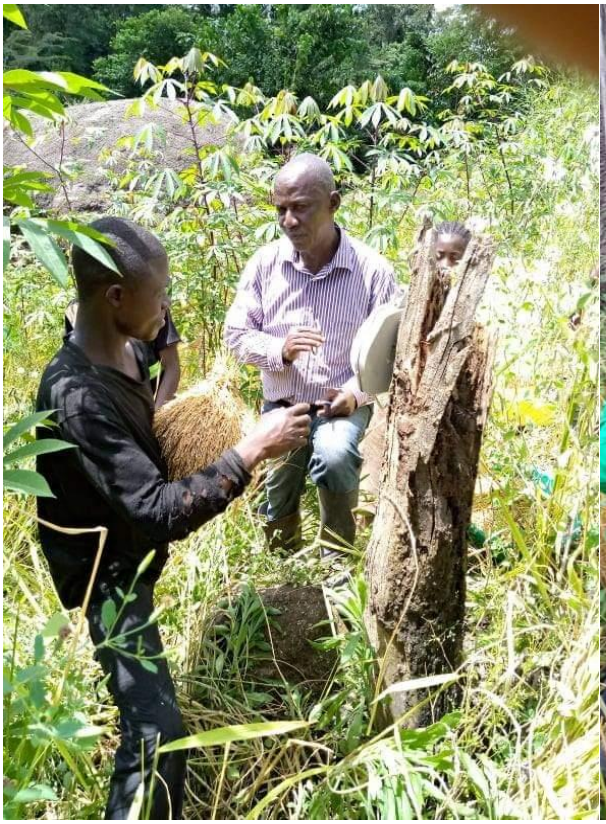
Food and Agriculture Organization
of the United Nations

LIBERIA AGRICULTURE PILOT SURVEY

FINAL REPORT

MINISTRY OF AGRICULTURE

APRIL,2019



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FOREWORD

The agriculture sector in Liberia is arguably the principal engine of growth and economic transformation. For that growth to be planned and executed effectively, data on what pertains in the sector is crucial for decision-making.

The Government of Liberia through the Ministry of Agriculture therefore requested the Food and Agriculture Organization of the United Nations (UNFAO) to rehabilitate the Agricultural Statistical System under the Technical Cooperation Program (TCP/3602). Since the appropriate methodologies for annual agricultural surveys do exist, and trained staff are present in the Ministry of Agriculture, this Liberia Agriculture Pilot Survey (2019) was commissioned. It has been prepared by the Statistics Division of the Department of Planning and Development of the Ministry of Agriculture in collaboration with the Liberia Institute of Geo-information Service (LISGIS) and with technical support from FAO-Liberia.

The Liberia Agriculture Pilot survey was conducted in four out of the fifteen counties of Liberia. It seeks to serve as a quick reference for various category of users, by providing salient features of Liberian agriculture in figures, with focus on crops such as rice and cassava, livestock, and fisheries.

With this first effort completed, the Ministry of Agriculture intends to continue and expand agriculture and crop surveys throughout the country and for all agricultural value chains. This report, and others to follow, will provide quality, consistent, and timely information of the agriculture sector for the formulation of sound development policies and plans to improve the efficiency of crop production in Liberia.
I am therefore please to deliver this maiden edition of the Liberia Agriculture {Pilot} Survey for 2019 and hope that it will provide practitioners with the tools and references needed to guide planning for the full realization of President George Manneh Weah's Pro-Poor Agenda for Prosperity and Development.

Jeannie Milly Cooper
MINISTER OF AGRICULTURE R.L.
Monrovia, Liberia

ACKNOWLEDGEMENT

The Ministry of Agriculture (MOA) through its Division of Statistics conducted 2019 Agriculture Pilot Survey under the TCP/3602 Project with the primary objective of providing relevant statistics for agricultural development planning. A pilot agriculture survey of this type requires a great deal of efforts, cooperation, a high level of commitment and technical as well as administrative support. Many individuals have made some contributions from the planning stage, data collection and towards publication of the results. Accordingly, we wish to sincerely extend our thanks and appreciations to those who have contributed in making the 2019 Agricultural pilot survey a very successful one. We are particularly grateful to the former Minister of Agriculture, Dr. Mogana S. Flomo, Jr. and Madam Mariatou Njie, FAO Country Representative who exerted some efforts in mobilizing resources, which enabled the survey team to accomplish the first pilot crop survey. We are very fortunate to have worked with people who recognized the usefulness of statistics. Thus, we owe a great deal to Hon. Jeannie Milly Cooper, the current Minister of Agriculture and Hon. Robert K. Fagans Sr., Deputy Minister for Planning and Development for their administrative and moral support. Special mention is due to Hon Francis F Wreh , Director-General for Liberia Institute of Statistics and Geo-Information Services (LISGIS) for his technical advice and administrative guidance during the data collection and summarization as well as analytical process of the survey results. Special mention is made of Mr. Lamin Janneh, International consultant for data processing and Mr. Kofi Agyeman-Duah, international statistician hired by FAO as our mentor to make this survey a successful one. Gratitude is expressed to the staff in the statistics division and LISGIS Agriculture section for their level of hard works and cooperation in the field. We are indebted to the Local Government Authorities who assisted our field personnel in the form of interpreting, logging, escorting and introducing them to the farmers. Principal contributors were the selected farmers who have cooperated, opened to dialogue about their agricultural as well as basic socio-economic activities. They deserve credit. Gratitude is expressed to the field personnel of the Ministry of Agriculture (MOA) whose dedication and sacrifices have made the field activities of the 2019 Agricultural Survey possible despite of several constraints. So many people have contributed to this report, and it is difficult and impossible to thank them individually. However, we extend thanks and appreciation to those individuals and Institutions, time does not permit us to mention one by one.

Mr. Aagon Nyanqgbeanquoi Yoko
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List of Acronyms

AAS	Annual Agricultural Survey
CAPI	Computer Assisted Personal Interview
CsPRO	Census and Survey Processing System
CV	Coefficient of Variation
EA	Enumeration Area
FAO	United Nations Food and Agriculture Organization
GIS	Geographic Information System
GPS	Global Positioning System
Ha	Hectares
HH	Household
HIES	Household Income Expenditure Survey
LISGIS	Liberia Institute of Statistics and Geo-Information Services
MOA	Ministry of Agriculture
MPEA	Ministry of Planning and Economic Affairs
MT	Metric Tons
PPS	Probability Proportional to Size
PSUs	Primary sampling units
SDGs	Sustainable Development Goals
SPSS	Statistical Program for Social Scientists
TCP	Technical Cooperation Programme
WCA2020	World Census of Agriculture 2020

Executive Summary

Introduction

The 2019 crops pilot was undertaken in four counties in Liberia: - three from the food basket counties namely, Bong, Lofa and Nimba and one county from the least food producing counties (Bomi). The main objectives of the Pilot Survey are to:

- Collect timely, reliable, and accurate agricultural statistics on major food crops and livestock.
- Provide gender-disaggregated agricultural statistics on key agricultural activities.
- Provide indicators for the MoA to lead and monitor trends in food security status and vulnerability assessment.
- Provide indicators for monitoring the sustainable development goals (SDGs);
- Ensure that a user-friendly agricultural database is developed to enhance the availability and accessibility of crop production statistics, crop forecasting and market price statistics.
- Ensure that agriculture and food security web-based database is set-up to assemble, verify, integrate, validate and disseminate all available data in the sector and allowing smooth access and utilization by all stakeholders using FAO Country Stat Platform; and
- Above all, to test the survey instruments including the use of the CAPI technology.

A probability sample design in which each sampling unit in the target population has a known, non-zero probability of being included in the sample was adopted. A three-stage stratified cluster sample design was used. At the first stage, 42 EAs were selected from a frame provided by LISGIS. At the second stage, 420 agriculture households were systematically selected from a list of agriculture households within the sampled EAs. At the third stage, two sample farms were selected randomly from each of the two crops (rice and cassava) from the list of farms prepared separately for the EA.

At the end of the survey, 405 agriculture households and 42 EAs were successfully covered.

The Computer Assisted Personal Interview (CAPI) technology was used by the enumerators to collect information from the respondents. The questionnaire was designed in CSPro 7.0 and CAPI application was employed in the data capture. The SPSS software and Cspro 7.0 were used for data editing and data cleaning; and SPSS and Excel were used for the tables.

Demographic characteristics of agricultural households (Chapter 2)

The total agricultural households' population in the four counties was reported at 717,668. Out of this, 48.2% were males and 51.8% females. Nimba County has the highest agriculture population of 275,048 and Bomi County with the least 42,010.

The total number of holders was reported at 218,729 and out of this, Nimba County has the total of 96,882 holders and Bomi County has the least of 8,054 holders. The survey reported the number of agriculture households head at 160,613 and the average household size as four (4.0).

For all ages, Nimba county recorded 275,048 followed by Bong with the total of 210,615, Lofa 189,994 and Bomi accounting for 42,010. The survey report revealed that under 18 years in the agriculture household, Nimba reported at 130,327 followed by Bong with the total of 103,992

The agriculture population between 25 to 34 years were reported at 100,888 with female's population accounting for 62,032 compared to male population with 38,856. Those who age 65+year in the agriculture household were reported at 13,659, and out of this, 8,488 were females and 5,171 males.

Vulnerability (Chapter 3)

As many as 62,140 children between the ages 4-17 years were not going to school at the time of the survey. out of this estimate, 30,306(48.8%) were not going to school because the household found schooling expensive or had no money to send the child to school. Another (6,485) 10.42 percent cited the distance to school being too far as the reason for the child not going to school. Other reason worth mentioning are child not interested in school was reported at 2,510(4.04%) and child too young to go to school 8,284(13.33%).

The disability status of all household members was collected. The total number of people living with disability was 5,733 and out of this, Bong County recorded 3,329 people with disability. A detailed analysis of the disability data shows that the most common form of disability is physical with the total of 2,073 females compared to males with 1,292 members.

Land Use (Chapter 4)

The total number of holders acquired land within the enumeration area (EA) by various means. Nimba county reported 69,029 compared to Lofa with the total of 48,227. Out of this,66,797 holders inherited the land in Nimba and 48,753 in Lofa followed by Bong with a total of 37,179 and Bomi with the total of 5,596 holders. The number of holders that purchased land in Bong was reported at 4,156 compared to Lofa with a total of 1,889 followed by Nimba 1,569 and Bomi

with the least of 33 holders. 1,666 holders used community land in Lofa followed by Bong 569, Nimba 366 and Bomi 351. The holders that borrowed land in Bomi was reported at 5,295 compared to Bong with the total of 1,592 followed by Nimba 267 and Lofa with the total of 179.

The Survey results indicate that 557,668 ha of land was used by the agriculture households in the four counties in 2019. About 61.9 percent (345,319 ha) of the land area was utilized for temporary crops like cereals and vegetables. Approximately, 26.4 percent (146,978 ha) of the land is under permanent crops (cocoa, oil palm, or rubber) and 11.4% (63,704 ha) under temporary fallow.

A total of 190,098 metric tons of rice (upland) was reported to have been produced by the four counties. Nimba County (68,567Mt) was the highest producer of rice followed by Lofa (63,543 Mt) and Bong (49,510 Mt) while Bomi recorded only 8,466 Mt.

