

# Comprehensive Food Security & Vulnerability Analysis

GHANA 2012 | Focus on Northern Ghana

Data collected in April - May 2012



**World Food Programme**



**Ministry of Food and Agriculture**

**Ghana Statistical Service**

Funding provided by: **BILL & MELINDA GATES foundation**



**Australian Government  
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## **GHANA COMPREHENSIVE FOOD SECURITY & VULNERABILITY ANALYSIS, 2012**

Data collected in April and May, 2012

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Financial support for this study was provided by the Bill and Melinda Gates Foundation and the Australian International Development Agency (AusAID). The views expressed herein can in no way be taken to reflect the official opinion of the supporting agencies.

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## ► | FOREWORD

The implementation of strategic interventions to reduce food insecurity and address malnutrition and poverty, is at the heart of the UN World Food Programme's (WFP) support to the Government of Ghana. In pursuit of this goal, WFP, in collaboration with the Ghana Statistical Service, Ministry of Food and Agriculture and other agencies, carried out the first nationwide Comprehensive Food Security and Vulnerability Analysis (CFSVA) in 2009. This survey provided the Government and stakeholders in the food security and nutrition sector with a clear understanding of the state of national food insecurity, its underlying causes and possible ways of addressing them.

This 2012 CFSVA is a follow-up to the 2009 survey and was conducted in April/May 2012. It provides a general overview of the socio-economic and food security conditions in the country, with particular focus at district level in the three northern regions, which were identified in the 2009 survey as the most vulnerable and food insecure. The 2012 survey enables stakeholders to understand the depth of food insecurity at the district level, as well as effectively address its underlying causes so that the gains made in socio-economic development over the past years can be consolidated.

A distinctive attribute of the district level analysis of food security in northern Ghana is that it provides details of food consumption patterns, relative wealth of households and unique profiles of the districts that are deemed to be worst-off in terms of their food consumption. Thanks to this comprehensive picture of household food security status in both rural and urban settings, interventions can be better targeted to address the specific needs of the most vulnerable food insecure people.

### **ISMAIL OMER**

WFP Representative

## ▶ | ACKNOWLEDGEMENTS

The 2012 Comprehensive Food Security and Vulnerability Analysis is the product of a joint effort led by the World Food Programme and the Ghana Ministry of Food and Agriculture. The CFSVA was generously funded by the Bill and Melinda Gates Foundation and the Australian International Development Agency.

Throughout the CFSVA process, partner organisations contributed greatly to the success of the survey. We would like to express our gratitude specifically to Peter Peprah of the Ghana Statistical Service, Lena Otoo of the Ministry of Food and Agriculture, Tadia Sophie of the Food and Agriculture Organization, and Mawutor Ablo of the Ministry of Employment and Social Welfare for their valuable efforts. We would also like to thank the Regional Directorates of the Ministry of Food and Agriculture in the three northern regions of Ghana and their staff, who were pivotal to the success of the collection of data for the CFSVA. Throughout the survey field work, the Ministry of Food and Agriculture and the Ghana Statistical Service provided essential technical and logistical support to ensure success of the data collection exercise.

Staff members of the WFP Ghana Country Office in Accra and the Sub-Office in Tamale were critical to the success of the CFSVA. Special appreciation goes to Aboubacar Koisha, the Head of the Tamale Sub-Office and Hoang Nguyen Duc, Head of Programme for WFP Ghana, for their dedication of time and resources to the CFSVA. The Management of the WFP Country Office in Accra, Ismail Omer – Country Director, and Magdalena Moshi – Deputy Country Director, provided essential support to the update of the CFSVA. Steve Purbrick and Alanna Maguire, volunteers from the Australian Youth Ambassadors for Development (AYAD), worked tirelessly throughout the process of this project and were great contributors to the success of the CFSVA.

We are equally grateful to staff at the WFP West Africa Regional Bureau in Dakar for the technical support they provided at various stages of the survey, particularly to Cedric Charpentier, Naouar Labidi and Malick Ndiaye. Great appreciation goes to the WFP Food Security Analysis Service in Rome, particularly to Amit Wadhwa, Rogerio Bonifacio, Esther Amler and Christina Hobbs.

Lastly, we would like to express our profound appreciation to the 8,400 households throughout northern Ghana who spared a significant amount of their time to respond to the long list of questions posed in this survey.

**LISA HJELM AND WUNI DASORI**

# ▶ | TABLE OF CONTENTS

<b>1. KEY FINDINGS</b>	<b>1</b>	<b>6. CAUSES OF FOOD INSECURITY</b>	<b>31</b>
<b>2. SUMMARY</b>	<b>2</b>	<b>6.1</b> Poverty in northern Ghana	31
<b>3. ABOUT THIS CFSVA</b>	<b>5</b>	<b>6.2</b> Limited economic opportunity and poor infrastructure	34
<b>3.1</b> Why focus on northern Ghana?	6	<b>6.3</b> Socio-economic circumstances make female headed households more food insecure	36
<b>3.2</b> Introduction to food security	6	<b>6.4</b> How livelihood strategies influence food security	38
<b>4. BACKGROUND ON GHANA</b>	<b>10</b>	<b>6.5</b> Agricultural limitations	44
<b>4.1</b> Geography	10	Small land size and lack of crop diversity	44
<b>4.2</b> Climate	11	Crop production decline	45
<b>4.3</b> Land use	11	Low soil fertility and lack of fertilizer/pesticide and irrigation	46
<b>4.4</b> Water	11	Climatic conditions and seasonality	54
<b>4.5</b> People	12	<b>6.6</b> High food prices and dependence on purchased food during the lean season	50
<b>4.6</b> Education	12	A third of households faced a difficulty that hindered their food access for a time	52
<b>4.7</b> Health	13	<b>7. DISTRICT PROFILES</b>	<b>53</b>
<b>4.8</b> Economy	14	<b>7.1</b> Analysis of the six worst-off districts	55
<b>4.9</b> Inflation	15	Wa West	55
<b>4.10</b> Food prices and markets	15	Central Gonja	56
<b>4.11</b> Poverty	17	Talensi-Nabdam	56
<b>4.12</b> Access to infrastructure	17	Kassena Nankana West	56
<b>5. THE FOOD SECURITY SITUATION IN NORTHERN GHANA</b>	<b>19</b>	Kassena Nankana East	56
<b>5.1</b> How many are food insecure?	19	Garu-Tempene	57
<b>5.2</b> Food insecurity by district	19	<b>7.2</b> Description of better performing districts	58
<b>5.3</b> Who are the food insecure?	22	Sissala West	58
Poor households	22	East Gonja	58
Smallholder farmers	23	Nanumba North	58
Households headed by the uneducated	25	<b>8. THE UPPER EAST REGION</b>	<b>60</b>
Female headed households	26	<b>9. CONCLUSION AND RECOMMENDATIONS</b>	<b>61</b>
<b>5.4</b> Food security in urban and rural households	27		
<b>5.5</b> Food consumption, dietary diversity and sources of food	27		
<b>5.6</b> Household crop production	28		

## List of Figures

<b>Figure 1</b>	Model of factors determining food security	7
<b>Figure 2</b>	Food and nutrition security conceptual framework	8
<b>Figure 3</b>	Map of northern Ghana	10
<b>Figure 4</b>	Real price of maize trends in Tamale	16
<b>Figure 5</b>	Access to sanitation facilities in northern Ghana by wealth quintile	18
<b>Figure 6</b>	Prevalence of food insecure households by region	19
<b>Figure 7</b>	Distribution of severe and moderately food insecure districts	20
<b>Figure 8</b>	Food consumption score by wealth quintiles	22
<b>Figure 9</b>	Dietary diversity in the different wealth quintiles	23
<b>Figure 10</b>	Food security status by farm size	24
<b>Figure 11</b>	Farm size by region	24
<b>Figure 12</b>	Rates of food insecure households by educational level of head of household	25
<b>Figure 13</b>	Wealth quintiles by educational level of household head	26
<b>Figure 14</b>	Percent of households either severely or moderately food insecure by sex of household head	26
<b>Figure 15</b>	Percent of households either moderately or severely food insecure in urban and rural areas	27
<b>Figure 16</b>	Clusters based on crops grown in the different districts	29
<b>Figure 17</b>	Household food security and expenditure quintiles	32
<b>Figure 18</b>	Percentage of households using coping strategies in the last week by wealth quintile	34
<b>Figure 19</b>	Percent of households that currently have a loan or debt by wealth quintiles	35
<b>Figure 20</b>	Percentage of households per wealth quintile by sex of household head	37
<b>Figure 21</b>	Farm size by sex of head of household	38
<b>Figure 22</b>	Proportion of households in the different livelihood groups	39
<b>Figure 23</b>	Percentage of either severely or moderately food insecure households by livelihood and region	44
<b>Figure 24</b>	Household stocks at the time of the survey by food security status	46

<b>Figure 25</b>	Most common agricultural constraints reported by households producing the same or less than the previous year	47
<b>Figure 26</b>	Soil fertility and lack of fertilizer as agricultural constraints by wealth quintiles	47
<b>Figure 27</b>	Soil fertility and lack of fertilizer as agricultural constraints by food consumption groups	48
<b>Figure 28</b>	Crop calendar for northern Ghana	49
<b>Figure 29</b>	Months during which households perceive difficulties finding enough food	50
<b>Figure 30</b>	Months during which households are buying more maize than they are selling	51
<b>Figure 31</b>	Percentage of households experiencing difficulties by type of difficulty and region	52
<b>Figure 32</b>	Average days of consumption of food groups in the last week in selected districts	57
<b>Figure 33</b>	Households in two lowest wealth quintiles by district	59

## List of Tables

<b>Table 1</b>	Food insecure households and population by district	21
<b>Table 2</b>	Dietary diversity in food security groups	28
<b>Table 3</b>	Food sources in the different regions	28
<b>Table 4</b>	Income per capita	31
<b>Table 5</b>	Livestock ownership by wealth quintiles	33
<b>Table 6</b>	Available sources of credits/loans	35
<b>Table 7</b>	Livelihood groups and key outcomes	40
<b>Table 8</b>	Livelihood groups and dietary diversity	42
<b>Table 9</b>	Livestock units and ownership of most common animals	43
<b>Table 10</b>	Source of food by livelihood group	43
<b>Table 11</b>	Change in production between 2010/11 and 2011/12 growing season	45
<b>Table 12</b>	Share of food expenditures spent on different food items by food consumption group	51
<b>Table 13</b>	Key indicators by district	54
<b>Table 14</b>	Food security and wealth in selected Districts	55



## ▶ | 1. KEY FINDINGS

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In Upper West, Upper East and Northern regions of Ghana:

- More than 680,000 people were considered to be either severely or moderately food insecure at the time of the survey.
- Of the food insecure, 140,000 are classified as severely food insecure, having a very poor diet consisting of just staple foods, some vegetables and oil, and little else.
- The Upper East Region has the highest proportion of households who are either severely or moderately food insecure (28%). In the Northern and Upper West regions 10% and 16% of households respectively are either severely or moderately food insecure. The five districts with the highest proportion of households who are either severely or moderately food insecure are Wa West (42%), Central Gonja (39%), Talensi-Nabdam (39%), Kassena-Nankana West (35%) and Kassena-Nankana East (33%).
- Poorer households, those with smaller farms, female-headed households and households with an uneducated head are more often found to be food insecure than other households.
- In the poorest wealth quintile<sup>1</sup>, 13% of households had gone an entire day without eating at all, on at least one day, in the week preceding the survey. Poor households not only have limited means of purchasing food, but have smaller harvests, lower levels of education and greater vulnerability to shocks such as high food prices.
- Agriculture is the most common way for households to sustain their livelihoods. Some 88% of households in northern Ghana rely on crop cultivation as their chief livelihood activity and 95% had harvested or were planning to harvest one or more crops. Crop failure – chiefly caused by insufficient and erratic rainfalls – is the most common difficulty mentioned by households. When the harvest fails, households dependent on agriculture are at greater risk of becoming food insecure.
- Households reported seasonal difficulties in accessing enough food, with the gravest difficulties occurring during the peak of the lean season in June/July.
- Food prices are rising dramatically, in part due to food production decline in the 2011 growing season as well as relatively high inflationary trends. Poorer households spend a larger share of their expenditures on food and are therefore more influenced by rising food prices.

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<sup>1</sup> Wealth quintiles were created based upon a ranking of households using a proxy index based upon ownership of assets and housing conditions. More details on the wealth index are found in the section, 5.3 Who are the food insecure?''.

## ► | 2. SUMMARY

The 2012 Comprehensive Food Security and Vulnerability Analysis (CFSVA) focuses in greater detail on the three northern regions of Ghana, highlighting the areas and population groups experiencing food insecurity as well as the causes. This survey is the first of its kind to be representative at the district level and covers the 38 districts of the Northern, Upper East and Upper West regions (8,399 households were interviewed). The report describes the food security situation in April/May 2012.

Despite an overall increase in Ghana's wealth and development in recent years, the three northern regions have continued to record higher incidences of poverty, food insecurity and malnutrition. The food security challenges in these regions are confirmed by the results from the CFSVA which indicate that **more than 680,000 people were considered either severely or moderately food insecure** at the time of the survey and of these, 140,000 had a very poor diet, subsisting on staple foods, some vegetables and oil, and little else.

The highest proportion of food insecure households is found in the Upper East Region where 28% of households are either severely or moderately food insecure. This compares with 10% of households in the Northern Region and 16% in the Upper West Region. Poverty is one of the main causes of food insecurity in northern Ghana, especially in the Upper East Region where more than half (56%) of households fall into the poorest segments of the population (compared with around a third in the Upper West Region and in the Northern Region). Poor households (those with no or few assets and poor housing conditions) not only have limited means of purchasing food, but have smaller harvests, greater vulnerability to shocks due to reduced coping capacity and lower levels of education, which all together increase their food insecurity and vulnerability.

### CLASSIFYING FOOD INSECURITY

Household food security is classified according to **a combination** of two indicators:

- The food consumption score (FCS), which combines diet diversity, frequency of consumption and the relative nutritional importance of different food groups. It divides households into three groups: poor, borderline and acceptable food consumption
- A wealth index, which is based on asset ownership and housing conditions, and divides households into quintiles with the lowest two generally referred to as poor.

By combining the two indicators above households are subsequently divided into four food security groups:

- Severely food insecure – households with poor food consumption
- Moderately food insecure – households with borderline food consumption and in the two lowest (poorest) wealth quintiles
- Mildly food insecure – households with borderline food consumption and in the three highest (wealthiest) quintiles
- Food secure – households with acceptable food consumption

In this report food insecurity, unless otherwise specified, refers to households that are either severely or moderately food insecure.

It is worth noting that although the mildly food insecure households were not consuming an adequate diet at the time of the survey, their food insecurity is likely to be temporary because they are wealthier and more able to use their resources to access food. At the time of the survey their inadequate diet may have been because the survey was carried out during the lean season when household food access is impaired.

Close to half of the households in the poorest wealth groups (the two lowest wealth quintiles) were not able to secure a healthy daily food intake versus only 15% of the wealthiest (highest quintile) families at the time of the survey. **The poorer the household, the more likely it is to have poor food consumption.** Not only do poorer households eat less, they also have a less diverse diet, consuming meat, fish, sugar and dairy products less regularly than their wealthier counterparts. In addition, poor and food insecure households often purchase food on the local market, making them highly vulnerable to food insecurity when food prices increase.

**Poverty and limited economic opportunities in these regions are prompting widespread migration to the southern parts of the country.**

A quarter of the sampled northern households had members who migrated to other parts of the country in the year before the CFSVA, peaking at 34% for the Upper West Region. The hunt for paid employment is the main reason for leaving, followed by not having enough food throughout the year, which was identified by 30% of households with migrating members.

**Food security is often an outcome of the livelihood strategies** adopted by households.

Differences in income, procurement of food and assets between livelihood groups are key to understanding why, for instance, an unskilled labourer is more food insecure than a trader. Identifying livelihoods (based on households' sources of income) is important for targeting and designing assistance.

Almost half of the households (46%) in northern Ghana acquire their income from crop cultivation while close to a third (29%) rely on agro-pastoralism, a combination of income from livestock (49%) and crops (43%). Together, these two groups represent 75% of the population, which underlines the importance of agriculture in sustaining the livelihoods of households in northern Ghana. A quarter of the households in these two

### THREE MAIN CAUSES OF FOOD INSECURITY IN NORTHERN GHANA

**Persistent poverty** - The underlying causes of the persistent poverty in these regions is beyond the scope of the CFSVA, but the impact on the food security status of households is clear. Poverty limits household resources available to purchase food and to invest in the agricultural inputs required to increase output. When households are poor they have no buffer to protect them against shocks such as climatic events, food price rises and illness or death of a household member.

**Limited agricultural outputs and seasonal effects**

- Agriculture is the dominant livelihood among households in northern Ghana with 88% relying on crop cultivation as one of their three main income generating activities. But farmers here face a series of structural issues from lack of irrigation, fertilizer and pesticides (due to a lack of financial resources), to inadequate rains and low soil fertility. Households also have to deal with seasonal challenges affecting their ability to access food, as these regions have an erratic rainfall pattern (rainy/wet period followed by long dry spell). As a result, more than 80% of the households found it difficult to access enough food in July 2012. Wealthier households and those with better food consumption are at lower risk of becoming food insecure as a result of seasonality and weather-related shocks thanks to their larger harvests and additional resources to purchase food. For poorer households, erratic rainfall patterns each year present a significant challenge and the resulting shocks limit their food availability and access.

**Fluctuations in food prices** - Food prices have been rising dramatically, in part due to food production decline in the 2011 growing season as well as relatively high inflationary trends. High prices for staple foods have been pervasive since 2008 and pose a major constraint to household food access. In Tamale for example, the real price (inflationary effects removed) of maize was up by 66% compared with May 2011 and 48% above the five year average. There are also seasonal fluctuations in prices, which chiefly affect poor households because they are more likely to buy their main staples when the prices are highest. It is the same pattern for other common staples.

livelihood groups have inadequate food consumption. Households that sustain their livelihoods through regular employment or fishing (thanks to their regular consumption of fish, a source of protein) are most likely to have acceptable food consumption. However, a large proportion of fishermen are poor and therefore vulnerable to becoming food insecure if the availability of fish or opportunities to carry out fishing diminish.

The size of land cultivated is strongly correlated with food insecurity. Some 62% of households are smallholder farms cultivating five acres or less and 21% of them were food insecure at the time of the survey, compared with 11% of medium sized farming households (cultivating 6-10 acres) and 7% of households with large farms (cultivating 11 or more acres).

Female headed households are more likely to have inadequate food consumption and be poor than their male counterparts. Overall, female-headed households make up 8% of all households in northern Ghana rising to 15% in the Upper East Region, the region with the worst food consumption and wealth indicators. There are several social and economic reasons why households that are headed by a woman struggle more than others to feed their family. First of all, their lack of access to larger farms restricts their ability to feed their households from their own production. Their lack of skills and education often prevent them from finding good income-earning opportunities. In addition, the majority of the female household heads (64%) are widows (rising to 80% in the Upper East Region), which means they could have fewer income earners and agricultural workers. Some 30% of households headed by a woman are either severely or moderately food insecure compared with 15% of male-headed households.

The report also looks at the **difference between households in rural areas and those living in urban settings**. Although food insecurity appears to be more prevalent in rural (19%) than in urban areas (4%), it is worth noting that close to one fifth of urban households do not eat adequately (according to the food consumption score) and cannot afford food in the market despite being 'wealthier' (according to the asset based wealth index) than rural households. But the fact that urban households are more likely to be engaged in regular employment partially explains why some are more protected against seasonal food changes in access.

## ► | 3. ABOUT THIS CFSVA

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The 2012 Ghana Comprehensive Food Security and Vulnerability Analysis (CFSVA) presents a detailed picture of the food security and nutrition situation in northern Ghana. The objective is to update and build on the previous national level CFSVA, which was completed in 2009 and to provide the Government of Ghana and the development community with information on:

- Who are the food insecure?
- Where are they located?
- How many are they?
- Why are they food insecure?
- What are the underlying causes of food insecurity?

### 3.1 Why focus on northern Ghana?

The 2009 Ghana CFSVA identified significant disparity in development indicators between the three northern regions of Ghana and the rest of the country. Despite an overall increase in Ghana's wealth and development in recent years, the three northern regions have continued to record higher incidences of poverty, food insecurity and malnutrition. The 2012 CFSVA therefore focuses in greater detail on the three northern regions, highlighting the areas and population groups experiencing food insecurity as well as identifying some of its causes.

In this CFSVA report, the key trends and drivers of food security are reviewed, followed by an in-depth analysis of the food security situation in the three northern regions. The data collected is representative at the district level and is the first assessment to analyse food security on this scale.

This report has been produced to support the Government of Ghana and other stakeholders to better design, target and implement interventions aimed particularly at the most deprived and food insecure parts of northern Ghana in order to:

- Reduce vulnerability to shocks
- Improve the capacity of households to access sufficient and nutritious food
- Develop their livelihoods in the long-term.

## 3.2 Introduction to food security

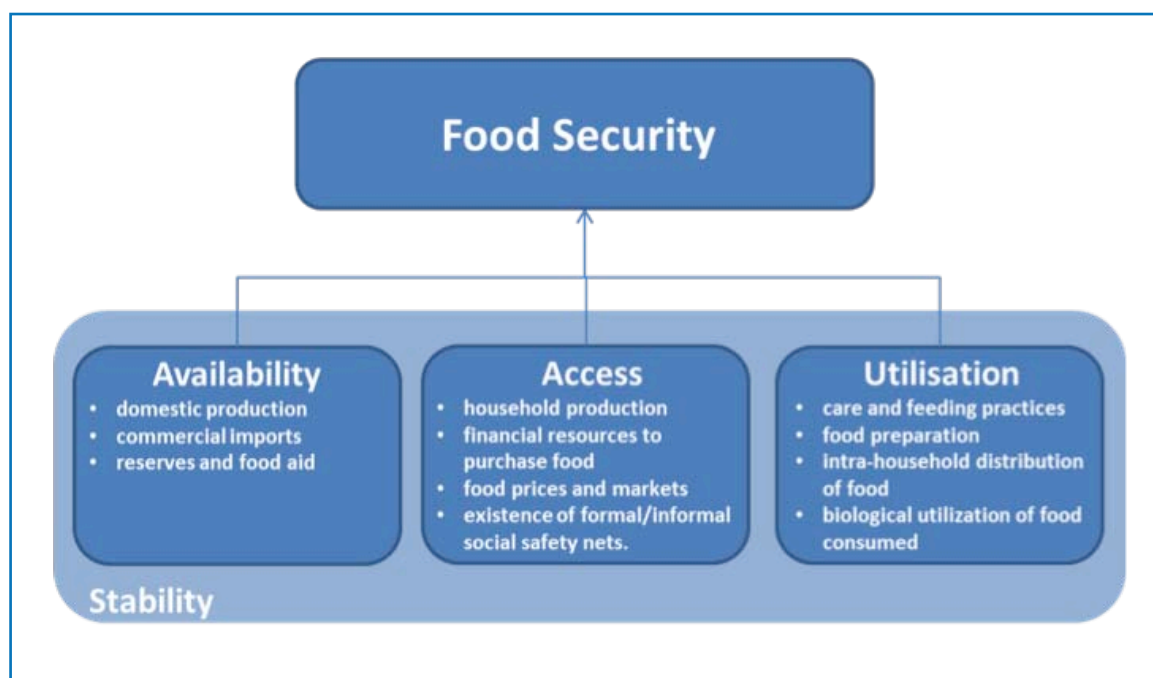
*Food security defines a situation in which all people at all times have physical and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.<sup>2</sup>*

Food security has four main dimensions (Figure 1).

- 1. Availability of food:** This is the extent to which sufficient quantity and quality of food is physically present in an area. This includes food found in markets, food produced on local farms or home gardens, and food provided as food aid or gifts.
- 2. Access to food:** Even when food is available, some people may not always be able to access it. Food access is ensured when communities, households and all individuals have enough resources to obtain sufficient food for a nutritious diet through a combination of home production, stocks, purchase, barter, gifts, borrowing or food aid.
- 3. Utilization of food:** Utilization refers to an individual's ability to obtain energy and nutrients from food in order to live a healthy life. Proper child care practices, a diet with sufficient energy and nutritional value, safe drinking water, adequate sanitation, knowledge of food storage and processing, general health and basic nutrition are essential to achieving adequate food utilization.
- 4. Stability:** A fourth component of food security, referring to both availability and access is stability. For households to be food secure they need to have access to food at all times and should not be at risk of becoming food insecure as a consequence of shocks or cyclical events, such as seasonal food shortages. Even if a household has adequate food consumption at one point in time, the household can still be food insecure if continuous availability or access to food is limited.

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<sup>2</sup> FAO (1996). Rome Declaration on World Food Security and World Food Summit Plan of Action

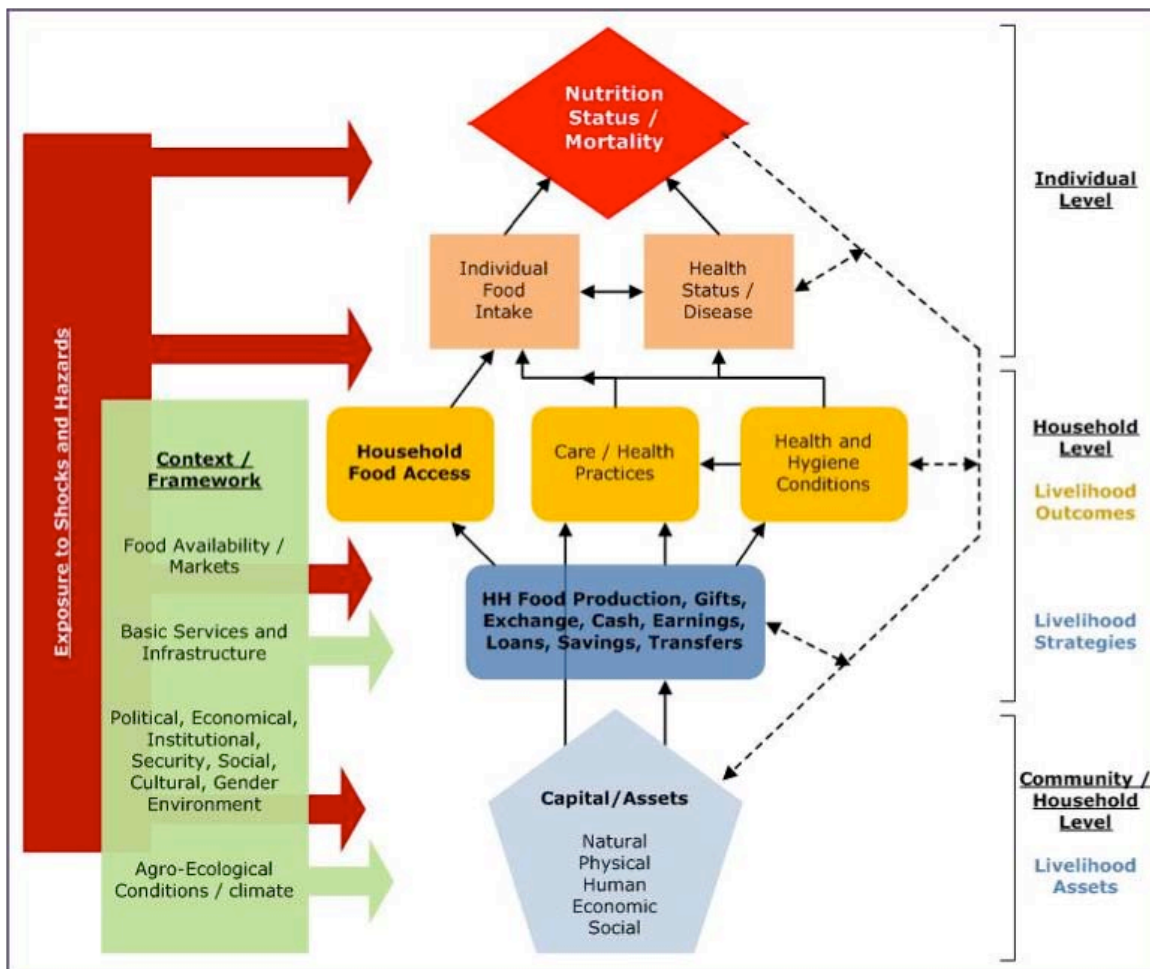
**Figure 1** Model of factors determining food security

The Food and Nutrition Security Conceptual Framework (Figure 2 below<sup>3</sup>) illustrates the relationships between all factors influencing food security and vulnerability. The framework follows multiple levels (community, household and individual) and examines the dimensions of food security in the context of the political, environmental and institutional dynamics of the analysis.

The framework highlights that food security is often an outcome of the livelihood strategies adopted by households. Livelihood strategies are the behavioural practices and choices adopted by households to make a living. These strategies are based upon the assets available to households, which include human, social, natural, physical and capital resources. A livelihood strategy is considered to be sustainable when it can cope with and recover from stresses and shocks, while maintaining its capabilities and assets both now and in the future, while not undermining the natural resource base. Common livelihoods strategies in Northern Ghana include crop production, livestock keeping and trade. (See section '[6.4 How livelihood strategies influence food security](#)').

<sup>3</sup> WFP (2009c)

**Figure 2** Food and nutrition security conceptual framework





## METHODOLOGY – CFSVA IN NORTHERN GHANA

The CFSVA was designed to be representative at district level in the three northern regions of Ghana (Northern, Upper East and Upper West). The survey was conducted in 38 districts and a total of 8,399 households in both urban and rural areas were interviewed. The data collection took place in April/May 2012 and the report provides a picture of the food security situation at that point in time.

The interviewed households were asked questions regarding:

- Demographic composition of household and education
- Migration
- Housing facilities and assets owned
- Agriculture and access to markets
- Income sources and access to credit
- Expenditures
- Food consumption and sources of food
- Shocks, risk and coping
- Assistance

In this report, the state of household food insecurity is assessed by calculating the food consumption score (FCS) and creating a wealth index and classifying households based on a combination of these indicators. The FCS combines diet diversity, frequency of consumption (the number of days each food group is consumed), and the relative nutritional importance of different food groups. The FCS uses standardized thresholds that subsequently divide households into three groups: poor food consumption, borderline food consumption, and acceptable food consumption. The wealth index is created based on asset ownership and housing conditions. Households are ranked and divided into quintiles according to this index. The two lowest quintiles are generally referred to as poor.

Households are divided into four food security groups based on food consumption and wealth:

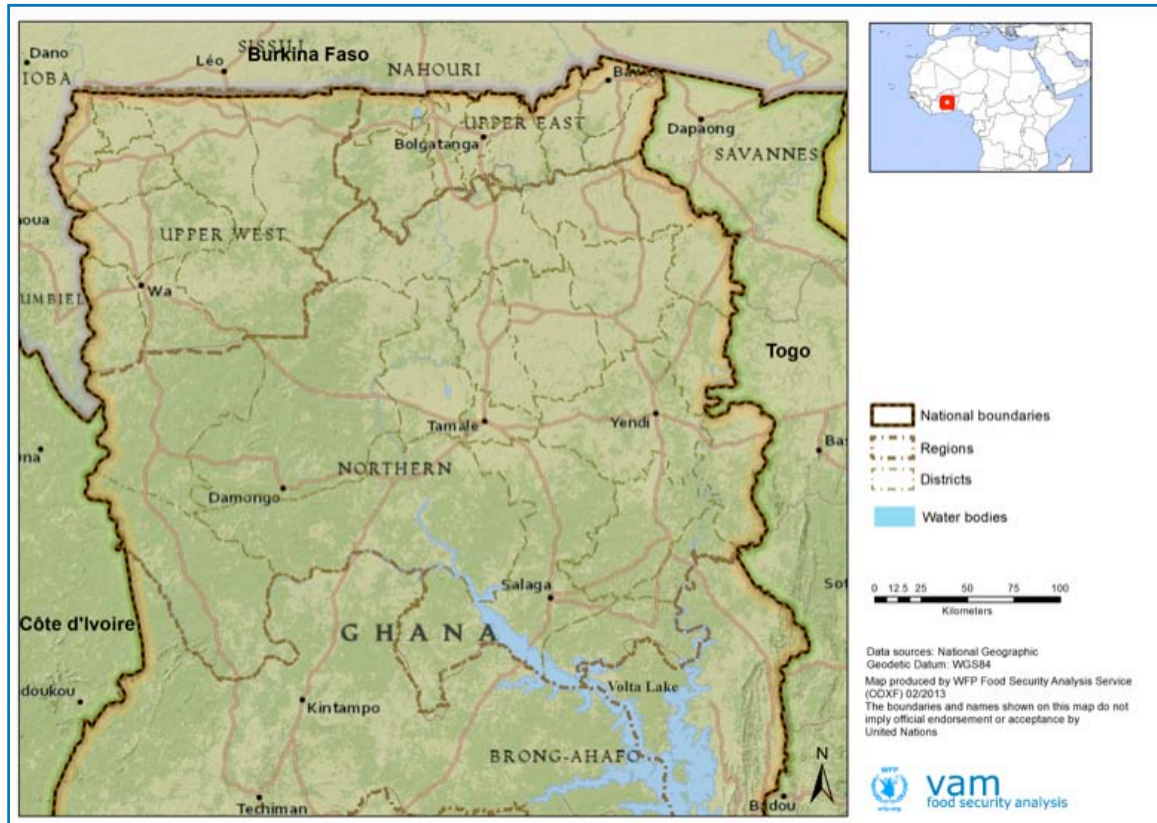
1. Severely food insecure – Households with poor food consumption
2. Moderately food insecure – Households with borderline food consumption and in the two lowest (poorest) wealth quintiles
3. Mildly food insecure – Households with borderline food consumption and in the three highest (wealthiest) quintiles
4. Food secure – Households with acceptable food consumption

In this report, unless otherwise specified, food insecure refers to households that are either severely or moderately food insecure.

A limitation of the study is that the results are specific to the lean season during which the data was collected and therefore are only accurate for this time in the year.

## ► | 4. BACKGROUND ON GHANA

**Figure 3** Map of northern Ghana



### 4.1 Geography

Located on the south coast of West Africa, the Republic of Ghana is bordered by Cote d'Ivoire to the west, Burkina Faso to the north, Togo to the east and the Gulf of Guinea to the south. It covers an area of 238,539 km<sup>2</sup>, of which about 5% is comprised of permanent water bodies. Administratively, Ghana is divided into 10 regions which are sub-divided into 170 districts.

Ghana is generally a low relief country, with a few highland areas lying at the northern and southern margins of the Volta basin. It has six distinct agro-ecological zones that are based on climate: (1) Sudan Savannah, (2) Guinea Savannah in the north, (3) Forest Savannah Transitional across the centre, (4) Semi-Deciduous Forest in the southern inland areas, (5) High Rainforest in the south-west and (6) Coastal Savannah along the east and central coastline. The greater part of the three northern regions is covered by the Guinea savannah zone, but parts of the Upper East and Upper West regions which border Burkina Faso to the north are covered by the Sudan savannah.

## 4.2 Climate

Northern Ghana has two main seasons: the rainy season, which runs from May to October and the dry season, which runs from November to April. The average annual rainfall ranges from 750 to 1050 mm and the intensity of the seasonal rains decreases northward. Localities in the extreme northern part experience a shorter rainy season, while areas in the southern part of the Northern Region experience a bimodal rainfall pattern. The southern part of Ghana, unlike the north, has two rainy seasons, the main one running from March to July, and the minor one from September to November. Agriculture in Ghana is almost entirely rain fed, so annual rainfall is a key driver of agricultural production.

## 4.3 Land use

Around 35% of Ghana is covered by forest, with savannah making up the remaining 65%. However, substantial clearing throughout the 20th century has significantly reduced the extent of forest cover, a process driven by expansion of agricultural land area to produce food for the growing population, growth of settlements and extraction of trees for timber. Arable land covers an estimated 57% of the country, although only 31% is currently under cultivation. Deforestation and agriculture have caused severe land degradation, erosion and siltation, particularly in the savannah zone – and they continue to reduce the fertility of already degraded soils.

Soils in Ghana have typically been leached of organic matter and nutrients, particularly phosphorous and nitrogen. Organic matter is particularly deficient in the savannah zone because of frequent burning, which contributes to poor agricultural production among smallholder agriculturalists.



## 4.4 Water

The Volta River Basin drains about 70% of the total area of Ghana and provides water for domestic, industrial, and hydroelectric purposes. The three major tributaries of the Volta River (White Volta, Black Volta and Oti) which drain the three northern regions, substantially decline in volume during the dry season. However, during years of torrential rainfall, these tributaries tend to burst their banks causing floods in nearby villages, damaging livelihoods and putting lives at risk. This CFSVA was carried out before the flooding season, and therefore households might not have considered flooding as a major difficulty at that point in time.

Groundwater resources in Ghana remain largely untapped for agriculture, though they are significant sources of drinking water for communities in the three northern regions. Just 0.2% of cultivated land is irrigated<sup>4</sup> so farmers are highly rainfall-reliant. An irrigation potential of over one million hectares has been identified in Ghana, largely in the savannah zones, to be supplied mostly from small and medium reservoirs. With limited irrigation infrastructure currently in place however, the promise of greater food security offered by irrigation development cannot be realized.

#### 4.5 People

Ghana's population has grown quickly since 2000 at an annual rate of 2.5% and now stands at 24.2 million according to the 2010 Population and Housing census<sup>5</sup>. Growth is more rapid in the Northern Region (an annual average rate of 2.9% since 2009) than the Upper East and Upper West regions (1.2% and 1.9% respectively).

According to the 2010 Population Census data, household sizes are larger in the three northern regions than their southern counterparts with an average of 5.8 -7.7 persons per household, compared with the national average of 4.4. Some 84%, 79% and 70% of people in the Upper West, Upper East and Northern regions respectively live in rural areas, compared with the national average of 49%. Population density in the Upper East should also be noted: while densities in the Northern and Upper West regions are very low (35 and 38 persons per km<sup>2</sup>), the Upper East has 118 persons per km<sup>2</sup>, despite a very low rate of urban habitation. This has implications for access to agricultural land, which will be explored later in this report. The three northern regions show a similar distribution of ages as the national average, with slightly higher proportions of people under 18 compared with other parts of the nation.

#### 4.6 Education

Rates of educational attainment and literacy are of interest from a food security perspective because children without basic education are less likely to get regular employment and income and remain entrenched in poverty, thereby increasing their risk of food insecurity. Rates of literacy in the three northern regions are much lower than the national average. According to the 2010 Population and Housing census, the literacy rates for those aged 15 and above for the Northern, Upper East and Upper West regions are just 33%, 41% and 40% respectively compared with a corresponding national literacy rate of 72%. Literacy rates appear to be improving however as rates for over 10 year olds are slightly higher, both nationally and for all three northern regions.

Rates of basic education completion are also lower across the three northern regions (for people aged 15 and above). While similar proportions of people achieve post-secondary level education or above, far fewer in northern Ghana complete junior high school or senior high school. For example, only 22% of northern Ghanaians complete junior secondary school, and only 9% senior high school compared

<sup>4</sup> FAO. 2005, Fertilizer use by food crop in Ghana

<sup>5</sup> Ghana Statistical Service (2012). 2010 Population & Housing Census: Summary Report of Final Results. Ghana Statistical Service, Accra.



with 31% and 22% nationally. As a consequence, the rates of primary-only education in northern Ghana are much higher at 35%, compared with 17% nationally.

In the CFSVA, households reported that approximately 91% of school-age children (6 to 15 years) are regularly enrolled in school, with this rate dropping to 81% for children between 16 and 18 years of age. There is also a slightly higher rate of school enrollment for boys than girls across the three

northern regions. Among school-age children that have never been to school or ceased attending, the CFSVA shows that 18% have done so because they need to work to contribute towards household food production. Other reasons for not attending school are the refusal of some parents to keep their children in school (17%) coupled with the unwillingness of the children themselves to attend (29%). While labour contribution and unwillingness of parents to send their children to school are the dominant constraints to school enrollment in the Northern Region (22% for each), the commonly cited reason for non-enrollment in school in the Upper East and Upper West regions is the refusal of children to enroll (43% and 26% respectively).

#### 4.7 Health

Insufficient or inappropriate care and hygiene practices, poor infant and young child feeding practices, use of unsafe water, inadequacy or absence of sanitation systems and inadequate access to maternal and child health services can all lead to ill-health, which affects a person's ability to absorb the required nutrients from available foods, leading to malnutrition. This makes it important to consider health data in addition to household food access when assessing the food security status of a population - see food and nutrition security conceptual framework (Figure 2).

According to the 2010 census<sup>6</sup> Ghana's maternal mortality rate was 485 deaths per 100,000 live births, down from 560 deaths per 100,000 live births in 2005. While these rates show significant improvement since the 1990 baseline for the Millennium Development Goals, they are still a long way from the 2015 target of a three quarters reduction (185 deaths per 100,000 live births). Maternal mortality rates are mixed across the three northern regions, with 466 deaths per 100,000 live births in the Upper West, 531 deaths per 100,000 live births in the Northern Region, through to a very high 802 deaths per 100,000 live births in the Upper East Region. The mortality rate for children under five in 2010 was 74 deaths per 1,000 live births, with 50 deaths per 1,000 live births amongst children under 12 months<sup>7</sup>.

<sup>6</sup> Ghana Statistical Service (2012). 2010 Population & Housing Census: Summary Report of Final Results. Ghana Statistical Service, Accra.

Rates of maternal and infant mortality do not directly indicate the level of food insecurity, although they do help provide general guidance on access to healthcare for those facing malnutrition-related difficulties.

The HIV/AIDS prevalence rate in Ghana has decreased from 3.6% in 2003, and was last estimated at 2.1% in 2011<sup>8</sup>. This is important to note for its food security implications, as the effective use of anti-retroviral treatments is linked to adequate diets.

#### 4.8 Economy

Ghana's GDP has grown quickly in the past few years, from GH¢30.2 billion (US \$28.2 billion) in 2008 to an estimated GH¢59.3 billion (US\$39.2 billion) in 2011<sup>9</sup>. GDP per capita is now estimated to have risen to GH¢2,419 (US\$1,598), up from GH¢1,318 (US\$1,234) in 2008. During this period, the rate of GDP growth has remained high, with the exception of 2009 when it dropped to 4%. The 2011 growth rate of 14% appears to have been due in part to significant growth in major export sectors, namely cocoa beans and products, gold and crude oil.

World Bank<sup>10</sup> reporting of economic growth trends over the past two decades shows that the highest contribution to GDP comes from the services sector, which accounts for 48.5% of the economy and grew at a strong rate of 8.3% in 2011. The industrial sector grew by 41%, presumably due to rapidly expanding oil production from Gulf of Guinea oilfields, and now makes up 26% of the economy (up from 20.4% in 2008)<sup>11</sup>.

The remaining 26% comes from the agricultural sector, where rates of growth declined from 7% in 2009 to 0.8% in 2011. The slow growth and relatively small size of the agricultural sector in terms of contribution to the economy offers some insight into the plight of those working in this sector: the 'skilled agricultural, forestry and fishery' sector employs some 41% of all workers in Ghana,<sup>7</sup> rising to some 73% of workers in northern Ghana.

Between 1991 and 2005 labour allocation shifted away from agriculture and into financial services, transport and communications as well as construction sectors. After agriculture the largest sectors in terms of workforce are 'service and sales' at 21%, and 'craft and related trades' at 15%. The services and industrial sectors both share 9% of workers each across northern Ghana. The dominance of the

<sup>7</sup> Levels & Trends in Child Mortality Report 2011. United Nations Children's Fund, New York.

<sup>8</sup> Ghana Aids Commission (2012). Ghana Country Aids Progress Report: January 2010 - December 2011. Ghana Aids Commission, Accra.

<sup>9</sup> Ghana Statistical Service (2012). Ghana's Economic Performance 2011. Ghana Statistical Service, Accra.

<sup>10</sup> World Bank (2009). Ghana Job Creation and Skills Development. Volume I: Main Report. Report No. 40328-GH.

<sup>11</sup> Ghana Statistical Service (2012). Ghana's Economic Performance 2011. Ghana Statistical Service, Accra.

<sup>12</sup> Ghana Statistical Service (2012). 2010 Population & Housing Census: Summary Report of Final Results. Ghana Statistical Service, Accra.

agricultural sector in northern Ghana underscores the difference in growth between here and the rest of the country, where the services and industrial sectors are significantly larger.

#### 4.9 Inflation

Annual inflation in Ghana has decreased from an annual average peak of 19% in 2009 to 9% in 2011<sup>13</sup>. In 2009 the World Bank and International Monetary Fund launched a stabilization programme that was designed to reduce the Government of Ghana's deficit following expansionary budgets between 2006 and 2008, which saw government debt as a percentage of GDP rise to 37% in 2010. The programme was expected to reduce inflationary pressures in the Ghanaian economy. Over this period, the Ghana cedi depreciated significantly against the US dollar: at the beginning of 2008, 1 cedi was buying at \$1.01, but it was only buying \$0.53 by the end of May 2012.

#### 4.10 Food prices and markets

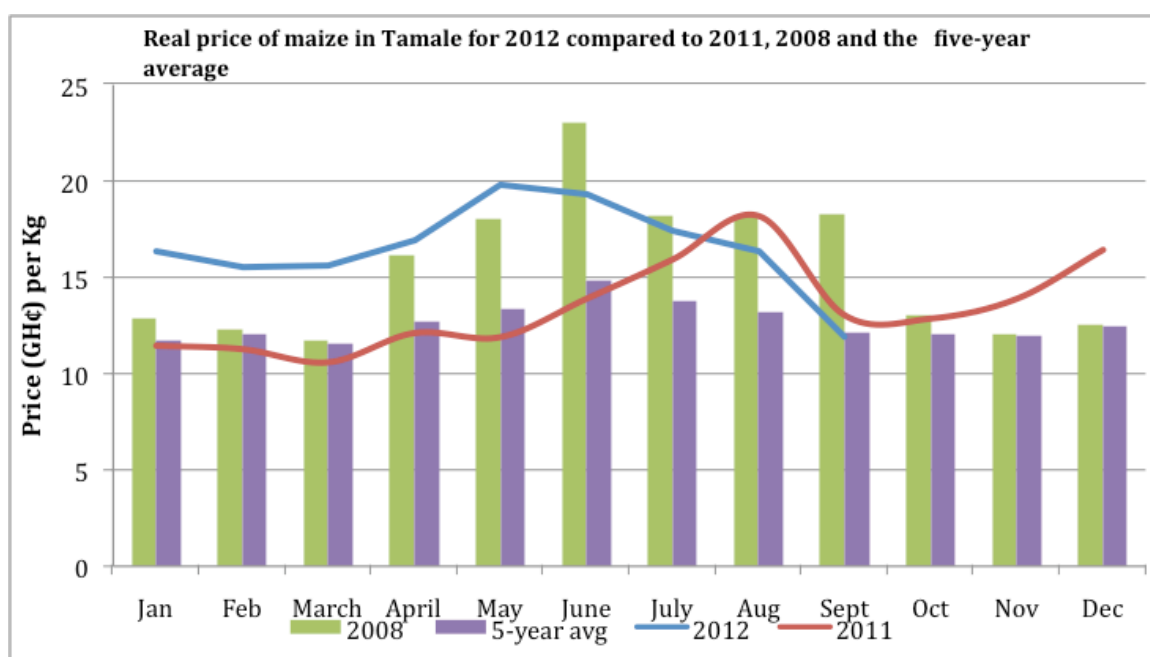
Food prices in northern Ghana have been much higher than average over the past 12 months, with the average price of maize in the three northern regional markets above that of May 2008, which was a period characterized by high food prices. These high food prices will affect households differently depending on whether they are net buyers or net sellers. For households that are more likely to rely on the market for food, high prices are an added barrier to their ability to access food. High prices for staple foods have been pervasive since 2008 and pose a major constraint to household food access. The analysis presented here shows the distinction between nominal prices and real prices (deflated prices) and helps to underscore the impact of inflation. At the time of the survey in May 2012, the nominal price of maize ranged from 61% to 84% higher than the five-year average in the three regional markets.



<sup>13</sup> Ghana Statistical Service (2012). Ghana's Economic Performance 2011. Ghana Statistical Service, Accra.

According to the Sahel Central Basin market assessment,<sup>14</sup> Tamale is one of the leading markets for maize in the region, so it plays an important role in determining the prices for the whole region. In fact, maize prices in Tamale together with Cinkasse and Korbongou in Northern Togo influence the prices in most other markets in the basin, making Tamale an important market to study more closely. In Tamale in the Northern Region, the real price (inflationary effects removed) of maize was up by 66% compared with May 2011 and 48% above the five year average (Figure 4). Though prices were trending very high in all major markets of northern Ghana, the significant difference in the percentage increase between the nominal and real prices was due in part to the high level of inflation.

**Figure 4** Real price of maize trends in Tamale



Source: Statistics, Research and Information Directorate of the Ministry of Food and Agriculture (MoFA/SRID)

During the early part of 2012 a significant share of the maize grain needs of southern Ghana had to be met by northern markets. This contributed to high market demand and higher prices as many food deficit and food purchasing households rushed to accumulate adequate stocks to cater for their consumption needs. Furthermore, seasonal trends in food availability affected market prices. As a result, the unprecedented trend in the real price of major staple grains at the time of the survey was both a consequence of lower than normal production from the previous growing season and the seasonal decline in market availability of grains which characterizes the months of May to August each year. This is the time of the year when the food prices are highest. Nevertheless, at the time of the survey in May, the real price of maize was 10% higher than its level for May 2008, a period characterized by record high food prices. The higher prices certainly had the effect of placing food security stress on poorer households.

<sup>14</sup> World Food Programme (2012). Executive brief. The Sahel Central Basin Market Assessment.



A rapid market assessment that was carried out in Tamale, Bolgatanga and Wa during October 2012<sup>15</sup> found that the markets were functioning in terms of food availability and the price differences between them were low. Transportation of commodities between these markets was also functioning and storage was available. Therefore it is likely that households' access to food from markets will be determined by the households' distance to markets and food prices, rather than food availability in the markets.

#### 4.11 Poverty

Poverty has decreased in northern Ghana, but there remain large disparities between the north and the south (using Ghana Living Standards Survey 5 data from 2006, and a poverty line of GHC 370 per year). Rates of poverty increased between 1992 and 1999, but dropped below 1992 levels in 2006. While the poverty rates fell from 48% in 1992 to 20% of the population in 2006 in southern Ghana, it declined marginally from 69% to 63% rates in northern Ghana<sup>16</sup>. Poverty is broadly considered to be a major contributory factor to food insecurity. In the CFSVA it was found that the poorer households have lower levels of education, spend a larger share of their limited means on purchasing food, have smaller harvests, and are more often mostly buying their staple foods when the market prices are the highest compared with wealthier households.

#### 4.12 Access to infrastructure

Access to electricity is significantly lower across all three northern regions compared with other parts of the nation with only 24% of households in the Upper East Region having electricity, 35% in the Northern Region, and 31% in the Upper West Region. By comparison, the national average of households using electricity as their main source of lighting is 64%. The CFSVA data shows large discrepancies between districts in northern Ghana: only three districts have electricity coverage of approximately 75%, while in 10 of the 38 northern districts, fewer than 10% of households have access to electricity<sup>17</sup>.

Lack of access to improved sanitation is another key disadvantage in northern Ghana, and a key difference between northern and southern Ghana.<sup>18</sup> While the national average for no access to a toilet facility is 19%, the corresponding rates for the three northern regions range from 72% to 82%. In 16 out of 38 districts in northern Ghana, the proportion of households with access to sanitation is less than 10%. Poorer households have more limited access to improved sanitation than wealthier (Figure 5). Poor sanitation has profound impact on health.

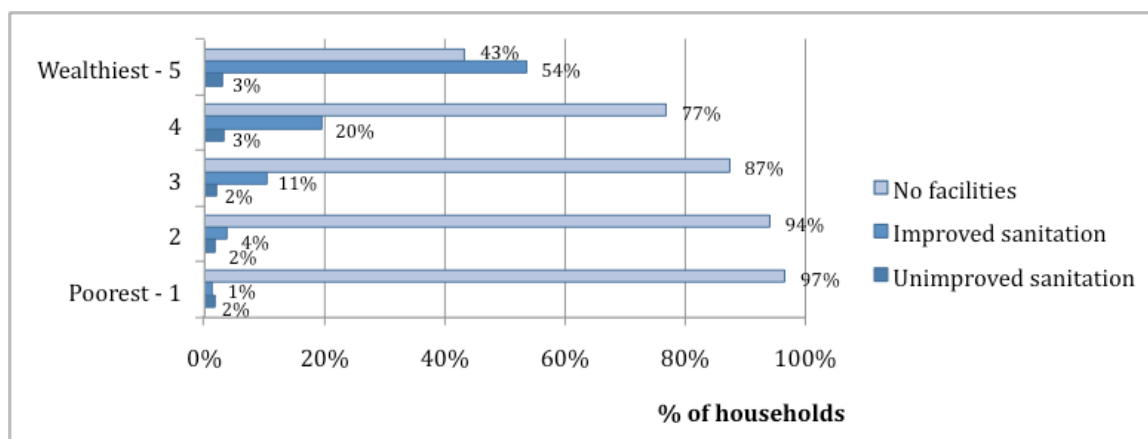
<sup>15</sup> World Food Programme (2012). Rapid market assessment in Tamale, Bolgatanga and Wa

<sup>16</sup> World Bank (2011). Tackling Poverty in Northern Ghana. Report No. 53991-GH.

<sup>17</sup> Ghana Statistical Service (2012). Ghana's Economic Performance 2011. Ghana Statistical Service, Accra.

<sup>18</sup> Ghana Statistical Service (2012). Ghana's Economic Performance 2011. Ghana Statistical Service, Accra.

**Figure 5** Access to sanitation facilities in northern Ghana by wealth quintile



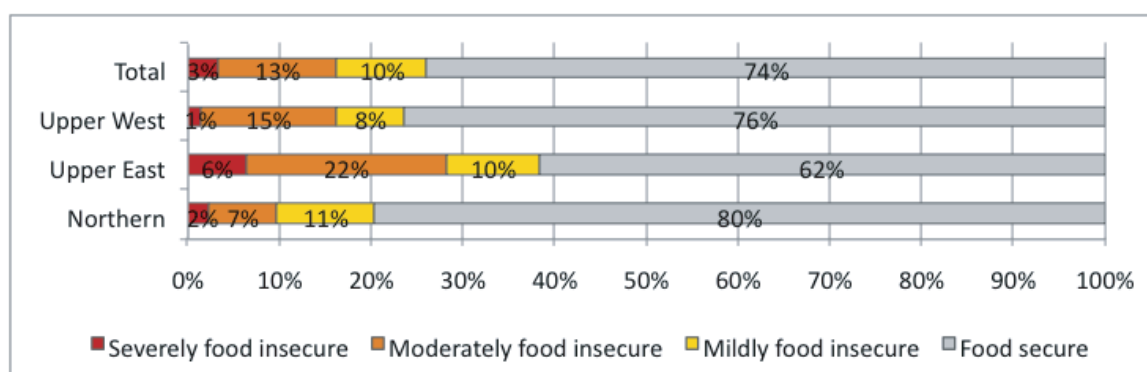
According to the CFSVA, 82% of households across the three northern regions have access to an improved source of drinking water. According to the 2010 census data Ghana has an average rate of access of 77%. The key difference between northern Ghana and the rest of the country is that there is a much higher reliance on boreholes for drinking water in the north, whereas piped water is much more common in terms of the national average.

## ► | 5. THE FOOD SECURITY SITUATION IN NORTHERN GHANA

### 5.1 How many are food insecure?

In the three northern regions of Ghana 16% of all households or more than 680,000 people, were estimated to be either severely or moderately food insecure at the time of the survey (Figure 6). Of these, 140,000 are severely food insecure, having a very poor diet consisting of staple foods, some vegetables and oil, and little else. Another 10% have a diet that is inadequate, but are at the same time wealthier and thereby defined as mildly food insecure. The status of these 'mildly food insecure' households is likely related to temporary adjustments to their diet based on seasonal effects on food access.

