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FEED THE FUTURE
AGRICULTURE POLICY SUPPORT PROJECT (APSP)

BASELINE SURVEY ON GENDER AND AGRICULTURE OF SELECTED COMMUNITIES IN GHANA
FINAL REPORT

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BASELINE SURVEY ON GENDER AND AGRICULTURE OF SELECTED COMMUNITIES IN GHANA

Contract No. 641-C-14-00001

Cover Photo: Selected women farmers in the Degri Community located in the Tumu District of the Upper West region in a focus group discussion (FGD)

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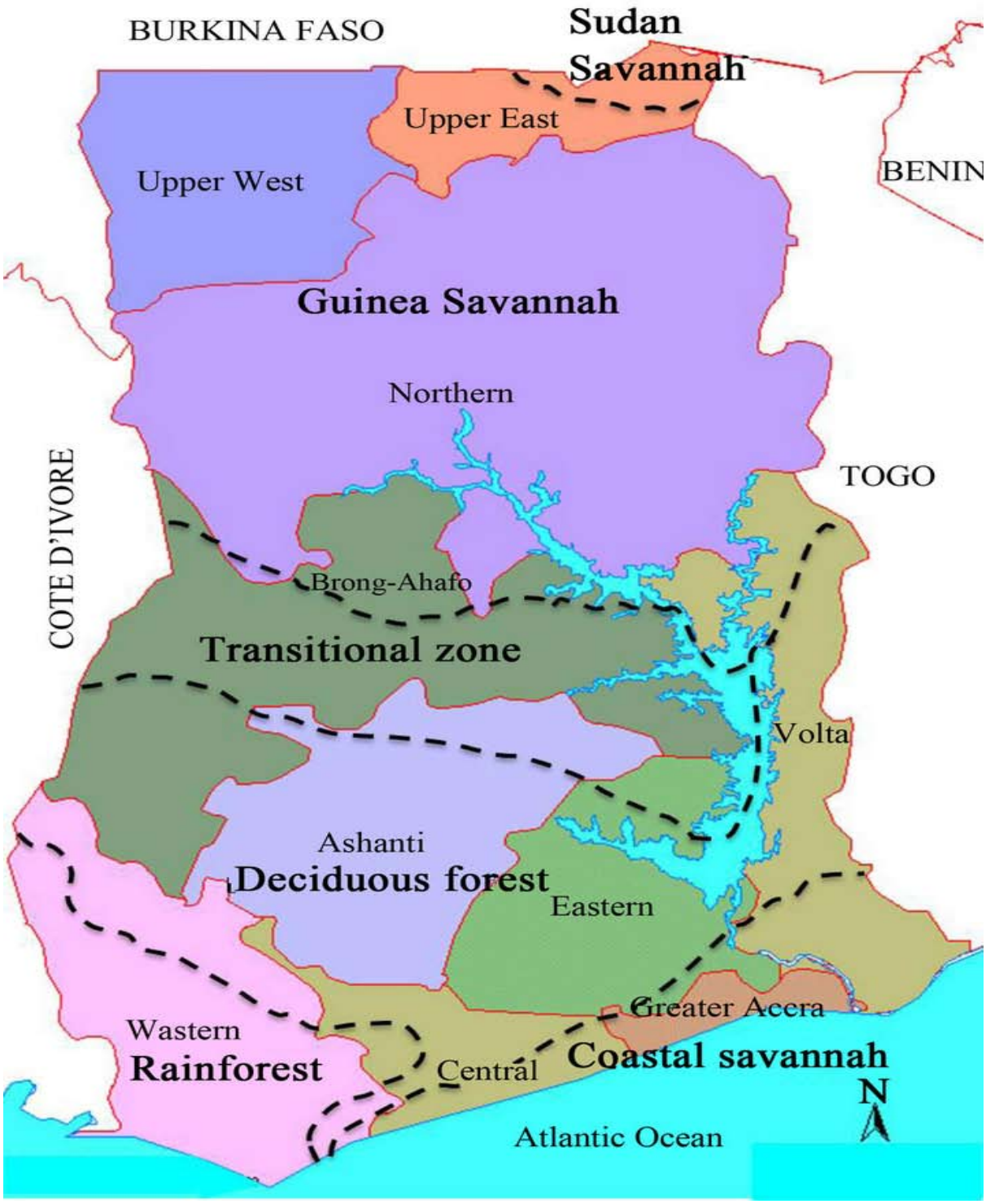


ACRYNOMS

AEAs	Agricultural Extension Agents
APSP	Agriculture Policy Support Project
CSOs	Civil Society Organizations
FANTA	Food And Nutrition Technical Assistance
FAO	Food and Agriculture Organization
FBOs	Farmer-Based Organizations
FtF	Feed the Future
FGD	Focus Group Discussion
GADS	Gender and Agricultural Development Strategy
GHS	Ghana Cedis
GLSS 6	Ghana Living Standard Survey 6
GSS	Ghana Statistical Service
GCS	GIMPA Consultancy Services
GIMPA	Ghana Institute of Management and Public Administration
GoG	Government of Ghana
GDP	Gross Domestic Product
HDDS	Household Dietary Diversity Score
HH	Household
IFAD	International Fund for Agriculture Development
JHS	Junior High School
KII	Key Informant Interview
LAP	Land Administrative Project
MoFA	Ministry of Food and Agriculture
NGOs	Non-Governmental Organizations
RA	Rapid Appraisal
RCBs	Rural and Community Banks
SOW	Statement of Work
SNA	System of National Accounts
SNA'93	System of National Accounts 1993
SSA	Sub-Sahara Africa
USAID	United States Agency for International Development
WIAD	Women In Agriculture Development

EXECUTIVE SUMMARY

Baseline Purpose and Baseline Questions

This report presents results of Baseline Survey on gender and agriculture in selected Agro-Ecological zones in Ghana based on indicators of the Gender and Agricultural Development Strategy (GADS) and the overall agriculture sector Monitoring and Evaluation Framework. The survey was undertaken by GIMPA Consultancy Services (GCS) in October 2014 as part of the short–term technical assistance under the USAID/Ghana-funded Feed the Future Agricultural Policy Support Project, implemented by Chemonics International Inc.

Some of the key issues explored in the survey, in line with the assignment's Statement of Work (SOW), were:

1. Average agricultural land use sizes by gender
2. Household food security situations (disaggregated by male/female headed households) considering availability, access and affordability
3. Access to, control over, and ownership of, productive resources disaggregated by gender
4. Number of males and females employed by the agricultural sector (youth and physically challenged) employed (primary and secondary) by the agricultural sector
5. Sources and levels of incomes of the diverse groups in the sector
6. Alternative livelihood activities engaged in by gender
7. Women time use, and relation to agricultural activities along the agricultural value chain
8. Women's reproductive roles and their effect on agricultural activities
9. Number of male and female farm laborers (casual or "by day" workers)
10. Use of labour-saving devices and types along the agricultural value chain by gender
11. Data on the categories of Ministry of Food and Agriculture (MoFA) staff by gender, age and professional skills whose activities are in support of the practitioners
12. Number of MoFA staff with knowledge in gender analysis and application to work

Project Background

The MoFA, through the Directorate of Women in Agriculture Development (WIAD), has the mandate to promote and ensure implementation of gender integration issues into Ghana's agricultural sector policy formulation and implementation. In 2004, WIAD developed and launched the Gender and Agricultural Development Strategy (GADS) aimed at integrating and mainstreaming gender concerns into MOFA's programs. The imple mentation of the GADS was assessed in 2008 with an acknowledgment of the tremendous contributions of the diverse groups in the agricultural sector. The expected outcome of the GADS is to address inequalities and to improve the contributions of these diverse groups in the agricultural sector. However, the GADS was deficient of baseline data which is critical in providing basis for measuring changes and progress in its implementation. The process for reviewing the GADS was therefore initiated with support from the West African Agriculture Productivity Project (WAAPP). Hence, the need to produce baseline data to establish the basis for measuring the impact and progress of the strategy.

Methodology and Limitations

GCS adopted a participatory approach guided by the principles of process consulting to ensure effective inclusion of the diverse stakeholders at all stages during the execution of the assignment. A Rapid Appraisal (RA) approach that draws on baseline survey methods and techniques to quickly, yet systematically, collect data was used for data collection. Desk review was undertaken which involved a critical review of project documents to ascertain and validate information and analysis that guided the design and implementation of the ongoing project. Using quantitative and qualitative methods, GCS designed appropriate questionnaire and Focused Group Interview Guide for field research to collect data in 30 communities.
The Gender and Agriculture survey questionnaire focused on background information on gender in agriculture improvements; women's participation and benefits in agricultural development; identification of gender-based constraints; women and food security in Ghana as well as gender-specific indicators. In addition, other core issues in agricultural productivity including the environment, climate change mitigation and adaptation, institutional capacity, and political leadership and commitment to the broad sector, and the target groups of the current study were considered.

It is important to emphasize some limitations to this study. The data collected through question-based surveys are influenced by respondents' knowledge of their own households (livelihood, food security, social standing in the community, decision-making, etc.). Hence, one important limitation encountered during the survey was recall bias and various other biases that influence responses.

Other limitations and challenges experienced during the fieldwork included compressed timelines, difficulty obtaining current information at the community level, limitation of self-reported data by some farmers, logistics and transportation constraints due to remoteness of some communities.

Specifically, questions for which responses are least likely to be accurate include those on average household monthly income from all sources; farm sizes; crop yields; comparisons of household income; food security; casual labor opportunities; and levels of assets and wealth in previous years. Inasmuch as some of responses are generally difficult to collect accurately, it was noticed that respondents' hope for future projects influenced some of their answers.

There are many reasons why farmers may provide biased or less-than-truthful responses to questions. For instance, they may want to appear worse off than they are in the hope that it may help to attract some donor support, or they may want to appear better off than they are for fear of being judged by enumerators. We attempted to reduce this potential bias by providing farmers with clear information about why they were being interviewed. We also informed them that their responses would have no bearing on their participation or lack of participation in any current or future projects and that they would not be identified individually or by name in any reports.

Key Findings and Conclusions

Livelihoods

The survey of economic activity undertaken by farmers disaggregated by gender shows that in some zones, about equal proportions of females and males carry out the same types of activities. For example, about 86 percent of female farmers and 89 percent of male farmers in the Coastal zone are into the cultivation of food crops, whereas about 14 percent and 12 percent, respectively, work in the government sector. In the Guinea Savannah zone, however, all the male farmers undertake crop production (food and cash crops) as their main economic activity while 84 percent of the female farmers are involved in food crop farming and about 8 percent are engaged in private businesses.

Access to Land

Female farmers tend to have about half the size of agricultural land available to their male counterparts in the Forest, Guinea Savannah and Transitional zones while land access is nearly equal among the two gender groups in the Coastal Savannah zone. The average land available to female farmers in the Coastal zone is about 3 acres while male farmers have about 4 acres. Agricultural land sizes are much larger in the Forest zone, where male farmers have about 14 acres compared to about 10 acres for the female farmers. Female farmers in the Transitional zone have about 5 acres of agricultural land, which is about half the size available to male farmers. However, both groups use nearly all their available land for agricultural activities in the Coastal and Guinea Savannah zones while in the Forest zone, both groups use just over half the land available to them.

Food Security

Farmers in the Guinea Savannah zone are more likely to face food insecurities than their counterparts in the other Agro-Ecological zones, and these insecurities are more pronounced in male-headed households than female headed households. As high as 70 percent of male-headed household in the Guinea Savannah zone faced difficulty in meeting their food demand in the previous 12 months compared with about 30 percent of female-headed households who reported such challenges. The Transitional zone appears to be the most food secured among the farm households surveyed, with about 68 percent male farmers encountering no food challenges in the period. The results, nevertheless, suggest that an appreciable number of farmers, regardless of gender, across the Agro-Ecological zones encounter food security challenges.

Food insecurity of the households was further interrogated using the Household Dietary Diversity Score (HDDS), which is based on the number of different food groups consumed out of a set of 12 food groups over a given reference period by a household. The food groups were cereals, fish and seafood, root and tubers, pulses/legumes/nuts, vegetables, milk and milk products, fruits, oil/fats, meat, poultry, offal, sugar/honey, eggs and miscellaneous. The survey found that most households had HDD score that was either low or moderate especially in the Coastal and Forest zones. Nonetheless, about 11 percent had high HDD scores (9-11 out of a maximum of 12) in the Forest zone. This depicts the average level of dietary diversity score among farmers surveyed meaning farmers have food security issues relating to access to food.

Access to Productive Resources

The findings reveal that the farmers have an acutely limited access to credit as a productive resource. As much as 81 percent of male farmers and 86 percent of female counterparts have no access to credit for their economic activities in the Coastal zone, with only about 19 percent of males and 14 percent of females having such access. A similar trend is observed in the Forest zone, with about 83 percent of male farmers having no access compared with about 88 percent of total female farmers having no access to credit. The picture appears to be the same in the Transitional zone, where about 68 percent of female farmers have no access to credit. A slightly improved situation is observed among the male farmers in the Transitional zone where just more than half have access to credit as a productive resource.

Access to extension services is quite high among farmers in the Coastal zone and to some extent in the Forest zone as well. Unlike the case of credit, about 94 percent of male farmers and all the female farmers in the Coastal zone have access to extension services for their agricultural activities. In the Forest zone, about 73 percent of male farmers and about 29 percent of female farmers have access to extension services. A slightly reduced number of farmers in the Guinea Savanna zone – about 41 percent of the female farmers and about 45 percent of male farmers interviewed – have access to extension services. It appears therefore that the Coastal region is the zone best serviced by extension activities, followed by the Transitional zone, then the Forest and Guinea Savannah zones in that order.

Like the situation observed for credit, access to agricultural machinery, specifically tractor services is low among all survey zones. As much as 88.6 percent of female farmers in the Forest zone have no access to tractor services. In the Guinea Savannah zone, an even higher proportion of about 93 percent of female farmers and 61 percent of male farmers do not have access to these services for their productive activities. The findings in the Transitional zone mimic those of the Guinea Savannah zones in that as high as 89.7 percent of female farmers do not have access compared to about 69 percent of male farmers who do not.

As observed for credit and machinery, most of the farmers (both male and female) have little access to irrigation equipment to support their agricultural activities especially during the dry season. In particular, female access to irrigation equipment is generally low. However, farmers in the Coastal zone have quite a high access to irrigation equipment to support vegetable production, with about 79 percent of females and half of the males surveyed having such access and as a result are able to undertake dry season farming. In the Transitional zone, about 31 percent of male farmers have access to irrigation compared to only about 13 percent of their female counterparts while in the Forest zone, just more than a quarter of males and about 11.4 percent of female farmers have access. Access to irrigation equipment among famers was found to be low. The findings show that male surveyed have not access to these equipment with only a few (8%) of the female farmers surveyed in the zone having access.

Household Incomes

The survey results indicate that majority of the farmers earn low incomes across the agro-ecological zones. Moreover, women across the Agro-Ecological zones earn very low incomes, which affect their ability to meet their own needs and those of their household. Nonetheless, some farmers are able to

earn annually, incomes above GHS 2,000 per annum; about 12 percent of the female farmers earn incomes above GHS 10,000 annually from their economic activities including agricultural activities. About 23 percent of farmers in the Coastal Savannah zone earn incomes in the range of GHS 501-1,000 annually, but a much higher proportion (about 37 percent) indicated that their income is above GHS 10,000 per annum. In the Forest zone, about a quarter of farmers earn income above GHS 10,000 while some 14 percent of the farmers say their annual income is in the range of GHS 100-500. Farmers in the Transitional zone have earnings from as low as GHS 100 to as high as GHS 10,000, with an equal proportion (about 22%) in the income brackets of GHS 501-1,000 and GHS 2,001-3,000, but 13 percent in the GHS 5,000-10,000 bracket annually.

Policy Recommendations

1 In order to make a real impact on food production and food security, agriculture spending and policy need to undergo a reorientation to focus more deeply on women farmers. In line with the call by WIAD, MoFA should strategically target at least 30 percent women participation in all agriculture-related programmes and projects. This is because of the significant contributions of women in the agricultural sector across all the Agro-Ecological zones to the same, or even greater, extent as their male counterparts as food processing and marketing are predominantly carried out by women, in addition to household chores in support of their families.

2 Government should formulate and implement the necessary legislation and regulations to stop discrimination in land ownership and tenure against women. Besides, government should take immediate steps to guarantee equal rights to land for men and women regardless of their civil status, and implement policies and programmes to facilitate women's access to and control over land for agricultural purposes.

3 MoFA should overhaul extension services delivery in Ghana to make them gender sensitive through:
- increasing the number of female extension agents
- establishing pro-female farmer field schools and farmer-to-farmer exchanges
- setting up gender-sensitive learning and evaluation mechanisms to improve extension services to women farmers.

4 While both male and female farmers have extremely low access to credit, the survey found that women have even less access. Therefore, government should consider establishing a Women Enterprise Fund to help provide targeted credit to women farmers who cannotac cess credit facilities from the formal financial sector. The key will be to ensure that there is sufficient capital to reach large numbers of women farmers, and that MoFA and the Ministry of Gender, Children and Social Protection to have a joint responsibility in the management of the fund in a transparent and efficient manner.

5 The Policy Planning Monitoring and Evaluation Directorate of MoFA and the FBO Desk at the Directorate of Agricultural Extension Services should support and actively engage with women's civil society organizations and networks such as farmer groups and women's coop eratives and facilitate their systematic inclusion and participation in the development, implementation, monitoring and evaluation of agricultural policies and programmes.

6 When all households' activities are taken into consideration, women generally work longer hours than men. It is therefore important that policies directed at labour-saving technologies to enhance women participation in agriculture are promoted. Therefore, MoFA through the Agricultural Engineering Services Directorate should provide gender sensitive agricultural mechanization schemes to support female farmers, especially female Farmer Based Organizations (FBOs) to procure tractors and improved agricultural implements and tools. This support can come in the form of input credit, distribution of subsidized agro-equipment/ implements to female farmers (individuals and groups). This would help reduce labour shortages for land preparation and improve women's productivity since they will expend less energy while producing more for home consumption and for the market.

1.0 INTRODUCTION AND METHODOLOGY

1.1 Introduction

This report presents results of a baseline survey on Gender and Agriculture in selected Agro-Ecological zones in Ghana as per indicators of the Gender and Agricultural Development Strategy (GADS) and the overall agriculture sector Monitoring and Evaluation Framework. The study was undertaken by GIMPA Consultancy Services (GCS), which was awarded a contract assignment addressing the provision of professional service to the USAID/Ghana Feed the Future (FtF) Agriculture Policy Support Project (APSP) in Ghana under the USAID Contract No: AID-641-14-0001.

1.2 Background of the Assignment

The Ministry of Food and Agriculture (MoFA), through the Directorate of Women in Agriculture Development (WIAD), has the mandate to promote and ensure implementation of gender integration in Ghana's agricultural sector policy formulation and implementation. In 2004, WIAD developed the Gender and Agricultural Development Strategy (GADS), which is aimed at integrating and mainstreaming gender concerns into MOFA's programs.

The development of GADS was crucial because of the significant contributions of the diverse groups, including women, in the agricultural sector. Implementation of the GADS was to help address inequalities and improve the contributions of these diverse groups in the agricultural sector. However, it lacked baseline data which is critical in providing basis for measuring changes and progress in its implementation. The West African Agriculture Productivity Project (WAAPP) therefore initiated the process for reviewing the GADS, including ensuring that sufficient and reliable baseline data are generated to facilitate measurement of the impact and progress of the strategy.

Consequently, WIAD is collaborating with the USAID/Ghana Feed the Future (FtF) Agriculture Policy Support Project (APSP) to undertake this study. The APSP is working with MoFA to support implementation of Ghana's Medium-Term Agriculture Sector Investment Plan (METASIP) with the goal to improving food security and creating an enabling environment for private sector investment. The specific objective of the APSP is to increase capacity of the Government of Ghana (GoG), private sector, and civil society organizations to implement evidence-based policy formation, implementation, research and advocacy and to perform rigorous monitoring and evaluation of agricultural programs implemented under the METASIP.

1.3 Methodology

GCS adopted a participatory approach guided by the principles of process consulting to ensure effective inclusiveness of diverse groups of stakeholders at all stages during the execution of the assignment. A Rapid Appraisal (RA) approach was used for data collection which involved baseline survey methods and techniques to quickly and systematically collect relevant data. Desk review of project documents was undertaken to ascertain and validate information and analysis that guided the design and implementation of the survey. Using quantitative and qualitative methods, GCS designed appropriate questionnaires and a Focused Group Interview Guide to collect data in 30 communities.

The Gender and Agriculture Survey Questionnaire focused on background information on gender in agriculture improvements as per the project design to increase women's participation and benefit, identification of gender-based constraints, women and food security in Ghana as well as gender-specific indicators. In addition, sustainability issues in agricultural practices, including the environment, climate change mitigation and adaptation, institutional capacity, political leadership and commitment to the sector and to the specific impact groups were considered. GCS adopted a two-prong approach using two parallel teams of two senior consultants each to concurrently collect field data. A Lead Consultant, who also doubled as the Quality Assurance Director, coordinated the activities of the two teams.

1.4 Baseline Questions

As per the assignment's Statement of Work (SOW), the key questions to be addressed by the Consultant included the following:

1. Average agricultural land use size by gender
2. Household food security situation (disaggregated by male/female headed households) considering availability, access and affordability
3. Access to, control over, and ownership of, productive resources (disaggregated by gender)
4. Number of males and females employed by the agricultural sector (youth and physically challenged)
5. Sources and levels of income of the diverse groups in the sector
6. Alternative livelihood activities (by gender)
7. Women time use in relation to agricultural activities along the agricultural value chain
8. Women's reproductive roles and their effect on agricultural activities
9. Number of male and female farm Laborers (casual or "by day" laborers)
10. Use of labour-saving devices and types, along the agricultural value chain (by gender)
11. Data on the categories of MoFA staff by gender, age, and professional skills
12. Number of MoFA staff with knowledge in gender analysis and application to work

The baseline questions were supported with i) Key Informant Interviews and ii) semi-structured interviews and focus group discussions with women and men groups covering the main Agro-Ecological zones (Guinea Savannah, Coastal Savannah, Transitional and the Forest Zones). The Guinea Savannah zone was further divided into two groups – Guinea Savannah (Northern Region) and Guinea Savannah (Upper West Region). In line with discussions with WIAD, three (3) districts were sampled from each Agro-Ecological zone and two (2) communities per district. Therefore, data were collected in 30 communities in the five zones as a representative of the country (Table 1). In each community, 10 households were sampled at random making a total of 300 households. There were two focus group discussions in each of the 30 communities, making a total of 60 focus group discussions. In the selection of the communities, a list of communities was taken from the MoFA District Office as the sampling frame. Two communities were selected at random from each district. The focus group discussions were held separately for each group: women and men. Based on the above and discussions with MoFA and WIAD, the sampling frame in Table 1 was agreed on.