The combined cassava production of the four counties was reported at 334,339 metric tons with a yield of 5.4 metric tons per hectare. Nimba recorded the highest production of 147,827 Mt followed by Bong (98,155 Mt), Lofa (74,296 mt) and Bomi (16,061Mt)

Extension Service (Chapter 5)

Extension services were provided by the government and other partners to farmers through various sources. The total agricultural households were reported at **717,668**. Out of this, the number of households that received extension information through radio were reported at 26,246 farmers,17,644 received information on new agriculture practices,7,373 received information on crop varieties. 6778 received information through farmer-to-farmer interaction, 150 received through farmer association and 149 through other source of information. 300 farmers received information on credit facilities and 72 households receiving farm machinery information. Plant Disease and Pest information was provided to 6,986 households/ Agriculture marketing is one of the key important aspects as relate to agriculture commodity. The results only show that 1,012 households received marketing information.

Access of Facilities (Chapter 6)

Facilities on education, food storage, health, information, etc. were used as an indicator to determine the traveling distance for agriculture households. 109,437 agriculture households walked up to 30 minutes to primary school. Out of this, 50,081 (45.8%) in Nimba followed by 35,492(32.4%) in Lofa, 20,142 (18.4%) in Bong and 3,722 (3.4%) in Bomi. The total of 57,831 households walked 30 minutes to food storages facilities. Of this number, 25,817 in Nimba; Lofa

25,674, Bong 5,292 and Bomi 1,048 compared to 21,709 and 21,476 that covered one hour for primary school and food storage facilities, respectively.

Means of Transport (Chapter 7).

The households in the agriculture sector normally used transportation to transfer their goods from one location to another. The number of households involved in renting or hiring transport facilities were reported at 67,732 members.

Out of this estimate, 45,577 (67.3%) rent motorbike and 1,119 (1.9%) owned motorbike. The number of households that rent or hired pick-up were reported at 9,255(13.7%) compared to 3,696(5.5%) households that rent or hired tricycle.

Storage Facilities (Chapter 8)

The agriculture households that owned and stored their harvest under shelter/outside/kitchen was reported at 113,089 with storage capacity of 2.6 metric tons which was less than 71,931 households that owned bags with storage capacity of 5.3 metric tons. This result mean those who used bags have more storage capacity than under shelter/outside kitchen.

The agriculture households that used sealed containers was reported at 4,525 with storage capacity of 2.6 metric tons as compared to specific house room and drum (1.9 metric ton). However, none of the households' own silo for storage purpose but cold storage, underground and other specify were reported less than (0.1 to 0.3) metric tons

Access to Loan (Chapter 9)

The total of 20,565 holders applied for loan in the last five years and out of this,16,658 holders were in Nimba County compared to Bong county with the total of 1,391 holders followed by Bomi with 1,364 and 1,152 holders in Lofa county. Usually, loans are applied for various reasons like purchasing seeds, fertilizer, agro- chemicals, de-busing (clearing of land) and hiring of labour. Regardless of the county, the loans received were largely 19,911 total applicants.

Out of this estimate, the number of holders that received loan for agriculture labour were reported at 17,693 (89%). For purchasing of seed about 612(3.1%) holders received loan which was less than De-bushing (clearing of land) with the total of 703.

Farm Management Practices (Chapter 10)

The number of agriculture households that applied fertilizer in the survey areas was reported at 9,260. Out of this, 5,646 (61.0%) households used or applied mineral fertilizers (inorganic)

compared to 3,047(32.9%) household that used organic fertilizer. Moreover, 6.1 percent (567) households applied manure to their crops in the study areas.

The number of holders in study areas were reported at 164,160, and out of this, 160,074 (97.5%) used local seeds compared to 3,878 (2.4%) holders that used improved seeds This mean the total production in the four counties were low because 97.5 percent holders used local seeds.

This result mean that Central Agriculture Research Institute (CARI) and extension division at the ministry of agriculture need to double their work for local farmers to use improve variety.The two types of pesticide used were insecticide and rodenticides. The number of agriculture holders that applied pesticide were reported at 4,296.(100%) while (3,468) (80.7%) holder applied insecticide and 19.3 % applied rodenticides

Food Security (Chapter 11)

The total of 139,637(19.5%) households had to worry that they would not have enough food to eat because of lack of money or other resources in the 12 months preceding the survey. Out of this, Nimba county accounted for 60,865 follows by Bong with a total of 38,840, Lofa 32021 and Bomi 7,912.

The second food insecurity issue is whether households were unable to eat healthy and nutritious food. The total of 141,177(19.6%) households were unable to eat healthy and nutritious during the period. Households in Bomi (100%), Nimba (97%), Bong (97%) and Lofa 66% had challenges eating healthy and nutritious food. Another important indicator of the FIES is "households eating a few kinds of food" which was measured. Predictably, households in Bomi (100%), Bong (97%) and Nimba (92%) and Lofa 67% had this problem

Labor Inputs (chapter 12)

There were 743,234 household members engaged in permanent agricultural activities compared to 834,088 agriculture household members involved in temporary agricultural activities. Adult males constituted 38.7%**.** Adult females 38.8%, boys 11.3% and girls 11.2%. Except for Lofa county where adult females were reported at 148,576 compared to adult males 127,839. Both adult males and boys were reported at 50.01% compared to 49.98% adult females and girls in the three other counties.

Equipment (Chapter 13)

The total number of hoes reported in the survey areas were 155,799 compared to 129,849 axes. Out of this, 138,690 hoes were owned solely by the holders while 11,699 were owned by the holding jointly with other holders and 4,799 were borrowed.

The total of 110,382 axes were owned by the holders while 13, 437 were owned by the holding jointly with other holdings and 5,111 axes were borrowed. Although, 307 were provided by other private holders.

Livestock (Chapter 14)

A total of 40,175 agriculture households reported having livestock (cattle, goats, sheep, poultry etc. 42.0 percent of households in Nimba County reported of having livestock followed by Bong with 16.0 percent. Both Lofa and Bomi recorded about 14.0 percent and 2.0 percent, respectively.

The number of cattle owned by households in Lofa and Nimba was recorded at 8,619 herds. Of this number females owned 5,011 (58.14%) male ownership constitutes 41.9%. Indigenous cattle (beef) constituted 4,137 (82.6%) and crossbreed (beef) were 874 (17.4%).

Conclusion

Despite the challenges encountered, the results generally show that the survey instruments (questionnaires) can help address most of the food security and vulnerability issues in Liberia and the CAPI technology is very effective and efficient in collecting agriculture data.
However, it must be stressed that the data from the Pilot Survey covered only four (4) out of the 15 counties in Liberia and cannot substitute for data from the annual agriculture survey since the TCP was primarily put in place for the FAO to assist the MoA to undertake a pilot agriculture survey based on the CAPI technology. Therefore, the MoA Management should endeavor to ensure that resources are mobilized from the Government of Liberia and other development partners to undertake the main survey as soon as possible

CHAPTER 1: INTRODUCTION

1.1 Background

Data is needed for planning processes, such as the design of agricultural programs, investment in agriculture or the evaluation of existing agricultural policies and its impact on farmer outputs, Agricultural surveys are one way to obtain such data. Research on agricultural activities of households seeks to collect and analyze the entire value chain of agriculture, both subsistence and non-subsistence farming. Results of such research can help to evaluate policies for addressing needs in the agricultural sector of Liberia.

The first Annual Agriculture Production Survey in Liberia was conducted in 1974 by the Ministry of Planning and Economic Affairs (MPEA) after the first Agricultural Census of Liberia was conducted in 1971. It was mainly designed to facilitate the availability of agricultural statistics in Liberia. The responsibility was later transferred to the Ministry of Agriculture (MOA) in 1976. Annual Production Surveys continued to be supported for the major crops in Liberia until 1989 except for two years in 1979 and 1980, due to financial constraints.

Conflict and capacity constraints resulted in limited socio-economic, geo-information and statistical gaps in Liberia after 1989. Most data and major censuses were lost during the civil war, thus rendering historical statistics unavailable. The existing National Statistical and Geo-

Information System lack capacity in data collection and compilation and institutional memory. These obstacles adversely affect the production of timely, reliable, comprehensive, and coordinated national socio-economic statistical and spatial information. As a result, evidence-based policy decision-making is limited in Liberia.

However, soon after the war, in 2004, the government established an autonomous agency, the Liberia Institute of Statistics and Geo-Information Services (LISGIS). The agency is responsible for the production of reliable statistical and spatial data, including data acquisition, analysis, geo-information, and communication to meet the demands of domestic and international clients.

To bridge the data gap created as a result, in 2014/15 the Crop Cutting Survey was made an integral part of the Household Income Expenditure Survey (HIES) undertaken by LISGIS. The Survey provided production estimates for the two key staple crops in Liberia - Rice and Cassava.

In 2018, the Ministry of Agriculture under the FAO Technical Cooperation Programme TCP/LIR/3602 decided to re-activate the Annual Agriculture Survey by conducting the 2019 Pilot Survey in accordance with the UN WCA2020 taking into consideration the Sustainable Development Goals (SDG2).

1.2 Objectives

The immediate objectives of the Pilot Survey are to:

- Collect timely, reliable, and accurate agricultural statistics on major food crops and livestock.
- Provide gender-disaggregated agricultural statistics on key agricultural activities.
- Provide indicators for the MoA to lead and monitor trends in food security status and vulnerability assessment.
- Provide indicators for monitoring the sustainable development goals (SDGs).
- Ensure that a user-friendly agricultural database is developed to enhance the availability and accessibility of crop production statistics, crop forecasting and market price statistics.
- Ensure that agriculture and food security web-based database is set-up to assemble, verify, integrate, validate and disseminate all available data in the sector and allowing smooth access and utilization by all stakeholders using FAO Country Stat Platform; and
- Above all, to test the survey instruments including the use of the CAPI technology.

1.3 Scope and Coverage

The target population or the universe for the pilot Agriculture Survey 2019 is defined as all the agricultural households engaged in crop cultivation and/or livestock farming in the four selected

counties. However, the survey population consisted of all rural areas in the selected EAs. Also undeveloped parts within the settlements of the urban areas with rural characteristics were included in the universe.

1.4 Sample Design

Some counties in Liberia are the bread baskets of the country whilst others are known to be the least when it comes to food production. Thus for the pilot survey whose main purpose among others, is to test the survey instruments and the CAPI technology, four counties – three from the food basket counties namely; Bong, Lofa and Nimba and one county from the least food producing counties - Bomi were considered.

Having initially settled on these four counties, a probability sample design in which each sampling unit in the target population has a known, non-zero probability of being included in the sample was adopted. A three-stage stratified cluster sample design was used for the Pilot Survey where

the first stage units are the Primary Sampling Units (PSUs) simply the enumeration areas (EAs) or clusters selected from a 2011 National Sample Frame (EA frame) provided by LISGIS. The second stage units are the agriculture households systematically selected from a current list of agriculture households within the sampled EAs. The third sample frame consisted of a list of all the farms under the same crop within all the sampled agricultural households in each sample EA. Two separate lists were prepared for rice and cassava. Each of these lists served as the sampling frame for the selection of farms for the crop cutting experiments. Three rice and one cassava sample farms were then selected randomly from each of the two crops from the list of farms prepared for the EA. The crop cutting exercise provided the data for the computation of the production and yield estimates.

1.5 Sample Size and Sample Selection

A total of 420 agricultural households in 42 sample EAs were targeted but in the end 405 agricultural households and 42 EAs were successfully covered. At the first stage, 42 EAs were selected systematically. At the second stage, after a complete household listing by the field team, 10 agricultural households were selected systematically from each EA visited. Finally, at the third stage, four sample farms were selected randomly from each of the two crops from the list of farms prepared for the EA.