Figure 6 Prevalence of food insecure households by region



There are two important factors to note regarding the proportion of food insecure households in northern Ghana. Firstly, data collection for the CFSVA was carried out towards the end of April and the beginning of May by which time the lean season had already started. During the lean season, households find it more difficult to access adequate food (this will be explored further later in the report). This implies that some households were constrained in their ability to access food at this point in time. Secondly, household food reserves were likely affected by the fact that the harvest of some of the most important staple crops during the 2011/12 agricultural season was lower than the preceding year (2010/11)<sup>19</sup> because of poor rainfall.

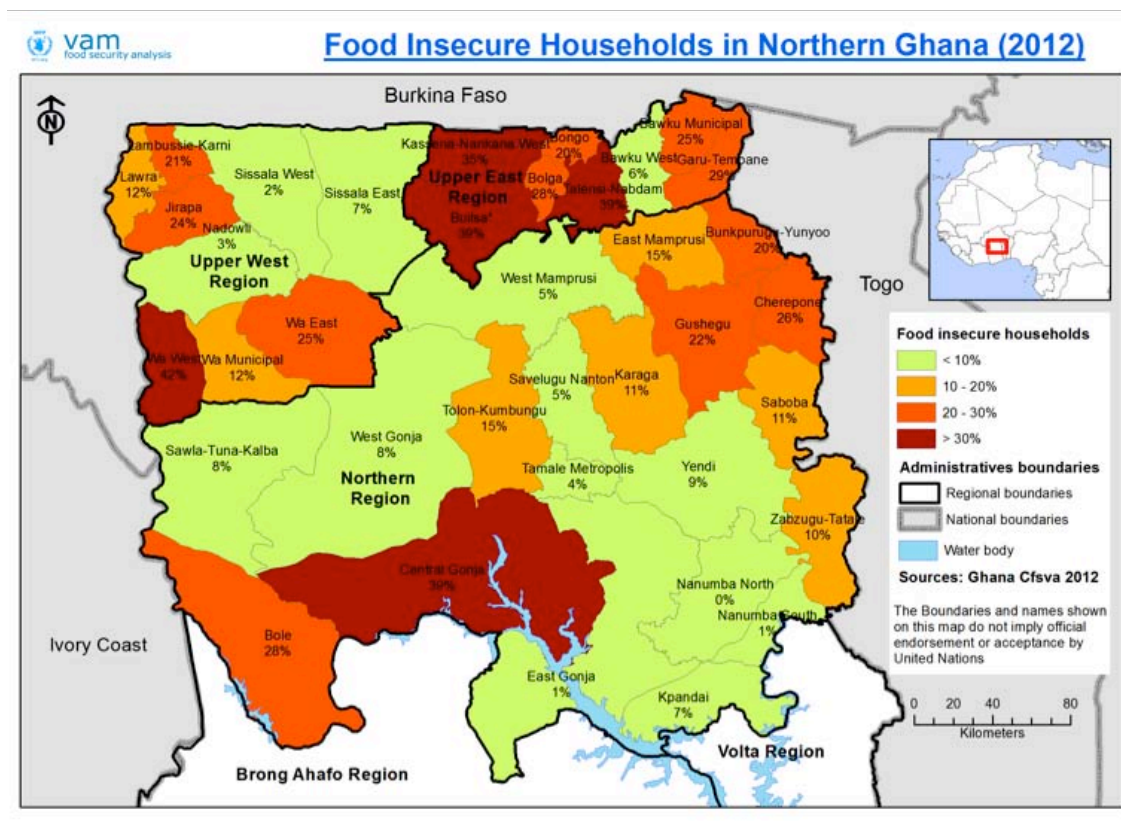
### 5.2 Food insecurity by district

There is a notable difference in household food insecurity at district level ranging from less than 1% of households in Nanumba North being either severely or moderately food insecure, to more than 42% of all households in Wa West (Table 1). The five districts with the highest proportion of either severely or moderately food insecure households are Wa West (42%), Central Gonja (39%), Talensi-Nabdam

<sup>19</sup> MoFA SRID production data

(39%), Kassena-Nankana West (35%) and Kassena-Nankana East (33%).<sup>20</sup> Three out of these five districts are found in the Upper East Region, which is the region with the highest proportion of food insecure households. The district with the largest absolute number is Bawku Municipal as a result of a large population in combination with a relatively high proportion of food insecure households.

**Figure 7** Distribution of severe and moderately food insecure districts



<sup>20</sup> The results from Buiasa district is not reported due to small sample size.

**Table 1** Food insecure households and population by district

Region/District	Total Population	Severely or moderately food insecure:					Percent of households	Population
		Severely food insecure	Moderately food insecure	Mildly food insecure	Food secure			
<b>NORTHERN</b>	<b>2,479,461</b>	<b>2.3%</b>	<b>7.4%</b>	<b>10.6%</b>	<b>79.7%</b>	<b>9.7%</b>	<b>241,136</b>	
Bole	61,593	6.4%	21.8%	10.9%	60.9%	28.2%	17,358	
Bunkpurugu-Yunyoo	122,591	5.4%	14.9%	5.4%	74.3%	20.3%	24,850	
Cherepone*	53,394	2.7%	23.0%	10.8%	63.5%	25.7%	13,709	
East Gonja	135,450	0.0%	0.9%	0.9%	98.2%	0.9%	1,199	
Central Gonja	87,877	4.5%	34.7%	14.0%	46.8%	39.2%	34,438	
Gushegu	111,259	4.9%	17.3%	6.7%	71.1%	22.2%	24,724	
Karaga	77,706	1.8%	9.1%	6.8%	82.2%	11.0%	8,516	
Kpandai	108,816	0.0%	6.8%	1.4%	91.8%	6.8%	7,419	
East Mamprusi	121,009	5.5%	9.1%	7.7%	77.7%	14.5%	17,601	
West Mamprusi	168,011	1.8%	3.2%	2.3%	92.8%	5.0%	8,363	
Nanumba North	141,584	.0%	.5%	.5%	99.1%	0.5%	638	
Nanumba South	93,464	0.0%	0.9%	0.5%	98.6%	0.9%	854	
Saboba	65,706	5.0%	5.9%	3.2%	86.0%	10.9%	7,135	
Savelugu-Nanton	139,283	0.0%	5.0%	15.1%	79.9%	5.0%	6,996	
Sawla-Tuna-Kalba	99,863	1.8%	6.4%	1.4%	90.5%	8.2%	8,171	
Tamale Metropolis	371,351	2.3%	1.4%	22.3%	74.1%	3.6%	13,504	
Tolon-Kumbungu	112,331	4.1%	10.9%	27.6%	57.5%	14.9%	16,773	
West Gonja	84,727	1.4%	6.8%	2.3%	89.5%	8.2%	6,932	
Yendi	199,592	0.9%	8.6%	27.5%	63.1%	9.5%	18,880	
Zabzugu-Tatale	123,854	2.3%	7.8%	4.6%	85.4%	10.0%	12,442	
<b>UPPER EAST</b>	<b>1,046,545</b>	<b>6.4%</b>	<b>21.9%</b>	<b>10.1%</b>	<b>61.7%</b>	<b>28.2%</b>	<b>295,557</b>	
Bawku Municipal	217,791	4.1%	21.2%	5.0%	69.8%	25.2%	54,938	
Bawku West	94,034	0.5%	5.9%	6.8%	86.9%	6.3%	5,957	
Bolgatanga Municipal	131,550	10.0%	18.2%	17.7%	54.1%	28.2%	37,073	
Bongo	84,545	1.4%	18.8%	10.1%	69.7%	20.2%	17,064	
Builsa*	92,991	2.7%	36.3%	4.1%	56.8%	39.0%	36,305	
Garu-Tempene	130,003	4.5%	24.7%	5.8%	65.0%	29.1%	37,893	
Kassena-Nankana East	109,944	17.7%	15.5%	9.5%	57.3%	33.2%	36,481	
Kassena-Nankana West	70,667	5.5%	29.4%	11.5%	53.7%	34.9%	24,636	
Talensi-Nabdam	115,020	10.5%	28.6%	15.9%	45.0%	39.1%	44,	
<b>UPPER WEST</b>	<b>702,110</b>	<b>1.4%</b>	<b>14.8%</b>	<b>7.5%</b>	<b>76.3%</b>	<b>16.2%</b>	<b>113,477</b>	
Jirapa	88,402	1.8%	21.8%	7.7%	68.6%	23.6%	20,895	
Lambussie-Karni	51,654	2.3%	19.0%	10.0%	68.8%	21.3%	10,985	
Lawra	100,929	0.9%	10.9%	6.8%	81.4%	11.8%	11,874	
Nawdowli	94,388	0.0%	2.7%	4.1%	93.2%	2.7%	2,551	
Sissala East	56,528	0.5%	6.3%	7.2%	86.0%	6.8%	3,837	
Sissala West	49,573	0.9%	1.4%	3.6%	94.1%	2.3%	1,127	
Wa East	72,074	4.5%	20.0%	6.4%	69.1%	24.5%	17,691	
Wa Municipal	107,214	0.9%	11.4%	13.2%	74.5%	12.3%	13,158	
Wa West	81,348	1.8%	40.3%	5.9%	52.0%	42.1%	34,232	
<b>Total</b>	<b>4,228,116</b>	<b>3.3%</b>	<b>12.9%</b>	<b>9.9%</b>	<b>73.9%</b>	<b>16.2%</b>	<b>686,527</b>	

\* Food consumption data from Cherepone and Builisa districts cannot be treated as representative due to small sample size

### 5.3 Who are the food insecure?

#### Poor households

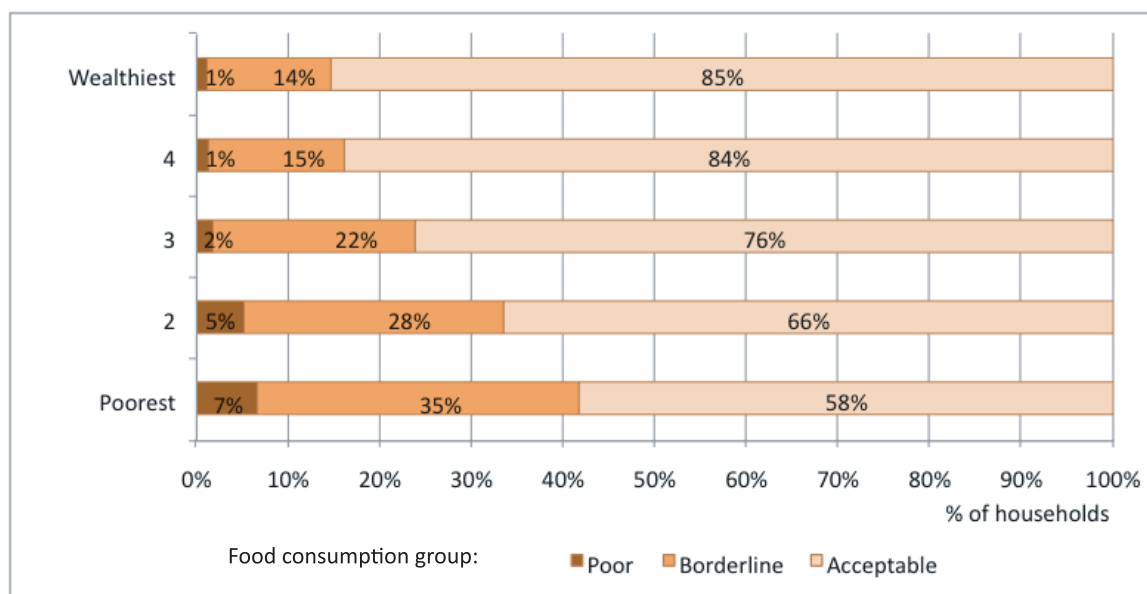
Food insecurity in Northern Ghana, and in general, is highly associated with poverty. The means by which households obtain their diet may vary, but generally, irrespective of whether households are farmers or living in urban areas, as wealth improves, so does diet.

While the CFSVA does not provide poverty statistics, it obtains a useful measure of relative wealth in Northern Ghana – the wealth index. The wealth index is a composite indicator based on ownership of certain assets and the presence of improved living conditions;<sup>21</sup> which are considered to be proxies of wealth in Northern Ghana. Households were ranked according to the wealth index and then divided into quintiles, which are used for comparisons of relative wealth between groups.

The wealth index together with the food consumption score was used to define the food insecure households.

When comparing food consumption between the wealth quintiles, a very clear relationship is seen. In the poorest wealth quintile, the proportion of households with either poor or borderline food consumption is 42% compared with 15% in the wealthiest quintile (Figure 8).

Figure 8 Prevalence of food consumption groups by wealth quintiles

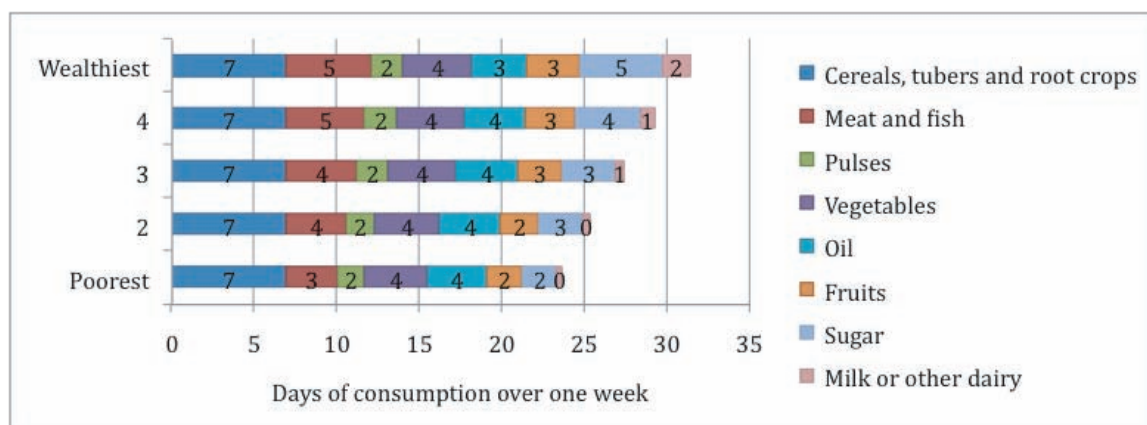


<sup>21</sup> Variables included in wealth index: bed, table and chair, sewing machine, sofa, clock, radio, television, cupboard, cabinet, mobile phone, improved sanitation, improved roofing, improved floor and motorized vehicle.

Households in the wealthier quintiles have a more diverse diet, consuming more meat, fish, sugar and dairy products than those in the poorer wealth quintiles (Figure 9). Thus the poorer the household, the more likely it is to have inadequate food consumption.

A more in-depth discussion on the associations between poverty and food security follows in section '6.1 Poverty in northern Ghana'.

Figure 9 Dietary diversity in the different wealth quintiles

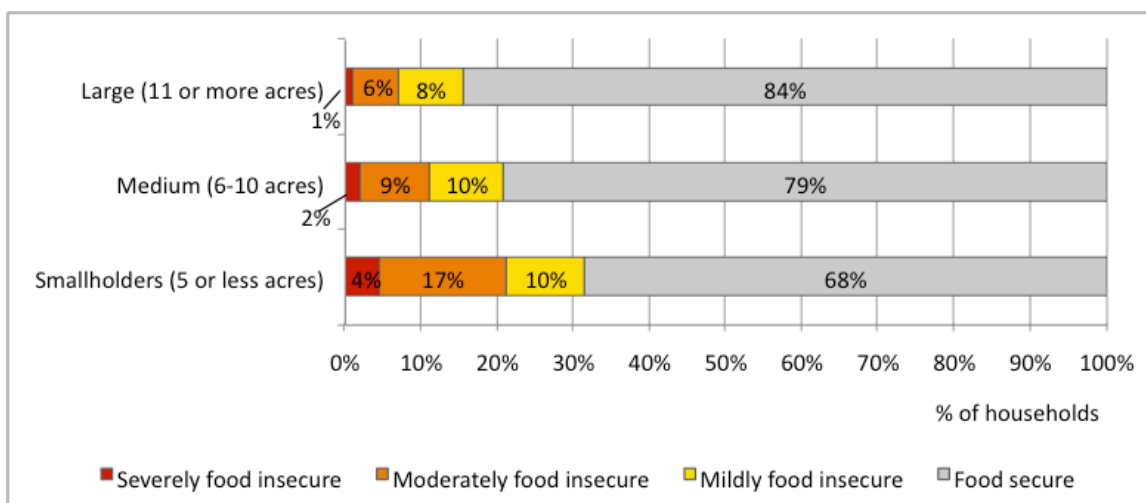


### Smallholder farmers

Smallholder farmers, defined as cultivating five acres or less, represent 62% of farming households in northern Ghana. They primarily or partly depend on farming for their livelihood by producing food both for their own consumption and as a source of income. Nearly half (49%) of smallholder farmers are poor (belonging to the two poorest wealth quintiles) and they disproportionately face various constraints such as the cost of agricultural inputs, limiting their ability to invest in agricultural production and resulting in a lower output, and placing them in a food insecure state (see section on agricultural limitations for further analysis of land size in relation to food security and wealth).

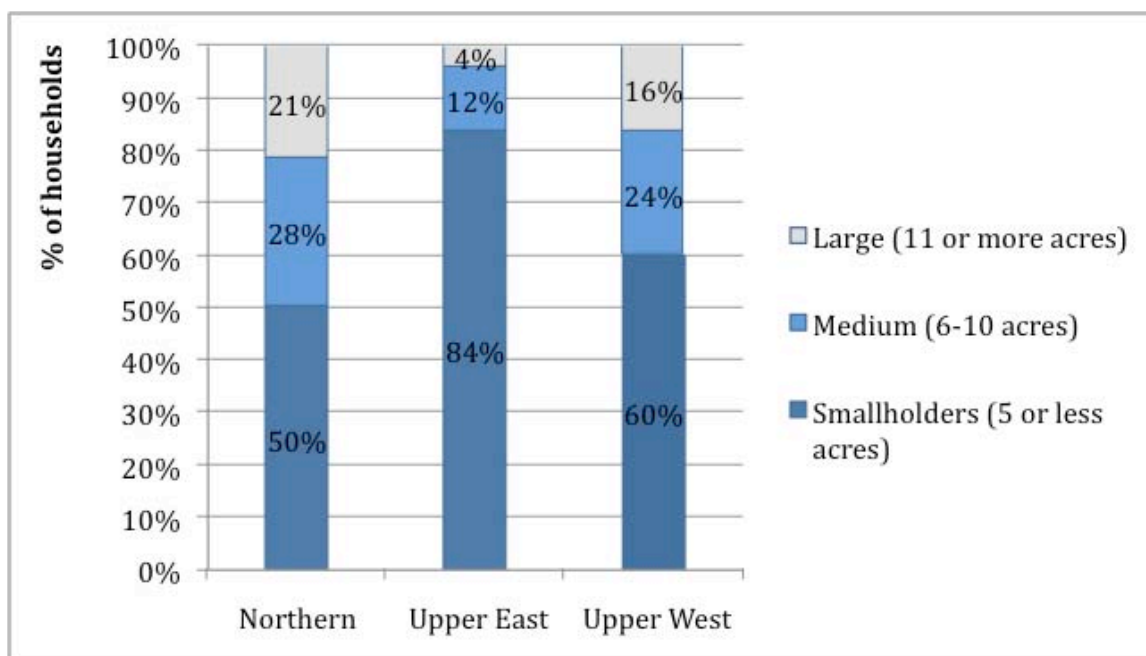
More than 21% of smallholders were found to be either severely or moderately food insecure at the time of the survey, compared with 11% of medium sized farmers (cultivating 6-10 acres) and 7% of large farmers (cultivating 11 or more acres) (Figure 10).

**Figure 10** Food security status by farm size



The largest proportion of smallholders is in the Upper East Region, where 84% of households cultivate five acres or less (Figure 11): this region also has the largest proportion of food insecure households. At the district level, the prevalence of smallholder farmers also correlates with inadequate food consumption. For example, in Bawku Municipal, Bongo and Kassena-Nankana West districts in the Upper East Region, more than 90% of households are smallholder farmers and the rate of food insecure households is above 20% in all these districts. Conversely, districts with a greater share of large farming households tend to have better food consumption rates. For instance in the Sissala West district, almost 70% are farming on a larger scale and only 2% are food insecure.

**Figure 11** Farm size by region

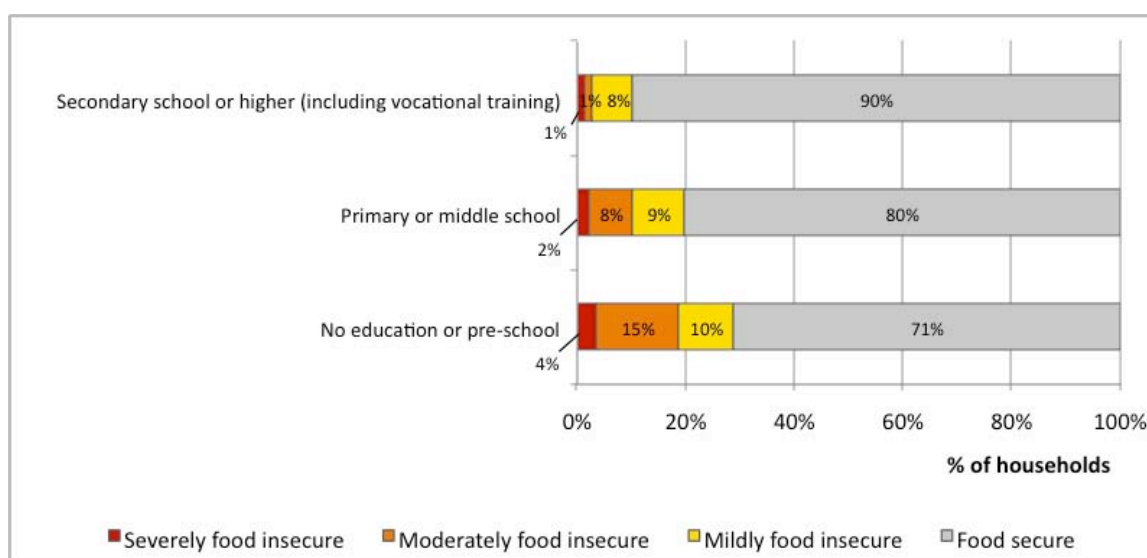




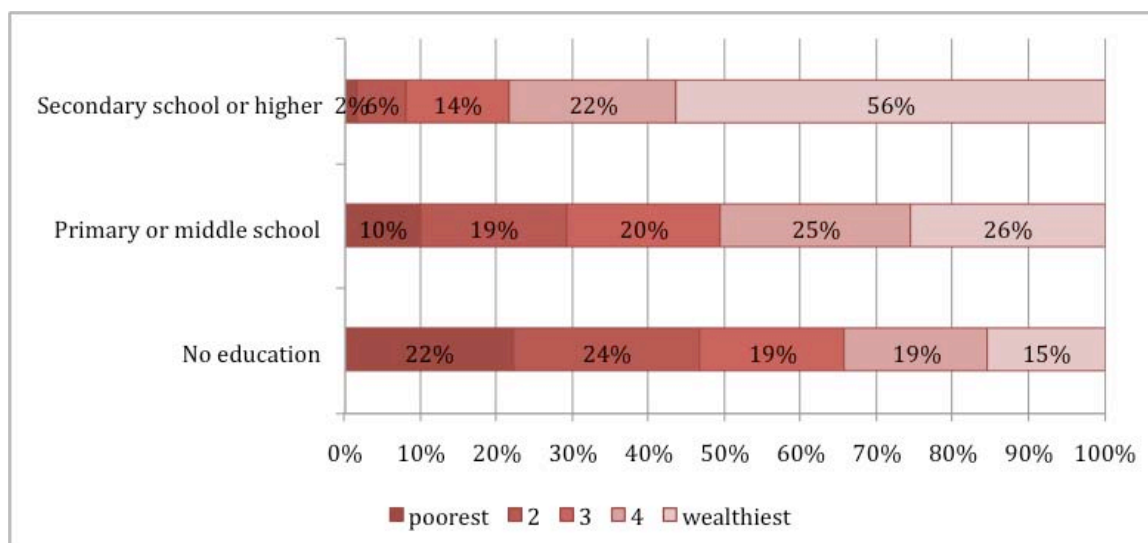
### Households headed by the uneducated

Households headed by someone with a higher level of education are less vulnerable to food insecurity. The 2009 CFSVA demonstrated that the three northern regions had a much higher percentage of uneducated household heads than other parts of the country. The present CFSVA survey found that 75% of household heads have no education, with the highest proportion in the Northern Region (79%). Of these, 4% are severely food insecure and 15% are moderately food insecure, which is higher compared to those households where the head has some education (Figure 12). Households with educated household heads are more likely to be in regular employment and in the higher (wealthier) wealth quintiles. More than half (56%) of households headed by someone with higher education are in the wealthiest quintile, illustrating the stark impact of education on economic well-being. To further illustrate the point, nearly half (46%) of households headed by the uneducated individuals are in the two poorest wealth quintiles (Figure 13).

**Figure 12** Rates of food insecure households by educational level of head of household



**Figure 13** Wealth quintiles by educational level of household head

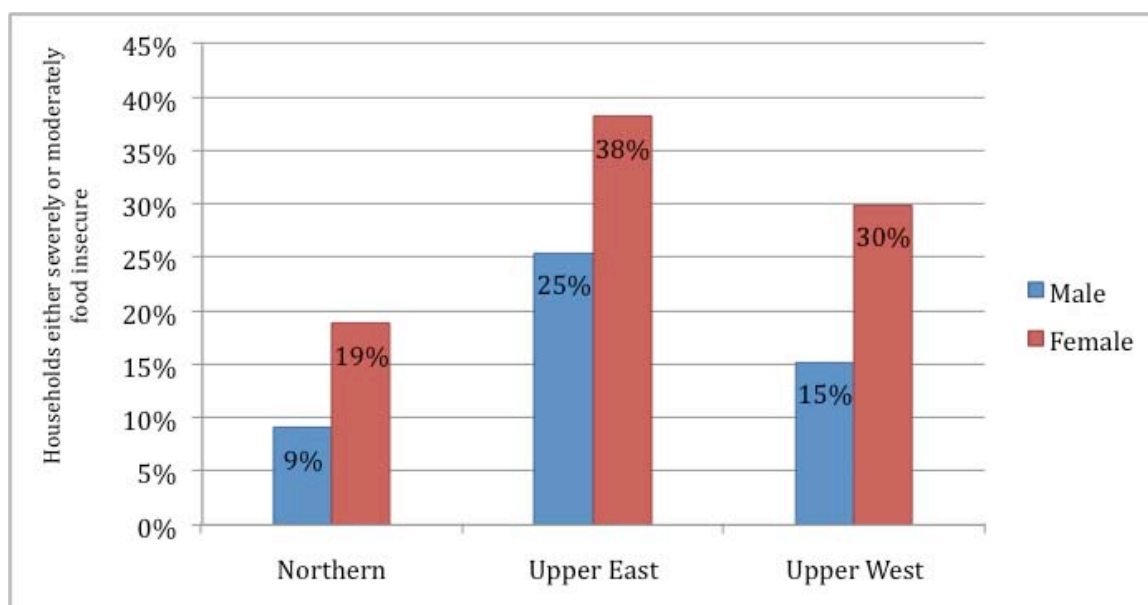


**Female headed households**

Overall, female-headed households make up 8% of all households across the three regions of northern Ghana, rising to 15% in the Upper East Region. In the Upper West Region, 7% of households are headed by a woman and in the Northern region this comes down to 5%.

Across the three northern regions, 30% of female-headed households are food insecure compared with 15% of male-headed households. Female-headed households in The Upper East Region have the highest prevalence of food insecurity: here some 38% of households headed by women are food insecure (Figure 14).

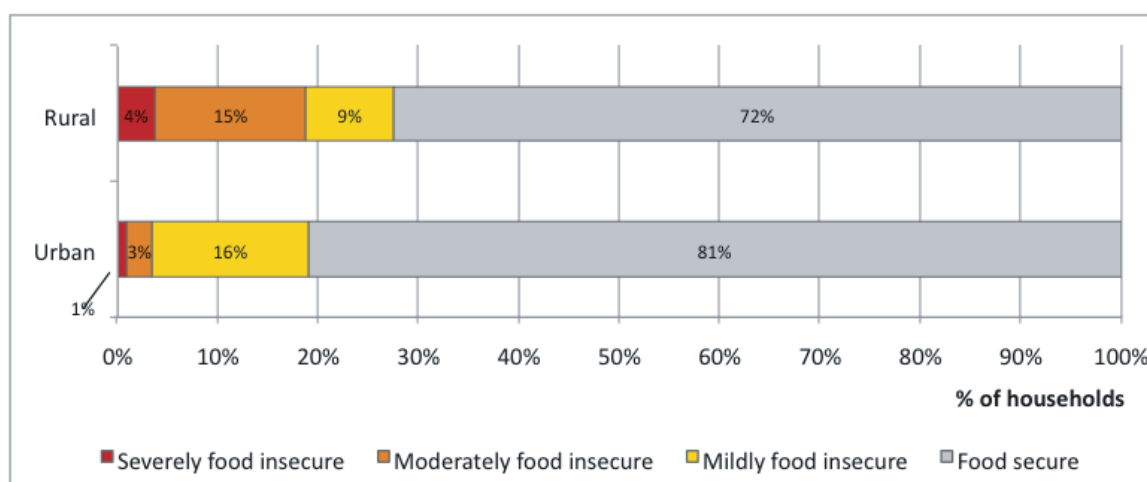
**Figure 14** Percent of households either severely or moderately food insecure by sex of household head



## 5.4 Food security in urban and rural households

Severe and moderate food insecurity is far more prevalent in rural areas (19%) than urban (4%). Of the food insecure urban households, they are mostly mildly food insecure (16%), which refers to households that are not currently consuming an adequate diet, but are not considered asset poor. These households are likely to have resources to augment their diet as seasonal food access improves. The fact that urban households are more likely to be engaged in regular employment partially explains why some are more protected against seasonal changes in food access.

Figure 15 Percent of households either moderately or severely food insecure in urban and rural areas



## 5.5 Food consumption, dietary diversity and sources of food

The food insecure households are not consuming an adequate diet to maintain a healthy life. The 3% of households defined as having poor food consumption, according to the food consumption score, mainly consume staples (chiefly maize and millet), occasionally accompanied by oil and vegetables, with food from other groups consumed on average less than once a week. This is an extremely poor diet, which can have a major impact on the nutritional status of individuals.

Households with borderline food consumption have a slightly higher intake of vegetables and oil, consumed three to four times in a week. In the borderline group, consumption of other types of food is still low and meat and fish are consumed on average less than once a week. Although their situation is not as severe as households with poor food consumption, households with borderline consumption clearly have an inadequate diet and should be considered food insecure. Whether households with borderline food consumption are in a long-term food insecurity situation or not depends on what resources they have to improve their situation. If these households are wealthier they are considered to be mildly food insecure and less likely to be chronically food insecure.

Households with acceptable food consumption consume fish and meat regularly as well as milk and other dairy products occasionally and are generally considered food secure (Table 2).

While food insecure households are highly reliant on maize and millet (in fact 98% of households reportedly ate these staples in the week preceding the survey) the food secure consume a wider variety of staples including rice, wheat, cassava, tubers and plantains.

**Table 2** Dietary diversity in food security groups

	Average number of days in a week eaten:							
	Cereals, tubers and root crops	Meat and fish	Pulses	Vegetables	Oil	Fruits	Sugar	Milk or other dairy
Severely Food Insecure	6.6	0.1	0.2	1.9	2.2	0.5	0.8	0.0
Moderately Food Insecure	6.9	0.8	1.2	3.6	3.5	1.4	1.7	0.0
Mildly Food Insecure	6.9	1.0	0.9	3.5	2.7	1.7	3.4	0.1
Food Secure	7.0	5.4	2.2	4.3	3.8	3.2	3.8	1.0

The two major sources of food are own production and market purchases. At the time of the survey, more than 65% of the food consumed came from cash purchase across the three northern regions though households in the Upper East Region were more market dependent, sourcing 72% of their food via cash purchase (Table 3).

**Table 3** Food sources in the different regions

Region	Cash Purchase	Own Production	Fishing, Hunting Gathering	Credit Prurchase	Gift	Other
Northern	62%	31%	3%	3%	1%	0%
Upper East	72%	22%	0%	2%	1%	0%
Upper West	56%	34%	5%	3%	1%	1%

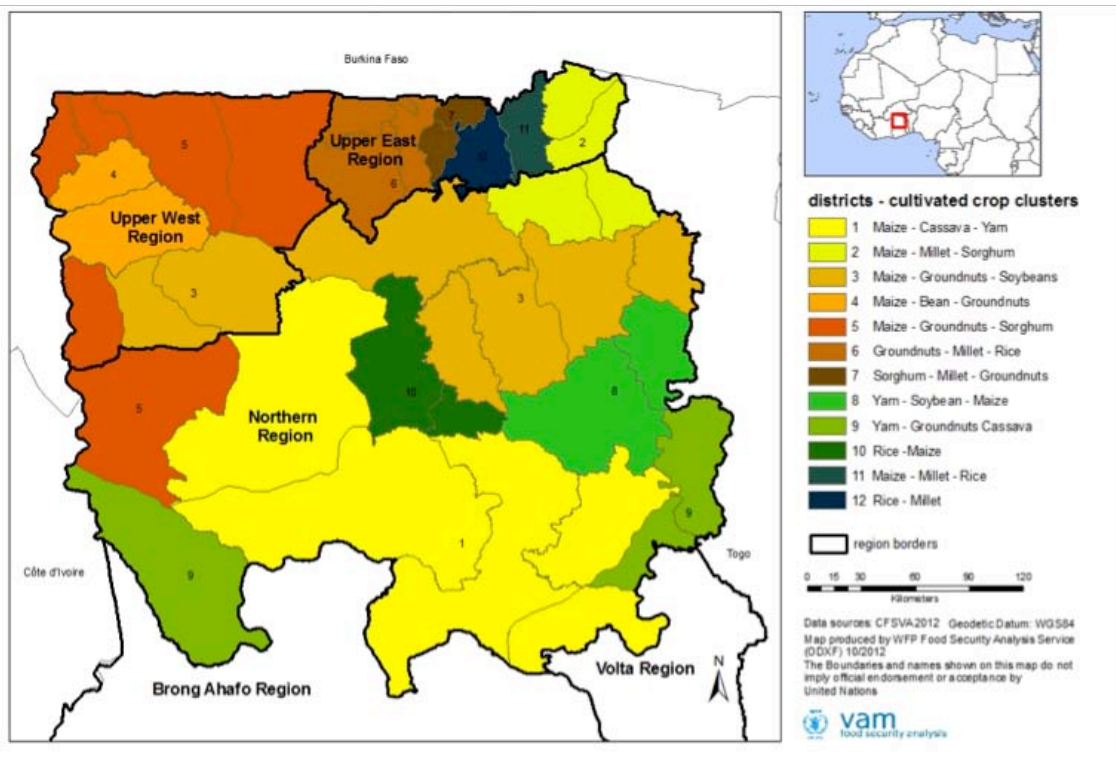
\*Other Includes: borrowed, exchanged, begging and food aid and other source

## 5.6 Household crop production

In order to better understand the differences and similarities between districts in terms of crops grown, crop clusters were created (Figure 16)<sup>22</sup>. Maize is the most frequently grown crop with more than 50% of households growing maize in all except two clusters. Meanwhile, in Nanumba South and Nanumba North more than 90% of households are cultivating yam, while cassava is most commonly grown in Central Gonja and Kpandai. In the western and middle parts of the regions, clusters of districts cultivating groundnuts are commonly found. In Sissala West and Wa West a high number of maize growing households also cultivate groundnuts. In the northern and north-eastern parts millet and sorghum are common crops. Bolgatanga and Bongo districts have the highest percentage of households growing sorghum.

<sup>22</sup> For a more detailed description of the crop clusters, see annex p.6.

**Figure 16** Clusters based on crops grown in the different districts



It is worth noting that districts dominated by yam, maize and rice producing clusters have better prospects for food security as these cash crops generate income as well as contribute to household food consumption. On the other hand, some of the predominant millet-sorghum and maize clusters are only just able to produce enough food to meet household consumption needs with very little surplus to generate income.

## MILDLY FOOD INSECURE HOUSEHOLDS

At the time of the survey, the food consumption of mildly food insecure households did not provide them with an adequate diet. These households are relatively wealthier than the severely and moderately food insecure in the three northern regions and their food insecurity is likely to be temporary. Although their diets were less than acceptable at the time of the survey, they are likely to have other resources available to allow them access food and therefore not likely to be in a chronic food insecurity situation. One of the explanations for their inadequate consumption at the time of the survey is that it was carried out during the lean season when households generally find it harder to access sufficient food.

The mildly food insecure are not using as many, or as severe, coping strategies as the households that are either severely or moderately food insecure. For example, less than 5% of households in this group had either gone the entire day without eating or consumed seed stock in the week preceding the survey. Among the severely and the moderately food insecure, more than 10% had gone the entire day without eating and more than 11% had consumed seed stock. The most common coping strategy across all groups is to reduce the number of meals. Among the mildly food insecure, 22% had done this in the week preceding the survey while among the households either severely or moderately food insecure the rate was double, 44%.

More than a fifth (22%) of mildly food insecure households are found in the Tamale Metropolis district. Mild food insecurity is more prevalent in urban areas than more severe food insecurity. Even though urban areas generally have a higher proportion of wealthier households (in terms of assets owned and housing conditions) many households still have a diet that is less than acceptable. One reason for this is that they are more dependent on market purchases (77% of their food is bought vs 61% for rural households) and therefore they are more likely to face difficulties when confronted with seasonal high food prices.

Artisans and unskilled labourers have a higher rate of mildly food insecure households than other livelihood groups. This could be because the income of these two groups depends on the general economic situation of the population who purchase their products and services. Hence the income of artisans and unskilled labourers may fluctuate with the seasons, dipping during the lean season and perhaps peaking post-harvest, further highlighting the fluctuating food security status of this group.

## ► | 6. CAUSES OF FOOD INSECURITY

Food insecurity in Northern Ghana can largely be attributed to two broad causes: general poverty and poor agricultural performance. This section will not attempt to address the multiple underlying causes of poverty but rather to expand on the associations between poverty and food insecurity within the context of the food security and conceptual framework.

The poor agricultural season in 2011 contributed to the current food security situation in several ways. It cut the food available for household consumption, reduced income and increased market prices. The high dependence on agriculture both for income and for subsistence across the north, coupled with high rates of poverty, combine to create repeated vulnerability to food insecurity as seen in the current CFSVA findings. A particularly problematic consequence of poor agricultural performance combined with poverty is that poor farming households are often forced to purchase staples from the market when prices are highest. According to the Rapid Market Assessment, that was carried out during October 2012 in Tamale, Bolgatanga, and Wa, imported commodities as well as cereals, are available in the market and the traders are able to respond if there should be an increase in demand. This suggests that the causes of reduced food access are more related to poverty and high food prices, rather than general availability of food (although it should be noted that this assessment was carried out later in the year than the CFSVA, following the onset of the harvests which influence food availability).

### 6.1 Poverty in northern Ghana

Although nationally Ghana has seen a decrease in poverty and an increase in economic development, the three northern regions are lagging behind. The 2009 Ghana CFSVA classified nearly 60% of households in the three northern regions in the poorest quintile (based on the wealth index), reflecting the north/south poverty divide. The 2008 Ghana Living Standards Survey<sup>23</sup> looked at poverty using income data and also illustrated this disparity, particularly in the Upper East and Upper West regions, where the income per capita is less than one third of the national average (Table 4).

**Table 4** Income Per Capital

Upper East	GH¢ 124
Upper West	GH¢ 106
Northern	GH¢ 296
National	GH¢ 397

Source: Ghana statistical service, 2008

<sup>23</sup> Ghana Statistical service. 2008. Ghana living standards survey report of the fifth round.

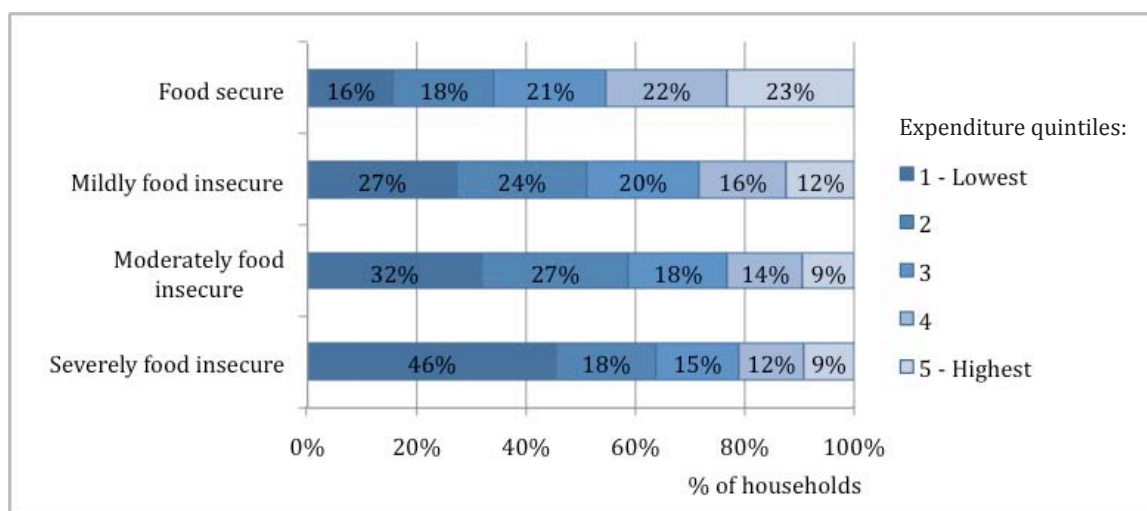
The higher rates of food insecurity across the north are largely the result of limited household resources available to purchase food, combined with limited agricultural output and the seasonality of food availability<sup>24</sup>.

Agricultural productivity is clearly linked to wealth in northern Ghana. Larger farmers, from a land cultivation perspective, are generally more well-off than smaller farmers. Some 49% of smallholder farmers fall into the two poorest wealth quintiles, compared with 36% and 24% of medium and large farmers respectively. Smallholders are at a high risk of not producing enough agricultural output to sustain their food needs throughout the whole year. At the same time, as half of these households are poor, they have limited resources to purchase food in the market. See the section titled Smallholder farmers below for more.

The CFSVA found that poorer households in general spend a larger share of their expenditure on food. Households in the wealthiest quintiles spend 34% of their total expenditures on food compared with 49% in the poorest quintile. At the time of the survey, those in the poorest quintiles sourced almost one third of their food from own production which most likely keeps the figures on share of spend on food down.

Households were asked about their monthly expenditures and the total expenditure per capita was divided into quintiles. Food insecure households are more likely to have low monthly per capita expenditures: among the food secure households, 16% are in the lowest expenditure quintile and among the households that are either moderately or severely food insecure 32% and 46% respectively are in the lowest expenditure quintile.

**Figure 17** Household food security and expenditure quintiles



<sup>24</sup> Ministry of Food and Agriculture. 2007. Food and Agriculture Development Policy (FASDEP II)



Besides the Wealth Index and expenditure quintiles, another important measure of wealth in these regions is ownership of livestock. Those in the poorest wealth quintile own on average 2.5 tropical livestock units (TLU) <sup>25</sup>, compared with 6.2 TLUs in the wealthiest fifth of households. This further underlines the fact that wealthier households have more resources and a greater potential to cope with shocks and stay away from food insecurity. Food secure households on average own twice as many animals compared with households that are either severely or moderately food insecure.

Table 5 Livestock ownership by wealth quintiles

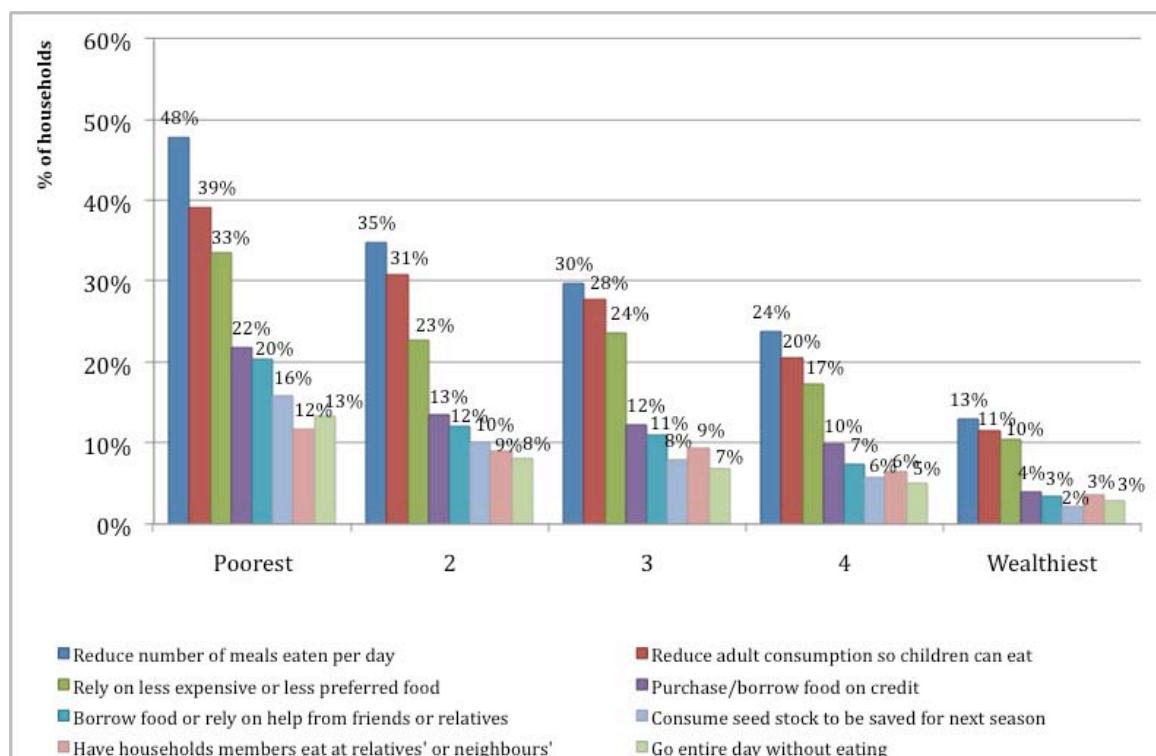
Wealth Quintiles	Tropical Livestock Unit (TLU)	Cattle	Bullocks	Goats	Sheep	Pigs	Chicken	Other Poultry	Rabbits	Horse / Donkeys / Mules	Grass-cutter
Poorest	2.5	1.1	0.3	3.9	2.4	1.1	8.8	2.9	0.0	0.1	0.0
2	3.3	1.9	0.5	4.7	3.2	1.4	11.4	4.4	0.1	0.2	0.0
3	4.4	2.8	0.6	5.9	3.5	1.7	13.1	4.0	0.1	0.3	0.0
4	5.5	4.2	0.5	6.0	4.9	1.7	14.4	4.9	0.1	0.3	0.0
Wealthiest	6.2	4.9	0.5	5.3	6.4	1.4	13.3	4.1	0.2	0.2	0.0

\* One TLU is equivalent to one head of cattle of 250 kg at maintenance. The index used the following weights: cattle: 0.8, bull: 0.8, goat: 0.1, sheep: 0.1, pig: 0.3, poultry: 0.007, hoarse/donkey: 0.5

\*\* Ownership of rabbits and grasscutters were not included in the TLU

When households in the poorest wealth quintile do not have enough food to eat, they resort to severe, and often corrosive, coping strategies more often than wealthier households. For example, some 13% of households in the poorest quintile had gone an entire day without eating on at least one day during the week preceding the survey compared with 3% in the wealthiest quintile (Figure 18).

<sup>25</sup> One TLU is equivalent to one head of cattle of 250 kg at maintenance. The index used the following weights: cattle: 0.8, bull: 0.8, goat: 0.1, sheep: 0.1, pig: 0.3, poultry: 0.007, hoarse/donkey: 0.5

**Figure 18** Percentage of households using coping strategies in the last week by wealth quintile

## 6.2 Limited economic opportunity and poor infrastructure

Economic opportunities other than agriculture are scant in northern Ghana. The potential for agricultural trade is also limited throughout Ghana by poor market infrastructure, such as roads, storage centres and selling space. As a result, farmers' ability to produce, sell and store marketable surpluses is hindered as is households' ability to buy it, so food access is impeded.

Poor infrastructure and market access were two of the most important factors constraining the growth of the agricultural sector in northern Ghana according to the 2007 Food and Agriculture Sector Development Policy (FASDEP II). The post-harvest loss of 20-50% of fruits, vegetables, roots and tubers and 20-30% of cereals and legumes is partly attributed to the lack of storage and drying facilities, which forces many farmers to sell their products immediately post-harvest when prices are low and to re-purchase them for consumption during the lean season when prices are at their highest.<sup>26</sup>

The lack of economic opportunities in northern Ghana is driving widespread migration out of the region. A quarter of northern households have members who migrated to other parts of the country in the year before the CFSVA, peaking at 34% for the Upper West Region. The main driver for migration is the search for employment opportunities followed by inadequate food year-round.

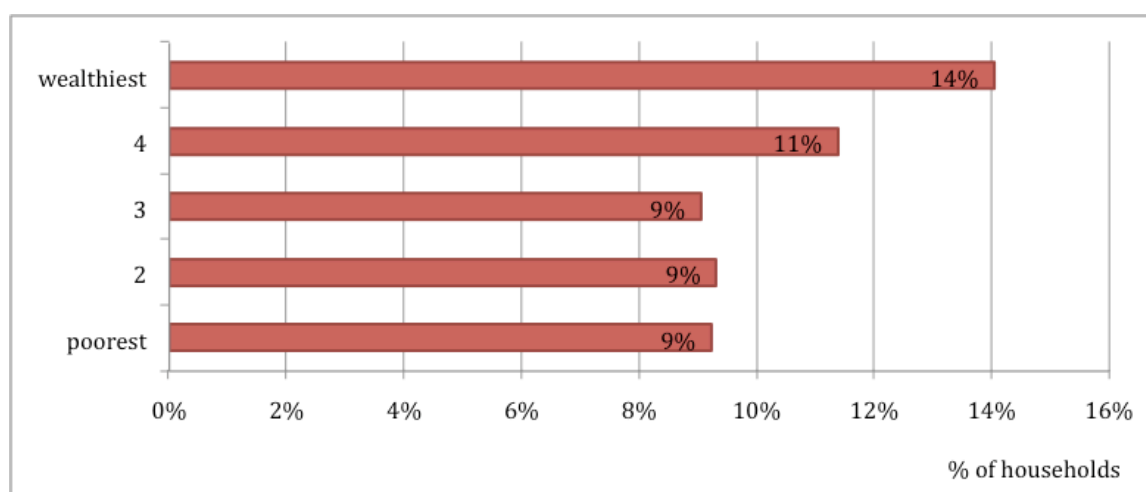
<sup>26</sup> Ministry of Food and Agriculture. 2007. Food and Agriculture Development Policy (FASDEP II)

While relatives or friends are the main source of loans or credit for households in need, there are a number of households that have no access to credit ranging from 10% for households in the wealthiest quintile to 17% for those in the poorest (Table 6). The wealthier households are more likely to have a loan or be in debt: the proportion of households that currently have a loan or are in debt ranges from 9% in the poorest quintiles to 14% in the wealthiest quintile (Figure 19).

**Table 6** Available sources of credits/loans

Wealth Quintiles	Relatives /friends	UN / NGOs / etc	Local Lender	Bank	Co-operatives	Non-financial institution	No Access to Credit	Other
Poorest	48%	4%	8%	6%	4%	5%	17%	0%
2	52%	6%	9%	11%	6%	10%	14%	1%
3	51%	8%	11%	14%	9%	11%	16%	1%
4	54%	9%	8%	17%	9%	12%	16%	1%
Wealthiest	60%	8%	9%	29%	12%	13%	10%	0%

**Figure 19** Percent of households that currently have a loan or debt by wealth quintiles



### 6.3 Socio-economic circumstances make female headed households more food insecure

The social and economic situation of female headed households provides a key insight into their food security situation. In the Ghana Food and Agriculture Sector Development Policy (FASDEP II),<sup>27</sup> it is acknowledged that women in northern Ghana do not have the same opportunities to earn income as men and this makes gender an important dimension of poverty<sup>28</sup>.

An FAO report concerning gender inequalities in rural employment in Ghana<sup>29</sup> demonstrates that rural women spend more time on unpaid domestic work and non-agricultural activities than men. In addition, women are more often self-employed than men, an employment status that is often linked to lower earnings. In rural Ghana nationally, men are five times more likely to take part in paid employment than women<sup>30</sup>.



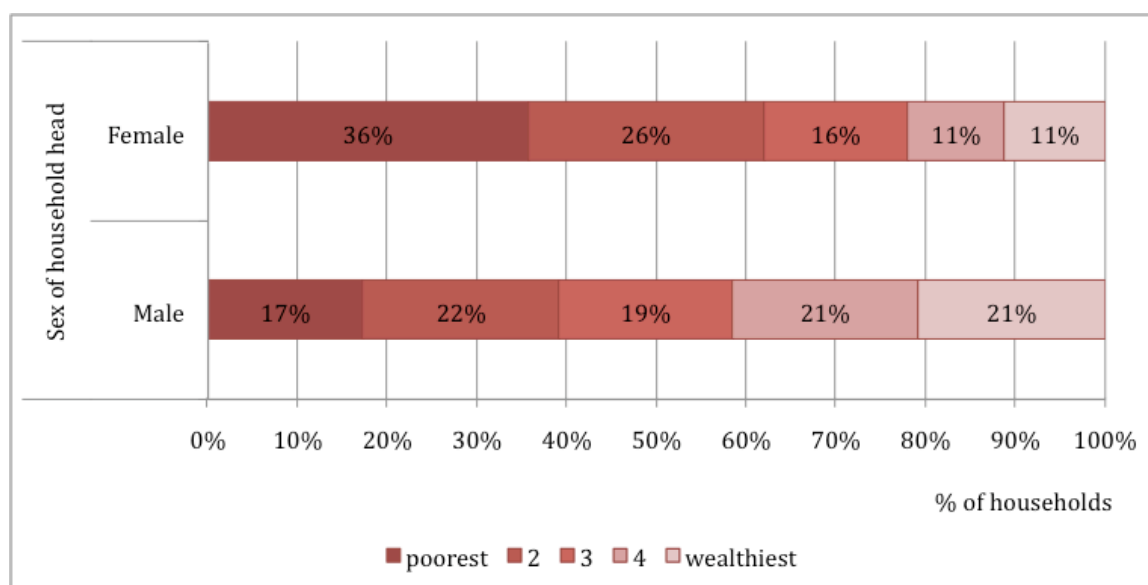
Female-headed households are disproportionately poor. About 62% of female headed households fall into the two poorest wealth quintiles compared with 39% of male headed households. Similarly, only 11% of female headed households reach the wealthiest quintile in comparison with 21% of male headed households (Figure 20).

<sup>27</sup> MoFA (Ministry of Food and Agriculture). 2007. Food and Agriculture Sector Development Policy (FASDEP II).

<sup>28</sup> MoFA (Ministry of Food and Agriculture). 2007. Food and Agriculture Sector Development Policy (FASDEP II). Ghana: MoFA

<sup>29</sup> FAO. Gender Inequalities in Rural Employment in Ghana. An Overview. 2012.

