assets

3.4.3.1 Land

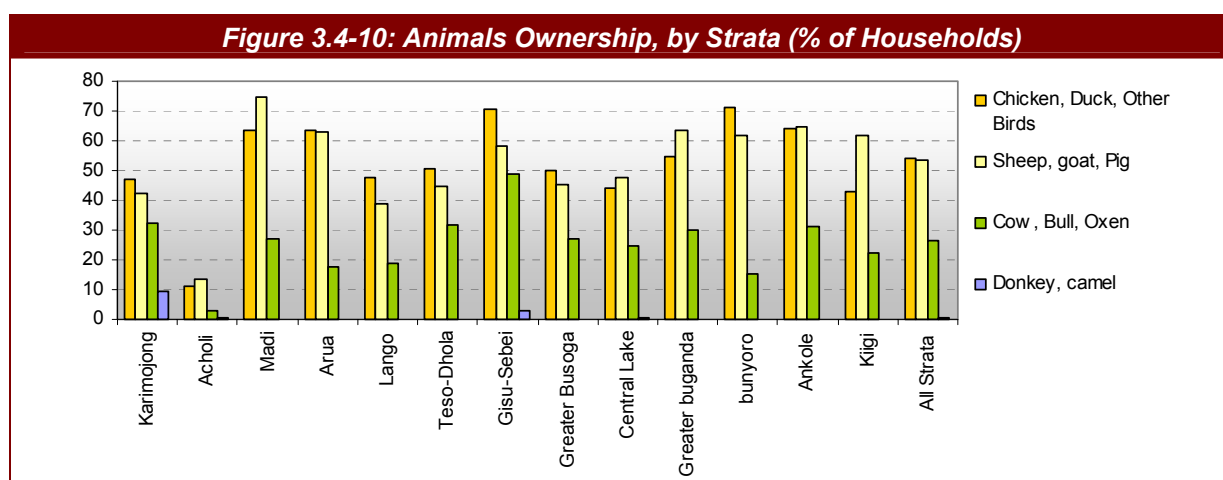
About 88% of the households had access to agricultural/farming land. In the Acholi stratum, only 20% of the household had access to land, likely due to insecurity and the conflict with the LRA, which displaced many communities. This illustrates the dramatic impact on the livelihood of the households in that stratum and further explains the incapacity of the households in that area to rely on their own food production (see 3.3.6.2). In the Lango stratum, similar causes, albeit at a lower intensity explain why only 77% of the households declared having access to land. In the Karimojong area, 83% had access to land, less than the national average, likely as a result of insecurity, repeated drought, and possibly livelihood strategies (pastoralists). Finally, in the Central Lake stratum, the figure was also found to be lower than the national average, with only 71% of the households having access to land. The reason for this is likely to be either a higher rate of urbanization (Wakiso) or geography, with Kalangala being composed mainly of islands with little or no access to land.

Among those with access to land, the average total land cultivated per household over the last year was 2 parcels, with an average total size of 2 acres. The land is generally owned by the household. There was little variation among regions, but the size and number of parcels cultivated were generally lower in the Karimojong, Acholi and Lango strata in the northern region, likely as a result of insecurity and drought.

These figures were also lower in the Central Lake stratum. Households were further asked if they had access to small household vegetable plots or kitchen gardens. Only 45.9% of the households did so. Small gardens were least frequent in the Karimojong stratum (18% of the households). As many as 55.6% of the households also reported owning fruit or nut trees, which may contribute to improving their diet. Ownership of nut or fruit trees was lowest in cluster 1 and 2 (less than 10% of the households). Everywhere else, it was above 45%.

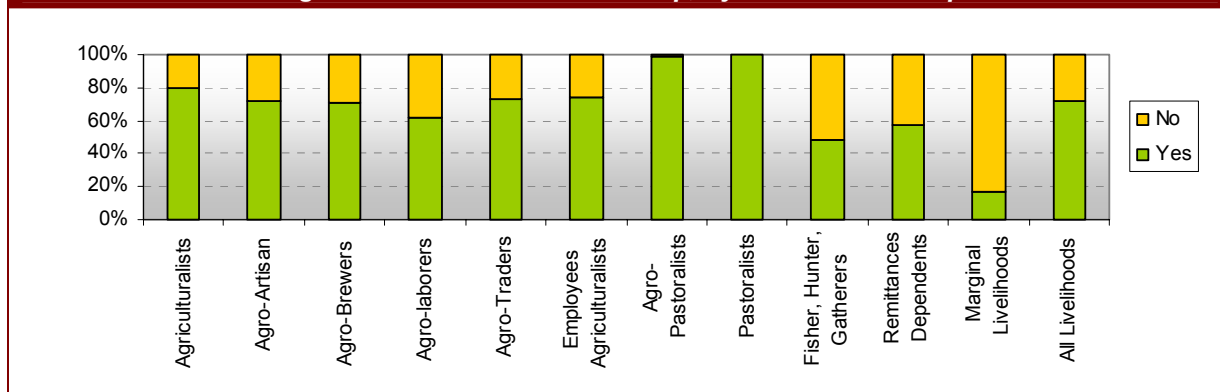
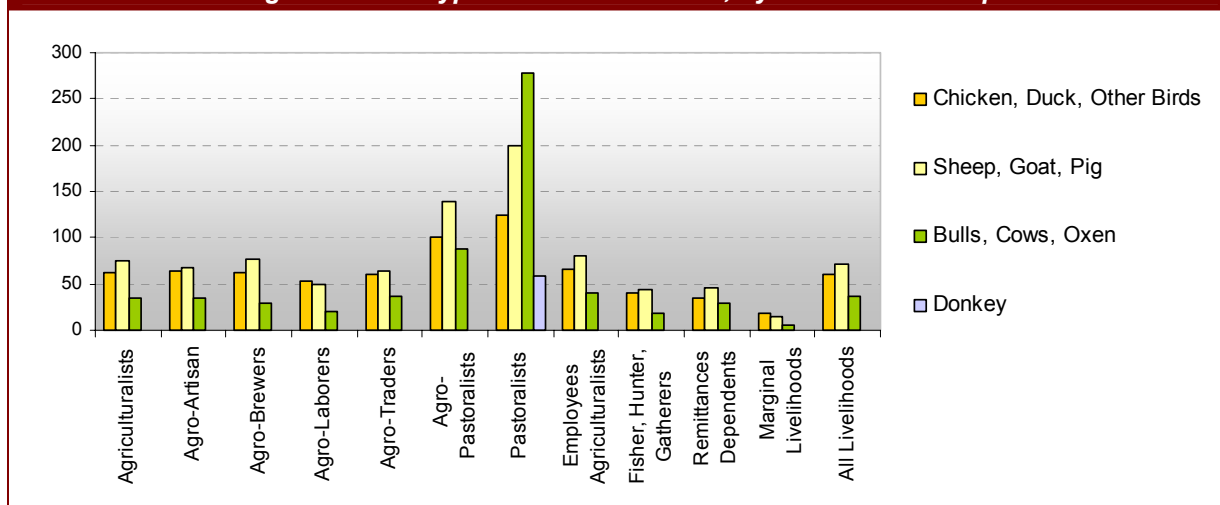
3.4.3.2 Animals

Animal ownership reflects both the livelihood strategies and the wealth of a household. It can also significantly contribute to the diversification of the diet and be a major source of proteins. Animals can also be an alternative source of food or cash when coping with a shock (see the specific section on shocks). Among the selected households, 71% declared owning animals. Animal ownership was lowest in the North, the Karimojong, Acholi and Lango strata, with, respectively, 53%, 19% and 53% of the households owning animals. Conflict and insecurity are likely to explain those results.



Ownership of chickens, goats and cows was most frequent. Overall, 53% of the households reported ownership of chickens, 42% of goats and 24% of cows (10% also reported ownership of bulls). Chicken and goats were frequently owned in all the clusters, except cluster 2. Cows were more frequently found in the northeastern and eastern regions. Despite the fact that the number of households claiming to own animals was relatively low in the Karimojong stratum, the average number of animals, as well as the variety of animals, owned was higher in that cluster. Cow ownership in the Karimojong stratum was much higher there than elsewhere, with an average of 3 per household, compared with 1.3 for the national average. A similar trend is observed with small animals such as goats and sheep, with the average number of animals reaching, respectively, 4.4 and 3.0 per household in the Karimojong stratum, while the average for the entire sample is 1.7 and 0.3, respectively. The animals owned were also more diverse in the Karimojong stratum. Ownership of oxen and donkeys was reported there more frequently than elsewhere. Possible reasons for this trend are, first, that Pastoralists are predominantly found in that region and, second, that, as the community questionnaire indicated, animal ownership is more frequently communal in the Karimojong area than elsewhere, meaning that households own part of the cattle present in the community without necessarily providing exclusive care for them. So while fewer households reported ownership of animals, it is possible that they somehow participate in communal ownership.

Animal ownership varies across livelihood groups, not surprisingly, since animal ownership was one of the factors taken into account to define the livelihood groups. About all, the Pastoralists and Agro-Pastoralists own animals. Animal ownership is lowest among Marginal Livelihoods (about 18%). However, livelihood groups show little specificity in the types of animals they own. Among all livelihood groups, chicken, goats and cows are the most frequently owned animals. Only oxen and donkeys appear to be owned nearly exclusively by Pastoralists. Not only do more households among Agro-Pastoralists and Pastoralists own animals, but they also tend to own more animals of each type, and more notably so among Pastoralists.

Figure 3.4-11: Animal Ownership, by Livelihood Group

Figure 3.4-12: Type of Animals Owned, by Livelihood Group


3.4.4 Income Sources and Access to Credit

3.4.4.1 Income Sources

Income sources are an important component of the livelihood strategies used by the various households in Uganda. As such, this element has already been discussed in the livelihood profiling proposed. What follows is a more detailed discussion of income sources across regions and livelihood profiles. During the assessment, households were asked to identify the four main sources of income for the household, using a one-year recall period. Overall, 99% of the households have at least one income source, 69% have at least two income sources, 24% have at least three income sources and only 6% reported four or more income sources. The number of income sources did not appear to vary across livelihood groups but was found to be slightly lower in the northern region.

Overall, sale of crops (66%), unskilled labour (35%), sale of animal products (24%), brewing (12%) and petty trading (12%) were the activities most frequently reported among the households' four main income sources. However those percentages vary greatly geographically and across livelihood profiles. Three regions show a very different proportion: the Karimojong, Acholi and Madi strata. In the Karimojong stratum, sale of crops plays a less important role (source of income for 17% of the households only). Brewing (51%), unskilled wage labour (49%) and begging (15%) were more important than elsewhere in the country. In the Acholi stratum, as in the Karimojong stratum, only 24% of the households have income from crop sales. Furthermore, few households have income from the sale of animal products (3%). Unskilled wage labour (66%) and brewing (41%) are the main sources. In the Madi stratum, 48% of the households generate income from crop sales. Again, brewing (49%) and unskilled labour (53%) are more frequent sources of income. About 20% of the households in the Madi stratum further derive income from fish sales. A similar figure is found in the Central Lake stratum. Additional geographic variation includes wages and salaries, a

more frequent source of income in the central region (10%) and begging, more frequently used in the eastern region (10% to 17%).

Among livelihood profiles, since income sources were used in determining the profiles, significant differences appear among profiles. Sale of crops is less frequently a source of income among Marginal Livelihoods (20%), Remittance Dependents (36%), Pastoralists (8%) and Fisher, Hunter, Gatherers (32%). Sale of animal products is predominantly a source of income among Pastoralists (58%) and Agro-Pastoralists (86%). Fish products are the source of income nearly exclusively among Hunter, Fisher, Gatherers (92%). Brewing is a source of income for 73% of the Agro-Brewers. Unskilled wage labour is predominantly used among Agro-Labourers (92%), Agro-Brewers (56%) and Marginal Livelihoods (68%). Less than 20% have income from this activity among the other groups. Skilled labour is found nearly exclusively among Agro-Artisans (72%). Among the Agro-Brewers and Marginal Livelihoods, 20% generated income from the use of natural resources (e.g., firewood). Among the Agro-Traders, 50% derived income from petty trading and 50% from commercial activities. Remittances were a source only among Remittance Dependents (75%) and 94% of the Employees Agriculturalists received salaries/wages as an income source (employee work).

The following figures illustrate the average contribution of different income sources and average total income geographically and among livelihood profiles. Estimates of absolute value of income should be interpreted with caution, as they tend to be either over- or underestimated during the data collection process. However, those figures are illustrative of trends in overall income and income sources. In addition to the above discussion on the income sources, the lowest absolute incomes are found in the north and northeast of Uganda, more specifically and starting from the lowest, the Acholi, Lango, Teso-Dhola, Gisu-Sebei and Karimojong strata. The highest incomes are found in the central region and southeast: Greater Busoga, Central Lake and Greater Buganda. Among livelihood groups, Marginal Livelihoods have the lowest income, while Employee Agriculturalists have the highest.

Figure 3.4-13: Average Annual Income (in Ugandan Shilling) and Income Sources, by Strata

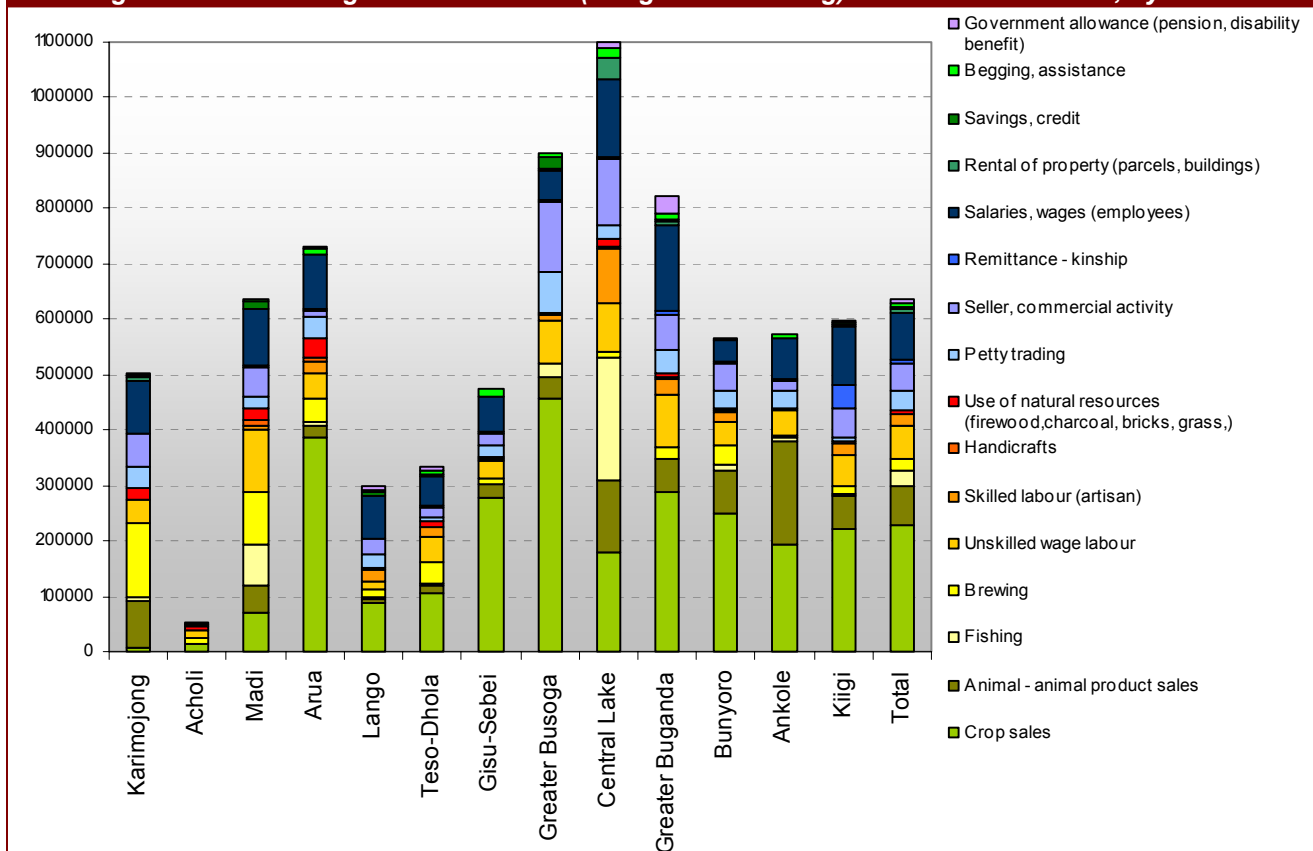
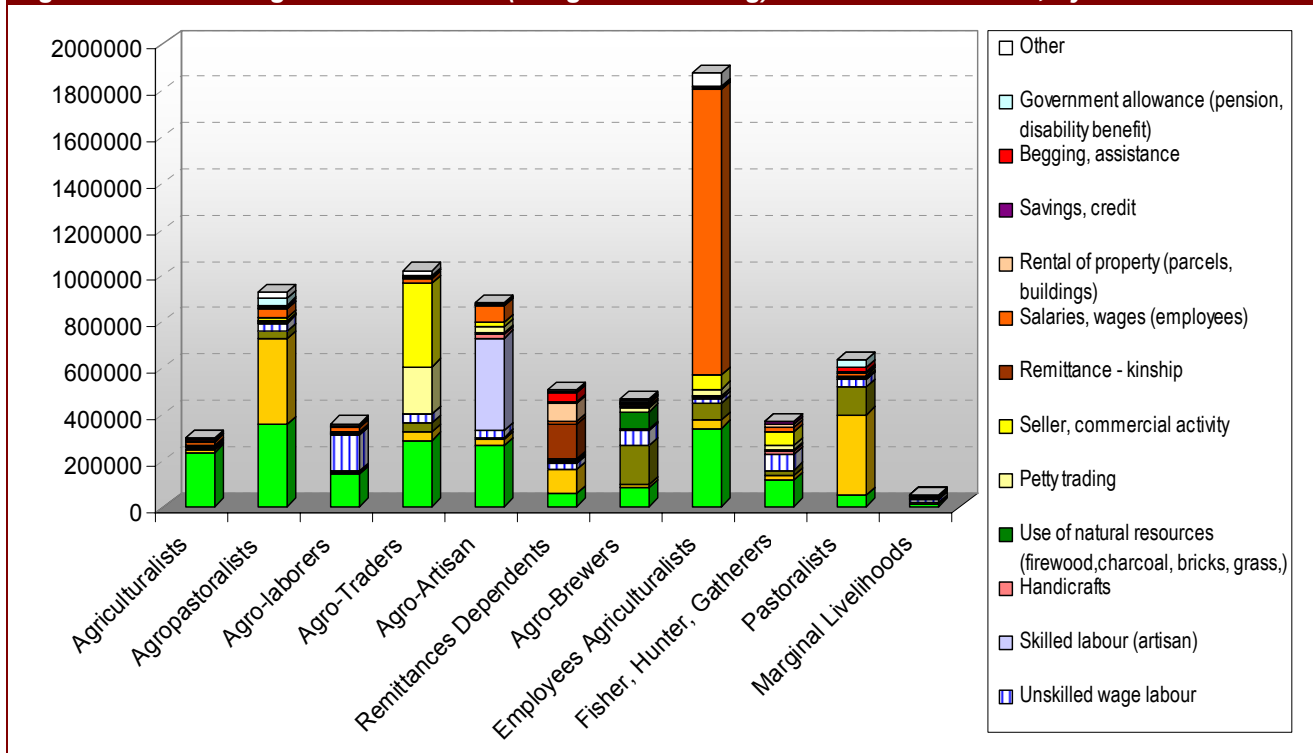


Figure 3.4-14: Average Annual Income (in Ugandan shilling) and Income Sources, by Livelihood Profile



3.4.4.2 Gender issues

For each activity, households were asked who contributed mainly to the activity and who was in charge of managing the income. Overall, most activities (52%) are predominantly done by the head of the household. Only brewery is more significantly operated by the spouse of the household head (43% of the case) or by the women in the household (17% of the case). Management of the income is even more a responsibility of the household head. For 71% of the income-generating activities, the income is managed by the head. Even for brewing, most of the households reported that the head of the household was in charge of managing that income (47%) and not the women (36%). This is likely an indication that women have a relatively weak access to financial resources.

Work-related gender issues were further explored on agricultural work. Responses to the household questionnaire indicated that both men and women contribute equally to agricultural work (albeit slightly more for the women in the central and western regions), and that children are also largely involved. To better understand the role of gender in the division of agricultural labour, the division of the roles was discussed through the community questionnaire. Role differentiation is most clear when it comes to taking care of the animals and fishing, which are nearly exclusively male roles all over the country. With regard to agricultural practices, differences are more clearly marked in the north, while roles tended to be more equal toward the south. Where gender differentiation existed, men are more frequently associated with what was identified as heavy preparation work, including clearing land and digging soil. Women's tasks generally include all the other agricultural operations and, more exclusively, weeding, harvesting and storing. Overall, children are not assigned specific roles but rather assist in whatever capacity is needed. The only more specific role is to guard the fields especially against birds.

3.4.4.3 Credit

On average, 31% of the selected households had access to loans or credit. Access was usually found to be better in the central and western regions, with 30% to 50% of the household declaring to have access to credit. However, the source of credit was families and friends for more than 50% of those who had access to credit. Less than a third of those with access to credit obtained that credit through formal moneylenders or banks. Charities or NGOs were mentioned by less than 20% of those who had access to credit. Findings from the community questionnaires further highlight the main problems faced by households when accessing credit. In the northern region the lack of institutions/services was most frequent. In general, however, the constraints were associated with formal credit systems and included, not surprisingly, high

interest rates and guarantees as well as loans' short terms (rapid repayment). Communities frequently found the formalities complicated, which decreased their ability to access credit. In the north and east, the need to form groups to access credit was also seen as a constraint. This type of credit (group) is likely related to project/NGOs' supported credit programs.

3.4.5 Household Expenditure

Household expenditure information was collected for both food and non-food items. This information helps understand the resource allocation within a household and can also be used as a proxy for the food access dimension. However, caution is needed in interpreting the results, as households relying mainly on their own production may have a low proportion of food expenditure while households relying on expensive foods (e.g., meat) may have a high proportion of food expenditure. Only cash expenditures were considered in this analysis. Foods purchased on credit and/or barter were not frequent. Expenses on foods and frequently consumed items were asked over a one-month recall period. Long-term and infrequent expenditures (e.g., school fees, construction) were asked over a six-month recall period. Both types of expenditure are reported on a monthly base hereafter.