1.6 Data Capture

The Computer Assisted Personal Interview (CAPI) technology was used by the enumerators to collect information from the respondents. This appreciably ensured data quality by minimising inconsistencies in data and error during the data capture and processing. Specifically:

- The questionnaire was designed in CSPro 7.0 and CAPI application was employed in the data capture.
- The SPSS software and Cspro 7.0 were used for Data editing and data cleaning.; and
- SPSS and Excel were used for the tables.
- The TCP/3602 project ended in October 2019,

1.7 Funding

Technical assistance and funding of the Pilot Liberia Pilot Agriculture Survey were mainly provided by the FAO through the Technical Cooperation Programme TCP/LIR/3602.

1.8 Presentation of Results

The report covers fourteen (14) out of the 18 major topics studied in the survey. These are:

1. Introduction/Background
2. Demographic Characteristics
3. Vulnerability and Disability
4. Crops and Land Use
5. Extension Service and Agriculture Information
6. Access to Facilities
7. Means of Transport
8. Storage Facilities
9. Access to loan/credit
10. Farm Management Practices
11. Food Security
12. Labor Inputs.
13. Equipment and
14. Livestock.

Where possible, figures are compared with those obtained in the 2011 Liberia Annual Agriculture Survey since the frame used for the Pilot Survey emanated from the 2011 population projections supplied by LISGIS.

CHAPTER 2: AGRICULTURAL HOUSEHOLDS DEMOGRAPHIC CHARACTERISTICS

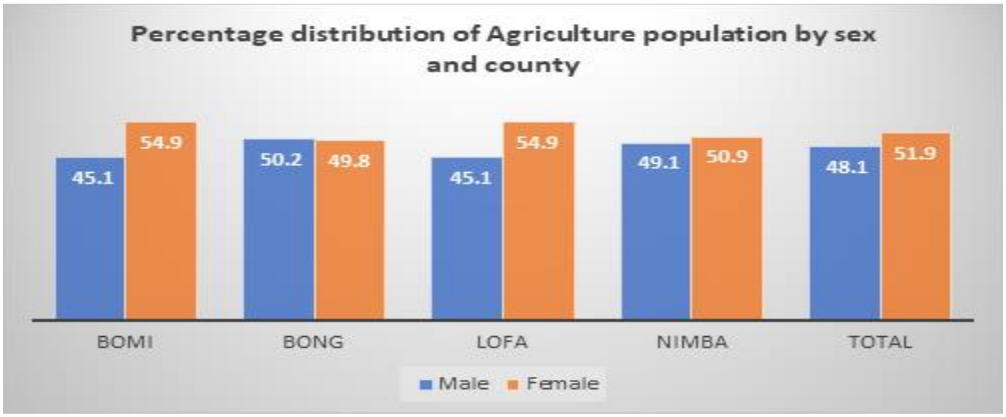
This section discusses the demographic characteristics of the agriculture households surveyed in the four counties of Liberia.

2.1: *Size of population in agriculture households by sex and County, 2019*

The total agricultural household population in the four counties was recorded to be 717,668. Out of this 48.2% were males and 51.8% were females (Table 2.1 and Figure 2.1). Nimba County has the highest agriculture population of 275,048 and Bomi County with the least 42,010. The estimates obtained from the Pilot Survey compares favorably with figures obtained by the LISGIS Agriculture Survey conducted in 2011 for the four counties as well as LISGIS 2017 projected population figures (Appendix D1).

3.1.1 Table 2.1: Size of population in agriculture households by sex and County, 2019

County	Male	% of Tot	Female	% of Tot	Total	% of Tot
Bomi	18,926	45.1	23,083	54.9	**42,010**	100
Bong	105,727	50.2	104,888	49.8	**210,615**	100
Lofa	85,702	45.1	104,292	54.9	189,994	100
Nimba	135,116	49.1	139,932	50.9	**275,048**	100
Total	**345,472**	**48.1**	**372,196**	**51.9**	**717,668**	**100**



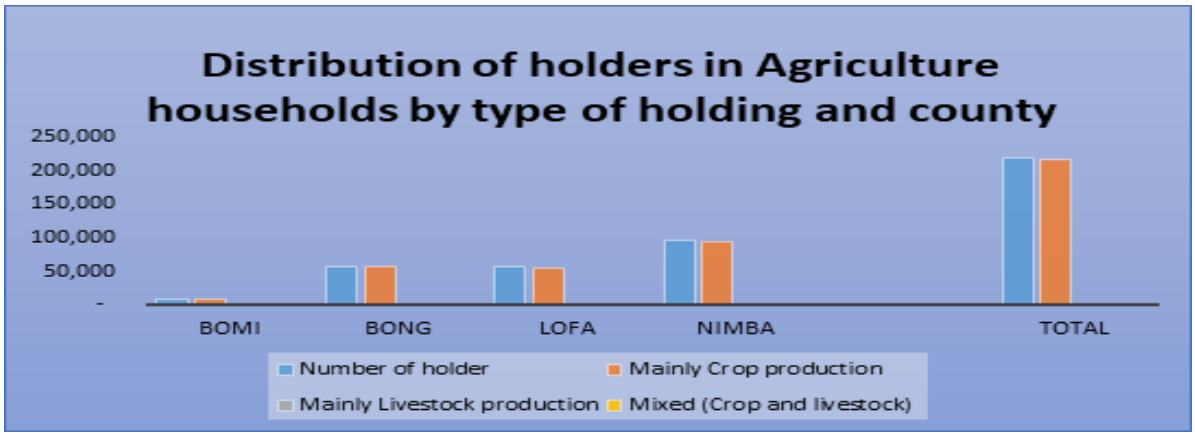
2.2: Distribution of population in agriculture households by number of holders, type of holding and county

Table 2.2 show the population in the agriculture households as well as the agriculture holders. The total number of holders was assessed to be 218,727, of which Nimba County obtained 96,882 (35%) holders and Bomi County has the least of 8,054(19%) holders. However, the total type of holdings mainly crop production was reported at 216,689 compared to mixed crop and livestock with the total of 2,038 holding.

Table 2.2 Distribution of population in Agricultural households by number of holders, type of holding and county

Description		Total Holders	Type of holding

	Total pop in Agri. Hh	Number	%	Mainly Crop production	%	Mainly Livestock production	%	Mixed (Crop and livestock)	%
Total	717,668	218,727	30	216,689	99	0	0	2038	1
Bomi	**42,010**	8,054	19	8,054	100	0	0	0	0
Bong	**210,615**	57,943	28	57,871	99.8	0	0	72	0.1
Lofa	**189,994**	55,848	29	55,597	99.5	0	0	251	0.5
Nimba	**275,048**	96,882	35	95,167	98.2	0	0	1715	0.8



2.3 Distribution of agriculture population by County and household size and average size of holding

The average household size is one of the important indicators which influence the wellbeing of the house given their resources. So, the interest is not only in the size of the population but also the average household size. The number of agriculture households head was reported at 160,613 with the average household size as four (4.0). Bomi and Bong each has the average size of five (5.0) while the average household sizes range from one (1) to over 10. The households with 4-5 members were 59,309. One-member household were 3,131 and households with 10 or more were 2,427. Noticeably, while Lofa did not have any single household with 10 or more members (Table 2.3).

Table 2.3: Distribution of agriculture population by County and household size and average size of holding

County	Total		Agricultural Household Size						Averag Hh Size
	Agriculture Population	Agriculture Household	%	One	(2 - 3)	(4 - 5)	(6 - 9)	10 +	
Bomi	42,010	7,912	19	186	1984	1662	4047	33	5
Bong	210,615	40,917	19	1462	10529	10897	16368	1661	5
Lofa	189,994	48,879	26	1033	20643	19065	8138	0	4
Nimba	275,048	62,905	23	451	20670	27686	13366	733	4

2.4: Distribution of population in the agriculture households by sex and age group

Table 2.4 shows the population in the agriculture households in the four counties. For all ages, the female population in the agriculture households was reported at 372,195 compared to male population of 345,473. Household population under 18 years was reported at 167,269 females and males 171,017

For all ages, Nimba county recorded 275,048 followed by Bong with the total of 210,615, Lofa 189,994 and Bomi accounting for 42,010. The survey report revealed that under 18 years in the agriculture household, Nimba reported at 130,327 followed by Bong with the total of 103,992.

The agriculture population between 25 to 34 years was reported at 100,888 with female's population accounting for 62,032 compared to 38,857male population. The total agriculture household's population between the ages of 45 to 54 years were reported at 58,732 in the four counties. Nimba constituted about 27,719 (47.2%) with the total male population of 19,526 compared to female with a total of 8,193. The total agriculture household in Lofa was reported at 16,043(27.3%) and out of this number, the female population in the agriculture households was 8,739 and male 7,304. Ages 65+ in the agriculture household were reported at 13,659, of which 8,488 were females and 5,171 males.

Table 2.4. Distribution of population in the agriculture households by sex and age group

		Under 18	18 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 +	
Bomi	Male	11,313	2,338	1,500	1,452	924	969	430	18,926
	Female	11,839	2,685	2,345	3,131	1,329	1,245	510	23,084
	Total	**23,152**	**5,023**	**3,845**	**4,583**	**2,253**	**2,214**	**940**	**42,010**
Bong	Male	55,254	13,677	9,980	13,620	5,608	5,643	1,946	105,728
	Female	53,738	16,261	11,251	9,741	7,109	4,713	2,074	104,887
	Total	**108,992**	**29,938**	**21,231**	**23,361**	**12,717**	**10,356**	**4,020**	**210,615**
Lofa	Male	43,274	10,532	10,200	11,502	7,304	2,531	359	85,702
	Female	38,001	10,994	25,682	16,002	8,739	1,962	2,912	104,292
	Total	**81,275**	**21,526**	**35,882**	**27,504**	**16,043**	**4,493**	**3,271**	**189,994**
Nimba	Male	61,136	14,350	17,177	14,362	19,526	6,129	2,436	135,116
	Female	69,191	19,628	22,753	14,751	8,193	2,424	2,992	139,932
	Total	**130,327**	**33,978**	**39,930**	**29,113**	**27,719**	**8,553**	**5,428**	**275,048**

2.5 Relationship of agricultural household members to head of household

Table 2.5 show the population in the agriculture households as well as the agriculture holders in the four counties. The total male and female headed agriculture households was reported at 160,613 and out of this, the female headed households was 27.9% compared to male headed household 72.1%. In terms of agriculture holders, 48.07% (345,049) were males and 51.92% (372,620) were females in the survey areas.

Out of this total, Nimba county male headed was reported at 52,591 compared to female headed 10,314. Bong with a total of 32,555 male headed and female headed households 8,362. Lofa male headed households was reported at 27,145 and female headed households was reported at 21,735 and Bomi haven the least of 4,357 male headed households compared to female 3,183 in **Table 2.5(Appendix D).**

2.6 Educational attainment

This section looks at the educational attainment of the number of holders in the survey areas. The number of holders that has never been to school were reported at 147,049 in the four counties. Out of this, Bong county recorded 36,254 followed by Lofa with 33,834, Nimba, 27463 and Bomi with only 4,490. For those who had been to school but had not gone beyond primary school was reported at 61,070. Again, only 54,041 people have attained either junior high, senior high school, vocational or degree (Table 2.6 appendix D).