Table 1: Sampling Frame

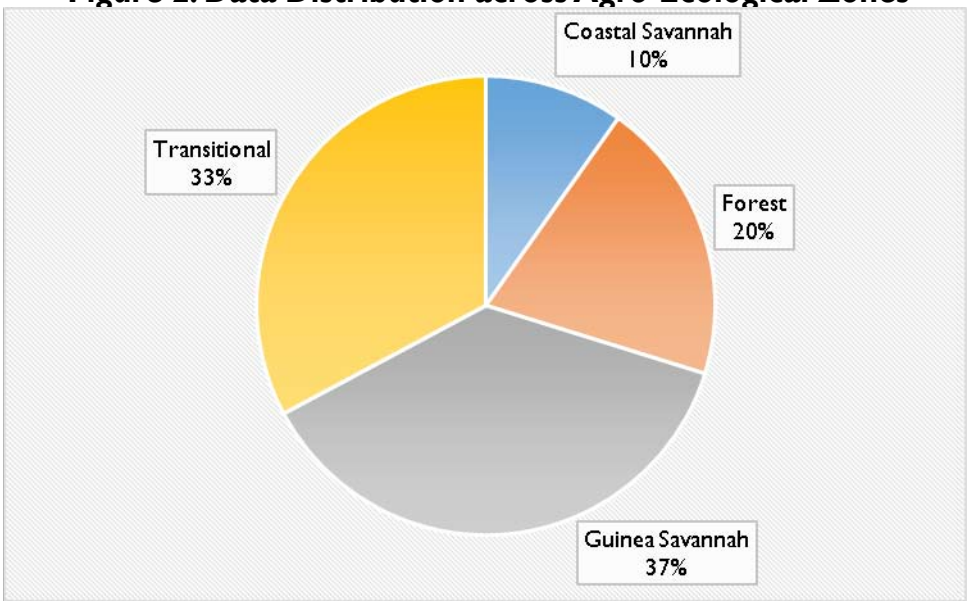
Ecological zones	District	Communities
Transitional zone (Brong-Ahafo Region)	Atebubu	New Kokrompe
		Old Kokrompe
	Bechem	Ohia Animguasie
		Terchire
	Wenchi	Ahyiayem
		Wurompo
	Kpando	Kpando Gadza
		Sovie-Kudzra
	Nkwanta South	Kpala
		Krumase
Guinea Savannah (Northern Region)	Bimbila	Afayili
		Taali
	Damango	Alhassan Kuraa
		Attributo
	Table 1: Sampling Frame Nanton	Kanshegu
		Mogla
Forest Zone (Western Region)	Juaboso	Juaboso
	Nzema East	Axim
	Tarkwa Nsuaem	Wassa Agona
		Wassa Simpa
Guinea Savannah (Upper West Region)	Tumu	Sakai
		Wellembelle
	Wa Municipal	Piisi
		Tanvaari
	Jirapa	Baazu
		Degri
Coastal Savannah (Volta Region)	Keta	Bawe
		Dekugbor

2.0 BASELINE FINDINGS

2.1 Distribution of Households across Agro-Ecological zones

A total of 305 completed household level questionnaires were used to collect data for the Baseline Survey. Figure 2 illustrates the distribution of the survey data across the four Agro-ecological zones. The results show that more households (37%) were surveyed in the Guinea Savannah zone representing the largest entry, followed by the Transitional zone (33%) and Forest zone (20%). Households surveyed in the Coastal zone constituted about 10 percent of the entire data.

Figure 2: Data Distribution across Agro-Ecological Zones



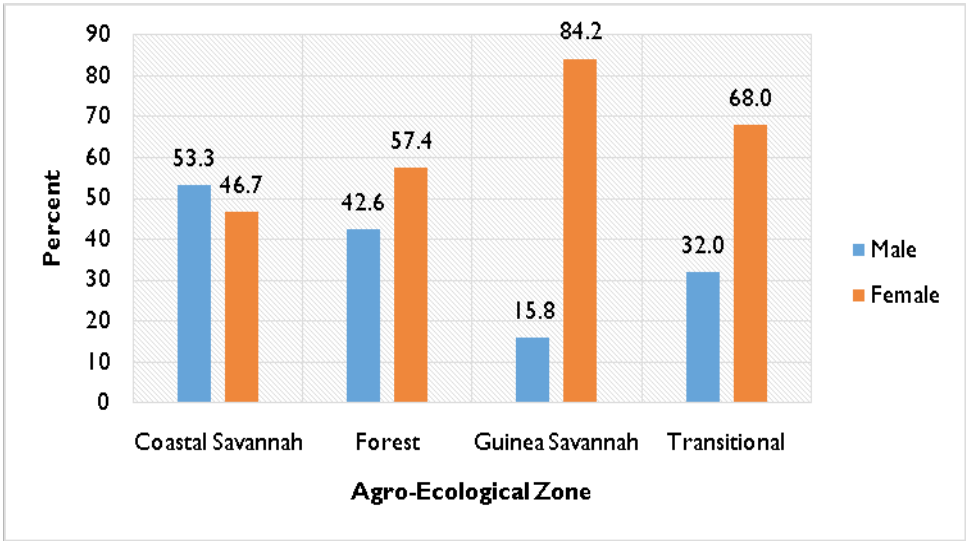
Source: Field Data, 2014

2.1.1 Household Demographics

Sex of Farmers

The sex distribution of the surveyed farmers across each Agro-Ecological zone is presented in Figure 3. The results show that females formed a large portion of the surveyed farmers, representing about 84 percent in the Guinea Savannah zone and 68 percent in the Transitional zone, and about 57 percent in the Forest zone. However, the percentage of female farmers surveyed in the Coastal Savannah zone (about 47%) was slightly less than their male counterparts (53%).

Figure 3: Sex of Farmers Interviewed



Source: Field Data, 2014

2.1.2 Educational level

The educational levels of farmers vary across each of the Agro-Ecological zones surveyed. The Guinea Savannah zone has the highest proportion (65%) of farmers without education while the Coastal zone has the highest proportion (53%) of farmers with at least basic level education (Table 2). In the Coastal zone, for example, about 13 percent of surveyed farmers have no education while 53.3 percent have basic education (JSS 1-3/Form 1-3/Standard 4 level) and 10 percent have high school level education (SSS 1-3/Form 4-6). Although the results indicate that 65 percent of farmers in the Guinea Savannah zone have no formal education, close to 11.4 percent of the farmers were found to have attained some JSS/Form 1-3/Standard 4 level of education. Also, a total of 10.5 percent of the farmers had some level of primary education. In the Transitional zone, about 28 percent of farmers say they have JSS 1-3/Standard 4 level of education while 26 percent indicated they have SSS1-3/Form 4-6 level of education. Similar findings were obtained for farmers in the Forest zone, where a significant percentage of the surveyed farmers have no formal education although others were found to have some primary, JSS 1-3/Form 1-3/Standard 4 level of education. Further breakdown of the educational levels according to sex of farmers across each agro-ecological zone is presented in Table 2a (see appendix 1). In the Coastal zones for instance, there were more male farmers with SSS/1-3/Form 4-6 than females farmers. The reverse was the case for the educational level category JSS 1-3/Form 1-3/ Standard; here, the results show that the female farmers in this category were more than the male farmers in the zone.

Table 2: Educational Level of Farmers

Level of Education	Coastal Savannah	Forest	Guinea Savannah	Transitional
	Percent	Percent	Percent	Percent
None	13.3	24.6	64.9	23.0
Some Primary	16.7	13.1	10.5	16.0
Completed Primary	-	4.9	0.9	2.0
JSS 1-3/Form 1-3/Standard 4	53.3	24.6	11.4	28.0
SSS/1-3/Form 4-6	10.0	13.1	5.3	26.0
Tech/Voc / Training College	6.7	14.8	7.0	5.0
College or University	-	4.9	-	-
Total	100.0	100.0	100.0	100.0

Source: Field Data, 2014

Table 2a: Educational Level of Farmers by Sex

Agro-Ecological Zone				Level of Education							Total
				None	Some Primary		JSS 1-3/ Form 1-3/ Standard 4	SSS/1-3/ Form 4-6	Tech/Voc/ Training College	College or	
Coastal Savannah	Sex of Farmer	Male	% within Sex of Farmer	12.5	25.0		37.5	12.5	12.5		100
		Female	% within Sex of Farmer	14.3	7.1		71.4	7.1	0.0		100
	Total		% within Sex of Farmer	13.3	16.7		53.3	10.0	6.7		100
Forest	Sex of Farmer	Male	% within Sex of Farmer	7.7	11.5	0.0	19.2	26.9	23.1	11.5	100
		Female	% within Sex of Farmer	37.1	14.3	8.6	28.6	2.9	8.6	0.0	100
	Total		% within Sex of Farmer	24.6	13.1	4.9	24.6	13.1	14.8	4.9	100
Guinea Savannah	Sex of Farmer	Male	% within Sex of Farmer	5.6	11.1	0.0	22.2	22.2	38.9	-	100
		Female	% within Sex of Farmer	76.0	10.4	1.0	9.4	2.1	1.0	-	100
	Total		% within Sex of Farmer	64.9	10.5	0.9	11.4	5.3	7.0	-	100

Transitional	Sex of Farmer	Male	% within Sex of Farmer	6.3	0.0	0.0	40.6	43.8	9.4	-	100
		Female	% within Sex of Farmer	30.9	23.5	2.9	22.1	17.6	2.9	-	100
	Total		% within Sex of Farmer	23.0	16.0	2.0	28.0	26.0	5.0	-	100

Source: Field Data, 2014

2.1.3 Age Distribution of Farmers

The ages of the surveyed farmers are presented in Table 3 below. In the Coastal Savannah zone, about 40 percent of the farmers are between the ages of 51 and 60 years, followed by about 27 percent whose ages are between 41 and 50 years. Among the surveyed farmers in the Forest zone, 50.8 percent of them have ages ranging from 41to 50 years, 23 percent of them were also found to have ages within 51-60 years bracket. A small number (6.6%) are above 60 years. In the Guinea savannah zone however, most of the farmers (about 33%) are of ages ranging from 31 to 40 years, followed by 31.76 percent who indicated their ages to be in the range of 41 – 50 years. Only 3.5 percent of the surveyed farmers in the zone were above 60 years. The results presented in Table 3 further indicate that 30 percent of the farmers in the Transitional zone have ages between 31 and 40 years and 29 percent have ages between 41 and 50 years. A breakdown of the age distribution of farmers by sex is presented in Table 3a. In the Coastal zone, 57 percent of the female farmers surveyed were in the age bracket of 51-60 years with about 14 percent above 60 years. In the Forest zone, the results show that 60 percent of the female farmers were between 41-50 years with about 6 percent above 60 years.

Table 3: Age Distribution of Farmers

Level of Education	Coastal Savannah	Forest	Guinea Savannah	Transitional
	Percent	Percent	Percent	Percent
20-30	13.3	9.8	23.7	12.0
31-40	10.0	9.8	32.5	30.0
41.50	26.7	50.8	31.6	29.0
51.60	40.0	23.0	8.8	11.0
Above 60	10.0	6.6	3.5	18.0
Total	100.0	100.0	100.0	100.0

Source: Field Data, 2014

Table 3a: Age Distribution of Farmers

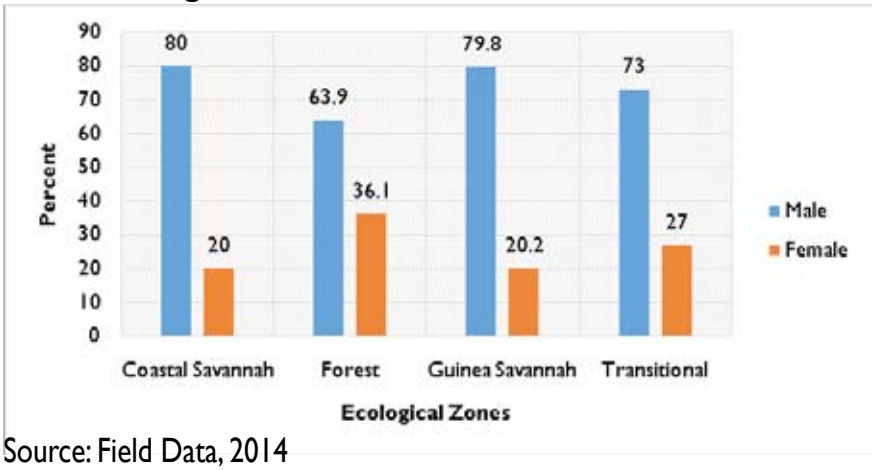
Agro-Ecological Zone				Age group of farmers					Total
				20-30	31-40	41-50	51-60	Above 60	
Coastal Savannah	Sex of Farmer	Male	Count	4	3	4	4	1	16
			% within Sex of Farmer	25.0%	18.8%	25.0%	25.0%	6.3%	100%
		Female	Count	0	0	4	8	2	14
			% within Sex of Farmer	13.3%	10.0%	26.7%	40.0%	10.0%	100.0%
	Total		Count	4	3	8	12	3	30
			% within Sex of Farmer	13.3%	10.0%	26.7%	40.0%	10.0%	100.0%
Forest	Sex of Farmer	Male	Count	4	1	10	9	2	26
			% within Sex of Farmer	15.4%	3.8%	38.5%	34.6%	7.7%	100.0%
		Female	Count	2	5	21	5	2	35
			% within Sex of Farmer	5.7%	14.3%	60.0%	14.3%	5.7%	100.0%
	Total		Count	6	6	31	14	4	61
			% within Sex of Farmer	9.8%	9.8%	50.8%	23.0%	6.6%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	4	8	1	4	1	18
			% within Sex of Farmer	22.2%	44.4%	5.6%	22.2%	5.6%	100.0%
		Female	Count	23	29	35	6	3	96
			% within Sex of Farmer	24.0%	30.2%	36.5%	6.3%	3.1%	100.0%
	Total		Count	27	37	36	10	4	114
			% within Sex of Farmer	23.7%	32.5%	31.6%	8.8%	3.5%	100.0%
Transitional	Sex of Farmer	Male	Count	3	13	9	1	6	32
			% within Sex of Farmer	9.4%	40.6%	28.1%	3.1%	18.8%	100.0%
		Female	Count	9	17	20	10	12	68
			% within Sex of Farmer	13.2%	25.0%	29.4%	14.7%	17.6%	100.0%
	Total		Count	12	30	29	11	18	100
			% within Sex of Farmer	12.0%	30.0%	29.0%	11.0%	18.0%	100.0%

Source: Field Data, 2014

2.1.4 Sex of Household Heads

To establish the sex of the household heads across the zones, the survey instrument solicited responses pertaining to the sex of the household head. The results are presented in Figure 4 below. The findings generally reveal that majority of the households surveyed were male headed although some female-headed households are identified from the results. Specifically, 80 percent of the farm households surveyed were male headed. In the Guinea Savannah zone, about 80 percent of the farm households are male headed. The results further indicate that about 73 percent of the farm households in the Transitional zone were male-headed. Largely, female-headed farm households were small and mostly insignificant.

Figure 4: Sex of Household Heads



Source: Field Data, 2014

2.1.5 Marital Status

One-half of the farmers surveyed in the Coastal savannah zone are in monogamous marriages; a slightly lower proportion (43.4%) are single; and about 3 percent are either in polygamous marriages or are widows/widowers/separated (Table 4). In the Forest zone, a much higher proportion (about 67%) of farmers are in monogamous marriages; about 8 percent are in polygamous marriages; about 21 percent are either widows/widowers/separated; and about 3 percent are single. The data shows that the Transitional zone has the highest proportion of respondents indicating they are in monogamous marriages (71%) whereas about 3 percent are in polygamous marriages. As indicated in Table 4, 12 percent of the surveyed farmers were found to be either widows/widowers/separated in the Transitional zone. The Guinea Savannah zone has the highest proportion of farmers (about 33%) who are in polygamous marriages.

Table 4: Marital Status of Farmers

Marital Status	Coastal Savannah	Forest	Guinea Savannah	Transitional
	Percent	Percent	Percent	Percent
Single	43.4	3.3	2.6	14.0
Married (Mono)	50.0	67.2	47.4	71.0
Married (Poly)	3.3	8.2	33.3	3.0
Widow/Widower Divorced/Separated	3.3	21.3	16.7	12.0
Total	100	100	100	100

Source: Field Data, 2014

2.2 Economic Activities

The main economic activities undertaken by farmers in the various Agro-Ecological zones include crop farming, engagement in private business/artisanship and government work. Reference to Table 5, about 87 percent of farmers in the Guinea Savannah zone are into crop farming, while some 7 percent are into private business and artisan trade. In the Forest zone, the findings do not deviate significantly from the others; 92.5 percent of the farmers engage in food crop farming as their main economic activity with some 7.5 percent engage themselves in private business and artisan trade. About 86 percent of farmers in the Coastal zone have food crop farming as their main economic activity whereas about 14 percent are employed in the government sector as salaried workers. A breakdown of the economic activities farmers surveyed by sex of farmers is presented in Table 5a. The findings show that 91.7 percent of male farmers are engaged in crop farming as their main economic activity with about 8 percent in some private business or artisan trade. Also, among the female farmers in the Forest zone, 93.1 percent of them are mostly engaged in crop farming whereas 6.9 percent are engaged in private business and artisan trade.

From the FGD, farmers in the Forest and Transitional zones are mainly engaged in cassava production. The primary crops cultivated in the Coastal and Guinea Savannah zones are slightly different from that of the Transitional and Forest zones. In the Coastal and Guinea Savannah zones, farmers tend to cultivate onions, maize, groundnuts and soybean. Alternative crops such as maize, plantain, okro, tomatoes, pepper, Bambara beans, yam and oil palm are also cultivated by the farmers in the Transitional and Forest zones. In terms of gender, female farmers in the Forest and Transitional zones are into the cultivation of cassava and cocoa as main crops while female farmers in the Coastal zone primarily cultivate vegetables such as onion and tomato.

Table 5: Main Economic Activity of Farmers

Economic Activity	Coastal Savannah	Forest	Guinea Savannah	Transitional
	Percent	Percent	Percent	Percent
Crop farming	85.7	92.5	86.7	92.7
Private business, artisan trade	-	7.5	7.1	7.3
Government work	14.3	-	-	-
Not engaged/None	-	-	6.2	-
Total	100	100	100	100

Table 5a: Main Economic Activity by Sex of Farmers

Agro-Ecological Zone				Main economic activity				Total
				Crop farming	Private business, artisan trade	Government work	Not Engaged/ None	
Coastal Savannah	Sex of Farmer	Male	% within Sex of Farmer	85.7	-	14.3	-	100.0
		Female	% within Sex of Farmer	85.7	-	14.3	-	100.0
	Total		% within Sex of Farmer	85.7	-	14.3	-	100.0
Forest	Sex of Farmer	Male	% within Sex of Farmer	91.7	8.3	-	-	100.0
		Female	% within Sex of Farmer	93.1	6.9	-	-	100.0
	Total		% within Sex of Farmer	92.5	7.5	-	-	100.0
Guinea Savannah	Sex of Farmer	Male	% within Sex of Farmer	100.0	0.0	-	0.0	100.0
		Female	% within Sex of Farmer	84.2	8.4	-	7.4	100.0
	Total		% within Sex of Farmer	86.7	7.1	-	6.2	100.0
Transitional	Sex of Farmer	Male	% within Sex of Farmer	96.7	3.3	-	-	100.0
		Female	% within Sex of Farmer	90.9	9.1	-	-	100.0
	Total		% within Sex of Farmer	92.7	7.3	-	-	100.0

Source: Household Baseline Data, 2014

Some of the alternative economic activities engaged in by the farmers include animal husbandry, agro-processing and government work. According to Table 6, aside from crop farming, 46.5 percent of farmers in the Transitional zone are engaged in animal husbandry as an alternative economic activity, whereas some 7 percent of farmers are not engaged in any alternative economic activity. About 53 percent of farmers in the Forest zone and some 39 percent in the Guinea Savannah zone were found to be engaged in animal husbandry as an alternative economic activity. Disaggregation of the results presented in Table 6 according to sex of farmers is presented in Table 6a. From Table 7, the type of farm animals kept by the surveyed farmers across each Agro-Ecological zone is presented. The types of animals kept by the farmers include Cattle, Sheep, Goat, poultry and pigs. In the Transitional zone, a lot more of the farmers rear poultry and goats with some indicating they rear cattle (Cows) with a few rearing pigs. Further analysis presented in Table 7a shows the breakdown of the type of animals reared by male and female farmers interviewed across the four agro-ecological zones in Ghana.

For instance, the results show that only four (4) out of the ten (10) responses obtained from farmers rearing goat in the Coastal zones came from female farmers. Further findings show that more positive responses were obtained from female farmers with regard to rearing poultry compared with male farmers in the same zone.