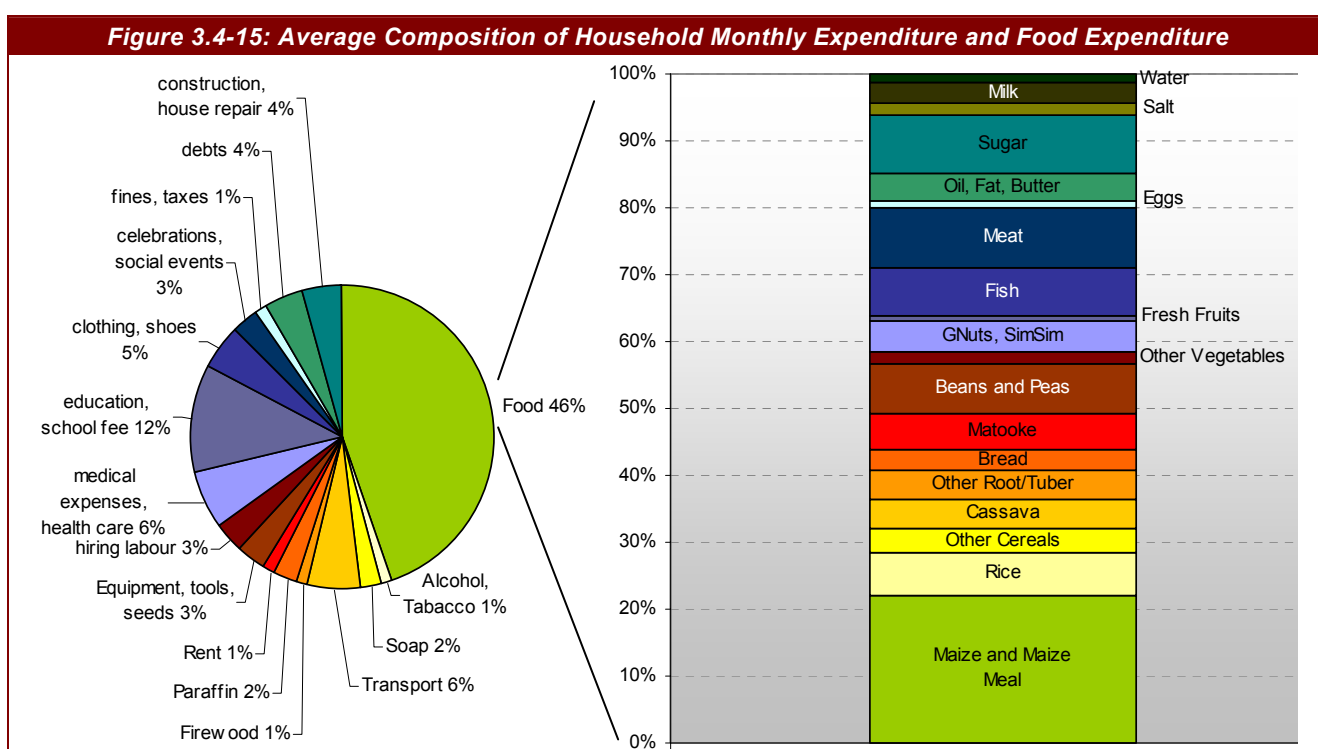
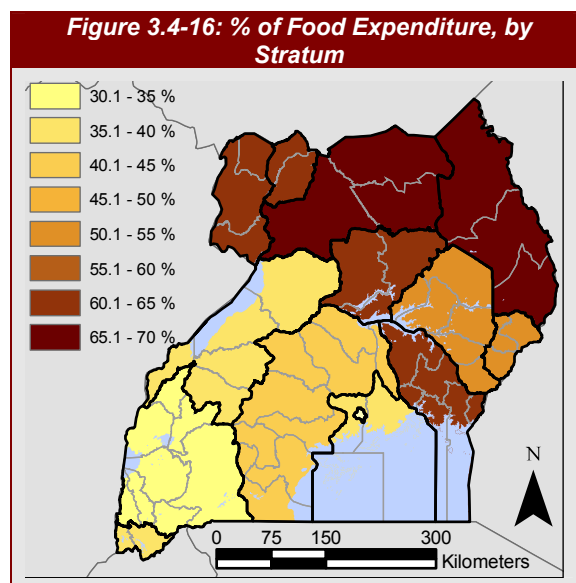


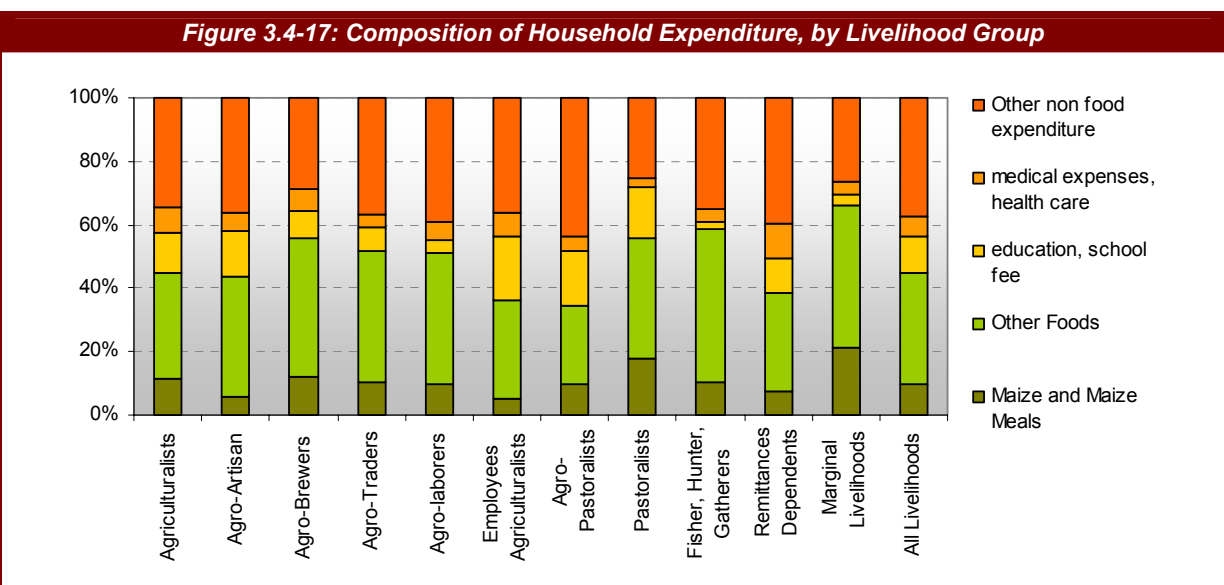
Figure 3.4-15: Average Composition of Household Monthly Expenditure and Food Expenditure illustrates the average composition of household expenditure. Food is the main budget line and accounts for up to 46% of expenditure. Most of the food expenditures are spent on maize and maize meal (22% - all cereals account for 31% of the food purchase) and beans and peas (7% of food purchases). Expenditures on meat (9% of food purchases) and fish (7% of food purchases) are relatively high. Purchase of sugar is also an important expenditure (9% of food purchases). Households in general spend little money on vegetables other than beans and peas or on fresh fruits. Among non-food expenditure, education and school fees is the second main expense, at 12% of total expenditure. Health care and transportation expenditure each account for 6% of the total expenses. Health care services account for 5%.

The composition of the expenditures varied greatly across the country. Food expenditure was highest in the north, especially in the Acholi and Karimojong areas (above 65% of the expenditures is used to purchase food) and was lowest toward the south and west (central and western regions). Households with a lower proportion of the income used to purchase food items reported a higher proportion of expenditures on education and school fees, health care, and to a lesser extent on housing construction and clothing, shoes.

Not surprisingly, the places with the lowest share of food expenditure were also those with the highest total expenditure (absolute value). Although absolute values of expenditure tend to be over- or underestimated, this likely indicates that in the central and western regions, higher expenditures lead households to devote a bigger share to non-food items.



Differences on expenditure also existed among livelihood groups. Marginal Livelihoods had the lowest average absolute expenditure of all the groups, followed by Remittance Dependents and Agro-Brewers. However, the share of food in the expenditure was different among those three groups. Marginal Livelihoods had the highest proportion of food expenditure, accounting for 66% of their total expenditure. The proportion of food expenditure remained high among Agro-Brewers (55%), but was only 39% among Remittance Dependents. The highest average absolute value of the expenditures was found among the Employees Agriculturalists as well as Agro-Pastoralists. It is also among those two groups that the share of food expenditure was lowest (below 40%).



3.5 External Shocks and Coping Mechanisms

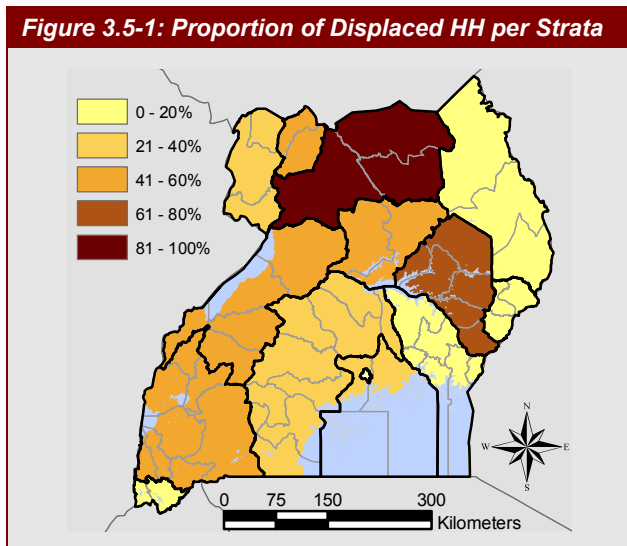
3.5.1 Migration and Exposure to Violence

When asked if they had ever been displaced, an average 39% of the households responded yes. Figures were generally high in all the clusters, except in Gisu-Sebei, Greater Busoga and Kiiga. However, the reason for the displacement varied greatly. In the northern region, displacement was generally perceived as caused by insecurity, while in the other places, socio-economic issues played a major role in inducing displacement. In the Bunyoro and Ankole strata, insecurity was also mentioned, albeit less frequently than in the north, mainly in linkage with ADF attacks. With the exception of the Acholi stratum, where the majority

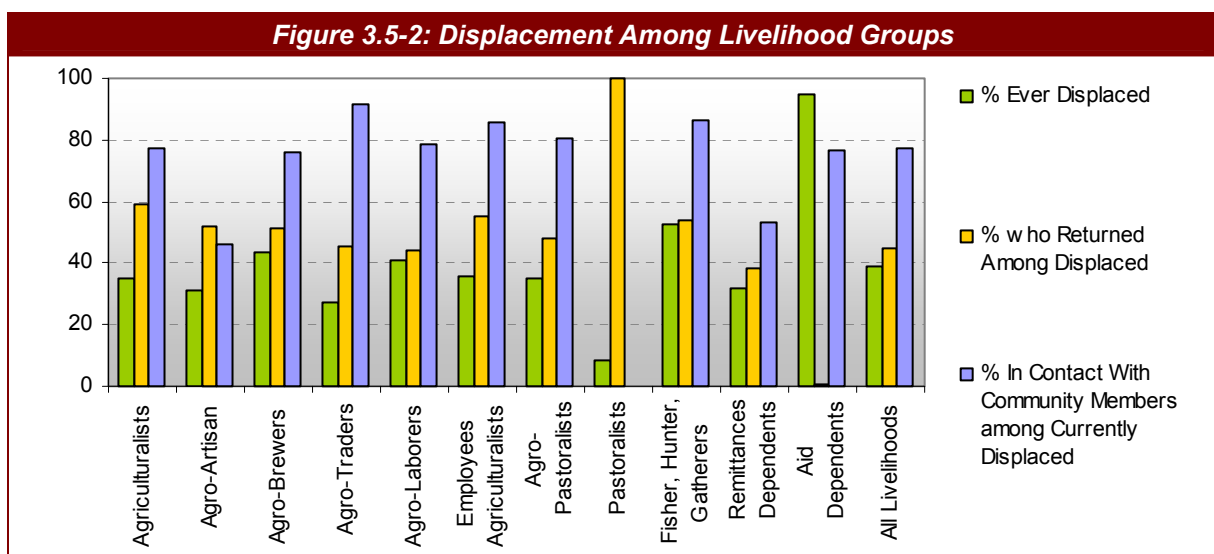
of the population still lives in IDP camps, as well as in the Lango and Greater Busoga strata, most of the households who were ever displaced returned to their place origin. In the northern region, insecurity was the main constraint to returning for the displaced households, while in the rest of the country, lack of landholding and poverty in the place of origin were the most frequently identified constraints. Among those who did not return, an average 22% were no longer in contact with community members of their original place of residence, which could lead to disruption in social networks.

Findings from the community questionnaire further confirm that migration in northern Uganda is due mainly to insecurity. In the Karimojong area and to a lesser extent in the Teso-Dhola and Gisu-Sebei strata, population movements were predominantly out-migration due to insecurity and tribal conflict (Turkana and Karimojong).

In the Acholi stratum, virtually the entire population migrated to IDP camps because of insecurity (LRA) and government policies to place people in camps for security reasons. In one case, people who migrated to town were settled in the camp. Communities of the Arua and Madi strata reported less migration, although in-migration of refugees from DRC and Sudan was mentioned. In the Greater Busoga, Central Lake and Greater Buganda clusters, migration was mainly due to a search for economic opportunities (employment) and, to a lesser extent, for land. Seasonal migration was also mentioned among fishing communities. In the western region, lack of land was the main reason for population movement. Secondary causes in that region included insecurity due to the DRC conflict (refugees) and attacks by the ADF.



Among livelihood groups, the proportion of households that were at one time displaced ranged from 27% to 40% among all livelihood groups, except for the Marginal Livelihoods, among whom 95% of the households had been displaced. The reason for displacement among Marginal Livelihoods was predominantly insecurity, while among the other groups, both security and economic reasons explained displacement. The lowest incidence of households resettling in their place of origin was found among Marginal Livelihoods (99% of those displaced are still displaced). Among the other livelihood groups, roughly 50% of those who were ever displaced were able to go back to their place of origin.



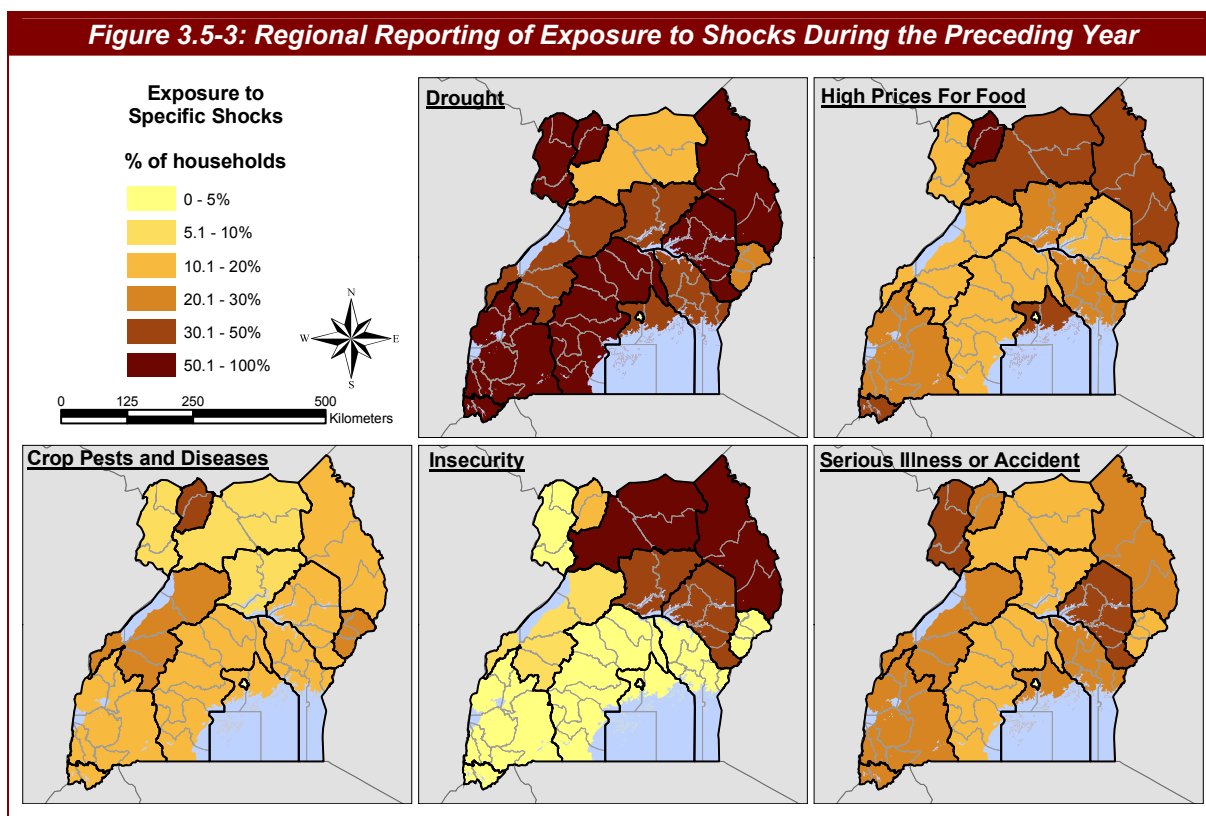
During the household questionnaire, respondents were further asked a series of questions to evaluate their exposure to traumatic events over the last year. On average, 27% reported they had had their house damaged, 29% experienced looting or theft of productive resources, 2% reported the killing of a household

member and 0.4% reported the killing of the household head. An average of 8% reported having household members being abducted and/or being threatened by death. Finally, 6% reported that a household member had been maimed or injured over the last year. For all these events, reporting was systematically higher in the Acholi stratum. Abduction there was reported by 35% of the households, 17% reported the death of a household member, 24% had had a member of the household physically maimed or injured and 65% had experienced the theft or looting of productive resources. The causal factors behind those rates do not fall within the scope of this study. However these events may have had an impact on the households' vulnerability.

3.5.2 Exposure to Shocks, and Coping Mechanisms

3.5.2.1 Exposure

Vulnerability to food insecurity is a function not only of the probability, frequency and intensity (risk factors) of exposure to external shocks, such as drought or conflicts, but also of the ability or lack thereof of a given household to reduce, mitigate and cope with external shocks. Shocks are understood as events that have a negative impact on individuals, households and/or communities. Respondents selected for the household questionnaires were asked if, over the last year, they had been faced by food shortages or a diminution in the quality and/or quantity of food available to them, because they could either not purchase enough or not produce enough themselves. They were then asked to identify the causes (shocks) that affected them (possible answer not provided). A distinction has been made between covariate shocks (affecting all the households in a given area, e.g., drought) and idiosyncratic shocks (affecting only selected households in a given area, e.g., disease). Before discussing the results, it is important to note that these are perceived exposure. What one household may perceive as a shock is not necessarily perceived as such by another. Underreporting is likely to happen where shocks occur on a regular basis (e.g., insecurity in northern Uganda) and therefore becomes a somewhat "normal" situation.



Overall, reported exposure to shocks was very high all over the country. Exposure to at least one covariate shock was reported by 70% of the households. Exposure to covariate shocks was more frequent than exposure to idiosyncratic shocks, as reported by 53% of the households. Among the covariate shocks, households most frequently reported exposure to drought (53%). Drought was highest in the northern region, which is typically characterized by a unimodal distribution of rainfall. Drought was also more

frequently identified in the southwest. Note that drought was seldom reported in the Acholi stratum, although that is a drought-prone area. The likely reason for this is the presence of conflict in the region and the fact that few people depend on agriculture and therefore few are affected by drought. Rather, households in the Acholi stratum were sensitive to insecurity and violence as well as to high prices for food. Overall, insecurity was reported by 11% of the households, mainly in the Karimojong (50%) and Teso-Dhola (32%) strata (Turkana, Karimojong), Acholi (64%) and Lango (35%) strata (LRA) and to a lesser extent in the Bunyoro (10%) strata (likely DRC/ADF). High prices for food are the second most important covariate shock (25% of the households), and were most frequently mentioned in the northern region. Again, this might be seen in relation with exposure to drought and violence in the area, which reduce a household's ability to sustain life based on their own production. However, high prices also affected all the other regions. The third most frequently reported shock overall was crop pest and disease (average 16%) and was reported in every cluster. This likely indicates the need for better agricultural extension services to provide access to more tolerant or resistant varieties and to raise awareness for better use of pest and disease control system.

Among the idiosyncratic shocks, two main categories of shocks were frequently mentioned: economic- and health-related shocks. Among the economic shocks, the lack or loss of employment was on average cited by 18% of the households and was identified across the country. Reduced income was also mentioned, although the reason for the reduced income was not specified. Serious illness or accident was the main idiosyncratic shock related to health. It was reported in every cluster by an average 24% of the households. Interestingly, while the number of household members who died over the last six months was remarkably higher in the Acholi stratum (see Health section 3.3.2), this was not translated in terms of shock. Overall, only 2% of the households reported the death of a household member among the shocks experienced. Again, the main livelihood profile in the district (dependence on food aid) is likely to explain the comparatively low frequency of "death" and other health-related idiosyncratic shocks. Theft because of insecurity and economic idiosyncratic shocks remained important in that cluster.

No livelihood group seemed to show specific patterns in terms of exposure to either covariate or idiosyncratic shocks, except the Marginal Livelihoods, who largely reported exposure to insecurity as the major shock (reported by 64%). Insecurity was also more frequently mentioned among Agro-Brewers (34%) and Pastoralists (42%).

3.5.2.2 Impacts

Nearly all the households reported that the shocks experienced over the last year had had an impact on either their income (cash and in-kind) or assets. The frequency showed little variability among strata and livelihood groups. However, in the northern region, households more frequently reported a decrease in income (in-kind and cash), while the rest reported loss of both income and assets. Impact on food security (understood here as the ability to produce or purchase enough food) was reported overall by 92% of the households. The Acholi, Karimojong and Madi strata as well as the Greater Buganda, Ankole and Kiiga strata reported a more frequent impact on their food security than the rest of the country.

Overall, idiosyncratic shocks do not appear to have a more or less frequent impact on households' income, assets and food security than covariate shocks. However, idiosyncratic shocks appear to affect the asset base less frequently than covariate shocks. Among the covariate shocks, insecurity affected income and assets as well as food security status. Drought more frequently affected income and food security but not assets. The third most frequent shock, crop pests and diseases, also predominantly affected income. Its impact on food security was found to be lower than that of drought and insecurity. Nevertheless, more than 80% of the households affected by crop pests and diseases reported a decrease in their ability to produce or purchase food.

3.5.2.3 Coping Mechanisms

Most households (98%) exposed to shocks reported the use of one or more coping mechanisms. Households had the possibility of providing up to two coping mechanisms they used in response to each of the four main shocks to which they were exposed. Overall, the coping mechanisms most frequently used were to loan or borrow money to buy food. This likely indicates that communities and social network play a major role in coping with shocks. "Loan/borrow food or money for food" was used overall by 40% of the households. It was most important in clusters from the eastern and western regions and least important in the central region. In the northern region, importance varied across clusters and was found highest in the Acholi and Karimojong strata, which are most exposed to drought and conflict (insecurity).

The second and third most frequently used coping mechanisms are related to diet change in terms of composition, size and frequency. Among the households exposed to a shock, 37% had changed their diet, which included relying on less expensive, less preferred food and consuming more wild food or hunting. Another 32% reduced the size and or frequency of the meals eaten. The reduction of meal size and frequency was highest in the northern and central regions. The sale of livestock was relatively frequent, which indicates the role of livestock as a safety net. Finally, "spending savings," although used overall by more than 10% of the households, was least used in the northern region, likely because households there had already eroded their asset base, mainly their savings.