2.6A. Agriculture population size by sex, literacy status and county

One need not to have formal education to be able to read or write. However, modern day agriculture requires literate farmers to be effective and efficient to use improved and adopt modern methods of agriculture. Hence, the literacy status of the agriculture household members 15 years and older were solicited from respondents. Table 2.6A shows that 46.71 percent (263,350) of households could not read or write.

Table 2.6A: Agriculture population size by sex, literacy status and County

Number of agriculture household member				
COUNTY	**Read or write**	Don't read or write	**TOTAL**	**Percent illiterate**
Bomi	18,594	13,599	32,193	42.24%
Bong	77,132	90,253	167,385	53.92%
Lofa	76,567	83,893	160,460	52.28%
Nimba	128,161	75,605	203,766	37.10%
Total	300,454	263,350	563,804	46.71%

2.7 Main Activity

The household members main activities were solicited in Table 2.7 appendix D. The total number of male & female involve in economic activities of survey areas were as followed: 319,676 households practiced crop production the four counties, 489 households in livestock activity and 5,144 households in trading. For the economically inactive, students were found to be in the majority (169,649) followed by 38,191 who were involved in household work. No activity, not looking for job were reported at 1,676.

2.9 Secondary Activity, Sex and Counties

The total secondary activities were presented in table 2.9 appendix D. The total male and female involved in crop production as a secondary activity were reported at 174,674 in the four counties, 83,346 households were trader, 2,514 households involved in livestock activity and 918 males were involved in fishing only in Lofa County. For the economically inactive, those who engages in household work were reported at 121,458 followed by students with the total of 112,653. Only Bomi county practiced aquaculture with the total member of 33 and those who involved in artisan were reported at 3,143 in Bomi and Bong Counties.

2.10 Marital Status of the households

Table 2.10 shows the marital status of the households 12 years and over. Thirty nine percent (183,670) out of the 466,411 were found to be never married. Out of the never married, the male accounted for 101,476 and females with the total of 87,194. On the contrary, 131,814 females were married compared to 99,549 males. The survey report shows that 3,156 females were divorced compared to 789 males. The total of 7,651 females were widowed in comparison to 492 males

Table 2.10: Agriculture household population aged 12 years and over by sex, age group, marital status

Marital Status		*Age Group*									
		12 to 17 years		18 to 29 years			30 to 49 years		50+ year	Total	%
Never married	Male	47,504		42,258			10,408		1,306	101,476	0.218
	Female	40,617		31,329			6,608		3,640	82,194	0.176
	Total	**88,121**		**73,587**			**17,016**		**4,946**	**183,670**	0.39
Married	Male	-		13,288			56,767		29,494	99,549	0.213
	Female	389		47,191			67,689		16,545	131,814	0.283
	Total	389		60,479			124,456		46,039	231,363	0.50
iving Togethe	Male	0		4,951			11,540		2,105	18,596	0.040
	Female	0		6,299			6,662		194	13,155	0.028
	Total	**0**		**11,250**			**18,202**		**2,299**	**31,751**	0.068
Divorced	Male	-		-			789		-	789	0.00
	Female	-		194			2,219		743	3,156	0.007
	Total			**194**			**3,008**		**743**	**3,945**	0.01
Widowed	Male	-		-			5		487	492	0.001
	Female	-		-			1,252		6,399	7,651	0.016
	Total						1,257		6,886	8,143	0.02
Seperated	Male	-		-			476		622	1,098	0.002
	Female	-		9			900		1,081	1,990	0.0043
	Total			9			1,376		1,703	3,088	0.01
Don't Know	Male	833		-			-		-	833	0.00
	Female	2,994		624					-	3,618	0.01
	Total	3,827		624						4,451	0.01
General Total		**92,337**		**146,134**			**165,315**		**62,616**	**466,411**	1.00

CHAPTER 3: ***VULNERABILITY AND DISABILITY***

3.1 Children not going to School

Schooling is the starting point to the total development of the child. However, as many as 62,140 children between the ages 4-17 years were found not going to school at the time of the survey (Table 3.1). Several reasons were assigned for the children not being in school. The total of 30,306(48.8%) were not going to school because the household found schooling expensive or had no money to send the child to school. Another 10.42 percent (6,485) cited the distance to school being too far as the reason for the child not going to school. Other reason worth mentioning are child not interested in school was reported at 2,510(4.04%) and child too young to go to school 8,284(13.33%).

There were county variations. Cost of schooling and households not having money permeated through all the counties. As far as distance to school as a hindrance is concerned, 4,478 (7.21%) children in Bong and 1,813 (2.92%) children in Lofa were affected. “Children work for money or food” was also another factor which affected 1,249 (16.5%) children in Nimba and Bong Counties. In Bomi for instance, 4,116 (6.62%) percent of the children were not going to school because of the cost of schooling or household had no money. In Nimba and Bong County, the survey report shows that 1,452(2.34%) children were found not going to school because they were pregnant. The total of 3,471 (5.59%) children in Bong, Lofa and Nimba were not in school because they had to help with household work.

Table 3.1: Proportion of Children aged 4-17 not currently in school and reasons for not being in school by county

Reason	Bomi		Bong		Lofa		Nimba		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
illness	-	-	-	-	291	-	-	194	485
work for food or money	-	-	833	-	-	-	416	-	1,249
help with household work	-	-	1,661	1,391	107	-	312	-	3,471
care for ill or disabled household r	-	-	-	-	-	-	-	-	
care for younger sibling	-	-	-	-	369	-	-	-	369
not interested in school	33	79	208	1,107	222	369	-	492	2,510
distance to school too far	-	-	2,343	2,135	740	1,073	-	194	6,485
no food at home,	-	-	-	-	-	-	-	-	
expensive or no money	2,728	1,388	6,307	4,117	3,440	3,465	5,740	3,121	30,306
child considered too young	51	-	-	1,520	1,671	-	374	4,668	8,284
pregnancy/marriage,	-	-	-	828	-	-	-	624	1,452
expelled from school,	-	-	-	-	-	-	-	-	
failure e.g. of exams,	-	-	-	-	-	-	-	-	
completed High School	-	-	-	-	-	-	-	-	
disability,	-	-	-	-	-	-	-	-	
other,	-	-	326	-	489	549	395	2,149	3,908
NA	-	-	1,174	562	-	-	789	1,095	3,620
Total	**2,812**	**1,467**	**12,853**	**11,660**	**7,329**	**5,456**	**8,026**	**12,537**	62,140

3.2 Biological Parents of Children

Children usually become very vulnerable when they lose their biological parents or when their biological parents are alive but for some reason, they do not stay with them the same household. Table 3.2 depicts that the biological mothers of 22,274 children were not alive. Children in Nimba (35%) and Lofa (34%) were the most affected. For those children, whose mothers were alive, 234,978 of them were not staying with their mother.

As far as biological father is concerned, 32,588 number of the children had lost them. Here also children in Lofa 16,102(49%) and Nimba 9,885(30%) were more vulnerable. Again, 221,982 children did not stay with their biological fathers with Nimba County recording 79,915 (36%) children and Bong 75,868(34%) children

Table 3.2: Population of children age 4-17 years with biological mother alive by county

COUNTY	Biological Mother Alive	%	Biological Mother in agriculture households	%	Biological Mother not in agriculture households	%	Biological Father Alive		Biological Father in agriculture households		Biological Father not in agriculture households		DK
Bomi	16,100	0.07	15,173	0.07	927	0.04	11,689	0.05	9,448	0.05	2,241	0.07	**0**
Bong	82,440	0.35	76,562	0.36	5,878	0.26	75,868	0.34	71,508	0.38	4,360	0.13	**0**
Lofa	60,774	0.26	53,107	0.25	7,667	0.34	54,510	0.25	37,859	0.20	16,102	0.49	**549**
Nimba	75,664	0.32	67,862	0.32	7,802	0.35	79,915	0.36	70,031	0.37	9,885	0.30	**0**
Total	**234,978**	**1.00**	**212,704**	**1.00**	**22,274**	**1.00**	**221,982**	**1.00**	**188,845**	**1.00**	**32,588**		**549**

3.3 Disability

The disability status of all household members was collected. The total number of people living with disability was 5,733 and the highest number of people with disability was recorded in Bong County (3,329).

A detailed analysis of the disability data shows that the most common form of disability is physical with the total of 2,073 females compared to males with 1,292 members. Bong County with a total of 1,946 people who are physically challenged. Sight affects 716 females in Bomi and Nimba County and hearing affect 612 females and 208 males in Bong and 251 in Lofa counties (Table 3.3).

Table 3.3: Percentage distribution of household with disability, type of disability by sex and county

Type of Disability	Bomi		Bong		Lofa		Nimba		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Sight	-	300	-	-	-	-	-	416	-	716
Hearing	-	-	208	612	251	-	-	-	459	612
Speech	-	-	-	-	-	-	-	-	-	-
Physical	-	300	1,041	905	251	-	-	867	1,292	2,073
Intellect	-	-	-	-	-	-	-	-	-	-
Emotional	-	-	-	-	-	-	-	-	-	-
Other (specify)	-	-	-	562	-	-	29	29	29	592
Total	**-**	**600**	**1,249**	**2,080**	**502**	**-**	**29**	**1,312**	**1,781**	**3,992**

CHAPTER 4: CROPS AND LAND USE

4.1 Means of Acquisition of farms/parcels and Plots

Table 4.1 appendix D revealed the total number of holders that acquired land within the enumeration area (EA) by various means were reported at 160,031. Out of this, Nimba county constituted 69,029 followed by Lofa with the total of 48,227, Bong 37,179 and Bomi 5,596.

The total of 41,486 holders operate outside the enumeration areas but within the district. Out of this, Nimba constituted 25,074 followed by Bong with the total of 8,019, Lofa 5,101 and 3,392 in Bomi. However, the total of 836 holders operate in outside the district, of which 361 in Bong and 475 in Bomi counties.

The holders that purchased land in the four counties were reported at 7,647. Out of this, 4,156 in Bong, 1889 in Lofa, 1569 in Nimba and 33 in Bomi counties.

The total of 7,612 holders used community land in the survey areas, of which 1,666 holders in Lofa, 5,229 in Bong, 366 in Nimba and 351 Bomi. The holders that borrowed land in the four counties were reported at 2,605. Out of this, Bong accounted for1,592 followed by Bomi with the total of 569, Nimba 265 and 179 in Lofa counties.

The total of 139,372 holders inherited land within the EA, and 37,165 inherited land outside the EA but within the district, however, 803 inherited land outside the district.

4.2: Land Use Type

Table 4.2 appendix D indicate that 557,668 ha of land was used by the agriculture households in the four counties in 2019. About 61.9 percent (345,319 ha) of the land area was utilized for temporary crops like cereals and vegetables. Approximately, 26.4 percent (146,978 ha) of the land is under permanent crops (cocoa, oil palm, or rubber) and 11.4% (63,704 ha) under temporary fallow.

4.3: Distribution of Farms Parcels by Gender of the Farm Manager

Table 4.3 show the total distribution of farm parcels by gender of the farm manager was reported at 166,045 with males accounting for 68.4% compared to female with 31.6%. The total gender within the EA were reported at 132,066 and of this, 67.7% were male compared to 32.3% female. Outside EA but within the District were reported at 33,509. Out of this, 23,892 males were reported compared to 9,617 females.