Table 6: Alternative Economic Activities of Farmers

	Coastal Savannah	Forest	Guinea Savannah	Transitional
	Percent	Percent	Percent	Percent
Crop farming	25.0	36.8	11.1	39.4
Private business, artisan trade	50.0	-	4.0	2.8
Not engaged/None	25.0	3.5	38.4	7.0
Animal Husbandry	-	52.6	39.4	46.5
Processing	-	7.0	7.1	1.4
Government work	-	-	-	2.8
Total	100.0	100.0	100.0	100.0

Table 6a: Alternative Economic Activities of Farmers by Sex

Agro-Ecological Zone				Which other economic activities are you engaged in?						Total
				Crop farming	Animal	Private business, artisan trade	Government work	Not engaged/ None	Processing	
Coastal Savannah	Sex of Farmer	Male	Count	0		2		0		2
			% within Sex of Farmer	0.0%		100.0%		0.0%		100.0%
		Female	Count	1		0		1		2
			% within Sex of Farmer	50.0%		0.0%		50.0%		100.0%
	Total		Count	1		2		1		4
			% within Sex of Farmer	25.0%		50.0%		25.0%		100.0%
Forest	Sex of Farmer	Male	Count	9	14			2	1	26
			% within Sex of Farmer	34.6%	53.8%			7.7%	3.8%	100.0%
		Female	Count	12	16			0	3	31
			% within Sex of Farmer	38.7%	51.6%			0.0%	9.7%	100.0%
	Total		Count	21	30			2	4	57
			% within Sex of Farmer	36.8%	52.6%			3.5%	7.0%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	0	10	0		7	0	17
			% within Sex of Farmer	0.0%	58.8%	0.0%		41.2%	0.0%	100.0%
		Female	Count	11	29	4		31	7	82
			% within Sex of Farmer	13.4%	35.4%	4.9%		37.8%	8.5%	100.0%
	Total		Count	11	39	4		38	7	99
			% within Sex of Farmer	11.1%	39.4%	4.0%		38.4%	7.1%	100.0%
Transitional	Sex of Farmer	Male	Count	6	17	1	0	0	0	24
			% within Sex of Farmer	25.0%	70.8%	4.2%	0.0%	0.0%	0.0%	100.0%
		Female	Count	22	16	1	2	5	1	47
			% within Sex of Farmer	46.8%	34.0%	2.1%	4.3%	10.6%	2.1%	100.0%
	Total		Count	28	33	2	2	5	1	17
			% within Sex of Farmer	39.4%	46.5%	2.8%	2.8%	7.0%	1.4%	100.0%

Source: Field Data, 2014

Table 7: Types of Farm Animals Reared (Multiple Response)

Agro-Ecological Zone			Responses		Percent of Cases
			N	Percent	
Forest	Farm animals kept by farmers[a]	Sheep	7	9.3%	17.5%
		Goat	29	38.7%	72.5%
		Poultry	36	48.0%	90.0%
		Pigs	3	4.0%	7.5%
	Total		75	100.0%	187.5%
Guinea Savannah	Farm animals kept by farmers[a]	Cows	16	12.7%	28.6%
		Sheep	19	15.1%	33.9%
		Goat	40	31.7%	71.4%
		Poultry	41	32.5%	73.2%
		Pigs	10	7.9%	17.9%
	Total		126	100.0%	225.0%
Transitional	Farm animals kept by farmers[a]	Cows	7	5.2%	9.2%
		Sheep	20	14.8%	26.3%
		Goat	45	33.3%	59.2%
		Poultry	59	43.7%	77.6%
		Pigs	4	3.0%	5.3%
	Total		135	100.0%	177.6%
a. Dichotomy group tabulated at value 1.					

Source: Field Data, 2014

Table 7a: Types of Farm Animals Reared by Sex of Farmers

Agro-Ecological Zone				Farmer animals kept by farmers[a]					Total
				Cows	Sheep	Goat	Poultry	Pigs	
Forest	Sex of Farmer	Male	Count		4	15	18	3	19
			% within Sex of Farmer		21.1%	78.9%	94.7%	15.8%	
		Female	Count		3	14	18	0	21
			% within Sex of Farmer		14.3%	66.7%	85.7%	0.0%	
	Total		Count		7	29	36	3	40
Guinea Savannah	Sex of Farmer	Male	Count	7	10	11	11	2	11
			% within Sex of Farmer	63.6%	90.9%	100.0%	100.0%	18.2%	
		Female	Count	9	9	29	30	8	45
			% within Sex of Farmer	20.0%	20.0%	64.4%	66.7%	17.8%	
	Total		Count	16	19	40	41	10	56
Transitional	Sex of Farmer	Male	Count	0	4	20	19	1	24
			% within Sex of Farmer	0.0%	16.7%	83.3%	79.2%	4.2%	
		Female	Count	7	16	25	40	3	52
			% within Sex of Farmer	13.5%	30.8%	48.1%	76.9%	5.8%	
	Total		Count	7	20	45	59	4	76
Percentages and totals are based on respondents.									
a. Dichotomy group tabulated at value 1.									

Source: Household Baseline Data, 2014

2.3 Land Availability and Land Use by Gender

To establish land size availability and use by farmers in the four agro-ecological zones, the survey collected subjective data from farmers by requiring them to state the total land available to them and the actual size of the land used for agricultural activity. From the results, it was established that female farmers tend to have about half the size of agricultural land available to their male counterparts in the Forest, Guinea Savannah and Transitional zones while land access is nearly equal among the two groups in the Coastal Savannah zone (Fig. 5). The average land available to female farmers in the Coastal zone is about 3 acres whereas male farmers have, on average, almost 4 acres for agricultural activities. In the Forest zone, the results show that male farmers have about 14 acres of land available for farming activities whereas female farmers have about 11 acres. Male farmers in the Transitional zone have an average of about 10 acres of land while female farmers in the zone have about 5 acres. In terms of land use, female farmers across the Agro-Ecological zones use between 3 and 9 acres of land compared with male farmers who used between 3 and 15 acres of land for agricultural activities.

Comparing this with the average land available to the surveyed farmers, it can be said that both groups (males/females) in the Guinea and Coastal Savannah zones use more than half of the available land for agricultural activities whereas in the Forest zone both male and female famers use just over half the land available to them. See Figure 5 for details.

Figure 5: Land Availability and Use

	Land Available		Land Used	
Coastal Savanna	3.12	3.91	2.73	3.78
Forest	10.5	14.25	8.09	11.5
Guinea savanna	3.77	6.64	3.07	6.28
Transitional	5.12	10.3	3.73	6.24

Source: Field Data, 2014

2.4 Household Food Security Situation (Disaggregated by Male/Female Headed Household)

To assess the food security situation of households, farmers were asked to indicate whether they faced food security challenges within the previous 12 months and the number of months these challenges (if any) occurred. According to Table 8, 40 percent of farmers surveyed in the Coastal Savannah zone faced food security challenges in the previous 12 months. About 83 percent of these farmers live in male-headed households and about 17 percent live in female-headed households (see Table 9). In the Forest zone, about 36 percent of the farmers surveyed had some difficulty meeting their household food demands in the previous 12 months. A further breakdown indicated that 59.1 percent were male-headed households with 40.9 percent being female-headed households. The results further show that farmers in the Guinea Savannah zone experienced some food security challenges within the reference period. The data indicate that about 47 percent faced challenges in meeting the food needs of their households. Again, most of the male-headed households experienced food security challenges in the previous 12 months. Further details are shown in Table 8a and 9 respectively.

Table 8: Household Food Security Challenges

Agro-Ecological Zone	Response	Frequency	Percent
Coastal Savannah	Yes	12	40.0
	No	18	60.0
	Total	30	100.0
Forest	Yes	22	36.1
	No	39	63.9
	Total	61	100.0
0Guinea Savannah	Yes	54	47.4
	No	59	51.8
	No Response	1	0.9
	Total	114	100
Transitional	Yes	34	34.0
	No	66	66.0
	Total	100	100.0

Source: Field Data, 2014

Table 8a: Household Food Security Challenge by Sex of Farmer

Agro-Ecological Zone				Household Food Security Challenges			Total
				Yes	No	No Response	
Coastal Savannah	Sex of Farmer	Male	Count	9	7		16
			% within Sex of Farmer	56.3	43.7		100.0
		Female	Count	3	11		14
			% within Sex of Farmer	21.4	78.6		100.0
	Total		Count	12	18		30
			% within Sex of Farmer	40.0	60.0		100.0
Forest	Sex of Farmer	Male	Count	8	18		26
			% within Sex of Farmer	30.8	69.2		100.0
		Female	Count	14	21		35
			% within Sex of Farmer	40.0	60.0		100.0
	Total		Count	22	39		61
			% within Sex of Farmer	36.1	63.9		100.0

Guinea Savannah	Sex of Farmer	Male	Count	1	17	0	18
			% within Sex of Farmer	5.6	94.4	0.0	100.0
		Female	Count	53	42	1	96
			% within Sex of Farmer	55.2	43.8	1.0	100.0
	Total		Count	54	59	1	114
			% within Sex of Farmer	47.4	51.8	0.9	100.0
Transitional	Sex of Farmer	Male	Count	8	24		32
			% within Sex of Farmer	25.0	75.0		100.0
		Female	Count	26	42		68
			% within Sex of Farmer	38.2	61.8		100.0
	Total		Count	34	66		100
			% within Sex of Farmer	34.0	66.0		100.0

Table 9: Cross Tabulation of Gender of Household Head (HH) and Food Insecurity

Agro-Ecological Zone				HH food security Problem		Total
				Yes	No	
Coastal Savannah	Sex of HH	Male	Count	10	14	24
			% within HH food security Problem	83.3%	77.8%	80.0%
		Female	Count	2	4	6
			% within HH food security Problem	16.7%	22.2%	20.0%
	Total		Count	12	18	30
			% within HH food security Problem	100.0%	100.0%	100.0%
Forest	Sex of HH	Male	Count	13	26	39
			% within HH food security Problem	59.1%	66.7%	63.9%
		Female	Count	9	13	22
			% within HH food security Problem	40.9	33.3%	36.1%
	Total		Count	22	39	61
			% within HH food security Problem	100.0%	100.0%	100.0%

Guinea Savannah	Sex of HH	Male	Count	10	14	24
			% within HH food security Problem	70.4%	88.1%	79.8%
		Female	Count	16	7	23
			% within HH food security Problem	29.6%	11.9%	20.2%
	Total		Count	54	59	114
			% within HH food security Problem	100.0%	100.0%	100.0%
Transitional	Sex of HH	Male	Count	28	45	73
			% within HH food security Problem	82.4%	68.2%	73.0%
		Female	Count	6	21	27
			% within HH food security Problem	17.6%	31.8%	27.0%
	Total		Count	34	66	100
			% within HH food security Problem	100.0%	100.0%	100.0%

Source: Field Data, 2014

Food security challenges faced by the surveyed farmers were determined using a 12-month reference period based on recall. Farmers were required to recall the specific months within the reference period in which they faced food security challenges. The results presented in Table 10 depict the findings. For example, farmers in the Coastal zone are likely to face food security challenges during the month of March through December. Specifically, surveyed farmers indicated they begin to experience food security challenges as early as March, with others indicating May. However, a lot more of the farmers said the situation is more severe around June and July of every year. In the Transitional zone, the findings show that farmers face some form of food insecurity throughout the 12 months; however, most of them indicated the situation becomes more severe in April, May, June, July, and August. Similar results were obtained for the farmers in the Guinea Savannah zone. The gender breakdown of these results is presented in Table 10a. The results show that in the Coastal Savannah zone, most female farmers indicated facing food security challenges in the months of May, June July and August as well as November and December with some also indicating its occurrence in March.

The qualitative data gathered from the field show that farmers across the agro-ecological zones have various strategies for mitigating food scarcity or insecurity issues when they occur. The qualitative findings show that during the months of food inadequacy and scarcity, farmers in the agro-ecological zones adopt a combination of mechanisms to mitigate or cope with the situation. These include, but not limited to, the following: first, farmers in the Guinea Savannah zone engage in the collection of wild foods during the season of food insecurity in addition to purchasing food through a batter system. Second, some farmers receive support from family, relatives and friends. Third, others sell their livestock and household valuables. Additionally, some migrate elsewhere to engage in paid labour. Moreover, some reduce the number of meals served each day or reduce the portions/sizes of meals served. Occasionally, some farmers are forced to consume less preferred foods.

Table 10: Months within which Farmers face Food Security Challenges

Agro-Ecological Zone			Response		Percent of Cases
			N	Percent	
Coastal Savannah	Month of occurence[a]	March	2	5.9%	16.7%
		December	4	11.8%	33.3%
		November	4	11.8%	33.3%
		August	4	11.8%	33.3%
		July	8	23.5%	66.7%
		June	8	23.5%	66.7%
		May	4	11.8%	33.3%
	Total		34	100.0%	283.3%
Forest	Month of occurence[a]	March	9	12.5%	39.1%
		February	3	4.2%	13.0%
		January	3	4.2%	13.0%
		December	3	4.2%	13.0%
		November	3	4.2%	13.0%
		October	4	5.6%	17.4%
		September	2	2.8%	8.7%
		August	3	4.2%	13.0%
		July	10	13.9%	43.5%
		June	13	18.1%	56.5%
		May	11	15.3%	47.8%
		April	8	11.1%	34.8%
	Total		72	100.0%	313.0%
Guinea Savannah	Month of occurence[a]	March	13	6.5%	20.0%
		February	3	1.5%	4.6%
		September	14	7.0%	21.5%
		August	44	21.9%	67.7%
		July	55	27.4%	84.6%
		June	45	22.4%	69.2%
		May	18	9.0%	27.7%
		April	9	4.5%	13.8%
	Total		201	100.0%	309.2%
Transitional	Month of occurence[a]	March	3	2.7%	8.1%
		February	1	0.9%	2.7%
		January	1	0.9%	2.7%
		December	1	0.9%	2.7%
		November	2	1.8%	5.4%
		October	3	2.7%	8.1%
		September	7	6.3%	18.9%
		August	11	9.8%	29.7%
		July	30	26.8%	81.1%
		June	25	22.3%	67.6%
		May	18	16.1%	48.6%
		April	10	8.9%	27.0%
	Total		112	100.0%	302.7%

a. Dichotomy group tabulated at value 1.

Source: Field Data, 2014

Table 10a: Months within which Farmers face Food Security Challenges Categorizzed by Sex

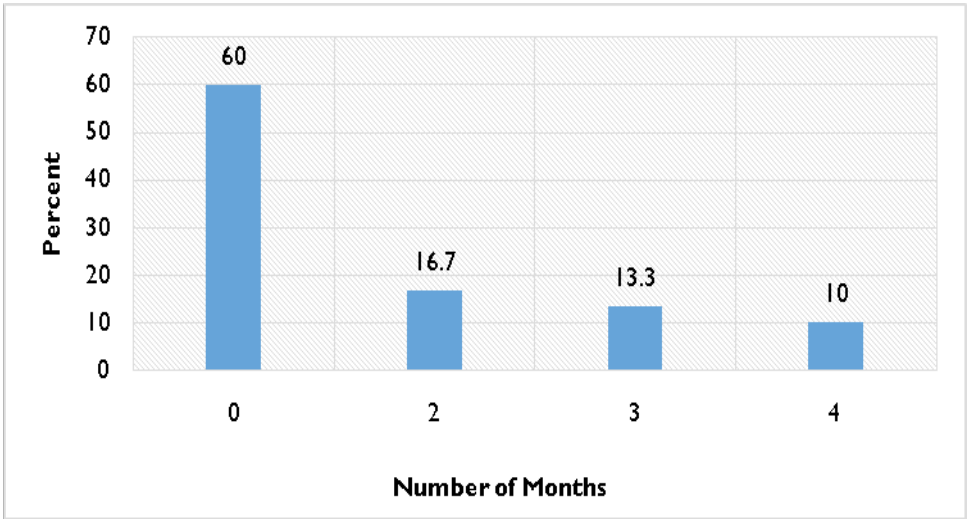
Agro-Ecological Zone				Month of occurrence[a]											
				M	Feb	Jan	Dec	Nov	Oct	Sept	Aug	July	June	May	Apr
Coastal Savannah	Sex of Farmer	Male	% within sex of Farmer	20.0	-	-	40.0	40.0	-	-	30.0	60.0	60.0	30.0	-
		Female	% within sex of Farmer	0.0	-	-	0.0	0.0	-	-	50.0	100.0	100.0	50.0	-
Forest	Sex of Farmer	Male	% within sex of Farmer	21.4	21.4	21.4	0.0	0.0	0.0	0.0	14.3	57.1	78.6	64.3	35.7
		Female	% within sex of Farmer	66.7	0.0	0.0	33.3	33.3	44.4	22.2	11.1	22.2	22.2	22.2	33.3
Guinea Savannah	Sex of Farmer	Male	% within sex of Farmer	20.4	6.1	-	-	-	-	11.1	22.2	22.2	22.2	22.2	33.3
		Female	% within sex of Farmer	18.0	0.0	-	-	-	-	43.8	75.0	87.5	43.8	12.5	18.8
Transitional	Sex of Farmer	Male	% within sex of Farmer	9.7	3.2	3.2	3.2	6.5	9.7	22.6	35.5	80.6	64.5	45.2	25.8
		Female	% within sex of Farmer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.3	83.3	66.7	33.3

Source: Household Baseline Data, 2014: Note: M – March

Coastal Savannah Zone

Again, the survey established the number of times (months) farmers in survey zones experience food security issues. According to Figure 6, 60 percent of farmers surveyed did not experience any difficulty in feeding their households during the previous 12 months. Hence, many of the farmers in the Coastal Savannah zone are able to feed their households throughout the year. Notwithstanding, about 17 percent of the farmers indicated they experienced food challenges for at least two (2) months in the previous 12 months. Some 13 percent also said they experienced difficulty in feeding their households for three (3) months in the previous 12 months, with about 10 percent of the farmers experiencing this difficulty for four (4) months.

Figure 6: Number of Months Household encounter Food Security Challenge – Coastal Zone

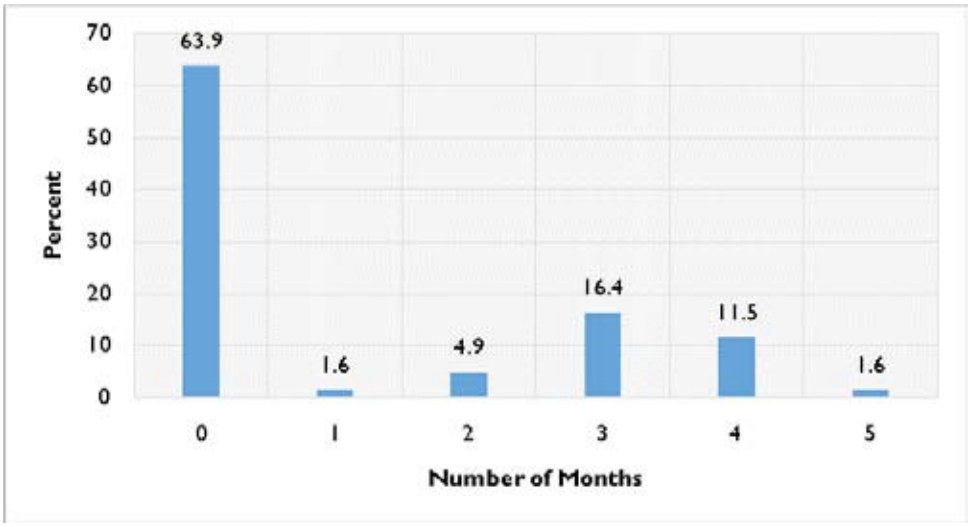


Source: Field Data, 2014

Forest Zone

In the Forest zone, about 64 percent of the farmers said there was no any month in the previous 12 month that their household faced difficulty with food. This suggests that most of the farm households surveyed were food secured through the entire 12 months. The results, however, indicate that about 16 percent of the farmers experienced food security challenges for about 3 months in the previous 12 months. Others indicated they had experienced food security challenges spanning 1, 2 and 4 months representing 1.6, 4.9 and 11.5 percent respectively (Fig. 7). The findings also showed that some of the farm households had food security challenges for close to five months in the previous 12 months although the number was small (1.6%).

Figure 7: Number of Months Household Encounter Food Security Challenge – Forest Zone

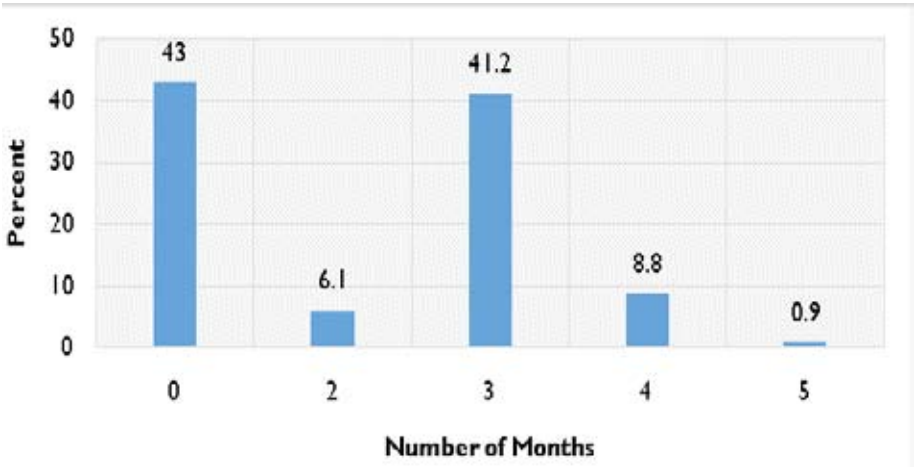


Source: Field Data, 2014

Guinea Savannah

In the Guinea Savannah zone, the results presented in Figure 8 indicate that some 41 percent of the farmers surveyed experienced food security problems for three 3 months. This suggests that many farmers in the Guinea Savannah zone do experience food security problems. Some 8.8 percent of the farmers also indicated they faced food security challenges for close to four (4) months in the previous 12 months. Overall, the food security situation across the zones shows that farmers in the Guinea Savannah zone are more food insecure compared to the others. Notwithstanding, a total of 43 percent of the farmers did not have difficulty feeding their households during the previous 12 months.