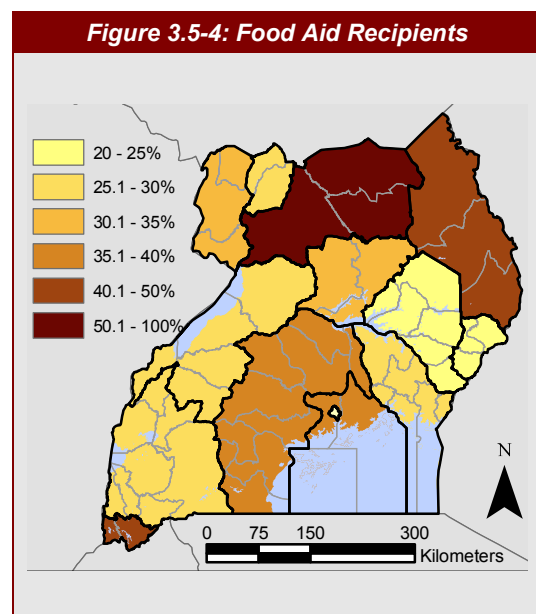
Looking at coping mechanisms in relation to specific shocks, it appears that changing the diet is less frequently used to cope with insecurity than with drought or high levels of crop pests and diseases. The likely explanation for this is that when faced with insecurity, households have little possibility to collect wild foods, for example. Rather, decreasing the size and frequency of meals was more frequently used. Overall, food-related coping mechanisms (changing diet, reducing size and frequency of meals, etc.) are used for both covariate and idiosyncratic shocks. Coping mechanisms involving finance, such as the sale of livestock or other assets, borrowing money and spending savings, are more frequently used when coping with idiosyncratic shocks such as loss or lack of employment, reduced income and health-related shocks.

3.5.2.4 Recovery

When asked if their households had recovered from the inability to have enough food caused by the main shock they were exposed to, overall only 7% said they had completely recovered, 41% declared that they had partially recovered and 52% said that they had not recovered at all. The percentage of households that recovered or partially recovered was lowest in the northern and western regions, likely because of repeated exposure over time, which continuously eroded their coping abilities. Recovery rates to idiosyncratic and covariate shocks were found to be similar. However, recovery was most difficult after exposure to insecurity. This is probably due to the ongoing exposure to conflict (northern Uganda) and banditry (Karimojong, Turkana), which prevent households from returning to a normal life. Among livelihoods, recovery appeared to be most difficult among Pastoralists (0% recovered), Marginal Livelihoods (3% recovered) and Agro-Labourers (4% recovered)

3.5.3 Food and Non-Food Assistance

The discussion of the coping mechanisms used by households faced with shocks indicated the importance of getting loans or borrowing food or money for food. Food aid was also found to be an important source of food for many households. One section of the household questionnaire focused more specifically on the issues of food aid and gifts. Among the selected households, as many as 34% declared having received any type of food aid in the last six months before the interview. Receiving food aid was most frequent in the Karimojong (50%) and Acholi (79%) strata, usually seen as least food secure because of drought and conflict. Food aid was also relatively high in the Kiiga stratum (44%). Among livelihoods, not surprisingly, a majority of the Marginal Livelihoods (80%) declared having received food aid. Large proportions of food aid recipients were found among Remittance Dependents (62%), Pastoralists (58%) and Agro-Brewers (40%). Respondents who received food aid were then asked about the main sources of that aid. They had the possibility of providing several answers.



Most households reported receiving food from families and friends, which indicates the strong role of social networks in coping with food insecurity. It was in fact the only source of food aid in the central and western regions as well as in the Arua stratum (North-West). Gifts from families and friends played a less preeminent role in the Karimojong (19%), Acholi (11%), Madi (25%) and Lango (56%) and Teso Dhola (48%). General food rations in these strata somewhat replaced the role of the community as a safety net.

Table 3.5-1: Beneficiary per Food Aid Sources

	Average %
Gift from family, friends	73
General Food Ration	13
School Feeding	8
Supplementary Feeding	2
Therapeutic Feeding	1
Food for Work / Assets	4
Others	12

The general food ration was found as a source of food aid in the Karimojong (81% of the households), Acholi (59%), Lango (6%) and Teso Dhola (31%) strata. School feeding was a less important source of food aid, but played an important role especially in the Acholi (39%) and Madi (67%) strata.

Gifts from families and friends similarly played a major role among all the livelihood groups, except the Marginal Livelihoods (16%), Pastoralists (29%) and Agro-Brewers (51%), compared with the 73% national average. Those three livelihood groups, more than the other groups, benefited from the general food ration: 50% of the Marginal Livelihoods, 100% of the Pastoralists and 35% of the Agro-Brewers who received food aid received the general food ration compared with 13% for the general population. Marginal Livelihoods and Agro-Brewers were also more often targeted through school feeding programs, with 29% and 11% of households, respectively, benefiting from those programs.

The role of the community as a safety net is further seen in the proportion of households (46%) that declared having given food to other households in need over the same period (last six months). The proportion of households having given food was higher where the general food ration was not available (central and western regions) and lowest in the Karimojong (16%), Acholi (24%) and Madi (21%) strata, and in the northeast in general. Findings from the community questionnaires also indicated the main role of the community in supporting its worse-off members throughout the country, by providing them with not only food but also other basic needs, such as clothes. Few households reported problems accessing food aid, except in the eastern and northern regions. Problems were usually associated with non-community-based food aid and included the low availability of food and the irregular distribution. Overall, 13% of the households reported exchanging or selling food aid in the last six months. About half did so in order to get other type of foods, and half did so to get cash for other expenses.

Households were then asked if they had benefited from other types of assistance besides food aid. Only 19% of the households benefited from other types of assistance. Again, the community itself was the main source for such assistance, with 41% of the households having benefited from support from their communities. Faith-based organizations, the Red Crescent and the government were the three main secondary sources, with each benefiting about 10 to 15% of the households. Differences among strata and livelihoods were less marked than for food aid and did not appear to follow a specific pattern. There were, however, differences in terms of the type of assistance provided. Assistance in cash as well as for health and education was very low in the northern and eastern regions, while it was the main type of assistance in the central and western regions. In the northern and eastern, non-food assistance was more diverse, including assistance for tools and seeds.

In conclusion, food aid and non-food assistance play an important role in supporting the lives of the less well off in Uganda. Remarkably, community-based safety nets are the main source for such assistance.

3.6 Food Utilization and Nutrition Status

The food utilization and nutrition status will be discussed based on results from the Mother and Child Health and Nutrition sections of the CFSVA questionnaire.

3.6.1 Women's Maternal Care, Health and Nutrition

Within the selected households, one woman was selected to answer questions on health and nutrition. Where there were children aged 6 to 59 months, the mother of those children was selected. If there were no children in that age bracket but there were children under 6 months, the mother of those children was selected. If there were no children in the household, a woman aged 15 to 49 was selected. Where no one met those criteria, the interview was terminated. In twenty-eight households, more than one woman met the selection criteria. Only one woman was randomly chosen to answer the questionnaire. A total of 2,496 women were interviewed.

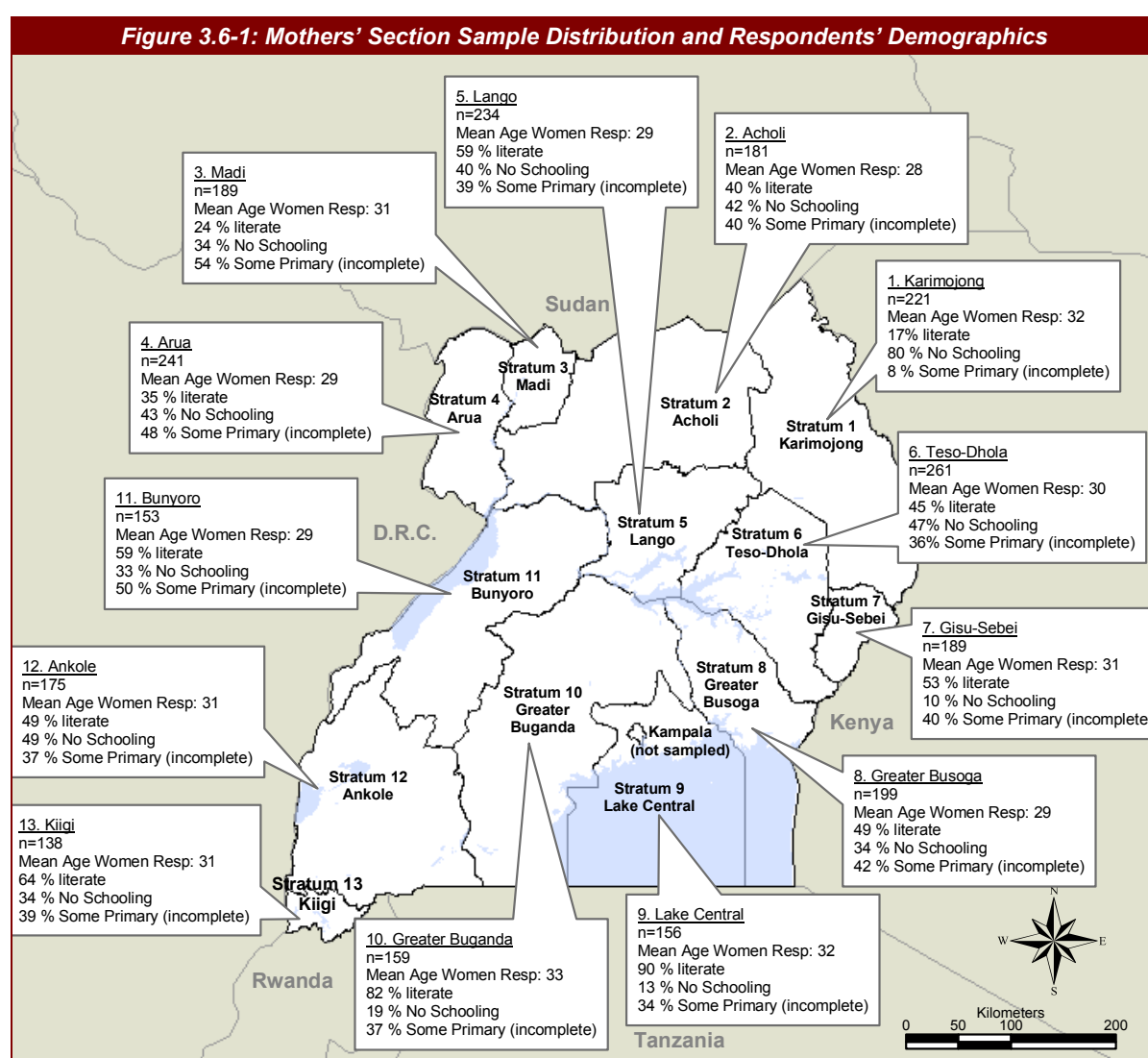


Table 3.6-1: Key Findings on Women's Education

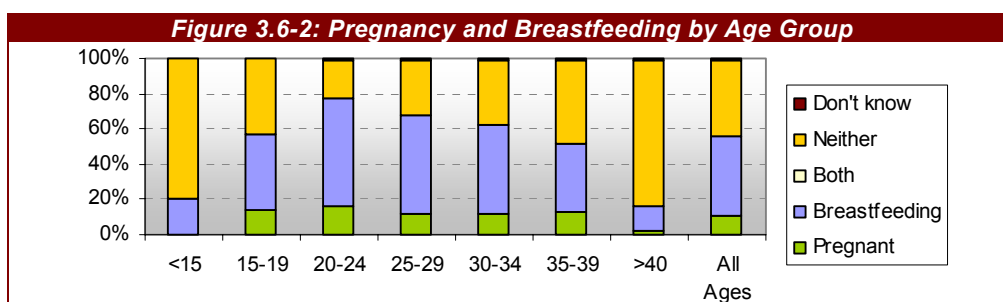
Mean age of interviewee	Can read/write simple message	Never attended school	Has not completed primary school
30 years	56%	36%	39%

Literacy and school attendance varied little across the country, except in the Karimojong stratum, which had the lowest literacy rate (17%) and the highest percentage of women who had never attended school (80%). The proportion of women who had participated in at least some primary education was found to be highest in the central region. Among livelihood groups, the proportion of women who had never attended school

was highest among Pastoralists (67%), Agro-Brewers (55%) and Marginal Livelihoods (47%), compared to an average of 36%. Inversely, the highest proportion of women with some education was found among the Employees Agriculturalists. The same pattern applies to women's literacy rate.

3.6.1.1 Pregnancy History

Overall, 94% of the women were currently or had been pregnant in the past. 11% of the interviewed women were found to be currently pregnant. Among them, 21% were in their first trimester, 36% in their second trimester and the 43% in the last trimester. Figure 3.6-2: Pregnancy and Breastfeeding illustrates the status of selected women by age groups. The highest proportion of pregnant women was found among those aged 20 to 24 (16%). On average, 45% of the women were breastfeeding at the time of data collection. Pregnancy and breastfeeding status showed little variation across the country, to the exception of the Acholi stratum where as many as 73% of the respondents were found to be currently breastfeeding (average 45%).



Among the selected women, 94% were or had been pregnant in the past and they reported a median number of 5 pregnancies (mean = 5) and 4 children (mean = 4.23). Among those women, 24% experienced miscarriage and 7% reported still births. The median age for first delivery was 18 years, but the mean was younger, at 16.5 years. Less educated women were found to have had their first delivery younger than the more educated ones. The mean first delivery age was 17.6 among women who never attended school. It was over 18 for those who completed primary school, over 19 for those who completed secondary school and above and over 21 for those with a higher degree. No significant differences among groups appeared when stratifying geographically or by livelihood groups.

3.6.1.2 Antenatal care

Table 3.6-2: Antenatal Care – Key Findings

Mothers declared having received antenatal care	Antenatal care received from		Women receiving iron foliate tablets	Women receiving Vitamin A
	Nurses	Midwives		
93%	44%	37%	74%	39%

Information collected on 2,521 children present in the sampled households (child health section) indicated that mothers received antenatal care from a doctor for only 12% of the children. Antenatal care showed little variation geographically and across livelihood groups, however, as many as 25% of the Marginal Livelihoods saw doctors, twice as much as the national average. This is possibly due to the services provided by NGOs in camp settings. The lowest access to doctors was found among Agro-Brewers (3% of the children).

The access to iron foliate tablets and vitamin A was found to be much lower in the western region, being received respectively by 60% and 20 to 30% of the women in the western region. Access to those services was generally found to be higher in the North, perhaps as a result of increased external assistance in those areas. Antenatal care showed no significant differences among livelihood groups.

The information collected in the child health section, however, indicated that for 70% of the selected children, mothers received vitamin A supplement. It further indicated that mothers had received tetanus injection while pregnant for 80% of the children. Coverage was found to be lower in the western Region, especially in the Bunyoro (62%) and Ankole (67%) strata.

3.6.1.3 Health Status and Practices

As part of the interview, the selected mothers were asked a series of questions with regard to their health status and practices. When asked if they had been ill with fever and/or diarrhea in the previous 2 weeks, 56% responded yes to fever and 17% said yes to diarrhea. In terms of geographic distribution, no clear pattern emerged, although the highest positive response rate was obtained in the Gisu-Sebei stratum, with over 80% reporting fever in the previous two weeks. With regard to diarrhea, the Karimojong, Acholi, Lango and Teso-Dhola strata showed the highest proportion of reported diarrhea (over 20%). When asked about the use of mosquito nets, only 30% of the mothers reported having used one during the night before data collection. Although malaria is endemic in every region of Uganda, utilization of mosquito nets was lowest in the western region, ranging from 10% to 19%. Little variation existed among livelihood groups on the use of mosquito nets, with the exception of the Employees-Agriculturalists and Hunter, Fisher, Gatherers among whom a higher proportion of women used nets (53% and 48%, respectively).

Mothers were further asked about their hand washing practices and whether or not they boiled water before consumption for their children. Poor hand washing practices and use of unsafe water among women taking care of children can be detrimental to the health of those children. Overall, 27% of the women declared to always boil water before giving it to the children and 9% reported to do so irregularly. Poor practice is especially prevalent in the northern and eastern regions; there, more than 80% reported never to boil water (over 95% in the Karimojong, Acholi, Madi, Arua and Teso-Dhola strata). In the western region, 40% to 64% of the women never boiled the water. The central region was the most effective with less than 15% of the mothers never boiling water.

To assess the hand washing habits, mothers were asked on which occasion they washed their hands and were allowed to provide multiple answers. The answers are summarized in Table 3.6-3: Hand Washing Practices. Overall and in all the clusters, less than 1% of the interviewed mothers replied that they never washed their hands.

Table 3.6-3: Hand Washing Practices

	Average %
Wash their hands before preparing meals	44 %
Wash their hands before eating	80 %
Wash their hands after going to the toilet	61 %
Wash their hands after cleaning a child who has gone to the toilet	8.0 %
Wash their hands "when they are dirty"	49 %

Practices varied little geographically but were generally found to be poorer in the Karimojong and Acholi strata, with for example only about 20% of the mothers washing their hands after going to the toilet in the Karimojong stratum. Similarly, practices varied little among livelihood groups, but were generally poorer among Pastoralists.

3.6.1.4 Nutrition Status

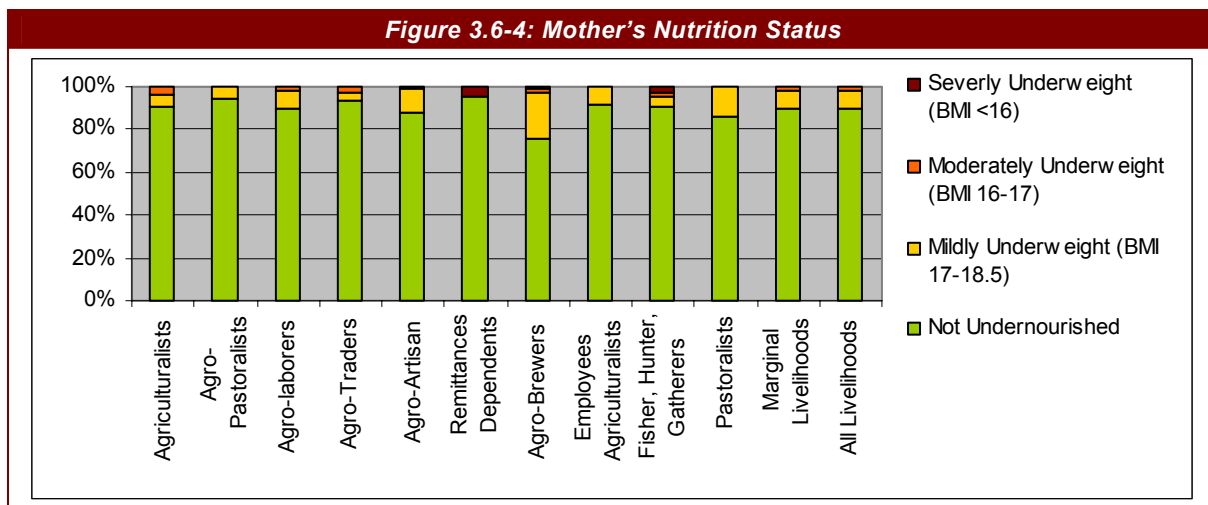
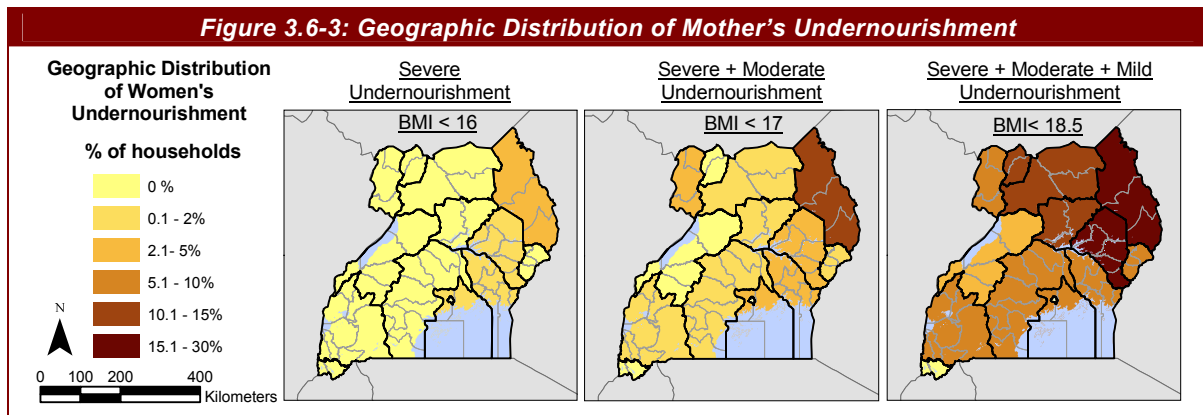
Complete weight and height measurements were obtained for 1,924 women. Weight and height were used to compute Body Mass Index (BMI) and were classified using standard WFP cut offs for undernourishment:

Severe: BMI < 16

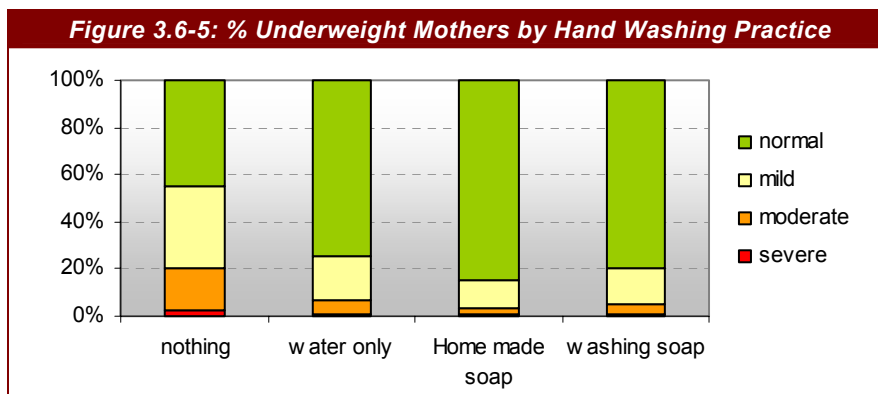
Moderate: 16<BMI<17

Mild: 17<BMI<18.5

Overall, less than 1% of the women were severely undernourished and 2% were malnourished (severely + moderately undernourished). Severe malnutrition is predominantly found in the Karimojong stratum, with 5% of the women severely undernourished. Moderate undernourishment is more widespread but is also highest in the Karimojong area, at 6%. Overall, it appears that malnutrition, including mild undernourishment is more prevalent in the northern and north-eastern regions. Among Livelihood groups, severe undernourishment is found mainly among Remittances Dependents (5%), Hunter, Fisher, Gatherers (3%) and Agro-Brewers (1%). Moderate undernourishment is more widespread among most of the groups. When mild undernourishment is taken into account, Agro-Brewers and Pastoralists are the worst off, which likely indicates the vulnerability of those groups.



Among women, it was further observed that those with poor hand washing practices were more likely to have a poor nutritional status (*what do you generally use to wash your hands?*).



3.6.2 Children Nutrition and Health

Information was collected on 2,521 children present in the sampled households. For each woman selected for the Mothers section (see section 3.6.1) a maximum of three children 59 months old or less was selected. Health and nutrition information was collected.

Table 3.6-4: Children Sample

Strata	Sample size (n)	% sample
Karimojong	238	9.4
Acholi	234	9.3
Madi	263	10.4
Arua	245	9.7
Lango	164	6.5
Teso-Dhola	131	5.2
Gisu-Sebei	212	8.4
Greater Busoga	269	10.7
Central Lake	174	6.9
Greater Buganda	112	4.4
Bunyoro	131	5.2
Ankole	211	8.4
Kiiga	137	5.4
Total	2521	100.0

3.6.2.1 Vaccine Coverage and Basic Health Care

According to the respondents, for 80% of the children, mothers received tetanus injection while pregnant. Coverage was found to be lower in the western region, especially in the Bunyoro (62%) and Ankole (67%) strata. Measles vaccination was received by 77% of the children. Coverage was lowest in the Arua (69%) and Ankole (67%) strata. Across livelihood groups, measles coverage was lowest among Remittances Dependents, mainly located in the south-west. It was highest among Marginal Livelihoods, again likely as an impact of increased services available in camps setting.