Table 4.3: Number of distribution of farm/parcels by gender of the farm manager, location and County

	Male	Female	Total
Within EA	89,376	42,690	**132,066**
Outside EA but within District	23,892	9,617	**33,509**
Outside District	365	105	**470**
Total	**113,633**	**52,412**	**166,045**

4.4: Rice and Cassava production within the survey areas

The Sustainable Development Goal 2.3 stipulates among other things that, by 2030 countries should double the agricultural productivity. For this reason, the Survey tried to measure the production and yield of the two most important crops in Liberia.

A total of 190,098 metric tons of rice (upland) was reported to have been produced by the four counties. Nimba County (68,567Mt) highest producer of rice followed by Lofa (63,543 Mt) and Bong (49,510 Mt) while Bomi recorded only 8,466 Mt (Table 4.4). In terms of total production, the figures are higher than what was achieved in 2011. In 2011, the production levels for Bong (47,210Mt), Lofa (51,440Mt), Nimba (61,630Mt) and Bomi (7,390Mt)[1]. However, the yield of 1.14 metric tons per hectare invariably, shows that Liberia has not been able to improve the yield per hectare over the years

The combined cassava production of the four counties was reported at 334,339 metric tons with a yield of 5.4 metric tons per hectare. Nimba recorded the highest production of 147,827 Mt followed by Bong (98,155 Mt), Lofa (74,296 mt) and Bomi (16,061Mt)

Table 4.4: Estimate of area under crop production, yield by type of crop and County

Estimates of Rice production 2019					
Rice Production					
Description	Number of Agriculture household	Average farm Area per household (Ha)	Average Yield per Ha	Average Yield per Household	Production (MT)
Total	160,613	1.16	1.14	1.17	190,086
Bomi	7,912	0.85	1.26	1.07	8,466
Bong	40,917	1.2	1.31	1.21	49,510
Lofa	48,879	1.3	1.33	1.30	63,543
Nimba	62,905	1.2	1.35	1.09	68,567

Estimates of Cassava production 2019					
Cassava					
Description	Number of Agriculture household	Average farm Area per household (Ha)	Average Yield per Ha	Average Yield per household	Production (MT)
Total	160,613	0.46	5.4	2.06	334,339
Bomi	7,912	0.41	4.6	2.03	16,061
Bong	40,917	0.47	5.6	2.32	96,155
Lofa	48,879	0.49	5.7	1.52	74,296
Nimba	62,905	0.48	5.7	2.35	147,827

CHAPTER 5: **EXTENSION SERVICES AND AGRICULTURE INFORMATION**

5.1: Agriculture households that received extension service

Extension services were provided by the government and other partners to farmers. The total agricultural household's population reported were **717,668**. Those who received extension services by various type was estimate at 12,112 and out of this, 3,273 (27%) farmers received MOA extension service. Bomi received 69 percent amongst the four counties. Local and International Non-governmental Organization (NGOs) provided extension service to 6,491 (54%) farmers in the four counties. EPA provided extension service to 416 farmers in Nimba county. The Cooperative Development Agency (CDA) only provided extension service to 46 farmers in Bomi county and MOA veterinary staff provided extension services to 72 farmers in Bong County and other constituted 834, (Table 5.1)

Table 5.1: Number of agriculture households that received Extension Services by Extension service type and County

	Bomi	Bong	Lofa	Nimba	Total
A. MoA veterinary staff	-	72	-	-	**72**
B. MoA agricultural extension officer	2,259	144	251	619	**3,273**
C. Farmers' unions	186	612	-	-	**798**
D. CDA (Cooperative Devt. Agency)	46	-	-	-	**46**
E. Local/INGO	2,040	1,704	2,038	709	**6,491**
F. Fisheries	-	-	-	-	**-**
G. Forestry	-	-	-	-	**-**
H. Private sector Dealers	-	-	-	180	**180**
I. EPA	-	-	-	416	**416**
X. Other	346	72	-	416	**834**
Total	**4,877**	**2,605**	**2,290**	**2,340**	**12,112**

5.2 Source of Extension Information

Extension services were provided by the government and other partners to farmers through various sources such as: radio, television, internet, newspaper, agriculture bulletin, extension officer, farmer to farmers, and farmers association. The total agricultural households reported were 160,613. Out of this, the number of households that received extension information through radio were 26,246 farmers, 17,644 received information on new agriculture practices,7,373 received information on crop varieties. 300 farmers received information on credit facilities, 72 households receiving farm machinery information. 6,986 households received plant disease and pest information and 1,012 households received agriculture marketing information in Table 5.2 appendix D

5.3: Main Source of Extension Service

Table 5.3 shows the total agriculture households that received main source of extension service was reported at 8,865. Out of this, (54%) received extension service in Bomi county compared to Lofa with the total of (23%) followed by Bong with (13%) household. Nimba County received least information amongst the four counties with the total of 11.2% households.

Table 5.3: Number of agriculture households received extension service by main source of extension service and County

	COUNTY				
	Bomi	**Bong**	**Lofa**	**Nimba**	**Total**
A. MoA veterinary staff	-	72	-	-	**72**
B. MoA agricultural extension officer	2,226	144	251	-	**2,621**
C. Farmers' unions	186	612	-	-	**798**
D. CDA (Cooperative Devt. Agency)	-	-	-	-	**-**
E. Local/INGO	2,040	216	1,747	403	**4,406**
F. Fisheries	-	-	-	-	**-**
G. Forestry	-	-	-	-	**-**
H. Private sector Dealers	-	-	-	180	**180**
I. EPA	-	-	-	416	**416**
X. Other	300	72	-	-	**372**
					-
Total	**4,752**	**1,116**	**1,998**	**999**	**8,865**

5.4: Number of Agriculture households who are satisfied with services received by source of service

Table 5.4 recorded 11,114 total number of households that satisfied with the various extension services in survey areas. Out of this estimate, 4,883 (44 percent) were satisfied with MOA extension officers compared to NGOs with an estimation of 3,925(35 percent) households. The total of 612 and 326 household in Bong counties were satisfied with farmers union and fisheries extension services.

The reports revealed that 4,183 households in Bomi were satisfied with various extension services followed by Bong with 2,859 households, Nimba County 2034 households and 2,038 households' in Lofa County.

Table 5.4: Number of agriculture households who are satisfied with the service received by source of service

	COUNTY				
	Bomi	**Bong**	**Lofa**	**Nimba**	**Total**
A. None	-	72	-	416	**488**
B. MoA veterinary staff	-	-	-	-	**-**
C. MoA agricultural extension officer	2,259	908	1,098	619	**4,883**
D. Farmers' unions	-	612	-	-	**612**
E. CDA (Cooperative Devt. Agency)	-	-	-	-	**-**
F. Local/INGO	1,532	869	941	583	**3,925**
G. Fisheries	-	326	-	-	**326**
H. Forestry	-	-	-	-	**-**
I. Private sector Dealers	-	-	-	-	**-**
J. EPA	-	-	-	416	**416**
X. Other	392	72	-	-	**464**
Total	**4,183**	**2,859**	**2,038**	**2,034**	**11,114**

CHAPTER 6: ACCESS TO FACILITIES

6.1 Agriculture households by Type of Facility

Facilities on education, food storage, health, information, etc were used as an indicator to determine the traveling distance for agriculture households. Those who walked up to 30 minutes to primary school were reported at 109,563 households, 57,831 to food storage, 48,281 to health facility, 72,621 to radio or mobile phone, 11,333 households used public transport.

The survey reported that the total of 109,563 households who walked for 30 minutes to a primary school in the four counties and out of this, Nimba reported 50,081 (45.7%) , Lofa 35,618(32.5%) , Bong 20,142 (18.4%) and Bomi 3,722 (3.4%).

The households walked 30 minutes to food storages facilities in the four counties reported were 25,817 households in Nimba; 25,674 households in Lofa, 5,295 household in Bong and 1,048 Bomi compared to 21,709 and 21,476 that covered one-hour distance for both primary school and food storage facilities.

However, the total households that covered 30 minutes to credit facility in the study areas were estimated at 6,092, 3,857 household covered a distance for one hour and 251 households walked a distance for two hours (Table 6.1 appendix D).

6.2 Agriculture households' main source of water.

There are nine (9) main sources of water determined during the survey period and it include the following: piped water inside house, piped water outside but in yard, public stand post/water point, community borehole, rive/stream/pond, protected well, unprotected well, protected spring, unprotected spring and other. The households who walked for 30 minutes in the four counties were reported for the following indicator. Protected well 38,671; community borehole 36,031and public stand post 27,647.

Moreover, those who used unprotected well and unprotected spring by covering 30 minutes distance were reported at 6,107and 1,929 households. A total of 25,740 households walked 30 minutes distance to used river/stream/pond and 1,450 walked for 30 to 60 minutes. The survey discovered that none of the households use pipe water inside the house. Table 6.2 main source of water in appendix D

6.3: Households by Toilet Type

Table 6.3 revealed the number of agriculture households that used different type of toilet were reported at 160,613. Out of this,66,545 used bush (NO TOILET) and 53,846 used pit latrines. Moreover, the number of agriculture households that used dry sanitation toilet (VIP) outside yard

were reported at 13,043 and those that used river or bush were reported at 10,158. Most importantly, 1,199 households used flush/pour toilet inside the house while those that shared by houses were reported at 943.

Table 6.3: Number of agriculture households by Toilet Type

Type of Toilet	**Number of agriculture Households**
Flush/pour toilet inside house	1,199
Flush/pour toilet shared by houses	943
Dry sanitation toilet (VIP) outside yard	13,043
Dry sanitation toilet (VIP) shared by houses	2,774
Pit latrine	53,846
Public pit latrine	12,105
No toilet (use bush)	66,545
River/beach	10,158
Total	**160,613**

CHAPTER 7: MEANS OF TRANSPORT

7.1: Main Source of Access

The households in the agriculture sector normally used transportation as a main to transfer their goods from one location to another. Table 7.1 show the number of households that used 10 main transport facilities during the survey. They include pick-up, buses, tractor, tricycle, motorbike, boats, wheelbarrow, truck, canoes, and other. Accordingly, the number of households involved in renting or hiring these facilities were reported at 67,371 households. Out of this estimate, 45,577 (67.3%) rent motorbike and 1,119 (1.9%) owned motorbike.

The number of households that rent or hired pick-up were reported at 9,255(13.7%) compared to 3,696(5.5%) households that used tricycle. However, the number of households that owned transport facility were reported at 12,266 compared to 828 households rent tractor. The number of households that owned wheelbarrow were reported 3,445 and those that borrow accounted for 5,641.

Table 7.1: Number of households by means of transport used, source of access and number owned

Main transport facility used	Main source of access			Number of transport facility owned
	Owns	Borrow	Rent/hire	
Head loading/porter	-	-	-	-
Car/Pick up	-	-	9,255	-
Buses/Lorry	-	-	3,624	-
Tractor	-	-	828	-
Tricycle	-	-	3,696	-
Motorbike	1,119	-	45,577	1,119
Boats/Ferry	-	-	2,007	-
Wheelbarrow	3,445	5,641	1,062	11,147
Trailers /Truck	-	-	489	-
Canoes	-	-	833	-

CHAPTER 8: STORAGE FACILITIES

8.1 Households who own storage facility

The agriculture households that owned and stored their harvest under shelter/outside/kitchen was reported at 113,089 with storage capacity of 2.6 metric tons. A total of 71,931 households owned and used bags with storage capacity of 5.3 metric tons. This result mean those who used bags have more storage capacity than under shelter/outside kitchen.