Figure 8: Number of Months Household Encounter Food Security Challenge – Guinea Savannah

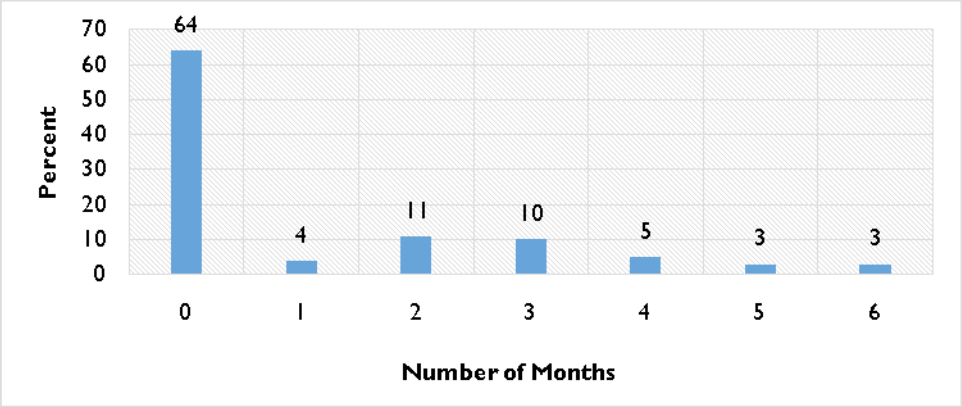


Source: Field Data, 2014

Transitional Zone

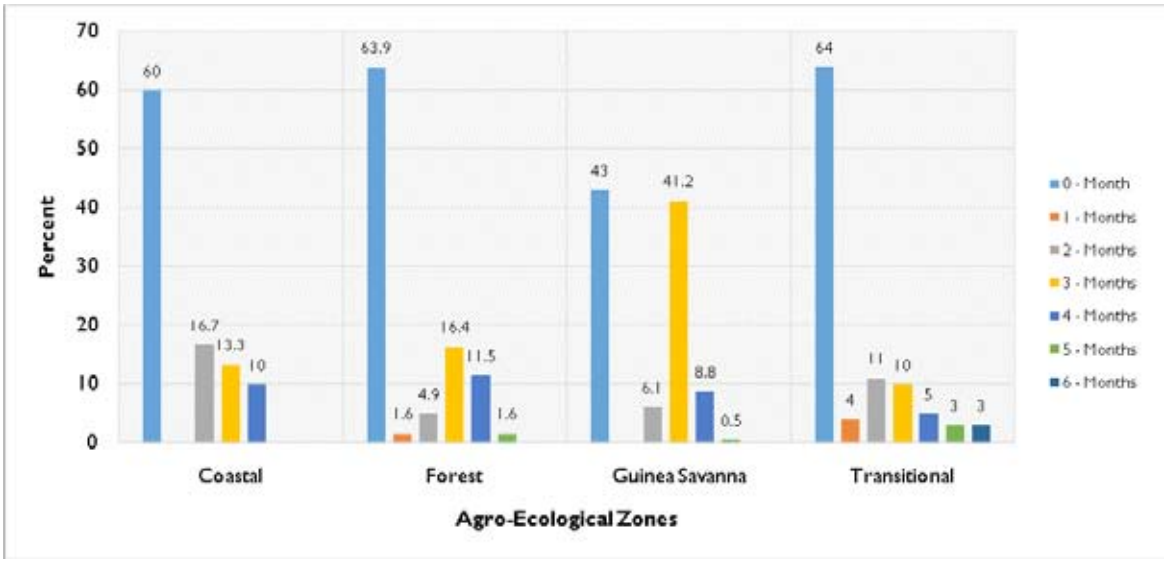
Farmers in the Transitional zone appear to be the most food secured among the farm households surveyed, with about 64 percent indicating they did not experience any food challenges in the period (Fig. 9), about 36 percent of the surveyed farmers in the zone said they had some challenges feeding their households during the 12 months period. The Transitional zones had about 3 percent of the surveyed farmers experiencing food security challenges for close to 6 months. This means that for a greater part of the year, some farm households in the zone are unable to feed themselves. Further analysis showing the disaggregation by sex of farmers with regard to number of months within which farmers face food security challenges across the four agro-ecological zones is presented in Table 48 (See appendix). For instance, the results show that 78.6 percent of female farmers interviewed in the Coastal zone rarely encounter food insecurity although a small percentage (7.1%) indicated that food security challenges occur at least 2, 3 or 4 months in a year. Figure 10 presents a snapshot of the entire results across each agro-ecological zone

Figure 9: Number of Months Household encounter Food Security Challenge – Transitional Zone



Source: Field Data, 2014

Figure 10: Number of Months Household encounter Food Security Challenge across Agro-Ecological Zones



Source: Field Data, 2014

2.4.1: Household Dietary Diversity Score (HDDS)

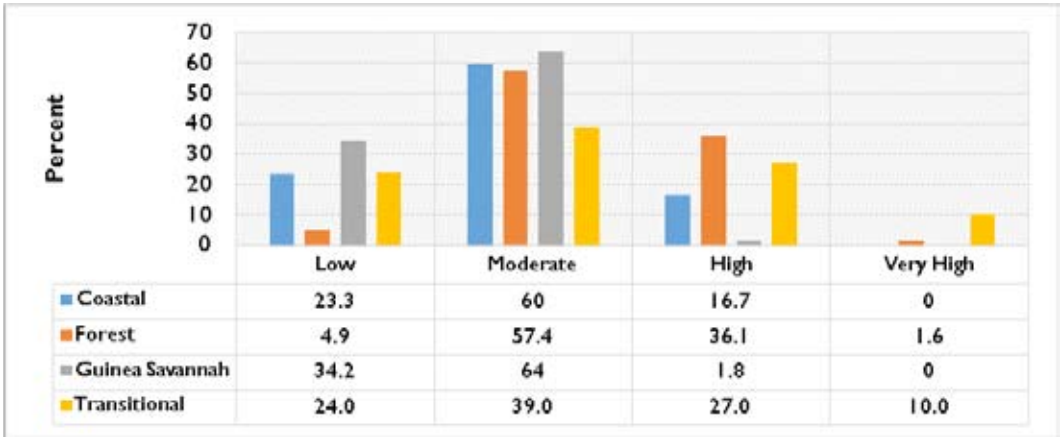
Another indicator used to establish the food insecurity of households is the Household Dietary Diversity Score (HDDS) used by Food and Nutrition Technical Assistance III (FANTA III). This metric gauges the number of different food groups consumed over a given reference period by a household. This is undertaken for the following reasons:

1. *A more diversified diet is highly correlated with such factors as caloric and protein adequacy, percentage of protein from animal sources (high quality protein), and household income. Even in very poor households, increased food expenditure resulting from additional income is associated with increased quantity and quality of the diet.*
2. *Questions on dietary diversity can be asked at the household or individual level, making it possible to examine food security at the household and intra-household levels.*

To better reflect a quality diet, the number of different food groups consumed is calculated, rather than the number of different foods consumed. Knowing that households consume, for example, an average of four different food groups implies that their diets offer some diversity in both macro- and micro-nutrients. This is a more meaningful indicator than knowing that households consume four different foods, which might all be cereals. The following set of 12 food groups is used to calculate the HDD index: cereals, fish and seafood, root and tubers, pulses/legumes/nuts, vegetables, milk and milk products, fruits, oil/fats, meat, poultry, offal, sugar/honey, eggs and miscellaneous (FANTA III, 2006).

The HDD scores across each of the zones are presented in Figure 10. The scores were further grouped into the following four categories: 1-3 (low), 4-6 (moderate), 7-9 (high) and 10-12 (very high). The results show that most of the farmers scored moderate (within 4-6). About 64 percent of farmers in the Guinea Savannah zone obtained moderate HDD score (4-6), followed by 60 percent of farmers in the Coastal zone. Farmers in the Transitional zone who scored HDDS in the range of 4-6 were about 39 percent. Some small number of farmers in the zones had high (7-9) HDD scores as depicted in Figure 11. The HDD scores were further analyzed along the sex of the household head as presented in Table 11.

Figure 11: HHD Scores across Agro-Ecological Zones



	Low	Moderate	High	Very High
Coastal	23.3	60	16.7	0
Forest	4.9	57.4	36.1	1.6
Guinea Savannah	34.2	64	1.8	0
Transitional	24.0	39.0	27.0	10.0

Source: Field Data, 2014

Table 11: HDD Score and Sex of Household Head (HH)

Agro-Ecological Zone				Category				Total
				Low	Moderate	High	Very High	
Coastal Savannah	Sex of HH	Male	Count	6	14	4		24
			% within Sex of FHH	25.0%	58.3%	16.7%		100.0%
		Female	Count	1	4	1		6
			% within Sex of HH	16.7%	66.7%	16.7%		100.0%
	Total		Count	7	18	5		30
			% within Sex of HH	23.3%	60.0%	16.7%		100.0%
Forest	Sex of HH	Male	Count	2	19	17	1	39
			% within Sex of FHH	5.1%	48.7%	43.6%	2.6%	100.0%
		Female	Count	1	16	5	0	22
			% within Sex of HH	4.5%	72.7%	22.7%	0.0%	100.0%
	Total		Count	3	35	22	1	61
			% within Sex of HH	4.9%	57.4%	36.1%	1.6%	100.0%
Guinea Savannah	Sex of HH	Male	Count	29	61	1		91
			% within Sex of FHH	31.9%	67.0%	1.1%		100.0%
		Female	Count	10	12	1		23
			% within Sex of HH	43.5%	52.2%	4.3%		100.0%
	Total		Count	39	73	2		114
			% within Sex of HH	34.2%	64.0%	1.8%		100.0%
Transitional	Sex of HH	Male	Count	20	25	21	7	73
			% within Sex of FHH	27.4%	34.2%	28.8%	9.6%	100.0%
		Female	Count	4	14	6	3	27
			% within Sex of HH	14.8%	51.9%	22.2%	11.1%	100.0%
	Total		Count	24	39	27	10	100
			% within Sex of HH	24.0%	39.0%	27.0%	10.0%	100.0%

Source: Field Data, 2014

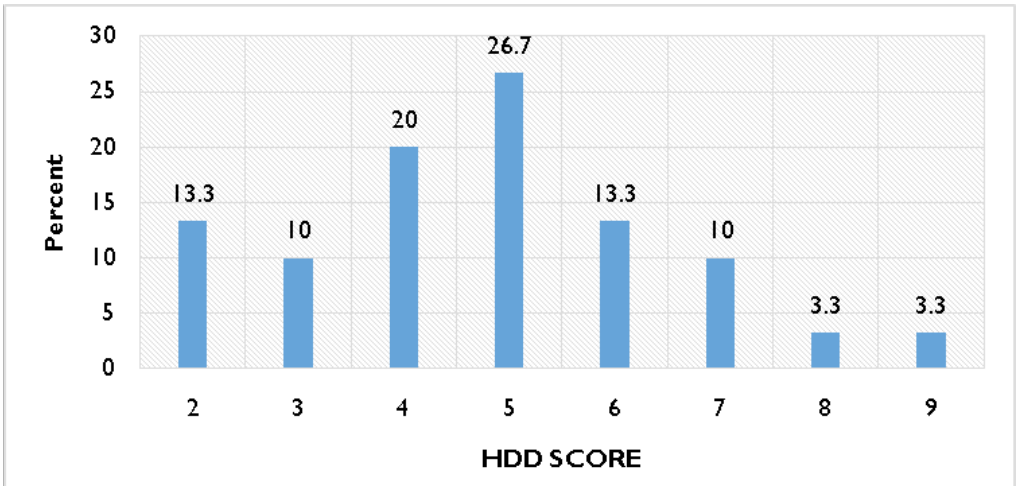
2.4.1.1 HDD Score – Coastal Zone

As indicated earlier, the Household Dietary Diversity Score (HDDS) is a widely used proxy measure of household food access where the number of different food groups consumed over 24 hours is recalled by respondents. While a diversified diet is an important outcome in itself, it also correlates with improved outcomes in birth weight, child anthropometrics status, and caloric and protein adequacy, as well as with household income . Increased food expenditure resulting from additional income is generally associated with increased quantity and quality of diet.

From Figure 12, the HDD score for farmers surveyed in the Coastal zone is presented. The results indicate that of the total farmers surveyed in the zone, 26.7 percent obtained an HDD score of 5 followed by 20 percent who scored 4 out of the maximum HDD score of 12. A total of 13.3 percent of the surveyed farmers had HDD score of 2 with some 10 percent of them obtaining a score of 3. Also, the findings indicate that just a small percentage (3.3%) of the surveyed farmers in the zone had HDD scores of 8 and 9 respectively. The findings therefore suggest that although some of the farmers obtained dietary diversity score above 6, most of them had very low dietary diversity score indicating a low level of variance in their food intake. In other words, the farmers are eating unbalanced diets. See Figure 12 for details.

Swindale, Anne, and Paula Bilinsky. Household Dietary Diversity Score (HDDS) for measurement of Food Access: Indicator Guide (v2). Washington, D.C.: Food and Nutrition Technical Assistance Project, Academy for Education Development, 2006.

Figure 12: Household Dietary Diversity Score – Coastal Savannah

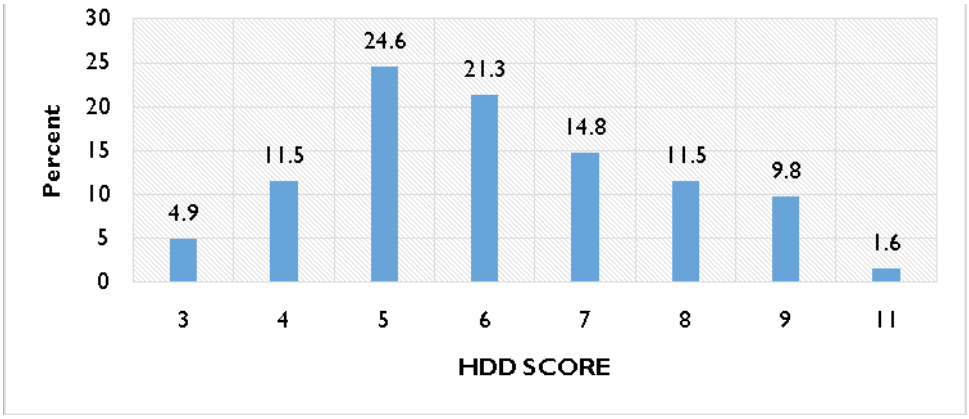


Source: Field Data, 2014

2.4.1.2 HDD Score – Forest Zone

According to the results presented in Figure 13, the HDD score for the surveyed farmers in the Forest zone ranged from as low as 3 to as high as 11. About 5 percent of the farmers obtained an HDD score of 3, followed by 11.5 percent who obtained 4 out of the total 12 HDD score. Most of the farmers in the zone have HDD scores between 5 and 6 representing 24.6 and 21.3 percent respectively. Farmers who obtained HDD scores of 7 constituted 14.8 percent of the total farmers surveyed in the zone. A small percentage (1.6%) of the farmers however scored HHD of 11 out of the total 12. From the results, it can be inferred that most of the farmers in the zone have adequate level of dietary diversity even though about a quarter of the respondents have dietary diversity score below 6.

Figure 13: Household Dietary Diversity Score – Forest Zone

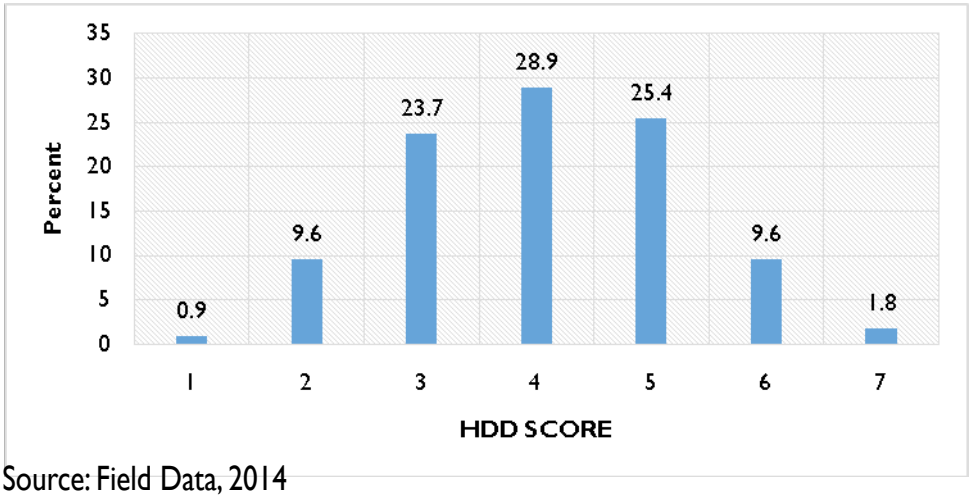


Source: Field Data, 2014

2.4.1.3 HDD Score – Guinea Savannah Zone

The Guinea Savannah zone has one of the poorest dietary diversities, with none of the households obtaining an HDDS of 12. In cumulative terms, about 63 percent of the surveyed households in the zone have HDDS ranging from 1 to 4. About 25 percent of the farmers obtained an HDD score of 5 out of the total of 12, while some of the farmers scored about 6 out of the 12 representing 9.6 percent (see Figure 14). The results reveal that most households have very low dietary diversity and therefore are not eating balanced diets. See Figure 14.

Figure 14: Household Dietary Score – Guinea Savannah

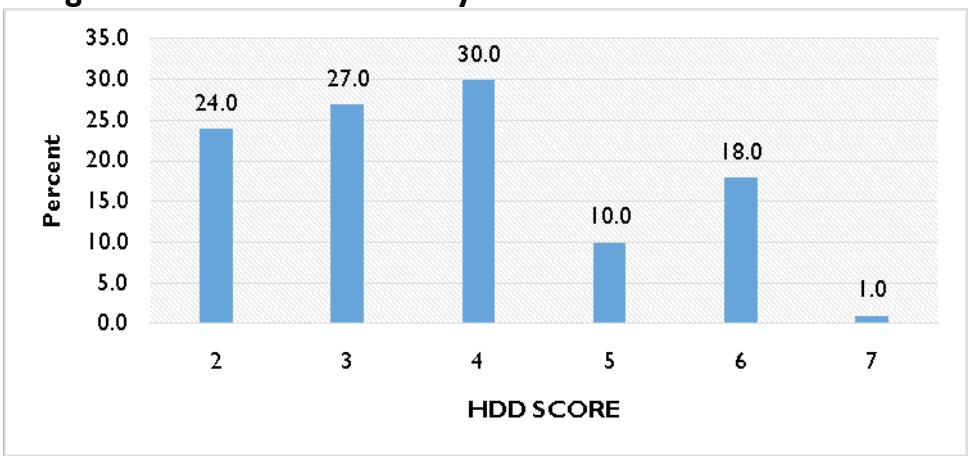


Source: Field Data, 2014

2.4.1.4 HDD Score – Transitional Zone

Cumulatively about 81 percent of the farmers surveyed in the Transitional zone scored HDDS of below 5, which is indicative of the fact that majority of the farmers in the zone have little diversity in their diet and therefore are not eating balanced diets. About 18 percent of the farmers, however, were found to have HDDS of 6 with only 1 percent scoring 7 out of the entire 12 HDDS. Refer to Figure 15 for details.

Figure 15: Household Dietary Score – Transitional Zone



Source: Field Data, 2014

2.5 Access to and Control Over Productive Resources (By Gender)

Access to productive resource refers to availability of a particular resource for use by an individual who needs it. Control over productive resources, on the other hand, reflects the extent to which an individual is able to make decisions regarding the use of the resources in question. Control over productive resources is also subject to the level of participation in decision-making and also depends on the balance of power among the parties with regards to these resources and their management decisions. In other spheres, control is also governed by social norms as well as formal institutional policies, procedures and the laws of a society. Control over a productive resource therefore is a distinct concept from access or rights to a resource which may confer the potential for control but do not indicate whether the individual or group can exercise access or rights to act in decisions about resource-allocation and use for his/her farming and other productive activities.

2.5.1 Access to and Control Over Land

To establish farmer access to and control over productive resources, disaggregated by gender, the HH level questionnaire required farmers to indicate whether they have access to, or control over, productive resources. In terms of access, zero (0) represented no access and one (1) represented access. In case of control, zero (0) represented no control and 1 indicated control. Table 12 shows that of the 16 male farmers surveyed in the Coastal zone, about 88 percent have access to land whereas 12.5 percent do not have access to land as a productive resource. All the females in the Coastal zone have access to land as productive resources. In the Forest zone, about 60 percent of the females surveyed have access to land and the remaining 40 percent have no access. Among the male farmers, about 81 percent in the Forest zone have access to land as a productive resource. The results further show that most of the female farmers in the Transitional zone have access to land for their agricultural and other economic activities. The general consensus gathered from the various focus group discussions held with the female farmers is that they can obtain land for their farming activities when the need arises. They however stated that men in their communities have greater access.

"We can obtain land for farming but we have to go through owners of the land by fulfilling some established norms"

"As for Land when you have money we (women) can rent for our farming activities, we also have formed female groups so we will be able to obtain bigger acreage as women" - typical response from a female FGD held in Nkwanta South.

Aside from access to land for agriculture and other productive activities, security of tenure is an important issue in the agricultural sector. In most parts of Sub-Saharan African (SSA) countries where agriculture is the predominant economic activity, security of tenure especially among female farmers is a challenge. Ensuring farmers have security over the land at their disposal can result in general improvement in incomes via increases in investment in the sector and productivity. It also holds the potential for promoting gender equity leading to the bridging of gaps in security over land between male and female farmers.

Given this background, the study sought to establish the extent to which male and female farmers across the agro-ecological zones have security over land at their disposal. Farmers were asked to indicate the level of control they have over the agricultural land available to them. In the Coast Savannah zone the results suggest that 75 percent of male farmers have control over the land available to them; hence, the need to have some security of tenure in this regards (See Table 13). Out of the female farmers surveyed in the zone, all of them (100%) say they have control over land as a productive resource implying that there is some level of security of tenure.

These findings were confirmed by results from the focus group discussions (FGDs). Moreover, from the FGDs, female farmers in the zone stated that aside from having control over the lands they have inherited, they (women) are also able to lease land for their agricultural activity provided they have the money to pay for the land and are free to cultivate any crop on the leased land. In the Forest zone, both male and female farmers have substantial control (security) over land as a resource. A total of 69.2 percent of the male farmers indicated they had control over the land available to them whereas about 57 percent of the female farmers surveyed in the zone stated they had security (control) over the land available to them.

In the Guinea savannah zone all the male farmers indicated they had control (security of tenure) over land as productive resource. Among the female farmers surveyed, however, about 58 percent indicated they have security of tenure over land. Even though the results indicate female farmers have some level of control, the findings from the focus group discussions showed that this level of control is subject to the decision of the men. For instance, in some communities, the women indicated that the decision regarding land use lies with the tindanas (landowners) and other male elders or clan heads. Therefore, at best, females in the Guinea Savannah zone can have some temporary security of tenure or control over land from the land owners.

Further analysis presented in Table 14, indicates the extent to which male and female farmers within the surveyed zones own land. Generally, the findings show that male farmers across each of the zones dominate in terms of land ownership. This presupposes that although female farmers say they have access to agricultural land for their farming activities, only a few actually own these lands. It is therefore imperative that women's access to and control over land be strengthened to serve as a means of raising their status and influence within households and communities because access to and control over land has direct links to wealth, status and power in many communities in Ghana.