<sup>30</sup> Ghana Living Standard Survey data from 2005

**Figure 20** Percentage of households per wealth quintile by sex of household head

The majority of the female heads (64%) are widows rising to 80% in the Upper East Region, which helps explain why this region has a high percentage of female-headed households (15%, compared with 8% for the three northern regions). Households headed by widows are likely to experience particular difficulties accessing food, because they lack a chief income earner and source of agricultural labour.

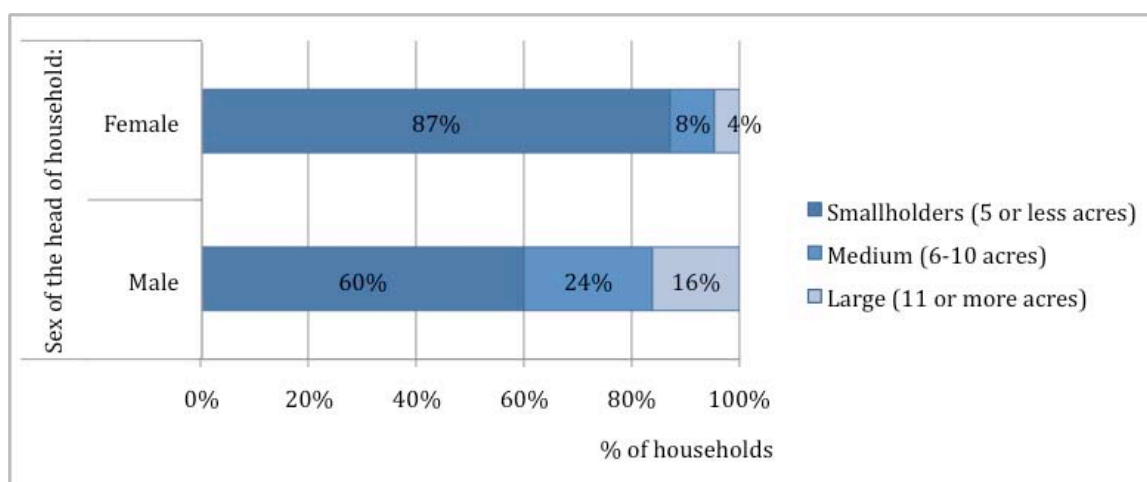
The livelihoods with the largest representation of female headed households are food processing (39%), artisans (19%) and traders (15%). Although agricultural activities are mostly reflected in male headed households, 56% of female headed households are either agriculturalists or agro-pastoralists.

It is well documented in many countries that rural women have less access than men to important resources and agricultural inputs such as land, livestock, labour, education, fertilizers and improved seeds.<sup>31</sup> For instance, 74% of female headed households own livestock compared with 85% of male headed households.

<sup>31</sup> FAO. 2011, The State of Food and Agriculture

In Ghana, women have previously been found to achieve lower yields compared to men due to a lack of inputs.<sup>32</sup> Female headed households also have less access to land for farming: 89% vs a 96% average for northern Ghana. They are also more likely to be smallholders (farming five acres or less): 87% of female headed households are smallholders compared with 60% of male (Figure 21). Just 4% farm more than 11 acres compared with 16% of men heading a household.

**Figure 21** Farm size by sex of head of household



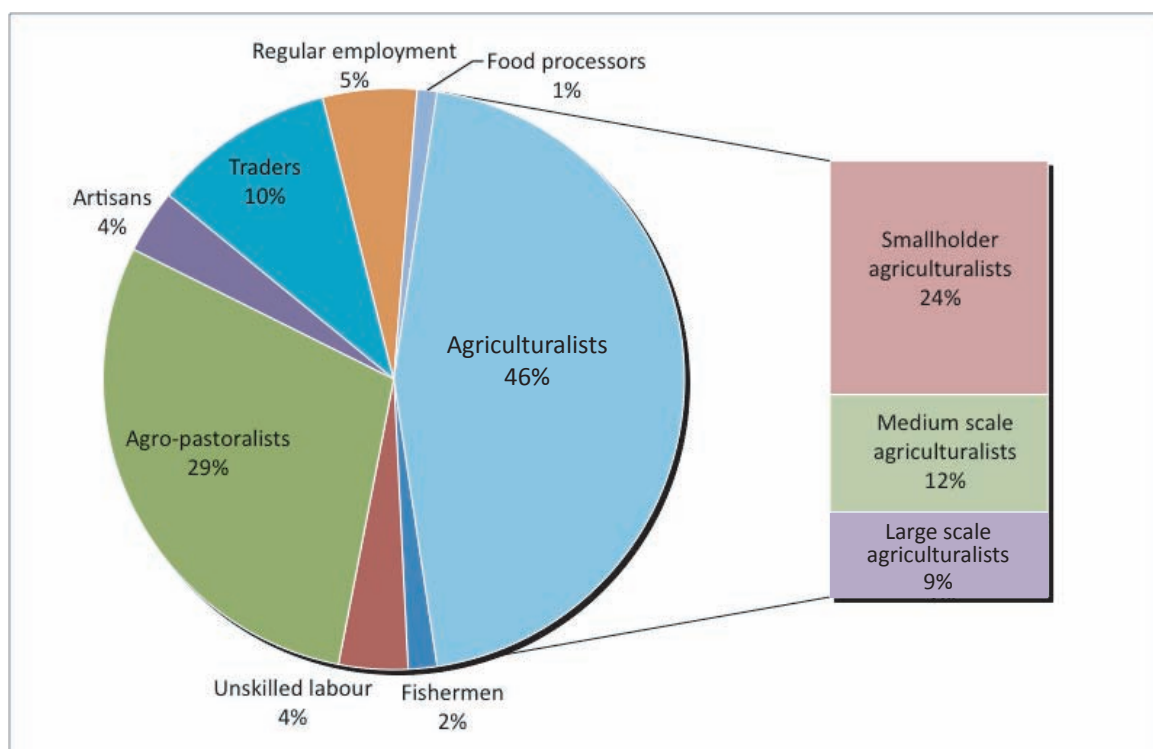
#### 6.4 How livelihood strategies influence food security

As noted in the section, *3.2 Introduction to food security*, food security is often an outcome of the livelihood strategies adopted by households. One method used to analyse food security from a livelihoods perspective is to classify households based upon their main income activities. In the CFSVA, households were asked about the three main activities they engaged in to sustain themselves. Each of these activities was given a relative weight according to its overall contribution to the household's income. A cluster analysis was then conducted to assign households to livelihood groups that exhibit similar patterns in the way they provide for themselves.

<sup>32</sup> FAO. 2011, The State of Food and Agriculture

A total of eight groups were found (see Figure 22 Proportion of households in the different livelihood groups below). As expected in northern Ghana, the majority of the population is engaged in agricultural activities. Agriculturalists form the largest livelihood group, representing nearly half (46%) of all households in northern Ghana, followed by the agro-pastoralist group (29% of all households). These two groups make up almost 75% of the total number of households, thereby underlining the importance of agriculture in sustaining the livelihoods of households in this region. These two groups are followed by traders (10%), regular employment (5%), unskilled labour (4%), artisans (4%), fishermen (2%) and food processors (1%) (Figure 22).<sup>33</sup>

Figure 22 Proportion of households in the different livelihood groups



<sup>33</sup> For a more detailed description of livelihood groups, see annex p.5.

**Table 7** Livelihood groups and key outcomes

Livelihood:	Share of the population:	Food insecurity:	Households in two lowest quintiles:	Main characteristics:
<b>Agriculturalists</b>	46%	Severe: 3.7% Moderate: 13.0% Mild: 8.4%	43%	This is the largest of all livelihood groups. Almost half of households in northern Ghana are agriculturalists. The food insecurity and wealth is similar to the overall food security situation in the three northern regions. In the agriculturalist group, 88% of the income comes from crop cultivation. One third of the food consumed is sourced from own production and they spend about 39% of their total expenses on food. Maize is the most common crop cultivated among the agriculturalists regardless of farm size.
<b>Smallholder Agriculturalists</b>	24%	Severe: 5.6%	9%	The majority of the agriculturalists are smallholder farmers. These households are not only more often food insecure than agriculturalists with larger farms, they are also poorer. Maize is the most common crop, cultivated by 75% of the smallholder agriculturalists. In addition, almost 25% cultivate millet and sorghum which is significantly higher than larger scale farmers who are not so likely to grow these crops.
<b>Medium-scale agriculturalists</b>	12%	Severe: 1.9%	11%	Food security and wealth increase with farm size. Maize is the most common crop, grown by 81% of households followed by yam (46%) and groundnuts (41%).
<b>Large-scale agriculturalists</b>	9%	Severe: 1.0% Moderate: 6.4% Mild: 6.9%	25%	Agriculturalists with larger farms are less likely to be food insecure than other agriculturalists. In addition they are wealthier and more likely to own more livestock. The three most common crops grown are maize (83%), yam (46%) and groundnuts (43%).
<b>Agro-pastoralists</b>	29%	Severe: 3.1% Moderate: 15.6% Mild: 10.3%	48%	In the agro-pastoralist group 49% of the income comes from livestock and 43% from crop cultivation. More than 98% of all agro-pastoralist households own livestock which is a valuable resource in times of difficulties. On average, this group owns seven tropical livestock units (TLU) <sup>34</sup> (the average is four across all livelihood groups). However, this livelihood group has a large proportion of households in the two lowest wealth quintiles.
<b>Traders</b>	10%	Severe: 2.7% Moderate: 7.1% Mild: 13.4%	21%	Traders are doing better than most livelihood groups in terms of wealth with only 21% of trader households in the two lowest wealth quintiles. The food security situation is also a little bit better than average. This is one group that has a larger proportion of households with female heads (15%) compared to the average (8%). In this group, 68% of the income comes from trade and 23% from crop cultivation.

<sup>32</sup> One TLU is equivalent to one head of cattle of 250 kg at maintenance. The index used the following weights: cattle: 0.8, bull:0.8, goat: 0.1, sheep: 0.1, pig: 0.3, poultry: 0.007, hoarse/donkey: 0.5



Livelihood:	Share of the population:	Food insecurity:	Households in two lowest quintiles:	Main characteristics:
<b>Regular employed</b>	5%	Severe: 0.4% Moderate: 0.7% Mild: 7.8%	6%	These households get 78% of their income from regular employment and they are doing better than most other groups, both in terms of wealth and food consumption. This group is characterized by higher education of the household head and they are more commonly found in urban areas.
<b>Unskilled Labourers</b>	4%	Severe: 4.0% Moderate: 18.6% Mild: 18.3%	43%	Among the unskilled labourers, 23% of households are either severely or moderately food insecure, making this one of the livelihood groups with the highest proportion of food insecure households. While 56% of their income comes from casual labour employment, the remaining share is derived mainly from some cultivation of crops (29% of the income). This group spends nearly half (47% compared to the overall average of 41%) of its total expenses on food, making it vulnerable to food insecurity during times of price increases.
<b>Artisans</b>	3%	Severe: 4.6% Moderate: 9.8% Mild: 17.0%	37%	Nearly one fifth (19%) of artisan households are female headed (compared to 8% of all households) and 82% of these women are widows. The main source of income is artisanry (66%), although almost 20% comes from crop cultivation.
<b>Fishermen</b>	2%	Severe: 0.6% Moderate: 4.8% Mild: 1.8%	46%	Although fishermen are likely to be poor, they tend to have better diets than households dependent on other livelihood strategies with some 5% being either severely or moderately food insecure. The low proportion of food insecure households among the fishing households is because of their regular consumption of fish, a good source of protein, which significantly raises the food consumption score. In this group 73% of the income comes from fishing and the other large source of income is crop cultivation.
<b>Food processors</b>	1%	Severe: 2.3% Moderate: 15.6% Mild: 8.6%	50%	Food processors, although they are a small group, are of concern since the wealth status as well as food consumption in this livelihood group is below average. A striking feature of this livelihood group is that almost 40% of households are female headed (average across all livelihood groups is 8%). In this group 74% of the income comes from food processing.

Household livelihood strategies clearly have a bearing on household food consumption, wealth and food security status (Table 7). More than 20% of unskilled labourers and agriculturalists that are smallholders are either severely or moderately food insecure. Meanwhile only about 1% of the group classified as regular employed and 5% of fishermen are in the same situation.

Whether or not the households in the different livelihood groups are food insecure depends on several different factors, such as how they access food, how wealthy they are and what other resources they have available to access food. For example, although a large proportion of fishermen are in the two lowest quintiles, they have good food consumption. However, because of their poverty they are vulnerable to food insecurity should there be any changes that affect fishing opportunities or availability of their catch.

**Table 8** Livelihood groups and dietary diversity

Livelihood Group	Days Eaten							
	Cereals, Tubers and Root Crops	Meat and Fish	Pulses	Vegetables	Oil	Fruits	Sugar	Milk or other Dairy
Regular Employment	6.9	5.6	1.9	4.6	3.8	3.1	4.6	2.0
Fishermen	7.0	6.2	1.9	3.7	3.6	3.3	4.1	0.7
Traders	6.9	4.5	2.0	4.3	3.4	2.7	4.4	1.2
Food Processors	7.0	4.2	1.7	4.0	4.1	2.6	3.7	1.0
Agriculturalists	6.9	4.3	1.7	4.1	3.5	3.0	3.5	0.7
Artisans	6.9	4.2	1.7	3.8	3.4	2.1	3.8	0.8
Agro-pastoralists	6.9	3.7	1.9	3.7	3.8	2.4	2.4	0.5
Unskilled Labour	6.9	3.1	1.8	4.1	3.5	2.5	2.8	0.6

It is also worth looking beyond food consumption – to livestock ownership – to determine the food security situation of the agro-pastoralist livelihood group. Although almost half of agro-pastoralist households are in the two poorest wealth quintiles, they own more livestock than most other livelihood groups (Table 9). This is significant as it demonstrates that although these households are asset poor, as noted by their relatively poor wealth ranking, they are in possession of highly valuable animals that offer them some resilience in times of need. The only other group that owns a similar number of livestock are the large-scale agriculturalists, but since they are already wealthier than most other groups the livestock ownership is not of such significance.

**Table 9** Livestock units and ownership of most common animals

Livelihood Group	Tropical Livestock Unit (TLU)	Cattle	Bullocks	Goats	Sheep	Pigs	Chicken	Other Poultry	Rabbits	Horse / Donkeys / Mules	Grass-cutter
Fishermen	2.2	1.0	0.0	4.1	6.5	0.8	10.9	1.9	0.1	0.0	0.1
Unskilled Labour	3.3	2.3	0.5	4.5	2.5	1.0	9.5	1.6	0.1	0.2	0.0
Agro-pastoralists	7.0	4.9	0.8	7.1	6.0	2.4	15.7	6.8	0.2	0.4	0.0
Artisans	2.2	1.2	0.3	3.2	2.4	1.0	8.1	1.8	0.2	0.2	0.0
Traders	4.2	3.1	0.4	4.8	3.2	1.3	10.7	3.3	0.0	0.2	0.0
Regular Employment	3.2	1.5	0.6	3.9	4.4	1.4	10.7	4.1	0.5	0.2	0.0
Food Processors	2.7	1.1	0.1	4.9	3.6	2.2	7.4	3.8	0.0	0.3	0.2
Agriculturalists	3.2	2.2	0.3	4.4	3.2	1.0	11.4	3.1	0.1	0.1	0.0
Small Holder Agriculturalists	2.0	1.1	0.2	3.4	2.3	0.9	8.8	1.9	0.1	0.1	0.0
Medium scale Agriculturalists	3.4	2.4	0.3	4.8	3.3	0.9	12.1	3.0	0.0	0.1	0.0
Large scale Agriculturalists	6.2	5.0	0.4	6.6	5.5	1.2	17.1	6.3	0.1	0.3	0.0

\* One TLU is equivalent to one head of cattle of 250 kg at maintenance. The index used the following weights: cattle: 0.8, bull: 0.8, goat: 0.1, sheep: 0.1, pig: 0.3, poultry: 0.007, hoars/donkey: 0.5

\*\* Ownership of rabbits and grass-cutters were not included in the TLU

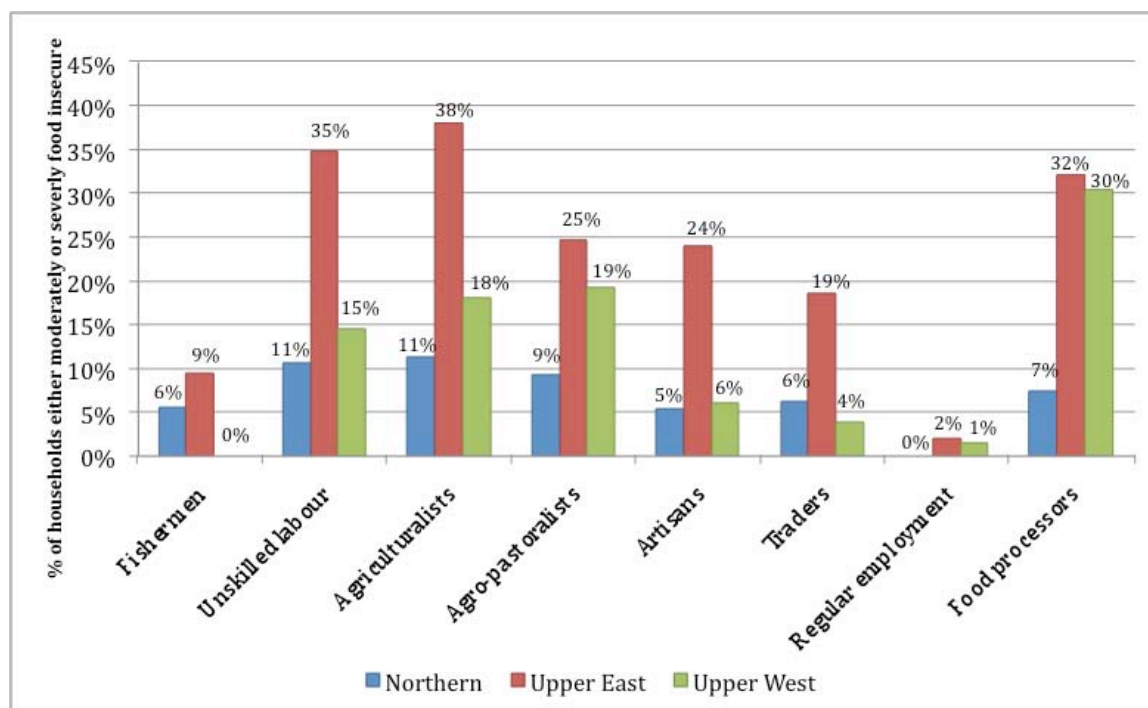
Different livelihood groups also source their food in different ways. Unsurprisingly, regular salaried employees source a relatively small share of their food from own production since they largely live in urban areas. Salaried employees are the wealthiest of the livelihood groups and are likely to have sufficient resources to access nutritious food through cash purchase. As expected, the two livelihood groups mainly involved in farming - the agriculturalists and agro-pastoralists - have the largest share of food from own production (Table 10).

**Table 10** Source of food by livelihood group

Livelihood group	Own Production	Cash Purchase	Fishing, Hunting, Gathering	Credit Prurchase	Gift	Borrowed
Fishermen	23%	55%	9%	11%	0%	1%
Unskilled labour	22%	67%	3%	2%	1%	0%
Agriculturalists	33%	60%	3%	2%	1%	0%
Agro-pastoralists	32%	61%	2%	2%	1%	0%
Artisans	17%	81%	1%	1%	0%	0%
Traders	19%	77%	1%	2%	1%	0%
Regular employment	13%	81%	1%	1%	1%	0%
Food processors	24%	69%	2%	2%	1%	0%

In the regional breakdown by livelihood group, agriculturalists are the worst off group in terms of their food security status in the Upper East Region, which also has the highest overall prevalence of households who are either severely or moderately food insecure (Figure 23). In the Upper East, they are followed by unskilled labourers, and food processors. Food processors are worst off in the Upper West with 30% either severely or moderately food insecure, while unskilled labourers and agriculturalists are both 11% food insecure in the Northern Region.

**Figure 23** Percentage of either severely or moderately food insecure households by livelihood and region



## 6.5 Agricultural limitations

### Small land size and lack of crop diversity

As agriculture is the chief way for most households to sustain themselves, agricultural production plays a vital role in the wealth and food consumption of households. The poverty of smallholder farmers, by comparison with larger-scale farmers, means they are often unable to afford to buy inputs such as fertilizer, leading to limited investment in agricultural production. Their small scale farming means they cultivate fewer varieties of crops than medium and large scale farmers: households that cultivate at least three different types of crops have better food consumption score than those that only cultivate one type. Maize is the most commonly grown crop, regardless of how many other crops are grown.

Other common crops among households growing more than one crop are millet, rice, sorghum, yam and groundnut.

The bigger the farm, the larger the volume of harvest and subsequent food stock: those with large farms (11 acres or more cultivated) have harvests and current stocks of maize almost four times bigger than smallholders. And subsequently, the smaller the farm, the less they harvest and can stock. This means smallholders are more likely to run out of food and to be forced to buy in the lean season when market prices are at their peak.

### Crop production decline

Crop production data from the three northern regions of Ghana<sup>35</sup> shows that the production of major staple crops declined substantially during the 2011/12 growing season compared with the previous year, mainly because of poor rainfall during the critical growing stages. Harvests of the major staples (maize, millet and sorghum) in 2011/12 were significantly below the levels of the previous year across the three northern regions (Table 11). The increase in maize production in the Upper East Region is likely due to government support under the Northern Rural Growth Project, which assists farmers with inputs needed for maize production. The Northern Region recorded a 19% decrease in maize production over the previous year with the largest decreases in Bunkpurugu-Yunyoo (-32%), Savelugu-Nanton (-33%) and West Mamprusi (-37%) districts.

**Table 11** Change in production between 2010/11 and 2011/12 growing season

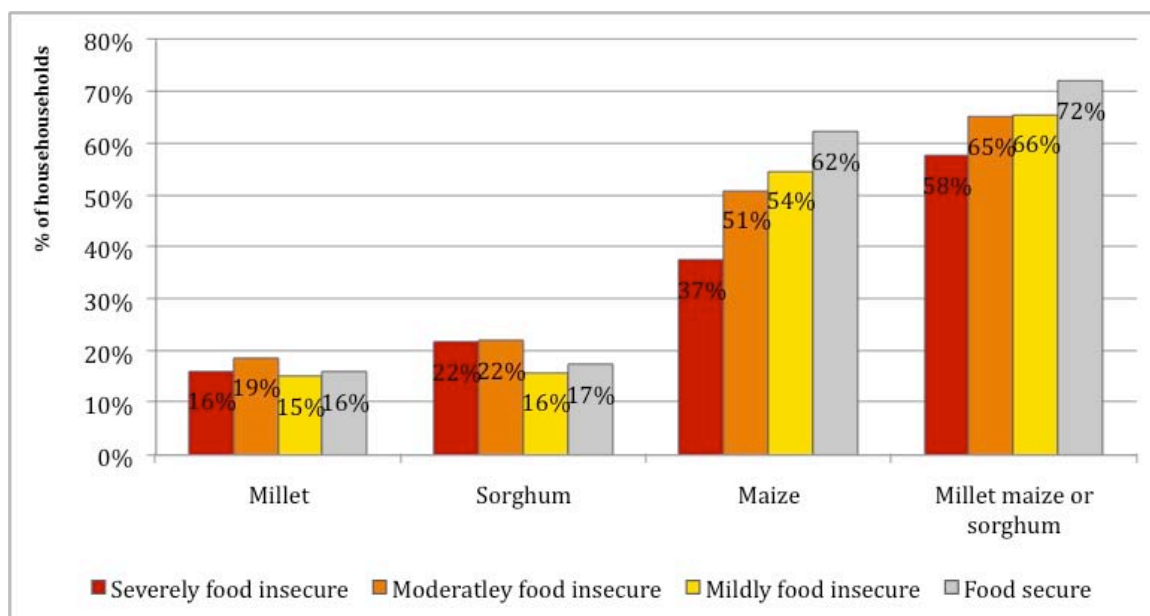
Region:	% change in production of:					
	Maize	Rice	Millet	Sorghum	Yam	Ground nuts
Northern	-19.2	-9.1	-18.6	10.5	27.2	-4.9
Upper East	20.9	-19.1	-21.2	-19.7	-23.4	-30.2
Upper West	-13.9	-10.5	-15.4	-34.8	-9.4	-17.5

Source: MoFA, SRID

Adequate food is produced in most years, but food availability in the market is usually subject to seasonal changes in supply from farmers, with reduced stocks available in the market during the lean season. The country is generally self-sufficient in the production of main staples, but the 2011 deficit in production coupled with high grain prices, prompted the Government of Ghana to import 25,000 metric tons of yellow maize in April 2012 to stabilize its market availability<sup>36</sup>. Of households either severely or moderately food insecure, 58% and 65% respectively had left-over stock of maize, millet or sorghum at the time of the survey. In the households with mild food insecurity and those that were food secure, the proportion of households with stock of maize, millet or sorghum was 66% and 72% respectively (Figure 24).

<sup>35</sup> Statistics, Research and Information Directorate of the Ministry of Food and Agriculture

<sup>36</sup> Statistics, Research and Information Directorate of the Ministry of Food and Agriculture

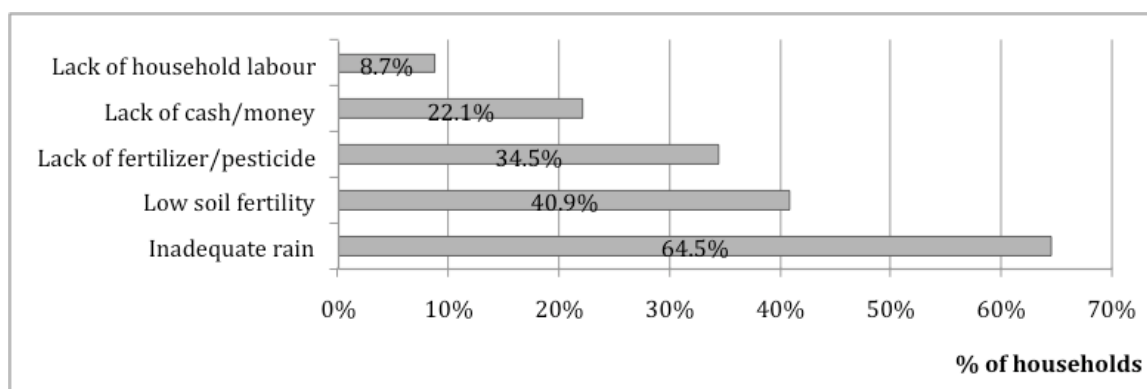
**Figure 24** Household stocks at the time of the survey by food security status

#### Low soil fertility and lack of fertilizer/pesticide and irrigation

Poor crop harvest may be attributed to various factors, but in northern Ghana, the three most important constraints that stop farmers from producing a larger output are inadequate rains, low soil fertility and lack of fertilizer/pesticide. In addition to these constraints, lack of money and lack of household labour were often mentioned across all regions. Irrigation systems are largely absent from this part of the country: results from the CFSVA show that less than 1% of farmers are able to make use of irrigation systems, making farming extremely dependent on favourable rainfall to ensure a good harvest. Attempts have been made to develop irrigation facilities in the Upper West Region, but the facilities have been under-utilized often because of poor construction, insufficient technical knowledge and weak management.<sup>37</sup>

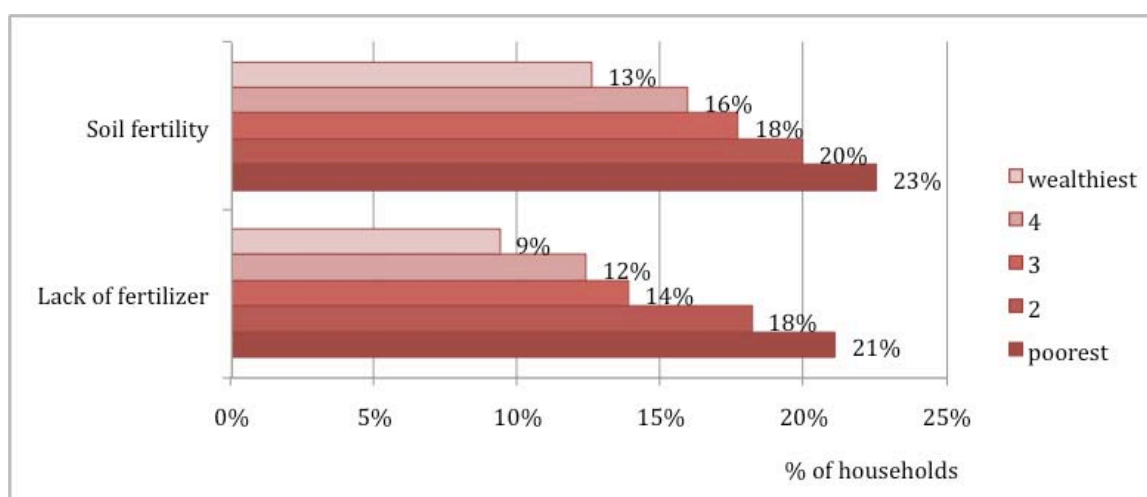
<sup>37</sup> Inkoom (2011). Utilisation of irrigation facilities towards poverty reduction in the Upper West Region of Ghana. Journal of Sustainable Development in Africa (Volume 13, No.2)

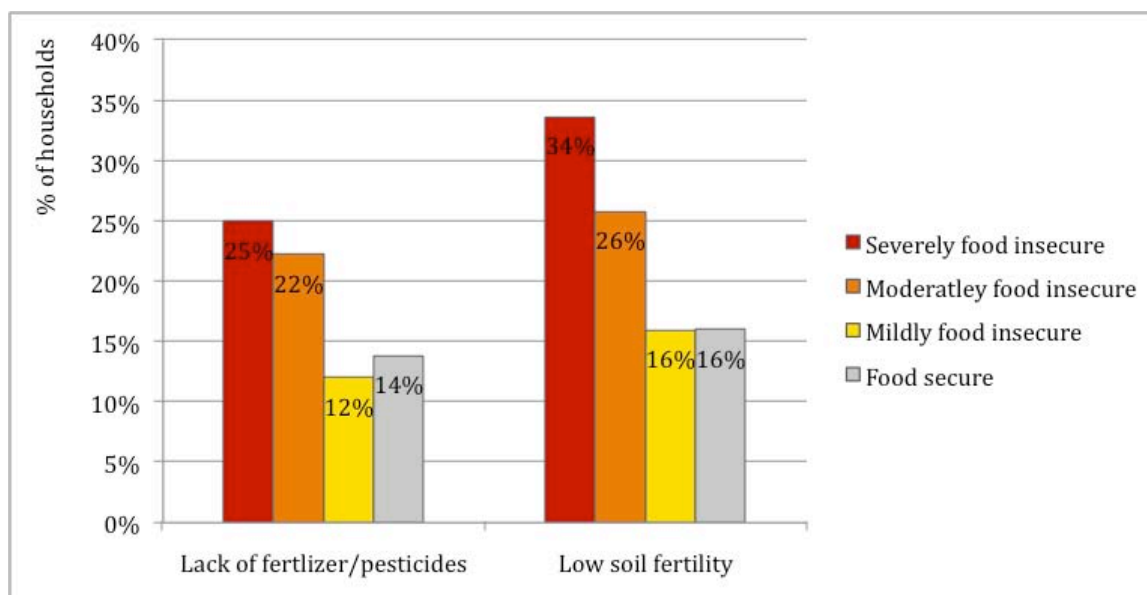
**Figure 25** Most common agricultural constraints reported by households producing the same or less than the previous year



The poorer the household and the lower its food consumption score the more likely it is to cite lack of fertilizer and/or pesticides and soil infertility as a constraint to increasing yields (Figure 26 and Figure 27).

**Figure 26** Soil fertility and lack of fertilizer as agricultural constraints by wealth quintiles



**Figure 27** Soil fertility and lack of fertilizer as agricultural constraints by food consumption groups

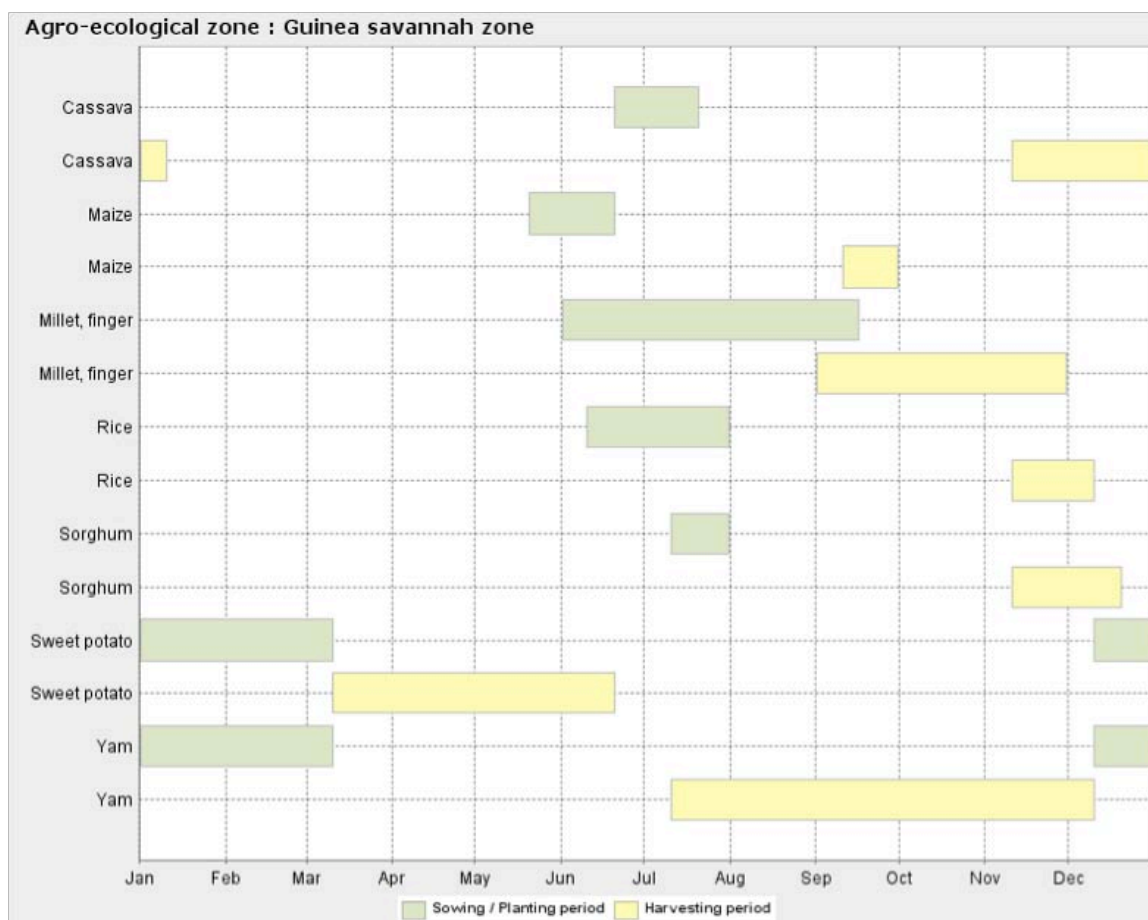
### Climatic conditions and seasonality

The seasonality of food availability and subsequent impact on food prices can make it difficult for households to meet their food needs throughout the year. Rainfall is one of the most important factors in the seasonal variability of food availability and access. Seasonality is a particular challenge for households in the northern regions, as they only have one rainy season which is followed by a long dry season. This limits the window of suitable weather for crop growth, unlike the southern agricultural areas of the country, which have two agricultural seasons. Crop cultivation is subject to high intra-seasonal variability in rainfall levels and is often hampered by extensive dry spells or flooding of riverine areas. The food security situation is particularly serious for three to five months each year.

The 2011 growing season was characterized by mixed agro-meteorological conditions from May to July, with long dry spells hampering germination and development, resulting in the wilting of crops in various locations. As a consequence grain filling of late maturing crops was affected leading to a deficit in grain production.

The crop calendar (Figure 28) for northern Ghana shows the important times for sowing/planting as well as harvesting.

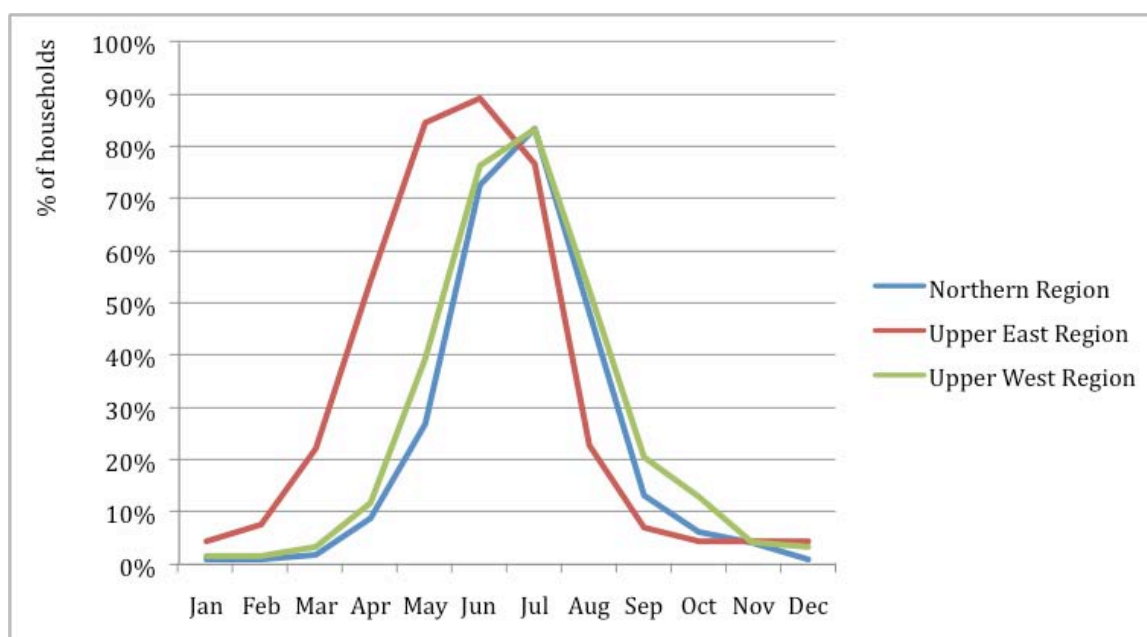


**Figure 28** Crop calendar for northern Ghana

Source: FAO

Across northern Ghana almost 90% of households finds it difficult to access enough food for their households in July (Figure 29)<sup>38</sup>. It is important to note that the graph shows the trend for the months when people have reported having difficulties in accessing food and should not be interpreted to mean that over 90% of the households are food insecure during those months. The lean season starts earlier in the Upper East Region and also ends earlier because the early millet crop is usually harvested by the end of July and early August to bolster food reserves.

<sup>38</sup> Households were asked during which months they usually have difficulties getting enough food to eat.

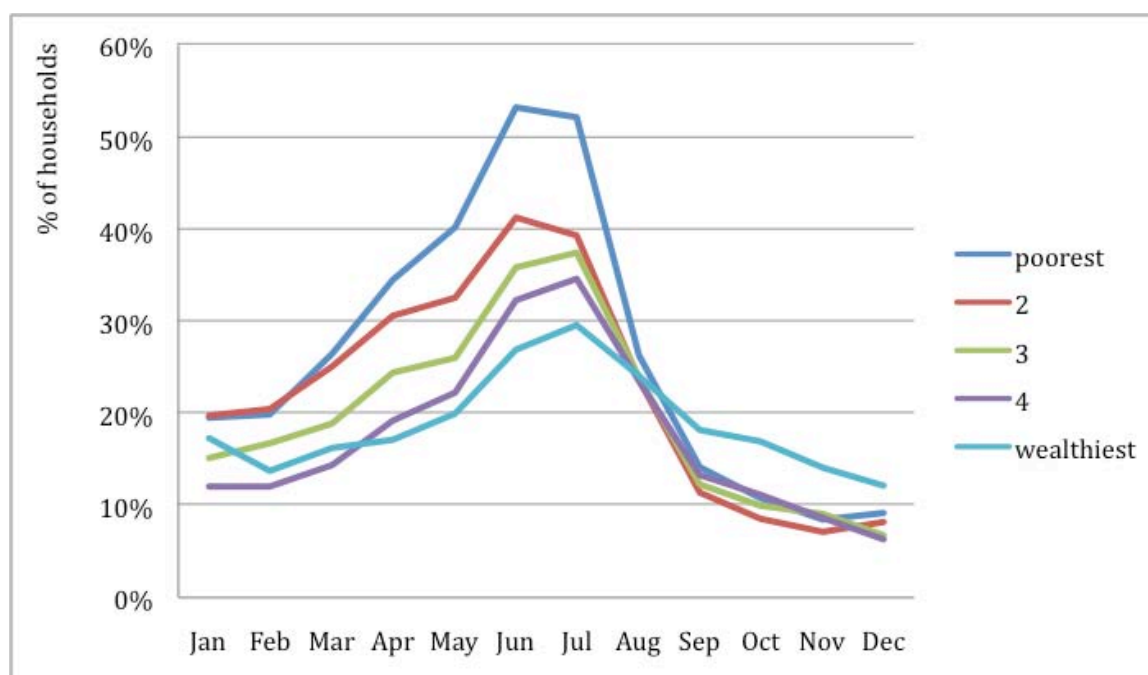
**Figure 29** Months during which households perceive difficulties finding enough food

Households across all wealth quintiles find it difficult to access enough food during the peak of the lean season, but poorer households are likely to find it more difficult to acquire enough food earlier in the year than wealthier quintiles. Wealthier households and those with better food consumption are at lower risk of becoming food insecure during the lean season thanks to larger harvests and additional resources to purchase food.

## 6.6 High food prices and dependence on purchased food during the lean season

A noticeable spike in the proportion of households purchasing the three major staple cereals (maize, millet and sorghum) lasts from April until August. During these lean season months, a high proportion of households (between 22% and 39%) mostly buy their grains. The increase in household grain purchases is consistent with the general trend in the market prices of these staples over the past five years. This price and purchasing trend will especially affect the poorer households because they usually run out of stock early in the lean season, becoming more dependent on the market for food purchases when prices are higher.

Households cultivating maize, cassava, rice millet or sorghum were asked to indicate the months during which they were mostly buying and mostly selling their crops. The trend is similar for all crops. For example, for maize, the most commonly consumed staple, it is clear that poor households rely more on markets during the lean season (Figure 30).

**Figure 30** Months during which households are buying more maize than they are selling

Smallholders more commonly mentioned high food price as a difficulty (18%) than medium (12%) and large scale farmers (6%). Yet smallholders are not one homogenous group: smallholders in the poorest wealth quintile spend 51% of their expenditure on food while those in the wealthiest quintile spend 37%. This means that poor smallholder farmers suffer most from rising prices of food since they are already spending more than half their expenditure on food, so have little lee-way when prices rise and are likely to resort to coping strategies that undermine their food security.

Wealthier households spend a smaller share of their total expenditure on food and a smaller share of their food expenditures on staples. They spend a larger share on meat and fish than poorer households (Table 12). The vulnerability of the poor households to increases in food prices is clear: they need to spend a larger portion of their income to meet their most basic food needs, so a rapid escalation in food prices would severely affect their food access.

**Table 12** Share of food expenditures spent on different food items by food consumption group

	Share of expenditure spent on food	Share of food expenditures spent on:				
		Staples	Vegetables and fruits	Meat and fish	Oil and butter	Food eaten outside the home
Poorest	49%	59%	10%	17%	11%	2%
2	44%	54%	10%	19%	12%	4%
3	41%	52%	11%	22%	11%	5%
4	36%	51%	10%	23%	10%	6%
Wealthiest	34%	49%	9%	25%	9%	7%

### A third of households faced a difficulty that hindered their food access for a time

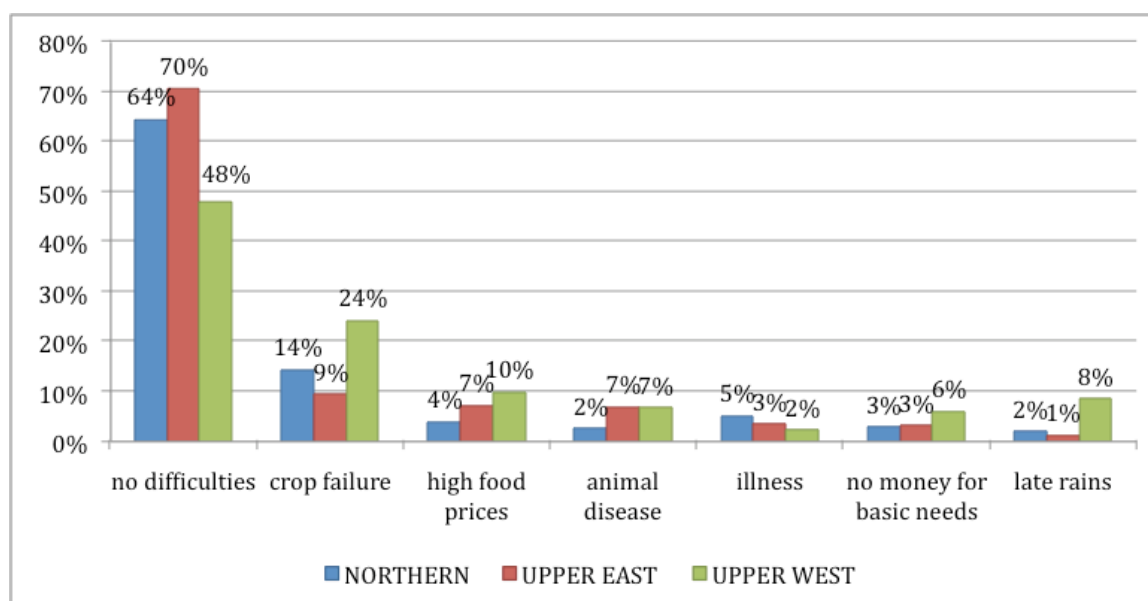
Households were asked whether they had experienced any difficulties the past 12 months. The majority of households had not experienced any difficulties, with the highest proportion of households not experiencing any difficulties in the Upper East Region (Figure 31). Of those households that experienced difficulties, the most common were crop failure and high food prices. In the Upper West Region almost a quarter of all households had experienced crop failure and 10% high food prices.

Of all households surveyed, 38% had experienced one or more difficulties during the last year with the most common difficulty being crop failure. This was mentioned as a difficulty by 40% of households that had experienced one or more shocks. Among all farming households, regardless of whether or not they faced difficulties, 15% reported a crop failure.

The majority of households that had experienced a difficulty in the past 12 months also mentioned that this difficulty had decreased their ability to produce or purchase enough food to eat for a period of time. In total, 32% of households had experienced a difficulty that decreased their food access for a time.

While most households were partially or completely recovered from their difficulties by the time of the survey, 8% had still not recovered. Although there are no great differences in the difficulties experienced between the food security groups, a higher percentage in the food insecure group had not recovered from the difficulties.

**Figure 31** Percentage of households experiencing difficulties by type of difficulty and region



The most common responses to difficulties are: selling livestock (8% of all households), not being able to do anything, looking for cheaper markets to purchase food and borrowing money. Selling livestock was the most common coping strategy for unskilled labourers, agro-pastoralists and agriculturalists. The traders mention that they look for cheaper markets, the fishermen most often borrow money and the regular employed mention bulk purchasing as a response to difficulties.

## ▶ | 7. DISTRICT PROFILES

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The results from the CFSVA are representative at district level which allows for a more in-depth portrayal and analysis of the food security situation than previous studies. As an in-depth analysis of all of the 38 districts surveyed is neither feasible nor particularly useful, the more notably poor districts in terms of wealth and food consumption were analysed in more detail alongside a brief analysis of the more well-off districts by way of contrast. However the CFSVA provides a large amount of district level data related to food security. Some selected variables are shown in Table 13. Additional district level tables can be found in the annex.

**Table 13** Key indicators by district

Districts:	Moderate or severe food insecurity	% in two poorest wealth quintiles	Smallholder households (5 or less acres)	Household heads without education	Girls between 15 and 18 not in school	No sanitation facilities	Households owning livestock
<b>Northern Districts:</b>							
Bole	28.2%	42.3%	65.5%	75.5%	71.7%	90.9%	79.8%
Bunkpurugu-Yunyoo	20.3%	65.3%	69.2%	81.5%	82.1%	91.4%	97.7%
Central Gonja	39.2%	59.0%	43.4%	86.0%	29.9%	98.2%	90.4%
Cherepone*	25.7%	44.1%	36.1%	70.0%	64.6%	85.5%	85.5%
East Gonja	0.9%	44.7%	70.9%	64.2%	88.9%	91.6%	63.2%
East Mamprusi	14.5%	33.6%	46.3%	68.6%	60.7%	88.2%	73.7%
Gushegu	22.2%	64.4%	22.1%	92.9%	36.3%	82.2%	88.8%
Karaga	11.0%	34.7%	14.8%	85.4%	52.5%	65.8%	75.5%
Kpandai	6.8%	45.9%	32.9%	71.8%	84.0%	77.7%	66.4%
Nanumba North	0.5%	8.1%	30.1%	65.8%	87.3%	61.3%	88.2%
Nanumba South	0.9%	59.8%	50.7%	78.5%	58.5%	99.5%	93.5%
Saboba	10.9%	31.7%	39.8%	87.3%	88.8%	77.8%	93.7%
Savelugu Nanton	5.0%	16.9%	42.9%	79.5%	72.7%	73.5%	95.9%
Sawla-Tuna-Kalba	8.2%	60.9%	72.7%	75.5%	76.5%	96.8%	82.9%
Tamale Metropolis	3.6%	8.6%	66.8%	77.7%	86.0%	43.6%	66.3%
Tolon-Kumbungu	14.9%	22.2%	53.2%	90.5%	42.6%	55.7%	94.1%
West Gonja	8.2%	49.5%	71.6%	75.9%	84.0%	90.5%	71.0%
West Mamprusi	5.0%	27.6%	33.3%	77.4%	90.4%	73.8%	74.0%
Yendi	9.5%	16.7%	42.9%	90.5%	81.6%	48.2%	91.9%
Zabzugu-Tatale	10.0%	38.4%	41.3%	89.0%	63.1%	71.7%	95.4%
<b>Total</b>	<b>9.7%</b>	<b>33.4%</b>	<b>50.4%</b>	<b>78.6%</b>	<b>76.4%</b>	<b>72.4%</b>	<b>81.1%</b>
<b>Upper East Districts:</b>							
Bawku Municipal	25.2%	55.4%	93.0%	77.9%	87.3%	99.1%	87.8%
Bawku West	6.3%	31.2%	74.5%	76.5%	93.2%	92.8%	94.4%
Bolga	28.2%	42.7%	84.2%	68.6%	83.7%	97.7%	97.6%
Bongo	20.2%	57.3%	96.8%	77.1%	86.4%	96.8%	91.7%
Builsa*	39.0%	60.6%	67.1%	66.8%	86.1%	81.4%	82.1%
Garu-Tempene	29.1%	70.0%	76.4%	83.9%	84.1%	96.9%	91.4%
Kassena-Nankana West	34.9%	67.0%	88.4%	75.7%	83.1%	97.7%	85.3%
Kassena-Nankana East	33.2%	51.4%	94.0%	58.2%	83.9%	83.6%	89.1%
Talensi-Nabdam	39.1%	69.5%	77.0%	85.5%	75.5%	90.5%	91.1%
<b>Total</b>	<b>28.2%</b>	<b>56.2%</b>	<b>83.9%</b>	<b>75.1%</b>	<b>85.0%</b>	<b>93.9%</b>	<b>90.2%</b>
<b>Upper West Districts:</b>							
Jirapa	23.6%	47.7%	53.0%	62.7%	86.3%	86.4%	90.6%
Lambussie-Karni	21.3%	58.8%	67.7%	69.7%	79.4%	69.2%	88.9%
Lawra	11.8%	27.1%	75.3%	47.1%	85.4%	59.3%	85.1%
Nadowli	2.7%	25.2%	82.4%	64.0%	74.9%	79.3%	93.6%
Sissala East	6.8%	22.6%	26.9%	51.6%	92.7%	86.4%	50.5%
Sissala West	2.3%	10.0%	9.0%	58.2%	88.5%	70.9%	81.7%
Wa East	24.5%	50.0%	46.8%	80.9%	83.6%	86.8%	85.0%
Wa Municipal	12.3%	32.7%	73.2%	69.5%	79.8%	81.8%	76.6%
Wa West	42.1%	81.9%	57.8%	87.3%	84.4%	88.2%	91.8%
<b>Total</b>	<b>16.2%</b>	<b>39.1%</b>	<b>60.1%</b>	<b>65.4%</b>	<b>83.5%</b>	<b>78.6%</b>	<b>83.8%</b>
<b>Total all districts</b>	<b>16.2%</b>	<b>41.1%</b>	<b>62.0%</b>	<b>75.2%</b>	<b>80.0%</b>	<b>79.8%</b>	<b>84.3%</b>

## 7.1 Analysis of the six worst-off districts

For the in-depth district analysis, the six districts with the highest proportion of food insecure households and the three districts with the lowest proportion of food insecure were selected for further analysis<sup>39</sup> (Table 14).

**Table 14** Food security and wealth in selected Districts

	Severely food insecure	Moderately food insecure	Mildly food insecure	Two poorest wealth quintiles
<i>Food insecure districts</i>				
Wa West	1.8%	40.3%	5.9%	81.9%
Central Gonja	4.5%	34.7%	14.0%	59.0%
Talensi-Nabdam	10.5%	28.6%	15.9%	69.5%
Kassena-Nankana West	5.5%	29.4%	11.5%	67.0%
Kassena-Nankana East	17.7%	15.5%	9.5%	51.4%
Garu-Tempene	4.5%	24.7%	5.8%	70.0%
<i>Food secure districts</i>				
Nanumba North	0.0%	0.5%	0.5%	8.1%
East Gonja	0.0%	0.9%	0.9%	44.7%
Sissala West	0.9%	1.4%	3.6%	10.0%
<b>Total Northern Ghana</b>	<b>3.3%</b>	<b>12.9%</b>	<b>9.9%</b>	<b>41.1%</b>

### Wa West

Wa West has the highest proportion of either severely or moderately food insecure households (42%) and some 82% of households are in the two poorest quintiles, making it the poorest district by wealth index.

There is a greater dependence on own production as a food source (49%), with a corresponding lower reliance on market purchases (48%) compared with other districts. This is a distinct contrast to other highly food insecure districts, which are typically more reliant on market purchases. Further analysis reveals that households in Wa West typically have reasonable harvests and remaining stocks of staple grains, but the consumption of food items outside this category is limited. As a result, there are few households falling into the more extreme 'poor' food consumption group, but very large numbers classified as 'borderline'. The below average wealth index figures possibly means households are less able to buy the range of foods required to increase dietary diversity. Also worth noting here is that the entire population of Wa West district is living in rural areas.

<sup>39</sup> There are indications that the prevalence of food insecure households in Builsa district is also high. Due to small sample size in this district the results are not representative and are therefore not analysed in-depth.

### Central Gonja

Central Gonja in the Northern Region has a high proportion of households that are either severely or moderately food insecure (39%) and poverty rates are high, with 59% of households in the two poorest wealth quintiles. Only 14% of household heads have primary education and only 30% of girls between 15 and 18 years attend school regularly, which is the lowest rate of all districts in the three northern regions.

Households in Central Gonja typically consume a wide range of staple foods, with frequent consumption of rice, cassava and other roots and tubers to complement maize and millet consumption. This represents a much wider variety of cereal consumption than other districts with comparable food consumption scores. Protein consumption in this district is still low however (on average consumed 2.8 days per week), which is why such a large proportion of households (49%) in the district are considered to have only borderline food consumption.

### Talensi-Nabdam

Talensi-Nabdam district has a high proportion of households classified as severely food insecure (at some 10%, this is well above the average rate of 3% for the three northern regions), indicating very low dietary diversity and inadequate energy intake.