Overall, 52% of the children had received de-worming tablets in the previous 6 months. Again coverage was lowest in the Arua strata (36%) as well as the Nebbi (43%), Lango (41%) and Ankole (42%) strata. Across livelihood groups, children from Remittances Dependents households are least covered (34%).

When asked about specific sickness, mothers indicated that 67% of the children had been ill with fever in the two weeks preceding the interview. That figure was over 80% in the Acholi and Greater Busoga strata. In terms of livelihood, the highest rates were found among Marginal Livelihoods (77%) and Fisher, Hunter, Gatherers (79%). Among those who had fever, 69% were brought to a health center. Visit to a health center was more frequent in the Acholi (80%) and Lango (79%) strata, possibly as a result of better access to health care in camps settings. It was least frequent among Remittances Dependents (50%). Finally, among those who visited a health center, 76% were prescribed anti-malaria medication. Geographic variation did not follow a pattern related to the distribution of malaria. Anti-malaria drugs were prescribed less frequently in the Karimojong (60%), Lango (65%), Greater Buganda (63%) and Kiiga (64%) strata. Among livelihood groups, the lowest prescription figure was found among Remittances Dependents (57%).

Mothers were then asked if the child had been ill with diarrhea in the two weeks preceding the interview. Overall, 29% of the children had been affected. Diarrhea was very frequently found in the Acholi strata, with more than half of the children being affected (53%), likely an outcome of the poor health, water and sanitation situation prevailing in many camps. In terms of livelihoods, children from Marginal Livelihoods (52%) and Fisher, Hunter, Gatherers (45%) households were more frequently affected, while those from Employee Agriculturalists were the least affected (16%). When asked about cough, mothers replied that the child had been with cough in 68% of the cases. Cough showed less variation geographically and across livelihoods, although it was least reported in the Nebbi strata (50%).

3.6.2.2 Breastfeeding

Almost all the children (98%) had been breastfed at some time, providing the babies with clean, nutritious food and antibodies. Two-thirds of the children (64%) were put to breast within one hour of birth and 84% within one day. Among the Acholi and Lango strata, children tended to be breastfed later with only 55% and 67% breastfed within one day, respectively. Among livelihood groups, only 55% of the women breastfed their children within one day, compared to the average of 84%. The second lowest figure was found among Agro-Brewers, at 73%.

3.6.2.3 Child Nutrition

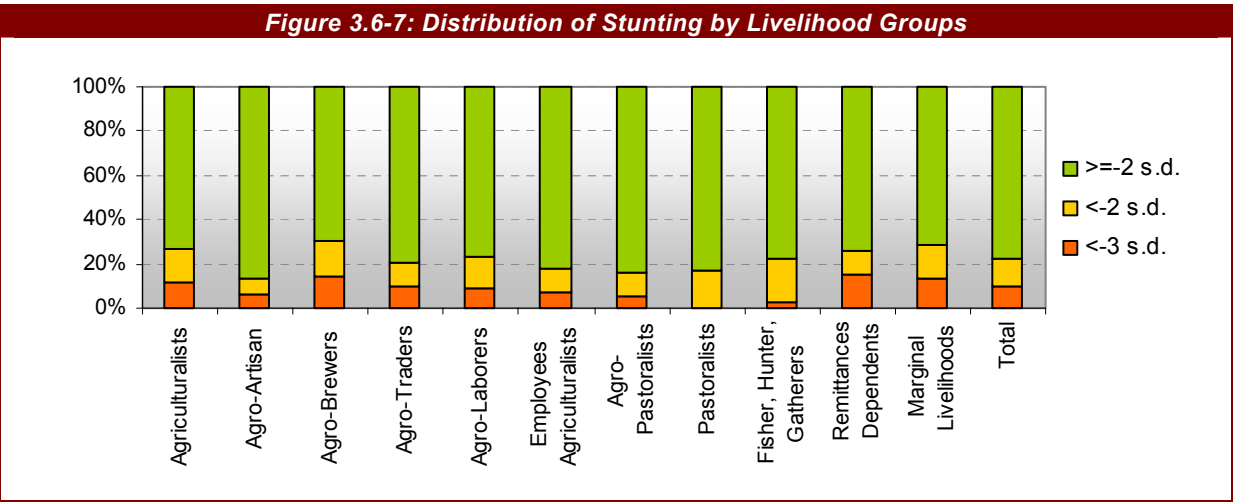
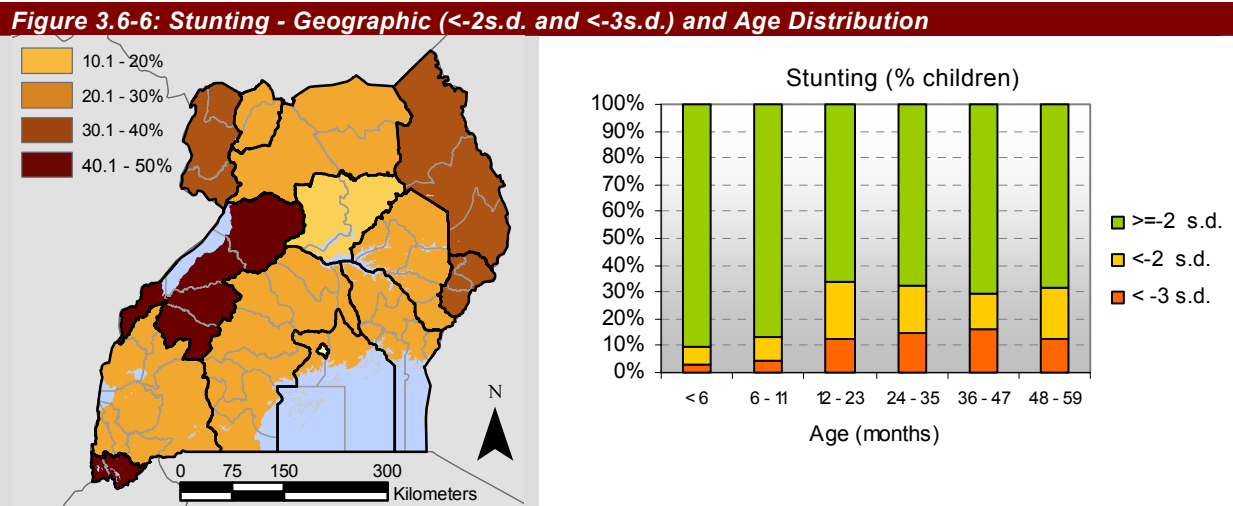
In the last part of the interview, measures of children's weight and height were conducted. Measures from 2,098 children were taken. While the sampling procedure does not ensure proper representative results at the geographical strata level (see section 1.7 on the limitations of the study for a more detailed discussion), the figures below are provided as an indication of trends in malnutrition prevailing in rural Uganda. Malnutrition will be defined by three indicators:

- Height by age (stunting): Height by age is a measure of linear growth, and as such, an indicator of long-term effect of under nutrition not affected by seasonal changes.

- Height by weight (wasting): Height by weight is an indication of the current nutritional status of a child and reflects recent nutritional intake and/or episode of illness. Severe wasting is often linked to acute food shortage.
- Weight by age (underweight): Weight by age combines information from stunting and wasting. Children can therefore be underweight because they are stunted, wasted or both

The status of children was measured and compared to a standard population using the Nutrition module of EpiInfo⁵⁴. Standard WHO cutoff points were used to differentiate between categories. Children below more than two standard deviations (-2 s.d.) were considered stunted, wasted or underweight. Children below more than three standard deviations (-3 s.d.) were considered severely stunted, wasted or underweight.

Overall, the prevalence of children below five years in rural Uganda that were stunted is 30%, but many were also found to be severely stunted (13%). Stunting prevailed in all places but was found to be especially high in the Kiiga and Bunyoro strata in the western region with 47% and 41%, respectively. Stunting was also high in the Karimojong (34%), Gisu Sebei (33%) and Arua (32%) strata. Severe stunting was most frequent in Kiiga (25%), Bunyoro (21%) and Karimojong (20%) strata. Across gender, boys were found to be more frequently stunted than girls at 34% and 24% of children stunted, respectively. Children 12 months or older were also found to be more frequently stunted than younger ones. Stunting was found to be frequent among many livelihood groups, most notably among Agriculturalists (34%), Agro-Labourers (34%), Pastoralists (34%) and Fisher, Hunter, Gatherers (34%).



Wasting affected 10% of the children, among whom 3% were severely wasted. These figures are extremely high but may be explained by the fact that data collection took place just before harvest season. Timing is

⁵⁴ for more information, see <http://www.cdc.gov/epiinfo/>

especially critical in the northern region where there is a unimodal distribution of rainfall and therefore has only one harvest per year. Wasting was indeed found to be most prevalent in the Karimojong strata (with 22% of children being wasted and 11% severely wasted) and in the Acholi strata (with 16% children wasted and 5% severely wasted). Wasting was also high in the eastern strata of Gisu Sebei and the Teso Dhola strata. Interestingly, while stunting was high in the Kiiga strata, wasting appeared to be less of a problem, likely indicating that malnutrition is more of a chronic problem in the area. Wasting did not appear to affect boys or girls more frequently. Age, however, showed a pattern inverse to that of stunting, with younger children more frequently wasted. Among livelihood groups, wasting was most prevalent among Pastoralists (20%, on a very small sample) as well as Remittances Dependents (16%) and Marginal Livelihoods (16%). Those groups were also more vulnerable to acute stunting.

Figure 3.6-8: Wasting - Geographic (<-2s.d. and <-3s.d.) and Age Distribution

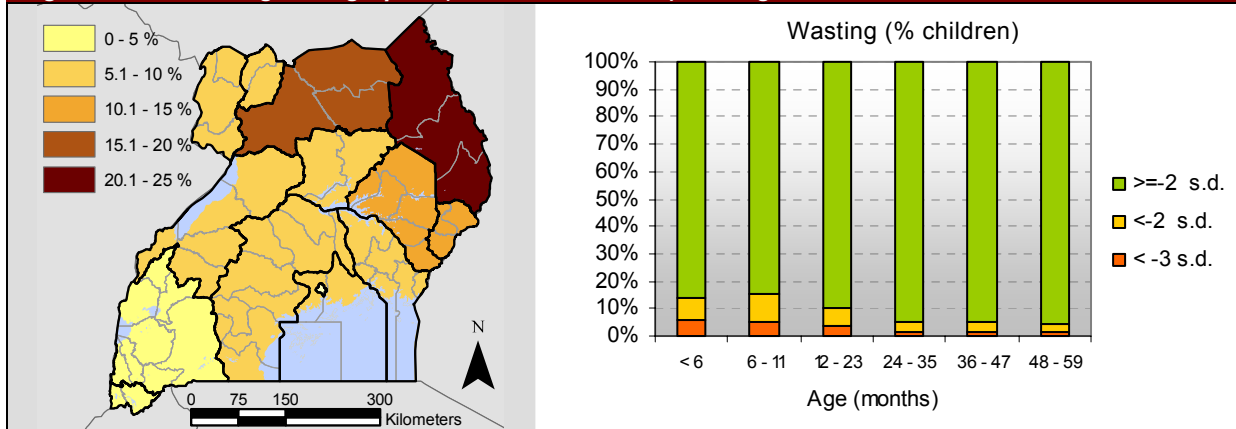
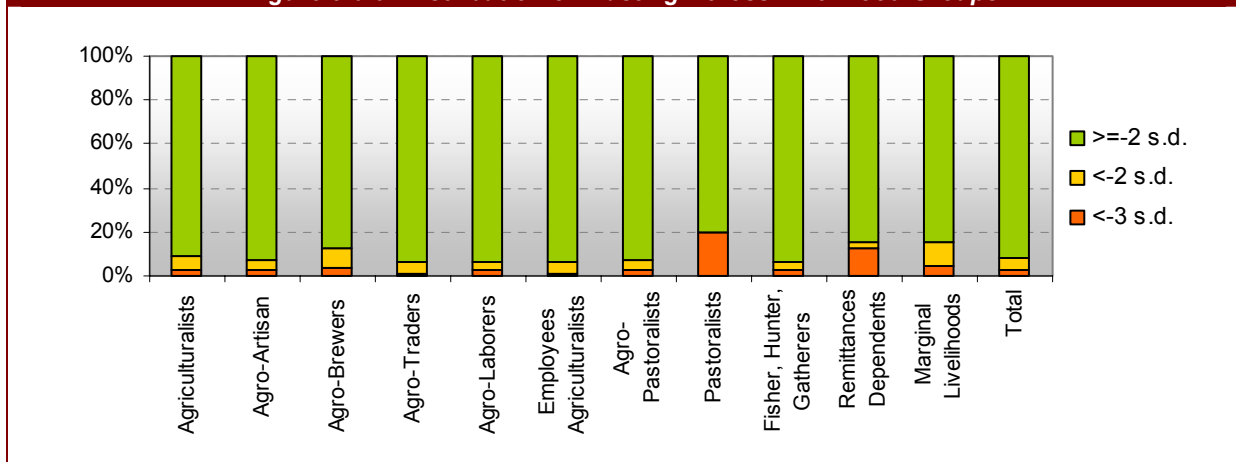


Figure 3.6-9: Distribution of Wasting Across Livelihood Groups



The third indicator – weight by age, underweight – illustrates the elements discussed for wasting and stunting. Overall, 25% of the children were found to be underweight (<-2 s.d.) and 11% were severely underweight. The areas with the highest proportion are: the Karimojong (31%), Acholi (29%), Madi (30%), Gisu Sebei (37%), Bunyoro (33%) and Kiiga (29%). All those places also presented high rates of severe underweight. Prevalence of underweight showed no difference across gender. The CFSVA found a similar trend across age groups as that described in the UDHS,⁵⁵ with the prevalence of underweight rising rapidly from 7% among children below 6 months, to 31% among those aged 6 to 11 months, to 36% among those 12 to 23 months old, and then decreasing among the older age groups. Across livelihoods, underweight were found among all the groups and more importantly among Agro-Brewers (30%), Marginal Livelihoods (29%), Agriculturalists (27%), Remittances Dependents (25%), Agro Labourers (23%) and Fisher, Hunter, Gatherers (23%).

⁵⁵ Uganda Bureau of Statistics, Uganda Demographic and Health Survey, 2002

Figure 3.6-10: Malnourished - Geographic (<math><-2s.d.</math> and <math><-3s.d.</math>) and Age Distribution

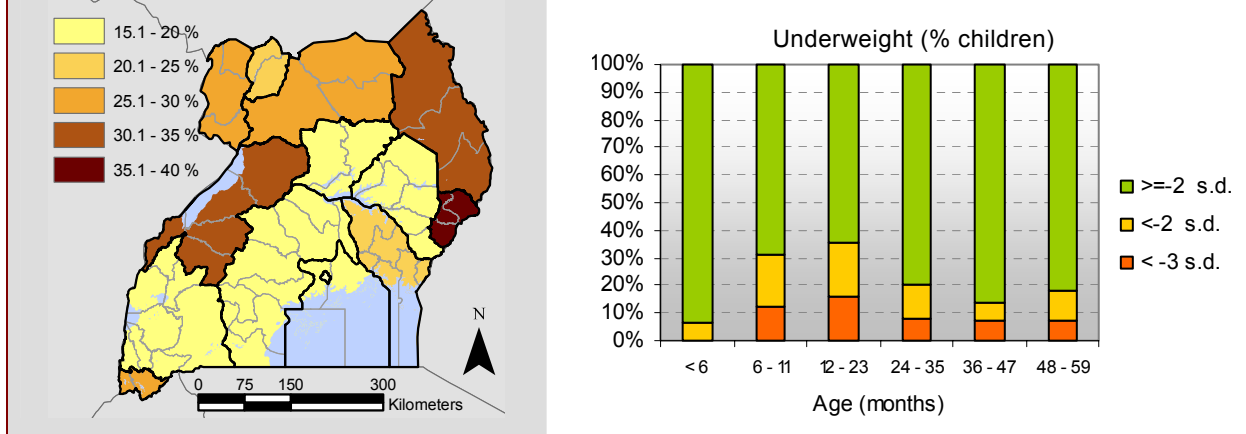
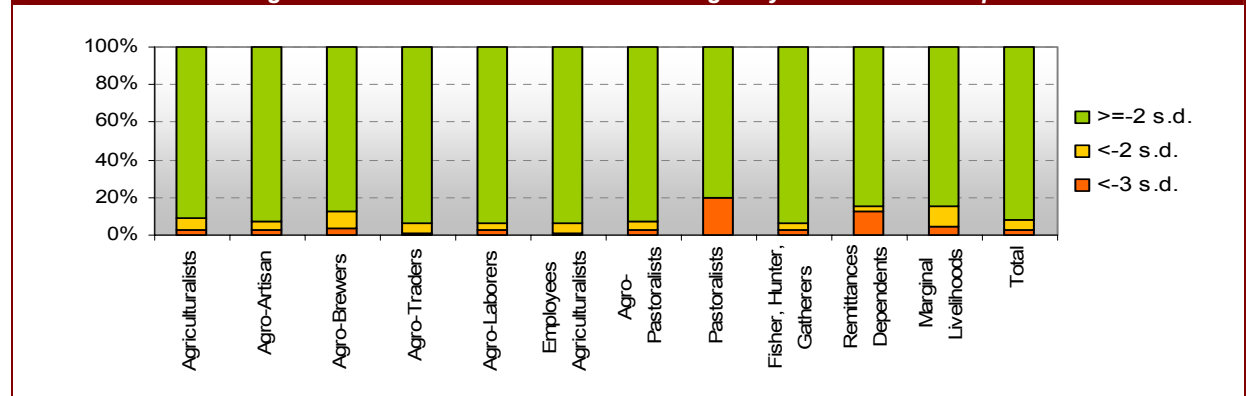


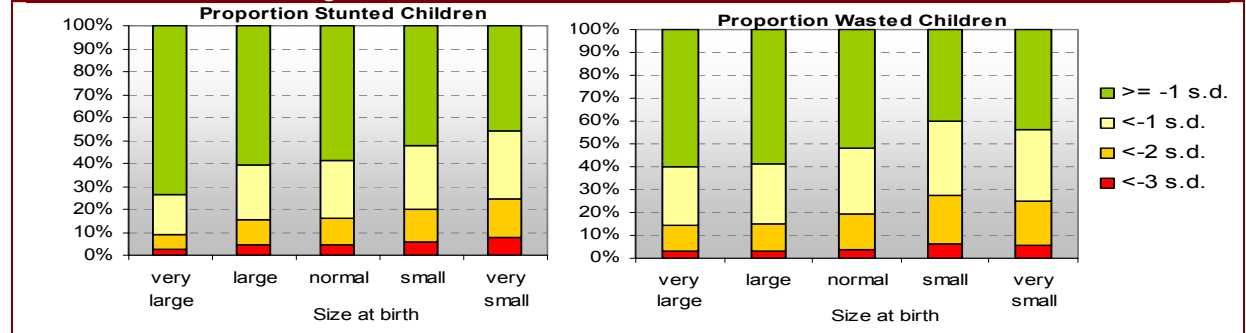
Figure 3.6-11: Distribution of Underweight by Livelihood Groups



In this analytical section, the household Food Security and Vulnerability profiles are used to explore easily observable and measurable factors closely related to the causes of malnutrition. Children have been studied to evaluate how they influence the nutrition outcome. Multiple ordinal logistic regressions were used to explore the relationship between selected independent variables and the malnutrition classification (dependent variable). This provides the ability to see, to a certain degree, the effect of one factor while controlling for all the other factors. Their interpretation must be cautious: one is never sure of the causality involved. Some of the factors found to be significantly related with nutritional status are:

- Health: Recent diarrhea or fever results in higher wasting and even stunting, de-worming results in less stunting. The analysis of the data shows a strong correlation between the reported size at birth and nutritional status, with children born smaller more frequently stunted and wasted. It is however not certain if this stunting and wasting is caused by the low birth-weight or if both weight at birth and malnutrition when growing up could be due to other common factors, not captured by the model.

Figure 3.6-12: Child Size at Birth and Nutritional Status



- Water and sanitation: Women who are not washing their hands properly are much more often wasted; however, this effect could not be shown on their children. We could not establish any correlation between the source of water, boiling the water or the type of toilet and the nutrition status of mothers and children.
- Ownership of Cattle: Households owning cattle had less stunting among their children, probably because of the improved security of income through cattle ownership (selling when needed for food). Another possibility is that consumption of animal proteins in households with cattle improves the growth of children. We don't have data on long-term consumption and could consider the diet of the previous week as a proxy for long-term consumption. However, the presence of animal protein in the previous week's diet didn't show any correlation with reduced stunting.
- Ownership of house and land was found to be positively associated with better nutritional outcome for mothers. That relationship, however, could not be identified with regard to children's nutritional status.
- In general, exposure to shocks did not seem to influence the nutritional status, except on wasting (short-term consequences). Households exposed to a loss of income in the previous year for example more frequently had wasted children. This indicates that proper coping mechanisms are necessary to ensure that wasting does not become a chronic problem.
- Currently displaced households had higher incidence of stunting among children, but not wasting. Displacement can therefore be associated with chronic problems of malnutrition.
- The Household Food Security situation: Poor household food consumption patterns increase the chance of wasting of children. There is no such correlation with stunting established; hence, poor food consumption is probably not a chronic phenomenon.
- No effect on malnutrition caused by the sex or age of the household-head or the dependency ratio in the household could be established. However, the condition of the mother is a clear determinant of malnutrition in their children; children of mothers with low BMI show more wasting, and the same is true for children of mothers who have experienced miscarriages.

Part 4 - HOUSEHOLD FOOD SECURITY AND VULNERABILITY PROFILING

As outlined in section 3.2 on Livelihood Groups page 32, one of the objectives of the CFSVA is to describe household food insecurity and vulnerability based on household characteristics, rather than attempting to rank and cluster geographically different situations of food insecurity. Households are first organized in groups with similar characteristics on key indicators. In this chapter, we will successively discuss household profiling (classification) based on (1) food consumption profiles and (2) food access. Those two classifications will then lead us to define food security profiles and to explore the severity of food insecurity for each group. The classification can further be used to make causal inferences on the sources of food insecurity and vulnerability.

4.1 Household Food Consumption Profiling

4.1.1 Frequency of Consumption and Dietary Diversity

The Household Food Consumption Profiling uses groups based on information collected at the household level on dietary diversity and the consumption frequency of staples and non-staple food. Diet diversity, measured by the number of different foods from different food groups consumed in a household, and frequency of consumption are good proxy indicators of the access dimension of food security and nutrition intake. Research has demonstrated that dietary diversity is highly correlated with caloric and protein adequacy, percentage of protein from animal sources (high-quality protein) and household income. Households included in the CFSVA (n = 2,987) were asked information on the frequency of consumption (0 to 7 days) for sixteen food items or food groups over the seven days prior to data collection. Those 16 items were:

- Maize
- Other cereals
- Rice
- Bread
- Roots and tubers
- Matooke (Banana)
- Beans and peas
- Groundnuts, sim sim
- Vegetables
- Fresh fruit
- Fish
- Meat
- Eggs
- Milk
- Oil, fat, butter
- Sugar

4.1.2 Analysis Methodology of Food Consumption Data

Using a method similar to that of the livelihood profiling (multivariate statistical techniques - principal component analysis (PCA) followed by cluster analysis), variables on food diversity and frequency of consumption⁵⁶ were analyzed simultaneously. The aim of the analysis is to group (cluster) together households that share a particular consumption pattern. PCA was run on the frequency of consumption of the above mentioned food groups. Cluster analysis was run on the base of six principal components obtained by PCA. Those six new variables maintain more than 80% of the variance of the original dataset. Such a high level of consistency with the original complexity of the dataset ensures a good reflection of the relationships among variables. In other words, cluster analysis will group together households that have a similar relationship among the frequencies of consumed foods as expressed in the principal components.