The agriculture households that used sealed containers was reported at 4,525 with storage capacity of 2.6 metric tons compared to specific house room and drum (1.9 metric ton). However, none of the households' own silo for storage purpose but cold storage, underground and other specify were reported less than (0.1 to 0.3) metric tons

Table 8.1: Number of households who own storage facility by type and average capacity (Mt)

Type of storage facility	Number of agriculture household's own storage facility	Average Capacity (Mt)
Granary/barn	17,211	1.5
In the house	32,457	1.6
Specific house/room	26,861	1.9
Under shelter/outside/kitchen	113,089	2.6
Sealed containers	4,525	2.1
Bags	71,931	5.3
Drums	752	1.9
Silo	-	-
Cold storage	72	0.3
Under ground	194	0.1
Other (specify)	1,932	0.1

CHAPTER 9: ACCESS TO LOAN/ CREDIT

9.1 Number of households who applied for agricultural loan

Table 9.1 revealed a total of 20,565 holders applied for loan in the last five years and out of this,16,658 holders were in Nimba County, 1,391 holders in Bong, 1,364 holders in Bomi and 1,152 holders in Lofa county.

Table 9.1: Number of agriculture households who applied for loan during the last 5 years by County

COUNTY	Number of agriculture Households who applied for loan
Bomi	1,364
Bong	1,391
Lofa	1,152
Nimba	16,658
Total	**20,565**

9.2 Purpose of Loan

Usually, loans are applied for various reasons like purchasing seeds, fertilizer, agro chemicals, de-busing (clearing of land) and hiring of labour. The results in Table 9.2 show that regardless of the county, the loans received were largely 19,911 total applicants. Out of this estimate, the number of holders that received loan for agriculture labour were reported at 17,693 (89%). For purchasing of seed 612(3.1%) holders received loan which was less than De-bushing (clearing of land) with the total of 703.

Table 9.2: Number of agriculture households who received loan during the last 5 years by reason/purpose of the loan

Purpose of loan	Number of agriculture households who received loan
Agriculture labour	17,693
Seeds	612
Farm implements and machinery	194
De-bushing (clearing of land)	703
Other agricultural purpose	709
Total	**19,911**

9.3: Source of Loan and Payment Period

Table 9.3 exposed the source of loan received and payment period during the last five years and it were reported at 19,911. Out of this, cooperative credit society give loan to 7,955 holders; 6,949 holders received loan from self-help group, 3,623 holders received loan from money landers; 1,106 holders received loan from family and friends, and 277holders received loan from Micro-finance institution.

Those who loan payment period less than one year were reported at 14,686(74%) compared to 4,366(22%) holder who payment was more than three years. A total of 4,366 holders paid their loan for more than 3 years while less than one year was reported at 2,582. There was no commercial bank to give loan to the holders, but Micro-finance Institutions provided loan to 277 holders within the survey areas.

Table 9.3: Number of agriculture households who received loan during the last 5 years by source of loan received and loan period

SOURCE of LOAN	Less than 1 Year	Between 1 and 3 years	More than 3 years	Others	Total
Liberia Bank for Development and Investment	-	-	-	-	**-**
Commercial Banks	-	-	-	-	**-**
Micro finances institutions	97	180	-	-	**277**
Cooperative credit society	7,704	251	-	-	**7,955**
Money lenders	3,372	-	-	251	**3,623**
Self-help group	2,582	-	4,366	-	**6,949**
Government	-	-	-	-	**-**
Family and friends	931	175	-	-	**1,106**
NGO	-	-	-	-	-
Total	**14,686**	**607**	**4,366**	**251**	**19,911**

9.4: Source of Loan and type of collateral for the last five years

Table 9.4 appendix D shows that 18,827 holders gave collateral to various institutions for loan during the last five years. Out of this estimate, 11,194 holders used crops as collateral to various source of credit institutions. 6,333 used thirty party in the study areas. Moreover, 1,646 holders did not used collateral in all the four counties. 88 holders use livestock and salary as collateral.

CHAPTER 10: FARM MANAGEMENT PRACTICES

10.1 House who use Fertilizers

Agronomic practices required farmers to use fertilizer as a mean for plant to grow and to obtain better yields. Table 10.1 indicates the number of holders that applied fertilizer in the survey areas was reported at 9,260. Out of this, 5,646 (61.0%) holders used or applied mineral fertilizers(inorganic) compared to 3,047(32.9%) holders that used organic fertilizer. Moreover, 6.1 percent (567) households applied manure to their crops in the study areas.

Table 10.1: Number of Holders who use fertilizer by type of fertilizer

Type of Fertilizer applied	Number of households apply fertilizer	Percent
A. Mineral fertilizers (Inorganic fertiliser)	5,646	61.0%
C. Organic fertilizer	3,047	32.9%
E. Manure	567	6.1%
Total	**9,260**	**100.0%**

10.2 Holders who use seed inputs and type

One of the methods used to be self sufficient in food production is to use improve seeds for better yields. Table 10.2 show the number of holders in study areas were reported at 164,160. Out of this, 160,074 (97.5%) used local seeds compared to 3,878 (2.4%) holders that used improved seeds

This mean the total production in the four counties were low because 97.5 percent holders used local seeds. This result show that the Central Agriculture Research Institute (CARI) and Extension Division at the Ministry of Agriculture need to double their work for local farmers to use improve variety.

Table 10.2: Number of Holders who use seed inputs by type of seed and County

Name of Seed Input	Number of Holders	Percent
A. Local Seeds	160,074	97.5%
B. Improved Seeds	3,878	2.4%
D. Genetically Modified (GM) seeds	208	0.1%
Total	**164,160**	**100.0%**

10.3 Holders who use Pesticides by Type

The two types of pesticide used were insecticide and rodenticides. The number of agriculture holders that applied pesticide and insecticide were reported at 4,296.(100%). Out of this, 3,468 (80.7%) holder applied insecticide and 828(19.3 % applied rodenticides(Table 10.3)

T**able 10.3: Number of Holders who use pesticides by type of pesticides applied**

Type of Pesticide	Number of Holders	Percent
A. Insecticide	3,468	80.7%
D. Rodenticides	828	19.3%
Total	**4296**	**100.0%**

10.4: Holders by inputs and education status

The total number of holders by inputs and education status were reported at 218,728, out of this estimate, those who never been to school was reported at 102,045(46.7%). About 1,335 agriculture holders' practices improved seeds and out of this,218 holders were in junior high and 828 in senior high school. The number of holders that practices mineral fertilizer(inorganic) were reported at 4,818 and out of this,3,096 did not go to school while 1,154 were in senior high, those who practices organic fertilizer was 3,047 holders. Moreover, in the study areas 2,060 practices irrigation and out of this, 1,198 did go to school; 858 holders in senior high school and 5persons obtained college degree (Table 10.4).

Table 10.4: Number of Holders by Inputs/farm practice and Educational Status

Educational Status of Holders	Total number of Holders	A. Local Seeds	B. Improved Seeds	D. Genetically Modified (GM) seeds	A.Mineral fertilizers (Inorganic fertiliser)	C. Organic fertiliser	E. Manure	A. Insecticide	D.Rodenticides	Irrigation
None	102,045	64,893	291	208	3,096	828	-	1,440	-	1,198
Pre-primary	12,978	6,658	-	-	-	1,656	562	828	-	.
Primary	48,092	18,938	-	-	562	562	-	562	-	.
Junior High	29,020	17,839	216	-	-	-	-	307	-	.
Senior High	22,884	18,268	828	-	1,154	-	-	326	828	858
Vocational	2,136	300	-	-	-	-	-	-	-	.
Degree	1,574	745	-	-	5	-	5	5	-	5
DK	.	-	-	-	-	-	-	-	-	.
Total	**218,728**	**127,643**	**1,335**	**208**	**4,818**	**3,047**	**567**	**3,468**	**828**	**2,060**

10.5: Holders who did not use improved inputs

The total number of holders that did not used improved inputs in the four counties were reported at 149,904. Out of this, 105,399 were male (70 percent) and 44,505(30 percent) females. A total of 66,041 holders expressed that the improved inputs were not available, 43,833 holders said the improved inputs were too expensive,17,813 holders said they do not see the usefulness. Moreover, 21,711 holders pointed out NO Knowledge about improved inputs in table 10.5.

Table 10.5: Number of holders who did not use improved inputs by reason by sex

Reasons	Number of holders		
	Male	Female	Total
No knowledge	17,129	4,582	21,711
Too expensive	29,598	14,235	43,833
Not available	47,254	18,787	66,041
Do not see usefulness	10,985	6,829	17,813
Other	433	72	505
Total	**105,399**	**44,505**	**149,904**

CHAPTER 11: FOOD SECURITY

The United Nations SDG2: recommends that countries should try as much as possible to "End hunger, achieve food security and improved nutrition and promote sustainable agriculture" by 2030. Therefore, countries should periodically assess the food security situation to know if there are on track or not. However, measuring the food security of countries especially in developing countries has not been that easy over the years. Hence, in the WCA 2020, the FAO has: "introduced an innovative approach in its census supplementary theme on food security to access valid information on the severity of food insecurity as experienced by individuals in the population.

The approach … known as the Food Insecurity Experience Scale (FIES), aims to measure household food security through experience-based food insecurity. This is based on the premise that the severity of the food insecurity situation of an individual or a household can be inferred from observing typical behaviors and experiences associated with food insecurity. These include, for example, the condition of being worried about not being able to procure food, having to compromise on the variety and quality of foods consumed, and being forced to cut portions or to skip meals"[2].

11.1: Food insecurity experience

Eight recommended questions of the FIES were used in the Pilot Survey and the results are presented in Table 11.1. Two -third of the households had had to worry that they would not have enough food to eat because of lack of money or other resources in the 12 months preceding the survey. The total of 139,637 households worried not having enough food to eat. Out of this, Nimba county accounted for 60,865 follows by Bong with a total of 38,840, Lofa 32021 and Bomi 7,912.

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Table 11.1: Number of agriculture households worried they would not have enough food to eat because of a lack of money or other resources during the last 12 months by County

	COUNTY	Total number of agriculture households	Agriculture households worried not having enough food to eat	Percent of the total
	Bomi	7,912	7,912	100
	Bong	40,917	38,840	95
	Lofa	48,879	32,021	66
	Nimba	62,905	60,865	97
	Total	**160,613**	**139,637**	**87**

FAO (2015): World Programme for the census of Agriculture 2020: Volume 1, Programme, Concepts and Definitions. Rome

Table 11.2 indicates the number of agriculture households unable to eat health and nutritious food were reported at 141,177. Of this number, 61,195 (97%) in Nimba, 39,601 (97%) in Bong, 32,469 (66%) in Lofa and 7,912 (100%) in Bomi counties

Table 11.2: Number of agriculture households unable to eat healthy and nutritious food because of a lack of money or other resources during the last 12 months by County

COUNTY	Total number of agriculture households	Agriculture households unable to eat healthy and nutritious food	Percent of the total
Bomi	7,912	7,912	100
Bong	40,917	39,601	97
Lofa	48,879	32,469	66
Nimba	62,905	61,195	97
Total	**160,613**	**141,177**	**88**

The number of agriculture households who ate only a few kinds of foods because of lack of money or other resources during the past 12 months in 2019 were reported at 138,000. Out of this, 92% in Nimba. 97% in Bong, 67% in Lofa and 100% in Bomi counties in table 11.3

Table 11.3: Number of agriculture households who ate only a few kinds of foods because of a lack of money or other resources during the last 12 months by County

	COUNTY	Total number of agriculture households	Agriculture households who ate only a few kinds of foods	Percent of the total
	Bomi	7,912	7,912	100
	Bong	40,917	39,673	97
	Lofa	48,879	32,587	67
	Nimba	62,905	57,828	92
		160,613	138,000	85

Table 11.4 of the agriculture households had to skip a meal because there was not enough money or other resources to get food during the past 12 months were reported at 137,555. Out of this, 58,789 households in Nimba, 37,951 households in Bong, 32,957 households in Lofa and 7,878 households in Bomi counties.