Despite its rural population, Talensi-Nabdam has one of the lowest rates of reliance on own production for food. Households cite lack of access to fertilizer and pesticides (46%) as the main cause for not producing more during the 2011 growing season, alongside poor soil fertility (34% of households) and inadequate rainfall, which affected 30% of households. With more than 70% of households engaged in farming activities to sustain their livelihoods, food insecurity is likely to be serious during years of low volume harvests. Households typically have very low stocks of maize, along with below average stocks of millet/sorghum. Like Wa West district, Talensi-Nabdam also has much higher levels of poverty (based on wealth index scores), along with very high reliance on cash purchases for food.

### Kassena Nankana West

In Kassena Nankana West, 35% of households are either severely or moderately food insecure. What stands out in this district is the high rate of female headed households (20% vs the average of 8% across all three regions).

Household harvests of maize, millet and sorghum for 2011 were well below half that of the northern Ghana average, resulting in low household stocks for staple crops and very high rates of reliance on cash purchases. Households spend on average 60% of their total expenditure on food (average for Northern Ghana is 41%) and source 82% of their food from cash purchase.

A concerning factor regarding this reliance on cash purchases is the high number of households classified in the poorest two quintiles of the wealth index (67%), suggesting a limited capacity to purchase food once household stocks have been exhausted. According to the CFSVA data, this appears to be a clear case of households harvesting insufficient quantities of crops both for consumption and for sale as a source of income. Agricultural output is hampered by inadequate rainfall (65%) and crop failure (20%). The only crops households harvested in above average quantities were beans/peas.

### Kassena Nankana East

A third (33%) of the households are either severely or moderately food insecure and another 10% are mildly food insecure. This district has the highest proportion of households with severe food insecurity (almost 18%), whose diet mainly consists of staples and little else. More than half of the



households are in the two poorest wealth quintiles, yet there is a higher proportion of household heads who are educated: some 42% of household heads have primary education or higher compared with the average of 25%. Almost all are smallholder farmers with 94% cultivating less than five acres.

Even though almost 60% of households are agriculturalists or agro-pastoralists (i.e. their main source of income is from crop production of livestock), on average, 81% of food is sourced from cash purchases and only 17% from own production. Unsurprisingly, therefore, the most commonly mentioned difficulty experienced by households in the past year was high food prices (18% of households).

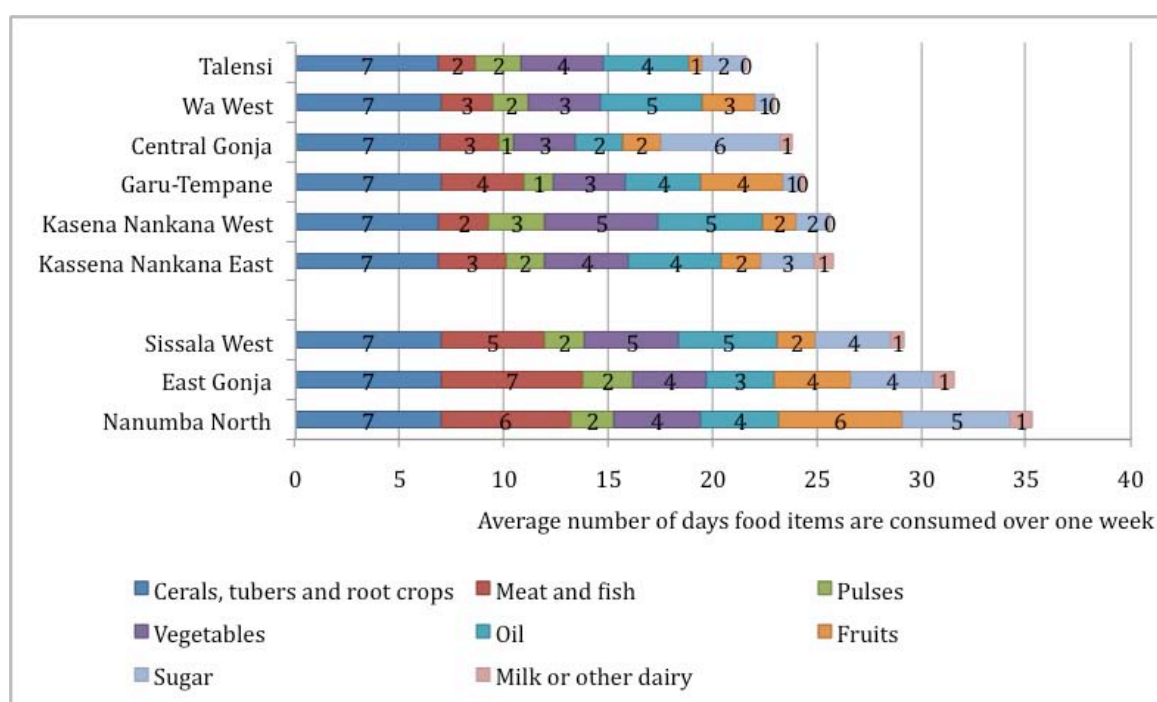
### Garu-Tempene

In Garu-Tempene, 5% of households are severely food insecure and another 25% are moderately food insecure. This, combined with more than 70% falling into the poorest wealth quintile suggests that in Garu-Tempene food insecurity is a chronic issue. Only 16% of household heads have at least primary education and an alarming 97% of households have no sanitation facilities, indicating the general levels of deprivation facing Garu-Tempene.

This district has the highest share of expenditure on food out of all districts in the three northern regions. On average, households spend 63% of their total expenditures on food compared to the 41% average for households in the northern regions. Also, market dependency is high with 63% of food sourced through cash purchases. Hence the most common difficulty facing households is high food prices, reported by 18% of those surveyed in Garu-Tempene.

Like many of the other districts in the Upper East Region, the main livelihood group is agro-pastoralism. Sixty-one percent of households are agro-pastoralists followed by 30% agriculturalists, making a total of 90% of households belonging to the two farming livelihoods. Farm sizes are small with 76% cultivating five acres or less - although 99% of households have access to land for cultivation. Households in this district mention lack of fertilizer as the main constraint to increasing crop production (mentioned by 18% of households).

**Figure 32** Average days of consumption of food groups in the last week in selected districts



## 7.2 Description of better performing districts

The analysis that follows focuses on districts that performed better in terms of our two key indicators, the food consumption score and wealth index.

### Sissala West

Households in Sissala West in general have good food consumption - only 2% are either severely or moderately food insecure. Farming is the most important livelihood activity with almost half of households being agriculturalists - but farming is done on a larger scale than in many other districts. Sissala West is the district where fewest households are smallholder farmers (only 9%). It is also more common to find household heads with at least primary education (40% compared to an average of 25%), which helps explain why these households are wealthier. Larger farm sizes, lower rates of households in the lower wealth quintiles and higher education rates indicate that households in this district are better off both in terms of food consumption and wealth.

### East Gonja

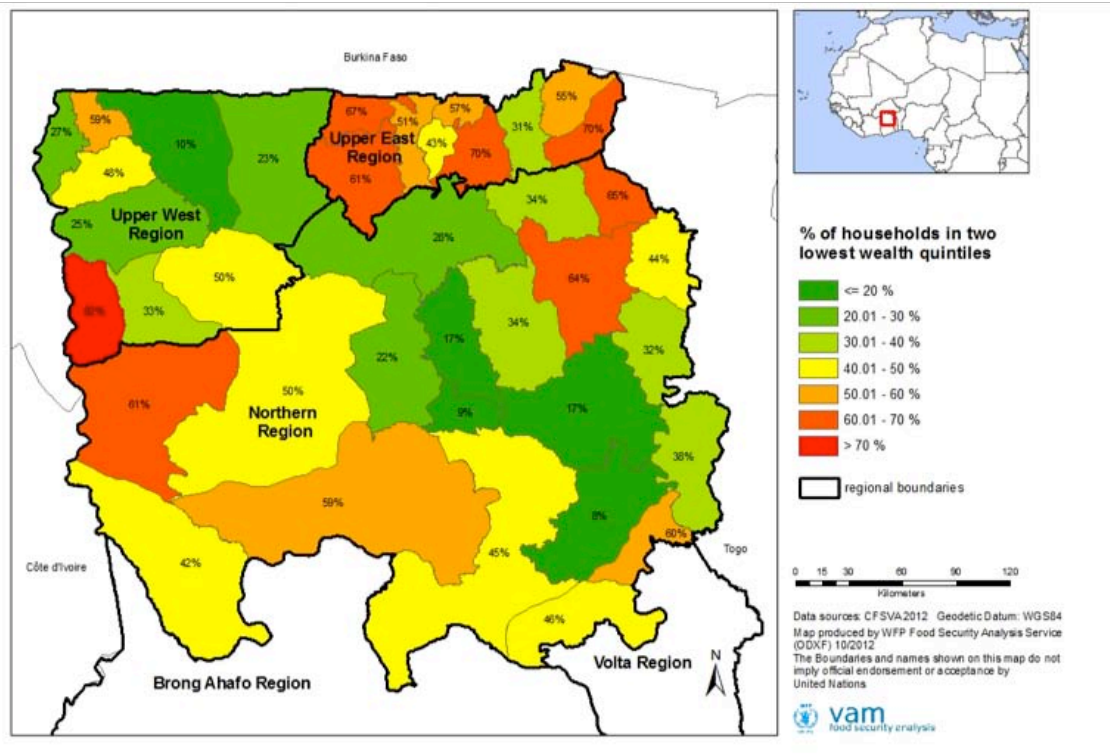
Of the households in East Gonja, 1% are either severely or moderately food insecure. These households spend 45% of their total expenditures on food and 46% of the food is sourced from cash purchase. More than one quarter of households have fishing as their main source of income and almost all other households obtain their income from farming activities. In East Gonja, 45% of households are in the two poorest wealth quintiles, which is high compared with other districts with low numbers of food insecure households. As noted above fishing households in general have good food consumption although they are not very wealthy.

### Nanumba North

Nanumba North in the Northern Region has the lowest rate of either severely or moderately food insecure households, less than 1%. In addition to this, only 8% of households are in the two poorest wealth quintiles.

Some 75% of households sustain their livelihoods through agriculture and 40% of the food comes from own production. Households in general have more land available for cultivation than other districts. Only 30% are smallholders versus an average of over 60% for the three regions, and a somewhat higher percentage of household heads (30%) are educated compared with an average of 25% across all three regions. The sanitation situation is also better, although 61% still have no sanitation facilities.

**Figure 33** Households in two lowest wealth quintiles by district



## ► | 8. THE UPPER EAST REGION

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A striking feature of the 2012 CFSVA results is the high proportion of food insecure households and higher proportions of households in the two poorest wealth quintiles in the Upper East Region. While the Upper East and Upper West regions have long been considered particularly disadvantaged, household food security in the Upper East is of particular concern. The relatively early commencement of the lean season in the Region (from late March) should be recognized as an important contributory factor to these results, which reflect a particular situation at a point in time when household access to food was likely to be constrained.

A large proportion of households in the Upper East reported difficulty in accessing food from April, at least one month earlier than the Northern and Upper West regions. Another key difference is the region's high population density, which, at 118 persons per km<sup>2</sup>, is much higher than the relatively low 35 persons per km<sup>2</sup> of the Northern Region and 38 persons per km<sup>2</sup> of the Upper West. The CFSVA shows that, on average, households in the Upper East cultivated just 4.4 acres of land in the 2011 season, compared with 9.8 in the Northern Region and 7.7 in Upper West. Access to land is important for households since agriculture (crop cultivation and keeping livestock) is the main source of livelihood. The scarcity of land constrains agricultural production, resulting in lower volumes of food production and lower incomes from agricultural production, potentially contributing to the higher rates of low household food consumption.

The CFSVA reveals that average household harvests in the Upper East Region are significantly below that of the other two regions for all widely grown staple and cash crops. The production of maize and millet is of great importance as these two food items are the backbone of diets amongst food insecure households. The average household maize harvest here was 40% lower than the northern Ghana average in the year preceding the survey (2011), and the sorghum/millet harvest was approximately 30% lower than the other two northern regions.

Limited access to land, however, is not the only constraint on production in the Upper East. The widespread cultivation of millet and sorghum in the region could be viewed as an adaptive response to the quality of soils, which are generally only suitable for the cultivation of limited crop varieties. This soil limitation is exacerbated by the region's relatively high poverty prevalence (56% of people are classed in the two poorest wealth quintiles), which severely limits household access to fertilizers. The limited ability to purchase agricultural inputs prevents growth and negatively affects food access.

None of these factors in their own right could be considered as the cause of high rates of food insecurity in the region. However, in combination, they constitute a series of interdependent pressures that hinder household access to food. This interdependence in turn makes it more difficult for households to improve both their food security situation and their incomes, and leaves them continually vulnerable to external shocks.

## ► | 9. CONCLUSION AND RECOMMENDATIONS

While the 2012 CFSVA is not directly comparable with the 2009 CFSVA because it was not carried out at the same time of year, it is still clear that food security in northern Ghana remains a major concern with more than 680,000 people estimated to be either severely or moderately food insecure. More than three in every 100 households are severely food insecure and of great concern.

While the 2012 CFSVA did not directly measure malnutrition rates, secondary sources have shown that this remains a major issue. The relationships between food security and nutrition in northern Ghana need examining. The nutritional status of children in the most food insecure districts in the CFSVA needs to be assessed, using data sources available, to ascertain the possibility of food security and nutrition specific interventions in these districts.

The highest proportion of food insecure households is found in the Upper East Region where 28% of households are either severely or moderately so. An important outcome of this survey is the food security information at district level, which is valuable for geographical targeting and can be used for investigating district level causes of food insecurity. There are large differences between the districts. Those with the highest proportion of food insecure households are in Wa West, Central Gonja, Talensi-Nabdam, Kassena-Nankana West and Kassena-Nankana East.

In addition to certain geographical areas with higher rates of food insecure households there are also sub-groups in the population that are at higher risk. Poorer households, smallholder farmers, female headed households and households where the head has no education have poorer food consumption than other groups. In the poorest wealth quintile, 13% of households had gone an entire day without eating at least once in the week preceding the survey.



The causes of food insecurity are complex, but there are four broad areas that stand out as more important and those are poverty, agricultural limitations, seasonal challenges and high food prices. By addressing general poverty issues in the regions, food security will improve.

Food access problems are seasonal with households experiencing difficulties during the peak of the lean season in June/July. During this period households become increasingly reliant on the market for food and again it is the poor smallholder households that suffer the most from high food prices.

Food prices would stabilize if the effect of weather related shocks on food production were controlled. To do this, vulnerable people in general and smallholder farmers in particular, in affected communities require increased investment in adaptation measures that sustain their agricultural production and household resilience during climatic disturbances such as droughts and flooding. They often face challenges specifically related to the cost of inputs such as fertilizer, leading to limited investment in agricultural production and a lower agricultural output.

A potential way of improving their resilience and increasing yields would be the seasonal implementation of cash transfers. It is also important to examine how food assistance modalities such as these could support urban livelihoods, such as artisans and unskilled labourers too, as they often face economic hardship during lean periods. These schemes should complement the Government of Ghana's poverty reduction programmes, especially LEAP (Livelihood Empowerment against Poverty).

It is recommended that food security and nutrition be actively promoted by the Government of Ghana, with the support of the UN system in Ghana, development partners and civil society organisations. Activities such as the SUN (Scaling up Nutrition) movement and the UN REACH (Renewed Effort against Child Hunger and Undernutrition) initiative, should be fully supported. It is vital that a Food and Nutrition Security Commission be established at the national and regional levels, to coordinate activities within this sector. It is further recommended that the relevant ministries, particularly the Ministry of Food and Agriculture, work closely with WFP to enable them to effectively analyse and monitor the food security situation throughout the country.

# GHANA CFSVA 2012

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**TECHNICAL ANNEX**

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## ▶ | GHANA CFSVA 2012 – TECHNICAL ANNEX

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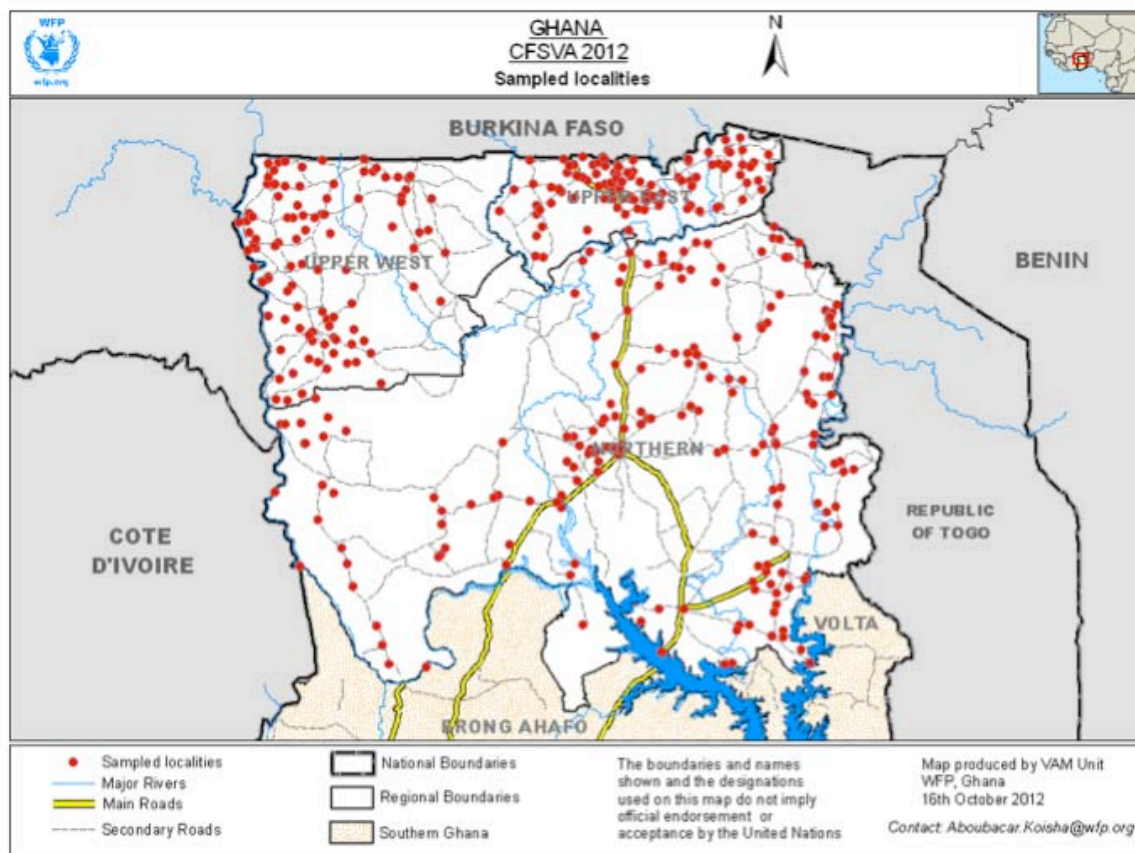
### Sampling and data collection

#### Sample design

A two-stage stratified cluster sample design was used in this survey. The survey was conducted in a total of 38 districts (strata) in the three northern regions of Ghana. The first stage of the two stage cluster sampling was the random selection of 11 clusters/communities in each district. Clusters for the CFSVA primary data collection were selected using the World Health Organisation's STEPS sampling tool. The STEPS tool allowed for the random selection of clusters in each district using weighted probabilities based on community populations. This provided WFP with a sample that accurately reflects the population distribution within each district, rather than skewing the sample towards smaller, more rural communities. A sampled list of communities (clusters) for each district was then cross-checked with enumerators of the Ministry of Food and Agriculture (MoFA), who confirmed the existence or otherwise of sampled communities and provided advice on accessibility during the primary data collection window. See sampled clusters in Figure 1 Sampled localities

The second stage was the random selection of households within the sampled clusters. The selection of households to participate in the survey was accomplished after the listing and random selection process by the team of enumerators or by selecting households along walked transects in random directions from the centre of the cluster.



**Figure 1** Sampled localities

### Sample size

The determination of the sample size for the 38 clusters was based on the guidelines in the CFSVA manual which stipulates a minimum sample of 200 households per strata. To meet this requirement and further retain ample sample size in the event of non-response, the number of clusters was increased to 11 per strata with 20 households sampled in each cluster, bringing the total sample per cluster to about 220. A total 8,399 households were sampled in the survey.

### Questionnaire

Households were asked questions regarding:

- Demographic composition of household and education;
- Migration;
- Housing facilities and assets owned;
- Agriculture and access to markets;
- Income sources and access to credit;
- Expenditures;
- Food consumption and sources of food;
- Shocks, risk and coping and;
- Assistance

### Data collection and entry

Data collection in each of the 38 strata was conducted by a team of 3 enumerators who all participated in a 4-day pre-survey training on the administration of the questionnaire with the Personal Digital Assistant (PDA).

Data was analysed using the SPSS software.

### Computation of key indicators

#### Food consumption score

Food consumption is a reflection of food availability and food access at the household level and is frequently used as a proxy indicator of the current food security situation. The Food Consumption Score is a composite score based on the dietary diversity, food frequency, and relative nutritional importance of various food groups consumed by a household.

Households were asked how many days in the week preceding the survey they had eaten a food item from a list of various food items eaten commonly in northern Ghana. Those items are divided into eight standard food groups: main staples (such as maize, millet, rice, bread and cassava); pulses, beans and nuts; meat, fish, poultry and eggs; vegetables (including green leafy vegetables); fruits; oils and fats; milk and other dairy products; and sugar.

Once the items are categorized into the appropriate food groups, the nutritional value of each group (Table 1) and the frequency of consumption (with a maximum of seven days per group) are used to calculate the FCS. This is done by multiplying each food group frequency by each food group weight, and then summing these scores into one composite score.

**Table 1** Food groups and weights used to calculate FCS

Food item	Food group	Weight
Maize, millet, rice, cassava, bread, roots and tubers, plantain	Cereals, tubers and crops	2
Pulses, beans and nuts	Pulses	3
Vegetables	Vegetables	1
Fruits	Fruits	1
Fish, poultry, red meat and bush meat	Meat and fish	4
Milk and milk products	Milk	4
Sugar, honey and sweets	Sugar	0.5
Oil, butter and shea butter	Oil	0.5

The FCS is a continuous variable with a range from 0 to 112. To provide more meaningful descriptive analysis of food consumption than reporting average scores, households are categorized into food consumption groups based on their FCS. The standard food consumption groups are poor, borderline, and acceptable food consumption. A score below 21 is considered poor food consumption and a score below 35 is defined as borderline food consumption (Table 2).

To ensure that the FCS is an appropriate and valid proxy indicator of food security in northern Ghana, it was tested for correlations with other food security indicators. In this case the Wealth Index and the share of monthly expenditures on food. Bivariate correlation analysis showed expected coefficients with statistical significance. Based on these results, the FCS was considered an adequate proxy for measuring the current food security situation in northern Ghana.

**Table 2** FCS thresholds used as cut-off for FCG

Food consumption group	Thresholds
Poor	0 - 21
Borderline	21 -35
Acceptable	> 35

### Wealth index methodology

The wealth index is a proxy indicator for household wealth based on ownership of certain assets and housing conditions which can explain the wealth of households in this context. The method is employed in WFP food security assessments and follows techniques used in DHS surveys. It involves Principal Component Analysis (PCA) of variables relating to ownership of assets and housing conditions. The PCA method is a form of data reduction which attempts to describe the underlying relationship between a series of variables. The PCA creates a continuous variable which explains the underlying relationship and can be used as a proxy for household wealth. As the continuous variable alone is not easily interpreted, it is used to rank households and divide them into quintiles which are more easily describable. These wealth quintiles allow for descriptive analysis of relative poverty.

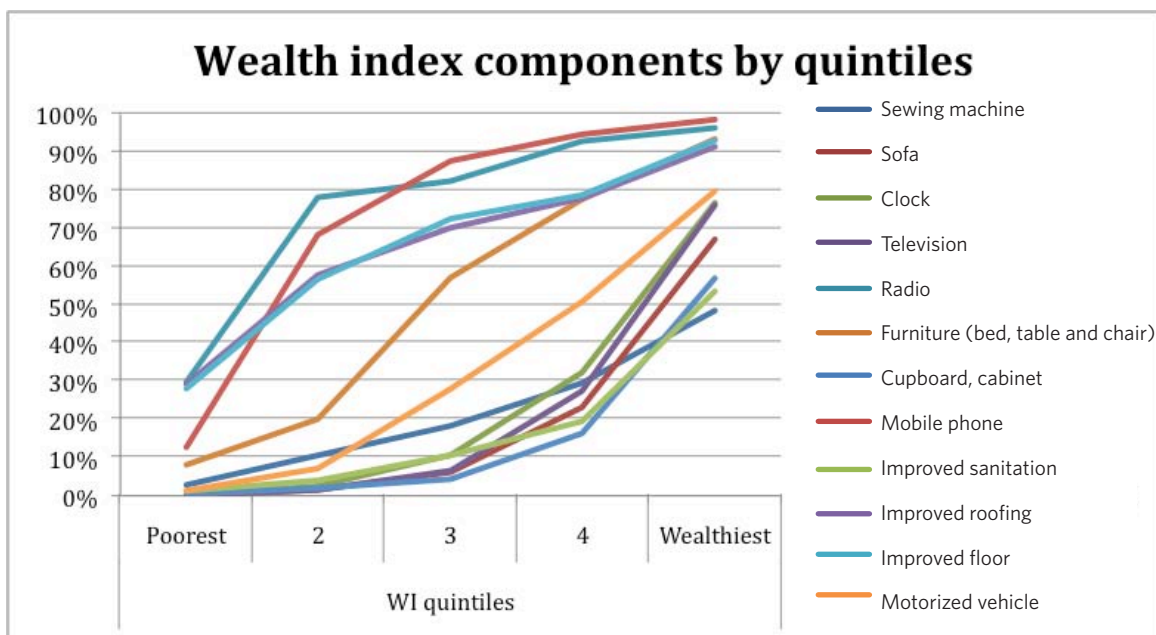
The selection of variables was based up on a low level of both under- and over-correlation between variables as well as a sufficient proportion of households with presence of the attribute (> 5 % of households and <95%). Livelihood specific assets were not included in the index, nor were variables showing small variance across the wealth quintiles, for example improved drinking water, which was found to be common over all wealth quintiles and ownership of refrigerator which was only found among those in the wealthiest quintile. Certain variables were grouped together to better explain the wealth situation. Ownership of boat with motor, car/truck or motorbike/scooter was combined into ownership of a motorized asset and ownership of bed, chair and table was combined into the variable owning furniture.

A series of iterations of the wealth index was run until an appropriate model was found. The variables used in the final model were ownership of:

- Bed, table and chair
- sewing machine,
- sofa,
- clock,
- radio,
- television,
- cupboard, cabinet,
- mobile phone,
- improved sanitation improved roofing,
- improved floor and
- motorized vehicle.

The graphs below (Figure 2) illustrate the relationship between the factors in the model and the created wealth quintiles.

**Figure 2** Assets ownership and housing conditions by wealth quintiles



### Food Security Groups

Food security groups were created and households were divided into four food security groups based on food consumption and wealth:

1. *Severely food insecure - Households with poor food consumption*  
These households are clearly food insecure since their diet is very poor and mainly based on staples.
2. *Moderately food insecure - Households with borderline food consumption and in the two lowest (poorest) wealth quintiles*  
These households have slightly better food consumption but are at the same time poor in terms of asset ownership and are therefore likely to be in chronic food insecurity
3. *Mildly food insecure - Households with borderline food consumption and in the three highest (wealthiest) quintiles*  
These households have inadequate diet, but because of other resources available in terms of their asset ownership, they have less severe food security situation. Although their diet is less than acceptable, they are more likely to be only temporarily food insecure compared with poorer households
4. *Food secure - Households with acceptable food consumption*  
The food secure households have an acceptable food consumption and therefore likely to be able to sustain a healthy living based on their present diet.

### Analysis of livelihood groups

Households were asked to mention up to three activities that they are engaged in to sustain their livelihood. The activities were coded as one of the following: crops, livestock, fishing/fish farming, artisanry, trading, food processing, support, regular employment and casual employment. In the cases where more than one activity was mentioned, the activities were ranked in order of importance.

It was commonly found that the households earn their income from more than one activity. Among the households, 23% mentioned only one activity as their main source of income, while 47% mentioned two and 30% mentioned three different activities to sustain their livelihood. Since almost 80 per cent of the households are engaged in more than one activity much of the information would be lost if only the main activity (ranked no 1) was used in further analysis. For that reason livelihood groups were created based on the relative contribution from each activity.

Households were asked to estimate the income from each activity and based on the relative proportion of income from each activity a K-means cluster analysis using SPSS was conducted. A cluster analysis was also performed using the ADDATI software, which is specifically developed for this kind of analysis. The results from the two different analyses were fairly similar. The biggest difference being that in the analysis from ADDATI a unique group for people receiving support was created. However, this group was found to be very small (eleven households) and further analysis of this group would most likely not generate any significant results. Since this was the only important difference, in following analysis of livelihood groups, the clusters created in SPSS were used.

The cluster analysis from SPSS created eight groups representing the livelihood groups of fishermen, unskilled labour, agriculturalist, agro-pastoralists, artisans, traders, regular employed and food processors.

Table 3 below shows the share of income from different activities in the livelihood groups.

**Table 3** Sources of income in the different livelihood groups

Livelihood Group	Number of households	% of households	Share of income from:								
			Crops	Live-stock	Fishing	Artistry	Trading	Food Processing	Support	Regular Employment	Casual Employment
Fishermen	130	1.6	22%	4%	73%	0%	1%	0%	0%	0%	0%
Unskilled Labour	308	3.8	29%	5%	0%	3%	3%	0%	3%	0%	56%
Agriculturalist	3700	45.6	88%	5%	0%	1%	4%	1%	0%	0%	1%
Agro-pastoralists	2360	29.1	43%	49%	0%	2%	4%	1%	0%	0%	1%
Artisans	285	3.5	19%	6%	0%	66%	6%	1%	0%	1%	1%
Traders	817	10.1	23%	5%	0%	2%	68%	1%	0%	1%	1%
Regular Employment	421	5.2	11%	2%	0%	2%	6%	78%	0%	78%	1%
Food Processors	89	1.1	16%	4%	0%	1%	3%	1%	0%	1%	1%
Total	8110	100	58%	18%	1%	4%	10%	4%	0%	4%	3%

### Crop clusters in the three northern regions of Ghana

In the questionnaire, households were asked to mention up to three main crops they had cultivated the past 12 months. Based on the average number of households cultivating the different crops in each district a cluster analysis using the ADDATI software was performed. The analysis grouped the districts into 12 separate clusters of districts, showing the differences in presence of crops grown across the regions.

**Table 4** Percentage of households growing different crops by crop cluster

	Maize Cassava Yam	Maize Millet (Sorghum / Soya)	Maize Rice- Soya	Maize - Bean- Gdnut (Sorghum)	Maize Gdnut- (Sorghum)	Gdnut Millet- Rice	Sorghum- Millet-Gdnut (Rice)	Yam-Soya- (Maize)	Yam- Gdnut- Cassava	Rice Maize	Maize- Millet- Rice	Maize- Millet- Rice
Maize	84%	93%	86%	77%	78%	54%	17%	70%	51%	66%	96%	18%
Millet	2%	63%	18%	12%	12%	52%	64%	5%	14%	1%	68%	20%
Rice	11%	10%	29%	17%	11%	43%	37%	8%	8%	57%	67%	29%
Sorghum	9%	31%	12%	31%	35%	33%	83%	9%	21%	2%	37%	17%
Cassava	41%	0%	2%	0%	1%	0%	0%	4%	11%	3%	0%	0%
Yam	64%	1%	27%	5%	13%	0%	0%	64%	87%	11%	0%	0%
Groundnut	22%	14%	37%	65%	50%	67%	62%	28%	55%	12%	2%	18%
Soya Bean	3%	25%	28%	3%	3%	1%	1%	50%	1%	8%	5%	6%
Beans	3%	10%	8%	41%	11%	1%	5%	1%	3%	1%	2%	1%

Table 5 Crop cluster and presence of crops by district

District	Class	Cluster/Descriptor	Maize	Millet	Rice	Sorghum	Cassava	Yam	Groundnut	Soya beans	Beans/Peas
CENTRAL GONJA	1	Maize-Cassava-Yam	91%	0%	23%	0%	53%	44%	31%	0%	1%
EAST GONJA	1	Maize-Cassava-Yam	83%	3%	15%	5%	31%	50%	8%	4%	2%
KPANDAI	1	Maize-Cassava-Yam	77%	1%	4%	5%	58%	77%	17%	0%	2%
NANUMBA NORTH	1	Maize-Cassava-Yam	83%	2%	9%	20%	34%	95%	35%	7%	0%
WEST GONJA	1	Maize-Cassava-Yam	92%	0%	2%	11%	31%	43%	25%	0%	11%
BAWKU MUNICIPAL	2	Maize-Millet-Sorghum	92%	71%	10%	25%	0%	0%	4%	38%	14%
BUNKPURUGU	2	Maize-Millet-Sorghum	94%	49%	10%	30%	0%	5%	18%	18%	14%
EAST MAMPRUSI	2	Maize-Millet-Sorghum	90%	63%	2%	18%	0%	0%	45%	22%	5%
GARU-TEMPANE	2	Maize-Millet-Sorghum	94%	62%	17%	54%	0%	0%	3%	10%	2%
CHEREPONI	3	Maize-Groundnuts-Soya beans	87%	7%	43%	22%	0%	13%	29%	38%	14%
GUSHEGU	3	Maize-Groundnuts-Soya beans	79%	28%	20%	27%	2%	31%	24%	27%	4%
KARAGA	3	Maize-Groundnuts-Soya beans	95%	0%	30%	3%	1%	40%	58%	31%	0%
SAVELUGU NANTON	3	Maize-Groundnuts-Soya beans	61%	0%	45%	5%	4%	22%	49%	43%	5%
WA EAST	3	Maize-Groundnuts-Soya beans	96%	27%	33%	10%	6%	45%	31%	22%	10%
WA MUNICIPAL	3	Maize-Groundnuts-Soya beans	88%	10%	10%	8%	2%	48%	43%	18%	9%
WEST MAMPRUSI	3	Maize-Groundnuts-Soya beans	98%	41%	33%	15%	0%	0%	29%	26%	10%
JIRAPA-LAMBUSSIE	4	Maize-Beans-Sorghum	73%	20%	14%	39%	0%	0%	73%	0%	30%
NADOWLI	4	Maize-Beans-Sorghum	81%	5%	21%	23%	0%	9%	59%	5%	52%
LAMBUSSIE-KARNI	5	Maize-Groundnut-Sorghum	75%	18%	13%	28%	0%	2%	57%	1%	22%
LAWRA	5	Maize-Groundnut-Sorghum	81%	20%	13%	37%	0%	0%	48%	1%	4%
SAWLA-TUNA-KALBA	5	Maize-Groundnut-Sorghum	56%	13%	13%	31%	5%	29%	35%	2%	11%
SISSALA EAST	5	Maize-Groundnut-Sorghum	77%	0%	7%	4%	2%	25%	36%	2%	12%
SISSALA WEST	5	Maize-Groundnut-Sorghum	93%	15%	3%	14%	0%	13%	73%	9%	17%
WA WEST	5	Maize-Groundnut-Sorghum	92%	3%	12%	76%	0%	9%	62%	5%	11%
BUILSA	6	Groundnut-Millet-Rice	54%	73%	33%	31%	0%	0%	54%	0%	2%
KASSENA NAIKANA EAST	6	Groundnut-Millet-Rice	55%	35%	58%	25%	0%	0%	60%	1%	1%
KASSENA NAIKANA WEST	6	Groundnut-Millet-Rice	53%	44%	42%	41%	0%	0%	84%	1%	0%
BOLGATANGA	7	Sorghum-Millet-Groundnut	21%	65%	35%	80%	0%	0%	54%	1%	7%
BONGO	7	Sorghum-Millet-Groundnut	10%	63%	42%	90%	0%	0%	78%	1%	1%
SABOBA	8	Yam-Soya-Maize	67%	6%	10%	16%	5%	63%	19%	57%	3%
YENDI	8	Yam-Soya-Maize	72%	4%	7%	6%	4%	64%	31%	47%	0%
BOLE	9	Yam-Gdnut-Cassava	59%	3%	4%	30%	21%	71%	34%	0%	6%
NANUMBA SOUTH	9	Yam-Gdnut-Cassava	56%	0%	13%	5%	15%	90%	58%	0%	1%
ZABZUGU TATALE	9	Yam-Gdnut-Cassava	41%	35%	6%	28%	1%	97%	68%	1%	2%
TAMALE METRO	10	Rice-Maize	60%	0%	58%	1%	0%	10%	8%	8%	1%
TOLOK KUMBUNGU	10	Rice-Maize	95%	2%	52%	5%	13%	19%	33%	6%	1%
BAWKU WEST	11	Maize-Millet-Rice	96%	68%	67%	37%	0%	0%	2%	5%	2%
TALENSI-NABDAM	12	Rice-Millet	18%	20%	29%	17%	0%	0%	18%	6%	1%

## Limitations

### Food consumption data in Cherepone and Builsa districts

The Cherepone district, located in the Northern Region, reported a very high prevalence of poor and borderline food consumption. The findings for this district were unexpected and by many with in-country knowledge, considered to be erroneous.

Further analysis of the food consumption patterns of the district revealed that it had the lowest consumption of meat or fish in all of northern Ghana with 44% of households reporting that they had not eaten meat or fish even once during the course of the week. In its neighbouring district of Saboba, only 8% of households reported never having eaten meat or fish in the past week. The deviation from the expected consumption of meat has a very large impact on the food consumption score where the weight of this food group is 4, the highest possible for all food groups. This has led to Cherepone having the highest prevalence of poor (19%) and borderline (51%) food consumption in all districts surveyed.

The cause of the unexpectedly low consumption of meat seems to have been introduced by errors during household interviews. It was found that two specific enumerators in this district had a very low reported food consumption score. In fact, these two enumerators were among the three most deviated from the average food consumption score in all districts surveyed (z-score = -2.07 and -1.81). The third enumerator in this category, who worked in Builsa district, was also found to have scores significantly lower than other enumerators in the same district especially in the food groups of vegetables, sugar and meat and fish. After thoroughly analyzing the data from these enumerators and validating with local knowledge it was decided to exclude the data from these enumerators from further analysis although this will result in a smaller sample of household that cannot be seen as statistically representative.



## ► | TABLES

<b>Table 6</b>	Selected food security indicators	75
<b>Table 7</b>	Sex and age of household head	76
<b>Table 8</b>	Education of household head	77
<b>Table 9</b>	Marital status of household head	78
<b>Table 10</b>	School attendance	79
<b>Table 11</b>	Reasons for not attending school	80
<b>Table 12</b>	Households with migrating household members	81
<b>Table 13</b>	Times when household members migrate	82
<b>Table 14</b>	Reasons for migration	83
<b>Table 15</b>	Types of transfer made by migrants	83
<b>Table 16</b>	Amount transferred by migrants	84
<b>Table 17</b>	Type of housing structure	85
<b>Table 18</b>	Own or rent dwelling	86
<b>Table 19</b>	Type of toilet facility	87
<b>Table 20</b>	Source of lighting	88
<b>Table 21</b>	Main source of drinking water	89
<b>Table 22</b>	Main source of drinking water, continued	90
<b>Table 23</b>	Asset ownership	91
<b>Table 24</b>	Asset ownership, continued	92
<b>Table 25</b>	Asset ownership, continued	93
<b>Table 26</b>	Asset ownership, continued	94
<b>Table 27</b>	Improved housing conditions	95
<b>Table 28</b>	Improved sanitation facilities	96
<b>Table 29</b>	Wealth quintiles	97
<b>Table 30</b>	Access to land for cultivation	98
<b>Table 31</b>	Households access to land for cultivation	99
<b>Table 32</b>	Size of land available for cultivation	100
<b>Table 33</b>	Land available, cultivated and harvested	101
<b>Table 34</b>	Households cultivating different type of cereals and tubers as their main crop	102
<b>Table 35</b>	Households cultivating pulses and other crops as their main crop	103
<b>Table 36</b>	Households cultivating vegetables as their main crop	104
<b>Table 37</b>	Most common crops cultivated (one of three most important crops mentioned by households)	105
<b>Table 38</b>	Agricultural constraints	106
<b>Table 39</b>	Most common constraints to not producing more agricultural output	107
<b>Table 40</b>	Types of irrigation	108
<b>Table 41</b>	Changes in agricultural production	109
<b>Table 42</b>	Livestock ownership	110
<b>Table 43</b>	Households practice fishing/fish farming	111

<b>Table 44</b>	Household members in income earning activity	112
<b>Table 45</b>	Main income activity mentioned by households	113
<b>Table 46</b>	Livelihood groups based on three main income activities	114
<b>Table 47</b>	Livelihood and wealth	115
<b>Table 48</b>	Livelihood and education and sex of household head	115
<b>Table 49</b>	Livelihood and food security	116
<b>Table 50</b>	Livelihood and loans or debt to pay back	116
<b>Table 51</b>	Coping strategies used in the different livelihood groups	117
<b>Table 52</b>	Expenditure posts in livelihood groups	118
<b>Table 53</b>	Food sources in livelihood groups	119
<b>Table 54</b>	Level of total income compared to 12 months ago	120
<b>Table 55</b>	Support to/from relatives or friends in the past 6 months	121
<b>Table 56</b>	Reasons for increased income mentioned by households	122
<b>Table 57</b>	Reasons for decreased income mentioned by the households	122
<b>Table 58</b>	Household with loans and sources of loan/credit available	123
<b>Table 59</b>	Reasons for taking loan	124
<b>Table 60</b>	Household debt compared to one year ago	125
<b>Table 61</b>	Expenditure posts	126
<b>Table 62</b>	Expenditure posts, continued	127
<b>Table 63</b>	Food expenditures	128
<b>Table 64</b>	Change in overall household expenditures	129
<b>Table 65</b>	Two main changes in expenditure experienced by the households	130
<b>Table 66</b>	Two main reasons for change in expenditure experienced by households	130
<b>Table 67</b>	Food items or services purchased on credit in the last month	131
<b>Table 68</b>	Food sources	132
<b>Table 69</b>	Average number of meals eaten the previous day	133
<b>Table 70</b>	Food consumption groups	134
<b>Table 71</b>	Average consumption of food items from different groups	135
<b>Table 72</b>	Food security groups	136
<b>Table 73</b>	Food security by livelihood, farm size, wealth, education and sex of households head	137
<b>Table 74</b>	Food sources by livelihood, farm size, wealth, food security, education and sex of households head	138
<b>Table 75</b>	Food related coping strategies	139
<b>Table 76</b>	Food related coping strategies, continued	140
<b>Table 77</b>	Months when households perceive difficulties in finding enough food	141
<b>Table 78</b>	Most common difficulties experienced by households over the past 12 months	142
<b>Table 79</b>	Responses to difficulties	143
<b>Table 80</b>	Food and non-food assistance	144

**Table 6** Selected food security indicators

Districts:	Food insecure households	Wealth: Two poorest quintiles	Expenditures: Share spent on food	Livelihoods: Most common livelihood	Farm size Smallholder (5 or less acres)
Northern districts:					
Bole	28.2%	42.3%	43%	Agriculturalists	65.5%
Bunkpurugu-Yunyoo	20.3%	65.3%	39%	Agro-pastoralists	69.2%
Central Gonja	39.2%	59.0%	33%	Agriculturalists	43.4%
Cherepone	25.7%	44.1%	31%	Agriculturalists	36.1%
East Gonja	0.9%	44.7%	45%	Agriculturalists	70.9%
East Mamprusi	14.5%	33.6%	38%	Agriculturalists	46.3%
Gushegu	22.2%	64.4%	37%	Agriculturalists	22.1%
Karaga	11.0%	34.7%	25%	Agriculturalists	14.8%
Kpandai	6.8%	45.9%	40%	Agriculturalists	32.9%
Nanumba North	0.5%	8.1%	36%	Agriculturalists	30.1%
Nanumba South	0.9%	59.8%	26%	Agriculturalists	50.7%
Saboba	10.9%	31.7%	28%	Agriculturalists	39.8%
Savelugu-Nanton	5.0%	16.9%	39%	Agriculturalists	42.9%
Sawla-Tuna-Kalba	8.2%	60.9%	32%	Agriculturalists	72.7%
Tamale Metropolis	3.6%	8.6%	28%	Agriculturalists	66.8%
Tolon-Kumbungu	14.9%	22.2%	33%	Agriculturalists	53.2%
West Gonja	8.2%	49.5%	45%	Agriculturalists	71.6%
West Mamprusi	5.0%	27.6%	42%	Agriculturalists	33.3%
Yendi	9.5%	16.7%	43%	Agriculturalists	42.9%
Zabzugu-Tatale	10.0%	38.4%	27%	Agriculturalists	41.3%
<b>Total</b>	<b>9.7%</b>	<b>33.4%</b>	<b>36%</b>	<b>Agriculturalists</b>	<b>50.4%</b>
Upper East districts:					
Bawku Municipal	25.2%	55.4%	38%	Agro-pastoralists	93.0%
Bawku West	6.3%	31.2%	33%	Agro-pastoralists	74.5%
Bolgatanga Municipal	28.2%	42.7%	49%	Artisans	84.2%
Bongo	20.2%	57.3%	55%	Agro-pastoralists	96.8%
Builsa	39.0%	60.6%	48%	Agriculturalists	67.1%
Garu-Tempane	29.1%	70.0%	63%	Agro-pastoralists	76.4%
Kassena Nankana West	34.9%	67.0%	60%	Agro-pastoralists	88.4%
Kassena Nankana East	33.2%	51.4%	37%	Agriculturalists	94.0%
Talensi-Nabdam	39.1%	69.5%	55%	Agro-pastoralists	77.0%
<b>Total</b>	<b>28.2%</b>	<b>56.2%</b>	<b>48%</b>	<b>Agro-pastoralists</b>	<b>83.9%</b>
Upper West districts:					
Jirapa	23.6%	47.7%	43%	Agriculturalists	53.0%
Lambussie-Karni	21.3%	58.8%	47%	Agriculturalists	67.7%
Lawra	11.8%	27.1%	40%	Agriculturalists	75.3%
Nadowli	2.7%	25.2%	42%	Agro-pastoralists	82.4%
Sissala East	6.8%	22.6%	46%	Agriculturalists	26.9%
Sissala West	2.3%	10.0%	27%	Agriculturalists	9.0%
Wa East	24.5%	50.0%	50%	Agro-pastoralists	46.8%
Wa Municipal	12.3%	32.7%	39%	Agriculturalists	73.2%
Wa West	42.1%	81.9%	46%	Agro-pastoralists	57.8%
<b>Total</b>	<b>16.2%</b>	<b>39.1%</b>	<b>42%</b>	<b>Agriculturalists</b>	<b>60.1%</b>
Urban	3.5%	11.6%	35%	Agriculturalists	64.2%
Rural	18.8%	47.1%	42%	Agriculturalists	61.6%
<b>Total</b>	<b>16.2%</b>	<b>41.1%</b>	<b>41%</b>	<b>Agriculturalists</b>	<b>62.0%</b>

**Table 7** Sex and age of household head

Districts	Sex:		Age (mean)	Age groups:		
	Male	Female		under 18 years	18-59 years	60 years or older
<b>Northern districts:</b>						
Bole	90.0%	10.0%	51	0.0%	72.7%	27.3%
Bunkpurugu-Yunyoo	91.4%	8.6%	47	0.0%	88.3%	11.7%
Central Gonja	96.4%	3.6%	48	0.0%	84.2%	15.8%
Cherepone	94.3%	5.7%	46	.4%	82.4%	17.2%
East Gonja	98.7%	1.3%	46	0.0%	87.2%	12.8%
East Mamprusi	95.9%	4.1%	43	0.0%	85.0%	15.0%
Gushegu	98.7%	1.3%	47	0.0%	81.8%	18.2%
Karaga	87.2%	12.8%	46	0.0%	79.5%	20.5%
Kpandai	96.8%	3.2%	48	0.0%	84.5%	15.5%
Nanumba North	96.8%	3.2%	52	0.0%	74.3%	25.7%
Nanumba South	94.1%	5.9%	46	0.0%	78.1%	21.9%
Saboba	99.5%	.5%	47	0.0%	80.1%	19.9%
Savelugu-Nanton	97.7%	2.3%	54	0.0%	58.4%	41.6%
Sawla-Tuna-Kalba	76.8%	23.2%	47	0.0%	77.3%	22.7%
Tamale Metropolis	95.9%	4.1%	51	0.0%	71.8%	28.2%
Tolon-Kumbungu	97.3%	2.7%	48	0.0%	72.9%	27.1%
West Gonja	88.6%	11.4%	43	0.0%	87.7%	12.3%
West Mamprusi	95.9%	4.1%	48	0.0%	88.7%	11.3%
Yendi	95.0%	5.0%	49	0.0%	78.8%	21.2%
Zabzugu-Tatale	100.0%	0.0%	43	0.0%	86.3%	13.7%
<b>Total</b>	<b>94.8%</b>	<b>5.2%</b>	<b>48</b>	<b>.0%</b>	<b>79.1%</b>	<b>20.9%</b>
<b>Upper East districts:</b>						
Bawku Municipal	93.7%	6.3%	48	0.0%	77.9%	22.1%
Bawku West	81.0%	19.0%	49	0.0%	85.1%	14.9%
Bolgatanga Municipal	80.0%	20.0%	53	0.0%	66.8%	33.2%
Bongo	82.6%	17.4%	54	0.0%	68.8%	31.2%
Builsa	88.9%	11.1%	52	0.0%	70.4%	29.6%
Garu-Tempene	88.8%	11.2%	53	0.0%	65.0%	35.0%
Kassena Nankana West	79.8%	20.2%	51	0.0%	70.2%	29.8%
Kassena Nankana East	80.9%	19.1%	50	0.0%	81.8%	18.2%
Talensi-Nabdam	87.7%	12.3%	44	0.0%	92.3%	7.7%
<b>Total</b>	<b>85.5%</b>	<b>14.5%</b>	<b>50</b>	<b>0.0%</b>	<b>75.3%</b>	<b>24.7%</b>
<b>Upper West districts:</b>						
Jirapa	86.4%	13.6%	50	0.0%	73.2%	26.8%
Lambussie-Karni	86.9%	13.1%	50	0.0%	79.2%	20.8%
Lawra	95.9%	4.1%	50	0.0%	82.4%	17.6%
Nadowli	92.3%	7.7%	46	0.0%	88.3%	11.7%
Sissala East	96.8%	3.2%	44	0.0%	91.0%	9.0%
Sissala West	97.3%	2.7%	52	0.0%	75.9%	24.1%
Wa East	90.0%	10.0%	47	0.0%	83.6%	16.4%
Wa Municipal	98.6%	1.4%	48	0.0%	77.7%	22.3%
Wa West	94.6%	5.4%	50	0.0%	81.0%	19.0%
<b>Total</b>	<b>93.5%</b>	<b>6.5%</b>	<b>48</b>	<b>0.0%</b>	<b>81.2%</b>	<b>18.8%</b>
Urban	91.4%	8.6%	50	.0%	75.4%	24.6%
Rural	91.9%	8.1%	49	0.0%	79.0%	21.0%
<b>Total</b>	<b>91.8%</b>	<b>8.2%</b>	<b>49</b>	<b>.0%</b>	<b>78.4%</b>	<b>21.6%</b>

**Table 8** Education of household head

Districts	Education:						
	No schooling	Pre-school	Primary school	Middle / JSS / JHS	Secondary / SSS / SHS	Higher	Technical / Vocational
Northern districts:							
Bole	75.5%	0.0%	8.6%	10.0%	1.4%	2.3%	2.3%
Bunkpurugu-Yunyoo	81.5%	1.4%	4.1%	5.9%	5.4%	1.8%	0.0%
Central Gonja	86.0%	.9%	4.1%	6.8%	.5%	.9%	.9%
Cherepone	70.0%	3.5%	7.0%	11.5%	2.6%	4.4%	.9%
East Gonja	64.2%	3.1%	7.5%	15.0%	9.7%	0.0%	.4%
East Mamprusi	68.6%	3.6%	6.4%	12.3%	6.8%	1.8%	.5%
Gushegu	92.9%	1.8%	2.7%	1.3%	.4%	.9%	0.0%
Karaga	85.4%	1.4%	5.0%	3.2%	3.2%	1.8%	0.0%
Kpandai	71.8%	1.4%	5.5%	11.4%	4.5%	4.5%	.9%
Nanumba North	65.8%	4.1%	6.8%	8.6%	8.6%	5.0%	1.4%
Nanumba South	78.5%	1.4%	5.9%	8.7%	4.1%	1.4%	0.0%
Saboba	87.3%	.5%	1.8%	6.8%	2.7%	.5%	.5%
Savelugu-Nanton	79.5%	1.4%	5.9%	8.2%	3.7%	.9%	.5%
Sawla-Tuna-Kalba	75.5%	.9%	6.8%	6.8%	7.7%	1.8%	.5%
Tamale Metropolis	77.7%	.9%	1.8%	9.1%	4.1%	5.9%	.5%
Tolon-Kumbungu	90.5%	0.0%	2.3%	3.6%	2.7%	.9%	0.0%
West Gonja	75.9%	2.7%	4.1%	7.7%	6.4%	2.3%	.9%
West Mamprusi	77.4%	.9%	11.3%	5.4%	2.3%	1.8%	.9%
Yendi	90.5%	1.8%	0.0%	5.0%	2.3%	.5%	0.0%
Zabzugu-Tatale	89.0%	.9%	2.7%	4.6%	1.8%	.9%	0.0%
<b>Total</b>	<b>78.6%</b>	<b>1.6%</b>	<b>4.6%</b>	<b>7.9%</b>	<b>4.3%</b>	<b>2.5%</b>	<b>.5%</b>
Upper East districts:							
Bawku Municipal	77.9%	0.0%	10.4%	6.8%	.9%	4.1%	0.0%
Bawku West	76.5%	5.0%	2.3%	10.9%	3.2%	2.3%	0.0%
Bolgatanga Municipal	68.6%	1.4%	7.3%	11.8%	4.5%	5.9%	.5%
Bongo	77.1%	0.0%	9.6%	6.0%	2.8%	3.2%	1.4%
Builsa	66.8%	3.5%	10.2%	13.7%	3.1%	1.3%	1.3%
Garu-Tempene	83.9%	0.0%	7.6%	4.5%	1.3%	2.7%	0.0%
Kassena Nankana West	75.7%	0.0%	6.9%	10.6%	3.7%	1.8%	1.4%
Kassena Nankana East	58.2%	.5%	16.4%	12.3%	3.6%	8.2%	.9%
Talensi-Nabdam	85.5%	.9%	6.8%	4.5%	.9%	1.4%	0.0%
<b>Total</b>	<b>75.1%</b>	<b>1.1%</b>	<b>8.5%</b>	<b>8.8%</b>	<b>2.6%</b>	<b>3.4%</b>	<b>.5%</b>
Upper West districts:							
Jirapa	62.7%	1.4%	12.3%	13.2%	4.1%	5.5%	.9%
Lambussie-Karni	69.7%	1.8%	10.0%	14.5%	1.8%	2.3%	0.0%
Lawra	47.1%	3.6%	12.2%	28.5%	3.6%	4.1%	.9%
Nadowli	64.0%	6.8%	9.5%	7.2%	.9%	9.0%	2.7%
Sissala East	51.6%	2.3%	10.0%	14.5%	8.6%	11.3%	1.8%
Sissala West	58.2%	.9%	10.0%	19.1%	8.6%	3.2%	0.0%
Wa East	80.9%	.9%	10.0%	5.9%	.9%	1.4%	0.0%
Wa Municipal	69.5%	5.5%	6.8%	6.8%	5.5%	5.5%	.5%
Wa West	87.3%	.9%	3.2%	6.3%	1.4%	0.0%	.9%
<b>Total</b>	<b>65.4%</b>	<b>3.1%</b>	<b>9.3%</b>	<b>12.7%</b>	<b>3.7%</b>	<b>4.9%</b>	<b>.9%</b>
Urban	64.4%	1.8%	4.6%	12.4%	6.8%	8.8%	1.2%
Rural	77.3%	1.7%	7.0%	8.4%	3.0%	2.1%	.5%
<b>Total</b>	<b>75.2%</b>	<b>1.7%</b>	<b>6.6%</b>	<b>9.0%</b>	<b>3.7%</b>	<b>3.2%</b>	<b>.6%</b>