There are several different methods and algorithms that can be used to cluster statistical units (in our case, households) and the number of clusters produced will vary depending on the type of clustering method used. The algorithm developed in ADDATI implies random selection of initial centres (the software was required to run 100 different partitions) using the non-hierarchical clustering method of Diday's dynamical clouds.⁵⁷ The software cross-tabulates the best two partitions (minimal internal inertia of the groups, i.e. maximal homogeneity within the groups) to create stable clusters, i.e. groups of households that consistently group together.

In the field of nutrition, different food items are divided into a number of "food groups," of which a combination should be consumed on a daily basis to ensure a healthy diet. These key food groups are: cereals, legumes and oilseeds, tubers and roots, vegetables and fruit, animal products, oil and fats. Based on this approach, some food items initially collected were considered together, in order to reduce the complexity of the outcome results. Nevertheless, a certain level of distinction has been kept between items

⁵⁶ The software used for this multivariate analyses is ADDATI 5.2c, developed by Silvio Griguolo, IUAV Venice, Italy, freely available at http://cidoc.iuav.it/~silvio/addati_en.html

⁵⁷ Proposed by Edwin Diday in 1971

belonging to the same food group. Source of food has been inspected and considered while aggregating different items. Specifically, the following foods were considered together:

1. Maize and other cereals – households declared to access these two items from both purchase (about 50% of responses) and own production (36-40%);
2. Rice and bread – both items are largely accessed through purchase (rice 86% of responses, bread 93%);
3. Roots & tubers and matooke – both presented own production around 60% and purchasing around 34% of the responses;
4. Pulses (beans and peas) and groundnuts & sim sim – own production 40% and purchase 50%;
5. Vegetables and fruit – own production 55% and purchase 33%;
6. Fish and meat – both being purchased by the large majority of households consuming those items (purchase accounted for 87% and 91% of the food source responses, respectively);
7. Eggs and milk – purchase was around 55% to 65%, respectively, while own production was 39% to 29%, respectively;
8. Oil and sugar were obviously considered separately as they belong to food groups with different nutrient contribution.

4.1.3 Household Food Consumption Groups and Profiles

Based on the methodology just described, seven distinct profiles of households characterized by their different food consumption patterns were identified. These seven profiles can then be summarized into four distinct food consumption groups following the characteristics described below:

Table 4.1-1: Household Food Consumption Group and Profiles

Household Food Consumption Group	% of HH	Profile	% of HH	Consumed Staples per Profile	Dietary Diversity ⁵⁸	VAC ⁵⁹
1. Very poor food consumption group:						
Very low food intake, almost certainly nutritionally inadequate. Households consume only one food group on a daily basis - cereals - through a combination of maize and other cereals.	15 %	Profile 1.1	15.2 %	Cereals are the only staple, sometimes vegetables	6	30%
2. Poor food consumption group:						
Household diet is mainly based on staple foods with little diversification and most likely having lack of animal proteins. Cereal or tuber consumption is complemented with frequent consumption of pulses or groundnuts, while vegetables or fruits are sometimes consumed. Very low consumption (1-2 days per week) of both oil and sugar	37 %	Profile 2.1	14.4 %	Roots and tubers & pulses/groundnuts	6	46%
		Profile 2.2	23.2 %	Cereals and tuber & pulses/groundnuts	7	53%
3. Fairly good food consumption:						
Frequency of consumption of eaten foods is regular but diet is not much diversified within food groups. Two different diet patterns have been detected: for the first one, daily consumption was reported for roots/tubers, fish/meat, sugar and oil, with sometimes integration of cereals and pulses or groundnuts. In the second diet pattern, households consumed cereals, pulses or groundnuts, vegetables or fruit, oil and sugar on a daily/very frequent base.	26 %	Profile 3.1	7.1 %	Roots and tubers, fish/meat, oil, sugar	8	56%
		Profile 3.2	18.5 %	Cereals, pulses/groundnuts, oil, sugar	9	57%
Good food consumption:						
Two diversified food patterns characterized by high frequency of consumption of items from all the food groups. In particular, these households registered a combined consumption of both vegetable and animal proteins.	22 %	Profile 4.1	12.3 %	Cereals, tubers, pulses, vegs, eggs/ milk, sugar, oil	10	74%
		Profile 4.2	9.3 %	Cereals, rice/bread, tubers, pulses, vegs, fish/meat, eggs/milk, sugar, oil	13	82%

⁵⁸ This score is the number of food items consumed by the household during the last week from a list of 16.

⁵⁹ This score is a weighed sum of how many days food groups were consumed during the last week, as a percentage of the maximum.

Formula: $(2 * \text{cereals} + 2 * \text{tubers} + 4 * \text{animal products \& meat} + 4 * \text{fish} + 3 * \text{pulses} + \text{vegetables} + \text{fruit} + 0.5 * \text{oil} + 0.5 * \text{sugar}) / 126$.

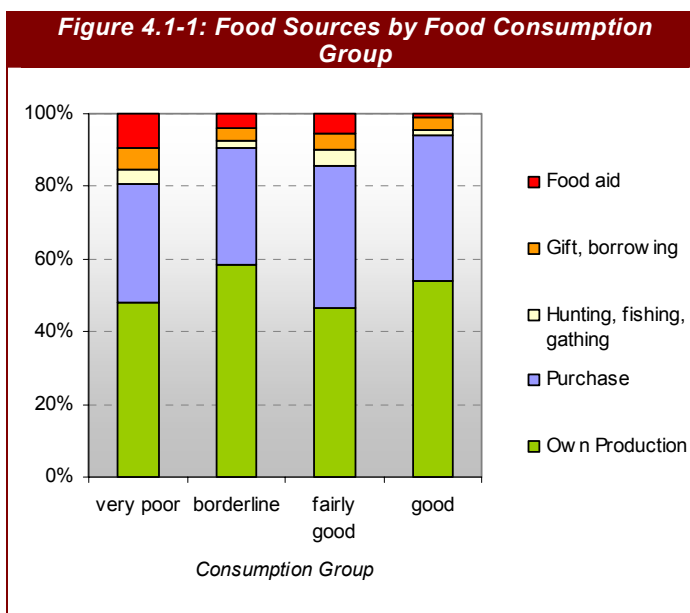
4.1.4 Food Sources Across Consumption Profiles

Access to food is determined by the household's ability/possibility to obtain food from own production, purchase, gathering or through transfers (gifts from relatives, members of the community, government or external assistance). The sources of different consumed foods were analyzed to understand how reliance on particular sources of food impacts household food security (one year recall period). As part of the survey, each household was asked to report the contribution of the main food sources to their annual food consumption.

Table 4.1-2: Provenance of food consumed

Purchase	Own Production	Food Aid	Gift or Borrowed	Hunting/Fishing/Gathering
52%	35%	6%	4%	3%

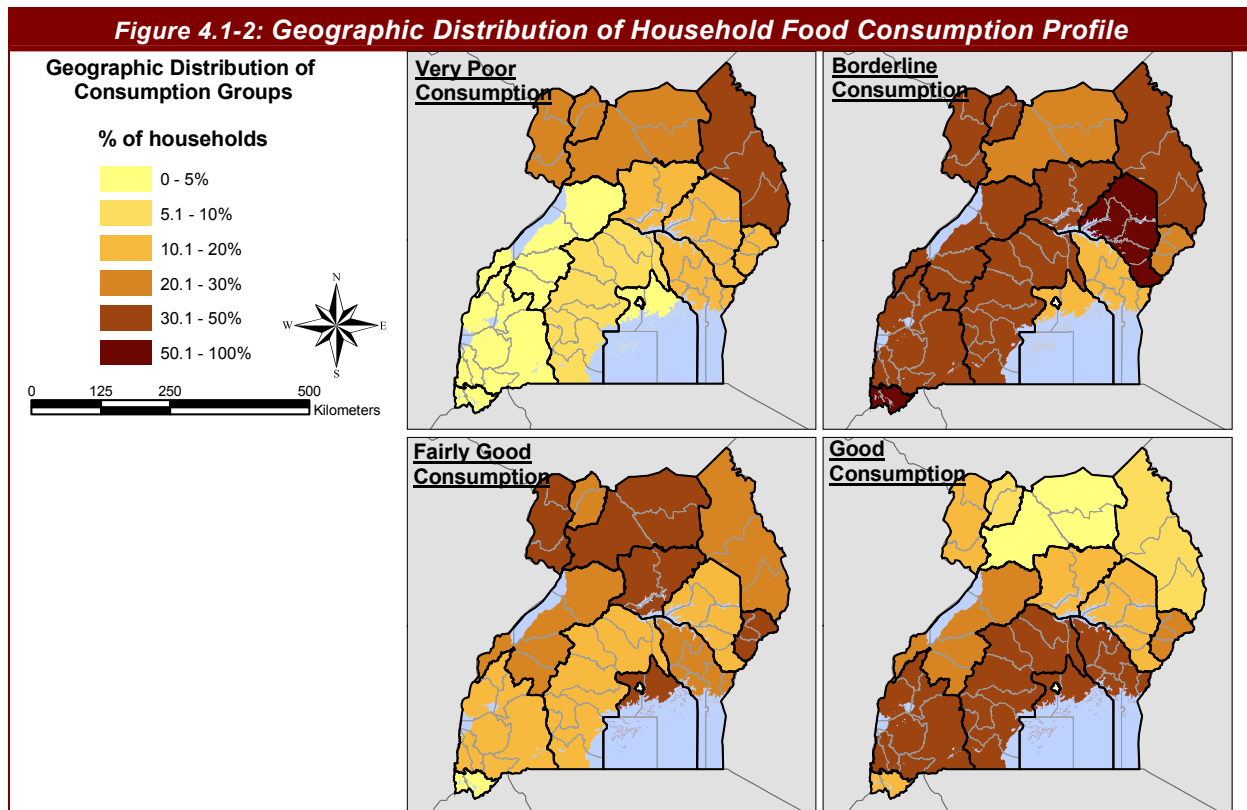
The percentage of food aid in the Very Poor Food Consumption group (9% of all the consumed food, based on a one-year recall period) has been found to be much higher than in the other three households groups. All these differences are statistically significant ($p < 0.001$). At the same time, percentage of food received as gift or borrowed was higher too, with statistically significant differences among groups. Contribution from purchase is not much different between very poor and poor food consumption household group, while there is statistical significant difference against the two fairly good and good food consumption groups ($p < .001$). The two better-off groups (in term of food consumption) tend to rely more on purchase than the two worse off groups and this difference is significant.



When investigating reliance within profiles, households with borderline food consumption in both profiles 2.1 and 2.2 present a high reliance on own production for foods consumed by their family members. In particular, the foods that characterized their diet (cereals or tubers/roots) are mainly produced on their own. Conversely, among households belonging to the fairly good food consumption group, analysis points out different food access patterns for the two profiles. Households consuming largely roots or tubers and fish or meat rely much more on hunting, fishing, gathering and purchase for their food. Households consuming cereals, pulses or groundnuts and vegetables or fruit present a higher share of food that is produced on their own within the households. This large reliance on own production is due mainly to vegetables/fruit and cereals, which are commonly grown.

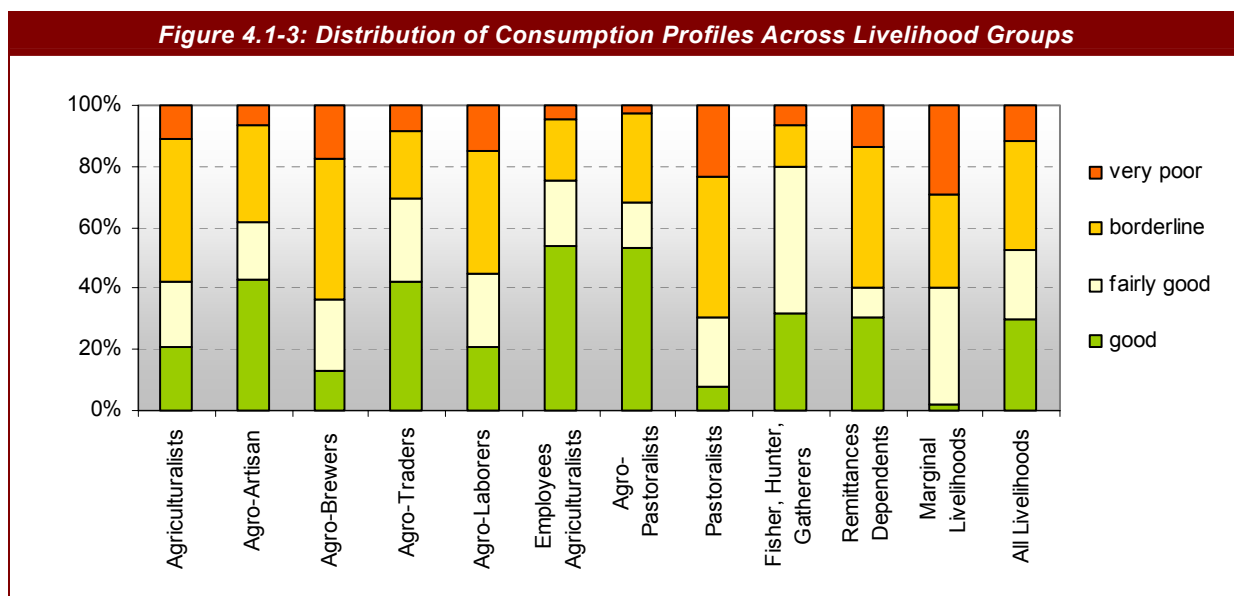
4.1.5 Geographic Distribution of Consumption Profiles

The geographic distribution of the consumption profiles illustrates that in the northern region, a large proportion of the population belongs to the Very Poor Consumption group. The proportion is highest in the Karimojong stratum (34%), followed by the Acholi stratum (29%) and Madi stratum (25%). While fewer households belonging to the Very Poor Consumption group are found in the Lango and Teso-Dhola strata, those two regions have a very high proportion of households within the Borderline Consumption group and are therefore at risk. In the south-eastern region (Gisu-Sebei, Greater Busoga) as well as in the central region (Lake Central, Greater Buganda), the overall proportion of households belonging to either the Very Poor or Borderline Consumption group is lowest (below 40%). In the western region, the cumulative proportion of households in the Very Poor and Borderline groups is about 50%, except in Kiiga, where a very high proportion of the population is in the Borderline group (82%) even though few were in the Very Poor Consumption category (3%).



4.1.6 Distribution of Consumption Profiles across Livelihood Groups

Figure 4.1-3: Distribution of Consumption Profiles Across Livelihood Groups shows that it is among the Marginal Livelihoods that the larger proportion of households with Very Poor food consumption is found (29%), followed by the Pastoralists (23%). Among Agro-Brewers, Pastoralists, Remittances Dependents and Marginal Livelihoods, 60% or more of the households belong to the Very Poor or Borderline consumption groups. Inversely, among the Employees Agriculturalists, Agro-Artisan, Agro-Traders, Agro-Pastoralists and Fisher, Hunter, Gatherers, more than 60% of the households belong to the Good and Fairly Good Food Consumption groups.



4.2 Household Access Profiling

4.2.1 Food Access Profiles Concept and Methodology

Using a methodology similar to that described for the livelihood and consumption profiling, the Household Access Profiles are based on information collected at the household level on:

- Total expenditures (proxy for income) – logarithm scale for normalization
- Food expenditure as a percent of total expenditures
- Availability of three groups of harvested foods until next season: cereals, starch and pulses
- Food sources

Those parameters are considered to be good proxies of the access dimension of food security and therefore complement well the consumption profiles. PCA was run on those indicators and led to eight principal components that explained 87% of the variance. Cluster analysis was run on the basis of those eight principal components, and led to define five classes or groups labelled from Very Weak Access to Good Access.

4.2.2 Household Access Groups

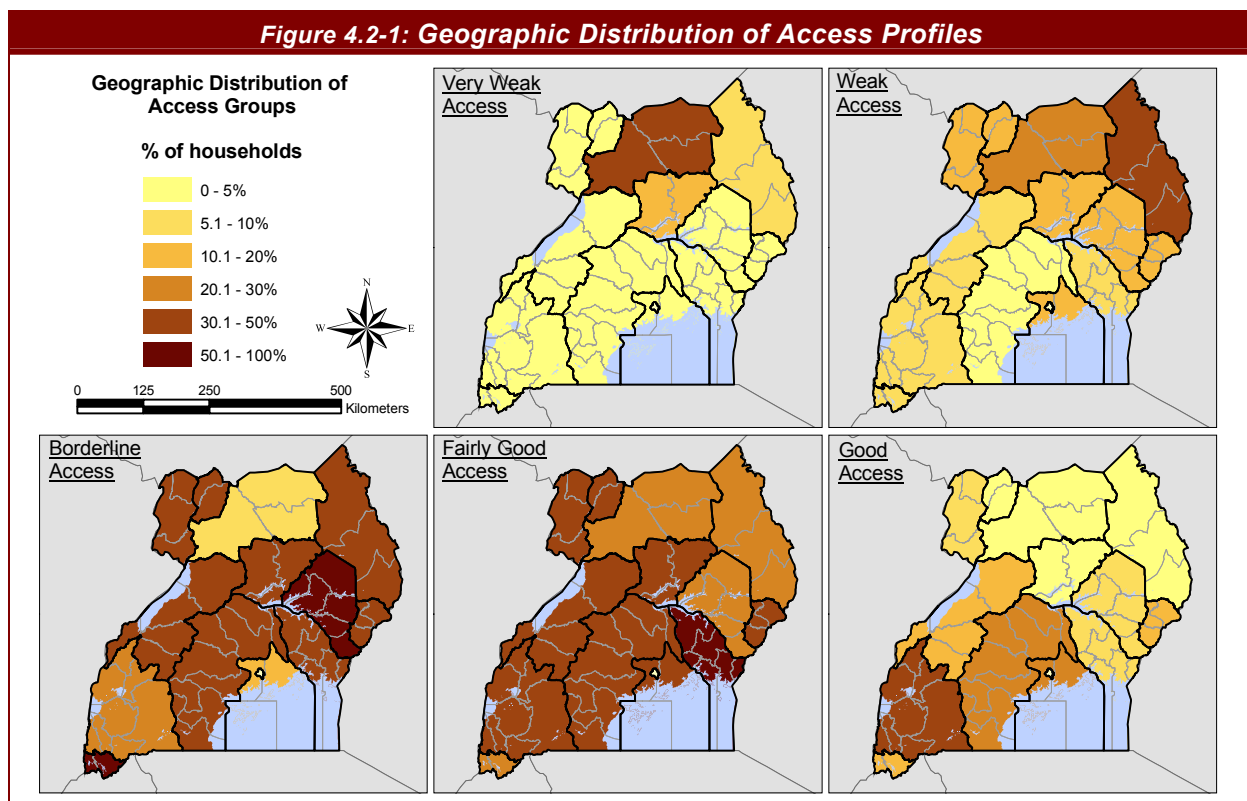
Based on the methodology just described, five distinct profiles of households characterized by their different food access patterns were identified.

Table 4.2-1: Household Access Groups

Household Access Group	% of HH (weighted)	Summary Description
Very Weak Access: The way these households obtain food is very unreliable and insufficient.	4 %	Households with a very weak access were those with the lowest food expenditures in absolute value with a high percentage of food expenditure (57%). Food sources were predominantly food aid (34%) and gifts (22%) as well as purchase (30%). Own production was relatively small (7%).
Weak Access: The way these households acquire food is difficult and unreliable.	11 %	In the Weak Access category, dependency on food aid and gifts was reduced to a total of about 3%. The total expenditures in absolute value remained very low and were at 58% of food expenditure. Despite the relatively small amount in absolute value devoted to food expenditure, food purchase was the source of 75% of the food consumed. Own production contributes little to the food sources, at 16%.
Medium Access: Households having less difficulties in obtaining food.	34 %	Total expenditure remained low among households of the Medium Access group, but was nearly twice that of the Very Weak and Weak groups. Food expenditure still accounted for 54% of the total expenses. Own production was the main source of foods, at 64%, followed by purchase (35%).
Fairly Good Access: Households who can fairly well obtain sufficient food	36 %	Households with a Fairly Good Access to food have total expenditure twice as high as the Medium access group, yet they still spend over 60% of their income on food. They rely heavily on purchased food (67%), while their own production was the source of about 28% of their food.
Good Access: Households who can easily obtain sufficient food.	15 %	The Good Access group has the highest average total expenditure in absolute terms, nearly three times as much as the Fairly Good Access group. The increased resources are spent on non-food items, and as a result, food expenditure accounts for only 27% of the total expenditures. Food sources are purchase (52%) and own production (40%).

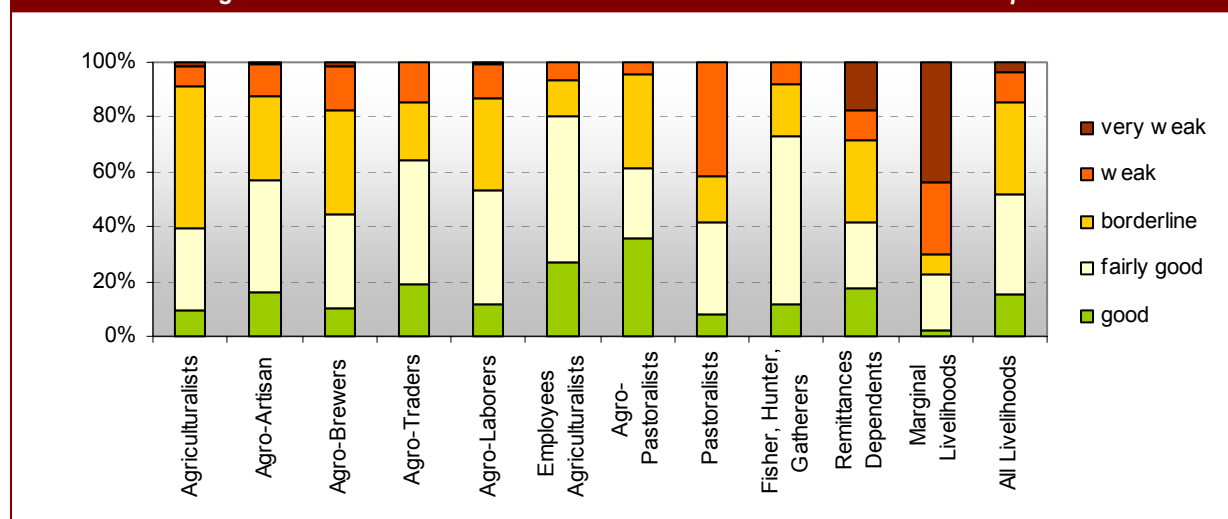
4.2.3 Geographic Distribution of Access Profiles

The geographic distribution of the consumption profiles indicates that the Acholi stratum is among the worst off in terms of access. There, 39% of the households belong to the Very Weak Access group and 26% belong to the Weak Access group. The Lango stratum has the second highest percentage of households belonging to the Very Weak Access group (11%). There, another 19% of the households belong to the Weak Access group. In the Karimojong stratum, while fewer households belong to the Very Weak Access group (8%), a large proportion belongs to the Weak Access group (32%). Overall, the group distribution shows a clear north-south pattern, with a generally higher proportion of households belonging to the Fairly Good and Good Access groups in the central and western regions as well as in the south-east (Greater Busoga). The Kiiga stratum at the extreme south is an exception, with Food Access group distribution closer to that of the Lango and Teso-Dhola strata (e.g. high proportion of households, 58%, with Borderline Access).