Table 12: Access to Land by Sex of Farmer

Agro-Ecological Zone				Access to Land		Total
				No Access	Access	
Coastal Savannah	Sex of Farmer	Male	Count	2	14	16
			% within Sex of Farmer	12.5	87.5	100.0
		Female	Count	0	14	14
			% within Sex of Farmer	0.0	100.0	100.0
	Total		Count	2	28	30
			% within Sex of Farmer	6.7	93.3	100.0
Forest	Sex of Farmer	Male	Count	5	21	26
			% within Sex of Farmer	19.2	80.8	100.0
		Female	Count	14	21	35
			% within Sex of Farmer	40.0	60.0	100.0
	Total		Count	19	42	61
			% within Sex of Farmer	31.1	68.9	100.0
Guinea Savannah	Sex of Farmer	Male	Count	0	18	18
			% within Sex of Farmer	0.0	100.0	100.0
		Female	Count	35	61	96
			% within Sex of Farmer	36.5	63.5	100.0
	Total		Count	35	79	114
			% within Sex of Farmer	30.7	69.3	100.0
Transitional	Sex of Farmer	Male	Count	10	22	32
			% within Sex of Farmer	31.3	68.8	100.0
		Female	Count	10	58	68
			% within Sex of Farmer	14.7	85.3	100.0
	Total		Count	20	80	100
			% within Sex of Farmer	20.0	80.0	100.0

Source: Field Data, 2014

Table 13: Control (Security) over Land by Sex of Farmer

Agro-Ecological Zone				Contol of Land		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	4	12	16
			% within Sex of Farmer	25.0	75.0	100.0
		Female	Count	0	14	14
			% within Sex of Farmer	0.0	100.0	100.0
	Total		Count	4	26	30
			% within Sex of Farmer	13.3	86.7	100.0
Forest	Sex of Farmer	Male	Count	8	18	26
			% within Sex of Farmer	30.8	69.2	100.0
		Female	Count	15	20	35
			% within Sex of Farmer	42.9	57.1	100.0
	Total		Count	23	38	61
			% within Sex of Farmer	37.7	62.3	100.0
Guinea Savannah	Sex of Farmer	Male	Count	0	18	18
			% within Sex of Farmer	0.0	100.0	100.0
		Female	Count	40	56	96
			% within Sex of Farmer	41.7	58.3	100.0
	Total		Count	40	74	114
			% within Sex of Farmer	35.1	64.9	100.0
Transitional	Sex of Farmer	Male	Count	1	31	32
			% within Sex of Farmer	3.1	96.9	100.0
		Female	Count	13	55	68
			% within Sex of Farmer	19.1	80.9	100.0
	Total		Count	14	86	100
			% within Sex of Farmer	14.0	86.0	100.0

Source: Field Data, 2014

Table 14: Farmer ownership of Land by Sex of Farmer

Agro-Ecological Zone				Ownership of Land		Total
				Don't Own	Own	
Coastal Savannah	Sex of Farmer	Male	Count	4	12	16
			% within Sex of Farmer	25.0	75.0	100.0
		Female	Count	12	2	14
			% within Sex of Farmer	85.7	14.3	100.0
	Total		Count	16	14	30
			% within Sex of Farmer	53.3	46.7	100.0
Forest	Sex of Farmer	Male	Count	10	16	26
			% within Sex of Farmer	38.5	61.5	100.0
		Female	Count	28	7	35
			% within Sex of Farmer	80.0	20.0	100.0
	Total		Count	38	23	61
			% within Sex of Farmer	62.3	37.7	100.0
Guinea Savannah	Sex of Farmer	Male	Count	0	18	18
			% within Sex of Farmer	0.0	100.0	100.0
		Female	Count	79	17	96
			% within Sex of Farmer	82.3	17.7	100.0
	Total		Count	79	35	114
			% within Sex of Farmer	69.3	30.7	100.0
Transitional	Sex of Farmer	Male	Count	14	18	32
			% within Sex of Farmer	43.8	56.3	100.0
		Female	Count	63	5	68
			% within Sex of Farmer	92.6	7.4	100.0
	Total		Count	77	23	100
			% within Sex of Farmer	77.0	23.0	100.0

Source: Field Data, 2014

2.5.2 Access to and Control over Credit

According to Cygnus Business Consulting Report (2004), agricultural credit serves as an important vehicle in the development of agriculture and augments employment opportunities among smallholder farmers in the rural areas. The issues of accessing credit and other financial portfolios and services by smallholder farmers in developing countries is severely limited, especially for those living in remote areas with no access to basic market infrastructure (Kloeppinger-Todd et al., 2010). In Ghana, the formal financial market sector is made up of the central bank of Ghana, a number of universal banks and rural and community banks (RCBs) (Bank of Ghana, 2008). According to International Fund for Agricultural Development (IFAD, 2008), rural and community banks serve as the largest avenue for the provision of formal financial services in rural areas and also represent about half of the total banking outlets in Ghana (IFAD, 2008)

The study sought to establish how male and female farmers are able to access credit (formal and informal) for their agricultural activities. The findings presented in Table 15, indicate that both male and female farmers still have very limited access to credit for their farming activities. In the Coastal Savannah zone, about 19 percent of male farmers surveyed said they had access to formal credit whereas about 14 percent of female farmers had access to formal credit. It was further established that these farmers are able to access informal sources of credit within their respective communities. These include but not limited to friends, relatives and money lenders. In the Forest zone, about 12 percent of male farmers surveyed said they had access to credit with about 16 percent of the female farmers having access. In the Transitional zone, the findings depict the fact that male and female farmers surveyed have low access to credit as a productive resource. See Table 15.

Findings obtained from the FGDs suggest that farmers hold the perception that satisfying the requirements to access formal credit for farming activities is cumbersome and that the interest rates charged are high. Some referred to the interest rates as "ko fie kowu" meaning "go home and die". The farmers, however, suggested they are able to access some form of informal credit from family, friends and neighbors for their farming activities.

"We sometimes also obtain inputs such as agro-chemicals on credit from dealers and pay later because they know we will pay"- Kpala (Nkwanta South)
"Some banks require that we form groups to be able to access credit so we have started putting ourselves together"- FGD (Ohia animguasie – Atebubu).

Additionally, the FGD participants reported that the poor had to rely on family and friends for small loans, or shopkeepers to supply them with agricultural inputs on credit. Overall, the findings regarding farmer control over credit as a productive resource across the Agro-Ecological zones surveyed was low. In the Guinea Savannah zone, nearly all female respondents (about 99%) say they do not have control over credit as a productive resource; 61 percent of male farmers also do not have control over credit as a resource in the zone (Table 16).

Table 15: Access to Credit by Sex of Farmer

Agro-Ecological Zone				Access to credit/capital		Total
				No Access	Access	
Coastal Savannah	Sex of Farmer	Male	Count	13	3	16
			% within Sex of Farmer	81.3%	18.8%	100.0%
		Female	Count	12	2	14
			% within Sex of Farmer	85.7%	14.3%	100.0%
	Total		Count	25	5	30
			% within Sex of Farmer	83.3%	16.7%	100.0%
Forest	Sex of Farmer	Male	Count	23	3	26
			% within Sex of Farmer	88.5%	11.5%	100.0%
		Female	Count	28	7	35
			% within Sex of Farmer	80.0%	20.0%	100.0%
	Total		Count	51	10	61
			% within Sex of Farmer	83.6%	16.4%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	11	7	18
			% within Sex of Farmer	61.1%	38.9%	100.0%
		Female	Count	94	2	96
			% within Sex of Farmer	97.9%	2.1%	100.0%
	Total		Count	105	9	114
			% within Sex of Farmer	92.1%	7.9%	100.0%
Transitional	Sex of Farmer	Male	Count	18	14	32
			% within Sex of Farmer	56.3%	43.8%	100.0%
		Female	Count	46	22	68
			% within Sex of Farmer	67.6%	32.4%	100.0%
	Total		Count	64	36	100
			% within Sex of Farmer	64.0%	36.0%	100.0%

Source: Field Data, 2014

Table 16: Control over Credit by Sex of Farmer

Agro-Ecological Zone				Control to credit/capital		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	11	5	16
			% within Sex of Farmer	68.8	31.3	100.0
		Female	Count	12	2	14
			% within Sex of Farmer	85.7	14.3	100.0
	Total		Count	23	7	30
			% within Sex of Farmer	76.7	23.3	100.0
Forest	Sex of Farmer	Male	Count	23	3	26
			% within Sex of Farmer	88.5	11.5	100.0
		Female	Count	28	7	35
			% within Sex of Farmer	80.0	20.0	100.0
	Total		Count	51	10	61
			% within Sex of Farmer	83.6	16.4	100.0
Guinea Savannah	Sex of Farmer	Male	Count	11	7	18
			% within Sex of Farmer	61.1	38.9	100.0
		Female	Count	95	1	96
			% within Sex of Farmer	99.0	1.0	100.0
	Total		Count	106	8	114
			% within Sex of Farmer	93.0	7.0	100.0
Transitional	Sex of Farmer	Male	Count	23	9	32
			% within Sex of Farmer	71.9	28.1	100.0
		Female	Count	49	19	68
			% within Sex of Farmer	72.1	27.9	100.0
	Total		Count	72	28	100
			% within Sex of Farmer	72.0	28.0	100.0

Source: Field Data, 2014

2.5.3 Access and Control over Extension Services

Agricultural extension services are meant to assist farmers adopt improved practices leading to improvement in their yields and subsequent well-being. However, according to Deere and Doss (2006) and FAO (2010), access to productive resources such as extension services differ between men and women – most often skewed toward men. In this study, farmer access to extension services was assessed and the findings are presented in Table 17. In the Coastal zone, access to extension services among male farmers was high compared with female farmers. Specifically, 93.8 percent of male farmers surveyed in the zone indicated they had access to extension services while among the female farmers about 43 percent said they had access to extension services.

In the Transitional zone, almost 50 percent of the female farmers indicated they had access to extension services whereas 81.3 percent of male farmers had access to extension services. Similarly, a lot more male farmers in the Guinea Savannah zone had access to extension services compared with female farmers interviewed. Additionally, about 73 percent of male farmers in the Forest zone had access to extension services whereas out of the total female farmers interviewed, 28.6 percent had access to extension services. Generally, the findings indicate that male farmers have greater access to extension services compared with their female counterparts across the four Agro-Ecological zones. This supports some earlier findings of Doss and Morris (2001) that in Ghana, female farmers in male-headed households have equal contact with extension agents but female farmers in female headed households have much less contact.

In terms of farmer control (i.e., extent to which a farmer can make decision regarding the use of extension services through AEAs) over extension services, male farmers were again found to have much more control over the use of extension agents than female farmers. From Table 18, 42.3 percent of male farmers in the Forest zone had control over the use of extension services compared with 25.7 percent of the 35 female farmers interviewed in the zone. These findings support the observation that service providers – such as Agricultural Extension Agents (AEAs) – tend to approach male farmers more often than female farmers, through patriarchal cultural practices of seclusion fueled by ancient belief systems and the general perception that women do not farm, a perception which prevents AEAs from visiting female farmers alone (FAO, 2011). In such instances female farmers can only be contacted through their husbands or household heads who become their spokespersons. This cultural seclusion has implications for the implementation of GADS especially in the area of extension service delivery. To prevent some of these cultural hindrances, female farmers, in a focus group discussion in Nkwanta South district, said they had to form female farmers-based organizations (FBOs) through the effort of extension. These findings would aid MoFA through WIAD in fashioning out programs and projects to address the key constraint of inadequate extension service, quality and coverage to farmers as outlined in the Gender and Agricultural Development Strategy (GADS).

Table 17: Access to Extention Services by Gender

Agro-Ecological Zone				Access to extention services		Total
				No Access	Access	
Coastal Savannah	Sex of Farmer	Male	Count	1	15	16
			% within Sex of Farmer	6.3	93.8	100.0
		Female	Count	8	6	14
			% within Sex of Farmer	57.1	42.9	100.0
	Total		Count	9	21	30
			% within Sex of Farmer	30.0	70.0	100.0
Forest	Sex of Farmer	Male	Count	7	19	26
			% within Sex of Farmer	26.9	73.1	100.0
		Female	Count	25	10	35
			% within Sex of Farmer	71.4	28.6	100.0
	Total		Count	32	29	61
			% within Sex of Farmer	52.5	47.5	100.0
Guinea Savannah	Sex of Farmer	Male	Count	10	8	18
			% within Sex of Farmer	55.6	44.4	100.0
		Female	Count	57	39	96
			% within Sex of Farmer	59.4	40.6	100.0
	Total		Count	67	47	114
			% within Sex of Farmer	58.8	41.2	100.0
Transitional	Sex of Farmer	Male	Count	6	26	32
			% within Sex of Farmer	18.8	81.3	100.0
		Female	Count	34	34	68
			% within Sex of Farmer	50.0	50.0	100.0
	Total		Count	40	60	100
			% within Sex of Farmer	40.0	60.0	100.0

Source: Field Data, 2014

Table 18: Control over Extention Services by Gender

Agro-Ecological Zone				Control of over Extention Servoces		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	5	11	16
			% within Sex of Farmer	31.3%	68.8%	100.0%
		Female	Count	4	10	14
			% within Sex of Farmer	28.6%	71.4%	100.0%
	Total		Count	9	21	30
			% within Sex of Farmer	30.0%	70.0%	100.0%
Forest	Sex of Farmer	Male	Count	15	11	26
			% within Sex of Farmer	57.7%	42.3%	100.0%
		Female	Count	26	9	35
			% within Sex of Farmer	74.3%	25.7%	100.0%
	Total		Count	41	20	61
			% within Sex of Farmer	67.2%	32.8%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	8	10	18
			% within Sex of Farmer	44.4%	55.6%	100.0%
		Female	Count	57	39	96
			% within Sex of Farmer	59.4%	40.6%	100.0%
	Total		Count	65	49	114
			% within Sex of Farmer	57.0%	43.0%	100.0%
Transitional	Sex of Farmer	Male	Count	8	24	32
			% within Sex of Farmer	25.0%	75.0%	100.0%
		Female	Count	49	19	68
			% within Sex of Farmer	72.1%	27.9%	100.0%
	Total		Count	57	43	100
			% within Sex of Farmer	57.0%	43.0%	100.0%

Source: Field Data, 2014

2.5.4 Access and Control Over Agricultural Machinery (Tractor) Services

Access to agricultural machinery, specifically tractor services, is low among all survey zones (Table 19). As much as 78.6 percent of the female farmers in the Coastal zone were found not to have access to tractor services. Among male farmers interviewed in the zone, 50 percent said they had access to tractor services. In the Guinea Savannah zone, only 38.9 percent of male farmers have access to tractor services whereas among the female farmers a small percentage (8.3%) had access. The findings in the Transitional zone were not significantly different from the findings obtained from farmers in the Guinea Savannah zone. See Table 19 for details.

The findings further suggest that both male and female farmers in the four Agro-Ecological zones have very little control over tractor services (Table 20) but male farmers are more likely to have such control compared with female farmers. About 13 percent of male farmers in the Coastal zone, for instance, have control over tractor services whereas none of the female farmers have such control. In the Transitional zone, only about 10 percent of female farmers have some control over available tractor services, compared with about 31 percent of male farmers who do. Some 39 percent of male farmers in the Guinea Savannah zone have control over available tractor services for their agricultural as well as related economic activities while only about 6 percent of their female colleagues have such control.

Table 19: Access to Tractor Services – by Sex of Farmer

Agro-Ecological Zone				Access to tractor services		Total
				No Access	Access	
Coastal Savannah	Sex of Farmer	Male	Count	8	8	16
			% within Sex of Farmer	50.0	50.0	100.0
		Female	Count	11	3	14
			% within Sex of Farmer	78.6	21.4	100.0
	Total		Count	19	11	30
			% within Sex of Farmer	63.3	36.7	100.0
Forest	Sex of Farmer	Male	Count	23	3	26
			% within Sex of Farmer	85	11.5	100.0
		Female	Count	31	4	35
			% within Sex of Farmer	88.6	11.4	100.0
	Total		Count	54	7	61
			% within Sex of Farmer	88.5	11.5	100.0

Guinea Savannah	Sex of Farmer	Male	Count	11	7	18
			% within Sex of Farmer	61.1	38.9	100.0
		Female	Count	88	8	96
			% within Sex of Farmer	91.7	8.3	100.0
	Total		Count	99	15	114
			% within Sex of Farmer	86.8	13.2	100.0
Transitional	Sex of Farmer	Male	Count	17	15	32
			% within Sex of Farmer	53.1	46.9	100.0
		Female	Count	57	11	68
			% within Sex of Farmer	83.8	16.2	100.0
	Total		Count	74	26	100
			% within Sex of Farmer	74.0	26.0	100.0

Source: Field Data, 2014

Table 20: Control over Tractor Services by Sex of Farmer

Agro-Ecological Zone				Control of tractor services		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	14	2	16
			% within Sex of Farmer	87.5	12.5	100.0
		Female	Count	14	0	14
			% within Sex of Farmer	100.0	0.0	100.0
	Total		Count	28	2	30
			% within Sex of Farmer	93.3	6.7	100.0%
Forest	Sex of Farmer	Male	Count	23	3	26
			% within Sex of Farmer	88.5	11.5	100.0
		Female	Count	30	5	35
			% within Sex of Farmer	85.7	14.3	100.0
	Total		Count	53	8	61
			% within Sex of Farmer	86.9	13.1	100.0

Guinea Savannah	Sex of Farmer	Male	Count	11	7	18
			% within Sex of Farmer	61.1	38.9	100.0
		Female	Count	90	6	96
			% within Sex of Farmer	93.8	6.3	100.0
	Total		Count	101	13	114
			% within Sex of Farmer	88.6	11.4	100.0
Transitional	Sex of Farmer	Male	Count	22	10	32
			% within Sex of Farmer	68.8	31.3	100.0
		Female	Count	61	7	68
			% within Sex of Farmer	89.7	10.3	100.0
	Total		Count	83	17	100
			% within Sex of Farmer	83.0	17.0	100.0

Source: Field Data, 2014

2.5.5 Access and Control over Irrigation Equipment

Most of the farmers (both male and female) interviewed have no access to irrigation equipment such as watering cans, sprinklers water pumps to aid their agricultural activities especially during the dry season. Female access to irrigation equipment was generally low (Table 21). The results however show that farmers in the Coastal zone who are predominantly into vegetable production have access to these irrigation equipment to support the farming activity. About 79 percent of the females surveyed had access to irrigation equipment, which makes it possible for these farmers to undertake their farming activities throughout the year. In the Transitional zone, about 31 percent of male farmers have access to irrigation equipment compared with only about 13 percent of their female counterparts. In the Forest zone, just about 35 percent of males have access to irrigation equipment whereas about 11 percent of the female farmers had access. The Guinea Savannah zone has the least access to irrigation equipment since all the male farmers interviewed do not have access to irrigation equipment. Interestingly, a small percentage (8.3 %) of the female farmers surveyed had access. The trend for control over irrigation equipment is similar to results obtained for farmer access to these equipment (Table 21): aside from farmers (male and female) in the Coastal zone, majority of the farmers across the other Agro-Ecological zone have virtually no control over irrigation equipment for their agricultural activities.

Table 21: Access to Irrigation Equipment by Sex of Farmer

Agro-Ecological Zone				Access to Irrigation Equipment		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	8	8	16
			% within Sex of Farmer	50.0	50.0	100.0
		Female	Count	3	11	14
			% within Sex of Farmer	21.4	78.6	100.0
	Total		Count	11	19	30
			% within Sex of Farmer	36.7	63.3	100.0
Forest	Sex of Farmer	Male	Count	17	9	26
			% within Sex of Farmer	65.4	34.6	100.0
		Female	Count	31	4	35
			% within Sex of Farmer	88.6	11.4	100.0
	Total		Count	48	13	61
			% within Sex of Farmer	78.7	21.3	100.0
Guinea Savannah	Sex of Farmer	Male	Count	18	0	18
			% within Sex of Farmer	100.0	0.0	100.0
		Female	Count	88	8	96
			% within Sex of Farmer	91.7	8.3	100.0
	Total		Count	106	8	114
			% within Sex of Farmer	93.0	7.0	100.0
Transitional	Sex of Farmer	Male	Count	22	10	32
			% within Sex of Farmer	68.8	31.3	100.0
		Female	Count	59	9	68
			% within Sex of Farmer	86.8	13.2	100.0
	Total		Count	81	19	100
			% within Sex of Farmer	81.0	19.0	100.0

Source: Field Data, 2014

Table 22: Control over Irrigation Equipment by Sex of Farmer

Agro-Ecological Zone				Access to Irrigation Equipment		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	8	8	16
			% within Sex of Farmer	50.0%	50.0%	100.0%
		Female	Count	3	11	14
			% within Sex of Farmer	21.4%	78.6%	100.0%
	Total		Count	11	19	30
			% within Sex of Farmer	36.7%	63.3%	100.0%
Forest	Sex of Farmer	Male	Count	15	11	26
			% within Sex of Farmer	57.7%	42.3%	100.0%
		Female	Count	30	5	35
			% within Sex of Farmer	85.7%	14.3%	100.0%
	Total		Count	45	16	61
			% within Sex of Farmer	73.8%	26.2%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	17	1	18
			% within Sex of Farmer	94.4%	5.6%	100.0%
		Female	Count	86	10	96
			% within Sex of Farmer	89.6%	10.4%	100.0%
	Total		Count	103	11	114
			% within Sex of Farmer	90.4%	9.6%	100.0%
Transitional	Sex of Farmer	Male	Count	32	0	32
			% within Sex of Farmer	100.0%	0.0%	100.0%
		Female	Count	60	8	68
			% within Sex of Farmer	88.2%	11.8%	100.0%
	Total		Count	92	8	100
			% within Sex of Farmer	92.0%	8.0%	100.0%

Source: Field Data, 2014

2.5.6 Improved Seeds and Fertilizers

The survey indicates that the Coastal zone is highly serviced by improved seeds because all farmers, regardless of gender, report having access to improved seeds (Table 23). In the Transitional zone, 81.3 percent of the male farmers and 72.1 percent of female farmers reported having access to improved seeds. The Guinea Savannah zone shows the least access of farmers to improved seeds, with as much as 85.4 percent of female farmers and about 56 percent of males in the zone reporting that they do not have access to improved seeds to undertake their farming activity. During the FGDs, most of these farmers attributed the problem to unavailability of these inputs in their immediate community markets and, in most cases, have to travel to bigger markets to purchase the seeds. Some farmers also cited reasons such as low purchasing power in cases where dealers bring improved seeds to their doorsteps.