**Table 9** Marital status of household head

District	Marital status:				More than one wife :	
	Married	Divorced/ separated	Widow(er)	Single	No	Yes
<b>Northern districts:</b>						
Bole	85.5%	5.5%	6.8%	2.3%	76.6%	23.4%
Bunkpurugu-Yunyoo	92.3%	2.3%	5.0%	0.5%	73.2%	26.8%
Central Gonja	93.7%	2.3%	2.7%	1.4%	61.1%	38.9%
Cherepone	93.4%	1.3%	4.0%	1.3%	60.4%	39.6%
East Gonja	94.7%	0.4%	1.3%	3.5%	70.1%	29.9%
East Mamprusi	96.8%	0.5%	0.9%	1.8%	48.4%	51.6%
Gushegu	97.8%	1.3%	0.4%	0.4%	54.1%	45.9%
Karaga	95.0%	0.0%	3.7%	1.4%	41.8%	58.2%
Kpandai	97.3%	0.5%	1.4%	0.9%	78.5%	21.5%
Nanumba North	96.8%	0.0%	1.4%	1.8%	61.4%	38.6%
Nanumba South	94.1%	1.8%	3.2%	0.9%	62.1%	37.9%
Saboba	98.6%	0.5%	0.0%	0.9%	56.9%	43.1%
Savelugu-Nanton	96.3%	1.4%	1.8%	0.5%	46.9%	53.1%
Sawla-Tuna-Kalba	85.0%	1.4%	9.1%	4.5%	67.4%	32.6%
Tamale Metropolis	97.3%	0.5%	2.3%	0.0%	67.3%	32.7%
Tolon-Kumbungu	93.2%	1.4%	2.7%	2.7%	54.4%	45.6%
West Gonja	89.5%	0.9%	4.5%	5.0%	79.7%	20.3%
West Mamprusi	95.0%	2.3%	2.3%	0.5%	55.2%	44.8%
Yendi	96.4%	2.3%	0.5%	0.9%	57.0%	43.0%
Zabzugu-Tatale	98.6%	0.0%	0.0%	1.4%	52.3%	47.7%
<b>Total</b>	<b>94.9%</b>	<b>1.2%</b>	<b>2.5%</b>	<b>1.4%</b>	<b>62.4%</b>	<b>37.6%</b>
<b>Upper East districts:</b>						
Bawku Municipal	88.3%	3.2%	7.7%	0.9%	71.9%	28.1%
Bawku West	78.3%	2.7%	19.0%	0.0%	78.6%	21.4%
Bolgatanga Municipal	76.8%	0.5%	20.9%	1.8%	71.0%	29.0%
Bongo	78.0%	0.9%	20.6%	0.5%	72.9%	27.1%
Builsa	84.1%	2.2%	9.7%	4.0%	70.5%	29.5%
Garu-Tempene	87.0%	0.4%	12.1%	0.4%	63.9%	36.1%
Kassena Nankana West	81.7%	1.8%	14.2%	2.3%	73.0%	27.0%
Kassena Nankana East	74.1%	5.0%	18.6%	2.3%	88.3%	11.7%
Talensi-Nabdam	84.5%	0.0%	13.2%	2.3%	81.7%	18.3%
<b>Total</b>	<b>82.1%</b>	<b>1.8%</b>	<b>14.6%</b>	<b>1.6%</b>	<b>73.9%</b>	<b>26.1%</b>
<b>Upper West districts:</b>						
Jirapa	84.1%	0.5%	13.2%	2.3%	78.4%	21.6%
Lambussie-Karni	85.5%	2.3%	10.4%	1.8%	67.2%	32.8%
Lawra	94.6%	0.0%	2.7%	2.7%	82.8%	17.2%
Nadowli	88.7%	3.6%	6.3%	1.4%	82.2%	17.8%
Sissala East	91.9%	1.4%	3.2%	3.6%	66.5%	33.5%
Sissala West	96.4%	0.9%	2.7%	0.0%	41.5%	58.5%
Wa East	94.5%	0.0%	5.0%	0.5%	74.5%	25.5%
Wa Municipal	96.8%	1.4%	0.9%	0.9%	65.7%	34.3%
Wa West	92.8%	0.9%	5.9%	0.5%	67.8%	32.2%
<b>Total</b>	<b>91.9%</b>	<b>1.2%</b>	<b>5.3%</b>	<b>1.5%</b>	<b>71.6%</b>	<b>28.4%</b>
Urban	91.9%	1.7%	4.6%	1.8%	68.0%	32.0%
Rural	90.3%	1.3%	7.0%	1.4%	66.9%	33.1%
<b>Total</b>	<b>90.6%</b>	<b>1.4%</b>	<b>6.6%</b>	<b>1.5%</b>	<b>67.1%</b>	<b>32.9%</b>

**Table 10** School attendance

District	Boys between 6 and 14	Girls between 6 and 14	Boys between 15 and 18	Girls between 15 and 18
Northern districts:				
Bole	74%	73%	58%	72%
Bunkpurugu-Yunyoo	96%	94%	91%	82%
Central Gonja	78%	73%	40%	30%
Cherepone	82%	82%	72%	65%
East Gonja	96%	94%	90%	89%
East Mamprusi	88%	84%	73%	61%
Gushegu	76%	67%	43%	36%
Karaga	84%	75%	54%	52%
Kpandai	94%	93%	86%	84%
Nanumba North	93%	90%	90%	87%
Nanumba South	87%	73%	59%	58%
Saboba	90%	91%	83%	89%
Savelugu-Nanton	90%	86%	81%	73%
Sawla-Tuna-Kalba	88%	92%	81%	77%
Tamale Metropolis	96%	96%	90%	86%
Tolon-Kumbungu	78%	75%	56%	43%
West Gonja	94%	84%	82%	84%
West Mamprusi	91%	93%	86%	90%
Yendi	97%	92%	90%	82%
Zabzugu-Tatale	90%	89%	65%	63%
<b>Total</b>	<b>90%</b>	<b>88%</b>	<b>79%</b>	<b>76%</b>
Upper East districts:				
Bawku Municipal	97%	92%	90%	87%
Bawku West	93%	93%	90%	93%
Bolgatanga Municipal	93%	92%	86%	84%
Bongo	97%	97%	90%	86%
Builsa	96%	93%	86%	86%
Garu-Tempene	94%	92%	90%	84%
Kassena Nankana West	94%	91%	74%	83%
Kassena Nankana East	90%	93%	90%	84%
Talensi-Nabdam	93%	90%	65%	75%
<b>Total</b>	<b>94%</b>	<b>93%</b>	<b>84%</b>	<b>85%</b>
Upper West districts:				
Jirapa	97%	93%	91%	86%
Lambussie-Karni	91%	88%	84%	79%
Lawra	95%	94%	87%	85%
Nadowli	89%	87%	79%	75%
Sissala East	98%	95%	95%	93%
Sissala West	92%	90%	89%	88%
Wa East	89%	87%	84%	84%
Wa Municipal	86%	89%	81%	80%
Wa West	93%	95%	89%	84%
<b>Total</b>	<b>92%</b>	<b>91%</b>	<b>86%</b>	<b>83%</b>
Urban	95%	94%	90%	88%
Rural	91%	89%	80%	78%
<b>Total</b>	<b>92%</b>	<b>90%</b>	<b>82%</b>	<b>80%</b>

**Table 11** Reasons for not attending school

Two reasons for not attending school	% of responses
Refuse to go	23.9%
Needs to help with house/farm work	17.9%
Refusal by parents	17.3%
Not enough money to pay schools fee, uniform, school materials	14.1%
Left for apprenticeship	7.9%
Other	5.2%
Got married/pregnant	3.9%
Sickness/disability	3.2%
Work to earn money	3.2%
Long distance to school	2.5%
No teacher at school	.8%
Insecurity/crime	.2%
<b>Total</b>	<b>100.0%</b>



**Table 12** Households with migrating household members

District:	Migrating household member	In household with migrating household members:		
		If yes, how many have migrated?	Migrants of working age	Head of household migrating
<b>Northern districts:</b>				
Bole	25.0%	1.7	1.4	10.9%
Bunkpurugu-Yunyoo	26.6%	1.4	1.4	25.4%
Central Gonja	36.5%	1.6	1.4	2.5%
Cherepone	17.6%	1.4	1.3	25.0%
East Gonja	8.0%	1.7	1.2	5.6%
East Mamprusi	43.6%	1.9	1.6	14.6%
Gushegu	12.9%	2.0	1.8	3.4%
Karaga	30.6%	1.7	1.4	6.0%
Kpandai	9.5%	1.7	1.2	19.0%
Nanumba North	31.1%	1.7	1.5	4.3%
Nanumba South	15.1%	1.2	1.3	6.1%
Saboba	9.0%	1.5	1.4	40.0%
Savelugu-Nanton	49.8%	2.0	1.8	4.6%
Sawla-Tuna-Kalba	32.7%	2.4	2.2	16.7%
Tamale Metropolis	11.4%	1.7	1.6	4.0%
Tolon-Kumbungu	24.9%	2.1	1.7	1.8%
West Gonja	15.9%	1.9	1.5	8.6%
West Mamprusi	47.1%	1.9	1.8	5.8%
Yendi	23.0%	1.8	1.4	0.0%
Zabzugu-Tatale	13.2%	1.5	1.2	6.9%
<b>Total</b>	<b>23.0%</b>	<b>1.8</b>	<b>1.6</b>	<b>8.6%</b>
<b>Upper East districts:</b>				
Bawku Municipal	9.0%	2.7	2.4	10.0%
Bawku West	27.1%	1.5	1.4	11.7%
Bolgatanga Municipal	24.1%	1.7	1.4	1.9%
Bongo	29.8%	2.3	2.0	9.2%
Builsa	32.7%	1.7	1.6	5.4%
Garu-Tempene	17.0%	2.1	1.8	15.8%
Kassena Nankana West	23.4%	2.0	1.5	7.8%
Kassena Nankana East	27.3%	1.5	1.4	13.3%
Talensi-Nabdam	19.5%	1.3	1.1	2.3%
<b>Total</b>	<b>21.9%</b>	<b>1.8</b>	<b>1.6</b>	<b>7.7%</b>
<b>Upper West districts:</b>				
Jirapa	42.7%	2.0	1.7	29.8%
Lambussie-Karni	46.2%	2.2	2.0	46.1%
Lawra	31.7%	2.2	1.9	11.4%
Nadowli	55.4%	2.0	1.7	9.8%
Sissala East	22.2%	1.7	1.6	4.1%
Sissala West	29.5%	3.0	2.8	6.2%
Wa East	17.7%	1.6	1.0	5.1%
Wa Municipal	33.2%	1.8	1.7	26.0%
Wa West	15.8%	1.5	1.1	8.6%
<b>Total</b>	<b>33.7%</b>	<b>2.0</b>	<b>1.7</b>	<b>18.6%</b>
Urban	18.8%	1.9	1.7	9.1%
Rural	25.8%	1.9	1.6	11.1%
<b>Total</b>	<b>24.6%</b>	<b>1.9</b>	<b>1.6</b>	<b>10.9%</b>

**Table 13** Times when household members migrate

	Of the migrating members, at what times do they normally migrate:					Any time
	Beginning of rainy season	Beginning of dry season	Middle of rainy season	Middle of dry season		
<b>Northern districts:</b>						
Bole	14.5%	18.2%	9.1%	5.5%	52.7%	
Bunkpurugu-Yunyoo	0.0%	33.9%	3.4%	16.9%	45.8%	
Central Gonja	3.7%	74.1%	1.2%	1.2%	19.8%	
Cherepone	0.0%	55.0%	0.0%	5.0%	40.0%	
East Gonja	11.1%	27.8%	0.0%	5.6%	55.6%	
East Mamprusi	2.1%	66.7%	1.0%	21.9%	8.3%	
Gushiegu	3.4%	27.6%	10.3%	27.6%	31.0%	
Karaga	11.9%	68.7%	6.0%	11.9%	1.5%	
Kpandai	9.5%	42.9%	0.0%	9.5%	38.1%	
Nanumba North	15.9%	37.7%	1.4%	5.8%	39.1%	
Nanumba South	21.2%	39.4%	6.1%	18.2%	15.2%	
Saboba	40.0%	40.0%	0.0%	5.0%	15.0%	
Savelugu-Nanton	10.1%	66.1%	8.3%	8.3%	7.3%	
Sawla-Tuna-Kalba	2.8%	75.0%	8.3%	2.8%	11.1%	
Tamale Metropolis	8.0%	36.0%	0.0%	28.0%	28.0%	
Tolon-Kumbungu	10.9%	54.5%	1.8%	32.7%	0.0%	
West Gonja	2.9%	34.3%	0.0%	2.9%	60.0%	
West Mamprusi	0.0%	79.8%	7.7%	5.8%	6.7%	
Yendi	7.8%	70.6%	2.0%	3.9%	15.7%	
Zabzugu-Tatale	27.6%	41.4%	3.4%	6.9%	20.7%	
<b>Total</b>	<b>7.5%</b>	<b>55.7%</b>	<b>4.0%</b>	<b>11.6%</b>	<b>21.2%</b>	
<b>Upper East districts:</b>						
Bawku Municipal	0.0%	25.0%	0.0%	40.0%	35.0%	
Bawku West	3.3%	65.0%	3.3%	5.0%	23.3%	
Bolgatanga Municipal	7.5%	77.4%	5.7%	0.0%	9.4%	
Bongo	1.5%	92.3%	1.5%	1.5%	3.1%	
Builsa	5.4%	71.6%	2.7%	8.1%	12.2%	
Garu-Tempane	7.9%	68.4%	2.6%	18.4%	2.6%	
Kassena Nankana West	0.0%	90.2%	0.0%	0.0%	9.8%	
Kassena Nankana East	31.7%	25.0%	3.3%	5.0%	35.0%	
Talensi-Nabdam	0.0%	76.7%	2.3%	0.0%	20.9%	
<b>Total</b>	<b>6.0%</b>	<b>69.1%</b>	<b>2.6%</b>	<b>6.7%</b>	<b>15.5%</b>	
<b>Upper West districts:</b>						
Jirapa	3.2%	62.8%	3.2%	4.3%	26.6%	
Lambussie-Karni	1.0%	75.5%	4.9%	2.0%	16.7%	
Lawra	7.1%	58.6%	0.0%	15.7%	18.6%	
Nadowli	4.9%	35.0%	2.4%	17.9%	39.8%	
Sissala East	8.2%	61.2%	4.1%	0.0%	26.5%	
Sissala West	0.0%	90.8%	0.0%	1.5%	7.7%	
Wa East	5.1%	69.2%	0.0%	0.0%	25.6%	
Wa Municipal	1.4%	45.2%	0.0%	0.0%	53.4%	
Wa West	5.7%	74.3%	17.1%	2.9%	0.0%	
<b>Total</b>	<b>3.9%</b>	<b>56.5%</b>	<b>2.6%</b>	<b>7.4%</b>	<b>29.6%</b>	
Urban	6.6%	54.6%	1.8%	12.6%	24.4%	
Rural	6.2%	60.1%	3.5%	8.8%	21.4%	
<b>Total</b>	<b>6.2%</b>	<b>59.4%</b>	<b>3.3%</b>	<b>9.3%</b>	<b>21.8%</b>	

**Table 14** Reasons for migration

Two main reasons for migration	% of responses
Looking for paid employment	46.9%
Inadequate food throughout the year	19.3%
Lack of arable land / land pressure	3.2%
Lack of pasture	.5%
Poor climatic conditions (drought, flood)	6.8%
Insecurity (violence, etc.)	.9%
Education	8.6%
Other	13.8%
<b>Total</b>	<b>100.0%</b>
Long distance to school	2.5%
No teacher at school	.8%
Insecurity/crime	.2%
<b>Total</b>	<b>100.0%</b>

**Table 15** Types of transfer made by migrants

Main types of transfer made by migrants	% of responses
Money	30.4%
Foodstuffs (please specify type)	10.9%
Clothing	11.2%
Household equipment	8.7%
Other equipment	2.1%
No transfers	36.6%
<b>Total</b>	<b>100.0%</b>

**Table 16** Amount transferred by migrants

District	Amount of money transferred by migrants, ranked:			
	No transfer	Smallest amount	Middle	Largest amount
<b>Northern districts:</b>				
Bole	91.4%	1.8%	3.2%	3.6%
Bunkpurugu-Yunyoo	86.9%	1.8%	8.1%	3.2%
Central Gonja	87.8%	5.4%	4.5%	2.3%
Cherepone	95.6%	1.8%	2.6%	0.0%
East Gonja	92.5%	5.8%	1.3%	.4%
East Mamprusi	83.2%	11.4%	3.6%	1.8%
Gushegu	95.6%	3.1%	.4%	.9%
Karaga	95.9%	1.8%	1.8%	.5%
Kpandai	97.3%	1.4%	1.4%	0.0%
Nanumba North	90.5%	1.8%	4.1%	3.6%
Nanumba South	96.3%	1.4%	1.8%	.5%
Saboba	93.2%	1.8%	5.0%	0.0%
Savelugu-Nanton	84.0%	4.1%	9.1%	2.7%
Sawla-Tuna-Kalba	92.3%	3.2%	2.7%	1.8%
Tamale Metropolis	97.7%	.9%	.9%	.5%
Tolon-Kumbungu	96.8%	2.3%	.5%	.5%
West Gonja	95.5%	2.7%	1.4%	.5%
West Mamprusi	79.6%	4.1%	10.4%	5.9%
Yendi	99.5%	.5%	0.0%	0.0%
Zabzugu-Tatale	98.6%	0.0%	.5%	.9%
<b>Total</b>	<b>92.9%</b>	<b>2.6%</b>	<b>3.0%</b>	<b>1.5%</b>
<b>Upper East districts:</b>				
Bawku Municipal	94.1%	1.8%	3.2%	0.9%
Bawku West	78.7%	3.2%	5.4%	12.7%
Bolgatanga Municipal	87.7%	5.9%	2.7%	3.6%
Bongo	79.8%	3.2%	8.3%	8.7%
Builsa	90.7%	4.9%	3.1%	1.3%
Garu-Tempene	87.0%	2.7%	3.6%	6.7%
Kassena Nankana West	90.4%	7.3%	1.4%	.9%
Kassena Nankana East	86.4%	5.0%	5.0%	3.6%
Talensi-Nabdam	96.8%	1.8%	1.4%	0.0%
<b>Total</b>	<b>88.9%</b>	<b>3.9%</b>	<b>3.5%</b>	<b>3.7%</b>
<b>Upper West districts:</b>				
Jirapa	70.9%	2.3%	14.1%	12.7%
Lambussie-Karni	86.4%	4.1%	5.0%	4.5%
Lawra	82.4%	12.2%	.5%	5.0%
Nadowli	76.1%	12.6%	5.0%	6.3%
Sissala East	95.0%	.9%	1.8%	2.3%
Sissala West	89.1%	2.3%	6.4%	2.3%
Wa East	91.8%	1.4%	.5%	6.4%
Wa Municipal	85.5%	.9%	5.0%	8.6%
Wa West	91.0%	1.8%	1.8%	5.4%
<b>Total</b>	<b>84.1%</b>	<b>4.8%</b>	<b>4.5%</b>	<b>6.5%</b>
Urban	94.4%	2.4%	1.7%	1.5%
Rural	89.3%	3.6%	3.8%	3.4%
<b>Total</b>	<b>90.1%</b>	<b>3.4%</b>	<b>3.4%</b>	<b>3.0%</b>

Table 17 Type of housing structure

	Separate house	Semi-detached house	Flat/ Apartment	Room(s) (compound house)	Room(s) (other type)	Several huts/ buildings	Several huts/ buildings (other compound)	Tent/ improvised home	Other
<b>Northern districts:</b>									
Bole	1.8%	3.2%	1.4%	47.7%	39.1%	5.0%	1.4%	0.0%	.5%
Bunkpurugu-Yunyoo	0.0%	0.0%	1.4%	67.6%	.9%	30.2%	0.0%	0.0%	0.0%
Central Gonja	.5%	.5%	0.0%	61.7%	14.0%	23.4%	0.0%	0.0%	0.0%
Cherepone	0.0%	0.0%	1.8%	36.6%	22.5%	37.0%	2.2%	0.0%	0.0%
East Gonja	14.6%	42.5%	2.7%	30.5%	2.7%	6.6%	.4%	0.0%	0.0%
East Mamprusi	0.0%	0.0%	.5%	13.6%	23.2%	51.4%	11.4%	0.0%	0.0%
Gushegu	0.0%	7.1%	4.4%	81.3%	1.8%	4.9%	0.0%	0.0%	.4%
Karaga	0.0%	0.0%	0.0%	63.0%	5.5%	27.4%	4.1%	0.0%	0.0%
Kpandai	0.0%	1.8%	.5%	68.6%	25.9%	.9%	1.8%	.5%	0.0%
Nanumba North	1.4%	1.4%	2.3%	79.7%	.9%	13.1%	1.4%	0.0%	0.0%
Nanumba South	0.0%	0.0%	1.4%	54.8%	25.6%	16.9%	.5%	0.0%	.9%
Saboba	0.0%	6.3%	.5%	49.8%	2.3%	28.5%	12.7%	0.0%	0.0%
Savelugu-Nanton	0.0%	0.0%	1.4%	81.3%	0.0%	17.4%	0.0%	0.0%	0.0%
Sawla-Tuna-Kalba	0.0%	2.7%	0.0%	89.5%	5.9%	.9%	.5%	0.0%	.5%
Tamale Metropolis	.9%	0.0%	1.4%	97.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Tolon-Kumbungu	0.0%	0.0%	5.4%	62.4%	.5%	31.2%	.5%	0.0%	0.0%
West Gonja	.5%	7.7%	3.2%	45.9%	31.8%	9.1%	1.4%	0.0%	.5%
West Mamprusi	0.0%	1.4%	.9%	85.5%	1.8%	7.7%	2.7%	0.0%	0.0%
Yendi	.5%	11.3%	1.8%	86.0%	0.0%	.5%	0.0%	0.0%	0.0%
Zabzugu-Tatale	0.0%	0.0%	2.7%	79.9%	7.3%	8.7%	1.4%	0.0%	0.0%
<b>Total</b>	<b>1.2%</b>	<b>4.5%</b>	<b>1.6%</b>	<b>70.8%</b>	<b>7.8%</b>	<b>12.4%</b>	<b>1.6%</b>	<b>.0%</b>	<b>.1%</b>
<b>Upper East districts:</b>									
Bawku Municipal	0.0%	0.0%	2.7%	83.3%	.5%	5.9%	7.7%	0.0%	0.0%
Bawku West	0.0%	0.0%	.9%	57.9%	1.8%	14.0%	24.9%	.5%	0.0%
Bolgatanga Municipal	.9%	.9%	.9%	97.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Bongo	0.0%	.5%	2.3%	37.6%	14.7%	20.2%	24.8%	0.0%	0.0%
Builsa	.9%	8.8%	2.7%	55.3%	2.7%	28.3%	1.3%	0.0%	0.0%
Garu-Tempane	0.0%	.4%	.9%	79.8%	2.7%	15.7%	.4%	0.0%	0.0%
Kassena Nankana West	1.8%	0.0%	.9%	94.0%	2.3%	.9%	0.0%	0.0%	0.0%
Kassena Nankana East	.5%	.9%	1.8%	77.3%	18.6%	.9%	0.0%	0.0%	0.0%
Talensi-Nabdam	.5%	1.8%	3.2%	94.5%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>.5%</b>	<b>1.4%</b>	<b>1.9%</b>	<b>78.3%</b>	<b>3.6%</b>	<b>8.4%</b>	<b>5.8%</b>	<b>.0%</b>	<b>0.0%</b>
<b>Upper West districts:</b>									
Jirapa	.5%	1.4%	.9%	76.8%	6.4%	3.6%	10.5%	0.0%	0.0%
Lambussie-Karni	1.4%	6.3%	2.3%	52.0%	20.4%	8.1%	9.0%	0.0%	.5%
Lawra	3.2%	10.0%	4.5%	51.1%	8.1%	9.5%	13.6%	0.0%	0.0%
Nadowli	2.7%	12.2%	9.0%	45.9%	29.3%	.9%	0.0%	0.0%	0.0%
Sissala East	8.6%	8.1%	5.0%	64.7%	13.6%	0.0%	0.0%	0.0%	0.0%
Sissala West	2.7%	20.0%	.9%	75.9%	0.0%	.5%	0.0%	0.0%	0.0%
Wa East	1.8%	40.9%	.5%	33.2%	22.3%	1.4%	0.0%	0.0%	0.0%
Wa Municipal	1.4%	5.9%	.5%	51.8%	15.0%	22.7%	1.8%	0.0%	.9%
Wa West	.9%	33.0%	1.8%	52.9%	6.3%	1.4%	3.6%	0.0%	0.0%
<b>Total</b>	<b>2.4%</b>	<b>14.2%</b>	<b>3.0%</b>	<b>55.0%</b>	<b>13.9%</b>	<b>6.8%</b>	<b>4.7%</b>	<b>0.0%</b>	<b>.2%</b>
Urban	1.3%	3.5%	1.8%	83.6%	5.4%	3.2%	1.1%	0.0%	.0%
Rural	1.2%	5.7%	2.0%	67.3%	8.2%	11.6%	3.8%	.0%	.1%
<b>Total</b>	<b>1.2%</b>	<b>5.3%</b>	<b>1.9%</b>	<b>70.1%</b>	<b>7.7%</b>	<b>10.2%</b>	<b>3.4%</b>	<b>.0%</b>	<b>.1%</b>

**Table 18** Own or rent dwelling

	Own	Don't own but live for free	Pay Rent	Squatter	Mortgage	Other
<b>Northern districts:</b>						
Bole	95.0%	.9%	2.3%	.9%	.9%	0.0%
Bunkpurugu-Yunyoo	98.6%	1.4%	0.0%	0.0%	0.0%	0.0%
Central Gonja	96.4%	1.8%	1.8%	0.0%	0.0%	0.0%
Cherepone	90.7%	5.7%	2.2%	0.0%	0.0%	1.3%
East Gonja	96.9%	2.2%	.9%	0.0%	0.0%	0.0%
East Mamprusi	98.2%	.9%	.9%	0.0%	0.0%	0.0%
Gushegu	94.7%	5.3%	0.0%	0.0%	0.0%	0.0%
Karaga	99.5%	.5%	0.0%	0.0%	0.0%	0.0%
Kpandai	98.6%	.9%	.5%	0.0%	0.0%	0.0%
Nanumba North	91.9%	5.0%	3.2%	0.0%	0.0%	0.0%
Nanumba South	90.9%	5.9%	1.8%	0.0%	0.0%	1.4%
Saboba	92.3%	7.2%	0.0%	0.0%	0.0%	.5%
Savelugu-Nanton	99.1%	.5%	.5%	0.0%	0.0%	0.0%
Sawla-Tuna-Kalba	96.4%	2.7%	.9%	0.0%	0.0%	0.0%
Tamale Metropolis	79.5%	1.4%	8.2%	0.0%	0.0%	10.9%
Tolon-Kumbungu	99.1%	.9%	0.0%	0.0%	0.0%	0.0%
West Gonja	95.9%	0.0%	4.1%	0.0%	0.0%	0.0%
West Mamprusi	99.5%	0.0%	.5%	0.0%	0.0%	0.0%
Yendi	99.5%	.5%	0.0%	0.0%	0.0%	0.0%
Zabzugu-Tatale	96.3%	3.2%	.5%	0.0%	0.0%	0.0%
<b>Total</b>	<b>93.5%</b>	<b>2.0%</b>	<b>2.3%</b>	<b>.0%</b>	<b>.0%</b>	<b>2.1%</b>
<b>Upper East districts:</b>						
Bawku Municipal	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bawku West	98.6%	.9%	0.0%	0.0%	0.0%	.5%
Bolgatanga Municipal	61.4%	34.1%	4.1%	.5%	0.0%	0.0%
Bongo	99.5%	.5%	0.0%	0.0%	0.0%	0.0%
Builsa	94.2%	2.7%	2.7%	0.0%	0.0%	.4%
Garu-Tempene	98.2%	0.0%	1.8%	0.0%	0.0%	0.0%
Kassena Nankana West	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kassena Nankana East	95.5%	.5%	4.1%	0.0%	0.0%	0.0%
Talensi-Nabdam	97.3%	1.8%	.9%	0.0%	0.0%	0.0%
<b>Total</b>	<b>92.6%</b>	<b>5.8%</b>	<b>1.5%</b>	<b>.1%</b>	<b>0.0%</b>	<b>.1%</b>
<b>Upper West districts:</b>						
Jirapa	90.0%	2.7%	7.3%	0.0%	0.0%	0.0%
Lambussie-Karni	82.8%	12.2%	2.3%	2.7%	0.0%	0.0%
Lawra	91.0%	.9%	8.1%	0.0%	0.0%	0.0%
Nadowli	85.1%	5.0%	5.0%	0.0%	0.0%	5.0%
Sissala East	87.3%	8.6%	4.1%	0.0%	0.0%	0.0%
Sissala West	98.2%	.9%	.9%	0.0%	0.0%	0.0%
Wa East	99.5%	.5%	0.0%	0.0%	0.0%	0.0%
Wa Municipal	93.2%	3.2%	3.2%	0.0%	0.0%	.5%
Wa West	99.5%	.5%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>91.8%</b>	<b>3.4%</b>	<b>3.9%</b>	<b>.2%</b>	<b>0.0%</b>	<b>.8%</b>
Urban	78.2%	4.9%	11.2%	0.0%	0.0%	5.8%
Rural	95.9%	3.0%	.6%	.1%	.0%	.4%
<b>Total</b>	<b>92.9%</b>	<b>3.4%</b>	<b>2.4%</b>	<b>.1%</b>	<b>.0%</b>	<b>1.3%</b>

**Table 19** Type of toilet facility

	Flush/Pour Toilet	Ventilated Improved Pit Latrine (VIP)	Pit latrine with slab	Pit latrine without slab/ open pit	Bucket/Pan	Composting toilet	No facilities (bush, beach, etc.)
<b>Northern districts:</b>							
Bole	0.0%	7.3%	1.8%	0.0%	0.0%	0.0%	90.9%
Bunkpurugu-Yunyoo	0.0%	4.1%	2.7%	1.4%	0.0%	.5%	91.4%
Central Gonja	0.0%	1.4%	0.0%	0.0%	.5%	0.0%	98.2%
Cherepone	0.0%	7.9%	6.6%	0.0%	0.0%	0.0%	85.5%
East Gonja	0.0%	1.3%	1.8%	4.4%	0.0%	.9%	91.6%
East Mamprusi	0.0%	6.4%	4.5%	.9%	0.0%	0.0%	88.2%
Gushegu	0.0%	15.1%	1.3%	1.3%	0.0%	0.0%	82.2%
Karaga	.5%	7.3%	16.0%	10.5%	0.0%	0.0%	65.8%
Kpandai	.5%	1.4%	19.1%	.5%	0.0%	.9%	77.7%
Nanumba North	.5%	21.2%	10.4%	6.8%	0.0%	0.0%	61.3%
Nanumba South	0.0%	0.0%	.5%	0.0%	0.0%	0.0%	99.5%
Saboba	0.0%	.5%	8.6%	13.1%	0.0%	0.0%	77.8%
Savelugu-Nanton	.5%	13.2%	7.3%	2.3%	0.0%	3.2%	73.5%
Sawla-Tuna-Kalba	0.0%	1.4%	.5%	.5%	0.0%	.9%	96.8%
Tamale Metropolis	2.3%	47.3%	5.0%	1.8%	0.0%	0.0%	43.6%
Tolon-Kumbungu	1.4%	19.9%	9.5%	4.1%	.5%	9.0%	55.7%
West Gonja	.5%	5.0%	1.4%	2.3%	0.0%	.5%	90.5%
West Mamprusi	0.0%	22.2%	1.4%	0.0%	0.0%	2.7%	73.8%
Yendi	0.0%	37.8%	14.0%	0.0%	0.0%	0.0%	48.2%
Zabzugu-Tatale	0.0%	7.8%	4.6%	15.1%	0.0%	.9%	71.7%
<b>Total</b>	<b>.6%</b>	<b>17.6%</b>	<b>5.8%</b>	<b>2.8%</b>	<b>.0%</b>	<b>.9%</b>	<b>72.4%</b>
<b>Upper East districts:</b>							
Bawku Municipal	0.0%	0.0%	.5%	.5%	0.0%	0.0%	99.1%
Bawku West	0.0%	0.0%	5.4%	1.8%	0.0%	0.0%	92.8%
Bolgatanga Municipal	.5%	.5%	.9%	.5%	0.0%	0.0%	97.7%
Bongo	0.0%	2.8%	.5%	0.0%	0.0%	0.0%	96.8%
Builsa	.9%	8.8%	3.5%	5.3%	0.0%	0.0%	81.4%
Garu-Tempene	1.3%	1.3%	0.0%	.4%	0.0%	0.0%	96.9%
Kassena Nankana West	0.0%	.9%	1.4%	0.0%	0.0%	0.0%	97.7%
Kassena Nankana East	2.7%	7.7%	.5%	0.0%	0.0%	5.5%	83.6%
Talensi-Nabdam	.9%	3.2%	5.0%	0.0%	0.0%	.5%	90.5%
<b>Total</b>	<b>.6%</b>	<b>2.3%</b>	<b>1.9%</b>	<b>.9%</b>	<b>0.0%</b>	<b>.5%</b>	<b>93.9%</b>
<b>Upper West districts:</b>							
Jirapa	1.8%	5.5%	5.5%	.9%	0.0%	0.0%	86.4%
Lambussie-Karni	.5%	13.6%	12.2%	4.1%	.5%	0.0%	69.2%
Lawra	1.4%	19.9%	8.1%	10.9%	0.0%	.5%	59.3%
Nadowli	0.0%	16.2%	4.5%	0.0%	0.0%	0.0%	79.3%
Sissala East	4.1%	7.2%	1.4%	0.0%	0.0%	.9%	86.4%
Sissala West	0.0%	18.2%	.9%	10.0%	0.0%	0.0%	70.9%
Wa East	0.0%	.5%	.5%	.5%	0.0%	11.8%	86.8%
Wa Municipal	2.7%	13.2%	2.3%	0.0%	0.0%	0.0%	81.8%
Wa West	0.0%	0.0%	.5%	10.9%	0.0%	.5%	88.2%
<b>Total</b>	<b>1.3%</b>	<b>10.9%</b>	<b>4.0%</b>	<b>3.9%</b>	<b>.0%</b>	<b>1.3%</b>	<b>78.6%</b>
Urban	3.0%	42.0%	6.1%	11%	0.0%	.9%	47.0%
Rural	.2%	5.8%	4.0%	2.7%	.0%	.8%	86.5%
<b>Total</b>	<b>.7%</b>	<b>11.9%</b>	<b>4.3%</b>	<b>2.4%</b>	<b>.0%</b>	<b>.8%</b>	<b>79.8%</b>

**Table 20** Source of lighting

	Oil, kerosene or gas lantern	Battery flashlights	Electric generator/ Invertor	Candles/ firewood	Electric Company	No lighting	Solar	Other
<b>Northern districts:</b>								
Bole	49.1%	25.5%	0.0%	0.0%	24.5%	.9%	0.0%	0.0%
Bunkpurugu-Yunyoo	50.5%	42.8%	.5%	0.0%	3.2%	0.0%	3.2%	0.0%
Central Gonja	21.6%	69.8%	1.8%	0.0%	5.9%	.9%	0.0%	0.0%
Cherepone	39.2%	25.1%	.9%	0.0%	34.4%	.4%	0.0%	0.0%
East Gonja	33.2%	23.0%	0.0%	4.4%	38.9%	0.0%	.4%	0.0%
East Mamprusi	3.2%	65.5%	1.8%	0.0%	29.5%	0.0%	0.0%	0.0%
Gushegu	4.4%	92.0%	0.0%	0.0%	0.0%	.9%	2.7%	0.0%
Karaga	1.8%	64.4%	.9%	0.0%	32.9%	0.0%	0.0%	0.0%
Kpandai	31.4%	15.0%	.5%	.5%	52.3%	.5%	0.0%	0.0%
Nanumba North	15.8%	19.8%	0.0%	.5%	63.5%	.5%	0.0%	0.0%
Nanumba South	66.7%	2.7%	0.0%	0.0%	15.5%	13.7%	0.0%	1.4%
Saboba	41.2%	31.7%	0.0%	0.0%	24.0%	.9%	2.3%	0.0%
Savelugu-Nanton	9.1%	19.2%	1.8%	0.0%	56.6%	12.3%	.9%	0.0%
Sawla-Tuna-Kalba	32.7%	57.7%	0.0%	0.0%	5.0%	3.2%	1.4%	0.0%
Tamale Metropolis	10.0%	10.0%	0.0%	0.0%	78.2%	1.8%	0.0%	0.0%
Tolon-Kumbungu	12.7%	47.5%	.5%	.5%	38.5%	0.0%	0.0%	.5%
West Gonja	0.0%	65.0%	.9%	0.0%	11.4%	.5%	22.3%	0.0%
West Mamprusi	4.1%	39.8%	.5%	0.0%	55.2%	.5%	0.0%	0.0%
Yendi	10.4%	5.4%	1.8%	0.0%	74.8%	7.7%	0.0%	0.0%
Zabzugu-Tatale	24.2%	60.3%	0.0%	.5%	15.1%	0.0%	0.0%	0.0%
<b>Total</b>	<b>20.6%</b>	<b>33.0%</b>	<b>.5%</b>	<b>.3%</b>	<b>41.9%</b>	<b>2.3%</b>	<b>1.2%</b>	<b>.1%</b>
<b>Upper East districts:</b>								
Bawku Municipal	2.7%	96.4%	0.0%	0.0%	.9%	0.0%	0.0%	0.0%
Bawku West	4.1%	95.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bolgatanga Municipal	68.6%	7.3%	0.0%	.5%	23.2%	0.0%	0.0%	.5%
Bongo	72.9%	2.3%	.5%	0.0%	22.0%	0.0%	2.3%	0.0%
Builsa	46.5%	42.9%	.4%	.4%	7.1%	.4%	2.2%	0.0%
Garu-Tempene	0.0%	88.8%	0.0%	0.0%	5.4%	5.8%	0.0%	0.0%
Kassena Nankana West	56.9%	10.6%	.5%	0.0%	3.2%	.5%	1.8%	26.6%
Kassena Nankana East	6.8%	65.0%	.5%	0.0%	25.5%	2.3%	0.0%	0.0%
Talensi-Nabdam	48.2%	46.8%	0.0%	0.0%	4.5%	0.0%	.5%	0.0%
<b>Total</b>	<b>34.4%</b>	<b>51.4%</b>	<b>.2%</b>	<b>.1%</b>	<b>9.5%</b>	<b>.8%</b>	<b>.7%</b>	<b>2.9%</b>
<b>Upper West districts:</b>								
Jirapa	19.1%	60.9%	0.0%	0.0%	19.5%	.5%	0.0%	0.0%
Lambussie-Karni	13.6%	41.6%	0.0%	.5%	20.8%	23.1%	.5%	0.0%
Lawra	12.2%	16.3%	.5%	.5%	58.8%	9.0%	2.7%	0.0%
Nadowli	85.1%	6.3%	.5%	0.0%	7.2%	0.0%	0.0%	.9%
Sissala East	7.7%	44.3%	.5%	1.4%	40.7%	.9%	4.5%	0.0%
Sissala West	2.3%	15.0%	.5%	0.0%	78.2%	1.8%	2.3%	0.0%
Wa East	7.7%	68.2%	0.0%	0.0%	23.6%	0.0%	.5%	0.0%
Wa Municipal	17.3%	52.7%	0.0%	.9%	25.0%	.9%	2.7%	.5%
Wa West	13.6%	85.5%	.9%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>22.8%</b>	<b>42.9%</b>	<b>.3%</b>	<b>.4%</b>	<b>28.6%</b>	<b>3.3%</b>	<b>1.5%</b>	<b>.2%</b>
Urban	11.2%	10.8%	.2%	.1%	74.9%	2.5%	.2%	0.0%
Rural	27.9%	46.1%	.4%	.3%	20.9%	2.0%	1.3%	1.1%
<b>Total</b>	<b>25.1%</b>	<b>40.2%</b>	<b>.4%</b>	<b>.3%</b>	<b>30.0%</b>	<b>2.1%</b>	<b>1.1%</b>	<b>.9%</b>



**Table 21** Main source of drinking water

	Piped water in/out side	Tube well/borehole	Unprotected dug well	Protected dug well	Surface water (river, dam, lake, etc.)	Sachet water
<b>Northern districts:</b>						
Bole	8.6%	66.4%	1.8%	0.0%	0.0%	.5%
Bunkpurugu-Yunyoo	1.8%	80.6%	0.0%	0.0%	17.6%	0.0%
Central Gonja	7.2%	8.1%	8.1%	.9%	75.2%	.5%
Cherepone	8.4%	72.2%	0.0%	0.0%	19.4%	0.0%
East Gonja	2.7%	35.8%	3.1%	4.0%	53.1%	1.3%
East Mamprusi	7.3%	28.6%	22.7%	19.5%	21.8%	0.0%
Gushegu	.9%	79.1%	2.7%	1.8%	5.8%	0.0%
Karaga	0.0%	70.8%	.5%	0.0%	28.3%	.5%
Kpandai	17.3%	30.5%	3.6%	2.3%	44.5%	.9%
Nanumba North	2.7%	59.5%	10.4%	3.2%	23.4%	.5%
Nanumba South	.9%	63.5%	0.0%	.5%	32.4%	0.0%
Saboba	10.0%	71.0%	2.7%	.5%	14.5%	0.0%
Savelugu-Nanton	31.5%	52.5%	1.4%	.5%	14.2%	0.0%
Sawla-Tuna-Kalba	0.0%	77.7%	0.0%	.5%	20.5%	.5%
Tamale Metropolis	89.1%	2.3%	0.0%	5.5%	2.3%	0.0%
Tolon-Kumbungu	41.6%	10.4%	.5%	1.8%	45.7%	0.0%
West Gonja	34.5%	59.5%	1.8%	0.0%	4.1%	0.0%
West Mamprusi	5.0%	53.8%	18.6%	13.1%	9.5%	0.0%
Yendi	27.9%	72.1%	0.0%	0.0%	0.0%	0.0%
Zabzugu-Tatale	7.8%	81.3%	.5%	.5%	10.0%	0.0%
<b>Total</b>	<b>25.9%</b>	<b>46.0%</b>	<b>3.8%</b>	<b>3.4%</b>	<b>19.2%</b>	<b>.2%</b>
<b>Upper East districts:</b>						
Bawku Municipal	.9%	68.9%	17.6%	9.5%	3.2%	0.0%
Bawku West	2.3%	66.5%	6.8%	24.4%	0.0%	0.0%
Bolgatanga Municipal	10.9%	76.8%	5.9%	4.5%	0.0%	0.0%
Bongo	6.9%	78.4%	2.3%	9.6%	0.0%	0.0%
Builsa	29.6%	21.7%	37.2%	8.4%	0.0%	0.0%
Garu-Tempene	26.5%	54.7%	6.7%	6.3%	4.5%	0.0%
Kassena Nankana West	6.4%	78.9%	7.8%	4.6%	.9%	0.0%
Kassena Nankana East	5.0%	75.5%	5.5%	6.8%	5.9%	0.0%
Talensi-Nabdam	1.4%	89.1%	6.4%	3.2%	0.0%	0.0%
<b>Total</b>	<b>9.3%</b>	<b>68.8%</b>	<b>11.1%</b>	<b>8.1%</b>	<b>1.5%</b>	<b>0.0%</b>
<b>Upper West districts:</b>						
Jirapa	7.7%	86.4%	0.0%	.5%	4.1%	1.4%
Lambussie-Karni	33.0%	57.5%	4.5%	0.0%	2.7%	0.0%
Lawra	23.5%	62.0%	7.7%	2.3%	4.5%	0.0%
Nadowli	3.2%	95.0%	.9%	.5%	0.0%	0.0%
Sissala East	8.6%	91.0%	0.0%	0.0%	0.0%	.5%
Sissala West	3.2%	95.9%	0.0%	0.0%	0.0%	0.0%
Wa East	25.0%	61.8%	6.4%	.9%	5.9%	0.0%
Wa Municipal	8.6%	86.8%	0.0%	.9%	.5%	1.8%
Wa West	34.8%	63.8%	.9%	0.0%	0.0%	0.0%
<b>Total</b>	<b>15.7%</b>	<b>78.2%</b>	<b>2.3%</b>	<b>.7%</b>	<b>2.0%</b>	<b>.5%</b>
Urban	61.1%	29.5%	2.4%	2.2%	3.9%	.7%
Rural	10.7%	64.4%	6.3%	4.7%	12.3%	.1%
<b>Total</b>	<b>19.2%</b>	<b>58.5%</b>	<b>5.6%</b>	<b>4.3%</b>	<b>10.9%</b>	<b>.2%</b>

**Table 22** Main source of drinking water, continued

	Protected spring	Unprotected spring	Rain water	Tanker truck/cart with small tank	Bottled water	Other
Northern districts:						
Bole	0.0%	0.0%	0.0%	0.0%	0.0%	22.7%
Bunkpurugu-Yunyoo	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Central Gonja	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cherepone	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
East Gonja	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
East Mamprusi	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gushegu	.4%	3.1%	0.0%	0.0%	0.0%	6.2%
Karaga	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kpandai	0.0%	0.0%	0.0%	0.0%	.9%	0.0%
Nanumba North	0.0%	0.0%	0.0%	0.0%	.5%	0.0%
Nanumba South	0.0%	0.0%	2.3%	0.0%	.5%	0.0%
Saboba	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%
Savelugu-Nanton	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sawla-Tuna-Kalba	0.0%	.9%	0.0%	0.0%	0.0%	0.0%
Tamale Metropolis	0.0%	0.0%	0.0%	0.0%	0.0%	.9%
Tolon-Kumbungu	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
West Gonja	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
West Mamprusi	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yendi	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Zabzugu-Tatale	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>.0%</b>	<b>.2%</b>	<b>.1%</b>	<b>0.0%</b>	<b>.1%</b>	<b>1.1%</b>
Upper East districts:						
Bawku Municipal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bawku West	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bolgatanga Municipal	.5%	0.0%	0.0%	0.0%	0.0%	1.4%
Bongo	0.0%	.9%	0.0%	0.0%	.5%	1.4%
Builsa	0.0%	2.2%	.4%	0.0%	0.0%	.4%
Garu-Tempene	.4%	.9%	0.0%	0.0%	0.0%	0.0%
Kassena Nankana West	0.0%	0.0%	.9%	0.0%	0.0%	.5%
Kassena Nankana East	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Talensi-Nabdam	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>.1%</b>	<b>.4%</b>	<b>.1%</b>	<b>0.0%</b>	<b>.0%</b>	<b>.5%</b>
Upper West districts:						
Jirapa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lambussie-Karni	.9%	.9%	0.0%	.5%	0.0%	0.0%
Lawra	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nadowli	0.0%	0.0%	0.0%	0.0%	0.0%	.5%
Sissala East	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sissala West	0.0%	0.0%	0.0%	0.0%	0.0%	.9%
Wa East	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wa Municipal	0.0%	0.0%	0.0%	.5%	0.0%	.9%
Wa West	0.0%	0.0%	0.0%	0.0%	.5%	0.0%
<b>Total</b>	<b>.1%</b>	<b>.1%</b>	<b>0.0%</b>	<b>.1%</b>	<b>.0%</b>	<b>.3%</b>
Urban	0.0%	0.0%	0.0%	.1%	0.0%	.2%
Rural	.1%	.3%	.1%	.0%	.1%	.9%
<b>Total</b>	<b>.1%</b>	<b>.2%</b>	<b>.1%</b>	<b>.0%</b>	<b>.1%</b>	<b>.8%</b>

**Table 23** Asset ownership

	Bed	Table	Chair	Generator/ Inverter	Sewing machine	Boat without motor	Boat with motor	Car/truck
<b>Northern districts:</b>								
Bole	69%	75%	80%	3%	21%	11%	0%	1%
Bunkpurugu-Yunyoo	47%	52%	56%	1%	31%	1%	0%	0%
Central Gonja	59%	47%	40%	1%	13%	7%	0%	1%
Cherepone	77%	55%	58%	2%	22%	0%	0%	0%
East Gonja	85%	87%	88%	11%	17%	20%	10%	4%
East Mamprusi	74%	69%	73%	4%	26%	0%	0%	0%
Gushiegu	77%	37%	50%	3%	8%	0%	0%	2%
Karaga	76%	72%	69%	2%	14%	0%	0%	1%
Kpandai	77%	56%	79%	2%	15%	4%	3%	2%
Nanumba North	83%	90%	86%	2%	42%	0%	0%	0%
Nanumba South	42%	71%	92%	0%	16%	1%	2%	0%
Saboba	56%	74%	81%	1%	19%	1%	0%	0%
Savelugu-Nanton	81%	82%	82%	1%	23%	0%	0%	2%
Sawla-Tuna-Kalba	43%	42%	45%	4%	34%	0%	0%	3%
Tamale Metropolis	92%	86%	84%	1%	25%	0%	0%	3%
Tolon-Kumbungu	85%	77%	76%	0%	30%	1%	0%	3%
West Gonja	67%	66%	64%	2%	18%	0%	0%	0%
West Mamprusi	79%	73%	75%	3%	35%	5%	1%	0%
Yendi	72%	82%	75%	0%	30%	0%	0%	0%
Zabzugu-Tatale	52%	79%	92%	1%	20%	2%	0%	2%
<b>Total</b>	<b>73%</b>	<b>72%</b>	<b>75%</b>	<b>2%</b>	<b>24%</b>	<b>3%</b>	<b>1%</b>	<b>2%</b>
<b>Upper East districts:</b>								
Bawku Municipal	65%	49%	50%	1%	15%	0%	0%	0%
Bawku West	68%	85%	86%	2%	21%	0%	0%	0%
Bolgatanga Municipal	49%	61%	79%	1%	23%	0%	0%	1%
Bongo	51%	49%	71%	0%	22%	1%	0%	0%
Builsa	50%	54%	56%	1%	15%	0%	0%	0%
Garu-Tempene	34%	34%	34%	1%	9%	0%	0%	1%
Kassena Nankana West	48%	61%	61%	2%	22%	0%	0%	0%
Kassena Nankana East	55%	67%	65%	2%	23%	2%	0%	4%
Talensi-Nabdam	58%	68%	59%	0%	16%	1%	0%	1%
<b>Total</b>	<b>54%</b>	<b>58%</b>	<b>62%</b>	<b>1%</b>	<b>18%</b>	<b>1%</b>	<b>0%</b>	<b>1%</b>
<b>Upper West districts:</b>								
Jirapa	66%	76%	80%	1%	30%	0%	0%	3%
Lambussie-Karni	48%	53%	72%	1%	13%	0%	0%	1%
Lawra	81%	80%	73%	1%	34%	0%	0%	3%
Nadowli	92%	91%	93%	1%	36%	0%	0%	2%
Sissala East	86%	74%	88%	3%	13%	2%	0%	3%
Sissala West	92%	78%	78%	3%	25%	1%	0%	2%
Wa East	60%	65%	77%	0%	9%	0%	0%	0%
Wa Municipal	52%	56%	91%	2%	14%	0%	0%	4%
Wa West	39%	37%	51%	1%	6%	2%	1%	0%
<b>Total</b>	<b>68%</b>	<b>69%</b>	<b>79%</b>	<b>2%</b>	<b>21%</b>	<b>1%</b>	<b>0%</b>	<b>2%</b>
Urban	88%	85%	84%	1%	31%	0%	0%	4%
Rural	62%	64%	69%	2%	20%	2%	1%	1%
<b>Total</b>	<b>67%</b>	<b>67%</b>	<b>72%</b>	<b>2%</b>	<b>22%</b>	<b>2%</b>	<b>1%</b>	<b>1%</b>

**Table 24** Asset ownership, continued

	Animal-drawn cart	Motorbike/Scooter	Bicycle	Sofa	Clock	Radio	Television	Land-line telephone
<b>Northern districts:</b>								
Bole	0%	26%	79%	10%	12%	83%	18%	0%
Bunkpurugu-Yunyoo	13%	21%	83%	5%	6%	62%	3%	0%
Central Gonja	1%	33%	94%	8%	27%	86%	6%	2%
Cherepone	21%	42%	92%	21%	22%	74%	22%	0%
East Gonja	1%	28%	81%	15%	33%	73%	18%	1%
East Mamprusi	37%	34%	88%	13%	40%	75%	23%	0%
Gushiegu	8%	32%	92%	8%	11%	61%	0%	0%
Karaga	7%	36%	95%	26%	31%	84%	28%	0%
Kpandai	0%	40%	88%	16%	5%	62%	25%	0%
Nanumba North	0%	64%	97%	10%	58%	88%	46%	0%
Nanumba South	0%	33%	82%	1%	6%	47%	6%	0%
Saboba	0%	50%	92%	22%	32%	79%	8%	0%
Savelugu-Nanton	7%	48%	98%	39%	44%	91%	49%	0%
Sawla-Tuna-Kalba	1%	30%	82%	6%	13%	64%	6%	0%
Tamale Metropolis	1%	51%	88%	50%	62%	85%	65%	2%
Tolon-Kumbungu	5%	45%	96%	58%	32%	92%	29%	0%
West Gonja	2%	40%	88%	12%	16%	80%	20%	0%
West Mamprusi	35%	24%	93%	26%	19%	83%	31%	0%
Yendi	0%	55%	100%	35%	40%	91%	55%	0%
Zabzugu-Tatale	0%	47%	92%	11%	16%	81%	9%	0%
<b>Total</b>	<b>6%</b>	<b>41%</b>	<b>90%</b>	<b>24%</b>	<b>32%</b>	<b>78%</b>	<b>31%</b>	<b>1%</b>
<b>Upper East districts:</b>								
Bawku Municipal	24%	6%	90%	21%	6%	80%	1%	0%
Bawku West	44%	18%	85%	10%	18%	87%	2%	0%
Bolgatanga Municipal	12%	31%	80%	31%	21%	84%	24%	1%
Bongo	24%	14%	72%	17%	14%	69%	9%	0%
Builsa	23%	20%	81%	20%	12%	62%	9%	0%
Garu-Tempene	23%	14%	80%	5%	3%	65%	6%	0%
Kassena Nankana West	27%	8%	81%	10%	5%	54%	5%	0%
Kassena Nankana East	21%	20%	85%	21%	15%	83%	25%	0%
Talensi-Nabdam	4%	11%	69%	8%	5%	46%	6%	0%
<b>Total</b>	<b>21%</b>	<b>16%</b>	<b>81%</b>	<b>17%</b>	<b>11%</b>	<b>71%</b>	<b>9%</b>	<b>0%</b>
<b>Upper West districts:</b>								
Jirapa	3%	33%	93%	19%	25%	88%	19%	1%
Lambussie-Karni	25%	22%	86%	6%	8%	78%	9%	1%
Lawra	18%	40%	88%	23%	38%	88%	30%	0%
Nadowli	5%	29%	90%	11%	23%	83%	6%	0%
Sissala East	30%	57%	76%	4%	46%	78%	28%	0%
Sissala West	75%	65%	90%	3%	35%	95%	43%	2%
Wa East	5%	32%	79%	2%	12%	68%	14%	0%
Wa Municipal	7%	49%	87%	10%	26%	90%	20%	2%
Wa West	0%	8%	82%	2%	5%	50%	1%	0%
<b>Total</b>	<b>14%</b>	<b>37%</b>	<b>86%</b>	<b>11%</b>	<b>25%</b>	<b>81%</b>	<b>18%</b>	<b>1%</b>
Urban	5%	55%	87%	47%	60%	87%	63%	2%
Rural	14%	28%	86%	14%	17%	74%	14%	0%
<b>Total</b>	<b>12%</b>	<b>33%</b>	<b>86%</b>	<b>20%</b>	<b>24%</b>	<b>77%</b>	<b>22%</b>	<b>1%</b>