4.2.4 Distribution of Access Profiles Across Livelihood Groups

Figure 4.2-2: Distribution of Access Profiles Across Livelihood Groups shows that Marginal Livelihoods and Remittance Dependents have the highest proportion of households in the Very Weak Access group, at 44% and 17%, respectively. Pastoralists must also be singled out for the high proportion of households in the Weak Access group (42%). Inversely, those with the highest proportion of households in the Good Access group were the Employees Agriculturalists (27%) and the Agro-Pastoralists (36%). The highest proportions of households belonging to the Fairly Good Access group were found among Employees Agriculturalists (53%) and Fisher, Hunter, Gatherers (61%).

Figure 4.2-2: Distribution of Access Profiles Across Livelihood Groups


4.3 Household Food Security Profiling

4.3.1 Household Food Security Profiling Concept and Methodology

The Household Consumption profile and the Household Food Access profiles are based on proxies of the Food Access dimension of Food Security. As such, they can be used as indicators of Food Security and Vulnerability status. The Household Food Security and Vulnerability profiling constitute the main objective, and result of the Uganda CFSVA. To define the Food Security and Vulnerability profiles, a matrix was constructed based on the Consumption and Access profiles. Characteristics associated with each cell in the matrix were then taken into account and led to define a four-group household classification.

Table 4.3-1: Household Food Security Profiles

		Access Profile				
		Very Weak	Weak	Borderline	Fairly Good	Good
Consumption Profile	Very Poor	1%	2%	5%	2%	1%
	Borderline	1%	4%	18%	9%	4%
	Fairly Good	1%	3%	5%	12%	2%
	Good	0%	1%	6%	13%	9%

Food Security Profile:		% of Households
Food Insecure		5 %
Highly vulnerable		31 %
Moderately Vulnerable		18 %
Food Secure		46 %

Overall, 70% of the **Food Insecure** belongs to the *Very Poor* consumption group and 30% belong to the *Borderline* consumption group. 53% belong to the *Very Weak Access* group and 47% belong to the *Weak Access* group. Their total expenditure is the lowest, and Food accounts for about 58% of the expenses. On average, Food Aid and gifts account together for over 30% of the food sources. Only 10% comes from their own production and 48% is purchased. Their diet is mainly made of cereals, beans and peas, other vegetables and some roots and tubers (average once a week).

Among the **Highly Vulnerable**, and in terms of consumption profiles, 72% are *Borderline*, 16% are *Very Poor* consumption and 12% are *Fairly Good*. In terms of Access, 74% are *Borderline*, 22% are *Weak* and

3% are *Very Weak*. Their total expenditure is nearly twice as much as those of the Food Insecure but remain in majority food purchase (54%). Most of the Food source is own production (54%), while purchase accounts for about 38% of the sources. Their consumption pattern is similar to that of the Food Insecure but offers more diversity and more frequent consumption of cereals and roots and tubers (average 3 days a week). They also more frequently have groundnuts or sim sim and beans and peas.

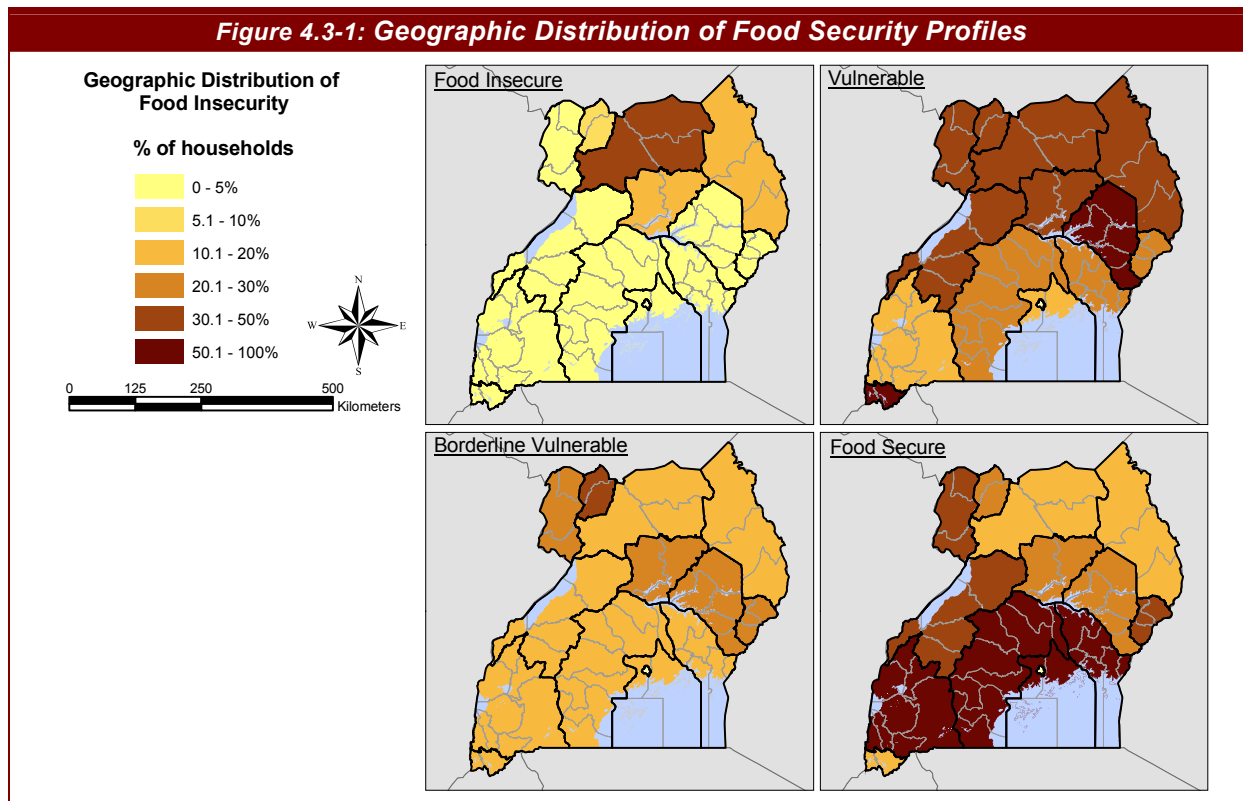
The **Moderately Vulnerable's** total expenditure is more than twice that of the Highly Vulnerable and 61% of those are devoted to food purchase. Their reliance on own production for food sources is slightly lower (41%), while purchase accounts for 54%. Their average diet is similar to that of the Highly Vulnerable group, except that they more often consume oil, fat and butter as well as sugar. The majority of the Moderately Vulnerable belong to the *Borderline* (48%) and *Fairly Good* (28%) consumption profiles. In terms of Access profile, they mainly belong to the *Borderline* (28%) and *Fairly Good* (62%) profiles.

Among the **Food Secure**, households belong mainly to the *Fairly Good* (30%) and *Good* (62%) consumption profiles. In terms of Access they mainly have *Fairly Good* (54%) and *Good* (33%) profiles. This group has the highest total expenditure, over twice that of the Moderately Vulnerable. They rely slightly more on purchase for their food sources (61%) and less on own production (35%). Their average diet is similar to that of the Moderately Vulnerable.

The remainder of this section will seek to better characterize and tentatively explore causal factors that explain food insecurity and vulnerability.

4.3.2 Geographic Distribution of Food Security and Vulnerability Profiles

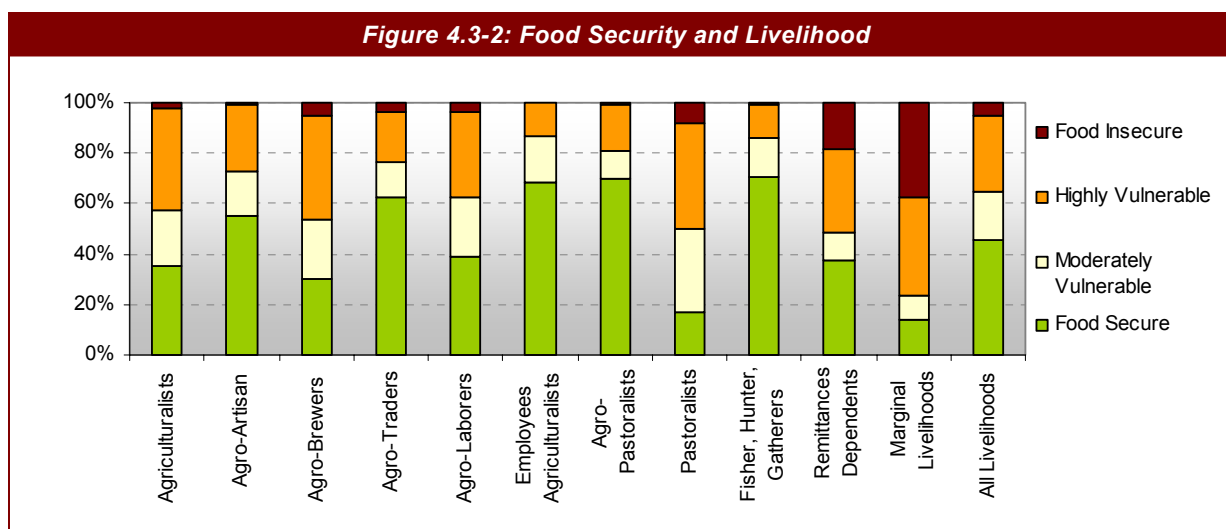
Figure 4.3-1: Geographic Distribution of Food Security Profiles



The distribution of food security profiles highlights a north-south pattern, with the exception of Kiiga in the extreme south where the proportion of Highly Vulnerable is higher (61%) than in the other strata of the same region. (western). While Food Insecure are present throughout the country, larger proportions are found within the Acholi (33%), Lango (12%) and Karimojong (18%) strata. The higher vulnerability of the north and east is further illustrated by the proportion of Highly Vulnerable in those regions. In the Acholi, Lango, Karimojong and Teso-Dhola strata, the cumulative proportion of Food Insecure and Vulnerable is over 50%. Such a high proportion is not found elsewhere in the country, except in Kiiga (62%). The north-west (Madi and Arua) and the Ankole strata have cumulative proportion of Food Insecure and Vulnerable of roughly 40%. Elsewhere it is below 30%, which is not negligible but relatively better compared to the other regions.

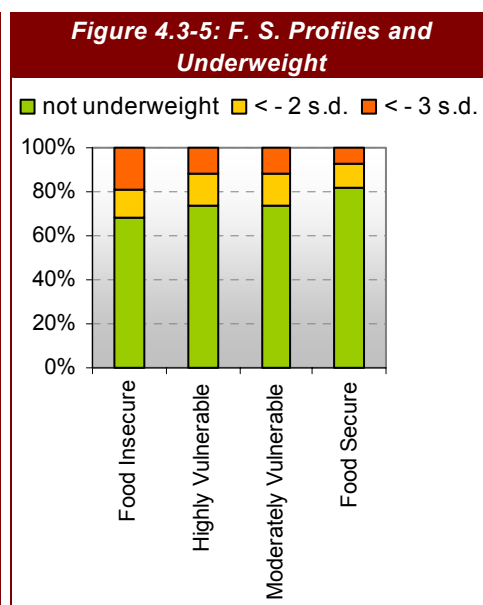
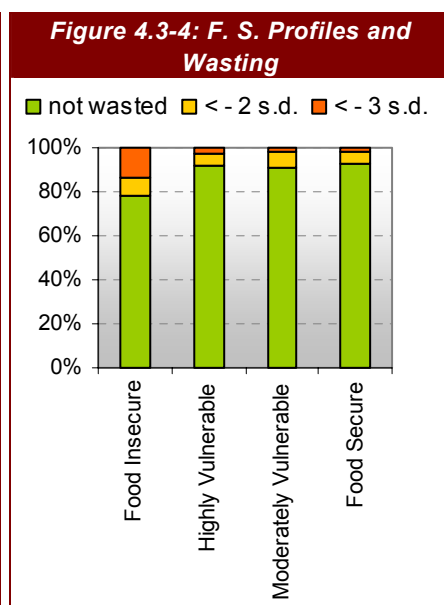
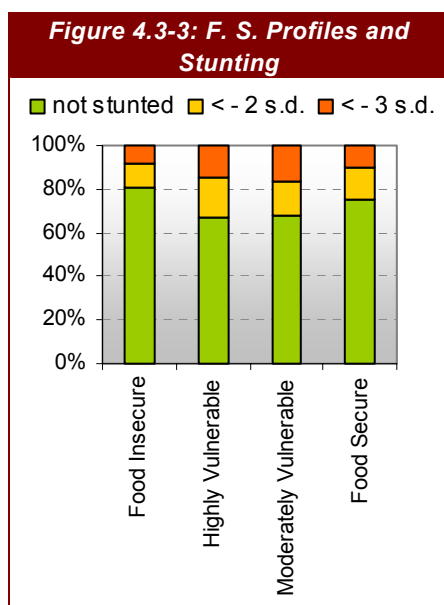
4.3.3 Distribution of Food Security Profiles Across Livelihood Groups

A similar analysis across livelihood groups shows that the highest proportion of Food Insecure is found among Marginal Livelihoods (37%), Remittances Dependents (18%), Pastoralists (8%) and Agro-Brewers (5%). Figure 4.3-2 presents the distribution of access profiles across livelihood groups. It is also among those groups (from 33% to 42%) as well as among the Agriculturalists (40%) that the proportion of Highly Vulnerable is highest. The geographic distribution of those livelihood profiles is likely to support the geographic distribution of food insecurity discussed above, with Marginal Livelihoods in the Acholi stratum, Pastoralists in the Karimojong area, Agro-Brewers in the Karimojong and Teso-Dhola strata. The highest proportions of Food Secure are found among Employees Agriculturalists, Agro-Pastoralists, Agro-Traders, Agro-Artisans and Fisher, Hunter, Gatherers.



4.3.4 Household Food Security and Vulnerability Profiles and Malnutrition

The relationships between the access, consumption and food security profiles and indicators of child nutritional status – stunting, wasting and underweight – discussed in section 3.6.2.3 was explored.



- Looking at underweight, which reflects both wasting and stunting since underweight children can be stunted or wasted or both, we found that there was a good correlation between the food security profiles and prevalence of underweight. This relationship was even stronger looking at wasting. The proportion of wasting and underweight among children under 5 years was found to be positively correlated with the food security profiles, with the food insecure showing higher proportions. Stunting,

however, was found across food security profiles. Bunyoro provides a good example of a stratum generally considered as food secure but that still has a high percentage of stunted children. The causal analysis described in 3.6.2.3 shows that food consumption seems to cause wasting in children and women.

4.3.5 Selected Indicators in Relation to Food Security Profiles

In this analytical section, the household Food Security and Vulnerability profiles are used to explore easily observable and measurable factors, closely related to the causes of food security and to verify how they influence the food security status of the households. It should be noted, however, that the direction of the relationship cannot be asserted with certitude (e.g. are they food insecure because they are less educated or are they less educated because they are food insecure?). Multiple ordinal logistic regression was used to explore the “effect” of each selected variable and the different classes defined in the Food Security Profiles, while controlling for the other selected variables.

In terms of demographics, the gender and age of the household head and marital status of the household were not significant predictors or significantly correlated with the Food Security Profiles. Economic indicators (e.g. income activities, expenditures) were used to develop the profiles. Poverty indicators at the district level obtained from secondary data analysis did not show a significant correlation with Food Security Profiles. On the social side, education of both the household head and the head of the household spouse were significant predictors of the food security profiles. The time taken for a mother to start breastfeeding her children was also found to be related with the food security status. Among Food Insecure, only 66% of the women started breastfeeding their children within one day of the birth; this percentage increased to 82% among highly vulnerable, 85% among moderately vulnerable and 86% among food secure. This in turn has major implications on the child’s health, since breastfeeding provides children with protection against infections.

Higher education achievements (secondary/vocational and some or completed post-secondary) were correlated with higher food security. Some indicators related to access to productive resources were found to be significantly correlated with Food Security profiles. The acreage cultivated by a household was a good predictor; households with more land were more likely to be food secure. However, even among those with large parcels, food insecurity existed while some with little or no land still were food secure. Similar relationships existed with ownership of cows and chickens, but not other types of livestock. Finally, experience of displacement was also correlated to food security profiles.

Figure 4.3-6: Food Security and Household Head Education

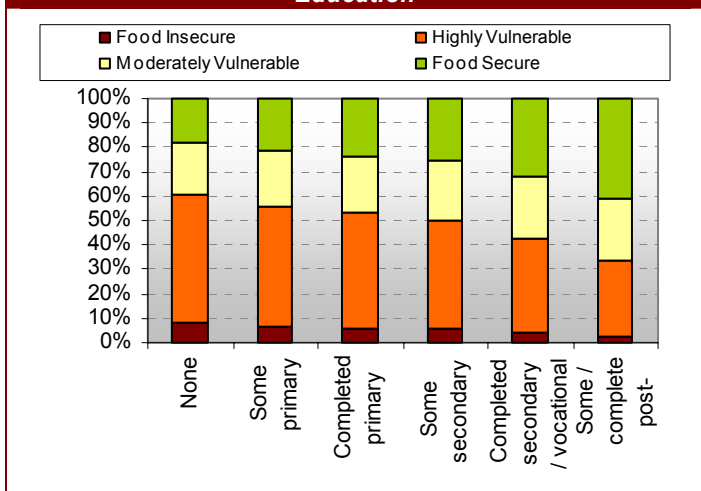
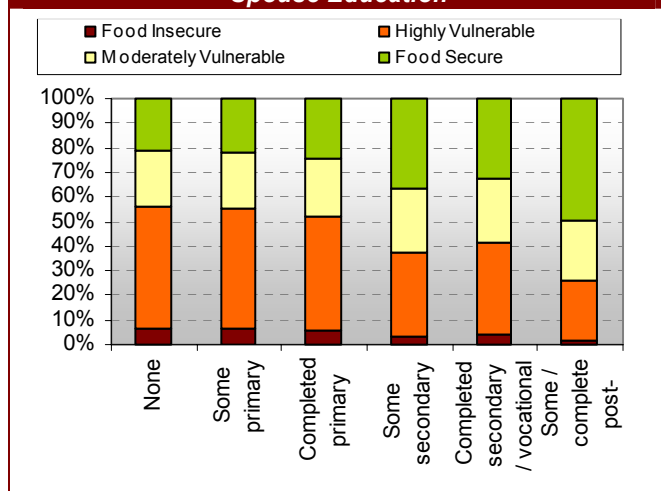
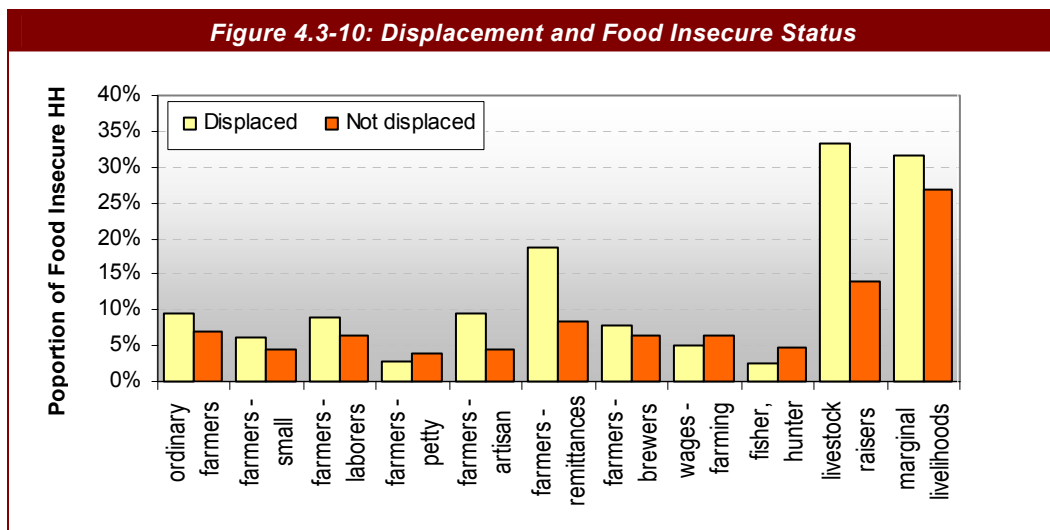
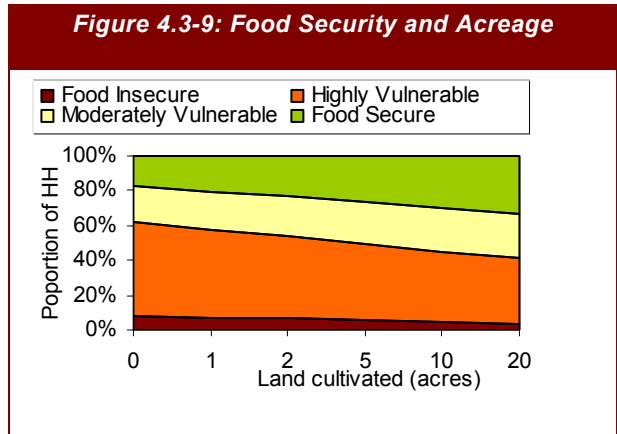
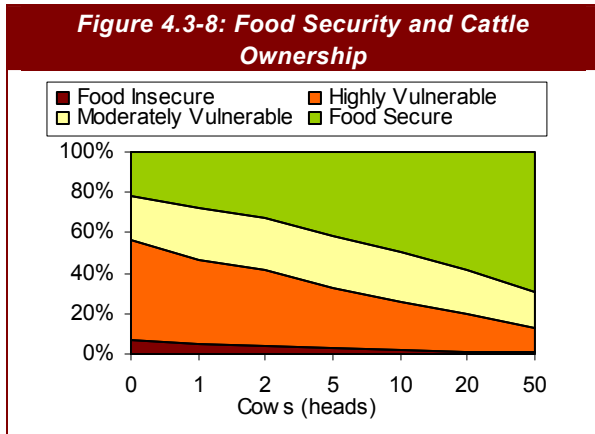


Figure 4.3-7: Food Security and Head of Household Spouse Education

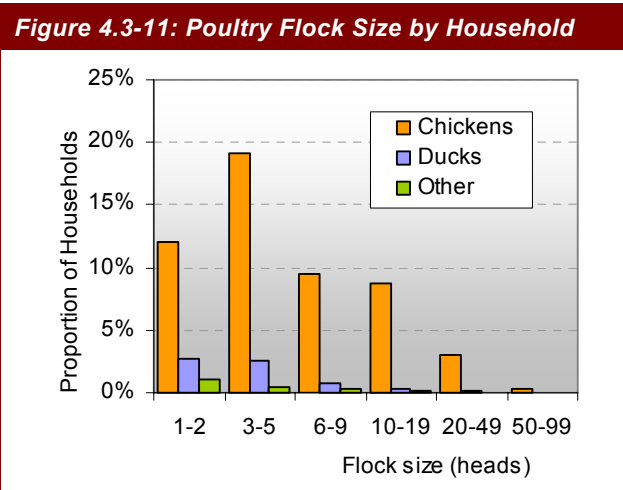




4.3.6 Threat to Food Security – The Case of the Avian Flu

While somewhat out of the scope of this study, the looming avian flu pandemic lead us to derive some observations based on data from the CFSVA. The main objective was to assess how food security could be affected by mass poultry culling. The assumption was that because of an eventual outbreak of avian influenza, households could completely lose their poultry, and vulnerability to food insecurity would increase.