Control over improved seeds as a productive resource follows the trend observed in access to these inputs. As explained earlier, the concept of control over productive resources relates to a farmers ability to make some level of decision regarding the use of productive resources i.e. improved seeds. In the Coastal zone, all the farmers, male and female, indicate they have control over access to improved seeds (Table 24). In the Transitional zone, about 77 percent of female farmers have control over the use of improved seeds. Among the male farmers interviewed, 59.4 percent had control over improved seeds. The pattern in the Forest zone mimics that of the Transition zone: about 46 percent of males compared with about 66 percent of females have control over access to improved seeds. Again, farmers in the Guinea Savannah zone have the least control over improved seeds as about 85 percent of female farmers and 56 percent of male farmers report that they have no control.

Table 23: Access to Improved Seeds by Sex of Farmer

Agro-Ecological Zone				Access to improved seeds		Total
				No Access	Access	
Coastal Savannah	Sex of Farmer	Male	Count	-	16	16
			% within Sex of Farmer	-	100.0%	100.0%
		Female	Count	-	14	14
			% within Sex of Farmer	-	100.0%	100.0%
	Total		Count	-	30	30
			% within Sex of Farmer	-	100.0%	100.0%
Forest	Sex of Farmer	Male	Count	14	12	26
			% within Sex of Farmer	53.8%	46.2%	100.0%
		Female	Count	11	24	35
			% within Sex of Farmer	31.4%	68.6%	100.0%
	Total		Count	25	36	61
			% within Sex of Farmer	41.0%	59.0%	100.0%

Guinea Savannah	Sex of Farmer	Male	Count	10	8	18
			% within Sex of Farmer	55.6%	44.4%	100.0%
		Female	Count	82	14	96
			% within Sex of Farmer	85.4%	14.6%	100.0%
	Total		Count	92	22	114
			% within Sex of Farmer	80.7%	19.3%	100.0%
Transitional	Sex of Farmer	Male	Count	6	26	32
			% within Sex of Farmer	18.8%	81.3%	100.0%
		Female	Count	19	49	68
			% within Sex of Farmer	27.9%	72.1%	100.0%
	Total		Count	25	75	100
			% within Sex of Farmer	25.0%	75.0%	100.0%

Source: Field Data, 2014

Table 24: Control over Improved Seeds

Agro-Ecological Zone				Control improved seeds		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	-	16	16
			% within Sex of Farmer	-	100.0%	100.0%
		Female	Count	-	14	14
			% within Sex of Farmer	-	100.0%	100.0%
	Total		Count	-	30	30
			% within Sex of Farmer	-	100.0%	100.0%
Forest	Sex of Farmer	Male	Count	19	7	26
			% within Sex of Farmer	73.1%	26.9%	100.0%
		Female	Count	15	20	35
			% within Sex of Farmer	42.9%	57.1%	100.0%
	Total		Count	34	27	61
			% within Sex of Farmer	55.7%	44.3%	100.0%

Guinea Savannah	Sex of Farmer	Male	Count	10	8	18
			% within Sex of Farmer	55.6%	44.4%	100.0%
		Female	Count	82	14	96
			% within Sex of Farmer	85.4%	14.6%	100.0%
	Total		Count	92	22	114
			% within Sex of Farmer	80.7%	19.3%	100.0%
Transitional	Sex of Farmer	Male	Count	13	19	32
			% within Sex of Farmer	40.6%	59.4%	100.0%
		Female	Count	16	52	68
			% within Sex of Farmer	23.5%	76.5%	100.0%
	Total		Count	29	71	100
			% within Sex of Farmer	29.0%	71.0%	100.0%

Source: Field Data, 2014

2.5.7 Agro-processing Equipment

The survey also sought to establish farmer access and control over agro-processing equipment. From Table 25, male farmer access to agro-processing equipment was low, especially in the Guinea Savannah zone where about 89 and 87 percent of male and female farmers surveyed do not have access. In the Coastal zone, 31.3 percent of male farmers reported they had access to agro-processing equipment. Among the female farmers interviewed in the zone, 58.3 percent had access to agro-processing facilities. Elsewhere in the Transitional zone, quite a sizeable percentage of female farmers had access to agro-processing and 39.4 percent of male farmers also had access. The findings also indicate that the Guinea Savannah zone lagged behind the other zones in terms of access.

In terms of farmer control over agro-processing equipment, the findings reveal that both male and female farmers have little control over this productive resource as shown in Table 26. In the Forest zone, 60.6 percent of the female farmers sampled indicate they had control over the use of agro-processing facilities whereas among the male farmers just about 6 percent had control. Besides, about 44 percent of female farmers in the Transitional zone were found to have control over agro-processing equipment as productive resource.

Table 25: Access to Agro-processing equipment

Agro-Ecological Zone				Access to Agro-processing equipment		Total
				No Access	Access	
Coastal Savannah	Sex of Farmer	Male	Count	11	5	16
			% within Sex of Farmer	68.8%	31.3%	100.0%
		Female	Count	5	7	12
			% within Sex of Farmer	41.7%	58.3%	100.0%
	Total		Count	16	12	28
			% within Sex of Farmer	57.1%	42.9%	100.0%
Forest	Sex of Farmer	Male	Count	11	6	17
			% within Sex of Farmer	64.7%	35.3%	100.0%
		Female	Count	15	9	24
			% within Sex of Farmer	62.5%	37.5%	100.0%
	Total		Count	26	15	41
			% within Sex of Farmer	63.4%	36.6%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	16	2	18
			% within Sex of Farmer	88.9%	11.1%	100.0%
		Female	Count	66	29	95
			% within Sex of Farmer	69.5%	30.5%	100.0%
	Total		Count	82	31	113
			% within Sex of Farmer	72.6%	27.4%	100.0%
Transitional	Sex of Farmer	Male	Count	19	10	29
			% within Sex of Farmer	65.5%	34.5%	100.0%
		Female	Count	40	26	66
			% within Sex of Farmer	60.6%	39.4%	100.0%
	Total		Count	59	36	95
			% within Sex of Farmer	62.1%	37.9%	100.0%

Source: Field Data, 2014

Table 26: Control overAgro-processing equipment by Sex of Farmer

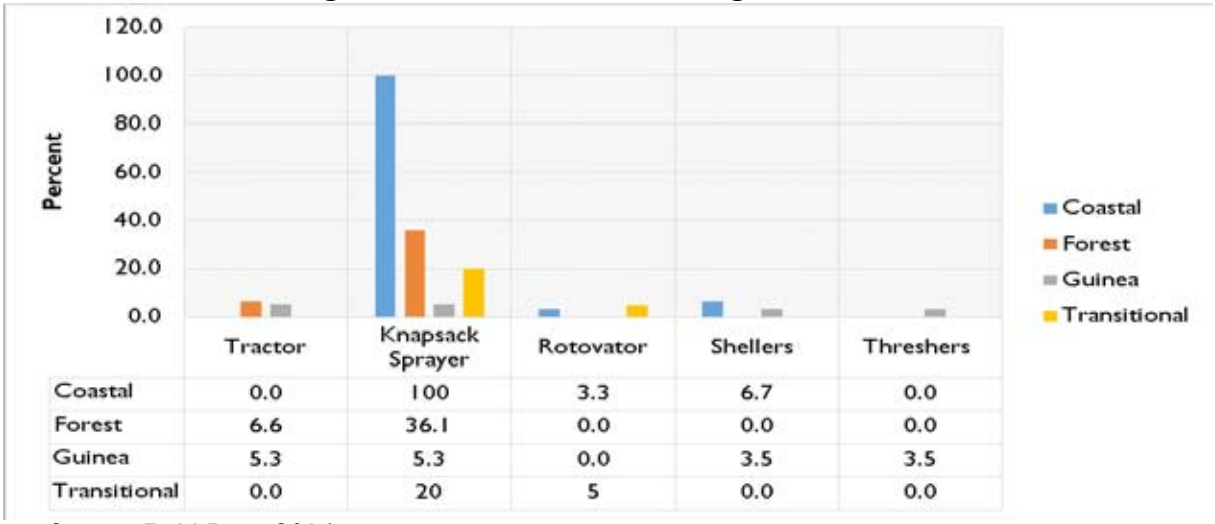
Agro-Ecological Zone				Control over Agro-processing equipment		Total
				No Control	Control	
Coastal Savannah	Sex of Farmer	Male	Count	8	8	16
			% within Sex of Farmer	50.0%	50.0%	100.0%
		Female	Count	9	3	12
			% within Sex of Farmer	75.0%	25.0%	100.0%
	Total		Count	17	11	28
			% within Sex of Farmer	60.7%	39.3%	100.0%
Forest	Sex of Farmer	Male	Count	17	1	18
			% within Sex of Farmer	94.4%	5.6%	100.0%
		Female	Count	13	20	33
			% within Sex of Farmer	39.4%	60.6%	100.0%
	Total		Count	30	21	51
			% within Sex of Farmer	58.8%	41.2%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	16	2	18
			% within Sex of Farmer	88.9%	11.1%	100.0%
		Female	Count	42	54	96
			% within Sex of Farmer	43.8%	56.3%	100.0%
	Total		Count	58	56	114
			% within Sex of Farmer	50.9%	49.1%	100.0%
Transitional	Sex of Farmer	Male	Count	23	9	32
			% within Sex of Farmer	71.9%	28.1%	100.0%
		Female	Count	38	30	68
			% within Sex of Farmer	55.9%	44.1%	100.0%
	Total		Count	61	39	100
			% within Sex of Farmer	61.0%	39.0%	100.0%

Source: Field Data, 2014

2.6 Use of labor-saving devices and the type, along the agricultural value chain by gender

The use of labor-saving devices such as Tractor, Rotovators, Sheller, and Threshers is minimal among surveyed farmers in the Coastal Savannah zone. However, all the farmers in the zone use Knapsack sprayer as a type of labor-saving device for their farming activities. In the Forest and Transitional zones, only 36.1 and 20 percent of farmers respectively use Knapsack sprayer as a labor saving device. With respect to other labor-saving devices such as Tractor, Rotovators, Shellers and Threshers, farmers in these zones make very little use of them – perhaps because they do not have access to them. Figure 16 below presents details of the results. Detailed analysis of the use of labor-saving devices by farmers according to sex is presented in Tables 42 to 46 in appendix 1.

Figure 16: Use of Labor Saving Devices



	Tractor	Knapsack Sprayer	Rotovator	Shellers	Threshers
Coastal	0.0	100	3.3	6.7	0.0
Forest	6.6	36.1	0.0	0.0	0.0
Guinea	5.3	5.3	0.0	3.5	3.5
Transitional	0.0	20	5	0.0	0.0

Source: Field Data, 2014

2.7 Sources and Levels of incomes of diverse groups in the Sector

2.7.1 Sources of Income – Farmers

The sources of income for the households are presented in Table 27. The findings show that the sources of income for farmers in the Coastal Savannah are sales of farm produce and trading. For farmers in the Forest zone, their sources of income include sale of farm produce and animals, trading, paid labor, and artisan trade, among others. Most farmers in the Guinea Savannah zone stated that their sources of income are sale of farm produce and animals, trading, paid labor, selling of firewood and charcoal as well as processing of farm produce. Further analysis is presented in Table 28 indicating the distribution of farmers (male and female) who engage in sale of agricultural produce. The findings show that more female farmers across the zone engage in trading than male farmers.

Table 27: Sources of Income

Agro-Ecological Zone			Response		Percent of Cases
			N	Percent	
Coastal Savannah	Sources of Income[a]	Sales of farm produce	14	73.7%	100.0%
		Trading	5	26.3%	35.7%
	Total		19	100.0%	135.7%
Forest	Sources of Income[a]	Sales of farm produce	34	41.5%	97.1%
		Sales of farm animals	27	32.9%	77.1%
		Trading	5	6.1%	14.3%
		Paid labor	12	14.6%	34.3%
		Artisanship	1	1.2%	2.9%
		Processing of farm produce	3	3.7%	8.6%
	Total		82	100.0%	234.3%
Guinea Savannah	Sources of Income[a]	Sales of farm produce	68	34.9%	75.6%
		Sales of farm Animals	31	15.9%	34.4%
		Trading	50	25.6%	55.6%
		Paid labor	10	5.1%	11.1%
		Artisanship	2	1.0%	2.2%
		Selling firewood and charcoal	5	2.6%	5.6%
		Processing of farm produce	29	14.9%	32.2%
	Total		195	100.0%	216.7%
Transitional	Sources of Income[a]	Sales of farm produce	58	50.9%	86.6%
		Sales of farm animals	16	14.0%	23.9%
		Trading	35	30.7%	52.2%
		Paid labor	2	1.8%	3.0%
		Artisanship	2	1.8%	3.0%
		Gifts and Remittances	1	0.9%	1.5%
	Total		114	100.0%	170.1%
a. Dichotomy group tabulated at value 1.					

Source: Field Data, 2014

Table 28: Distribution of farmers Earning Income from Trading

Agro-Ecological Zone				Trading		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count	13	3	16
			% within Sex of Farmer	81.3%	18.8%	100.0%
		Female	Count	9	5	14
			% within Sex of Farmer	64.3%	35.7%	100.0%
	Total		Count	22	8	30
			% within Sex of Farmer	73.3%	26.7%	100.0%
Forest	Sex of Farmer	Male	Count	23	2	25
			% within Sex of Farmer	92.0%	8.0%	100.0%
		Female	Count	21	14	35
			% within Sex of Farmer	60.0%	40.0%	100.0%
	Total		Count	44	16	60
			% within Sex of Farmer	73.3%	26.7%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	18	0	18
			% within Sex of Farmer	100.0%	0.0%	100.0%
		Female	Count	46	50	96
			% within Sex of Farmer	47.9%	52.1%	100.0%
	Total		Count	64	50	114
			% within Sex of Farmer	56.1%	43.9%	100.0%
Transitional	Sex of Farmer	Male	Count	28	4	32
			% within Sex of Farmer	87.5%	12.5%	100.0%
		Female	Count	33	35	68
			% within Sex of Farmer	48.5%	51.5%	100.0%
	Total		Count	61	39	100
			% within Sex of Farmer	61.0%	39.0%	100.0%

Source: Field Data, 2014

2.7.2 Levels of Income of Farmers

The computed incomes of farmers include income generated from all farm activities as well as non-farm related activities. The survey results indicate that about 23 percent of farmers in the Coastal Savannah zone have incomes in the range of GHS 501-1,000, with a much higher proportion (about 37%) indicating their income is above GHS 10,000 (Table 29). In the Forest zone, close to 27 percent of farmers have income above GHS 10,000 while some 14 percent of the farmers say their income is between GHS 100-500. Farmers in the Transitional zone have earnings from as low as GHS 100 to as high as GHS 10,000, with an equal proportion (about 22%) in the income brackets of GHS 501-1,000 and GHS 2,001-3,000, but 13 percent of them are in the GHS 5,000-10,000 bracket. Many of the farmers, from the analysis, can be said to be earning low incomes across each of the Agro-Ecological zones, which may impact negatively on their household expenditure.

2.7.3 Level of Income by Gender

The income levels are further disaggregated by gender, as shown in Table 30. The results show that women across the Agro-Ecological zones surveyed earn very low incomes which might have some effect on their ability to meet their own needs and, by extension, those of the household. Nonetheless, some of them are able to earn incomes above GHS 2,000 per cropping season, with about 63 percent of the female farmers earning incomes above GHS 10,000.

Table 29: Annual Income of Farmers by Agro-Ecological zone

Ecological Zone	Income (in GHS)	Percent
Coastal Savannah	501-1000	23.3
	1501-2000	10.0
	2001-3000	6.7
	4001-5000	10.0
	5000-10000	13.3
	Above 10000	36.7
	Total	100.0
Forest	100-500	13.9
	501-1000	11.9
	1001-1500	5.9
	1501-2000	9.9
	2001-3000	11.9
	3001-4000	11.9
	4001-5000	1.0
	5000-10000	6.9
	Above 10000	26.7
	Total	100.0
Guinea Savannah	100-500	10.8
	501-1000	29.4
	1001-1500	12.7
	1501-2000	17.6
	2001-3000	6.9
	3001-4000	11.8
	4001-5000	6.9
	5000-10000	3.9
	Total	100.0
Transitional	100-500	16.7
	501-1000	22.2
	1001-1500	7.4
	1501-2000	5.6
	2001-3000	22.2
	3001-4000	9.3
	4001-5000	3.7
	5000-10000	13.0
Total		100.0

Source: Field Data, 2014

Table 30: Annual Income of Farmers by Sex of Farmer

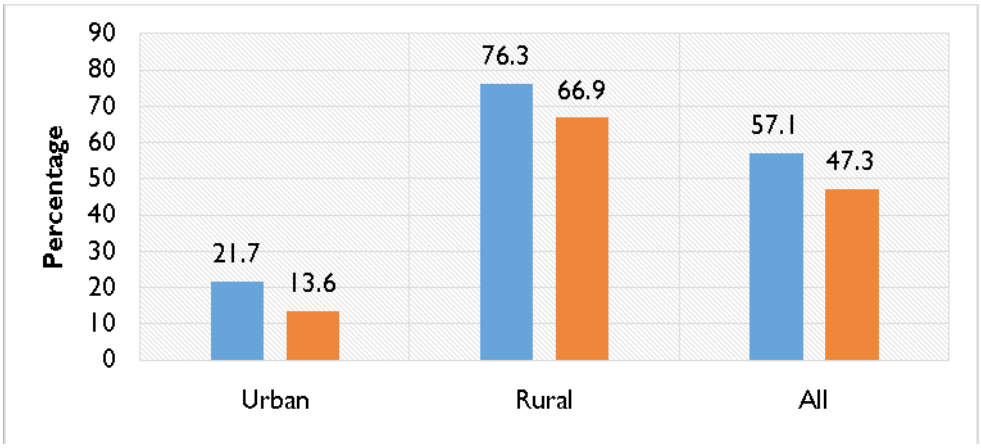
			Range of Income (GHS)									Total
			100-500	501-1000	1001-1500	1501-2000	2001-3000	3001-4000	4001-5000	5000-10000	above 10000	
Sex of Farmer	Male	Count	2	9	5	15	15	15	5	12	14	92
		% within Sex of Farmer	2.2%	9.8%	5.4%	16.3%	16.3%	16.3%	5.4%	13.0%	15.2%	100.0%
	Female	Count	32	52	18	19	18	14	8	10	24	195
		% within Sex of Farmer	16.4%	26.7%	9.2%	9.7%	9.2%	7.2%	4.1%	5.1%	12.3%	100.0%
Total		Count	34	61	23	34	33	29	13	22	38	287
		% within Sex of Farmer	11.8%	21.3%	8.0%	11.8%	11.5%	10.1%	4.5%	7.7%	13.2%	100.0%

Source: Field Data, 2014

2.8 Number of Males and Females Employed by the Agricultural Sector

To ascertain the number of males and females employed by the agricultural sector in the target zones, data from the Ghana Living Standard Survey 6 compiled by the Ghana Statistical Service were analyzed. The analysis shows that the agricultural sector employs more males than females: about 57 percent being male and about 47 percent being females. The disaggregation by location shows that in the rural areas, about 76 percent of males are employed by the agricultural sector compared with about 67 percent females (Fig. 17) while in the urban areas, about 22 percent of males and about 14 percent of females are employed by the sector. Linking the above to the survey, all respondents interviewed are engaged in at least one form of agricultural practice, with farming being the dominant occupation.

Figure 17: Agricultural Sector Employment by Gender



Source: GLSS 6, Ghana Statistical Service (GSS)

2.9 Time Use in Relation to Activities along the Agricultural Value Chain

Time is experienced and recalled as durations, or elapsed time, spent in various activities and with various sorts of feelings. Time use describes the allocation of time among various circumstances and subjective states. It is a key social indicator which finds particular applications in the assessment of individuals' material welfare and well-being. It provides the core measure of amounts of work in specific paid occupations ("normal/actual hours per week"), and for unpaid work in private households or in volunteer groups.

To establish the time use of the surveyed farmers across the four Agro-Ecological zones (Coastal Savannah, Forest, Guinea Savannah and Transitional), data were collected on the various activities undertaken and the time spent on each of these activities. To ensure conformity with internationally acceptable standards the various activities were categorized under System of National Accounts (SNA) Production, Non-SNA production, Non-productive Activities and Productive Activities. These terminologies are explained subsequently.

System of National Accounts (SNA)
According to Ghana Statistical Service (GSS, 2012), the System of National Accounts (SNA) is an internationally accepted framework for estimating the Gross Domestic Product (GDP) of a country. Currently, Ghana uses the System of National Accounts of 1993 (SNA'93) to estimate her GDP. This is to ensure that statistical data conforms to internationally agreed set of standards that govern the compilation of macro-economic aggregates.

SNA production
Under SNA, productive activities that border on production of goods and services supplied, or intended to be supplied, to units other than their producers, own-account production of all goods retained by their producers, own-account production of housing services by owner-occupiers and of domestic and personal services produced in a household by paid domestic staff. This excludes all household activities that produce domestic or personal services for own final consumption within the same household except the services produced by employing paid domestic staff.

Non-SNA production (extended SNA)
This captures the general domestic and personal services produced and consumed within the same household, for example cleaning, servicing and repairs; preparation and serving of meals; care, training and instruction of children; care of the sick, infirm and elderly; transportation of members of the household or their goods; as well as unpaid volunteer services to other households, community, neighborhood associations and other associations (GSS, 2012) .