Table 25 Asset ownership, continued

	Refrigerator	Freezer	Washing machine	Computer	Camera	Video Deck	DVD/VCD	Cupboard, Cabinet
Northern districts:								
Bole	3%	0%	0%	1%	1%	15%	15%	4%
Bunkpurugu-Yunyoo	0%	0%	0%	0%	0%	1%	2%	5%
Central Gonja	4%	2%	0%	1%	1%	3%	4%	1%
Cherepone	6%	1%	0%	4%	3%	8%	21%	9%
East Gonja	7%	5%	1%	4%	2%	6%	17%	23%
East Mamprusi	7%	6%	0%	3%	2%	5%	20%	22%
Gushiegu	1%	1%	0%	0%	1%	0%	0%	1%
Karaga	1%	1%	0%	0%	1%	10%	22%	12%
Kpandai	6%	2%	0%	2%	0%	20%	5%	2%
Nanumba North	9%	3%	0%	3%	5%	34%	40%	35%
Nanumba South	2%	1%	0%	0%	1%	2%	7%	20%
Saboba	0%	1%	0%	0%	0%	2%	2%	22%
Savelugu-Nanton	7%	2%	0%	1%	0%	29%	42%	50%
Sawla-Tuna-Kalba	1%	0%	0%	1%	1%	1%	5%	10%
Tamale Metropolis	20%	9%	0%	5%	0%	6%	27%	64%
Tolon-Kumbungu	5%	3%	1%	2%	2%	17%	21%	38%
West Gonja	4%	2%	0%	3%	3%	10%	12%	5%
West Mamprusi	2%	2%	0%	2%	0%	14%	12%	8%
Yendi	12%	4%	0%	1%	0%	26%	37%	18%
Zabzugu-Tatale	0%	0%	0%	1%	1%	3%	5%	33%
<b>Total</b>	<b>7%</b>	<b>3%</b>	<b>0%</b>	<b>2%</b>	<b>1%</b>	<b>11%</b>	<b>18%</b>	<b>26%</b>
<b>Upper East districts:</b>								
Bawku Municipal	0%	0%	0%	0%	0%	1%	0%	1%
Bawku West	1%	0%	0%	1%	2%	2%	2%	1%
Bolgatanga Municipal	5%	5%	0%	2%	2%	13%	15%	7%
Bongo	3%	0%	0%	0%	0%	5%	6%	3%
Builsa	3%	1%	0%	0%	0%	3%	5%	0%
Garu-Tempene	2%	0%	0%	0%	0%	1%	2%	2%
Kassena Nankana West	1%	1%	0%	1%	1%	2%	3%	2%
Kassena Nankana East	15%	6%	0%	5%	4%	15%	13%	9%
Talensi-Nabdam	2%	0%	0%	0%	0%	0%	3%	1%
<b>Total</b>	<b>3%</b>	<b>1%</b>	<b>0%</b>	<b>1%</b>	<b>1%</b>	<b>5%</b>	<b>5%</b>	<b>3%</b>
<b>Upper West districts:</b>								
Jirapa	10%	5%	1%	5%	1%	14%	15%	8%
Lambussie-Karni	3%	1%	0%	0%	1%	4%	5%	3%
Lawra	12%	4%	0%	1%	3%	10%	23%	18%
Nadowli	3%	0%	0%	1%	0%	2%	4%	6%
Sissala East	9%	2%	0%	3%	1%	16%	25%	22%
Sissala West	4%	2%	1%	2%	1%	6%	22%	14%
Wa East	3%	0%	0%	0%	1%	8%	5%	0%
Wa Municipal	6%	3%	0%	5%	3%	7%	11%	8%
Wa West	0%	0%	0%	1%	0%	0%	0%	0%
<b>Total</b>	<b>6%</b>	<b>2%</b>	<b>0%</b>	<b>2%</b>	<b>2%</b>	<b>7%</b>	<b>12%</b>	<b>9%</b>
Urban	23%	11%	0%	7%	2%	19%	39%	46%
Rural	2%	1%	0%	1%	1%	6%	8%	10%
<b>Total</b>	<b>6%</b>	<b>3%</b>	<b>0%</b>	<b>2%</b>	<b>1%</b>	<b>8%</b>	<b>13%</b>	<b>16%</b>

**Table 26** Asset ownership, continued

	Mobile phone	Hoe	Axe	Tractor	Cutlass	Cooker	Fishing gear	Sickle ( i.e. rice)
Northern districts:								
Bole	69%	94%	47%	0%	98%	1%	9%	7%
Bunkpurugu-Yunyoo	64%	99%	74%	0%	98%	1%	0%	90%
Central Gonja	69%	98%	85%	2%	99%	3%	9%	76%
Cherepone	65%	98%	66%	4%	96%	1%	3%	85%
East Gonja	61%	80%	71%	1%	80%	3%	24%	49%
East Mamprusi	73%	99%	69%	4%	96%	1%	0%	93%
Gushegu	50%	94%	51%	1%	97%	0%	0%	83%
Karaga	79%	97%	79%	5%	96%	0%	4%	91%
Kpandai	62%	97%	78%	3%	97%	0%	5%	33%
Nanumba North	90%	100%	93%	2%	100%	0%	0%	77%
Nanumba South	65%	97%	89%	1%	96%	0%	5%	75%
Saboba	76%	100%	68%	1%	97%	0%	10%	64%
Savelugu-Nanton	94%	99%	67%	5%	98%	0%	0%	92%
Sawla-Tuna-Kalba	69%	97%	72%	2%	94%	0%	1%	6%
Tamale Metropolis	89%	90%	75%	3%	96%	0%	0%	65%
Tolon-Kumbungu	89%	98%	91%	4%	95%	3%	8%	95%
West Gonja	68%	96%	72%	0%	95%	2%	0%	63%
West Mamprusi	81%	97%	72%	2%	96%	1%	6%	85%
Yendi	93%	100%	70%	4%	97%	1%	0%	82%
Zabzugu-Tatale	73%	99%	97%	1%	98%	0%	5%	93%
<b>Total</b>	<b>77%</b>	<b>95%</b>	<b>75%</b>	<b>2%</b>	<b>96%</b>	<b>1%</b>	<b>4%</b>	<b>69%</b>
Upper East districts:								
Bawku Municipal	74%	99%	58%	1%	89%	0%	0%	96%
Bawku West	85%	98%	66%	1%	95%	1%	1%	77%
Bolgatanga Municipal	84%	96%	60%	2%	94%	3%	1%	63%
Bongo	70%	98%	82%	0%	91%	1%	4%	69%
Builsa	64%	96%	86%	2%	92%	3%	4%	73%
Garu-Tempene	53%	96%	52%	0%	91%	1%	0%	68%
Kassena Nankana West	60%	99%	57%	1%	91%	2%	5%	39%
Kassena Nankana East	73%	93%	36%	0%	90%	14%	3%	30%
Talensi-Nabdam	48%	96%	33%	0%	89%	0%	1%	51%
<b>Total</b>	<b>68%</b>	<b>97%</b>	<b>58%</b>	<b>1%</b>	<b>91%</b>	<b>2%</b>	<b>2%</b>	<b>66%</b>
Upper West districts:								
Jirapa	69%	93%	85%	2%	98%	37%	0%	64%
Lambussie-Karni	62%	95%	76%	1%	92%	1%	0%	17%
Lawra	72%	97%	91%	2%	95%	0%	1%	33%
Nadowli	72%	97%	91%	2%	93%	2%	15%	6%
Sissala East	78%	87%	48%	1%	87%	1%	1%	38%
Sissala West	89%	96%	97%	6%	96%	1%	1%	50%
Wa East	57%	100%	94%	0%	96%	0%	0%	9%
Wa Municipal	79%	97%	65%	3%	99%	4%	1%	14%
Wa West	41%	97%	60%	0%	95%	1%	5%	4%
<b>Total</b>	<b>69%</b>	<b>96%</b>	<b>79%</b>	<b>2%</b>	<b>95%</b>	<b>6%</b>	<b>3%</b>	<b>25%</b>
Urban								
Urban	89%	91%	64%	3%	95%	4%	0%	49%
Rural								
Rural	70%	97%	72%	2%	94%	2%	4%	63%
<b>Total</b>	<b>73%</b>	<b>96%</b>	<b>71%</b>	<b>2%</b>	<b>94%</b>	<b>2%</b>	<b>3%</b>	<b>60%</b>

**Table 27** Improved housing conditions

Districts	Improved drinking water	Improved sanitation	Improved roofing	Improved floor	Improved lightning	Household owning a motorized vehicle	Improved source of cooking fuel
<b>Northern districts:</b>							
Bole	75%	9%	54%	73%	25%	27%	0%
Bunkpurugu-Yunyoo	82%	7%	28%	86%	4%	21%	0%
Central Gonja	16%	1%	26%	41%	9%	33%	0%
Cherepone	81%	15%	53%	68%	36%	42%	1%
East Gonja	42%	4%	59%	32%	39%	35%	4%
East Mamprusi	55%	11%	57%	94%	31%	35%	1%
Gushiegu	82%	16%	21%	48%	1%	32%	0%
Karaga	71%	24%	49%	44%	34%	37%	1%
Kpandai	50%	22%	85%	48%	53%	44%	1%
Nanumba North	65%	32%	72%	92%	64%	64%	0%
Nanumba South	67%	0%	57%	25%	29%	34%	1%
Saboba	81%	9%	45%	82%	25%	51%	1%
Savelugu-Nanton	84%	24%	43%	48%	71%	48%	1%
Sawla-Tuna-Kalba	78%	3%	44%	41%	8%	30%	0%
Tamale Metropolis	97%	55%	85%	93%	80%	51%	3%
Tolon-Kumbungu	54%	40%	17%	25%	39%	46%	1%
West Gonja	94%	7%	37%	48%	13%	40%	3%
West Mamprusi	72%	26%	57%	98%	56%	24%	0%
Yendi	100%	52%	63%	71%	84%	55%	0%
Zabzugu-Tatale	89%	13%	77%	31%	15%	47%	0%
<b>Total</b>	<b>75%</b>	<b>25%</b>	<b>58%</b>	<b>66%</b>	<b>45%</b>	<b>42%</b>	<b>1%</b>
<b>Upper East districts:</b>							
Bawku Municipal	79%	0%	85%	70%	1%	7%	0%
Bawku West	93%	5%	91%	96%	0%	18%	1%
Bolgatanga Municipal	93%	2%	95%	67%	23%	31%	4%
Bongo	95%	3%	77%	67%	22%	15%	2%
Builsa	60%	13%	33%	31%	8%	20%	0%
Garu-Tempene	88%	3%	63%	48%	11%	15%	1%
Kassena Nankana West	91%	2%	55%	62%	4%	8%	2%
Kassena Nankana East	87%	16%	58%	80%	28%	21%	5%
Talensi-Nabdam	94%	10%	61%	50%	5%	11%	1%
<b>Total</b>	<b>86%</b>	<b>5%</b>	<b>71%</b>	<b>63%</b>	<b>11%</b>	<b>16%</b>	<b>2%</b>
<b>Upper West districts:</b>							
Jirapa	95%	13%	73%	51%	20%	34%	1%
Lambussie-Karni	91%	26%	59%	43%	44%	23%	2%
Lawra	88%	30%	76%	86%	68%	40%	0%
Nadowli	99%	21%	92%	78%	8%	29%	0%
Sissala East	100%	14%	98%	86%	42%	58%	1%
Sissala West	99%	19%	86%	99%	80%	66%	3%
Wa East	88%	13%	67%	70%	24%	32%	1%
Wa Municipal	96%	18%	89%	86%	26%	50%	5%
Wa West	99%	1%	74%	40%	1%	10%	2%
<b>Total</b>	<b>95%</b>	<b>18%</b>	<b>80%</b>	<b>72%</b>	<b>32%</b>	<b>37%</b>	<b>2%</b>
Urban	93%	52%	86%	87%	78%	55%	4%
Rural	80%	11%	61%	62%	23%	29%	1%
<b>Total</b>	<b>82%</b>	<b>18%</b>	<b>66%</b>	<b>66%</b>	<b>32%</b>	<b>33%</b>	<b>2%</b>

**Table 28** Improved sanitation facilities

	Unimproved sanitation	Improved sanitation	No facilities
<b>Northern districts:</b>			
Bole	0.0%	9.1%	90.9%
Bunkpurugu-Yunyoo	1.4%	7.2%	91.4%
Central Gonja	.5%	1.4%	98.2%
Cherepone	0.0%	14.5%	85.5%
East Gonja	4.4%	4.0%	91.6%
East Mamprusi	.9%	10.9%	88.2%
Gushegu	1.3%	16.4%	82.2%
Karaga	10.5%	23.7%	65.8%
Kpandai	.5%	21.8%	77.7%
Nanumba North	6.8%	32.0%	61.3%
Nanumba South	0.0%	.5%	99.5%
Saboba	13.1%	9.0%	77.8%
Savelugu-Nanton	2.3%	24.2%	73.5%
Sawla-Tuna-Kalba	.5%	2.7%	96.8%
Tamale Metropolis	1.8%	54.5%	43.6%
Tolon-Kumbungu	4.5%	39.8%	55.7%
West Gonja	2.3%	7.3%	90.5%
West Mamprusi	0.0%	26.2%	73.8%
Yendi	0.0%	51.8%	48.2%
Zabzugu-Tatale	15.1%	13.2%	71.7%
<b>Total</b>	<b>2.8%</b>	<b>24.8%</b>	<b>72.4%</b>
<b>Upper East districts:</b>			
Bawku Municipal	.5%	.5%	99.1%
Bawku West	1.8%	5.4%	92.8%
Bolgatanga Municipal	.5%	1.8%	97.7%
Bongo	0.0%	3.2%	96.8%
Builsa	5.3%	13.3%	81.4%
Garu-Tempane	.4%	2.7%	96.9%
Kassena Nankana West	0.0%	2.3%	97.7%
Kassena Nankana East	0.0%	16.4%	83.6%
Talensi-Nabdam	0.0%	9.5%	90.5%
<b>Total</b>	<b>.9%</b>	<b>5.3%</b>	<b>93.9%</b>
<b>Upper West districts:</b>			
Jirapa	.9%	12.7%	86.4%
Lambussie-Karni	4.5%	26.2%	69.2%
Lawra	10.9%	29.9%	59.3%
Nadowli	0.0%	20.7%	79.3%
Sissala East	0.0%	13.6%	86.4%
Sissala West	10.0%	19.1%	70.9%
Wa East	.5%	12.7%	86.8%
Wa Municipal	0.0%	18.2%	81.8%
Wa West	10.9%	.9%	88.2%
<b>Total</b>	<b>3.9%</b>	<b>17.5%</b>	<b>78.6%</b>
Urban	1.1%	51.9%	47.0%
Rural	2.7%	10.8%	86.5%
<b>Total</b>	<b>2.4%</b>	<b>17.8%</b>	<b>79.8%</b>



**Table 29** Wealth quintiles

Districts	Poorest	2	3	4	Wealthiest	Two poorest quintiles
<b>Northern districts:</b>						
Bole	17.3%	25.0%	25.9%	20.9%	10.9%	42.3%
Bunkpurugu-Yunyoo	34.7%	30.6%	15.8%	13.5%	5.4%	65.3%
Central Gonja	24.8%	34.2%	21.6%	14.0%	5.4%	59.0%
Cherepone	21.6%	22.5%	18.5%	22.0%	15.4%	44.1%
East Gonja	21.7%	23.0%	18.1%	20.8%	16.4%	44.7%
East Mamprusi	15.5%	18.2%	22.3%	22.7%	21.4%	33.6%
Gushegu	38.7%	25.8%	20.9%	11.1%	3.6%	64.4%
Karaga	11.9%	22.8%	21.0%	23.7%	20.5%	34.7%
Kpandai	25.9%	20.0%	18.2%	22.7%	13.2%	45.9%
Nanumba North	3.2%	5.0%	14.0%	33.3%	44.6%	8.1%
Nanumba South	34.2%	25.6%	18.3%	19.6%	2.3%	59.8%
Saboba	15.4%	16.3%	21.7%	26.7%	19.9%	31.7%
Savelugu-Nanton	4.1%	12.8%	13.2%	34.7%	35.2%	16.9%
Sawla-Tuna-Kalba	29.5%	31.4%	22.3%	11.4%	5.5%	60.9%
Tamale Metropolis	4.5%	4.1%	10.0%	19.5%	61.8%	8.6%
Tolon-Kumbungu	5.0%	17.2%	15.4%	33.5%	29.0%	22.2%
West Gonja	22.7%	26.8%	23.6%	15.0%	11.8%	49.5%
West Mamprusi	10.4%	17.2%	20.4%	29.0%	23.1%	27.6%
Yendi	4.1%	12.6%	18.0%	21.6%	43.7%	16.7%
Zabzugu-Tatale	16.4%	21.9%	21.0%	27.9%	12.8%	38.4%
<b>Total</b>	<b>15.6%</b>	<b>17.8%</b>	<b>17.4%</b>	<b>22.0%</b>	<b>27.2%</b>	<b>33.4%</b>
<b>Upper East districts:</b>						
Bawku Municipal	18.9%	36.5%	25.7%	15.8%	3.2%	55.4%
Bawku West	8.6%	22.6%	35.7%	24.4%	8.6%	31.2%
Bolgatanga Municipal	10.9%	31.8%	18.6%	17.7%	20.9%	42.7%
Bongo	27.1%	30.3%	13.8%	17.4%	11.5%	57.3%
Builsa	42.5%	18.1%	15.0%	14.6%	9.7%	60.6%
Garu-Tempene	40.4%	29.6%	16.6%	9.9%	3.6%	70.0%
Kassena Nankana West	27.1%	39.9%	20.6%	9.6%	2.8%	67.0%
Kassena Nankana East	22.3%	29.1%	16.4%	10.5%	21.8%	51.4%
Talensi-Nabdam	40.5%	29.1%	16.4%	10.0%	4.1%	69.5%
<b>Total</b>	<b>25.7%</b>	<b>30.5%</b>	<b>20.2%</b>	<b>14.5%</b>	<b>9.1%</b>	<b>56.2%</b>
<b>Upper West districts:</b>						
Jirapa	19.5%	28.2%	14.1%	18.6%	19.5%	47.7%
Lambussie-Karni	25.8%	33.0%	21.7%	12.7%	6.8%	58.8%
Lawra	11.8%	15.4%	20.4%	21.7%	30.8%	27.1%
Nadowli	7.2%	18.0%	30.6%	27.5%	16.7%	25.2%
Sissala East	5.0%	17.6%	17.2%	38.5%	21.7%	22.6%
Sissala West	1.4%	8.6%	15.9%	46.4%	27.7%	10.0%
Wa East	25.5%	24.5%	25.5%	17.7%	6.8%	50.0%
Wa Municipal	8.6%	24.1%	26.4%	25.9%	15.0%	32.7%
Wa West	52.5%	29.4%	13.1%	3.6%	1.4%	81.9%
<b>Total</b>	<b>16.9%</b>	<b>22.2%</b>	<b>21.3%</b>	<b>22.8%</b>	<b>16.7%</b>	<b>39.1%</b>
Urban	4.3%	7.3%	9.8%	19.7%	58.9%	11.6%
Rural	21.8%	25.3%	20.8%	20.0%	12.1%	47.1%
<b>Total</b>	<b>18.8%</b>	<b>22.3%</b>	<b>18.9%</b>	<b>20.0%</b>	<b>20.0%</b>	<b>41.1%</b>

**Table 30** Access to land for cultivation

	No	Yes	Agricultural land	Backyard / Vegetable garden	Wealthiest
Northern districts:					
Bole	5.5%	94.5%	99.0%	1.0%	10.9%
Bunkpurugu-Yunyoo	1.4%	98.6%	97.3%	2.7%	5.4%
Central Gonja	1.4%	98.6%	97.7%	2.3%	5.4%
Cherepone	3.1%	96.9%	98.6%	1.4%	15.4%
East Gonja	6.2%	93.8%	96.7%	3.3%	16.4%
East Mamprusi	1.4%	98.6%	100.0%	0.0%	21.4%
Gushiegu	.4%	99.6%	99.1%	.9%	3.6%
Karaga	1.4%	98.6%	100.0%	0.0%	20.5%
Kpandai	2.7%	97.3%	99.1%	.9%	13.2%
Nanumba North	.9%	99.1%	100.0%	0.0%	44.6%
Nanumba South	.9%	99.1%	99.5%	.5%	2.3%
Saboba	0.0%	100.0%	100.0%	0.0%	19.9%
Savelugu-Nanton	0.0%	100.0%	99.5%	.5%	35.2%
Sawla-Tuna-Kalba	1.8%	98.2%	98.1%	1.9%	5.5%
Tamale Metropolis	15.0%	85.0%	100.0%	0.0%	61.8%
Tolon-Kumbungu	.9%	99.1%	98.6%	1.4%	29.0%
West Gonja	1.4%	98.6%	97.7%	2.3%	11.8%
West Mamprusi	.9%	99.1%	100.0%	0.0%	23.1%
Yendi	0.0%	100.0%	100.0%	0.0%	43.7%
Zabzugu-Tatale	0.0%	100.0%	100.0%	0.0%	12.8%
<b>Total</b>	<b>4.1%</b>	<b>95.9%</b>	<b>99.2%</b>	<b>.8%</b>	<b>27.2%</b>
Upper East districts:					
Bawku Municipal	.5%	99.5%	98.6%	1.4%	3.2%
Bawku West	2.3%	97.7%	100.0%	0.0%	8.6%
Bolgatanga Municipal	5.9%	94.1%	63.3%	36.7%	20.9%
Bongo	0.0%	100.0%	99.1%	.9%	11.5%
Builsa	6.2%	93.8%	93.9%	6.1%	9.7%
Garu-Tempene	.9%	99.1%	85.1%	14.9%	3.6%
Kassena Nankana West	0.0%	100.0%	94.0%	6.0%	2.8%
Kassena Nankana East	8.6%	91.4%	88.1%	11.9%	21.8%
Talensi-Nabdam	3.2%	96.8%	100.0%	0.0%	4.1%
<b>Total</b>	<b>2.9%</b>	<b>97.1%</b>	<b>90.7%</b>	<b>9.3%</b>	<b>9.1%</b>
Upper West districts:					
Jirapa	7.7%	92.3%	98.0%	2.0%	19.5%
Lambussie-Karni	10.4%	89.6%	98.0%	2.0%	6.8%
Lawra	8.6%	91.4%	65.8%	34.2%	30.8%
Nadowli	1.4%	98.6%	100.0%	0.0%	16.7%
Sissala East	12.2%	87.8%	97.4%	2.6%	21.7%
Sissala West	3.2%	96.8%	67.6%	32.4%	27.7%
Wa East	0.0%	100.0%	100.0%	0.0%	6.8%
Wa Municipal	2.7%	97.3%	97.2%	2.8%	15.0%
Wa West	.5%	99.5%	100.0%	0.0%	1.4%
<b>Total</b>	<b>4.8%</b>	<b>95.2%</b>	<b>91.9%</b>	<b>8.1%</b>	<b>16.7%</b>
Urban	14.3%	85.7%	94.2%	5.8%	58.9%
Rural	1.7%	98.3%	95.6%	4.4%	12.1%
<b>Total</b>	<b>3.9%</b>	<b>96.1%</b>	<b>95.4%</b>	<b>4.6%</b>	<b>20.0%</b>

**Table 31** Households access to land for cultivation

	How do you access this land that you use for cultivation:					Shared cropping	Other
	Permission from Chief/Tindana	Short term lease/rented (<2 years)	Long-term lease or rented (> 2 years)	Owner-ship	Extended family /community land		
Northern districts:							
Bole	42.3%	.5%	0.0%	51.0%	3.8%	1.4%	1.0%
Bunkpurugu-Yunyoo	1.4%	1.8%	.9%	83.6%	11.9%	0.0%	.5%
Central Gonja	26.5%	.9%	1.8%	47.5%	23.3%	0.0%	0.0%
Cherepone	15.9%	0.0%	0.0%	39.5%	44.5%	0.0%	0.0%
East Gonja	7.5%	.5%	0.0%	15.1%	75.5%	.9%	.5%
East Mamprusi	3.2%	7.4%	.9%	85.3%	3.2%	0.0%	0.0%
Gushegu	2.2%	0.0%	.9%	94.2%	1.8%	.4%	.4%
Karaga	37.0%	.5%	.9%	18.1%	43.5%	0.0%	0.0%
Kpandai	12.1%	0.0%	1.4%	47.7%	38.8%	0.0%	0.0%
Nanumba North	13.2%	0.0%	0.0%	70.0%	15.9%	.5%	.5%
Nanumba South	12.0%	0.0%	0.0%	52.5%	35.0%	0.0%	.5%
Saboba	.5%	0.0%	0.0%	65.2%	34.4%	0.0%	0.0%
Savelugu-Nanton	22.4%	2.7%	0.0%	42.5%	32.0%	.5%	0.0%
Sawla-Tuna-Kalba	4.2%	0.0%	.5%	64.8%	30.6%	0.0%	0.0%
Tamale Metropolis	46.0%	0.0%	.5%	49.7%	2.7%	0.0%	1.1%
Tolon-Kumbungu	1.8%	0.0%	.9%	12.3%	84.0%	0.0%	.9%
West Gonja	41.5%	0.0%	.5%	54.4%	2.8%	0.0%	.9%
West Mamprusi	4.1%	1.8%	0.0%	80.4%	11.4%	1.8%	.5%
Yendi	18.5%	0.0%	0.0%	17.6%	63.5%	.5%	0.0%
Zabzugu-Tatale	3.2%	0.0%	.9%	63.9%	32.0%	0.0%	0.0%
<b>Total</b>	<b>18.2%</b>	<b>.8%</b>	<b>.5%</b>	<b>52.8%</b>	<b>27.0%</b>	<b>.3%</b>	<b>.4%</b>
Upper East districts:							
Bawku Municipal	1.8%	0.0%	.9%	60.2%	37.1%	0.0%	0.0%
Bawku West	.5%	0.0%	0.0%	88.4%	10.6%	.5%	0.0%
Bolgatanga Municipal	2.4%	.5%	0.0%	66.7%	30.4%	0.0%	0.0%
Bongo	0.0%	.5%	0.0%	99.5%	0.0%	0.0%	0.0%
Builsa	8.0%	0.0%	.9%	84.0%	7.1%	0.0%	0.0%
Garu-Tempene	.5%	.9%	0.0%	98.6%	0.0%	0.0%	0.0%
Kassena Nankana West	6.0%	0.0%	0.0%	78.4%	15.6%	0.0%	0.0%
Kassena Nankana East	18.4%	0.0%	1.0%	37.3%	39.3%	3.5%	.5%
Talensi-Nabdam	1.9%	0.0%	0.0%	93.0%	5.2%	0.0%	0.0%
<b>Total</b>	<b>3.7%</b>	<b>.2%</b>	<b>.3%</b>	<b>77.7%</b>	<b>17.8%</b>	<b>.3%</b>	<b>.0%</b>
Upper West districts:							
Jirapa	3.0%	0.0%	0.0%	94.6%	2.5%	0.0%	0.0%
Lambussie-Karni	26.3%	2.5%	1.0%	27.8%	42.4%	0.0%	0.0%
Lawra	12.4%	1.5%	1.0%	65.3%	19.8%	0.0%	0.0%
Nadowli	12.8%	.9%	0.0%	47.5%	37.9%	.5%	.5%
Sissala East	37.1%	2.1%	1.5%	16.0%	42.3%	0.0%	1.0%
Sissala West	6.1%	0.0%	0.0%	64.8%	29.1%	0.0%	0.0%
Wa East	19.1%	0.0%	0.0%	79.5%	.9%	.5%	0.0%
Wa Municipal	40.2%	0.0%	0.0%	22.9%	35.5%	1.4%	0.0%
Wa West	36.4%	0.0%	0.0%	5.0%	58.6%	0.0%	0.0%
<b>Total</b>	<b>21.7%</b>	<b>.7%</b>	<b>.3%</b>	<b>47.8%</b>	<b>29.0%</b>	<b>.4%</b>	<b>.1%</b>
Urban	32.4%	1.6%	.5%	43.2%	21.2%	.3%	.8%
Rural	11.4%	.4%	.4%	62.1%	25.3%	.3%	.2%
<b>Total</b>	<b>14.6%</b>	<b>.6%</b>	<b>.4%</b>	<b>59.2%</b>	<b>24.7%</b>	<b>.3%</b>	<b>.3%</b>

**Table 32** Size of land available for cultivation

	Smallholders (5 or less acres)	Medium (6-10 acres)	Large (11 or more acres)
<b>Northern districts:</b>			
Bole	65.5%	18.9%	15.5%
Bunkpurugu-Yunyoo	69.2%	22.0%	8.9%
Central Gonja	43.4%	34.2%	22.4%
Cherepone	36.1%	35.6%	28.3%
East Gonja	70.9%	24.6%	4.4%
East Mamprusi	46.3%	34.3%	19.4%
Gushegu	22.1%	30.4%	47.5%
Karaga	14.8%	21.3%	63.9%
Kpandai	32.9%	35.7%	31.4%
Nanumba North	30.1%	27.9%	42.0%
Nanumba South	50.7%	33.3%	16.0%
Saboba	39.8%	38.5%	21.7%
Savelugu-Nanton	42.9%	34.2%	22.8%
Sawla-Tuna-Kalba	72.7%	19.0%	8.3%
Tamale Metropolis	66.8%	19.8%	13.4%
Tolon-Kumbungu	53.2%	28.2%	18.5%
West Gonja	71.6%	14.4%	14.0%
West Mamprusi	33.3%	39.0%	27.7%
Yendi	42.9%	35.6%	21.5%
Zabzugu-Tatale	41.3%	37.6%	21.1%
<b>Total</b>	<b>50.4%</b>	<b>28.4%</b>	<b>21.3%</b>
<b>Upper East districts:</b>			
Bawku Municipal	93.0%	6.0%	.9%
Bawku West	74.5%	20.4%	5.1%
Bolgatanga Municipal	84.2%	14.3%	1.5%
Bongo	96.8%	2.8%	.5%
Builsa	67.1%	21.9%	11.0%
Garu-Tempene	76.4%	20.0%	3.6%
Kassena Nankana West	88.4%	8.3%	3.2%
Kassena Nankana East	94.0%	4.5%	1.5%
Talensi-Nabdam	77.0%	14.6%	8.5%
<b>Total</b>	<b>83.9%</b>	<b>12.3%</b>	<b>3.8%</b>
<b>Upper West districts:</b>			
Jirapa	53.0%	33.5%	13.5%
Lambussie-Karni	67.7%	22.1%	10.3%
Lawra	75.3%	15.7%	9.1%
Nadowli	82.4%	14.4%	3.2%
Sissala East	26.9%	31.7%	41.4%
Sissala West	9.0%	21.7%	69.3%
Wa East	46.8%	33.2%	20.0%
Wa Municipal	73.2%	18.8%	8.0%
Wa West	57.8%	30.7%	11.5%
<b>Total</b>	<b>60.1%</b>	<b>23.6%</b>	<b>16.3%</b>
Urban	64.2%	21.4%	14.4%
Rural	61.6%	23.0%	15.4%
<b>Total</b>	<b>62.0%</b>	<b>22.8%</b>	<b>15.2%</b>

**Table 33** Land available, cultivated and harvested

District	Available land (ha)	Cultivated land (ha)	Harvested land (ha)
<b>Northern districts:</b>			
Bole	20.1	2.9	3.0
Bunkpurugu-Yunyoo	4.0	2.5	3.0
Central Gonja	6.0	3.6	4.0
Cherepone	6.5	3.8	4.1
East Gonja	5.1	2.4	2.8
East Mamprusi	6.0	4.5	5.0
Gushegu	10.1	6.1	6.2
Karaga	16.7	9.4	9.3
Kpandai	12.6	4.4	4.8
Nanumba North	10.2	5.5	6.1
Nanumba South	7.9	3.2	3.3
Saboba	5.5	7.9	4.6
Savelugu-Nanton	5.8	3.7	3.8
Sawla-Tuna-Kalba	12.6	2.4	3.1
Tamale Metropolis	5.3	3.1	3.4
Tolon-Kumbungu	6.3	5.6	4.3
West Gonja	6.9	3.7	3.5
West Mamprusi	9.8	3.9	4.4
Yendi	6.4	3.7	4.2
Zabzugu-Tatale	7.8	3.7	4.2
<b>Total</b>	<b>7.9</b>	<b>4.0</b>	<b>4.1</b>
<b>Upper East districts:</b>			
Bawku Municipal	1.5	1.5	1.5
Bawku West	3.3	2.6	3.0
Bolgatanga Municipal	1.8	1.6	1.8
Bongo	1.3	1.2	1.2
Builsa	3.0	2.5	2.8
Garu-Tempene	2.3	2.1	2.0
Kassena Nankana West	2.7	1.6	1.8
Kassena Nankana East	1.7	1.2	1.3
Talensi-Nabdam	10.0	1.8	2.0
<b>Total</b>	<b>3.1</b>	<b>1.8</b>	<b>1.9</b>
<b>Upper West districts:</b>			
Jirapa	9.7	3.2	4.3
Lambussie-Karni	8.0	2.8	3.0
Lawra	3.4	2.2	2.5
Nadowli	5.8	1.9	3.4
Sissala East	12.7	5.1	6.0
Sissala West	15.2	8.9	11.3
Wa East	7.7	3.2	3.7
Wa Municipal	15.0	2.1	2.3
Wa West	4.7	2.9	2.8
<b>Total</b>	<b>8.9</b>	<b>3.1</b>	<b>3.8</b>
Urban	6.0	3.2	3.5
Rural	6.8	3.2	3.4
<b>Total</b>	<b>6.7</b>	<b>3.2</b>	<b>3.4</b>

**Table 34** Households cultivating different type of cereals and tubers as their main crop

District	Maize	Millet	Rice	Sorghum and/ or millet	Cassava	Cocoyam	Potatoes	Yam
<b>Northern districts:</b>								
Bole	23.4%	1.0%	1.0%	7.3%	2.4%	0.0%	.5%	49.8%
Bunkpurugu-Yunyoo	63.9%	12.3%	2.7%	7.8%	0.0%	0.0%	0.0%	.9%
Central Gonja	57.7%	0.0%	4.1%	.5%	10.0%	0.0%	0.0%	22.3%
Cherepone	58.3%	1.3%	12.6%	3.1%	0.0%	0.0%	0.0%	3.1%
East Gonja	66.8%	0.0%	3.4%	.5%	8.7%	0.0%	0.0%	17.3%
East Mamprusi	40.7%	15.3%	0.0%	3.2%	0.0%	0.0%	0.0%	0.0%
Gushiegu	53.2%	9.5%	4.5%	10.5%	0.0%	0.0%	0.0%	10.0%
Karaga	65.4%	0.0%	3.7%	0.0%	0.0%	0.0%	0.0%	13.1%
Kpandai	22.1%	0.0%	1.4%	0.0%	9.4%	0.0%	0.0%	64.8%
Nanumba North	9.9%	0.0%	3.6%	.5%	1.4%	0.0%	0.0%	81.5%
Nanumba South	5.2%	0.0%	.5%	.5%	.9%	0.0%	.5%	86.9%
Saboba	33.5%	0.0%	1.9%	2.4%	.9%	0.0%	0.0%	32.1%
Savelugu-Nanton	28.6%	0.0%	25.7%	0.0%	.5%	0.0%	0.0%	1.4%
Sawla-Tuna-Kalba	32.6%	3.1%	5.2%	11.4%	.5%	0.0%	0.0%	13.5%
Tamale Metropolis	41.5%	0.0%	42.6%	0.0%	0.0%	0.0%	0.0%	3.3%
Tolon-Kumbungu	87.0%	0.0%	6.5%	0.0%	.5%	0.0%	0.0%	.9%
West Gonja	72.6%	0.0%	0.0%	.9%	4.2%	0.0%	.5%	14.9%
West Mamprusi	86.8%	5.5%	2.3%	.5%	0.0%	0.0%	0.0%	0.0%
Yendi	30.3%	0.0%	3.7%	0.0%	0.0%	0.0%	.5%	43.1%
Zabzugu-Tatale	2.7%	0.0%	1.4%	.9%	0.0%	0.0%	.5%	93.6%
<b>Total</b>	<b>43.7%</b>	<b>2.3%</b>	<b>10.6%</b>	<b>2.0%</b>	<b>1.8%</b>	<b>0.0%</b>	<b>.1%</b>	<b>25.4%</b>
<b>Upper East districts:</b>								
Bawku Municipal	87.8%	9.5%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%
Bawku West	77.4%	18.0%	.9%	3.2%	0.0%	0.0%	0.0%	0.0%
Bolgatanga Municipal	13.0%	45.9%	2.4%	37.2%	0.0%	0.0%	0.0%	0.0%
Bongo	.9%	24.3%	6.4%	67.0%	0.0%	0.0%	0.0%	0.0%
Builsa	24.1%	59.9%	4.2%	8.5%	0.0%	0.0%	0.0%	0.0%
Garu-Tempane	84.5%	5.9%	.5%	7.3%	0.0%	0.0%	0.0%	0.0%
Kassena Nankana West	33.6%	24.0%	3.2%	31.8%	0.0%	0.0%	0.0%	0.0%
Kassena Nankana East	40.6%	14.2%	23.4%	13.7%	0.0%	0.0%	0.0%	0.0%
Talensi-Nabdam	17.9%	11.6%	26.3%	27.4%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>46.2%</b>	<b>24.2%</b>	<b>5.2%</b>	<b>20.8%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Upper West districts:</b>								
Jirapa	29.9%	8.0%	2.5%	10.0%	0.0%	0.0%	0.0%	.5%
Lambussie-Karni	51.3%	3.0%	2.0%	7.0%	0.0%	0.0%	0.0%	0.0%
Lawra	53.8%	7.1%	4.6%	16.8%	0.0%	0.0%	0.0%	0.0%
Nadowli	48.2%	.9%	2.8%	11.0%	0.0%	0.0%	0.0%	.9%
Sissala East	84.2%	0.0%	.5%	.5%	0.0%	.5%	0.0%	2.6%
Sissala West	89.1%	4.7%	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%
Wa East	72.5%	7.8%	6.4%	.5%	1.8%	0.0%	0.0%	6.4%
Wa Municipal	56.1%	2.8%	1.4%	1.9%	0.0%	0.0%	0.0%	9.9%
Wa West	52.3%	.5%	1.8%	23.2%	0.0%	0.0%	0.0%	.9%
<b>Total</b>	<b>56.5%</b>	<b>4.0%</b>	<b>2.6%</b>	<b>8.8%</b>	<b>.2%</b>	<b>.0%</b>	<b>0.0%</b>	<b>2.9%</b>
Urban	44.2%	3.6%	20.0%	5.0%	.2%	0.0%	0.0%	9.3%
Rural	47.2%	9.7%	5.4%	9.2%	1.1%	.0%	.1%	14.9%
<b>Total</b>	<b>46.8%</b>	<b>8.8%</b>	<b>7.6%</b>	<b>8.6%</b>	<b>1.0%</b>	<b>.0%</b>	<b>.1%</b>	<b>14.1%</b>

**Table 35** Households cultivating pulses and other crops as their main crop

District	Beans/Peas	Cashew nut	Groundnuts/Peanut	Soya Beans	Cotton
<b>Northern districts:</b>					
Bole	1.0%	1.5%	11.7%	0.0%	0.0%
Bunkpurugu-Yunyoo	.9%	0.0%	2.3%	1.8%	7.3%
Central Gonja	0.0%	0.0%	4.1%	0.0%	0.0%
Cherepone	0.0%	0.0%	10.3%	11.2%	0.0%
East Gonja	1.0%	0.0%	1.4%	.5%	0.0%
East Mamprusi	0.0%	0.0%	24.5%	8.3%	7.9%
Gushiegu	.5%	.5%	5.0%	6.4%	0.0%
Karaga	0.0%	0.0%	13.1%	4.2%	0.0%
Kpandai	0.0%	0.0%	1.9%	0.0%	0.0%
Nanumba North	0.0%	0.0%	2.7%	.5%	0.0%
Nanumba South	0.0%	0.0%	5.6%	0.0%	0.0%
Saboba	.5%	0.0%	2.8%	20.8%	5.2%
Savelugu-Nanton	1.0%	0.0%	21.9%	18.6%	2.4%
Sawla-Tuna-Kalba	1.6%	1.6%	29.0%	.5%	0.0%
Tamale Metropolis	0.0%	0.0%	4.4%	5.5%	0.0%
Tolon-Kumbungu	0.0%	0.0%	4.6%	.5%	0.0%
West Gonja	1.9%	0.0%	4.2%	0.0%	0.0%
West Mamprusi	.5%	0.0%	4.5%	0.0%	0.0%
Yendi	0.0%	0.0%	6.4%	16.1%	0.0%
Zabzugu-Tatale	.5%	0.0%	.5%	0.0%	0.0%
<b>Total</b>	<b>.4%</b>	<b>.1%</b>	<b>7.2%</b>	<b>4.7%</b>	<b>1.0%</b>
<b>Upper East districts:</b>					
Bawku Municipal	0.0%	0.0%	0.0%	0.0%	0.0%
Bawku West	0.0%	0.0%	0.0%	.5%	0.0%
Bolgatanga Municipal	0.0%	0.0%	1.4%	0.0%	0.0%
Bongo	0.0%	0.0%	1.4%	0.0%	0.0%
Builsa	0.0%	0.0%	3.3%	0.0%	0.0%
Garu-Tempene	0.0%	0.0%	.5%	.5%	0.0%
Kassena Nankana West	0.0%	0.0%	7.4%	0.0%	0.0%
Kassena Nankana East	.5%	0.0%	6.1%	0.0%	0.0%
Talensi-Nabdam	1.1%	1.1%	11.6%	3.2%	0.0%
<b>Total</b>	<b>.1%</b>	<b>.1%</b>	<b>2.7%</b>	<b>.3%</b>	<b>0.0%</b>
<b>Upper West districts:</b>					
Jirapa	6.0%	.5%	42.8%	0.0%	0.0%
Lambussie-Karni	4.0%	0.0%	30.2%	0.0%	.5%
Lawra	1.0%	0.0%	16.2%	0.0%	0.0%
Nadowli	6.4%	0.0%	29.4%	.5%	0.0%
Sissala East	1.6%	0.0%	6.3%	1.1%	1.6%
Sissala West	1.4%	0.0%	.5%	0.0%	1.4%
Wa East	0.0%	0.0%	3.2%	1.4%	0.0%
Wa Municipal	.5%	0.0%	13.2%	9.0%	0.0%
Wa West	0.0%	0.0%	20.0%	.9%	0.0%
<b>Total</b>	<b>2.4%</b>	<b>.1%</b>	<b>19.1%</b>	<b>2.0%</b>	<b>.2%</b>
Urban	.7%	.1%	10.0%	5.6%	.2%
Rural	.7%	.1%	7.8%	2.4%	.7%
<b>Total</b>	<b>.7%</b>	<b>.1%</b>	<b>8.1%</b>	<b>2.9%</b>	<b>.6%</b>

**Table 36** Households cultivating vegetables as their main crop

District	Garden eggs/ Eggplant	Leafy vegetables	Okro	Onion	Pepper	Tomatos
<b>Northern districts:</b>						
Bole	0.0%	0.0%	0.0%	0.0%	.5%	0.0%
Bunkpurugu-Yunyoo	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Central Gonja	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%
Cherepone	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
East Gonja	.5%	0.0%	0.0%	0.0%	0.0%	0.0%
East Mamprusi	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gushegu	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Karaga	0.0%	0.0%	0.0%	0.0%	0.0%	.5%
Kpandai	0.0%	.5%	0.0%	0.0%	0.0%	0.0%
Nanumba North	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nanumba South	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Saboba	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Savelugu-Nanton	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sawla-Tuna-Kalba	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
Tamale Metropolis	0.0%	.5%	1.1%	0.0%	1.1%	0.0%
Tolon-Kumbungu	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
West Gonja	0.0%	0.0%	.5%	0.0%	.5%	0.0%
West Mamprusi	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yendi	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Zabzugu-Tatale	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>.0%</b>	<b>.1%</b>	<b>.2%</b>	<b>0.0%</b>	<b>.3%</b>	<b>.1%</b>
<b>Upper East districts:</b>						
Bawku Municipal	0.0%	0.0%	0.0%	.5%	0.0%	.9%
Bawku West	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bolgatanga Municipal	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bongo	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Builsa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Garu-Tempene	0.0%	0.0%	0.0%	.9%	0.0%	0.0%
Kassena Nankana West	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kassena Nankana East	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%
Talensi-Nabdam	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>.2%</b>	<b>.1%</b>	<b>.2%</b>
<b>Upper West districts:</b>						
Jirapa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lambussie-Karni	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Lawra	0.0%	.5%	0.0%	0.0%	0.0%	0.0%
Nadowli	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sissala East	0.0%	0.0%	0.0%	0.0%	.5%	.5%
Sissala West	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wa East	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wa Municipal	.5%	0.0%	.9%	0.0%	0.0%	3.8%
Wa West	.5%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>.1%</b>	<b>.2%</b>	<b>.2%</b>	<b>0.0%</b>	<b>.0%</b>	<b>.7%</b>
Urban	0.0%	.4%	.7%	0.0%	.1%	.1%
Rural	.0%	.0%	.0%	.1%	.2%	.2%
<b>Total</b>	<b>.0%</b>	<b>.1%</b>	<b>.1%</b>	<b>.1%</b>	<b>.2%</b>	<b>.2%</b>



**Table 37** Most common crops cultivated (one of three most important crops mentioned by households)

	Maize	Millet	Rice	Sorghum	Cassava	Yam	Groundnut	Soya bean	Beans/peas
Northern districts:									
Bole	59%	3%	4%	30%	21%	71%	34%	0%	6%
Bunkpurugu-Yunyoo	94%	49%	10%	30%	0%	5%	18%	18%	14%
Central Gonja	91%	0%	23%	0%	53%	44%	31%	0%	1%
Cherepone	87%	7%	43%	22%	0%	13%	29%	38%	14%
East Gonja	83%	3%	15%	5%	31%	50%	8%	4%	2%
East Mamprusi	90%	63%	2%	18%	0%	0%	45%	22%	5%
Gushegu	79%	28%	20%	27%	2%	31%	24%	27%	4%
Karaga	95%	0%	30%	3%	1%	40%	58%	31%	0%
Kpandai	77%	1%	4%	5%	58%	77%	17%	0%	2%
Nanumba North	83%	2%	9%	20%	34%	95%	35%	7%	0%
Nanumba South	56%	0%	13%	5%	15%	90%	58%	0%	1%
Saboba	67%	6%	10%	16%	5%	63%	19%	57%	3%
Savelugu-Nanton	61%	0%	45%	5%	4%	22%	49%	43%	5%
Sawla-Tuna-Kalba	56%	13%	13%	31%	5%	29%	35%	2%	11%
Tamale Metropolis	60%	0%	58%	1%	0%	10%	8%	8%	1%
Tolon-Kumbungu	95%	2%	52%	5%	13%	19%	33%	6%	1%
West Gonja	92%	0%	2%	11%	31%	43%	25%	0%	11%
West Mamprusi	98%	41%	33%	15%	0%	0%	29%	26%	10%
Yendi	72%	4%	7%	6%	4%	64%	31%	47%	0%
Zabzugu-Tatale	41%	35%	6%	28%	1%	97%	68%	1%	2%
<b>Total</b>	<b>75%</b>	<b>12%</b>	<b>25%</b>	<b>12%</b>	<b>12%</b>	<b>38%</b>	<b>28%</b>	<b>15%</b>	<b>4%</b>
Upper East districts:									
Bawku Municipal	92%	71%	10%	25%	0%	0%	4%	38%	14%
Bawku West	96%	68%	67%	37%	0%	0%	2%	5%	2%
Bolgatanga Municipal	21%	65%	35%	80%	0%	0%	54%	1%	7%
Bongo	10%	63%	42%	90%	0%	0%	78%	1%	1%
Builsa	54%	73%	33%	31%	0%	0%	54%	0%	2%
Garu-Tempane	94%	62%	17%	54%	0%	0%	3%	10%	2%
Kassena Nankana West	53%	44%	42%	41%	0%	0%	84%	1%	0%
Kassena Nankana East	55%	35%	58%	25%	0%	0%	60%	1%	1%
Talensi-Nabdam	18%	20%	29%	17%	0%	0%	18%	6%	1%
<b>Total</b>	<b>55%</b>	<b>57%</b>	<b>33%</b>	<b>44%</b>	<b>0%</b>	<b>0%</b>	<b>37%</b>	<b>9%</b>	<b>4%</b>
Upper West districts:									
Jirapa	73%	20%	14%	39%	0%	0%	73%	0%	30%
Lambussie-Karni	75%	18%	13%	28%	0%	2%	57%	1%	22%
Lawra	81%	20%	13%	37%	0%	0%	48%	1%	4%
Nadowli	81%	5%	21%	23%	0%	9%	59%	5%	52%
Sissala East	77%	0%	7%	4%	2%	25%	36%	2%	12%
Sissala West	93%	15%	3%	14%	0%	13%	73%	9%	17%
Wa East	96%	27%	33%	10%	6%	45%	31%	22%	10%
Wa Municipal	88%	10%	10%	8%	2%	48%	43%	18%	9%
Wa West	92%	3%	12%	76%	0%	9%	62%	5%	11%
<b>Total</b>	<b>84%</b>	<b>13%</b>	<b>14%</b>	<b>27%</b>	<b>1%</b>	<b>18%</b>	<b>53%</b>	<b>7%</b>	<b>19%</b>
Urban	59%	9%	32%	11%	3%	15%	24%	13%	3%
Rural	73%	29%	24%	27%	7%	25%	37%	12%	8%
<b>Total</b>	<b>71%</b>	<b>25%</b>	<b>25%</b>	<b>24%</b>	<b>7%</b>	<b>23%</b>	<b>35%</b>	<b>12%</b>	<b>7%</b>

**Table 38** Agricultural constraints

Two reasons for not producing more	% of responses
Inadequate rain	31.4%
Low soil fertility	19.9%
Lack of fertilizer/pesticide	16.8%
Lack of cash/money	10.8%
Lack of household labour	4.2%
Heavy rains	2.7%
Lack of access to credit, collateral	2.6%
Lack of land	2.3%
Pests and diseases	2.2%
Other	1.7%
Lack of training/technical advice	1.0%
Lack of tools	.9%
Lack of seeds	.8%
Household is engaged in other activity	.7%
No marketing opportunities	.6%
Don't need/want to	.6%
Water logging	.4%
Theft of crops	.3%
Lack of storage facilities	.1%
	<b>100.0%</b>

**Table 39** Most common constraints to not producing more agricultural output

	Lack of fertilizer/ pesticide	Labour	Soil fertility	Heavy rains	Lack of cash	Lack of land	Inadequate rain
<b>Northern districts:</b>							
Bole	5%	20%	3%	1%	29%	0%	36%
Bunkpurugu-Yunyoo	14%	1%	10%	1%	7%	0%	36%
Central Gonja	14%	6%	9%	4%	10%	2%	4%
Cherepone	15%	1%	32%	1%	15%	3%	35%
East Gonja	26%	0%	13%	8%	6%	0%	6%
East Mamprusi	19%	1%	19%	0%	6%	1%	37%
Gushegu	9%	4%	10%	1%	10%	1%	23%
Karaga	5%	0%	4%	1%	5%	0%	2%
Kpandai	8%	1%	6%	9%	6%	0%	26%
Nanumba North	18%	11%	19%	2%	10%	1%	33%
Nanumba South	5%	7%	32%	4%	21%	2%	30%
Saboba	13%	1%	6%	1%	1%	1%	29%
Savelugu-Nanton	3%	1%	6%	0%	3%	0%	29%
Sawla-Tuna-Kalba	9%	4%	6%	4%	1%	0%	30%
Tamale Metropolis	7%	0%	8%	7%	2%	0%	5%
Tolon-Kumbungu	24%	0%	12%	3%	18%	1%	28%
West Gonja	15%	6%	16%	1%	13%	1%	38%
West Mamprusi	12%	0%	12%	0%	4%	1%	68%
Yendi	14%	5%	15%	2%	14%	0%	14%
Zabzugu-Tatale	2%	5%	4%	1%	21%	0%	32%
<b>Total</b>	<b>12%</b>	<b>3%</b>	<b>11%</b>	<b>3%</b>	<b>9%</b>	<b>1%</b>	<b>24%</b>
<b>Upper East districts:</b>							
Bawku Municipal	18%	2%	32%	1%	21%	7%	34%
Bawku West	20%	10%	8%	2%	4%	1%	7%
Bolgatanga Municipal	15%	3%	21%	2%	1%	4%	16%
Bongo	6%	20%	39%	1%	20%	29%	15%
Builsa	21%	5%	40%	1%	24%	3%	45%
Garu-Tempene	18%	4%	17%	0%	3%	2%	12%
Kassena Nankana West	23%	6%	18%	3%	3%	1%	65%
Kassena Nankana East	19%	1%	2%	3%	3%	2%	10%
Talensi-Nabdam	30%	2%	35%	0%	13%	1%	46%
<b>Total</b>	<b>19%</b>	<b>5%</b>	<b>25%</b>	<b>1%</b>	<b>11%</b>	<b>5%</b>	<b>29%</b>
<b>Upper West districts:</b>							
Jirapa	3%	2%	10%	1%	0%	0%	19%
Lambussie-Karni	37%	1%	40%	1%	20%	2%	50%
Lawra	9%	2%	29%	0%	19%	3%	46%
Nadowli	9%	3%	29%	1%	9%	1%	42%
Sissala East	14%	0%	4%	1%	10%	0%	28%
Sissala West	5%	11%	27%	0%	54%	1%	65%
Wa East	23%	2%	5%	8%	8%	0%	16%
Wa Municipal	32%	8%	38%	1%	2%	2%	31%
Wa West	40%	5%	38%	0%	3%	1%	53%
<b>Total</b>	<b>19%</b>	<b>4%</b>	<b>25%</b>	<b>2%</b>	<b>11%</b>	<b>1%</b>	<b>37%</b>
Urban	8%	2%	12%	3%	6%	1%	15%
Rural	17%	4%	19%	2%	10%	2%	31%
<b>Total</b>	<b>15%</b>	<b>4%</b>	<b>18%</b>	<b>2%</b>	<b>10%</b>	<b>2%</b>	<b>28%</b>