Poultry is not that prominent in rural Uganda. 46% of households have no poultry at all, 24% have flocks of more than 5 birds, and only 4% possess 20 birds or more. Among the poorer third of the population, only 6% of the households have flocks of more than 10 heads; among the richest third, 12% of the households have this size flock. There is in fact very limited or no household-based intensive commercial poultry raising. The economic impact of the avian flu on the economy could therefore be deep but not widespread (affect only a few, but deeply impact them). More importantly, there is a potential impact of the flu on food security.



As illustrated in the previous section, ownership of chickens, ducks and other poultry is positively correlated with a household food security status. This effect is observed if all other factors are kept equal. That is, if two households only differ by ownership of poultry, the one with poultry is more likely to be food secure. Among households without chicken, 8% were found to be food insecure and 51% vulnerable. Only 19% were found to be food secure. Among households with 20 or more chickens, 4% were food insecure, 39% vulnerable and 34% food secure.

Figure 4.3-12: Flock Size by Household Across Income Brackets

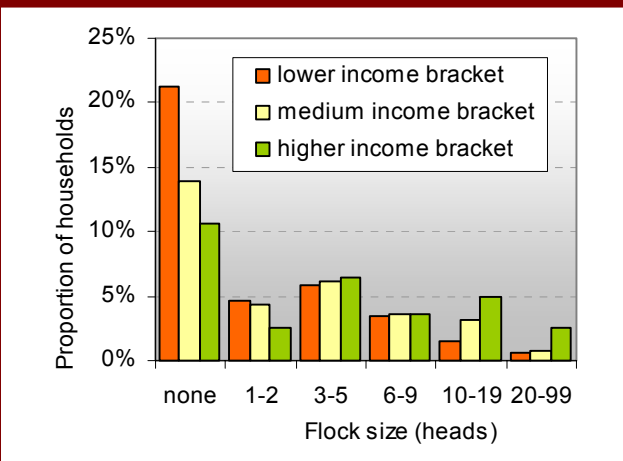
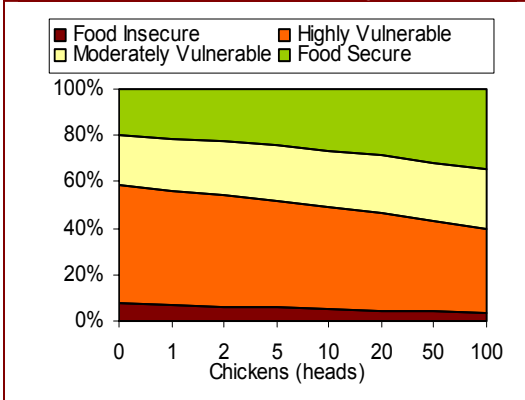


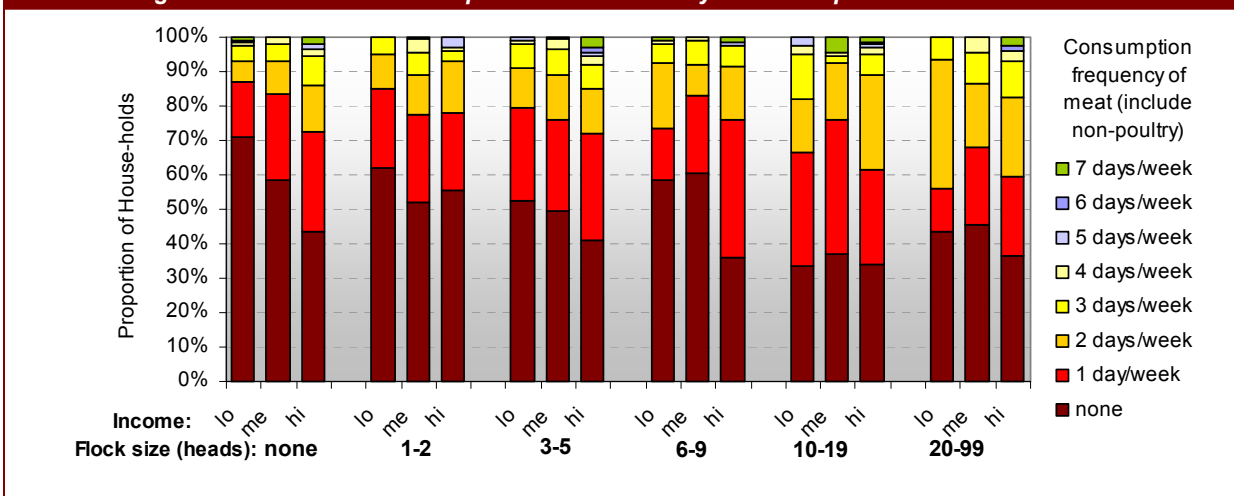
Figure 4.3-13: Chicken Ownership and Food Security



While our study cannot ascertain the causality of this relationship, it is likely that a loss of poultry would increase the vulnerability of households. Two mechanisms can be explored to support this hypothesis: the negative impact of culling on consumption of animal protein (diet diversity) and on the livelihood profile. First, while our data did not differentiate between the different sources of meat (e.g. poultry, cattle), they suggest that the direct impact of the avian flu on nutrition is likely to be negligible. Only about 10% of the households eat meat more than twice a week. Meat in general is not the most important protein source.

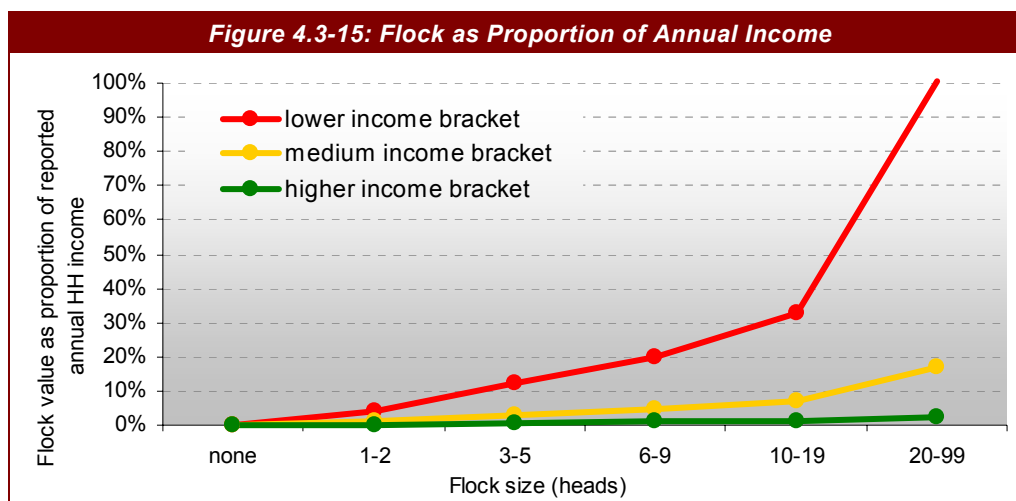
Among the poorer third of the population, only 1% consumes (any kind of) meat more than four times a week, even if they possess relatively large numbers of poultry. Clearly, meat is not a basic “staple” and in the case of poultry culling, only few people will suffer a (moderate) direct nutrition effect.

Figure 4.3-14: Meat Consumption Across Poultry Ownership and Income Brackets



Second, income data were used to evaluate the impact of poultry culling on livelihoods. No specific information on sale of poultry as an income source was collected, but rather on the more general sale of animals and animal products. Since poultry is only a small income-source compared to cattle, swine, goats and sheep, conclusions could be misleading. Rather, we compared the estimated value of the flock to the

reported annual household income. For poor households, 25 heads of chicken are equivalent to the year's cash income of an entire year. Figure 4.3-15 shows that especially poor households with more than 10 heads of chicken (3% of the population) would strongly feel the loss of assets in case of culling. Poor households with only 6 to 10 chickens would still suffer (3% of the population); the same is true for households from the middle income bracket with larger flocks (1% of the population). It is likely that poultry are used as an asset and to cope during times of need and distress. Loss of the poultry (e.g. due to the avian flu) is therefore likely to increase the likelihood of a household to be food insecure because of the impact on livelihood and the ability to cope with other shocks.



Programmatically, our findings suggest that the avian flu is likely to have an impact on food insecurity and vulnerability. More than food intake, it is the ability of households to dispose of their poultry as an asset to cope with external shocks that will be affected. As a result, the most appropriate response will be to help the victims with alternative means of livelihood (e.g. income generating sources, alternative assets). This might be for instance the diffusion of other small animals such as goats or pigs that serve the same function. Since only a small part of the population would be affected, assistance will have to be carefully targeted.

Part 5 - LIVELIHOOD FOOD SECURITY AND VULNERABILITY SUMMARY PROFILES⁶⁰

The Household Livelihood profiling analysis led us to identify 11 different livelihood profiles. Based on the Food Security and Vulnerability analysis discussed above, two livelihood groups can be identified as food insecure: Marginal Livelihoods and Remittances Dependents. Another three groups are considered vulnerable: Pastoralists, Agro-Brewers and Agro-Labourers. Two groups can be considered as intermediate: the Agriculturalists and Agro-Traders. Four groups are identified as most food secure: The Employee Agriculturalists, Agro-Artisans, Fisher, Hunter, Gatherers and Agro-Pastoralists.

Livelihood Group (% of Population)	Food Security and Vulnerability Summary Profile
Marginal livelihoods (5%)	<p>Marginal livelihoods are among the food insecure groups. They are mainly located in the Acholi stratum and some in the Lango stratum. Households in this livelihood category mainly depend on external assistance to sustain their lives (main food source). Access to land and productive resources is their main challenge. They own little land and the least livestock of all groups. Their income activities are varied but generally bring very little income (lowest average income and total expenditure of all livelihood groups). They spend most of their resources on food (66% of the expenditure).</p> <p>Marginal livelihoods have the highest percentage of households with six or more individuals per sleeping room. More than 20% of the households ate one or less meal the day before the interview. Food Aids Dependents have the largest proportion of households with Very Poor food consumption (29%) and with Very Weak Access. Up to 37% of the households, more than in any other group, are classified as food insecure. Additional factors of vulnerability include the highest rate of displacement, with few having been able to return back to their communities. They are also most exposed to insecurity, abduction, death of household members and theft and looting. Their ability to recover from external shocks is the lowest, likely as a result of exhaustion of any coping mechanism. The percentage of children in this group affected by stunting and wasting is remarkably low, with 22% (of which only 5.7% severely stunted) and 13%, respectively.</p>
Remittances Dependents (4%)	<p>Remittances and kinship Dependents are among the food insecure livelihood groups. They mainly depend on remittances as their main source of income. Only 36% depend on sale of crops. Gifts and borrowing are important sources of food as well. The food insecure status of this group is highlighted by the fact that 60% or more of the households belong to the Very Poor or Borderline consumption groups. More than 20% of the households ate one or less meal the day before the interview, and it is among this group that the highest proportion of severely malnourished women is found (5%). They also have among the highest proportion of households in the Very Weak Access group. Overall, 18% of the households are considered food insecure in this group.</p> <p>Remittances Dependents are found mainly in the Kiiga and Lake Central strata. In terms of vulnerability factors, Remittances Dependents are more frequently female-headed households than other groups (45%). Heads of households are further found to be on average older and less educated than those of other groups. Their income and food sources are less diversified and mainly dependent on external support. 62% are food aid beneficiary, albeit mainly aid from families and friends. Few children in this group were found suffering from stunting (9%) and wasting (3%), but it could also be due to the small number of children from this group in the sample.</p>

⁶⁰ See Livelihood Groups page 32 for a detailed mapping of the groups

<p>Pastoralists (0.4%)</p>	<p>The Pastoralists are among the groups identified as vulnerable. Interpretation of the figures for the Pastoralists must be cautious because they are based on a very small sample (32 individuals). Overall, Pastoralists have a similar profile to that of Agro-Pastoralists but livestock rearing is more intensive. They earn less from crop sales, although they do have access to land and they own sheep, goats, bulls and cows in larger quantities. Factors of vulnerability include the lack of access to services (e.g. lighting) and facilities (e.g. sanitation), insecurity (42%) and the lack of diversity in their agricultural production. The poor food security status of Pastoralists is illustrated by the fact that more than 20% of the households ate one or less meal the day before the interview. As many as 23% of the households belong to the Very Poor consumption group. Pastoralists ate maize, roots and tubers, matooke and fruits less frequently than other groups but other cereals (e.g. sorghum) and meat and other animal products more frequently. Mild undernourishment was also found in higher proportion among Pastoralists women than among other groups. Pastoralists must also be singled out for the high proportion of households in the Weak Access group (42%) and the high proportion of Food Insecure (8%). Overall, 58% of the Pastoralists benefit from food aid. Pastoralists are mainly located in the Karimojong area.</p>
<p>Agro-Brewers (7%)</p>	<p>Agro-Brewers are one of the five vulnerable livelihood groups identified through this study. It is one of the few groups among whom severe malnutrition was identified among the adult women (1%). Moderate and mild undernourishment among adult women were also higher than in other groups. Among Agro-Brewers, 60% or more of the households belong to the Very Poor or Borderline consumption groups and it is one of the groups with the highest proportion of food insecure (5%). Agro-Brewers are mainly located in the Karimojong, Teso-Dhola and Madi region. They are undiversified agriculturalists with low income complemented by brewing activities as well as sale of natural resources (e.g. firewood). Their low income is further reflected in their low total expenditures in absolute value. Among Agro-Brewers, more than 20% of the households ate one or less meal the day before the interview. In addition to the low income and lack of diversity, factors of vulnerability include insecurity (reported by 42%). On a health point of view, Agro-Brewers is one of the two groups with the highest reported use of bush and streams as latrines and the highest rate of wasted children (13%) among the livelihoods groups.</p>
<p>Agro-Labourers (21%)</p>	<p>Agro-Labourers are also identified as a vulnerable group, although they are relatively better off compared to the Agro-Brewers. Agro-labourers are found in all regions except the Karimojong and Acholi strata (less than 6% of the households there). Their income is higher and complemented by earnings from unskilled labour (e.g. agricultural work). The higher income also leads to a higher role of purchase in their food source. About 4% of the Agro-Labourers are considered insecure and 33% vulnerable. Factors of vulnerability include lack of diversification and reliance on daily wages (unstable). This group also is among those that expressed the most difficulties in recovering from external shock. This group was found to have one of the highest rates of stunted children (30%). Nonetheless, this number is not so high compared with other countries in the region.</p>
<p>Agriculturalist (26%)</p>	<p>Agriculturalists are present throughout the country and live nearly exclusively on their own agricultural production, both for self-consumption (60% of the sources of foods) and crop sale (about the only source of income). A high percentage of Agriculturalists produce five or more crops, which likely explains the relatively good ranking in terms of Food Consumption: more than 60% of the households belong to the Good and Fairly Good Food consumption groups. Yet, in terms of overall Food Security, 40% are considered vulnerable. Sources of vulnerability are likely to be the high dependency on one source of income (agriculture), a relatively small income in absolute value and the practice of a self-sustenance</p>

oriented agriculture. This group is likely to be more vulnerable to external shock that can affect the agricultural production (e.g. drought). The number of stunted children in this group is one of the highest with almost 30% (12% are severely stunted).

**Agro-Traders
(11%)**

Agro-Traders are among the **food secure** groups. They are mainly located in the Arua, Busoga, Central Lake, Buganda and Bunyoro strata. More than 60% of households of Agro-Traders belong to the Good and Fairly Good Food Consumption groups, and more than 60% are considered Food Secure. Agro-Traders are on average more educated and earn high income through sale of crops and other trading and commercial activities. Purchase is an important source of food. Their food security status is further illustrated by the fact that more than 40% of the households had three or more meals the day before the survey (above the average), and bicycle and motorized transportation means are more frequently used.

**Fisher, Hunter, Gatherers
(3%)**

Fisher, Hunter, Gatherers are agriculturalists with high income complemented by various activities. They are the only group who depends on hunting, fishing and gathering as a food source as well as purchase. However, they consume little from their own production (32% of the sources). Sale of fish is a main source of income. Fisher, Hunter, Gatherers have a high income from diverse sources. The proportion of households among the Fairly Good Access group is 61%, and more than 60% of the households belong to the Good and Fairly Good Food Consumption groups. Overall 71% of the households are considered **food secure**. Nevertheless, about 3% of the women among this group were found to be severely undernourished, which possibly indicates great inequalities within the group. This is reinforced by the high number of stunted children in this group (31%). Fisher, Hunter, Gatherers are located mainly in the Madi and Lake Central strata. They have on average smaller households and younger head of households compared to other groups. This likely explains why they have fewer children in school and possibly less dependents.

**Agro-Artisans
(6%)**

Agro-Artisans have a **food secure** livelihood profile. They are mainly located in the central and south-east area (Greater Buganda, Central Lake, Greater Busoga). Agro-Artisans' main source of income comes from skilled labour (artisan). Yet agricultural production remains an important source of income and is also used for self-consumption. Overall, they have a relatively high income (absolute value). Their wealth is confirmed by the fact that they more frequently use alternative transportation means to walking than other livelihood groups. Also more than 50% of the households had three or more meals the day before data collection, which is higher than the average. More than 60% of the households belong to the Good and Fairly Good Food Consumption groups.

**Agro-Pastoralists
(12%)**

Agro-Pastoralists are among the **food secure** group. They have a similar profile to that of agriculturalists, but their overall income is higher and includes earnings from sale of animals and animal products. They obtain more than 60% of their food through own production (diversified agriculture) and own goat, sheep, pigs and cattle, albeit in lower quantities than pastoralists. Agro-Pastoralists are mainly located in the Arua and central and western regions, except Kiiga, which is different than the traditionally called agro-pastoral area in the Karimojong stratum. Agro-Pastoralists have larger households than other groups but still manage to perform well on food security indicators: More than 50% of the households had three or more meals the day before the survey and 36% of the households are among the Good Access profile. 70% are considered food secure.

**Employees
Agriculturalists
(5%)**

Employees Agriculturalists are probably the most **food secure** group. Overall, there are few Employee-Agriculturalists, but they are found throughout the country. They have the highest average income, earned through wages and salaries (employees). Their high income is further reflected in their high expenditure, of which Food presents the smallest proportion of all groups. Their livelihood also includes additional income and self-consumption from their agricultural production. They are on average more educated live more frequently in concrete houses (43%) and move less often by foot. More than 50% of the households had three or more meals the day before the survey. More than 60% of the households belong to the Good and Fairly Good Food Consumption groups. Similarly, about 80% of the households belong to the Good and Fairly Good Access profiles. 68% are considered food secure.

Part 6 - GEOGRAPHIC FOOD SECURITY AND VULNERABILITY SUMMARY PROFILES

NORTHERN REGION - KARIMOJONG

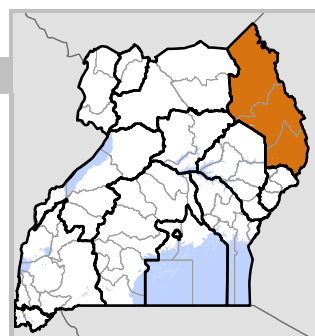
STRATA 1 – DISTRICTS OF KOTIDO, MOROTO, NAKAPIRIPIRIT

Tot. Pop. size: 936,323

Sample size: 263 households

Community questionnaires: 20

Main Livelihood Groups: Agro-Brewers (41%), Agriculturalists (17%),
Pastoralists (12%), Agro-Traders (8%)



Food Security Profile:

Food Insecure: 18% Highly vulnerable: 46% Moderately vulnerable: 18% Food Secure: 18%

Access Profile:

Very Weak: 8% Weak: 32% Borderline: 33% Fairly good: 24% Good: 3%

Consumption Profile:

Very Poor: 34% Borderline: 30% Fairly good: 28% Good: 8%

Children Nutrition:

Stunted: 15% Severely stunted: 8% Wasted: 10% Severely wasted: 8%

The Karimojong stratum is among the least food secure, with 18% of its population food insecure and 46% Vulnerable. Agro-Brewers and Pastoralists, two livelihood groups identified as insecure, constitute over 50% of the households' livelihood strategies. Overall households in this stratum are less educated than the average. They generally have access to protected water sources, but access to other services, especially energy and sanitation, are poor (no use of latrines). The proportion of households with more than six individuals per sleeping room is high and most people travel by foot. Only 5% use bicycles. The stratum has among the highest proportion of households who ate only one meal per day and highest proportion of expenditure on food. There is little crop diversity, and drought and insecurity are important risk factors.

NORTHERN REGION - ACHOLI

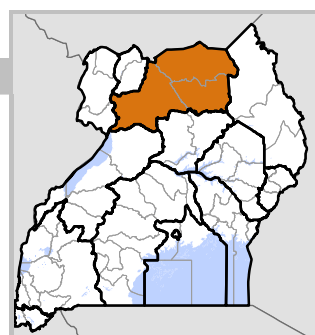
STRATA 2 – DISTRICTS OF GULU, KITGUM, PADER

Tot. Pop. size: 1,083,973

Sample size: 192 households

Community questionnaires: 18

Main Livelihood Groups: Marginal Livelihoods (87%)



Food Security Profile:

Food Insecure: 33% Highly vulnerable: 38% Moderately vulnerable: 12% Food Secure: 17%

Access Profile:

Very Weak: 39% Weak: 26% Borderline: 9% Fairly good: 24% Good: 2%

Consumption Profile:

Very Poor: 29% Borderline: 29% Fairly good: 40% Good: 2%

Children Nutrition:

Stunted: 18% Severely stunted: 8% Wasted: 11% Severely wasted: 3%

The Acholi stratum is a highly food insecure area, with 33% of the population food insecure and 38% vulnerable. The main livelihood profile is that of Marginal Livelihoods (87% of the population). As a result, characteristics of the stratum are close to that of Marginal Livelihoods (e.g. very small income, little diet diversity, food aid as main food source). The main constraints to the population are insecurity and lack of

access to land, the latter being the consequence of the other. The Acholi population is very young (66% of 0-15 years), which can be seen as both a burden (high number of dependents) as well as an opportunity for the future. Overall households have a relatively good access to services such as protected water sources, schools or health facilities, likely as a result of the concentration in IDP camps. While the health situation is not in the scope of this study, several elements tend to show negative consequences on children and maternal health. Data show that women tend to breastfeed their children later in this stratum than elsewhere in Uganda.

NORTHERN REGION - MADI

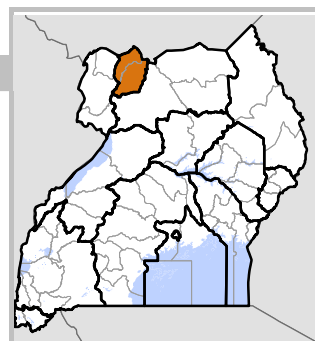
STRATA 3 – DISTRICTS OF ADJUMANI, MOYO

Tot. Pop. size: 397,068

Sample size: 200 households

Community questionnaires: 20

Main Livelihood Groups: Agro-Brewers (32%), Agro-Labourers (18%),
Fisher, Hunter, Gatherers (18%), Agro-Pastoralists (9%)



Food Security Profile:

Food Insecure: 7%	Highly vulnerable: 34%	Moderately vulnerable: 32%	Food Secure: 27%
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Access Profile:

Very Weak: 0%	Weak: 16%	Borderline: 30%	Fairly good: 49%	Good: 5%
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Consumption Profile:

Very Poor: 26%	Borderline: 40%	Fairly good: 28%	Good: 7%
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Children Nutrition:

Stunted: 18%	Severely stunted: 8%	Wasted: 6%	Severely wasted: 0%
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The Madi stratum has relatively few households that are food insecure (still above national average); nevertheless, the proportion of vulnerable households remains high (34%). Two livelihood groups identified as insecure are largely present in the stratum: Agro-Brewers and Agro-Labourers. Level of Vulnerability and Food Insecurity in the region are more likely related to those livelihood strategies rather than external causes.