Table 11.4: Number of agriculture households who had to skip a meal because there was not enough money or other resources to get food during the last 12 months by County

	County	Total number of agriculture households	Agriculture households who had to skip a meal	Percent of the total
	Bomi	7,912	7,878	100
	Bong	40,917	37,951	93
	Lofa	48,879	32,957	67
	Nimba	62,905	58,769	93
	Total	**160,613**	**137,555**	**86**

The number of agriculture households who ate less because of a lack of money or other resources during the past 12 months were reported at 140,590, of which Nimba constituted 97% followed by Bong with a total of 95%, Lofa with 67% and 100% in Bomi respectively in table 11.5

Table 11.5: Number of agriculture households who ate less because of a lack of money or other resources during the last 12 months by County

County	Total number of agriculture households	Agriculture households who ate less	Percent of the total
Bomi	7,912	7,912	100
Bong	40,917	38,785	95
Lofa	48,879	32,878	67
Nimba	62,905	61,015	97
Total	**160,613**	**140,590**	**88**

The number of agriculture households who ran out of food because of a lack of money or other resources were estimated at 140,120 in table 11.5. out of this, 97 % of the households in ran out of food in Nimba compared to 95% household in Bong, 66 % household in Lofa and 100 % of the households in Bomi in table 11.6

Table 11.6: Number of agriculture households who ran out of food because of a lack of money or other resources during the last 12 months by County

	County	Total number of agriculture households	Agriculture households who ran out of food	Percent of the total
	Bomi	7,912	7,912	100
	Bong	40,917	38,768	95
	Lofa	48,879	32,113	66
	Nimba	62,905	61,328	97
	Total	**160,613**	**140,120**	**87**

Table 11.7 shows the number of agriculture's households hungry but did not eat because there was not enough money or other resources for food were reported at 135,904 (84.6%). The

households in Nimba accounted for 92% compared to 94% households in Bong followed by 66% households in Lofa and 90% house in Bomi counties

Table 11.7: Number of agriculture households hungry but did not eat because there was not enough money or other resources for food during the last 12 months by County

County	Total number of agriculture households	Agriculture households who were hungry but did not eat	Percent of the total
Bomi	7,912	7,082	89.5
Bong	40,917	38,407	94
Lofa	48,879	32,465	66
Nimba	62,905	57,951	92
Total	**160,613**	**135,904**	**85**

The agriculture households who went without eating for a whole day because of a lack of money or other resources were reported at 130,127 in the survey areas. Out of this. Bong accounted for 38,606 (94%) compared to 54,037 (86%) in Nimba followed by 30,723(63%) in Lofa and 6,761 (85%) in Bomi in table 11.8

Table 11.8: Number of agriculture households who went without eating for a whole day because of a lack of money or other resources during the last 12 months by County

	County	Total number of agriculture households	Agriculture households who went without eating for a whole day	Percent of the total
	Bomi	7,912	6,761	85
	Bong	40,917	38,606	94
	Lofa	48,879	30,723	63
	Nimba	62,905	54,037	86
	Total	**160,613**	**130,127**	**81**

11.9 : **Presence of food shortage**

Table 11.9 shows the total number of agriculture households experiencing food shortage during the last 12 months in study areas were reported at 19,236. Out of this, Lofa county accounted for 33% follow by Bong 4%, Nimba 2% and Bomi 1%.

Table 11.9: Agriculture households who experienced food shortage during the last 12 months by County

County	Total number of agriculture households	Number of agriculture households experiencing food shortage	Percent of the total
Bomi	7,912	51	0.65
Bong	40,917	1,806	4.6
Lofa	48,879	16,211	33
Nimba	62,905	1,168	2
Total	**160,613**	**19,236**	**12**

11.: Reason for food shortage

Several reasons were adduced by the households as contributing to the food shortages (Table 11.11). The total number of agriculture households that food shortage affected were reported at 175,233 of which males accounted for 86,923(49.6 %) and females.88,310 (50.4%).

The major reasons identified for food shortages include the following: loss of crops/insufficient production affected 107,138 of the households, Lack of adequate capital affected 40,323 households, family size too big affected 18,558 households, lack of adequate labour affected 3,255 households, Inability to work because of illness or injury affected 2,380 households, lack of jobs affected 1,895 and other affected 1,382. More importantly, disable or old people, loss of livestock and over selling produce were considered zero.

Table 11.11: Main reason for food shortage by Sex in last 12 months

Main Reasons for food shortage	Number of agriculture households		
	Male	Female	Total
Loss of crops/Insufficient production	53,404	53,734	**107,138**
Lack of jobs	1,125	770	**1,895**
Inability to work because of illness or injury	1,190	1,190	**2,380**
Disabled, old age	-	-	**-**
Lack of adequate land	-	302	**302**
Lack of adequate capital	19,697	20,626	**40,323**
Family too big	9,279	9,279	**18,558**
Lack of adequate labour	1,537	1,718	**3,255**
Over selling produce	-	-	**-**
Loss of livestock	-	-	**-**
environmental or political crises	-	-	**-**
Others	691	691	**1,382**
Total	**86,923**	**88,310**	**175,233**

11.12: Household immediate Response to the food shortage by sex

Households who experience food shortages usually adopt various strategies to cope with the situation. The results depicted in table 11.12 indicate that overall, 286,318 number of agriculture households experience food shortage during the survey and out of this, the male adult account for 86,923(36.8%) and female adult 88,310 (37.4%). Those who reduced the size of their meals to allow the other household members to eat bigger portion was estimated at 252,771 and out of this, female adult account for (29.1%), male adult(28.5%) then the boys (21.0%). Similarly, 21.4 percent of the girls also reduced their meals. Eating less preferred food affected 33,567 number of agriculture household and out of this, male adult account for 44.4% compared to 43.9 percent of the adult females. The same applied to the boys (6.4%) ate less preferred food in comparison to the girls (5.2%).

Table11.12: Immediate response taken by agriculture households who experience food shortage by sex and age group

Immediate response	Number of agriculture households				
	Male adult	Female adult	Boys	Girls	Total
Eating less preferred food	14,912	14,745	2,149	1,761	33,567
Reducing the size of meal	72,011	73,565	53,286	53,909	**252,771**
					-
Total	**86,923**	**88,310**	**55,415**	**55,670**	**286,318**

11.13: Steps taken to alleviate food shortage

Households who experience food shortages usually adopt various strategies to cope with the situation. The results depicted in table 11.13 indicate that the total number of households taken steps to alleviate food shortage were reported at 177,091. Those who used saving to buy food were reported 121,552. Out of this estimate, the adult males accounted for (48.9%) compared to 47.1% females

The second steps to alleviate food shortage was to take out loan and the estimation was 22,981 households. Out of this estimate, males constituted about 12,159(52.9%); adult females 10,812(47.1%.) The total adult males and adult females involved in taken steps to alleviate food shortage were reported at 84,324 and 81,186; boys and girls were reported at 6,193 and 5,388 The least step in alleviating food shortage was food relief which constituted about 58 households with adult male (29) and adult females (29).

Table 11.13: Steps taken to alleviate food shortage by agriculture households who experience food shortage by sex and age group

Steps taken to alleviate food shortage	Number of agriculture households				
	Adult Male	Adult Female	Boys	Girls	Total
Use savings to buy food	59,395	57,268	2,299	2,590	**121,552**
Take out a loan	12,169	10,812	-	-	**22,981**
Sold land	-	-	-	-	**-**
Sold livestock	2,074	1,388	-	-	**3,462**
Get another job	3,902	3,908	924	312	**9,046**
Social grand	-	-	-	-	**-**
Food relief	29	29	-	-	**58**
Help from charities	2,142	2,898	-	-	**5,040**
Other (Specify)	4,611	4,881	2,970	2,486	**14,948**
Total	**84,324**	**81,186**	**6,193**	**5,388**	**177,091**

11.15: Households reported to likely experience food shortages

This section looks at households which likely experience food shortage in the next 12 months. Table 11.15 shows that food shortages affected 67,803 households and 59 percent of 24,328 households in Bong experienced food shortage. Similarly, food shortage was encountered by most households in Bomi (46%) and Lofa (40%). Just 33 percent of households experienced food shortage in Nimba

Table 11.15: Number of agriculture households reported to likely experience food shortages in next 12 months by County

County	Total agriculture households	Agriculture households reported likely to experience food shortage during the next 12 months	Percent of the total
Bomi	7,912	3,616	46
Bong	40,917	24,328	59
Lofa	48,879	19,340	40
Nimba	62,905	20,519	33
Total	**160,613**	**67,803**	**42**

11.16: Natural and Man-made Disasters

Natural and man-made disasters when they occur have direct consequences on food security. Therefore, attempt was made to ascertain whether households in the four counties encountered any natural or man-made disaster in the 12 months before the survey. The results are captured in Table 11.16. Floods affected about 112,845 households in all the four counties. Out of this estimate, no damages done to 100,958 households, 7,683 were slightly affected and 3,683 moderately affected and 521 severely affected.

Drought also affected agriculture households in the study areas. 112,845 households were in all the four counties. NO damage was reported at 107,773, 3,177 were slightly affected, 1,895 moderately affected.

Another natural disaster which caused the households was pests/diseases. It affected 112,844 agriculture households in all the counties. 20,885 households were slightly affected, 7,814 moderately affected and 696 severely affected, and there was no damage done to 81,806 households in the four counties.

Erratic rains – that is, rains falling when they are not expected and failing to fall when they are expected disrupt agricultural activities. 160,613 agriculture households in the four counties suffered from erratic rains, and out of this, about 135,601 households were not affected, while 13,531were slightly affected, 11,174 were moderately affected, 307 were severely affected.