**Table 40** Types of irrigation

	Rain-fed	Irrigated- canals, dam, river, swamp, well	Irrigated- pump	Irrigated- bucket	Other
Northern districts:					
Bole	98.6%	.5%	0.0%	0.0%	1.0%
Bunkpurugu-Yunyoo	100.0%	0.0%	0.0%	0.0%	0.0%
Central Gonja	100.0%	0.0%	0.0%	0.0%	0.0%
Cherepone	100.0%	0.0%	0.0%	0.0%	0.0%
East Gonja	98.6%	1.4%	0.0%	0.0%	0.0%
East Mamprusi	99.5%	.5%	0.0%	0.0%	0.0%
Gushegu	100.0%	0.0%	0.0%	0.0%	0.0%
Karaga	99.5%	.5%	0.0%	0.0%	0.0%
Kpandai	96.3%	1.4%	0.0%	.9%	1.4%
Nanumba North	100.0%	0.0%	0.0%	0.0%	0.0%
Nanumba South	99.5%	0.0%	0.0%	0.0%	.5%
Saboba	99.5%	.5%	0.0%	0.0%	0.0%
Savelugu-Nanton	100.0%	0.0%	0.0%	0.0%	0.0%
Sawla-Tuna-Kalba	99.5%	0.0%	0.0%	0.0%	.5%
Tamale Metropolis	99.5%	0.0%	0.0%	0.0%	.5%
Tolon-Kumbungu	99.5%	0.0%	0.0%	0.0%	.5%
West Gonja	100.0%	0.0%	0.0%	0.0%	0.0%
West Mamprusi	99.1%	.9%	0.0%	0.0%	0.0%
Yendi	96.4%	3.6%	0.0%	0.0%	0.0%
Zabzugu-Tatale	99.5%	.5%	0.0%	0.0%	0.0%
<b>Total</b>	<b>99.2%</b>	<b>.5%</b>	<b>0.0%</b>	<b>.0%</b>	<b>.2%</b>
Upper East districts:					
Bawku Municipal	99.1%	0.0%	0.0%	.9%	0.0%
Bawku West	98.1%	1.9%	0.0%	0.0%	0.0%
Bolgatanga Municipal	100.0%	0.0%	0.0%	0.0%	0.0%
Bongo	99.1%	.9%	0.0%	0.0%	0.0%
Builsa	99.5%	.5%	0.0%	0.0%	0.0%
Garu-Tempene	100.0%	0.0%	0.0%	0.0%	0.0%
Kassena Nankana West	99.5%	0.0%	.5%	0.0%	0.0%
Kassena Nankana East	98.0%	.5%	0.0%	.5%	1.0%
Talensi-Nabdam	100.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>99.4%</b>	<b>.3%</b>	<b>.1%</b>	<b>.2%</b>	<b>.1%</b>
Upper West districts:					
Jirapa	100.0%	0.0%	0.0%	0.0%	0.0%
Lambussie-Karni	97.5%	2.5%	0.0%	0.0%	0.0%
Lawra	99.0%	0.0%	0.0%	.5%	.5%
Nadowli	96.8%	3.2%	0.0%	0.0%	0.0%
Sissala East	99.5%	0.0%	0.0%	.5%	0.0%
Sissala West	99.5%	.5%	0.0%	0.0%	0.0%
Wa East	100.0%	0.0%	0.0%	0.0%	0.0%
Wa Municipal	97.2%	0.0%	0.0%	2.3%	.5%
Wa West	100.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>98.7%</b>	<b>.7%</b>	<b>0.0%</b>	<b>.5%</b>	<b>.2%</b>
Urban					
Urban	99.1%	.3%	0.0%	.2%	.4%
Rural					
Rural	99.1%	.5%	.0%	.2%	.1%
<b>Total</b>	<b>99.1%</b>	<b>.5%</b>	<b>0.0%</b>	<b>.2%</b>	<b>.2%</b>

**Table 41** Changes in agricultural production

	Last years (2011) agricultural production compared to the year before (2010)				
	Less	Same	More	Don't know	Other
<b>Northern districts:</b>					
Bole	58.2%	6.7%	25.5%	9.6%	1.0%
Bunkpurugu-Yunyoo	36.1%	6.8%	53.4%	3.7%	0.0%
Central Gonja	15.5%	10.0%	74.0%	.5%	0.0%
Cherepone	54.1%	12.3%	26.4%	7.3%	0.0%
East Gonja	20.3%	14.6%	39.6%	25.5%	0.0%
East Mamprusi	47.5%	4.6%	47.5%	.5%	0.0%
Gushegu	25.4%	4.9%	66.5%	3.1%	0.0%
Karaga	9.3%	3.2%	86.1%	1.4%	0.0%
Kpandai	42.1%	11.2%	44.4%	2.3%	1.4%
Nanumba North	40.0%	15.9%	35.5%	8.6%	0.0%
Nanumba South	42.4%	2.8%	50.2%	4.6%	.5%
Saboba	39.8%	8.6%	50.7%	.9%	0.0%
Savelugu-Nanton	26.0%	10.5%	63.5%	0.0%	0.0%
Sawla-Tuna-Kalba	43.1%	1.9%	30.1%	25.0%	.5%
Tamale Metropolis	16.6%	9.6%	73.8%	0.0%	.5%
Tolon-Kumbungu	38.4%	10.0%	47.5%	4.1%	.5%
West Gonja	49.3%	6.0%	37.8%	6.9%	0.0%
West Mamprusi	56.2%	17.8%	24.2%	1.8%	0.0%
Yendi	22.1%	5.0%	67.1%	5.9%	0.0%
Zabzugu-Tatale	35.6%	2.7%	61.2%	.5%	0.0%
<b>Total</b>	<b>33.3%</b>	<b>8.8%</b>	<b>52.6%</b>	<b>5.3%</b>	<b>.2%</b>
<b>Upper East districts:</b>					
Bawku Municipal	31.2%	13.1%	40.3%	15.4%	0.0%
Bawku West	17.6%	7.4%	70.8%	4.2%	0.0%
Bolgatanga Municipal	17.9%	8.2%	70.5%	3.4%	0.0%
Bongo	22.9%	30.3%	40.8%	6.0%	0.0%
Builsa	43.4%	35.8%	19.8%	.9%	0.0%
Garu-Tempane	4.5%	17.2%	75.1%	3.2%	0.0%
Kassena Nankana West	65.1%	8.7%	25.2%	.9%	0.0%
Kassena Nankana East	18.9%	11.9%	66.7%	2.5%	1.0%
Talensi-Nabdam	50.2%	3.8%	42.7%	3.3%	0.0%
<b>Total</b>	<b>31.0%</b>	<b>14.2%</b>	<b>49.5%</b>	<b>5.3%</b>	<b>.1%</b>
<b>Upper West districts:</b>					
Jirapa	19.2%	13.3%	66.0%	1.5%	0.0%
Lambussie-Karni	55.6%	11.6%	30.8%	2.0%	0.0%
Lawra	35.6%	24.3%	38.6%	1.5%	.5%
Nadowli	42.0%	14.6%	39.3%	4.1%	0.0%
Sissala East	38.1%	6.2%	26.8%	28.9%	0.0%
Sissala West	66.7%	7.5%	25.4%	.5%	0.0%
Wa East	21.4%	23.6%	54.5%	.5%	0.0%
Wa Municipal	37.9%	26.2%	30.8%	5.1%	.5%
Wa West	55.5%	5.9%	35.9%	2.7%	0.0%
<b>Total</b>	<b>39.1%</b>	<b>16.6%</b>	<b>39.8%</b>	<b>4.5%</b>	<b>.2%</b>
Urban	24.0%	8.6%	63.8%	3.6%	.4%
Rural	35.4%	12.4%	46.8%	5.4%	.1%
<b>Total</b>	<b>33.7%</b>	<b>11.8%</b>	<b>49.4%</b>	<b>5.1%</b>	<b>.2%</b>

**Table 42** Livestock ownership

District	% owning livestock	Tropical livestock units (TLU)*	Cattle (n)	Goats (n)	Sheep (n)	Pigs (n)	Chicken (n)	Other poultry (n)
Northern districts:								
Bole	79.8%	2.4	2.7	6.2	3.5	3.5	19.4	2.8
Bunkpurugu-Yunyoo	97.7%	6.0	3.9	6.5	6.9	2.6	19.5	6.3
Central Gonja	90.4%	6.0	6.1	7.8	6.2	0.3	20.8	5.5
Cherepone	85.5%	3.7	2.6	6.3	6.7	1.5	19.1	7.5
East Gonja	63.2%	2.9	2.2	7.7	11.2	7.1	46.9	8.5
East Mamprusi	73.7%	2.4	1.3	3.5	4.9	1.4	11.2	2.7
Gushiegu	88.8%	6.5	21.5	6.5	4.8	2.0	20.6	15.4
Karaga	75.5%	4.4	5.7	7.3	4.1	0.0	13.7	3.2
Kpandai	66.4%	2.2	2.1	5.6	15.4	1.3	56.9	1.9
Nanumba North	88.2%	5.3	9.0	6.6	5.7	1.5	25.3	10.1
Nanumba South	93.5%	1.7	1.3	3.1	1.1	0.6	13.8	2.6
Saboba	93.7%	7.6	6.9	6.0	5.6	2.5	21.3	11.8
Savelugu-Nanton	95.9%	2.8	2.1	5.0	4.5	0.2	15.9	5.3
Sawla-Tuna-Kalba	82.9%	4.1	4.1	6.6	1.9	2.0	15.1	3.6
Tamale Metropolis	66.3%	2.9	3.8	4.7	6.2	0.1	12.9	3.2
Tolon-Kumbungu	94.1%	5.0	4.3	4.7	5.2	0.3	17.9	4.4
West Gonja	71.0%	2.5	2.2	4.9	2.6	1.9	11.3	3.8
West Mamprusi	74.0%	4.6	5.0	5.5	4.2	1.0	12.0	2.8
Yendi	91.9%	3.1	2.7	5.7	4.9	0.0	15.2	2.3
Zabzugu-Tatale	95.4%	4.9	4.3	5.3	3.1	1.1	16.4	5.6
<b>Total</b>	<b>81.1%</b>	<b>3.9</b>	<b>4.6</b>	<b>5.7</b>	<b>5.5</b>	<b>1.4</b>	<b>19.6</b>	<b>5.2</b>
Upper East districts:								
Bawku Municipal	87.8%	4.1	2.0	4.3	3.7	2.8	16.1	8.7
Bawku West	94.4%	6.2	3.2	5.9	3.5	5.4	14.3	3.2
Bolgatanga Municipal	97.6%	4.1	2.1	4.5	4.4	2.2	12.8	4.4
Bongo	91.7%	3.8	1.6	5.1	3.7	2.7	8.4	7.7
Builsa	82.1%	4.3	2.3	8.6	6.4	1.0	11.2	4.1
Garu-Tempane	91.4%	3.9	2.2	4.5	3.6	1.8	10.6	3.6
Kassena Nankana West	85.3%	3.9	2.7	5.1	3.5	2.2	9.6	3.9
Kassena Nankana East	89.1%	3.0	1.8	10.1	3.7	1.1	11.4	3.2
Talensi-Nabdam	91.1%	2.3	1.3	5.4	3.7	0.8	9.8	5.3
<b>Total</b>	<b>90.2%</b>	<b>3.9</b>	<b>2.1</b>	<b>5.5</b>	<b>4.0</b>	<b>2.3</b>	<b>12.0</b>	<b>5.2</b>
Upper West districts:								
Jirapa	90.6%	6.6	3.6	11.2	5.0	6.7	20.0	7.5
Lambussie-Karni	88.9%	6.5	17.0	8.4	4.3	2.4	10.5	5.7
Lawra	85.1%	10.8	13.5	9.1	6.8	5.9	11.7	1.5
Nadowli	93.6%	3.2	1.3	7.5	3.2	3.4	13.2	2.2
Sissala East	50.5%	2.9	11.8	4.9	5.1	0.2	11.6	0.7
Sissala West	81.7%	20.7	24.4	15.9	17.9	1.4	12.9	7.5
Wa East	85.0%	5.3	5.1	8.3	3.9	1.0	8.7	2.2
Wa Municipal	76.6%	3.4	3.5	7.7	2.8	0.7	16.4	1.7
Wa West	91.8%	4.4	3.5	8.4	4.9	1.8	9.6	1.9
<b>Total</b>	<b>83.8%</b>	<b>6.4</b>	<b>7.4</b>	<b>8.9</b>	<b>5.3</b>	<b>3.0</b>	<b>13.2</b>	<b>3.2</b>
Urban								
Urban	75.1%	3.0	2.9	4.8	5.3	1.1	12.9	3.0
Rural								
Rural	85.9%	4.6	4.5	6.4	4.9	2.1	16.5	5.1
<b>Total</b>	<b>84.3%</b>	<b>4.3</b>	<b>4.3</b>	<b>6.2</b>	<b>5.0</b>	<b>1.9</b>	<b>16.0</b>	<b>4.8</b>

\* One TLU is equivalent to one head of cattle of 250 kg at maintenance. The index used the following weights:

cattle: 0.8, bull: 0.8, goat: 0.1, sheep: 0.1, pig: 0.3, poultry: 0.007, hoarse/donkey: 0.5

**Table 43** Households practice fishing/fish farming

District	Does the household practice fishing/fish farming?	
	No	Yes
Northern districts:		
Bole	83.7%	16.3%
Bunkpurugu-Yunyoo	99.5%	.5%
Central Gonja	87.4%	12.6%
Cherepone	95.2%	4.8%
East Gonja	82.8%	17.2%
East Mamprusi	100.0%	0.0%
Gushegu	100.0%	0.0%
Karaga	96.3%	3.7%
Kpandai	95.8%	4.2%
Nanumba North	100.0%	0.0%
Nanumba South	94.1%	5.9%
Saboba	87.9%	12.1%
Savelugu-Nanton	98.1%	1.9%
Sawla-Tuna-Kalba	100.0%	0.0%
Tamale Metropolis	100.0%	0.0%
Tolon-Kumbungu	95.6%	4.4%
West Gonja	96.8%	3.2%
West Mamprusi	84.0%	16.0%
Yendi	100.0%	0.0%
Zabzugu-Tatale	94.7%	5.3%
<b>Total</b>	<b>95.5%</b>	<b>4.5%</b>
<b>Upper East districts:</b>		
Bawku Municipal	100.0%	0.0%
Bawku West	99.5%	.5%
Bolgatanga Municipal	99.5%	.5%
Bongo	95.0%	5.0%
Builsa	95.4%	4.6%
Garu-Tempane	99.5%	.5%
Kassena Nankana West	95.2%	4.8%
Kassena Nankana East	92.7%	7.3%
Talensi-Nabdam	98.5%	1.5%
<b>Total</b>	<b>97.8%</b>	<b>2.2%</b>
<b>Upper West districts:</b>		
Jirapa	100.0%	0.0%
Lambussie-Karni	96.6%	3.4%
Lawra	99.4%	.6%
Nadowli	82.9%	17.1%
Sissala East	100.0%	0.0%
Sissala West	98.9%	1.1%
Wa East	98.9%	1.1%
Wa Municipal	99.4%	.6%
Wa West	96.0%	4.0%
<b>Total</b>	<b>96.2%</b>	<b>3.8%</b>
Urban	99.5%	.5%
Rural	95.9%	4.1%
<b>Total</b>	<b>96.4%</b>	<b>3.6%</b>

**Table 44** Household members in income earning activity

Districts	Household members are engaged in an income earning activity	Household members are engaged in an income earning activity 12 months ago
<b>Northern districts:</b>		
Bole	1.9	1.8
Bunkpurugu-Yunyoo	1.9	3.1
Central Gonja	3.9	4.0
Cherepone	3.9	3.8
East Gonja	2.8	2.5
East Mamprusi	3.6	3.5
Gushegu	4.0	4.0
Karaga	4.4	4.6
Kpandai	0.5	0.4
Nanumba North	3.9	3.9
Nanumba South	3.4	3.5
Saboba	3.4	3.4
Savelugu-Nanton	3.4	3.4
Sawla-Tuna-Kalba	2.4	2.5
Tamale Metropolis	2.6	2.7
Tolon-Kumbungu	4.4	4.4
West Gonja	2.2	2.2
West Mamprusi	2.7	3.3
Yendi	2.8	2.7
Zabzugu-Tatale	2.1	2.0
<b>Total</b>	<b>2.9</b>	<b>3.0</b>
<b>Upper East districts:</b>		
Bawku Municipal	1.1	1.6
Bawku West	1.8	1.5
Bolgatanga Municipal	2.8	2.8
Bongo	2.7	2.7
Builsa	1.2	1.2
Garu-Tempene	1.6	2.0
Kassena Nankana West	1.5	1.4
Kassena Nankana East	1.9	2.0
Talensi-Nabdam	1.6	1.7
<b>Total</b>	<b>1.8</b>	<b>1.9</b>
<b>Upper West districts:</b>		
Jirapa	2.7	2.8
Lambussie-Karni	2.7	2.6
Lawra	2.3	2.2
Nadowli	2.0	2.0
Sissala East	2.5	2.6
Sissala West	2.4	2.3
Wa East	2.4	2.6
Wa Municipal	2.6	2.8
Wa West	2.6	2.6
<b>Total</b>	<b>2.5</b>	<b>2.5</b>
Urban	2.7	2.7
Rural	2.4	2.5
<b>Total</b>	<b>2.5</b>	<b>2.6</b>



**Table 45** Main income activity mentioned by households

	Crops	Livestock	Fishing / fish farming	Artisanry	Trade, commerce, selling	Food processing	Support (people or organization)	Regular employment	Casual employment
<b>Northern districts:</b>									
Bole	91.2%	.5%	1.9%	.5%	3.7%	0.0%	.5%	1.9%	0.0%
Bunkpurugu-Yunyoo	89.6%	4.1%	0.0%	.9%	3.6%	0.0%	0.0%	1.4%	.5%
Central Gonja	86.9%	1.4%	6.3%	.5%	3.2%	.5%	0.0%	.9%	.5%
Cherepone	89.4%	1.3%	.4%	1.8%	3.1%	0.0%	.4%	3.5%	0.0%
East Gonja	79.1%	3.0%	16.4%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%
East Mamprusi	91.8%	.9%	0.0%	.5%	2.7%	.5%	.5%	2.7%	.5%
Gushiegu	92.4%	6.7%	0.0%	0.0%	.9%	0.0%	0.0%	0.0%	0.0%
Karaga	95.0%	.9%	.5%	0.0%	2.3%	.5%	0.0%	.9%	0.0%
Kpandai	86.0%	3.7%	5.6%	.5%	1.4%	.9%	0.0%	1.9%	0.0%
Nanumba North	89.1%	1.4%	0.0%	0.0%	1.8%	.5%	0.0%	6.8%	.5%
Nanumba South	92.7%	3.7%	0.0%	.5%	1.4%	.5%	.5%	.9%	0.0%
Saboba	90.4%	6.4%	.5%	1.4%	.9%	.5%	0.0%	0.0%	0.0%
Savelugu-Nanton	90.8%	3.7%	0.0%	.5%	1.4%	2.3%	0.0%	.9%	.5%
Sawla-Tuna-Kalba	83.3%	3.0%	0.0%	2.5%	6.4%	3.0%	0.0%	.5%	1.5%
Tamale Metropolis	71.7%	1.4%	0.0%	4.1%	12.3%	.9%	.5%	7.8%	1.4%
Tolon-Kumbungu	95.4%	1.4%	0.0%	.5%	1.4%	0.0%	0.0%	1.4%	0.0%
West Gonja	72.7%	11.5%	.5%	1.1%	4.9%	1.6%	0.0%	4.4%	3.3%
West Mamprusi	96.3%	.5%	.9%	0.0%	.9%	0.0%	0.0%	.9%	.5%
Yendi	92.3%	0.0%	0.0%	.9%	5.0%	0.0%	0.0%	1.8%	0.0%
Zabzugu-Tatale	98.6%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>86.4%</b>	<b>2.4%</b>	<b>1.6%</b>	<b>1.2%</b>	<b>4.3%</b>	<b>.6%</b>	<b>.1%</b>	<b>2.8%</b>	<b>.6%</b>
<b>Upper East districts:</b>									
Bawku Municipal	96.8%	.9%	0.0%	.9%	0.0%	0.0%	0.0%	.9%	.5%
Bawku West	90.9%	3.6%	0.0%	0.0%	4.5%	0.0%	0.0%	.9%	0.0%
Bolgatanga Municipal	36.5%	5.9%	0.0%	21.0%	8.2%	0.0%	0.0%	19.6%	8.7%
Bongo	64.4%	8.3%	0.0%	2.3%	9.3%	0.0%	0.0%	14.4%	1.4%
Builsa	43.7%	8.6%	2.6%	4.0%	16.6%	6.0%	0.0%	9.9%	8.6%
Garu-Tempene	95.4%	1.4%	0.0%	0.0%	.9%	0.0%	0.0%	2.3%	0.0%
Kassena Nankana West	78.9%	8.4%	0.0%	.5%	5.3%	2.6%	0.0%	.5%	3.7%
Kassena Nankana East	70.8%	2.7%	.9%	4.6%	5.5%	0.0%	.5%	12.3%	2.7%
Talensi-Nabdam	62.9%	23.3%	0.0%	1.0%	8.9%	0.0%	0.0%	2.5%	1.5%
<b>Total</b>	<b>72.0%</b>	<b>6.8%</b>	<b>.3%</b>	<b>4.5%</b>	<b>5.8%</b>	<b>.7%</b>	<b>.0%</b>	<b>6.9%</b>	<b>2.9%</b>
<b>Upper West districts:</b>									
Jirapa	86.2%	.5%	0.0%	2.3%	3.7%	1.4%	0.0%	6.0%	0.0%
Lambussie-Karni	78.4%	6.9%	0.0%	1.4%	6.4%	3.2%	.5%	1.8%	1.4%
Lawra	87.4%	1.9%	0.0%	1.4%	6.1%	0.0%	0.0%	3.3%	0.0%
Nadowli	82.9%	4.1%	0.0%	.9%	2.3%	0.0%	0.0%	9.5%	.5%
Sissala East	76.6%	3.2%	0.0%	.9%	5.0%	0.0%	.9%	11.5%	1.8%
Sissala West	93.8%	2.4%	0.0%	0.0%	1.9%	0.0%	0.0%	.9%	.9%
Wa East	91.2%	4.2%	0.0%	.5%	3.2%	0.0%	0.0%	.9%	0.0%
Wa Municipal	87.7%	1.4%	.5%	.9%	2.3%	0.0%	.5%	5.0%	1.8%
Wa West	98.2%	1.4%	0.0%	0.0%	.5%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>87.1%</b>	<b>2.6%</b>	<b>.1%</b>	<b>1.0%</b>	<b>3.4%</b>	<b>.4%</b>	<b>.2%</b>	<b>4.6%</b>	<b>.7%</b>
Urban	66.8%	1.8%	.1%	4.3%	11.1%	.8%	.4%	12.8%	2.0%
Rural	85.7%	4.0%	1.1%	1.7%	3.2%	.5%	.1%	2.5%	1.1%
<b>Total</b>	<b>82.4%</b>	<b>3.6%</b>	<b>1.0%</b>	<b>2.1%</b>	<b>4.6%</b>	<b>.6%</b>	<b>.1%</b>	<b>4.3%</b>	<b>1.3%</b>

**Table 46** Livelihood groups based on three main income activities

	Fishermen	Unskilled labour	Agriculturalists	Agro-pastoralists	Artisans	Traders	Regular employment	Food processors
<b>Northern districts:</b>								
Bole	6.1%	.9%	69.8%	8.5%	.5%	11.8%	2.4%	0.0%
Bunkpurugu-Yunyoo	0.0%	0.0%	24.9%	64.3%	1.4%	7.2%	1.8%	.5%
Central Gonja	9.0%	4.5%	49.8%	26.2%	.5%	5.9%	2.7%	1.4%
Cherepone	.4%	1.8%	60.0%	24.9%	1.3%	6.7%	4.9%	0.0%
East Gonja	25.1%	0.0%	59.7%	12.3%	.5%	2.4%	0.0%	0.0%
East Mamprusi	0.0%	2.7%	70.5%	7.7%	.9%	11.4%	5.5%	1.4%
Gushegu	0.0%	0.0%	55.4%	41.1%	0.0%	3.1%	.4%	0.0%
Karaga	.5%	0.0%	73.2%	16.7%	1.9%	4.8%	1.4%	1.4%
Kpandai	5.0%	.5%	69.7%	15.6%	.5%	2.8%	3.2%	2.8%
Nanumba North	0.0%	2.7%	75.1%	4.5%	1.4%	6.8%	9.5%	0.0%
Nanumba South	0.0%	4.6%	77.0%	8.3%	2.3%	4.6%	1.8%	1.4%
Saboba	.9%	.5%	53.2%	37.0%	1.4%	3.7%	.5%	2.8%
Savelugu-Nanton	0.0%	4.1%	68.3%	15.6%	.9%	4.6%	3.2%	3.2%
Sawla-Tuna-Kalba	0.0%	2.0%	71.1%	7.6%	3.6%	9.6%	1.5%	4.6%
Tamale Metropolis	0.0%	3.2%	37.3%	11.1%	8.8%	29.0%	9.2%	1.4%
Tolon-Kumbungu	.5%	0.0%	72.0%	16.5%	2.3%	4.6%	4.1%	0.0%
West Gonja	.6%	8.8%	40.3%	28.7%	2.8%	9.9%	6.6%	2.2%
West Mamprusi	3.2%	1.8%	56.6%	26.0%	1.8%	8.7%	1.4%	.5%
Yendi	0.0%	.5%	61.5%	20.8%	2.3%	13.1%	1.8%	0.0%
Zabzugu-Tatale	1.4%	1.9%	84.7%	8.4%	.5%	2.3%	0.0%	.9%
<b>Total</b>	<b>2.6%</b>	<b>2.1%</b>	<b>57.8%</b>	<b>18.8%</b>	<b>2.8%</b>	<b>10.9%</b>	<b>4.0%</b>	<b>1.2%</b>
<b>Upper East districts:</b>								
Bawku Municipal	0.0%	.5%	32.4%	59.9%	.9%	3.6%	1.8%	.9%
Bawku West	0.0%	.9%	9.7%	60.4%	1.4%	24.0%	1.8%	1.8%
Bolgatanga Municipal	0.0%	13.2%	11.9%	21.9%	24.7%	9.6%	18.7%	0.0%
Bongo	0.0%	6.9%	9.6%	50.5%	4.6%	13.3%	15.1%	0.0%
Builsa	2.7%	9.3%	32.0%	20.7%	2.7%	16.7%	10.0%	6.0%
Garu-Tempene	0.0%	2.7%	30.1%	60.7%	0.0%	3.7%	2.7%	0.0%
Kassena Nankana West	.5%	5.2%	30.9%	49.2%	1.6%	8.4%	1.6%	2.6%
Kassena Nankana East	1.8%	9.1%	31.5%	27.9%	6.8%	9.6%	12.8%	.5%
Talensi-Nabdam	0.0%	3.5%	30.3%	43.3%	2.5%	17.9%	2.5%	0.0%
<b>Total</b>	<b>.4%</b>	<b>5.5%</b>	<b>24.2%</b>	<b>44.9%</b>	<b>5.8%</b>	<b>10.8%</b>	<b>7.3%</b>	<b>1.0%</b>
<b>Upper West districts:</b>								
Jirapa	0.0%	1.8%	44.2%	31.8%	3.7%	9.7%	5.5%	3.2%
Lambussie-Karni	0.0%	5.9%	39.5%	36.4%	2.3%	11.4%	.9%	3.6%
Lawra	.5%	9.3%	44.7%	29.3%	1.4%	10.2%	4.7%	0.0%
Nadowli	3.2%	3.6%	29.4%	44.8%	1.4%	5.9%	10.0%	1.8%
Sissala East	0.0%	4.5%	62.3%	12.3%	1.4%	8.2%	11.4%	0.0%
Sissala West	.5%	6.7%	49.2%	34.2%	1.6%	4.1%	3.6%	0.0%
Wa East	0.0%	1.4%	39.8%	42.1%	7.4%	7.4%	1.9%	0.0%
Wa Municipal	.5%	13.4%	56.2%	19.4%	.9%	2.3%	7.4%	0.0%
Wa West	.9%	4.1%	28.8%	63.5%	0.0%	1.8%	.5%	.5%
<b>Total</b>	<b>.7%</b>	<b>6.2%</b>	<b>43.6%</b>	<b>34.4%</b>	<b>2.1%</b>	<b>6.6%</b>	<b>5.5%</b>	<b>1.0%</b>
Urban	.2%	4.4%	36.3%	13.8%	6.5%	22.1%	15.5%	1.2%
Rural	1.9%	3.7%	47.5%	32.3%	2.9%	7.6%	3.1%	1.1%
<b>Total</b>	<b>1.6%</b>	<b>3.8%</b>	<b>45.6%</b>	<b>29.1%</b>	<b>3.5%</b>	<b>10.1%</b>	<b>5.2%</b>	<b>1.1%</b>

**Table 47** Livelihood and wealth

	Poorest	2	3	4	Wealthiest
Fishermen	17.4%	29.1%	23.6%	17.1%	12.8%
Unskilled labour	20.1%	22.5%	19.6%	20.2%	17.6%
Agriculturalists	20.7%	22.5%	19.2%	21.8%	15.9%
Agro-pastoralists	21.3%	26.9%	21.0%	18.1%	12.8%
Artisans	13.1%	23.7%	16.6%	16.1%	30.5%
Traders	8.5%	13.0%	19.8%	22.6%	36.2%
Regular employment	1.4%	4.9%	7.5%	17.5%	68.7%
Food processors	22.5%	27.2%	14.9%	22.4%	13.0%

**Table 48** Livelihood and education and sex of household head

	Education of household head:			Sex of the head of household:	
	no education or pre-school	primary or middle school	vocational training secondary school or higher	Male	Female
Fishermen	64.0%	27.1%	8.8%	97.2%	2.8%
Unskilled labour	66.3%	21.4%	12.3%	91.7%	8.3%
Agriculturalists	81.0%	14.3%	4.7%	94.3%	5.7%
Agro-pastoralists	82.3%	13.8%	3.9%	93.9%	6.1%
Artisans	69.5%	23.3%	7.1%	81.3%	18.7%
Traders	75.6%	18.7%	5.7%	85.0%	15.0%
Regular employment	30.9%	16.7%	52.5%	91.4%	8.6%
Food processors	82.1%	12.6%	5.2%	60.9%	39.1%

**Table 49** Livelihood and food security

Livelihood	Severely food insecure	Moderately food insecure	Mildly food insecure	Food secure
Fishermen	.6%	4.8%	1.8%	92.8%
Unskilled labour	4.0%	18.6%	18.3%	59.1%
Agro-pastoralists	3.1%	15.6%	10.3%	71.0%
Artisans	4.6%	9.8%	17.0%	68.6%
Traders	2.7%	7.1%	13.4%	76.7%
Regular employment	.4%	.7%	7.8%	91.1%
Food processors	2.3%	15.6%	8.6%	73.5%
Agriculturalists	3.7%	13.0%	8.4%	75.0%
Smallholder agriculturalists	5.6%	17.2%	8.0%	69.2%
Medium scale agriculturalists	1.9%	9.4%	10.1%	78.6%
Large scale agriculturalists	1.0%	6.4%	6.9%	85.8%

**Table 50** Livelihood and loans or debt to pay back

Livelihood	Does the household have any loan or debt to pay back:
Fishermen	6%
Unskilled labour	16%
Agro-pastoralists	7%
Artisans	11%
Traders	13%
Regular employment	22%
Food processors	18%
Agriculturalists	11%
Smallholder agriculturalists	10%
Medium scale agriculturalists	12%
Large scale agriculturalists	15%

**Table 51** Coping strategies used in the different livelihood groups

Livelihood	Coping strategies used in the previous week:												
	Reduced number meals	Borrowed food	Consumed less preferred food	Bought food on credit	Gathered unusual food	Had household members eating at relatives	Reduced adult consumption so that children can eat	Relled on casual labour	Fed working members on the expense of non-working members	Went the entire day without eating	Consumed seed stock		
Fishermen	35%	16%	26%	25%	4%	15%	31%	6%	5%	4%	5%		
Unskilled labour	43%	17%	30%	19%	15%	12%	31%	23%	6%	12%	8%		
Agro-pastoralists	34%	11%	23%	13%	10%	8%	30%	13%	4%	8%	8%		
Artisans	24%	8%	14%	9%	5%	7%	28%	6%	2%	7%	3%		
Traders	21%	7%	15%	9%	4%	7%	20%	9%	2%	4%	6%		
Regular employment	12%	3%	14%	4%	3%	2%	12%	3%	3%	3%	3%		
Food processors	45%	15%	23%	19%	14%	15%	42%	10%	6%	14%	20%		
Agriculturalists	27%	10%	21%	11%	8%	8%	23%	12%	5%	6%	8%		
Smallholder agriculturalists	32%	11%	24%	11%	10%	9%	28%	12%	5%	8%	9%		
Medium scale agriculturalists	24%	11%	20%	10%	8%	8%	19%	13%	5%	5%	8%		
Large scale agriculturalists	20%	9%	16%	11%	5%	5%	16%	9%	4%	3%	6%		

**Table 52** Expenditure posts in livelihood groups

Livelihood	Share of expenditure on:																
	Food	Educ- ation	Transpor- tation	Health	Housing	Celebrat- ions	Communi- cation	Alcohol	Hygiene	Farming	Hiring labour	Clothing	Veterinary expenditure	Gifts	Business inputs	Other high value	Cooking utilities
Fishermen	44%	6%	10%	2%	2%	6%	3%	3%	6%	3%	4%	4%	0%	1%	4%	1%	1%
Unskilled labour	47%	5%	8%	3%	4%	5%	4%	4%	7%	2%	2%	3%	0%	1%	2%	1%	2%
Agro-pastoralists	42%	8%	7%	3%	3%	7%	5%	4%	8%	2%	3%	5%	1%	1%	2%	1%	1%
Artisans	50%	5%	7%	2%	4%	5%	6%	3%	6%	2%	1%	4%	0%	1%	4%	0%	4%
Traders	38%	9%	8%	3%	4%	6%	5%	2%	5%	1%	2%	5%	1%	1%	7%	1%	4%
Regular employ- ment	39%	10%	9%	3%	6%	6%	7%	3%	4%	1%	2%	4%	0%	2%	3%	1%	4%
Food processors	40%	7%	7%	4%	2%	6%	4%	3%	7%	2%	3%	5%	0%	1%	4%	1%	3%
Agricultural-ists	39%	8%	8%	3%	4%	8%	5%	3%	7%	3%	4%	5%	1%	1%	2%	1%	2%
Small holder agricultural-ists	43%	7%	8%	3%	3%	7%	4%	4%	7%	2%	3%	5%	0%	1%	1%	1%	2%
Medium scale agriculturalists	36%	8%	9%	3%	4%	9%	5%	2%	7%	3%	5%	4%	0%	1%	2%	1%	2%
Large scale agriculturalists	31%	9%	10%	4%	4%	9%	5%	2%	6%	3%	7%	5%	1%	2%	2%	1%	2%

**Table 53** Food sources in livelihood groups

Livelihood	Share of food sourced from:										
	own production	fishing, hunting, gathering	borro-wed	credit purchase	cash purchase	exchange	gift	begging	food aid	other source	
Fishermen	23%	9%	1%	11%	55%	0%	0%	0%	0%	0%	
Unskilled labour	22%	3%	0%	2%	67%	0%	1%	0%	0%	0%	
Agro-pastoralists	32%	2%	0%	2%	61%	0%	1%	0%	0%	0%	
Artisans	17%	1%	0%	1%	81%	0%	0%	0%	0%	0%	
Traders	19%	1%	0%	2%	77%	0%	1%	0%	0%	0%	
Regular employment	13%	1%	0%	1%	81%	0%	1%	0%	0%	0%	
Food processors	24%	2%	0%	2%	69%	0%	1%	0%	0%	0%	
Agricult-uralists	33%	3%	0%	2%	60%	0%	1%	0%	0%	0%	
Small holder agriculturalists	30%	3%	0%	2%	62%	0%	1%	0%	0%	0%	
Medium scale agriculturalists	35%	3%	0%	3%	58%	0%	0%	0%	0%	0%	
Large scale agriculturalists	36%	3%	0%	2%	57%	0%	0%	0%	0%	0%	

**Table 54** Level of total income compared to 12 months ago

	No change	Increased	Decreased
Northern districts:			
Bole	24.1%	22.7%	53.2%
Bunkpurugu-Yunyoo	27.0%	55.0%	18.0%
Central Gonja	17.6%	21.2%	61.3%
Cherepone	19.4%	28.6%	52.0%
East Gonja	31.9%	21.2%	46.9%
East Mamprusi	14.1%	39.1%	46.8%
Gushiegu	59.1%	19.1%	21.8%
Karaga	14.2%	8.7%	77.2%
Kpandai	25.0%	50.5%	24.5%
Nanumba North	29.7%	39.2%	31.1%
Nanumba South	21.0%	26.9%	52.1%
Saboba	39.5%	34.5%	25.9%
Savelugu-Nanton	28.3%	25.6%	46.1%
Sawla-Tuna-Kalba	40.9%	19.1%	40.0%
Tamale Metropolis	16.4%	18.6%	65.0%
Tolon-Kumbungu	26.2%	51.6%	22.2%
West Gonja	39.1%	36.8%	24.1%
West Mamprusi	35.7%	23.1%	41.2%
Yendi	34.7%	47.3%	18.0%
Zabzugu-Tatale	27.9%	29.7%	42.5%
<b>Total</b>	<b>27.3%</b>	<b>30.3%</b>	<b>42.3%</b>
Upper East districts:			
Bawku Municipal	33.3%	40.1%	26.6%
Bawku West	60.6%	33.0%	6.3%
Bolgatanga Municipal	38.6%	44.1%	17.3%
Bongo	56.0%	33.0%	11.0%
Builsa	74.8%	8.8%	16.4%
Garu-Tempene	21.5%	76.7%	1.8%
Kassena Nankana West	42.2%	25.2%	32.6%
Kassena Nankana East	22.7%	45.0%	32.3%
Talensi-Nabdam	24.1%	31.8%	44.1%
<b>Total</b>	<b>40.3%</b>	<b>37.9%</b>	<b>21.8%</b>
Upper West districts:			
Jirapa	18.2%	18.6%	63.2%
Lambussie-Karni	62.9%	16.7%	20.4%
Lawra	40.7%	37.1%	22.2%
Nadowli	29.7%	31.5%	38.7%
Sissala East	48.4%	28.5%	23.1%
Sissala West	21.4%	30.9%	47.7%
Wa East	3.6%	68.6%	27.7%
Wa Municipal	33.6%	33.6%	32.7%
Wa West	11.8%	27.6%	60.6%
<b>Total</b>	<b>29.4%</b>	<b>33.0%</b>	<b>37.6%</b>
Urban	24.0%	34.2%	41.8%
Rural	33.0%	32.8%	34.2%
<b>Total</b>	<b>31.5%</b>	<b>33.0%</b>	<b>35.5%</b>



**Table 55** Support to/from relatives or friends in the past 6 months

	Among households receiving support:			
	Any member of your household received support	From within the country	From outside the country	Anybody in the household currently giving support
Northern districts:				
Bole	6.4%	100.0%	7.1%	31.8%
Bunkpurugu-Yunyoo	4.1%	100.0%	0.0%	18.0%
Central Gonja	6.8%	86.7%	0.0%	18.9%
Cherepone	14.1%	87.5%	6.3%	30.0%
East Gonja	4.9%	45.5%	0.0%	2.2%
East Mamprusi	10.5%	91.3%	8.7%	40.0%
Gushiegu	8.0%	100.0%	0.0%	27.6%
Karaga	16.4%	80.6%	0.0%	31.1%
Kpandai	4.1%	77.8%	0.0%	10.5%
Nanumba North	12.2%	92.6%	7.4%	31.5%
Nanumba South	7.3%	93.8%	0.0%	21.9%
Saboba	30.9%	98.5%	0.0%	35.0%
Savelugu-Nanton	11.9%	100.0%	3.8%	42.5%
Sawla-Tuna-Kalba	12.3%	92.6%	0.0%	29.5%
Tamale Metropolis	20.9%	97.8%	6.5%	38.2%
Tolon-Kumbungu	7.7%	70.6%	5.9%	26.7%
West Gonja	9.1%	85.0%	10.0%	31.4%
West Mamprusi	20.4%	95.6%	2.2%	64.3%
Yendi	7.2%	93.8%	0.0%	29.7%
Zabzugu-Tatale	4.1%	44.4%	11.1%	3.7%
<b>Total</b>	<b>11.9%</b>	<b>92.3%</b>	<b>4.1%</b>	<b>29.6%</b>
Upper East districts:				
Bawku Municipal	6.8%	100.0%	0.0%	2.7%
Bawku West	5.4%	91.7%	8.3%	32.1%
Bolgatanga Municipal	15.0%	100.0%	0.0%	10.0%
Bongo	23.9%	96.2%	1.9%	33.5%
Builsa	7.5%	88.2%	0.0%	18.6%
Garu-Tempane	10.3%	100.0%	0.0%	8.1%
Kassena Nankana West	25.2%	96.4%	1.8%	15.1%
Kassena Nankana East	37.3%	95.1%	3.7%	27.3%
Talensi-Nabdam	1.8%	50.0%	0.0%	1.4%
<b>Total</b>	<b>13.4%</b>	<b>95.9%</b>	<b>1.7%</b>	<b>14.0%</b>
Upper West districts:				
Jirapa	15.0%	100.0%	0.0%	10.5%
Lambussie-Karni	30.3%	88.1%	10.4%	25.8%
Lawra	13.1%	82.8%	17.2%	21.7%
Nadowli	42.8%	95.8%	4.2%	32.0%
Sissala East	38.5%	88.2%	1.2%	46.2%
Sissala West	12.3%	88.9%	14.8%	18.6%
Wa East	23.6%	100.0%	1.9%	25.9%
Wa Municipal	15.0%	90.9%	6.1%	15.9%
Wa West	5.9%	23.1%	0.0%	2.3%
<b>Total</b>	<b>21.1%</b>	<b>90.6%</b>	<b>5.5%</b>	<b>21.1%</b>
Urban				
Urban	17.2%	97.2%	6.4%	34.2%
Rural				
Rural	13.4%	91.7%	3.2%	21.3%
<b>Total</b>	<b>14.0%</b>	<b>92.9%</b>	<b>3.8%</b>	<b>23.5%</b>

**Table 56** Reasons for increased income mentioned by households

Two main reasons for increase in income	% of responses
Higher wages	7.7%
Higher outputs	28.3%
Higher profit	32.3%
More people working due to increased employment opportunities	3.1%
More support/remittances	4.1%
Favourable weather conditions	12.7%
Other	2.3%
No other reason	9.5%
	100.0%

**Table 57** Reasons for decreased income mentioned by the households

Two main reasons for decreased income	% of responses
Lower wages	2.4%
Lower output	33.7%
Lower profit	12.5%
Less people working due to lack of employment opportunities	2.9%
Less support/remittances	5.1%
Adverse weather conditions	33.7%
Other	3.3%
No other reason	6.3%
	100.0%

**Table 58** Household with loans and sources of loan/credit available

	Sources of loans/credit available:							No access to credit	Other
	Loan or debt to pay back:	Relatives / friends	UN/ NGOs/ etc.	Local lender	Bank	Co-operatives	Non-financial institution		
<b>Northern districts:</b>									
Bole	10.0%	67.3%	0.5%	4.5%	11.8%	1.4%	0.0%	4.1%	0.0%
Bunkpurugu-Yunyoo	4.1%	67.1%	1.4%	30.2%	15.3%	2.7%	1.4%	18.5%	0.0%
Central Gonja	18.5%	86.9%	1.8%	1.8%	7.2%	1.8%	0.5%	0.9%	0.0%
Cherepone	16.7%	88.5%	8.4%	3.5%	9.3%	5.3%	0.0%	3.1%	0.4%
East Gonja	0.0%	34.1%	0.4%	0.9%	4.9%	1.3%	0.4%	0.9%	0.0%
East Mamprusi	35.0%	89.5%	3.6%	24.1%	11.4%	12.7%	0.0%	1.8%	0.0%
Gushegu	16.4%	37.3%	5.8%	18.7%	5.3%	2.2%	1.3%	8.9%	0.0%
Karaga	29.2%	61.2%	10.5%	2.7%	2.7%	0.9%	0.9%	1.8%	0.5%
Kpandai	6.4%	11.4%	1.8%	0.9%	7.3%	10.5%	6.8%	16.4%	0.5%
Nanumba North	11.3%	23.0%	26.6%	5.9%	8.1%	19.4%	4.1%	8.6%	0.5%
Nanumba South	34.2%	77.2%	0.5%	4.1%	1.4%	0.9%	0.9%	32.4%	0.5%
Saboba	13.2%	62.3%	3.6%	1.4%	0.9%	0.5%	0.0%	0.9%	0.5%
Savelugu-Nanton	15.1%	83.6%	10.5%	5.9%	9.1%	0.0%	21.9%	0.0%	0.0%
Sawla-Tuna-Kalba	18.6%	35.5%	2.3%	2.3%	3.2%	20.0%	2.7%	8.2%	0.0%
Tamale Metropolis	13.2%	82.3%	6.8%	9.1%	10.5%	3.6%	5.9%	2.3%	0.5%
Tolon-Kumbungu	4.1%	80.5%	1.8%	1.8%	3.2%	1.4%	0.5%	37.6%	0.0%
West Gonja	11.4%	11.8%	17.7%	2.3%	9.1%	6.4%	2.7%	5.0%	2.7%
West Mamprusi	27.6%	67.9%	7.2%	20.8%	53.8%	26.7%	35.3%	21.3%	0.5%
Yendi	0.0%	81.1%	5.9%	0.9%	1.4%	0.5%	0.9%	30.2%	0.0%
Zabzugu-Tatale	1.4%	30.6%	1.4%	1.8%	2.3%	0.5%	2.3%	63.5%	5.0%
<b>Total</b>	<b>13.2%</b>	<b>61.2%</b>	<b>6.1%</b>	<b>8.0%</b>	<b>10.1%</b>	<b>6.3%</b>	<b>5.5%</b>	<b>12.7%</b>	<b>0.5%</b>
<b>Upper East districts:</b>									
Bawku Municipal	.5%	39.2%	0.9%	5.9%	5.4%	1.4%	0.9%	1.4%	0.5%
Bawku West	2.3%	42.1%	1.8%	3.6%	13.1%	1.4%	0.5%	0.9%	0.0%
Bolgatanga Municipal	15.5%	42.3%	0.9%	4.5%	25.5%	9.5%	1.8%	17.7%	0.5%
Bongo	3.7%	80.3%	2.3%	8.3%	38.5%	1.8%	30.3%	6.4%	0.0%
Builsa	7.5%	19.0%	2.7%	0.9%	27.4%	1.3%	6.2%	38.1%	0.0%
Garu-Tempene	2.7%	52.9%	4.5%	0.0%	11.7%	8.5%	0.9%	1.3%	0.4%
Kassena Nankana West	9.6%	36.2%	2.8%	0.0%	17.9%	0.5%	28.4%	20.2%	0.5%
Kassena Nankana East	16.8%	59.5%	6.4%	35.5%	42.7%	10.5%	15.9%	16.8%	0.9%
Talensi-Nabdam	1.4%	37.7%	0.9%	12.3%	2.7%	1.8%	0.5%	35.0%	0.0%
<b>Total</b>	<b>6.3%</b>	<b>43.9%</b>	<b>2.2%</b>	<b>6.9%</b>	<b>18.4%</b>	<b>4.0%</b>	<b>8.0%</b>	<b>15.0%</b>	<b>0.3%</b>
<b>Upper West districts:</b>									
Jirapa	8.2%	52.3%	9.5%	16.8%	46.4%	20.0%	3.2%	3.6%	2.3%
Lambussie-Karni	27.1%	54.3%	22.6%	32.6%	27.1%	14.0%	19.9%	26.7%	0.0%
Lawra	5.4%	21.7%	0.5%	8.1%	33.5%	17.6%	33.5%	19.5%	0.0%
Nadowli	17.6%	33.8%	13.1%	2.7%	10.8%	12.6%	51.4%	19.8%	4.5%
Sissala East	5.9%	60.2%	16.7%	19.9%	34.4%	24.4%	10.9%	5.4%	0.5%
Sissala West	2.7%	29.1%	5.5%	0.5%	7.3%	9.1%	7.7%	11.4%	0.0%
Wa East	7.3%	52.3%	1.4%	1.4%	2.7%	0.9%	0.0%	26.4%	0.5%
Wa Municipal	11.8%	58.6%	62.3%	45.5%	39.1%	39.1%	67.3%	26.8%	0.5%
Wa West	2.7%	46.6%	0.5%	2.3%	12.2%	19.9%	5.0%	32.6%	0.0%
<b>Total</b>	<b>9.8%</b>	<b>44.9%</b>	<b>17.1%</b>	<b>15.7%</b>	<b>25.7%</b>	<b>19.3%</b>	<b>27.3%</b>	<b>19.7%</b>	<b>1.1%</b>
Urban	14.7%	62.4%	5.0%	7.1%	22.1%	11.3%	10.7%	9.8%	0.3%
Rural	9.8%	51.3%	7.4%	9.5%	14.0%	7.3%	10.1%	15.6%	0.6%
<b>Total</b>	<b>10.6%</b>	<b>53.2%</b>	<b>7.0%</b>	<b>9.1%</b>	<b>15.4%</b>	<b>8.0%</b>	<b>10.2%</b>	<b>14.6%</b>	<b>0.6%</b>

**Table 59** Reasons for taking loan

Two main reasons for taking loan	% of responses
Land purchase	.4%
House purchase/construction	4.7%
Home improvement	9.6%
Business investment	16.5%
Bride price / wedding	1.5%
Funeral	8.1%
Education	11.7%
Rental debt/advance	.2%
Vehicle	.6%
Transport/travel costs	.9%
Hospital/doctors	5.9%
Medicines	3.0%
Agricultural inputs	25.6%
Food purchases	11.1%
	100.0%

**Table 60** Household debt compared to one year ago

	Less now	Same now (including no debt last year or this year)	More now
<b>Northern districts:</b>			
Bole	29.5%	64.5%	5.9%
Bunkpurugu-Yunyoo	6.8%	83.8%	9.5%
Central Gonja	11.3%	70.3%	18.5%
Cherepone	12.8%	70.0%	17.2%
East Gonja	17.7%	70.4%	11.9%
East Mamprusi	6.8%	64.5%	28.6%
Gushegu	9.3%	72.0%	18.7%
Karaga	7.3%	73.5%	19.2%
Kpandai	17.3%	76.4%	6.4%
Nanumba North	13.5%	82.9%	3.6%
Nanumba South	36.1%	37.4%	26.5%
Saboba	24.1%	68.2%	7.7%
Savelugu-Nanton	32.4%	58.4%	9.1%
Sawla-Tuna-Kalba	4.1%	82.3%	13.6%
Tamale Metropolis	25.0%	70.0%	5.0%
Tolon-Kumbungu	12.2%	82.8%	5.0%
West Gonja	35.9%	54.1%	10.0%
West Mamprusi	15.4%	65.6%	19.0%
Yendi	63.5%	36.0%	5%
Zabzugu-Tatale	62.1%	33.8%	4.1%
<b>Total</b>	<b>23.3%</b>	<b>66.2%</b>	<b>10.4%</b>
<b>Upper East districts:</b>			
Bawku Municipal	1.8%	96.8%	1.4%
Bawku West	53.4%	25.3%	21.3%
Bolgatanga Municipal	5.9%	81.8%	12.3%
Bongo	3.2%	95.4%	1.4%
Builsa	18.6%	73.0%	8.4%
Garu-Tempene	22.0%	34.5%	43.5%
Kassena Nankana West	11.0%	86.2%	2.8%
Kassena Nankana East	28.6%	60.9%	10.5%
Talensi-Nabdam	24.1%	72.3%	3.6%
<b>Total</b>	<b>16.3%</b>	<b>73.0%</b>	<b>10.7%</b>
<b>Upper West districts:</b>			
Jirapa	6.4%	90.0%	3.6%
Lambussie-Karni	33.9%	49.8%	16.3%
Lawra	4.5%	91.4%	4.1%
Nadowli	43.2%	47.7%	9.0%
Sissala East	3.6%	91.4%	5.0%
Sissala West	2.3%	94.5%	3.2%
Wa East	8.2%	79.1%	12.7%
Wa Municipal	8.6%	84.1%	7.3%
Wa West	28.5%	52.5%	19.0%
<b>Total</b>	<b>15.5%</b>	<b>76.0%</b>	<b>8.5%</b>
Urban	22.1%	68.1%	9.8%
Rural	19.4%	70.4%	10.2%
<b>Total</b>	<b>19.9%</b>	<b>70.0%</b>	<b>10.2%</b>

**Table 61** Expenditure posts

Column1	Sources of loans/credit available:							
	Food	Education (school fees, uniforms)	Transport	Health/ Medical expenses	Housing (rent, repairs, construction, etc.)	Celebrations, social events,	Comm-unication	Alcohol and tobacco
Northern districts:								
Bole	43%	6%	9%	3%	3%	4%	5%	0%
Bunkpurugu-Yunyoo	39%	14%	5%	5%	4%	9%	2%	4%
Central Gonja	33%	5%	11%	6%	4%	10%	4%	2%
Cherepone	31%	4%	7%	14%	4%	5%	7%	5%
East Gonja	45%	8%	10%	2%	1%	4%	4%	1%
East Mamprusi	38%	7%	8%	4%	5%	11%	4%	1%
Gushegu	37%	5%	10%	6%	1%	10%	5%	5%
Karaga	25%	5%	10%	5%	6%	11%	6%	2%
Kpandai	40%	10%	6%	2%	2%	5%	4%	3%
Nanumba North	36%	6%	10%	2%	1%	5%	7%	2%
Nanumba South	26%	4%	8%	5%	3%	11%	4%	3%
Saboba	28%	11%	10%	3%	1%	16%	5%	4%
Savelugu-Nanton	39%	6%	13%	2%	5%	7%	8%	1%
Sawla-Tuna-Kalba	32%	11%	14%	3%	3%	10%	5%	4%
Tamale Metropolis	28%	12%	7%	6%	9%	9%	4%	0%
Tolon-Kumbungu	33%	7%	12%	5%	3%	11%	8%	1%
West Gonja	45%	5%	6%	0%	3%	7%	4%	2%
West Mamprusi	42%	7%	10%	5%	6%	5%	6%	1%
Yendi	43%	8%	6%	1%	0%	16%	5%	1%
Zabzugu-Tatale	27%	4%	12%	3%	4%	12%	5%	4%
<b>Total</b>	<b>36%</b>	<b>8%</b>	<b>9%</b>	<b>4%</b>	<b>4%</b>	<b>9%</b>	<b>5%</b>	<b>2%</b>
Upper East districts:								
Bawku Municipal	38%	8%	1%	2%	6%	8%	5%	5%
Bawku West	33%	16%	8%	3%	1%	4%	5%	3%
Bolgatanga Municipal	49%	5%	7%	1%	4%	5%	6%	6%
Bongo	55%	8%	6%	2%	2%	3%	5%	3%
Builsa	48%	9%	4%	2%	3%	6%	3%	6%
Garu-Tempene	63%	2%	3%	2%	1%	3%	5%	4%
Kassena Nankana West	60%	3%	3%	4%	2%	3%	4%	4%
Kassena Nankana East	37%	7%	4%	5%	4%	8%	6%	5%
Talensi-Nabdram	55%	3%	8%	3%	0%	9%	5%	2%
<b>Total</b>	<b>48%</b>	<b>6%</b>	<b>5%</b>	<b>2%</b>	<b>3%</b>	<b>6%</b>	<b>5%</b>	<b>4%</b>
Upper West districts:								
Jirapa	43%	6%	9%	4%	3%	4%	3%	8%
Lambussie-Karni	47%	6%	7%	3%	3%	3%	4%	5%
Lawra	40%	12%	7%	2%	4%	4%	4%	9%
Nadowli	42%	8%	8%	3%	2%	5%	5%	8%
Sissala East	46%	8%	14%	1%	1%	2%	5%	1%
Sissala West	27%	19%	9%	3%	6%	2%	7%	1%
Wa East	50%	9%	9%	3%	2%	3%	4%	1%
Wa Municipal	39%	7%	10%	3%	8%	5%	5%	3%
Wa West	46%	5%	15%	2%	0%	3%	3%	10%
<b>Total</b>	<b>42%</b>	<b>9%</b>	<b>10%</b>	<b>3%</b>	<b>3%</b>	<b>4%</b>	<b>4%</b>	<b>6%</b>
Urban	35%	11%	7%	4%	5%	8%	5%	2%
Rural	42%	7%	8%	3%	3%	7%	5%	4%
<b>Total</b>	<b>41%</b>	<b>8%</b>	<b>8%</b>	<b>3%</b>	<b>4%</b>	<b>7%</b>	<b>5%</b>	<b>3%</b>