NORTHERN REGION - ARUA

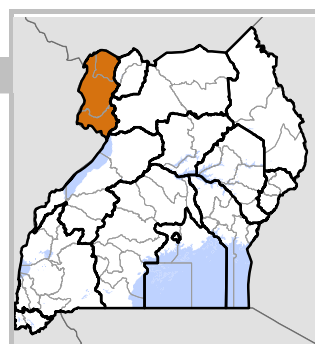
STRATA 4 – DISTRICTS OF ARUA, NEBBI, YUMBE

Tot. Pop. size: 1,521,072

Sample size: 270 households

Community questionnaires: 20

Main Livelihood Groups: Agriculturalists (34%), Agro-Labourers (20%),
Agro-Traders (11%), Agro-Pastoralists (11%)



Food Security Profile:

Food Insecure: 5%	Highly vulnerable: 34%	Moderately vulnerable: 26%	Food Secure: 35%
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Access Profile:

Very Weak: 1%	Weak: 16%	Borderline: 34%	Fairly good: 43%	Good: 7%
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Consumption Profile:

Very Poor: 20%	Borderline: 31%	Fairly good: 37%	Good: 12%
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Children Nutrition:

Stunted: 24%	Severely stunted: 8%	Wasted: 7%	Severely wasted: 1%
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The Arua stratum is generally quite similar to the Madi stratum and has comparable figures in terms of food security, access and consumption profiles. The population is composed of fewer Fisher, Hunter, Gatherers and more Agro-Traders, a group identified as food secure.

NORTHERN REGION - LANGO

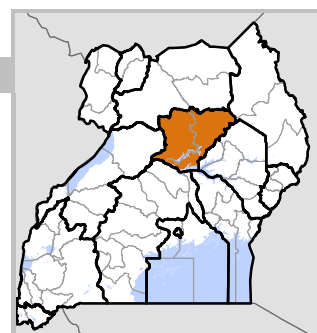
STRATA 5 – DISTRICTS OF APAC, LIRA

Tot. Pop. size: 1,425,233

Sample size: 274 households

Community questionnaires: 33

Main Livelihood Groups: Agriculturalists (41%), Marginal Livelihoods (16%), Agro-Labourers (16%)



Food Security Profile:

Food Insecure: 12% Highly vulnerable: 37% Moderately vulnerable: 20% Food Secure: 30%

Access Profile:

Very Weak: 11% Weak: 20% Borderline: 34% Fairly good: 31% Good: 4%

Consumption Profile:

Very Poor: 12% Borderline: 42% Fairly good: 31% Good: 15%

Children Nutrition:

Stunted: 12% Severely stunted: 5% Wasted: 7% Severely wasted: 0%

The Lango stratum faces similar problems to the Acholi stratum, albeit less intensively. Insecurity there is also relatively important but the population has overall better access to land. This in turn leads to more diversified livelihood profiles – albeit still profiles considered among the insecure. Crop diversity in the stratum remains low. On the health side, as among the Acholi, women tend to breastfeed their children later than elsewhere in Uganda.

EASTERN REGION – TESO-DHOLA

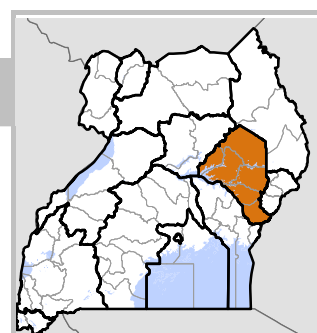
STRATA 6 – DISTRICTS OF KABERMAIDO, KATAKWI, SOROTI, KUMI, PALLISA, TORORO

Tot. Pop. size: 2,247,520

Sample size: 300 households

Community questionnaires: 20

Main Livelihood Groups: Agro-Labourers (30%), Agro-Brewers (26%), Agriculturalists (20%)



Food Security Profile:

Food Insecure: 3% Highly vulnerable: 53% Moderately vulnerable: 21% Food Secure: 23%

Access Profile:

Very Weak: 1% Weak: 14% Borderline: 51% Fairly good: 28% Good: 6%

Consumption Profile:

Very Poor: 16% Borderline: 55% Fairly good: 17% Good: 13%

Children Nutrition:

Stunted: 12% Severely stunted: 6% Wasted: 9% Severely wasted: 3%

The Teso-Dhola stratum, geographically close to the Karimojong stratum, faces similar problems of insecurity and drought, albeit less intensively. Two of the main livelihood strategies found in the stratum were identified as insecure: Agro-Labourers (30%) and Agro-Brewers (26%), which may explain the high proportion of households in the Vulnerable group in the Food Security Profile.

EASTERN REGION – GISU-SEBEI

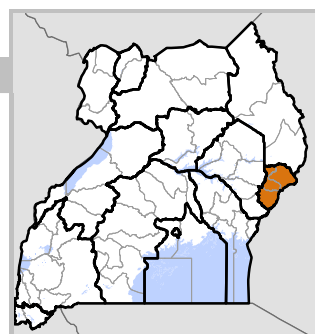
STRATA 7 – DISTRICTS OF KAPCHORWA, SIRONKO, MBALE

Tot. Pop. size: 1,191,723

Sample size: 257 households

Community questionnaires: 20

Main Livelihood Groups: Agriculturalists (53%), Agro-Labourers (18%), Agro-Traders (11%)



Food Security Profile:

Food Insecure: 2% Highly vulnerable: 28% Moderately vulnerable: 26% Food Secure: 44%

Access Profile:

Very Weak: 2% Weak: 11% Borderline: 40% Fairly good: 32% Good: 15%

Consumption Profile:

Very Poor: 18% Borderline: 22% Fairly good: 34% Good: 27%

Children Nutrition:

Stunted: 18% Severely stunted: 13% Wasted: 9% Severely wasted: 2%

The Gisu-Sebei stratum is in the continuation of the Teso-Dhola stratum but its overall food security performances are higher, with only 2% of food insecure and 28% of vulnerable households although crop diversity remains low. Compared to the Teso-Dhola stratum, a higher proportion of households are Agriculturalists and none are Agro-Brewers. Agro-Traders are a more important group as well. These more food secure livelihood profiles explain the reduced proportion of food insecure and vulnerable in the population.

EASTERN REGION – GREATER-BUSOGA

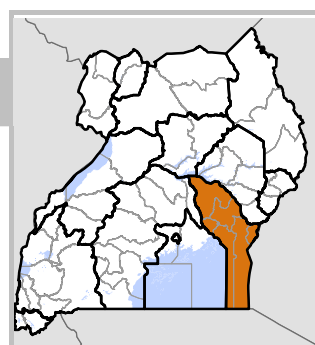
STRATA 8 – DISTRICTS OF KAMULI, IGANGA, JINJA, MAYUGE, BUGIRI, BUSIA

Tot. Pop. size: 2,765,672

Sample size: 190 households

Community questionnaires: 19

Main Livelihood Groups: Agro-Traders (31%), Agro-Labourers (25%), Agriculturalists (13%), Agro-Artisan (12%)



Food Security Profile:

Food Insecure: 3% Highly vulnerable: 21% Moderately vulnerable: 16% Food Secure: 60%

Access Profile:

Very Weak: 1% Weak: 9% Borderline: 33% Fairly good: 50% Good: 7%

Consumption Profile:

Very Poor: 15% Borderline: 11% Fairly good: 27% Good: 47%

Children Nutrition:

Stunted: 16% Severely stunted: 7% Wasted: 5% Severely wasted: 1%

CENTRAL REGION – CENTRAL LAKE

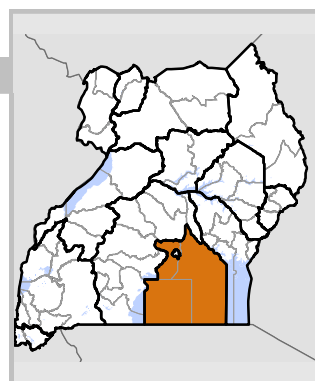
STRATA 9 – DISTRICTS OF MUKONO, WAKISO, KALANGALA

Tot. Pop. size: 1,738,147

Sample size: 202 households

Community questionnaires: 20

Main Livelihood Groups: Agriculturalists (19%), Hunter, Fisher, Gatherers (18%), Agro-Pastoralists (16%), Agro-Labourers (13%), Agro-Traders (11%), Agro-Artisan (9%)



Food Security Profile:

Food Insecure: 0% Highly vulnerable: 19% Moderately vulnerable: 14% Food Secure: 67%

Access Profile:

Very Weak: 0% Weak: 12% Borderline: 17% Fairly good: 48% Good: 22%

Consumption Profile:

Very Poor: 4% Borderline: 19% Fairly good: 34% Good: 43%

Children Nutrition:

Stunted: 16% Severely stunted: 7% Wasted: 6% Severely wasted: 1%

CENTRAL REGION – GREATER BUGANDA

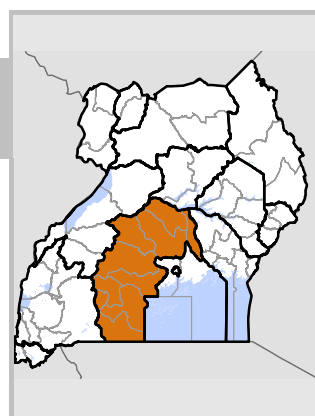
STRATA 10 – DISTRICTS OF KAYUNGA, NAKASONGOLA, LUWERO, KIBOGA, MUBENDE, MPIGI, SEMBABULE, MASAKA, RAKAI

Tot. Pop. size: 3,648,136

Sample size: 203 households

Community questionnaires: 20

Main Livelihood Groups: Agriculturalists (30%), Agro-Labourers (18%), Agro-Pastoralists (15%), Agro-Artisan (11%), Agro-Traders (9%)



Food Security Profile:

Food Insecure: 2% Highly vulnerable: 26% Moderately vulnerable: 18% Food Secure: 54%

Access Profile:

Very Weak: 2% Weak: 5% Borderline: 38% Fairly good: 34% Good: 21%

Consumption Profile:

Very Poor: 6% Borderline: 36% Fairly good: 13% Good: 44%

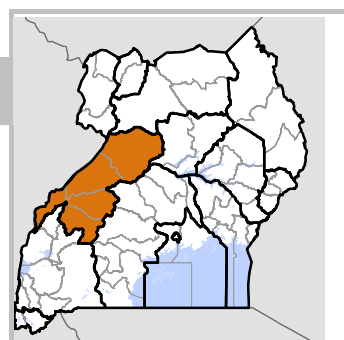
Children Nutrition:

Stunted: 17% Severely stunted: 7% Wasted: 5% Severely wasted: 0%

WESTERN REGION - BUNYORO

STRATA 11 – DISTRICTS OF MASINDI, HOIMA, KIBAALE, KYENJOJO, BUDINBUGYO

Tot. Pop. size: 1,796,139
 Sample size: 207 households
 Community questionnaires: 20
 Main Livelihood Groups: Agriculturalists (29%), Agro-Pastoralists (22%), Agro-Labourers (20%), Agro-Traders (14%)



Food Security Profile:
 Food Insecure: 2% Highly vulnerable: 36% Moderately vulnerable: 17% Food Secure: 45%

Access Profile:
 Very Weak: 1% Weak: 6% Borderline: 47% Fairly good: 32% Good: 14%

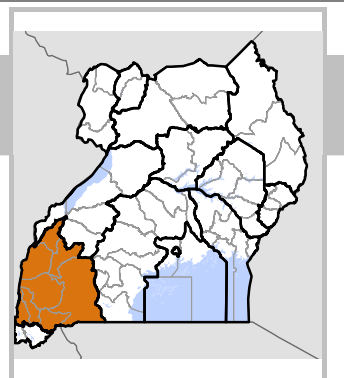
Consumption Profile:
 Very Poor: 4% Borderline: 45% Fairly good: 25% Good: 26%

Children Nutrition:
 Stunted: 23% Severely stunted: 16% Wasted: 4% Severely wasted: 2%

WESTERN REGION - ANKOLE

STRATA 12 – DISTRICTS OF KABAROLE, KAMWENGE, KASESE, BUSHENYI, MBARARA, NTUNGAMO, RUKUNGIRI, KANUNUNGU

Tot. Pop. size: 3,823,306
 Community questionnaires: 20
 Sample size: 207 households
 Main Livelihood Groups: Agriculturalists (27%), Agro-Labourers (29%), Agro-Pastoralists (21%), Agro-Traders (9%)



Food Security Profile:
 Food Insecure: 2% Highly vulnerable: 19% Moderately vulnerable: 18% Food Secure: 61%

Access Profile:
 Very Weak: 1% Weak: 5% Borderline: 23% Fairly good: 36% Good: 35%

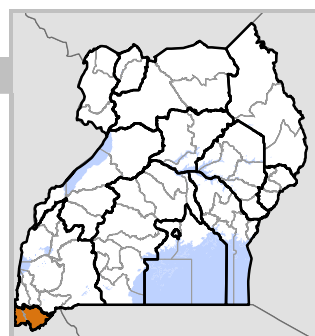
Consumption Profile:
 Very Poor: 4% Borderline: 47% Fairly good: 13% Good: 36%

Children Nutrition:
 Stunted: 15% Severely stunted: 10% Wasted: 3% Severely wasted: 1%

WESTERN REGION - KIIGA

STRATA 13 – DISTRICTS OF KABALE, KISORO

Tot. Pop. size: 678,630
 Community questionnaires: 20
 Sample size: 200 households
 Main Livelihood Groups: Agriculturalists (33%), Agro-Labourers (24%), Remittances Dependents (13%), Agro-Pastoralists (8%), Agro-Traders (8%)



Food Security Profile:

Food Insecure: 1% Highly vulnerable: 60% Moderately vulnerable: 20% Food Secure: 19%

Access Profile:

Very Weak: 0% Weak: 7% Borderline: 58% Fairly good: 24% Good: 11%

Consumption Profile:

Very Poor: 3% Borderline: 83% Fairly good: 3% Good: 10%

Children Nutrition:

Stunted: 26% Severely stunted: 19% Wasted: 3% Severely wasted: 0%

Part 7 - RECOMMENDATIONS FOR PROGRAMME INTERVENTIONS

7.1 Summary Findings

The primary objective of this Comprehensive Food Security and Vulnerability analysis was to obtain a better understanding of food insecurity and vulnerability among Ugandan rural households at the sub-regional level. Some of the main findings of this research are:

- **Food insecurity and vulnerability are highly prevalent in Uganda.** Five percent of the rural households were found to be food insecure and 31% are considered vulnerable.
- **Food insecurity and vulnerability are present everywhere in Uganda but vary regionally.** Only in the Central Lake stratum were no households classified as food insecure. However, in that stratum, vulnerable households still accounted for 19% of the population. Among the most food insecure are: The Acholi strata (with 33% of the households' food insecure and 38% vulnerable), the Karimojong (with 18% food insecure and 46% vulnerable) and the Lango strata (with 12% food insecure and 37% vulnerable). Vulnerability was also found to be very high in the Teso-Dhola strata (3% food insecure, 53% vulnerable) and Kiiga strata (1% food insecure, 60% vulnerable).
- **Food insecurity and vulnerability are prevalent among all livelihood groups but vary across strategies.** Marginal livelihoods (mainly Acholi strata) and Remittances Dependents (mainly Kiiga strata) are found to have higher percentages of food insecure and vulnerable. Five other groups, Pastoralists, Agro-Brewers, Agriculturalists, Agro-Labourers and Agro-Traders, are considered vulnerable and four groups are considered most food secure: Employees-Agriculturalists, Agro-Pastoralists, Fisher, Hunter, Gatherers and Agro-Artisan.
- **Causes and "food insecurity profiles" vary geographically and across livelihoods.** Among the most food insecure and vulnerable regions, the Acholi and Lango strata are mainly affected by insecurity that reduces food availability and the household's ability to access food (financially, geographically). In the Karimojong and Teso-Dhola strata, insecurity as well as exposure to repeated external shocks (drought) is the likely explanation of food insecurity and vulnerability. In the Kiiga strata, access indicators are relatively good but diet diversity remains poor. Cultural factors may explain a traditionally less diverse diet.
- **Child malnutrition is present everywhere in Uganda but varies regionally.** Stunting affects a large proportion of the children throughout the country (30%) and is especially acute in the Karimojong, Bunyoro and Kiiga strata. Wasting also affected a high number of children (10%), possibly because data were collected just before harvest season. Wasting was especially high in the Karimojong and Acholi strata. In terms of livelihoods, stunting affects more frequently Agriculturalists, Agro-Labourers, Pastoralists and Fisher, Hunter, Gatherers (34%), and wasting affects more frequently Pastoralists, Remittances Dependents and Marginal Livelihoods. In addition to those groups, underweight children were also more frequently found among Agro-Brewers.
- **Causes of malnutrition vary geographically and across livelihoods.** The proportion of wasting and underweight among children under 5 years was found to be linked to poor household food consumption, with the food insecure showing higher proportions of wasting and underweight. Stunting however was found across food security profiles. Bunyoro provides a good example of a stratum generally considered as food secure but that still has a high percentage of stunted children. Malnutrition cannot therefore only be related to food insecurity, but must take into account the health dimension.
- **Access to Health Services is unequal.** Our data suggest that Marginal Livelihoods (mainly Acholi strata) generally have a better access to health services than the rest of the population (e.g. better vaccination coverage). Nevertheless, the child health situation among this group remains critical, as illustrated by the fact that diarrhoea affects more than half the children (53%). The focus on the conflict area should however not overlook problems arising in other areas. Measles vaccination coverage for children was found to be lowest in the Arua and Ankole strata.
- **Several socio-economic indicators are strongly correlated with food security status.** While the gender of the household head seemed to have little influence on the food security status, the age of the household head, the household size and the level of education of both the household head and spouse were found to have a significant impact. Some indicators related to access to productive resources

were found to positively influence Food Security status (acreage, ownership of cattle and poultry). Among shocks, the level of violence in the north of the country was also found to have a significant impact, especially when it relates to displacements. Other shocks such as price fluctuations of food, crop pests and diseases were also found to have an impact. The livelihood strategy adopted by households and their geographic distribution were also found to be related to the Food Insecurity status.

- **Food Insecure mothers tend to start breastfeeding their children later.** The time taken for a mother to start breastfeeding her children was found to be related with the food security status. Among Food Insecure, only 66% of the women started breastfeeding their children within one day of birth. This percentage increased to 82% among highly vulnerable, 85% among moderately vulnerable and 86% among food secure. This in turn has major implications on the child's health, since breastfeeding provides children with protection against infections.
- **Animal pandemics are likely to have an impact on livelihood strategies more than on dietary intake.** As the discussion on the potential impact of the bird flu pandemic illustrates, any large scale loss of animals will affect the ability of a household to dispose of the animal as an asset (e.g. sale to generate income) in case of external shocks. The reduced coping ability will in turn increase the likelihood of a household to be food insecure or vulnerable. The direct impact on food intake, however, is likely to be negligible.

7.2 Priority Areas

Food Security in Uganda will be achieved only through an integrated approach which not only addresses the immediate need for food but also the structural problems that cause vulnerability. This report therefore concludes with recommendations for food and non-food programme options and targeting based on the findings summarized above. The recommendations are:

- A formal on-going food security **monitoring system** should be implemented in partnership with the Ministry of Agriculture and other stakeholders. The CFSVA found that a majority of the population of rural Uganda is food insecure (5%) or vulnerable to food insecurity (31% highly vulnerable, 19% moderately vulnerable). Those vulnerable households are highly sensitive to external shock, mainly drought, food price fluctuation and crop pests and diseases. An early warning system could be developed based on these three components: climatic data, market information and crop pests and diseases surveillance system.
- **Education is a major long-term objective to reduce food insecurity and vulnerability.** As the CFSVA found, education achievement of both the household head and spouse of the household head is significantly correlated to the food security status. School attendance is found to remain very low in the Karimojong strata, where access to schools was also found to be most problematic (because of distance). Education infrastructure needs to be improved in that stratum as well as in the Arua and Kiiga strata. While the emphasis is often on primary education, the education/food security status was strong with a higher level of education. The secondary education sector and vocational training is largely underserved and needs strengthening both in terms of infrastructure and capacity building (e.g. teachers).
- **An integrated approach to resolve the conflict in northern Uganda is needed.** Insecurity is the major constraint faced by the population in order to resume their normal activities and move from food aid dependency to alternative livelihood strategies in which food aid will play a less important role. Achieving security is therefore the priority but lies largely in the hands of the government. While often squalid, the camp conditions in northern Uganda allow increased access to services such as education and health facilities. Many additional infrastructures could further be developed. Since the majority of the population in the Acholi strata is Marginal livelihoods and since insecurity is a year-round problem, no specific group or seasonal targeting will be discussed.
- **Exposure to recurrent shocks in the Karimojong and Teso-Dhola strata must be addressed with long-term focus on development.** Limited, seasonal interventions are needed to address the immediate needs of the population in the Karimojong and Teso-Dhola strata during the hunger season. From a long-term perspective, agricultural practices and inputs (e.g. varieties tolerant to drought) must be promoted through intensification/support of agricultural services. As mentioned above, education is a priority in the area.

- **Higher diet diversity must be promoted (Social Marketing).** While a high percentage of households were found to be vulnerable in the Kiiga strata, the cause of vulnerability was mainly diet diversity (86% were found to have inadequate or borderline diversity), while the access dimension was found to be relatively good. Nutrition data showed high stunting frequency, indicating a chronic problem but low wasting (not acute). Reliance on own production was found to be high in Kiiga (e.g. roots and tubers, matooke) and the diversity of crops was relatively high. A likely explanation is the lack of diversity in the diet for traditional/cultural reasons. Rather, promotion of alternative crops, for example through demonstration plots, could be pursued. Similar remarks apply to the Ankole strata. In the Karimojong, Acholi, Teso-Dhola and Gisu-Sebei strata, agricultural households generally cultivate few varieties. Overall only a limited amount of different food items seem to be available on the market, which in turn leads to poor diet diversity. Social marketing, seed distribution, and agricultural research to develop adapted seeds are needed to increase diversity of the production in those areas.
- **Improve access to health facilities and services.** Distances to health facilities were found to be highest in the western strata and Karimojong stratum. This in turn is likely to have an impact on the health status of the children. Water and sanitation conditions in the camps of northern Uganda must be improved to decrease the risk posed by air- and water-borne diseases. More generally, measles vaccination must be reinforced throughout the country. Among livelihood groups, Remittances Dependents must be targeted to improve their access to health services as they tend to have the lowest coverage in terms of vaccination (measles, tetanus) and tend to access health facilities less frequently when a child is sick.
- **Target food insecure households with young children for integrated food security and child health programs.** Mothers from food insecure households tended to start breastfeeding their children later. Children from food insecure households also tended to be more frequently ill with diarrhea. Any food security program targeting food insecure and vulnerable households must therefore be accompanied with support to improve the health of the children.