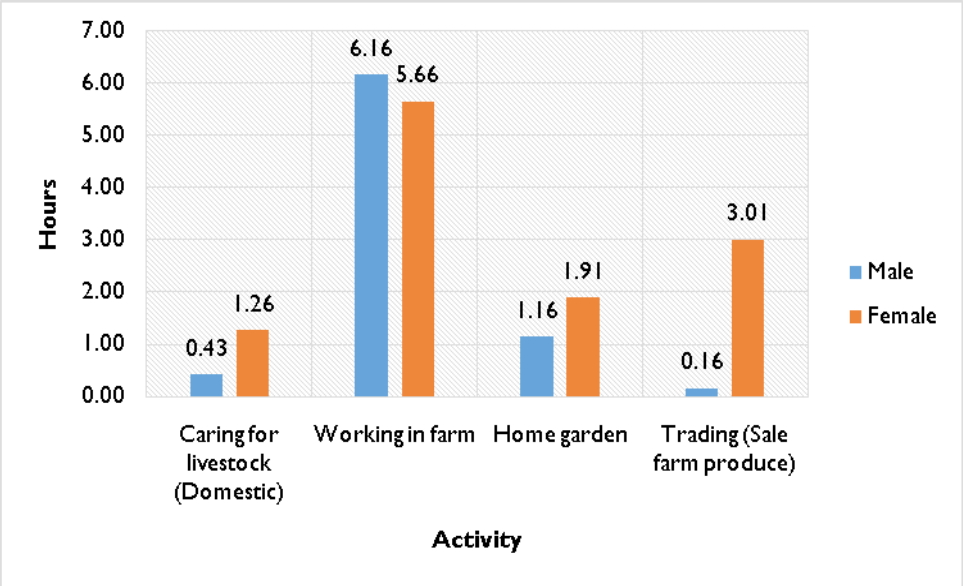
Non-productive activities
An activity is considered non-productive if it cannot be delegated to someone else, in line with the "third person rule". Activities performed for personal maintenance and care such as eating, drinking, sleeping, or exercising are non-productive. Similarly, activities associated with socializing and entertainment, such as participation in sports, hobbies and games and use of mass media are considered non-productive activities (GSS, 2012).

Productive work
An activity is said to be productive if its performance can be delegated to another person and yield the same desired result. As such, all productive activities fall within the general production boundary (GSS, 2012).

2.10 Productive and Reproductive Roles and their Effect on Agricultural Activities

The productive/SNA activated for male and female farmers are illustrated in Figure 18. The findings show that male farmers interviewed spend close to 6.16 hours working on their farm and on average about 1.16 hours on their home gardens. Female farmers on the other hand were found to spend about 5.66 hours on average working on the farm and about 1.91 hours on home garden. Also, females were found to spend about 3.01 hours engaging in trading activities, which is 2.85 hours more than their male counterparts. The results further indicate that females time use with respective to caring for livestock averaged 1.26 hours, which is 0.83 hours more than those of the male farmers sampled. This might be due to the fact that mostly women or females usually cater for domestic livestock (small animals).

Figure 18: Time Use – Productive/SNA Activities



Source: Field Data, 2014

Some of the non-SNA activities farmers are engaged in are child care, cooking, laundry/cleaning, fetching of firewood and caring for the sick. Women time use with respect to these identified activities was found to be more compared with that of men. On average, female farmers surveyed spend close to 1.11 hours caring for children compared with about 0.09 hours that male farmers spend caring for children. Female farmers were found to spend about 1.20 hours undertaking cleaning and laundry activities which is 1.17 hours more than that of male farmers (See Figure 19). It is important to point out that some activities such as cooking and child care can be done simultaneously. For example a female farmer can be cooking, cleaning the house and caring for children at the same time. From the analysis, women undertake more non-SNA activities than men. A typical instance is presented in Figure 20 where a woman was breastfeeding while being interviewed on the field.

Ghana Statistical Services (GSS, 2012), Ghana Time-Use Survey, Main Report.

Figure 19: Time Use – Non SNA Activities

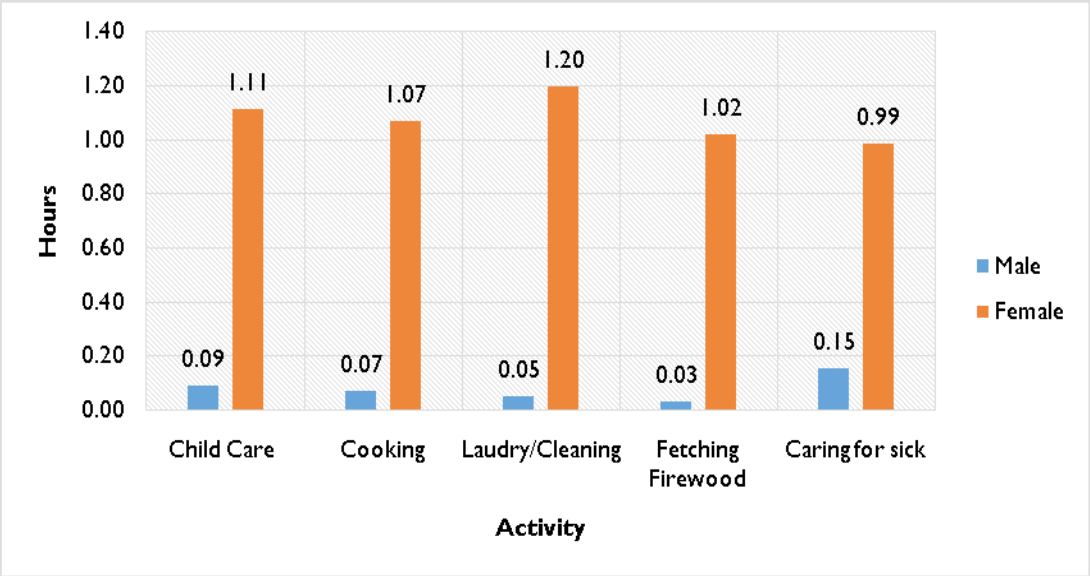
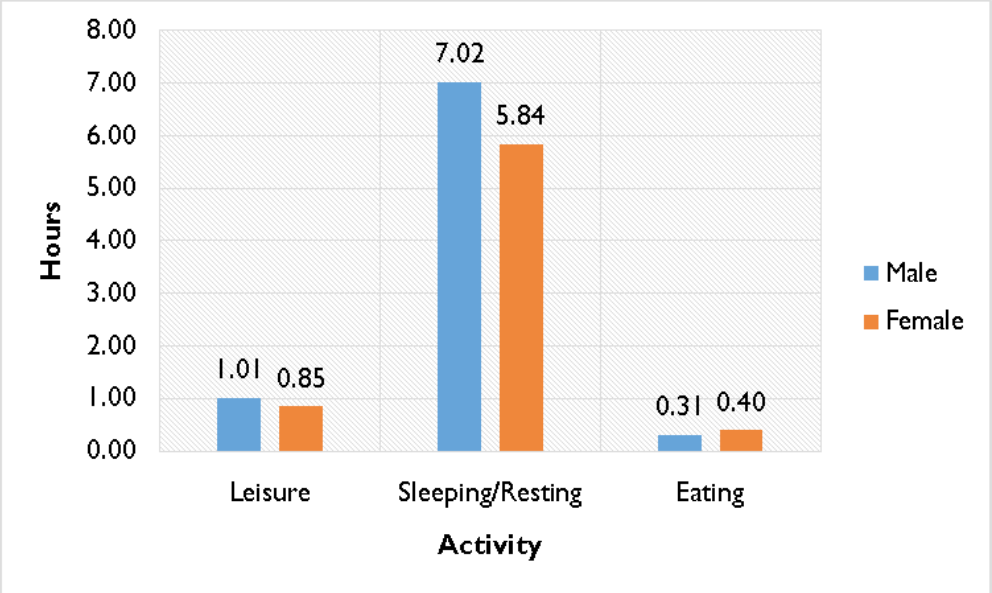


Figure 20: Woman juggling multiple duties

The study also established time use with respect to non-productive activities such as leisure, sleeping and eating. This is illustrated in figure 21 below. The findings show that on average male farmers sleep for about 7 hours a day whereas female farmers sleep for about 6 hours on average. In terms of leisure, the study found that male farmers have more leisure time than female farmers.

Figure 21: Time Use – Non-Productive Activities



Source: Field Data, 2014

Time Use – Farming and Off-Farming Season

The study determined the various specific times female farmers wake up/sleep during the farming and off-farming seasons. During the farming season, majority of farmers (about 71%) in the Coastal Savannah zone wake up between 2:00 AM and 5:00 AM, whereas about 29 percent wake up between 5:30 AM and 8:00 AM (Table 31). In the Forest zone, majority of female farmers (about 79%) wake up between 2:00 AM and 5:00 AM during the farming season ostensibly to begin their household chores as well as other economic activities. The remaining 21 percent wake up between 5:30 AM and 8:00 AM. From the results, women across all 4 zones wake up early during the farming season to undertake their respective reproductive and economic roles. Women sleeping time across each zone ranges from 6:00 PM to 11:00 PM during the farming season, but most of them retire to bed between 6:00 PM and 8:00 PM. The findings further reveal that women farmers surveyed in the Coastal zone spend between 6-8 hours on farming-related activities. Similar results are seen across the other Agro-Ecological zones. The results for women time use during the off-farming season are presented in Table 41 of Appendix 1. The results further reveal that women wake-up time changes during the off-farming season. For example, in the Coastal zone most of the women wake up between 5:30 AM and 8:00 AM whereas they wake up between 2:00 AM and 5:00 AM during the farming season.

Table 31: Women Wake up Time - Farming Season

Agro-Ecological zone	Hours	Percent
Coastal Savannah	2-5am	71.4
	5:30- 8am	28.6
	Total	100.0
Forest	2-5am	78.7
	5:30- 8am	21.3
	Total	100.0
Guinea Savannah	2-5am	58.3
	5:30- 8am	41.7
	Total	100.0
Transitional	2-5am	66.7
	5:30- 8am	33.3
	Total	100.0

Source: Field Data, 2014

Table 32: Women Sleeping Time - Farming Season

Agro-Ecological zone	Hours	Percent
Coastal Savannah	6-8pm	21.4
	9-11pm	78.6
	Total	100.0
Forest	6-8pm	63.9
	9-11pm	36.1
	Total	100.0
Guinea Savannah	6-8pm	38.5
	9-11pm	61.5
	Total	100.0
Transitional	6-8pm	64.3
	9-11pm	35.7
	Total	100.0

Source: Field Data, 2014

2.11 Number of Male and Female Farm Laborers ("by day" laborers)

The survey results reveal that none of the farmers in the Coastal zone are engaged in paid labor (Table 33), compared with about 23 percent of farmers in the Forest zone who are engaged in paid labor. In the Transitional zone, about 3 percent of the surveyed farmers are engaged in some form of paid labor. From the results, many of the farmers surveyed are not engaged in paid labor across all the Agro-Ecological zones. The disaggregation of the above findings along gender is presented in Table 34, where majority of the farmers, regardless of gender, are not engaged in paid labor – especially in the Coastal and Transitional zones. In the Guinea Savannah zone, an equal proportion of males and females (about 11%) are engaged in paid labor whereas in the Forest zone, about 27 percent of the male farmers and about 20 percent of the female farmers report being in paid labor.

Table 33: Farmers Engaged in Paid Labor

Agro-Ecological zone	Response	Percent
Coastal Savannah	No	100.0
Forest	No	77.5
	Yes	22.5
	Total	100.0
Guinea Savannah	No	89.4
	Yes	10.6
	Total	100.0
Transitional	No	96.6
	Yes	3.4
	Total	100.0

Source: Field Data, 2014

Table 34: Number of Males and Females Laborers (by day) across Ecological Zones

Agro-Ecological Zone				Paid Labor		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count	16		16
			% within Sex of Farmer	100.0		100.0
		Female	Count	14		14
			% within Sex of Farmer	100.0		100.0
	Total		Count	30		30
			% within Sex of Farmer	100.0		100.0
Forest	Sex of Farmer	Male	Count	30	11	41
			% within Sex of Farmer	73.2	26.8	100.0
		Female	Count	49	12	61
			% within Sex of Farmer	80.3	19.7	100.0
	Total		Count	79	23	102
			% within Sex of Farmer	77.5	22.5	100.0
Guinea Savannah	Sex of Farmer	Male	Count	16	2	18
			% within Sex of Farmer	88.9	11.1	100.0
		Female	Count	85	10	95
			% within Sex of Farmer	89.5	10.5	100.0
	Total		Count	101	12	113
			% within Sex of Farmer	89.4	10.6	100.0
Transitional	Sex of Farmer	Male	Count	17	0	17
			% within Sex of Farmer	100.0	0.0	100.0
		Female	Count	40	2	42
			% within Sex of Farmer	95.2	4.8	100.0
	Total		Count	57	2	59
			% within Sex of Farmer	96.6	3.4	100.0

Source: Field Data, 2014

2.12 Categories of MoFA staff

Table 35 shows the categories of MoFA staff across the various districts surveyed. It presents the ages, gender and professional skills. One noticeable feature relating to staffing at the district level is the fact that there is a sizeable number of extension officers present in each district but only few of the districts have gender specialists or desk officers.

Table 35: Category of District MoFA Staff – Age, Gender and Professional Skills

	Average Age	Sex of Staff		Professional Skills	
		Male	Female	Skilled	Unskilled
Coastal Savannah	47.18	9 (81.8)	2 (18.2)	10 (90.9)	1 (9.1)
Forest	45.43	45 (85.3)	7 (14.7)	40 (76.9)	12 (23.1)
Guinea Savannah	45.78	67 (94.4)	19 (5.6)	61 (70.9)	25 (29.1)
Transitional	42.62	43 (95.6)	2 (4.4)	40 (88.9)	5 (11.1)

Note: Figures in bracket represent percentages

2.13 Gender Mainstreaming – Surveyed Districts of MoFA

This section presents the results obtained from the qualitative data obtained from the district offices of Ministry of Food and Agriculture offices. The respondents were district directors of the various offices and some technical officers present at the respective offices. The findings show that many of the staff appreciated, and had fair knowledge about, gender-related issues and the need to incorporate such issues into the activities of the Ministry in relation to dealing directly with farmers.

– District Level Gender Needs

In the Tarkwa Nsuaem in the Forest zone, a MoFA staff stated that *"Women in the district are into processing of oil palm, and gari but do not have the processing equipment and storage facilities"*. In Kpando District, the officer indicated that many issues facing women relate to ownership of land: *"Women in the district are not considered custodian of the land". Additionally, "more access to land through financing should be made available to women in the district".*

– Gender Aims and Goals of District level MoFA

The survey further indicated the major aim of MoFA relating to gender issues in their respective districts. In the Keta district, the officer stated that the district has no policy direction of its own relating to gender issues.

Again, the key informant interview (KII), brought to the fore some major constraints faced by district level MoFA in mainstreaming gender issues into their respective activities: These are presented in Text Box II below:

TEXT BOX II: Constraints to Gender

Some major constraints at the district level of MoFA pertaining the mainstreaming gender into their activities include:

"Inability *of women to attend meetings since meeting times do not favor them"; "In some communities women normally feel uncomfortable to talk in the presence of men"* – Atebubu District

Finance for gender activities – Tarkwa Nsuaem District

"Our major constrain is getting gender related data" – Kpando District

"Access to capital, agriculture implement, market and access roads" – Nkwanta North

3.0 FOCUS GROUP DISCUSSIONS – KEY FINDINGS

3.1 Introduction

This section presents qualitative and quantitative findings of focus group discussions (FGDs) that formed part of the GCS survey instruments that were used in the Baseline Survey on Gender and Agriculture. The qualitative study component was conducted during the same timeframe as the household survey. The qualitative team visited target communities in the Agro-Ecological zones and undertook focus group discussions. The team also conducted formal interviews and informal conversations with key informants who had insight into various economic activities, socio-cultural norms and livelihood development of the communities under study. Table 3.0 shows the Agro-Ecological zones and the districts in which the FGDs were carried out. Two communities from each district were selected and two separate FGDs with male and female groups were held. Critical among the discussions were the nature of association with farm-based organizations (FBOs), main crops cultivated, decision making at the household level, economic and social empowerment of women as well as alternative livelihood activities by farmers. The results of the FGDs are presented in the following sections, starting with information on FBOs.

3.2 Farm-Based Organizations (FBOs) in the Four Zones – by Sex of Farmer

According to the findings from the FGDs as shown in Table 36, farmers within the four Agro-Ecological zones belong to some established and recognized FBOs. In some cases, all participants in the FGDs belong to FBOs, especially in the Transitional and Coastal zones. Gender representation in most of these FBOs used for the FGDs is high and in some instances females formed the majority. In the Guinea Savannah zone, for instance, all the female farmers who participated in the discussions belong to an FBO while only half the men in the zone belong to such organizations.

Table 36: Men and women who belong to FBOs

Gender	Agro-Ecological zone			
	Forest	Transitional	Coastal	Guinea Savannah
Men	%	%	%	%
Yes	85.7	100.0	100.0	50.0
No	14.3			50.0
Total	100.0			100.0
Women				
Yes	85.7	100.0	100.0	100.0
No	14.3			0.0
Total	100.0			100.0

Source: Survey, 2014

3.3 Crops Cultivated

From the FGD, farmers in the Forest and Transitional zones are mainly engaged in cassava production, with some indicating cocoa as their main crop (Table 37). The primary crops cultivated in the Coastal and Guinea Savannah zones are slightly different from that of the Transitional and Forest zones. In the Coastal and Guinea Savannah zones farmers tend to cultivate onions, maize, groundnuts and soybean. Alternative crops such as maize, plantain, okro, tomatoes, pepper, Bambara beans, yam and oil palm are also cultivated by the farmers in the Transitional and Forest zones. In terms of gender, female farmers in the Forest and Transitional zones cultivate cassava and cocoa as their main crops while female farmers in the Coastal zone primarily cultivate vegetables such as onion and tomato.

Table 37: Crops cultivated by Agro-Ecological zone

Agro-Ecological zone	Gender					
	Women			Men		
	Major crop	Frequency	Percent	Major crop	Frequency	Percent
Coastal Savannah	Onion	3	75.0	pepper	1	25.0
	tomatoes	1	25.0	tomatoes	1	25.0
				onions	2	50.0
	Total	4	100.0	Total	4	100.0
Forest	cassava	13	65.0	cassava	9	45.0
	cocoa	4	20.0	cocoa	4	20.0
	groundnut	1	5.0	maize	1	5.0
	tomatoes	1	5.0	palm tree	1	5.0
	vegetables	1	5.0	yam	5	25.0
	Total	20	100.0	Total	20	100.0
Guinea Savannah	cassava	2	8.3	cassava	3	12.5
	groundnut	5	20.8	groundnut	7	29.2
	maize	10	41.7	maize	6	25.0
	okro	2	8.3	sorghum	3	12.5
	rice	1	4.2	soya bean	2	8.3
	soya bean	2	8.3	yam	3	12.5
	yam	2	8.3			
	Total	24	100.0	Total	24	100.0
Transition	beans	3	25.0	cassava	5	41.7
	cassava	6	50.0	maize	2	16.7
	maize	1	8.3	yam	5	41.7
	vegetable	2	16.7			
	Total	12	100.0	Total	12	100.0

Source: Survey, 2014

3.4 Socio-Cultural and Religious Restrictions Affecting Agricultural Production

The FGDs indicate that women in the Coastal Savannah zones are not restricted from engaging in any agricultural activities based on religious or socio-cultural grounds. However, women in the Forest zone are restricted culturally from directly fishing (going to fish in the river) and farming on Fridays as well as owning land in some cases. Other socio-cultural norms affecting women agricultural activities include "women not being allowed to farm after the death of a neighbor" and not being allowed to farm on some specified days.

3.5 Household Level Agricultural and Non-Agricultural Decision-Making

Although across all four zones, men make most of the decisions in the household, in the Coastal Savannah zone women say decision-making is a collective responsibility between men and women. The following are some of the expressions given by some of the women:
"In some cases, we [women] suggest to our husbands when they are considering a decision regarding an issue and we come to an agreement as to what to do"
"Our husbands most often come to us for suggestions when they want to make some decisions and we assist them"

Agriculture-related decisions such as sale of animals and other farm produce in the household was found to be exclusively reserved for men in most of the Agro-Ecological zones. However, there are instances where decisions are taken collectively by men and women.

Figure 22: Consultants interviewing women in one of the zones

3.6 Control of Benefits (Income) Accrued from Farming Activities (Men or Women)

Findings from the FGDs suggest that women have some level of control over incomes accrued from sale of farm produce even though men are mostly the ones in control. Some of the women in the FGDs explained:

"We often control the money obtained from the sale of farm produce since we [women] undertake the sale of the farm produce, but our husbands are often aware of the proceeds."

"The men collect the money we get from selling the farm produce but they share it with us so we can buy the things we need."

3.7 Gender Roles in Agriculture

According to the results obtained from the FGDs, men across the zones are predominantly engaged in labor-intensive activities (for example land preparation, weeding, application of agro-chemicals) during the farming season with women providing assistance in the form of provision of water and food. Nonetheless, women engage in activities such as planting, harvesting (collecting and gathering the harvested produce) and post-harvest activities including processing (e.g., making cassava dough, gari and palm oil) and marketing of produce.

According to the women, farming activities such as weeding (using hoes and cutlass), conveying harvested produce to places of storage are too difficult for them to engage in. In the Guinea Savannah zones, women identified the making of ridges (mounds) as a very difficult and arduous task to engage in during the farming season. On the part of male farmers, activities such as spraying and general application of agro-chemicals is are dangerous and hazardous.

Figure 23: Consultants interviewing an all women group

4.0 CONCLUSION AND RECOMMENDATIONS

The survey results clearly point out the considerable differences between male and female farmers across each of the Agro-Ecological zones in Ghana. For instance, the survey revealed clear differences in livelihood and food security across Agro-Ecological zones as expected. Given that 47.3 percent of people employed by the agricultural sector are women, the role of women cannot be discounted or understated especially as this has implications on national food security. Hence, mainstreaming gender-related issues into agriculture is imperative.

Generally, there were notable differences in food security challenges among farmers in the study; however, the challenges of farmers in the Guinea Savannah and Transitional zones were more pronounced. Also dietary diversity among farmers across the Agro-Ecological zones was moderate implying that farmers were largely eating unbalanced meals.

Land is the most important livelihood asset for most households across Ghana, especially in the rural areas. The study revealed that while men generally have unconditional access to, and control and ownership over, land for agricultural purposes, women have challenges regarding land control and security. In other words, access, control and ownership of land is highly inequitable in its distribution with women being at the disadvantage. This gender gap relating to land as a productive resource has implications for income generation for female farmers and food security. It is therefore important that concrete decisions are taken to eliminate or reduce to the barest minimum some of the gender gaps such as patriarchal practices and other barriers which confront women, especially access to and ownership of land.