Table 62 Expenditure posts, continued

	Share of expenditure on:								
	Soap/ personal hygiene,	Farming equipment	Hiring labour	Clothing, shoes	Vet. Expenses for farm animals	Gifts to help relatives/ friends	Business inputs	other high value expenditure	Utilities (electricity, water, gas)
<b>Northern districts:</b>									
Bole	7%	2%	9%	6%	0%	2%	1%	0%	1%
Bunkpurugu-Yunyoo	8%	1%	0%	5%	1%	1%	1%	0%	0%
Central Gonja	8%	2%	4%	6%	1%	1%	1%	2%	1%
Cherepone	13%	2%	0%	5%	0%	1%	1%	1%	1%
East Gonja	7%	3%	6%	3%	0%	2%	5%	1%	0%
East Mamprusi	7%	1%	1%	5%	0%	2%	3%	2%	1%
Gushiegu	9%	3%	4%	7%	1%	2%	1%	0%	0%
Karaga	8%	3%	4%	6%	0%	1%	5%	2%	1%
Kpandai	4%	3%	11%	4%	0%	1%	1%	2%	2%
Nanumba North	5%	5%	7%	5%	1%	1%	5%	1%	1%
Nanumba South	6%	8%	10%	8%	0%	0%	2%	1%	1%
Saboba	9%	1%	2%	7%	1%	1%	1%	0%	1%
Savelugu-Nanton	5%	1%	1%	4%	0%	2%	0%	1%	2%
Sawla-Tuna-Kalba	10%	1%	1%	4%	0%	1%	2%	0%	0%
Tamale Metropolis	3%	3%	1%	6%	1%	2%	6%	0%	11%
Tolon-Kumbungu	7%	1%	0%	4%	1%	2%	2%	0%	3%
West Gonja	7%	1%	10%	3%	0%	2%	2%	2%	1%
West Mamprusi	5%	1%	1%	4%	1%	2%	2%	2%	1%
Yendi	9%	1%	7%	2%	0%	1%	1%	0%	4%
Zabzugu-Tatale	5%	4%	13%	5%	0%	1%	0%	1%	0%
<b>Total</b>	<b>6%</b>	<b>2%</b>	<b>4%</b>	<b>5%</b>	<b>1%</b>	<b>2%</b>	<b>3%</b>	<b>1%</b>	<b>3%</b>
<b>Upper East districts:</b>									
Bawku Municipal	13%	1%	2%	9%	1%	1%	0%	0%	1%
Bawku West	4%	2%	3%	7%	1%	1%	5%	4%	0%
Bolgatanga Municipal	6%	1%	3%	2%	0%	0%	1%	1%	2%
Bongo	7%	2%	1%	3%	0%	1%	0%	0%	1%
Builsa	5%	2%	4%	3%	1%	1%	1%	0%	1%
Garu-Tempane	8%	1%	1%	2%	0%	1%	1%	2%	0%
Kassena Nankana West	10%	0%	1%	4%	1%	1%	1%	0%	0%
Kassena Nankana East	7%	2%	1%	7%	0%	1%	5%	1%	1%
Talensi-Nabdam	8%	0%	2%	3%	1%	0%	0%	0%	1%
<b>Total</b>	<b>8%</b>	<b>1%</b>	<b>2%</b>	<b>5%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>
<b>Upper West districts:</b>									
Jirapa	8%	1%	0%	5%	0%	1%	4%	1%	1%
Lambussie-Karni	7%	3%	2%	3%	1%	1%	4%	2%	1%
Lawra	5%	2%	2%	4%	1%	0%	3%	0%	1%
Nadowli	5%	2%	1%	3%	1%	2%	3%	2%	0%
Sissala East	5%	2%	4%	2%	0%	3%	3%	0%	2%
Sissala West	4%	5%	6%	4%	3%	0%	2%	0%	2%
Wa East	5%	3%	5%	3%	0%	1%	1%	1%	1%
Wa Municipal	7%	2%	2%	2%	1%	1%	3%	2%	1%
Wa West	6%	1%	0%	2%	1%	1%	2%	3%	1%
<b>Total</b>	<b>6%</b>	<b>2%</b>	<b>2%</b>	<b>3%</b>	<b>1%</b>	<b>1%</b>	<b>3%</b>	<b>1%</b>	<b>1%</b>
Urban	5%	2%	2%	4%	1%	2%	5%	1%	7%
Rural	7%	2%	3%	5%	1%	1%	2%	1%	1%
<b>Total</b>	<b>7%</b>	<b>2%</b>	<b>3%</b>	<b>5%</b>	<b>1%</b>	<b>1%</b>	<b>2%</b>	<b>1%</b>	<b>2%</b>

**Table 63** Food expenditures

	Share of food expenditures spent on:					
	Share of total expenditure spent on food	Staples	Vegetables and fruits	Meat and fish	Oil and butter	Food eaten outside the home
Northern districts:						
Bole	43%	67%	6%	19%	6%	2%
Bunkpurugu-Yunyoo	39%	55%	5%	22%	16%	1%
Central Gonja	33%	59%	13%	17%	8%	3%
Cherepone	31%	53%	5%	20%	22%	1%
East Gonja	45%	47%	11%	25%	13%	4%
East Mamprusi	38%	47%	18%	14%	17%	4%
Gushegu	37%	49%	11%	28%	9%	3%
Karaga	25%	36%	10%	27%	16%	11%
Kpandai	40%	39%	8%	41%	10%	3%
Nanumba North	36%	45%	6%	35%	10%	5%
Nanumba South	26%	44%	2%	45%	6%	2%
Saboba	28%	55%	7%	25%	10%	3%
Savelugu-Nanton	39%	51%	9%	16%	9%	16%
Sawla-Tuna-Kalba	32%	38%	5%	44%	9%	4%
Tamale Metropolis	28%	57%	10%	20%	8%	4%
Tolon-Kumbungu	33%	39%	22%	20%	13%	6%
West Gonja	45%	60%	7%	21%	9%	4%
West Mamprusi	42%	51%	12%	18%	13%	7%
Yendi	43%	37%	7%	38%	6%	12%
Zabzugu-Tatale	27%	51%	7%	28%	9%	5%
<b>Total</b>	<b>36%</b>	<b>49%</b>	<b>9%</b>	<b>26%</b>	<b>11%</b>	<b>5%</b>
Upper East districts:						
Bawku Municipal	38%	48%	13%	21%	17%	2%
Bawku West	33%	52%	11%	18%	11%	8%
Bolgatanga Municipal	49%	62%	9%	11%	6%	11%
Bongo	55%	63%	14%	12%	9%	2%
Builsa	48%	76%	6%	7%	8%	2%
Garu-Tempene	63%	62%	9%	17%	9%	2%
Kassena Nankana West	60%	64%	14%	8%	13%	0%
Kassena Nankana East	37%	42%	15%	16%	19%	8%
Talensi-Nabdam	55%	58%	13%	14%	15%	1%
<b>Total</b>	<b>48%</b>	<b>58%</b>	<b>12%</b>	<b>14%</b>	<b>12%</b>	<b>4%</b>
Upper West districts:						
Jirapa	43%	60%	8%	16%	13%	3%
Lambussie-Karni	47%	60%	13%	11%	12%	4%
Lawra	40%	58%	11%	22%	7%	2%
Nadowli	42%	42%	12%	25%	10%	10%
Sissala East	46%	44%	14%	27%	11%	4%
Sissala West	27%	41%	12%	31%	10%	6%
Wa East	50%	63%	6%	14%	11%	6%
Wa Municipal	39%	52%	13%	16%	5%	14%
Wa West	46%	70%	9%	14%	6%	1%
<b>Total</b>	<b>42%</b>	<b>55%</b>	<b>11%</b>	<b>19%</b>	<b>9%</b>	<b>6%</b>
Urban	35%	51%	9%	25%	9%	7%
Rural	42%	53%	10%	21%	11%	5%
<b>Total</b>	<b>41%</b>	<b>53%</b>	<b>10%</b>	<b>21%</b>	<b>11%</b>	<b>5%</b>



**Table 64** Change in overall household expenditures

District	Increased	Decreased	No change	Don't know
<b>Northern districts:</b>				
Bole	67.3%	4.5%	10.0%	18.2%
Bunkpurugu-Yunyoo	81.5%	1.4%	9.9%	7.2%
Central Gonja	71.5%	6.3%	18.6%	3.6%
Cherepone	53.3%	23.3%	12.3%	11.0%
East Gonja	40.3%	20.4%	18.6%	20.8%
East Mamprusi	68.6%	18.6%	12.3%	.5%
Gushegu	24.9%	5.3%	64.0%	5.8%
Karaga	76.7%	7.8%	11.4%	4.1%
Kpandai	87.7%	3.2%	9.1%	0.0%
Nanumba North	68.9%	4.1%	11.7%	15.3%
Nanumba South	61.2%	18.7%	19.2%	.9%
Saboba	57.7%	2.3%	34.5%	5.5%
Savelugu-Nanton	68.0%	6.4%	23.7%	1.8%
Sawla-Tuna-Kalba	35.9%	7.3%	5.0%	51.8%
Tamale Metropolis	88.6%	2.7%	7.3%	1.4%
Tolon-Kumbungu	64.3%	6.3%	10.4%	19.0%
West Gonja	50.5%	6.4%	39.5%	3.6%
West Mamprusi	48.0%	20.4%	29.0%	2.7%
Yendi	47.3%	2.3%	27.0%	23.4%
Zabzugu-Tatale	43.8%	12.8%	33.8%	9.6%
<b>Total</b>	<b>64.1%</b>	<b>8.0%</b>	<b>18.2%</b>	<b>9.7%</b>
<b>Upper East districts:</b>				
Bawku Municipal	47.3%	25.7%	16.7%	10.4%
Bawku West	50.2%	4.5%	39.8%	5.4%
Bolgatanga Municipal	86.8%	5.9%	5.5%	1.8%
Bongo	45.0%	1.8%	26.6%	26.6%
Builsa	30.1%	6.6%	59.3%	4.0%
Garu-Tempene	59.6%	1.3%	19.7%	19.3%
Kassena Nankana West	55.5%	14.7%	27.5%	2.3%
Kassena Nankana East	68.6%	7.7%	14.1%	9.5%
Talensi-Nabdam	75.9%	15.0%	7.7%	1.4%
<b>Total</b>	<b>58.9%</b>	<b>10.8%</b>	<b>22.1%</b>	<b>8.3%</b>
<b>Upper West districts:</b>				
Jirapa	72.7%	9.5%	13.6%	4.1%
Lambussie-Karni	72.9%	2.7%	17.6%	6.8%
Lawra	52.9%	6.3%	35.3%	5.4%
Nadowli	77.5%	10.4%	4.1%	8.1%
Sissala East	39.8%	2.7%	25.8%	31.7%
Sissala West	90.0%	5.0%	4.5%	.5%
Wa East	91.4%	7.7%	.5%	.5%
Wa Municipal	60.9%	1.8%	27.7%	9.5%
Wa West	69.7%	18.6%	7.7%	4.1%
<b>Total</b>	<b>68.4%</b>	<b>7.3%</b>	<b>16.7%</b>	<b>7.5%</b>
Urban	77.8%	3.9%	11.4%	6.9%
Rural	60.4%	9.7%	20.6%	9.3%
<b>Total</b>	<b>63.3%</b>	<b>8.7%</b>	<b>19.1%</b>	<b>8.9%</b>

**Table 65** Two main changes in expenditure experienced by the households

Two main changes in expenditure	% of responses
Food	32.9%
Housing	9.2%
Education	21.4%
Farm inputs	12.3%
Utilities (electricity, water, gas, etc.) and cooking fuel	6.3%
Health	10.8%
Transportation	3.3%
Business inputs	3.8%
	100.0%

**Table 66** Two main reasons for change in expenditure experienced by households

Reasons for changes in expenditure	% of responses
Lower costs/prices	1.7%
Less people in household	1.4%
Increase in own production	5.5%
Increased salary/salaries	.6%
Higher costs/prices	68.7%
More people in household	6.9%
Decrease in own production	10.5%
Decreased salary/salaries	.2%
Other	4.4%
	100.0%

**Table 67** Food items or services purchased on credit in the last month

	Food purchased on credit the last month
<b>Northern districts:</b>	
Bole	12.3%
Bunkpurugu-Yunyoo	16.2%
Central Gonja	8.1%
Cherepone	5.3%
East Gonja	10.2%
East Mamprusi	21.4%
Gushegu	17.3%
Karaga	24.7%
Kpandai	14.5%
Nanumba North	15.3%
Nanumba South	45.2%
Saboba	4.5%
Savelugu-Nanton	6.4%
Sawla-Tuna-Kalba	6.8%
Tamale Metropolis	9.5%
Tolon-Kumbungu	43.0%
West Gonja	19.1%
West Mamprusi	24.9%
Yendi	4.5%
Zabzugu-Tatale	6.8%
<b>Total</b>	<b>14.6%</b>
<b>Upper East districts:</b>	
Bawku Municipal	4.1%
Bawku West	12.2%
Bolgatanga Municipal	14.1%
Bongo	23.4%
Builsa	56.6%
Garu-Tempene	6.7%
Kassena Nankana West	47.2%
Kassena Nankana East	7.3%
Talensi-Nabdam	24.5%
<b>Total</b>	<b>20.6%</b>
<b>Upper West districts:</b>	
Jirapa	7.3%
Lambussie-Karni	25.8%
Lawra	6.3%
Nadowli	29.3%
Sissala East	8.1%
Sissala West	39.5%
Wa East	16.4%
Wa Municipal	15.5%
Wa West	9.0%
<b>Total</b>	<b>16.1%</b>
Urban	9.7%
Rural	18.0%
<b>Total</b>	<b>16.6%</b>

**Table 68** Food sources

	Own production	Fishing, hunting, gathering	Credit purchase	Cash purchase	Other (borrowed, exchange, gift, begging, food aid, other source)
<b>Northern districts:</b>					
Bole	40%	1%	2%	57%	1%
Bunkpurugu-Yunyoo	30%	8%	1%	61%	1%
Central Gonja	32%	2%	1%	64%	1%
Cherepone	12%	0%	0%	18%	2%
East Gonja	25%	5%	22%	46%	1%
East Mamprusi	14%	1%	1%	84%	0%
Gushegu	46%	2%	3%	49%	0%
Karaga	37%	2%	0%	59%	1%
Kpandai	33%	8%	1%	58%	0%
Nanumba North	40%	1%	0%	59%	0%
Nanumba South	44%	10%	0%	44%	2%
Saboba	41%	4%	0%	55%	0%
Savelugu-Nanton	34%	3%	0%	62%	1%
Sawla-Tuna-Kalba	43%	5%	2%	46%	4%
Tamale Metropolis	19%	0%	1%	80%	1%
Tolon-Kumbungu	39%	1%	0%	60%	0%
West Gonja	28%	3%	1%	66%	2%
West Mamprusi	20%	2%	8%	69%	1%
Yendi	37%	0%	0%	62%	0%
Zabzugu-Tatale	41%	2%	0%	57%	1%
<b>Total</b>	<b>31%</b>	<b>3%</b>	<b>3%</b>	<b>62%</b>	<b>1%</b>
<b>Upper East districts:</b>					<b>0%</b>
Bawku Municipal	29%	0%	1%	67%	3%
Bawku West	38%	1%	1%	60%	0%
Bolgatanga Municipal	14%	0%	1%	85%	0%
Bongo	16%	0%	3%	80%	0%
Builsa	13%	0%	3%	48%	0%
Garu-Tempene	34%	2%	1%	63%	1%
Kassena Nankana West	17%	0%	1%	82%	0%
Kassena Nankana East	17%	0%	1%	81%	1%
Talensi-Nabdam	16%	0%	5%	79%	0%
<b>Total</b>	<b>22%</b>	<b>0%</b>	<b>2%</b>	<b>72%</b>	<b>1%</b>
<b>Upper West districts:</b>					<b>0%</b>
Jirapa	36%	5%	1%	57%	1%
Lambussie-Karni	40%	2%	2%	52%	4%
Lawra	38%	3%	1%	58%	1%
Nadowli	30%	4%	1%	61%	5%
Sissala East	21%	4%	19%	50%	6%
Sissala West	34%	2%	0%	63%	0%
Wa East	28%	1%	1%	71%	0%
Wa Municipal	30%	16%	2%	51%	2%
Wa West	49%	0%	2%	48%	1%
<b>Total</b>	<b>34%</b>	<b>5%</b>	<b>3%</b>	<b>56%</b>	<b>2%</b>
					<b>0%</b>
Urban	19%	1%	1%	77%	1%
Rural	31%	3%	2%	61%	1%
<b>Total</b>	<b>29%</b>	<b>2%</b>	<b>2%</b>	<b>64%</b>	<b>1%</b>

**Table 69** Average number of meals eaten the previous day

	Adults	Children above 5 years
Northern districts:		
Bole	2.6	3.3
Bunkpurugu-Yunyoo	2.6	3.3
Central Gonja	3.0	3.7
Cherepone	2.9	3.7
East Gonja	3.0	3.6
East Mamprusi	2.7	3.2
Gushegu	2.9	3.8
Karaga	3.0	3.0
Kpandai	2.8	2.8
Nanumba North	3.0	3.7
Nanumba South	2.9	3.4
Saboba	3.0	3.8
Savelugu-Nanton	3.0	4.1
Sawla-Tuna-Kalba	2.2	2.6
Tamale Metropolis	2.9	3.5
Tolon-Kumbungu	3.0	4.2
West Gonja	2.8	3.1
West Mamprusi	2.9	3.6
Yendi	3.0	3.0
Zabzugu-Tatale	2.8	4.0
<b>Total</b>	<b>2.8</b>	<b>3.5</b>
Upper East districts:		
Bawku Municipal	2.8	3.3
Bawku West	2.6	3.0
Bolgatanga Municipal	2.8	3.1
Bongo	2.6	2.9
Builsa	2.3	2.6
Garu-Tempene	2.7	3.0
Kassena Nankana West	2.6	3.5
Kassena Nankana East	2.5	3.0
Talensi-Nabdam	2.2	3.0
<b>Total</b>	<b>2.6</b>	<b>3.1</b>
Upper West districts:		
Jirapa	2.4	2.9
Lambussie-Karni	2.2	2.7
Lawra	2.1	2.7
Nadowli	2.2	3.2
Sissala East	2.8	3.4
Sissala West	3.0	3.3
Wa East	2.9	2.9
Wa Municipal	2.4	3.0
Wa West	2.1	2.8
<b>Total</b>	<b>2.4</b>	<b>3.0</b>
Urban	2.8	3.2
Rural	2.7	3.3
<b>Total</b>	<b>2.7</b>	<b>3.3</b>

**Table 70** Food consumption groups

	Food Consumption Groups		
	Poor	Borderline	Acceptable
Northern districts:			
Bole	6.4%	32.7%	60.9%
Bunkpurugu-Yunyoo	5.4%	20.3%	74.3%
Central Gonja	4.5%	48.6%	46.8%
Cherepone	2.7%	33.8%	63.5%
East Gonja	0.0%	1.8%	98.2%
East Mamprusi	5.5%	16.8%	77.7%
Gushiegu	4.9%	24.0%	71.1%
Karaga	1.8%	16.0%	82.2%
Kpandai	0.0%	8.2%	91.8%
Nanumba North	0.0%	.9%	99.1%
Nanumba South	0.0%	1.4%	98.6%
Saboba	5.0%	9.0%	86.0%
Savelugu-Nanton	0.0%	20.1%	79.9%
Sawla-Tuna-Kalba	1.8%	7.7%	90.5%
Tamale Metropolis	2.3%	23.6%	74.1%
Tolon-Kumbungu	4.1%	38.5%	57.5%
West Gonja	1.4%	9.1%	89.5%
West Mamprusi	1.8%	5.4%	92.8%
Yendi	.9%	36.0%	63.1%
Zabzugu-Tatale	2.3%	12.3%	85.4%
<b>Total</b>	<b>2.3%</b>	<b>17.7%</b>	<b>80.0%</b>
Upper East districts:			
Bawku Municipal	4.1%	26.1%	69.8%
Bawku West	.5%	12.7%	86.9%
Bolgatanga Municipal	10.0%	35.9%	54.1%
Bongo	1.4%	28.9%	69.7%
Builsa	2.7%	40.4%	56.8%
Garu-Tempene	4.5%	30.5%	65.0%
Kassena Nankana West	5.5%	40.8%	53.7%
Kassena Nankana East	17.7%	25.0%	57.3%
Talensi-Nabdam	10.5%	44.5%	45.0%
<b>Total</b>	<b>6.4%</b>	<b>31.9%</b>	<b>61.7%</b>
Upper West districts:			
Jirapa	1.8%	29.5%	68.6%
Lambussie-Karni	2.3%	29.0%	68.8%
Lawra	.9%	17.6%	81.4%
Nadowli	0.0%	6.8%	93.2%
Sissala East	.5%	13.6%	86.0%
Sissala West	.9%	5.0%	94.1%
Wa East	4.5%	26.4%	69.1%
Wa Municipal	.9%	24.5%	74.5%
Wa West	1.8%	46.2%	52.0%
<b>Total</b>	<b>1.4%</b>	<b>22.3%</b>	<b>76.3%</b>
Urban	1.0%	17.8%	81.3%
Rural	3.7%	23.3%	73.0%
<b>Total</b>	<b>3.3%</b>	<b>22.8%</b>	<b>73.9%</b>

**Table 71** Average consumption of food items from different groups

	Average number of days eaten:							
	Cerals, tubers and root crops	Meat and fish	Pulses	Vegetables	Oil	Fruits	Sugar	Milk or other dairy
Northern districts:								
Bole	7.0	3.7	1.2	5.7	3.0	1.2	3.3	0.4
Bunkpurugu-Yunyoo	6.9	4.6	1.0	3.6	2.5	3.3	1.5	0.5
Central Gonja	7.0	2.8	0.8	3.0	2.2	1.8	5.8	0.5
Cherepone	6.9	3.8	1.9	0.8	3.3	1.0	3.8	0.7
East Gonja	7.0	6.8	2.4	3.5	3.3	3.7	4.0	1.0
East Mamprusi	6.8	4.0	2.7	3.9	4.9	1.9	5.2	1.3
Gushiegu	7.0	3.6	1.9	3.5	3.6	0.8	3.9	1.1
Karaga	7.0	3.9	3.1	5.2	3.9	2.7	5.8	1.3
Kpandai	7.0	5.8	1.3	2.9	2.3	5.3	2.9	0.5
Nanumba North	7.0	6.2	2.0	4.2	3.8	5.9	5.1	1.0
Nanumba South	7.0	6.8	0.5	5.9	1.8	6.5	1.6	0.7
Saboba	7.0	5.7	1.5	3.0	2.9	1.6	3.2	1.2
Savelugu-Nanton	7.0	3.8	2.0	4.3	2.8	3.2	4.9	0.7
Sawla-Tuna-Kalba	7.0	6.0	0.7	4.5	6.2	3.0	3.8	0.6
Tamale Metropolis	7.0	4.8	1.5	4.3	1.8	3.4	6.3	1.8
Tolon-Kumbungu	6.9	3.0	0.8	4.5	1.9	2.0	5.4	0.4
West Gonja	7.0	5.7	1.8	5.0	4.5	3.0	3.9	1.6
West Mamprusi	7.0	5.5	2.4	4.1	4.1	3.4	4.2	1.2
Yendi	7.0	4.0	2.0	2.6	2.1	0.8	3.0	0.3
Zabzugu-Tatale	7.0	5.2	1.2	3.7	2.5	4.0	4.1	1.3
<b>Total</b>	<b>7.0</b>	<b>4.9</b>	<b>1.6</b>	<b>4.0</b>	<b>3.0</b>	<b>3.1</b>	<b>4.4</b>	<b>1.0</b>
Upper East districts:								
Bawku Municipal	7.0	3.8	1.6	3.2	3.5	2.8	2.3	0.0
Bawku West	7.0	4.9	3.1	3.2	4.6	2.9	3.3	0.8
Bolgatanga Municipal	7.0	3.3	1.2	4.0	3.3	0.9	2.8	0.4
Bongo	6.9	3.0	2.8	5.1	2.9	0.6	1.1	0.4
Builsa	7.0	2.5	2.5	3.9	3.2	0.9	3.9	0.6
Garu-Tempene	7.0	4.0	1.5	3.4	3.6	3.9	0.8	0.2
Kassena Nankana West	6.9	2.4	2.6	5.5	5.0	1.6	1.5	0.1
Kassena Nankana East	6.9	3.3	1.8	4.1	4.4	1.9	2.6	0.9
Talensi-Nabdam	6.9	1.7	2.2	3.9	4.1	0.6	2.0	0.1
<b>Total</b>	<b>7.0</b>	<b>3.2</b>	<b>2.0</b>	<b>4.0</b>	<b>3.8</b>	<b>1.9</b>	<b>2.2</b>	<b>0.3</b>
Upper West districts:								
Jirapa	6.9	2.7	2.3	5.2	6.3	4.0	1.8	1.0
Lambussie-Karni	7.0	3.1	3.3	4.6	5.9	2.4	1.4	1.1
Lawra	6.9	4.1	1.9	4.0	5.1	1.7	2.0	0.6
Nadowli	6.9	4.8	2.7	4.8	4.7	2.8	2.1	0.5
Sissala East	7.0	5.4	1.3	5.2	5.8	3.1	4.1	1.3
Sissala West	7.0	5.0	1.9	4.6	4.7	1.8	3.6	0.6
Wa East	6.9	4.2	1.5	4.5	5.2	1.8	3.9	1.5
Wa Municipal	6.9	3.5	2.5	3.9	4.7	5.4	2.8	0.7
Wa West	7.0	2.5	1.7	3.4	4.9	2.5	0.9	0.1
<b>Total</b>	<b>6.9</b>	<b>3.9</b>	<b>2.2</b>	<b>4.4</b>	<b>5.2</b>	<b>3.0</b>	<b>2.4</b>	<b>0.8</b>
Urban	7.0	5.1	1.6	4.4	3.1	2.8	5.1	1.6
Rural	7.0	4.0	1.9	4.0	3.7	2.7	3.0	0.6
<b>Total</b>	<b>7.0</b>	<b>4.2</b>	<b>1.8</b>	<b>4.1</b>	<b>3.6</b>	<b>2.8</b>	<b>3.4</b>	<b>0.8</b>

**Table 72** Food security groups

	Severely food insecure	Moderately food insecure	Mildly food insecure	Food secure
<b>Northern districts:</b>				
Bole	6.4%	21.8%	10.9%	60.9%
Bunkpurugu-Yunyoo	5.4%	14.9%	5.4%	74.3%
Central Gonja	4.5%	34.7%	14.0%	46.8%
Cherepone	2.7%	23.0%	10.8%	63.5%
East Gonja	0.0%	.9%	.9%	98.2%
East Mamprusi	5.5%	9.1%	7.7%	77.7%
Gushegu	4.9%	17.3%	6.7%	71.1%
Karaga	1.8%	9.1%	6.8%	82.2%
Kpandai	0.0%	6.8%	1.4%	91.8%
Nanumba North	0.0%	.5%	.5%	99.1%
Nanumba South	0.0%	.9%	.5%	98.6%
Saboba	5.0%	5.9%	3.2%	86.0%
Savelugu-Nanton	0.0%	5.0%	15.1%	79.9%
Sawla-Tuna-Kalba	1.8%	6.4%	1.4%	90.5%
Tamale Metropolis	2.3%	1.4%	22.3%	74.1%
Tolon-Kumbungu	4.1%	10.9%	27.6%	57.5%
West Gonja	1.4%	6.8%	2.3%	89.5%
West Mamprusi	1.8%	3.2%	2.3%	92.8%
Yendi	.9%	8.6%	27.5%	63.1%
Zabzugu-Tatale	2.3%	7.8%	4.6%	85.4%
<b>Total</b>	<b>2.3%</b>	<b>7.4%</b>	<b>10.6%</b>	<b>79.7%</b>
<b>Upper East districts:</b>				
Bawku Municipal	4.1%	21.2%	5.0%	69.8%
Bawku West	.5%	5.9%	6.8%	86.9%
Bolgatanga Municipal	10.0%	18.2%	17.7%	54.1%
Bongo	1.4%	18.8%	10.1%	69.7%
Builsa	2.7%	36.3%	4.1%	56.8%
Garu-Tempene	4.5%	24.7%	5.8%	65.0%
Kassena Nankana West	5.5%	29.4%	11.5%	53.7%
Kassena Nankana East	17.7%	15.5%	9.5%	57.3%
Talensi-Nabdam	10.5%	28.6%	15.9%	45.0%
<b>Total</b>	<b>6.4%</b>	<b>21.9%</b>	<b>10.1%</b>	<b>61.7%</b>
<b>Upper West districts:</b>				
Jirapa	1.8%	21.8%	7.7%	68.6%
Lambussie-Karni	2.3%	19.0%	10.0%	68.8%
Lawra	.9%	10.9%	6.8%	81.4%
Nadowli	0.0%	2.7%	4.1%	93.2%
Sissala East	.5%	6.3%	7.2%	86.0%
Sissala West	.9%	1.4%	3.6%	94.1%
Wa East	4.5%	20.0%	6.4%	69.1%
Wa Municipal	.9%	11.4%	13.2%	74.5%
Wa West	1.8%	40.3%	5.9%	52.0%
<b>Total</b>	<b>1.4%</b>	<b>14.8%</b>	<b>7.5%</b>	<b>76.3%</b>
Urban	1.0%	2.5%	15.3%	81.3%
Rural	3.7%	14.8%	8.6%	73.0%
<b>Total</b>	<b>3.3%</b>	<b>12.9%</b>	<b>9.9%</b>	<b>73.9%</b>



**Table 73** Food security by livelihood, farm size, wealth, education and sex of households head

		Severely food insecure	Moderately food insecure	Mildly food insecure	Food secure
Livelihood groups	Fishermen	.6%	4.8%	1.8%	92.8%
	Unskilled labour	4.0%	18.6%	18.3%	59.1%
	Agriculturalists	3.7%	13.0%	8.4%	75.0%
	Agro-pastoralists	3.1%	15.6%	10.3%	71.0%
	Artisans	4.6%	9.8%	17.0%	68.6%
	Traders	2.7%	7.1%	13.4%	76.7%
	Regular employment	.4%	.7%	7.8%	91.1%
	Food processors	2.3%	15.6%	8.6%	73.5%
	Area cultivated categories	Smallholders (5 or less acres)	4.5%	16.7%	10.4%
Medium (6-10 acres)		2.0%	9.2%	9.7%	79.1%
Large (11 or more acres)		1.0%	6.1%	8.5%	84.5%
Wealth index groups	Poorest	6.7%	35.1%	0.0%	58.2%
	2	5.2%	28.5%	0.0%	66.3%
	3	1.9%	0.0%	22.1%	76.0%
	4	1.4%	0.0%	14.9%	83.8%
	Wealthiest	1.2%	0.0%	13.6%	85.2%
Sex of the head of household:	Male	3.1%	11.8%	10.1%	75.0%
	Female	5.3%	25.5%	7.1%	62.0%
Education of household head:	No education or pre-school	3.7%	14.8%	10.0%	71.6%
	Primary or middle school	2.1%	8.0%	9.2%	80.7%
	Vocational training secondary school or higher	1.3%	1.4%	7.3%	90.0%

**Table 74** Food sources by livelihood, farm size, wealth, food security, education and sex of households head

	Own production	Fishing, hunting gathering	Borrowed	Credit purchase	Cash purchase	Exchange	Gift	Begging	Food aid	Other source
<b>Livelihood groups:</b>										
Fishermen	23%	9%	1%	11%	55%	0%	0%	0%	0%	0%
Unskilled labour	22%	3%	0%	2%	67%	0%	1%	0%	0%	0%
Agriculturalists	33%	3%	0%	2%	60%	0%	1%	0%	0%	0%
Agro-pastoralists	32%	2%	0%	2%	61%	0%	1%	0%	0%	0%
Artisans	17%	1%	0%	1%	81%	0%	0%	0%	0%	0%
Traders	19%	1%	0%	2%	77%	0%	1%	0%	0%	0%
Regular employment	13%	1%	0%	1%	81%	0%	1%	0%	0%	0%
Food processors	24%	2%	0%	2%	69%	0%	1%	0%	0%	0%
<b>Wealth groups:</b>										
poorest	31%	3%	0%	2%	61%	0%	1%	0%	0%	0%
2	31%	3%	0%	2%	61%	0%	1%	0%	0%	0%
3	31%	3%	0%	2%	62%	0%	1%	0%	0%	0%
4	28%	3%	0%	3%	63%	0%	0%	0%	0%	0%
wealthiest	22%	1%	0%	2%	72%	0%	0%	0%	0%	0%
<b>Food security</b>										
severely food insecure	30%	1%	0%	2%	66%	0%	1%	0%	0%	0%
moderately food insecure	31%	2%	0%	2%	64%	0%	1%	0%	0%	0%
mildly food insecure	29%	1%	0%	1%	68%	0%	1%	0%	0%	0%
food secure	29%	3%	0%	2%	65%	0%	1%	0%	0%	0%
<b>Education of household head:</b>										
no education or pre-school	30%	2%	0%	2%	63%	0%	1%	0%	0%	0%
primary or middle school	28%	2%	0%	3%	64%	0%	1%	0%	0%	0%
vocational training secondary school or higher	19%	2%	0%	3%	72%	0%	1%	0%	0%	0%
<b>Sex of household head:</b>										
Male	29%	2%	0%	2%	63%	0%	1%	0%	0%	0%
Female	22%	2%	0%	2%	71%	0%	2%	0%	0%	0%

**Table 75** Food related coping strategies

	Reduce number of meals eaten per day?	Borrow food or rely on help from friends or relatives?	Rely on less expensive or less preferred foods?	Purchase/borrow food on credit?	Gather unusual types or amounts of wild food/hunt?
<b>Northern districts:</b>					
Bole	31%	14%	33%	12%	11%
Bunkpurugu-Yunyoo	36%	5%	32%	6%	28%
Central Gonja	22%	6%	28%	18%	0%
Cherepone	11%	7%	15%	3%	0%
East Gonja	18%	8%	12%	12%	3%
East Mamprusi	43%	15%	52%	17%	15%
Gushegu	17%	18%	1%	14%	1%
Karaga	3%	1%	4%	2%	0%
Kpandai	8%	2%	5%	2%	2%
Nanumba North	1%	1%	1%	2%	0%
Nanumba South	10%	1%	10%	2%	0%
Saboba	21%	16%	18%	14%	16%
Savelugu-Nanton	5%	1%	2%	1%	1%
Sawla-Tuna-Kalba	37%	15%	24%	15%	6%
Tamale Metropolis	3%	2%	0%	1%	1%
Tolon-Kumbungu	1%	0%	0%	0%	0%
West Gonja	24%	5%	8%	7%	6%
West Mamprusi	74%	25%	68%	35%	8%
Yendi	1%	0%	0%	0%	0%
Zabzugu-Tatale	5%	3%	1%	3%	0%
<b>Total</b>	<b>17%</b>	<b>7%</b>	<b>14%</b>	<b>8%</b>	<b>5%</b>
<b>Upper East districts:</b>					
Bawku Municipal	14%	0%	6%	1%	0%
Bawku West	17%	5%	14%	10%	4%
Bolgatanga Municipal	15%	4%	5%	10%	0%
Bongo	39%	19%	33%	24%	25%
Builsa	74%	31%	56%	35%	12%
Garu-Tempne	25%	4%	12%	5%	3%
Kassena Nankana West	59%	9%	16%	24%	0%
Kassena Nankana East	44%	9%	41%	5%	1%
Talensi-Nabdam	55%	24%	10%	30%	2%
<b>Total</b>	<b>35%</b>	<b>11%</b>	<b>18%</b>	<b>15%</b>	<b>4%</b>
<b>Upper West districts:</b>					
Jirapa	28%	3%	5%	3%	3%
Lambussie-Karni	60%	48%	56%	48%	36%
Lawra	61%	15%	62%	9%	13%
Nadowli	86%	26%	59%	33%	28%
Sissala East	33%	11%	40%	11%	5%
Sissala West	21%	6%	5%	6%	1%
Wa East	51%	26%	26%	26%	11%
Wa Municipal	57%	33%	65%	24%	56%
Wa West	79%	35%	70%	22%	46%
<b>Total</b>	<b>56%</b>	<b>23%</b>	<b>47%</b>	<b>20%</b>	<b>25%</b>
Urban	14%	5%	11%	5%	2%
Rural	33%	12%	23%	13%	9%
<b>Total</b>	<b>30%</b>	<b>11%</b>	<b>21%</b>	<b>12%</b>	<b>8%</b>

**Table 76** Food related coping strategies, continued

	Have household members eat at relatives'/ neighbour'	Reduce adult consumption so children can eat	Rely on casual labour for food	Feed workers at expense of non-working members	Go entire day without eating	Consume seed stock to be saved for next season
<b>Northern districts:</b>						
Bole	9%	31%	8%	4%	4%	6%
Bunkpurugu-Yunyoo	8%	27%	4%	3%	11%	7%
Central Gonja	2%	13%	2%	0%	0%	0%
Cherepone	2%	9%	1%	0%	1%	1%
East Gonja	5%	13%	2%	2%	0%	2%
East Mamprusi	7%	40%	13%	0%	7%	11%
Gushegu	2%	8%	10%	0%	2%	2%
Karaga	1%	1%	1%	0%	0%	4%
Kpandai	1%	3%	0%	0%	0%	0%
Nanumba North	0%	2%	0%	0%	1%	1%
Nanumba South	1%	5%	14%	0%	3%	1%
Saboba	14%	20%	13%	5%	17%	17%
Savelugu-Nanton	1%	1%	0%	0%	0%	0%
Sawla-Tuna-Kalba	14%	21%	5%	7%	11%	16%
Tamale Metropolis	1%	5%	0%	0%	0%	0%
Tolon-Kumbungu	0%	1%	0%	0%	0%	2%
West Gonja	6%	17%	12%	1%	9%	3%
West Mamprusi	33%	61%	44%	16%	4%	9%
Yendi	0%	1%	1%	0%	0%	1%
Zabzugu-Tatale	1%	3%	3%	0%	0%	2%
<b>Total</b>	<b>5%</b>	<b>14%</b>	<b>6%</b>	<b>2%</b>	<b>3%</b>	<b>4%</b>
<b>Upper East districts:</b>						
Bawku Municipal	0%	5%	2%	0%	0%	0%
Bawku West	1%	23%	24%	1%	0%	1%
Bolgatanga Municipal	2%	22%	4%	0%	2%	1%
Bongo	5%	45%	20%	1%	23%	17%
Builsa	14%	67%	17%	15%	21%	44%
Garu-Tempene	2%	24%	5%	1%	3%	4%
Kassena Nankana West	4%	53%	9%	0%	13%	17%
Kassena Nankana East	11%	50%	6%	0%	9%	3%
Talensi-Nabdam	0%	39%	26%	1%	2%	15%
<b>Total</b>	<b>4%</b>	<b>33%</b>	<b>11%</b>	<b>2%</b>	<b>7%</b>	<b>10%</b>
<b>Upper West districts:</b>						
Jirapa	2%	9%	2%	1%	5%	4%
Lambussie-Karni	54%	64%	42%	40%	41%	52%
Lawra	13%	62%	36%	3%	39%	3%
Nadowli	26%	90%	21%	22%	7%	4%
Sissala East	9%	18%	5%	0%	3%	3%
Sissala West	3%	15%	8%	3%	3%	2%
Wa East	30%	34%	27%	16%	2%	13%
Wa Municipal	28%	51%	43%	30%	31%	34%
Wa West	34%	75%	36%	8%	24%	52%
<b>Total</b>	<b>22%</b>	<b>50%</b>	<b>26%</b>	<b>14%</b>	<b>19%</b>	<b>18%</b>
Urban	4%	13%	6%	2%	4%	3%
Rural	9%	28%	12%	5%	8%	9%
<b>Total</b>	<b>8%</b>	<b>26%</b>	<b>11%</b>	<b>4%</b>	<b>7%</b>	<b>8%</b>

**Table 77** Months when households perceive difficulties in finding enough food

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Northern districts:</b>												
Bole	1%	1%	1%	2%	12%	86%	88%	19%	4%	1%	2%	2%
Bunkpurugu-Yunyoo	1%	1%	3%	10%	48%	80%	92%	48%	24%	4%	1%	1%
Central Gonja	1%	0%	0%	4%	24%	65%	91%	85%	27%	1%	1%	1%
Cherepone	0%	0%	3%	8%	23%	56%	82%	65%	10%	1%	1%	1%
East Gonja	1%	1%	5%	19%	46%	83%	76%	19%	9%	3%	1%	1%
East Mamprusi	1%	2%	7%	34%	71%	86%	83%	55%	5%	2%	2%	2%
Gushegu	0%	1%	3%	13%	36%	70%	70%	18%	2%	1%	0%	1%
Karaga	0%	0%	2%	11%	33%	89%	97%	79%	37%	0%	0%	0%
Kpandai	0%	0%	0%	0%	2%	56%	57%	27%	0%	1%	0%	0%
Nanumba North	0%	0%	0%	2%	15%	59%	73%	28%	2%	1%	0%	0%
Nanumba South	1%	2%	3%	5%	21%	95%	97%	43%	8%	1%	1%	1%
Saboba	0%	0%	1%	3%	11%	60%	78%	77%	22%	4%	1%	1%
Savelugu-Nanton	0%	0%	0%	9%	28%	83%	96%	73%	11%	2%	1%	1%
Sawla-Tuna-Kalba	0%	0%	1%	5%	39%	90%	96%	57%	4%	0%	0%	0%
Tamale Metropolis	3%	3%	3%	14%	26%	68%	84%	50%	28%	26%	19%	4%
Tolon-Kumbungu	0%	0%	0%	5%	8%	61%	93%	88%	11%	1%	1%	0%
West Gonja	1%	1%	1%	7%	40%	78%	80%	51%	11%	2%	1%	2%
West Mamprusi	0%	0%	0%	6%	38%	90%	99%	80%	17%	2%	1%	1%
Yendi	1%	1%	1%	4%	8%	56%	71%	26%	4%	1%	1%	1%
Zabzugu-Tatale	0%	0%	0%	0%	10%	63%	80%	23%	0%	0%	0%	0%
<b>Total</b>	<b>1%</b>	<b>1%</b>	<b>2%</b>	<b>9%</b>	<b>27%</b>	<b>73%</b>	<b>84%</b>	<b>48%</b>	<b>13%</b>	<b>6%</b>	<b>4%</b>	<b>1%</b>
<b>Upper East districts:</b>												
Bawku Municipal	0%	0%	16%	70%	90%	96%	89%	8%	1%	1%	1%	0%
Bawku West	1%	1%	5%	29%	80%	95%	94%	6%	2%	2%	1%	1%
Bolgatanga Municipal	4%	9%	26%	67%	84%	82%	64%	23%	6%	1%	1%	1%
Bongo	4%	22%	63%	90%	95%	94%	54%	2%	1%	1%	1%	1%
Builsa	29%	29%	53%	81%	90%	75%	62%	27%	19%	20%	27%	30%
Garu-Tempene	0%	0%	2%	13%	71%	83%	53%	5%	1%	1%	1%	1%
Kassena Nankana West	4%	12%	28%	47%	84%	89%	89%	23%	6%	6%	6%	6%
Kassena Nankana East	2%	3%	11%	30%	71%	90%	81%	43%	21%	9%	4%	4%
Talensi-Nabdam	0%	1%	5%	42%	90%	97%	98%	69%	14%	4%	3%	3%
<b>Total</b>	<b>5%</b>	<b>8%</b>	<b>22%</b>	<b>54%</b>	<b>85%</b>	<b>89%</b>	<b>77%</b>	<b>23%</b>	<b>7%</b>	<b>4%</b>	<b>4%</b>	<b>5%</b>
<b>Upper West districts:</b>												
Jirapa	2%	2%	4%	17%	43%	73%	79%	59%	16%	4%	4%	4%
Lambussie-Karni	2%	1%	3%	4%	25%	72%	90%	66%	13%	7%	3%	1%
Lawra	1%	0%	2%	2%	16%	75%	95%	86%	52%	34%	4%	4%
Nadowli	1%	1%	1%	11%	50%	77%	91%	58%	30%	25%	7%	0%
Sissala East	2%	2%	7%	16%	26%	33%	50%	47%	19%	3%	2%	1%
Sissala West	0%	1%	1%	6%	24%	74%	83%	50%	17%	10%	10%	10%
Wa East	1%	1%	2%	5%	65%	92%	73%	12%	1%	1%	1%	1%
Wa Municipal	5%	4%	7%	27%	47%	82%	85%	42%	15%	12%	6%	7%
Wa West	0%	0%	1%	5%	47%	93%	91%	43%	4%	1%	1%	1%
<b>Total</b>	<b>2%</b>	<b>2%</b>	<b>3%</b>	<b>12%</b>	<b>39%</b>	<b>76%</b>	<b>83%</b>	<b>53%</b>	<b>20%</b>	<b>13%</b>	<b>4%</b>	<b>3%</b>
Urban	2%	3%	4%	15%	31%	69%	78%	43%	17%	14%	9%	2%
Rural	2%	3%	9%	24%	49%	80%	82%	42%	12%	6%	3%	3%
<b>Total</b>	<b>2%</b>	<b>3%</b>	<b>8%</b>	<b>23%</b>	<b>46%</b>	<b>78%</b>	<b>82%</b>	<b>42%</b>	<b>13%</b>	<b>7%</b>	<b>4%</b>	<b>3%</b>

**Table 78** Most common difficulties experienced by households over the past 12 months

	No difficulties	Crop failure	High food prices	Worker death	Animal disease	Illness	Not enough money for basic needs	Late rains
<b>Northern districts:</b>								
Bole	70.5%	6.4%	4.1%	3.2%	.5%	4.5%	4.1%	.9%
Bunkpurugu-Yunyoo	48.6%	22.5%	4.5%	6.3%	0.0%	.5%	0.0%	5.9%
Central Gonja	55.9%	19.4%	3.2%	8.1%	2.3%	6.8%	3.6%	5.0%
Cherepone	55.1%	7.9%	.9%	2.2%	5.3%	7.9%	2.6%	13.2%
East Gonja	96.9%	1.8%	.4%	0.0%	0.0%	0.0%	0.0%	.4%
East Mamprusi	63.2%	3.2%	.5%	8.2%	0.0%	10.0%	2.3%	0.0%
Gushegu	74.2%	8.4%	0.0%	3.1%	.4%	9.3%	1.8%	1.3%
Karaga	72.1%	15.1%	1.4%	2.3%	8.7%	3.2%	2.7%	.5%
Kpandai	80.5%	3.6%	1.8%	2.3%	.9%	3.2%	3.2%	1.4%
Nanumba North	87.8%	1.8%	0.0%	5.0%	2.7%	4.1%	0.0%	.9%
Nanumba South	49.8%	18.7%	2.7%	3.2%	1.4%	7.3%	21.0%	5.9%
Saboba	52.0%	19.9%	2.7%	4.1%	10.0%	6.8%	0.0%	1.4%
Savelugu-Nanton	47.0%	37.4%	2.3%	1.4%	12.8%	4.6%	1.4%	1.4%
Sawla-Tuna-Kalba	74.1%	2.3%	2.7%	6.4%	2.7%	8.6%	2.3%	.5%
Tamale Metropolis	37.3%	29.1%	9.5%	13.2%	.5%	5.0%	3.2%	.5%
Tolon-Kumbungu	91.4%	1.4%	.5%	2.3%	.5%	2.7%	2.3%	.5%
West Gonja	68.2%	9.1%	2.3%	1.8%	3.6%	4.5%	.5%	.9%
West Mamprusi	50.7%	26.2%	2.3%	6.3%	1.4%	9.0%	3.6%	.5%
Yendi	89.2%	.9%	7.2%	.9%	5.0%	0.0%	.5%	1.8%
Zabzugu-Tatale	85.8%	1.8%	0.0%	.9%	.5%	5.5%	.5%	1.8%
<b>Total</b>	<b>64.3%</b>	<b>14.1%</b>	<b>3.6%</b>	<b>5.4%</b>	<b>2.3%</b>	<b>4.9%</b>	<b>2.6%</b>	<b>1.7%</b>
<b>Upper East districts:</b>								
Bawku Municipal	87.8%	4.1%	.9%	.5%	6.8%	1.4%	.9%	0.0%
Bawku West	87.8%	2.7%	.9%	.5%	4.1%	0.0%	.5%	.9%
Bolgatanga Municipal	60.0%	6.8%	4.5%	5.5%	15.0%	5.0%	2.3%	.5%
Bongo	69.7%	6.9%	12.4%	2.3%	6.0%	3.7%	8.7%	.5%
Builsa	25.2%	32.3%	14.6%	7.1%	2.2%	10.2%	10.2%	3.5%
Garu-Tempene	74.0%	0.0%	17.9%	3.6%	4.5%	0.0%	.4%	.4%
Kassena Nankana West	64.2%	19.7%	3.2%	5.0%	12.8%	3.7%	.9%	1.8%
Kassena Nankana East	58.6%	7.3%	17.7%	8.6%	1.4%	6.8%	5.9%	2.7%
Talensi-Nabdam	90.9%	6.8%	.9%	.5%	.9%	.5%	.5%	0.0%
<b>Total</b>	<b>70.4%</b>	<b>9.1%</b>	<b>6.9%</b>	<b>3.4%</b>	<b>6.6%</b>	<b>3.2%</b>	<b>2.9%</b>	<b>1.0%</b>
<b>Upper West districts:</b>								
Jirapa	43.6%	27.7%	15.5%	6.8%	8.2%	5.9%	.5%	5.0%
Lambussie-Karni	56.1%	24.4%	11.8%	6.8%	5.9%	2.3%	2.3%	3.2%
Lawra	60.6%	22.2%	.5%	4.1%	.5%	2.3%	3.6%	8.1%
Nadowli	12.6%	41.0%	19.4%	8.6%	12.6%	1.4%	18.9%	5.0%
Sissala East	71.9%	5.0%	1.8%	.9%	.5%	.5%	7.7%	6.8%
Sissala West	66.4%	15.5%	3.6%	8.2%	3.2%	3.2%	.5%	8.2%
Wa East	27.3%	15.9%	20.9%	0.0%	13.2%	0.0%	13.6%	28.2%
Wa Municipal	39.1%	33.6%	10.0%	4.1%	7.3%	1.8%	2.3%	10.0%
Wa West	80.1%	10.0%	0.0%	6.3%	5.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>47.9%</b>	<b>23.9%</b>	<b>9.6%</b>	<b>5.1%</b>	<b>6.5%</b>	<b>2.0%</b>	<b>5.7%</b>	<b>8.3%</b>
Urban	55.6%	16.3%	8.2%	8.4%	2.8%	4.4%	2.5%	1.9%
Rural	64.7%	14.1%	5.1%	4.0%	4.7%	3.8%	3.4%	2.9%
<b>Total</b>	<b>63.1%</b>	<b>14.4%</b>	<b>5.7%</b>	<b>4.7%</b>	<b>4.3%</b>	<b>3.9%</b>	<b>3.3%</b>	<b>2.7%</b>

**Table 79** Responses to difficulties

	Per cent of responses
Sold livestock	11.4%
We were not able to do anything	8.6%
Looked for cheaper markets to purchase food	6.9%
Borrowed money	6.7%
Bulk purchased	5.9%
Increased petty trade	5.4%
Reduced number of meals per day	5.0%
Reduced portion size of meals	3.8%
Sell charcoal or firewood	3.8%
External support	3.8%
There was no need to do anything/no other coping strategy	3.3%
Purchased food on credit	3.3%
Other coping	3.3%
Looked for temporary work outside community (less than 3 months)	3.2%
Borrowed food	2.9%
Money, selling, buying, savings related	2.7%
Looked for temporary work outside community (more than 3 months)	2.5%
Work related coping	2.4%
Reduce non-essential expenditures (health, transportation, etc.)	2.4%
Relied on less preferred, less expensive food	2.2%
Sought support from relatives/friends (including remittances)	1.9%
Ate seed stock	1.6%
Worked additional hours or took additional casual/ temporary work	1.6%
Ate wild foods	1.4%
Spent savings, jewellery	.8%
Begged	.6%
Sold agricultural tools, equipment, seeds, etc.	.6%
Worked for food only	.5%
Reduced expenditures on health and education	.5%
help from UN/NGO/Church/Charity	.3%
Sent children to work for money or food	.2%
Spent days without eating	.2%
Sold land	.2%
Send children to live/eat with relatives/friends	.1%
Rented out land	.1%
Illegal income activities (theft, prostitution)	.0%
Sold household belongings (kitchen utensils/furniture)	.0%
	100.0%

**Table 80** Food and non-food assistance

	Did your household or one (or more) of its members benefit from food assistance?		Household or one (or more) of its members benefit from non-food assistance	
	No	Yes	No	Yes
<b>Northern districts:</b>				
Bole	98%	2%	99%	1%
Bunkpurugu-Yunyoo	93%	7%	96%	4%
Central Gonja	89%	11%	99%	1%
Cherepone	95%	5%	92%	8%
East Gonja	100%	0%	100%	0%
East Mamprusi	73%	27%	35%	65%
Gushiegu	83%	17%	68%	32%
Karaga	41%	59%	74%	26%
Kpandai	73%	27%	90%	10%
Nanumba North	81%	19%	94%	6%
Nanumba South	88%	12%	95%	5%
Saboba	65%	35%	94%	6%
Savelugu-Nanton	79%	21%	68%	32%
Sawla-Tuna-Kalba	95%	5%	95%	5%
Tamale Metropolis	95%	5%	98%	2%
Tolon-Kumbungu	93%	7%	91%	9%
West Gonja	77%	23%	74%	26%
West Mamprusi	95%	5%	91%	9%
Yendi	100%	0%	98%	2%
Zabzugu-Tatale	100%	0%	100%	0%
<b>Total</b>	<b>88%</b>	<b>12%</b>	<b>90%</b>	<b>10%</b>
<b>Upper East districts:</b>				
Bawku Municipal	99%	1%	99%	1%
Bawku West	97%	3%	98%	2%
Bolgatanga Municipal	79%	21%	72%	28%
Bongo	91%	9%	11%	89%
Builsa	87%	13%	84%	16%
Garu-Tempene	100%	0%	60%	40%
Kassena Nankana West	88%	12%	97%	3%
Kassena Nankana East	55%	45%	30%	70%
Talensi-Nabdam	99%	1%	100%	0%
<b>Total</b>	<b>89%</b>	<b>11%</b>	<b>77%</b>	<b>23%</b>
<b>Upper West districts:</b>				
Jirapa	89%	11%	85%	15%
Lambussie-Karni	67%	33%	78%	22%
Lawra	81%	19%	65%	35%
Nadowli	19%	81%	51%	49%
Sissala East	63%	37%	45%	55%
Sissala West	89%	11%	74%	26%
Wa East	91%	9%	53%	47%
Wa Municipal	52%	48%	40%	60%
Wa West	47%	53%	71%	29%
<b>Total</b>	<b>64%</b>	<b>36%</b>	<b>61%</b>	<b>39%</b>
Urban	93%	7%	88%	12%
Rural	82%	18%	79%	21%
<b>Total</b>	<b>84%</b>	<b>16%</b>	<b>81%</b>	<b>19%</b>







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