Moreover, farmer access to credit was relatively low across all the Agro-Ecological zones, with female farmers being slightly at disadvantage compared with their male counterparts although it was indicated that there were avenues for obtaining credit (formal and informal) for economic activities. Nonetheless, the conditions relating to loan acquisitions hinder most farmers from accessing such facilities. Women tend to lack confidence to go to the banks, as they are unfamiliar with the system and because women in Ghana tend to be more cautious at taking risks than men. While women will need credit to be able to grow their businesses, requirements from financial institutions are often stringent. The formation of gender-based FBOs to access credit (group lending) was identified as a key remedy to these difficulties faced by women.

Furthermore, given the fact that women's time use was mostly related to non-SNA activities such as child care, cooking, laundry/cleaning, fetching of firewood and caring for the sick, this has implications on their contribution to food production and income generation. Notwithstanding, female farmers spend close to 6 hours working on farms and about 2 hours working on their home gardens. Women were also found to have less time use in relation to leisure and sleeping/resting perhaps due to their defined gender roles in the household.

The extent of awareness, knowledge and appreciation of gender issues among staff surveyed at the district level of MoFA was found to be fair although most of them do not have the requisite expertise to undertake gender analysis.

From the FGDs, the study established that farmers surveyed (male and female) appreciated the importance of having social capital through the formation of farmer based cooperative societies and other Farmer-Based Organizations (FBOs) since these initiatives could enhance access to productive resources and ensure household food security and reduce household poverty. As such, measures should be put in place to encourage the formation of effective farmers' cooperatives and other farmers' organizations for the purpose of knowledge transfer, input and output distribution and marketing, savings mobilization, and farm credit sourcing and supply.

4.1 Recommendations

Based on the findings of the study, the following recommendations are made:

In order to improve the capacity of women to utilize land for their agricultural activities along the value chain, it is recommended that the government, NGOs as well as agribusiness companies should assist especially female farmers in providing agricultural packages such as farm inputs, modern implements, micro financing and markets. The study recommends that the current interventions such as the Fertilizer Subsidy Program instituted in July 2008 and other related programs should be targeted to reach more women farmers.

The qualitative survey findings suggest that women strongly desire to own and control land in order to be able to make independent decisions with respect to land use, marketing of produce and control of crop sale proceeds. It is recommended that the government should undertake land reforms and the enactment of relevant legislation with the aid of land owners (custodians) at the traditional level in order to empower both men and women with secure land tenure to carry out agricultural activities. The output of the reform process should incorporate provisions of the National Gender Policy. It is important that some level of collaboration is established with projects like the Land Administrative Project (LAP) to ensure that any review or reform of land tenure legislation fully considers the needs of women farmers, especially in situations where there are significant numbers of female-headed households. This would aid in the achievement of "improve access on information on land rights" outlined in the GADS.

Additionally, regarding women's tenure security across the Agro-Ecological zones, it is recommended that the government should continue to dialogue with the traditional authorities so that the forces of land reform and modernization are accommodated to specifically benefit women or female farmers.

Conscious collaborative efforts among stakeholders should aim at reducing female farmers' time use on non-productive activities and responsibilities in the household so that the time saved can be channeled into productive work, thereby assisting in improving women incomes, reducing poverty, ensuring food security among others.

To ensure that policies directed at improving food security among rural households yield the needed impact. Policies, programs and projects should target consider female headed households since they have the likelihood of being more food secured than male headed households.
Further recommendations proffered include:

In order to make a real impact on food production and food security, agriculture spending and policy need to focus more deeply on women farmers. MoFA (through WIAD) and other partners should strategically target at least 30 percent women participation in all programs and projects in the short to medium term.

4.1.1 Integrating Gender Sensitive Issues into Extension Service delivery

There is the need for MoFA to integrate gender sensitive issues into extension services delivery in Ghana through establishing pro-female farmer field schools and farmer-to-farmer exchanges, and setting up gender-sensitive learning and evaluation mechanisms to improve extension services to women farmers, and encouraging increased participation of females in extension services delivery.

4.1.2 Establishment of Women Enterprise Fund

Government should consider establishing a Women Enterprise Fund to help provide credit to women farmers who cannot access credit from the formal financial sector. The key will be to ensure that there is sufficient capital to reach large numbers of women farmers, and that MoFA and the Ministry of Gender, Children and Social Protection transparently and efficiently manage it jointly.

4.1.3 Creating Synergy between MoFA and CSOs and NGOs

This has to do with mainstreaming the activities of other gender and agricultural oriented Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs) into MoFA to create some level of synergy. The Policy Planning and Budget (PPB) Directorate; Monitoring and Evaluation (M&E) Directorate; Agri-Business Unit and Projects Coordination Unit of MoFA and the FBO Desk at the Directorate of Agricultural Extension Services should support and engage actively with women's civil society organizations and networks such as farmer groups and women's cooperatives and facilitate their systematic inclusion and participation in the development, implementation, monitoring and evaluation of agricultural policies and programs.

4.1.4 Gender-sensitive Agricultural Engineering Services

To enhance mechanization among women farmers, individual farmers as well as farmers' groups that are eager to procure tractors and improved traditional tools, should be targeted for support by the Agricultural Engineering Services Directorate of MoFA through the establishment of Agricultural Mechanization Service Centers (AMSEC). This would help reduce the labor shortages for land preparation and improve women's productivity since they will make use of less energy while producing more for home consumption and for the market. There should be adequate strategies for promoting appropriate farm mechanization, including the promotion of animal traction technology, with the use of draft animal equipment and work bulls where applicable. Successful implementation of this will further aid in addressing the objective of "improve development and promotion of appropriate technologies in agriculture" as stipulated in the GADS.

APPENDICES

APPENDIX I

Table AN: Types of Farm Animals Reared by Sex of Farmers

Agro-Ecological Zone				Which other economic activities are you engaged in?					Total
				Cows	Sheep	Goat	Poultry	Pigs	
Forest	Sex of Farmer	Male	Count		4	15	18	3	19
			% within Sex of Farmer		21.1%	78.9%	94.7%	15.8%	
		Female	Count		3	14	18	0	21
			% within Sex of Farmer		14.3%	66.7%	85.7%	0.0%	
	Total		Count		7	29	36	3	40
Guinea Savannah	Sex of Farmer	Male	Count	7	10	11	11	2	11
			% within Sex of Farmer	63.6%	90.9%	100.0%	100.0%	18.2%	
		Female	Count	9	9	29	30	8	45
			% within Sex of Farmer	20.0%	20.0%	64.4%	66.7%	17.8%	
	Total		Count	16	19	40	41	10	56
Transitional	Sex of Farmer	Male	Count	0	4	20	19	1	24
			% within Sex of Farmer	0.0%	16.7%	83.3%	79.2%	4.2%	
		Female	Count	7	16	25	40	3	52
			% within Sex of Farmer	13.5%	30.8%	48.1%	76.9%	5.8%	
	Total		Count	7	20	45	59	4	76
Percentages and totals are based on respondents.									
a. Dichotomy group tabulated at value 1.									

Source: Household Baseline Data, 2014

Table AN 1: Category of District MoFA Staff – Age, Gender and Professional Skills

Agro-Ecological zones	Districts	Age	Gender	Professional Skills
Forest	Axim	52	M	Agronomist
		52	M	Agric Extension Officer
		28	M	Animal Production Officer
		43	M	Agric Extension Agent
		54	M	Agric Extension Agent
		52	F	WIAD
		41	M	Agric Extension Agent
		41	M	Agric Extension Agent
		35	M	Agric Extension Agent
		47	M	Agric Extension Agent
		36	M	Animal Health officer
		41	F	Market Enumerator
		48	F	Accountant
		30	F	Typist
		37	M	Driver
		52	M	Laborer
		45	M	Laborer
		45	M	Laborer
		30	M	Laborer
Forest	Juabeso	49	M	Agriculturist
		54	M	Veterinary Officer
		44	M	Accountant
		52	M	Snr. Technical Officer
		53	M	Asst. Chief Technical Officer
		54	M	Asst. Chief Technical Officer
		57	M	Chief Technical Officer
		49	M	Chief Technical Officer
		52	M	Technical Officer
		41	M	Technical Officer
		57	M	Snr. Technical Officer
		33	F	Stenographer
		32	F	Principal Technical Asst.
		56	M	Heavy Duty Driver
		56	M	Heavy Duty Driver
Forest	Nkwanta	53	M	Agric Extension Officer
		49	M	Animal Production Off
		55	F	Agric Extension Agent
		32	M	Agric Extension Agent
		52	M	WIAD
		50	M	Agric Extension Agent
		46	M	Agric Extension Agent
		47	M	Agric Extension Agent
		30	M	Agric Extension Agent
		56	M	Animal Health officer
		54	M	Market Enumerator
		36	M	Accountant
		28	M	Agric Extension Agent
		57	M	Agric Extension Agent

Agro-Ecological zones	Districts	Age	Gender	Professional Skills
		59	M	Agric Extension Agent
		41	M	Agric Extension Agent
		56	M	Agric Extension Agent
		54	M	Agric Extension Agent
		56	M	Agric Extension Agent
		31	F	Agric Extension Agent
		53	M	Laborer
		57	F	Agric Extension Agent
		55	M	Laborer
		40	M	Laborer
		50	M	Laborer
		44	M	Laborer
		35	M	Laborer
Forest	Kpando	57	F	Agriculturist
		30	M	MIS Officer
		36	M	DAO
		59	M	Extension Officer
		56	M	Extension Officer
		29	M	DAO
		28	F	Extension Officer
		48	M	Extension Officer
		40	M	Veterinary Officer
		55	F	Market Enumerator
		56	M	Laborer
		51	M	Cleaner
		40	M	Cleaner
		43	M	Security
		36	M	Extension Officer
		32	M	Driver
Transitional Zone	Bechem	56	M	Extension Officer-General Agric
		34	F	Extension Officer –General Agric
		35	M	Extension Officer-General Agric
		32	M	Extension Officer-General Agric
		58	M	Veterinary Officer
		30	M	Extension Officer-General Agric
		36	M	Engineer Technician
		54	M	Extension Officer-General Agric
		52	M	Extension Officer-General Agric
		53	M	Extension Officer-General Agric
		54	M	Extension Officer-General Agric
		43	M	Extension Officer-General Agric
		53	M	Extension Officer-General Agric
		43	F	Veterinary Officer
		42	M	Extension Officer-General Agric
		54	M	Extension Officer-General Agric
		41	M	Extension Officer-General Agric
		34	M	Extension Officer-General Agric
		46	M	Extension Officer-General Agric
		52	M	Executive Officer

Agro-Ecological zones	Districts	Age	Gender	Professional Skills
		29	F	Typist/Stenographer
		32	M	Driver
		56	M	Cleaner
		44	Security	Security
Transitional Zone	Wenchi	31	M	Agric Extension Agent
		35	M	Agric Extension Agent
		33	M	Agric Extension Agent
		43	M	Accountant
		47	M	Agriculturist
		52	M	Animal Health Officer
		49	M	Agriculturist
		57	M	Agriculturist
		58	M	Agriculturist
Transitional Zone	Atebubu	57	M	Veterinary Officer
		31	M	Extension Officer
		32	M	Agric Extension Officer
		29	M	Agric Extension Officer
		42	M	Agric Extension Officer
		35	M	Agric Extension Officer
		34	M	Agric Extension Officer
		33	M	Agric Extension Officer
		33	M	Agric Extension Officer
		39	M	Agric Extension Officer
		39	M	Agric Extension Officer
		39	M	Agric Extension Officer
		45	M	Agriculturist
		33	M	Snr. Technical Officer
		30	M	Asst. Chief Technical Officer
		58	M	Asst. Chief Technical Officer
Coastal Savannah	Keta	32	M	Chief Technical Officer
		30	M	Chief Technical Officer
		55	M	Technical Officer
		55	M	Technical Officer
		56	M	Agric Extension Agent
		52	M	Agric Extension Agent
		57	M	Agric Extension Agent
		55	M	Agric Extension Agent
		52	M	Agric Extension Agent
		54	M	Agric Extension Agent
		46	M	Agric Extension Agent
		51	M	Chief Technical Officer
		41	F	Technical Officer
		48	M	Technical Officer
		32	M	Snr. Technical Officer
		31	F	Stenographer

Source: Field Data, 2014

Table AN 2: Women Wake-up Time – Off Season

Agro-Ecological zone			Percent
Coastal Savannah	Valid	2-5am	28.6
		5:30- 8am	71.4
		Total	100.0
Forest	Valid	2-5am	62.3
		5:30- 8am	36.1
		6-10am	1.6
		Total	100.0
Guinea Savannah	Valid	2-5am	34.4
		5:30- 8am	64.6
		6-10am	1.0
		Total	100.0
Transitional	Valid	2-5am	33.3
		5:30- 8am	57.1
		6-10am	9.5
		Total	100.0

Source: Field Data, 2014

Table AN 3: Women Sleeping Time – Off Season

Agro-Ecological zone			Percent
Coastal Savannah	Valid	6-8pm	28.6
		9-11pm	71.4
		Total	100.0
Forest	Valid	6-8pm	55.7
		9-11pm	44.3
		Total	100.0
Guinea Savannah	Valid	6-8pm	46.8
		9-11pm	53.1
		Total	100.0
Transitional	Valid	6-8pm	40.5
		9-11pm	59.5
		Total	100.0

Source: Field Data, 2014

Table AN 4: Women Time Spent on Farming Activity – Off Season

Agro-Ecological zone			Percent
Coastal Savannah	Valid	< 6 hours	64.3
		6-8hrs	35.7
		Total	100.0
Forest	Valid	< 6 hours	45.9
		6-8hrs	42.6
		9-10hrs	11.5
		Total	100.0
Guinea Savannah	Valid	< 6 hours	67.7
		6-8hrs	27.1
		9-10hrs	4.2
		10.00	1.0
		Total	100.0
Transitional	Valid	< 6 hours	52.4
		6-8hrs	28.6
		9-10hrs	19.0
		Total	100.0

Source: Field Data, 2014

Table AN 5: Sex of Farmer and Use of tractor as Labour Saving Device

Agro-Ecological Zone				Tractor		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count	16		16
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	14		14
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	30		30
			% within Sex of Farmer	100.0%		100.0%
Forest	Sex of Farmer	Male	Count	21	5	26
			% within Sex of Farmer	80.8%	19.2%	100.0%
		Female	Count	35	0	35
			% within Sex of Farmer	100.0%	0.0%	100.0%
	Total		Count	56	5	61
			% within Sex of Farmer	91.8%	8.2%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	13	5	18
			% within Sex of Farmer	72.2%	27.8%	100.0%
		Female	Count	95	1	96
			% within Sex of Farmer	99.0%	1.0%	100.0%
	Total		Count	108	6	114
			% within Sex of Farmer	94.7%	5.3%	100.0%
Transitional	Sex of Farmer	Male	Count	30	2	32
			% within Sex of Farmer	93.8%	6.3%	100.0%
		Female	Count	63	5	68
			% within Sex of Farmer	92.6%	7.4%	100.0%
	Total		Count	93	7	100
			% within Sex of Farmer	93.0%	7.0%	100.0%

Source: Field Data, 2014

Table AN 6: Sex of Farmer and Use of Knapsack sprayer as Labour Saving Device

Agro-Ecological Zone				Knapsack Sprayer		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count		16	16
			% within Sex of Farmer		100.0%	100.0%
		Female	Count		14	14
			% within Sex of Farmer		100.0%	100.0%
	Total		Count		30	30
			% within Sex of Farmer		100.0%	100.0%
Forest	Sex of Farmer	Male	Count	11	15	26
			% within Sex of Farmer	42.3%	57.7%	100.0%
		Female	Count	28	7	35
			% within Sex of Farmer	80.0%	20.0%	100.0%
	Total		Count	39	22	61
			% within Sex of Farmer	63.9%	36.1%	100.0%
Guinea Savannah	Sex of Farmer	Male	Count	12	6	18
			% within Sex of Farmer	66.7%	33.3%	100.0%
		Female	Count	96	0	96
			% within Sex of Farmer	100.0%	0.0%	100.0%
	Total		Count	108	6	114
			% within Sex of Farmer	94.7%	5.3%	100.0%
Transitional	Sex of Farmer	Male	Count	24	8	32
			% within Sex of Farmer	75.0%	25.0%	100.0%
		Female	Count	56	12	68
			% within Sex of Farmer	82.4%	17.6%	100.0%
	Total		Count	80	20	100
			% within Sex of Farmer	80.0%	20.0%	100.0%

Source: Field Data, 2014

Table AN 7: Sex of Farmer and Use of Rotovators as Labour Saving Device

Agro-Ecological Zone				Rotovators		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count	15	1	16
			% within Sex of Farmer	93.8%	6.3%	100.0%
		Female	Count	14	0	14
			% within Sex of Farmer	100.0%	0.0%	100.0%
	Total		Count	29	1	30
			% within Sex of Farmer	96.7%	3.3%	100.0%
Forest	Sex of Farmer	Male	Count	26		26
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	35		35
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	61		61
			% within Sex of Farmer	100.0%		100.0%
Guinea Savannah	Sex of Farmer	Male	Count	18		18
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	96		96
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	114		114
			% within Sex of Farmer	100.0%		100.0%
Transitional	Sex of Farmer	Male	Count	29	3	32
			% within Sex of Farmer	90.6%	9.4%	100.0%
		Female	Count	66	2	68
			% within Sex of Farmer	97.1%	2.9%	100.0%
	Total		Count	95	5	100
			% within Sex of Farmer	95.0%	5.0%	100.0%

Source: Field Data, 2014

Table AN 8: Sex of Farmer and Use of Shellers as Labour Saving Device

Agro-Ecological Zone				Shellers		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count	14	2	16
			% within Sex of Farmer	87.5%	12.5%	100.0%
		Female	Count	14	0	14
			% within Sex of Farmer	100.0%	0.0%	100.0%
	Total		Count	28	2	30
			% within Sex of Farmer	93.3%	6.7%	100.0%
Forest	Sex of Farmer	Male	Count	26		26
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	35		35
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	61		61
			% within Sex of Farmer	100.0%		100.0%
Guinea Savannah	Sex of Farmer	Male	Count	14		18
			% within Sex of Farmer	77.8%		100.0%
		Female	Count	96		96
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	110		114
			% within Sex of Farmer	96.5%		100.0%
Transitional	Sex of Farmer	Male	Count	32		32
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	68		68
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	100		100
			% within Sex of Farmer	100.0%		100.0%

Source: Field Data, 2014

Table AN 9: Sex of Farmer and Use of Threshers as Labour Saving Device

Agro-Ecological Zone				Threshers		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count	16		16
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	14		14
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	30		30
			% within Sex of Farmer	100.0%		100.0%
Forest	Sex of Farmer	Male	Count	26		26
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	35		35
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	61		61
			% within Sex of Farmer	100.0%		100.0%
Guinea Savannah	Sex of Farmer	Male	Count	14		18
			% within Sex of Farmer	77.8%		100.0%
		Female	Count	96		96
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	110		114
			% within Sex of Farmer	96.5%		100.0%
Transitional	Sex of Farmer	Male	Count	32		32
			% within Sex of Farmer	100.0%		100.0%
		Female	Count	68		68
			% within Sex of Farmer	100.0%		100.0%
	Total		Count	100		100
			% within Sex of Farmer	100.0%		100.0%

Source: Field Data, 2014

Table AN 10: Sex of Farmer against Sales of Farm Produce

Agro-Ecological Zone				Sales of farm produce		Total
				No	Yes	
Coastal Savannah	Sex of Farmer	Male	Count			100.0%
			% within Sex of Farmer			14
		Female	Count			100.0%
			% within Sex of Farmer			30
	Total		Count			100.0%
			% within Sex of Farmer	100.0%		100.0%
Forest	Sex of Farmer	Male	Count	2		26
			% within Sex of Farmer	7.7%		100.0%
		Female	Count	1		35
			% within Sex of Farmer	2.9%		100.0%
	Total		Count	3		61
			% within Sex of Farmer	4.9%		100.0%
Guinea Savannah	Sex of Farmer	Male	Count	0		18
			% within Sex of Farmer	0.0%		100.0%
		Female	Count	28		96
			% within Sex of Farmer	29.2%		100.0%
	Total		Count	28		114
			% within Sex of Farmer	24.6%		100.0%
Transitional	Sex of Farmer	Male	Count	2		32
			% within Sex of Farmer	6.3%		100.0%
		Female	Count	10		68
			% within Sex of Farmer	14.7%		100.0%
	Total		Count	12		100
			% within Sex of Farmer	12.0%		100.0%

Source: Field Data, 2014

Table AN 11: Number of months Farmers Face Food Insecurity disaggregated by Sex

Agro-Ecological Zone				How many months during the year does your household find it difficult to get enough food to eat?							Total
				0	1	2	3	4	5	6	
Coastal Savannah	Sex of Farmer	Male	Count	7		4	3	2			16
			% within Sex of Farmer	43.8		25.0	18.8	12.4			100.0
		Female	Count	11		1	1	1			14
			% within Sex of Farmer	78.6		7.1	7.1	7.1			100.0
	Total		Count	18		5	4	3			30
			% within Sex of Farmer	60.0		16.7	13.3	10.0			100.0
Forest	Sex of Farmer	Male	Count	18	0	1	3	4	0		26
			% within Sex of Farmer	69.2	0.0	3.8	11.5	15.4	0.0		100.0
		Female	Count	21	1	2	7	3	1		35
			% within Sex of Farmer	60.0	2.9	5.7	20.0	8.6	2.9		100.0
	Total		Count	39	1	3	10	7	1		61
			% within Sex of Farmer	63.9	1.6	4.9	16.4	11.5	1.6		100.0
Guinea Savannah	Sex of Farmer	Male	Count	10		0	8	0	0		18
			% within Sex of Farmer	55.6		0.0	44.4	0.0	0.0		100.0
		Female	Count	39		7	39	10	1		96
			% within Sex of Farmer	40.6		7.3	40.6	10.4	1.0		100.0
	Total		Count	49		7	47	10	1		114
			% within Sex of Farmer	43.0		6.1	41.2	8.8	0.9		100.0
Transitional	Sex of Farmer	Male	Count	10		0	8	0	0		18
			% within Sex of Farmer	55.6		0.0	44.4	0.0	0.0		100.0
		Female	Count	39		7	39	10	1		96
			% within Sex of Farmer	40.6		7.3	40.6	10.4	1.0		100.0
	Total		Count	49		7	47	10	1		114
			% within Sex of Farmer	43.0		6.1	41.2	8.8	0.9		100.0

Source: Field Data, 2014