Man-made disasters such as insecurity and setting fire to farms affected some of the households. Again, the four counties suffered from insecurity were reported at 160,613 households. Out of this estimate, no damages done to 140,281 household, while 6,130 were slightly affected and 14,202 were moderately affected. Finally, wildfires caused by man affected 160,613 households in all the four counties while 2794 were slightly affected and 2780 were moderately affected

Table 11.16: Number of agriculture households who experienced natural and man-made disaster by severity of disaster

Type of disaster	Number of agriculture households reporting				
	No damage	Slight	Moderate	Severe	Total
Natural					
Floods and tidal waves	100,958	7,683	3,683	521	112,845
Drought	107,773	3,177	1,895		112,845
Typhoons or hurricanes/ Hailstorms	111,204	383	709	549	112,845
Pests/diseases	81,806	20,885	7,814	2,339	112,844
Erratic rains	135,601	13,531	11,174	307	160,613
Wild fires	152,268	828	6,688	828	160,612
Other	144,292	10,264	6,056		160,612
Man made					
Insecurity	140,281	6,130	14,202		160,613
Wild fires	155,039	2,794	2,780		160,613

CHAPTER 12: LABOUR INPUT

12.1: Agricultural household members by status of employment

There were 743,234 household members engaged in permanent agricultural activities compared to 834,088 agriculture household members involved in temporary agricultural activities. Adult males constituted 38.7% (287,501), adult females 38.8% (288,027), boys 11.3% (84,231) and girls 11.2% (83,475). Except for Lofa County where adult females (148,576) were more than adult males (127,839), both adult males and boys were 371,732 (50.01%) more than 371,502(49.98%) adult females and girls in the three other counties (Table 12.1)

In Lofa, the adult females (146,217) involve in temporary agricultural activities were more than adult males (120,660) and in Nimba, there were 151,579 adult males compared to 78432 adult females. For boys and girls, the girls in Lofa (48,914) were more than 5,743 girls in Nimba while the boys in Lofa (54,422) were also more than the (10,075) boys in Nimba in comparison, 834,088 temporary agriculture activities were more than 784,234 permanent agriculture activities

Table 12.1: Number of agriculture households members engaged in agricultural activity in past 12 months by work status, sex, age group and County

Work Status										
COUNTY	Number of households members who worked as Permanent agric. activities					Number of household's members who worked as Temporary agric. activities				
	Adults male	Adult female	Boys	Girls	Total	Adults male	Adult female	Boys	Girls	Total
Bomi	8,056	8,225	1,290	1,030	**18,601**	39,774	13,217	2,335	2,261	**57,587**
Bong	63,404	61,505	33,936	42,819	**201,664**	48,714	53,170	27,167	31,307	**160,358**
Lofa	127,839	148,576	47,622	39,298	**363,335**	120,660	146,217	54,422	48,914	**370,213**
Nimba	88,202	69,720	1,383	328	**159,633**	151,679	78,432	10,075	5,743	**245,929**
Total	**287,501**	**288,027**	**84,231**	**83,475**	**743,234**	**360,827**	**291,036**	**94,000**	**88,225**	**834,088**

12.2: Paid employees

There were 339,528 adult males from 15 years and above households which reported having paid employees. Lofa reported the highest number of households with paid employees of 186,993 (53.3%) followed by Nimba County with 88,755 (26.1%) (Table 12.2). There were 291,470 adult females from 15 years and above households which reported having paid employees. Again, Lofa county reported the highest number of households with paid employees of 192,584 (66.1%) followed by Nimba county with 61,283(21.0%), while the least was Bong County 37,602 (12.9%).

In comparison, the survey report indicates that the adult males from 15 years above involved in temporary paid employees were reported at 596,387 higher than 339,528 permanent adult male employees. In addition, the adult females from 15 years and above involved in temporary paid employees were reported at 482,785 higher compared to 291,470 adult females' permanent employees.

Table 12.2: Number and distribution of agriculture households who reported having paid employees by Sex and County

		Agricultural Households reporting paid employees							
		Number of permanently paid employees during the past 12 months				Number of temporary paid employees during the past 12 months			
COUNTY	Total agriculture households	ADULT MALES 15 years and above	ADULT FEMALES 15 years and above	CHILDREN BOYS less than 15 years	CHILDREN GIRLS 15 years below	ADULT MALES 15 years and above	ADULT FEMALES 15 years and above	CHILDREN BOYS less than 15 years	CHILDREN GIRLS less than 15 years
Bomi	**7,912**	132	-	-	-	35,153	7,109	-	-
Bong	**40,917**	63,647	37,602	4,499	18,435	68,979	34,704	8,435	6,452
Lofa	**48,879**	186,993	192,584	53,649	49,410	195,556	207,747	52,393	49,410
Nimba	**62,905**	88,755	61,283	1,196	8,535	295,700	233,225	21,325	11,416
Total	**160,613**	**339,528**	**291,470**	**59,344**	**76,379**	**595,387**	**482,785**	**82,153**	**67,278**

12.3: The Kuu System

The Kuu is a form of cooperation practiced by many farming communities in Liberia. It enables a group of farmers to assist one another to de-bush, clear, de-stump, weed and harvest their produce without any labour cost. Table 12.3 shows that of the 154,908 agriculture households used cooperative KUU system during the past 12 months. covered 126,337 (61.6%) use the Kuu system. It is mostly practised by farmers in Nimba 43279 followed by Lofa farmers 41,320. Only about two quarters of farmers in Bomi (5,705) use this system**.**

Table 12.3: Number agriculture households who used Cooperative (Kuu) system by county in past 12 months

COUNTY	Yes	No	Total
Bomi	5,705	2,207	**7,912**
Bong	36,033	4,321	**40,355**
Lofa	41,320	7,268	**48,588**
Nimba	43,279	14,775	**58,054**
Total	**126,337**	**28,571**	**154,908**

12.4: Agriculture households who used KUU in the past 12 months

The Survey collected various information on households who used KUU in the past 12 months was estimated at 673,965 in Table 12.4. Out of this, Lofa constituted 250,689 followed by Nimba with a total of 217,335, Bong 181,797, and Bomi 23,867

Table 12.4: Number of Agriculture Households Who Use KUU In the Past 12 Months by Type of **farming**

Type of Farming Activity Kuu are deployed to do	COUNTY	Number of Households			
	Bomi	Bong	Lofa	Nimba	Total
A. Brushing	5,705	35,342	40,301	42,809	**124,156**
B. Felling	5,705	28,614	35,860	30,091	**100,269**
C. Clearing	3,824	24,959	37,028	36,273	**102,084**
D. Planting	4,959	27,847	36,749	37,987	**107,543**
E. Weeding	1,961	22,224	35,853	25,313	**85,351**
F. Harvesting	1,580	24,815	36,263	34,344	**97,001**
G. Fencing	33	17,996	28,815	10,518	**57,361**
Total:	**23,767**	**181,797**	**250,869**	**217,335**	**673,765**

CHAPTER 13: EQUIPMENT

13.1: Households who reported used of agriculture equipment

Table 13.1 in appendix D show the type of agriculture equipment used and owned during the past 12 months. The total number of hoes reported in the survey areas were 155,799. Out of this, 138,690 were owned solely by the holders while 11,699 were owned by the holding jointly with other holders and 4,799 were borrowed.

The second total type of equipment reported were 129,849 Axes. Out of this estimate, 110,382 axes were owned by the holders while 13, 437 were owned by the holding jointly with other holdings and 5,111 axes were borrowed. Although, 307 were provided by other private holders.

The total type of equipment used during the survey were reported at 513,697, out of this, 445,523 were owned solely by the holders, 48,258 were jointly owned by the holdings with other holders, borrowed 15,912 while 2,664 were provided by landlord. Most importantly, 828 tractors were rented but none was owned by the holders.

13.2: Agriculture equipment owned by type

The total number of agriculture equipment owned by type and average were collected during the survey. The results are presented in table 13.2 appendix D. About 155,709 households reported that they owned 646,959 hoes with the average of 4 per household.

The second type of equipment were axes and 129,849 households reported that they owned 368,531 axes with total average of 3 per household in the four counties, while 83,267 total number of households reported owned 430,873 pangas/machete with 5 on average per household compared to 12,998 households who reported that the owned 34,372 pruning knives with the average of 3 per household in the four counties. In all the four counties, it was reported that 513,697 agriculture households stated that they owned 1,810,200 equipment with the total average of 4 per household.

13.3: Agriculture households equipment type, and years owned

In Table 13.3 about 513,697 agriculture households reported they owned 281,590 equipment for less than 1 years ago**,** 224,956 equipment from 1 to 4 years ago and 3,867 equipment for 5 to 9 years ago. According to the table, 155709 agriculture households stated they owned 80,025 hoes for the period less than one year, while 72966 hoes for 1 to 4 years compared to 1,153 hoes for 5 to 9 years**.** 129,849 agriculture households acquired 54,248 axes for less than 1 year compared to 72,586 for 1 to 4 years while 1,793 for 5 to 9 years. Most importantly, the 828 agriculture households acquired the 823 tractors for less than 1 year.

Table 13.3: Number of agriculture households by type of equipment owned, years acquired of equipment and County in past 12 months

Type of Equipment	No. of agriculture households reporting equipment	Less than 1 year ago	1-4 years ago	5 -9 Years ago	10 years and Over
Hoes	155,709	80,625	72,966	1,153	965
Axes	129,849	54,248	72,586	1,793	1,222
Slashers	5,594	2,417	2,628	-	549
Pangas/Machete	83,267	47,418	34,381	920	549
Watering cans	2,812	1,715	1,097	-	-
Wheelbarrows	5,855	2,183	3,672	-	-
Pruning knives	12,998	8,924	4,075	-	-
Pruning saws	833	833	-	-	-
Chain/Handsaw	-	-	-	-	-
Sheller spade	-	-	-	-	-
Fork hoe	4,459	-	4,459	-	-
Tractor	828	828	-	-	-
Plough mechanical	-	-	-	-	-
Ox-plough	-	-	-	-	-
Trailer	-	-	-	-	-
Harrow/Cultivator	-	-	-	-	-
Weeder	-	-	-	-	-
Planter	-	-	-	-	-
Sprayer	29	29	-	-	-
Pail	26,446	24,588	1,858	-	-
Milk can	194	97	97	-	-
Hand Mill (Manual Hammer	1,156	583	573	-	-
Hammer Mill (Engine Driver	-	-	-	-	-
Ox Cart	5,610	2,298	3,312	-	-
File/sharpening stone	78,056	54,804	23,252	-	-
Other, specify	-	-	-	-	-
Total	**513,697**	**281,590**	**224,956**	**3,867**	**3,284**

13.4: Distribution of agriculture household's equipment

The number and distribution of agriculture households by type of equipment owned and usage in the past 12 months was presented in table 13.4. The results show that 153,776 hoes followed by 128,034 axes, 82,010 pangas/machete were in good condition. About 12,747 pruning knives, 26,446 pail, 72,212 file/sharping stones were all in good working condition during the survey period. Most importantly, the total number of equipment owned and in good working condition by agriculture households were reported at 506,729

Table 13.4: Number and distribution of agriculture households by type of equipment owned and usage in the past twelve months

Hoes	153,776
Axes	128,034
Slashers	5,594
Pangas/Machete	82,010
Watering cans	2,812
Wheelbarrows	5,855
Pruning knives	12,747
Pruning saws	833
Chain/Handsaw	-
Sheller spade	-
Fork hoe	4,459
Tractor	828
Plough mechanical	-
Ox-plough	-
Trailer	-
Harrow/Cultivator	-
Weeder	-
Planter	-
Sprayer	29
Pail	26,446
Milk can	194
Hand Mill (Manual Hammer	1,123
Hammer Mill (Engine Driver	-
Ox Cart	4,777
File/sharpening stone	77,212
Other, specify	-
Total	**506,729**

CHAPTER 14: LIVESTOCK

14.1: Livestock ownership

According to the 2011 Liberia Annual Agriculture Survey[3], a concerted effort was made by international and local organizations to restocking the livestock looted during the civil conflict. The effort seems to be paying off. The Pilot Survey data shows a total of 40,175 (25%) agriculture households reported of having livestock (cattle, goats, sheep, poultry etc.). A 42.0 percent of households in Nimba County reported of having livestock followed by Bong with 16.0 percent. Both Lofa and Bomi recorded about 14.0% and 2.0 % respectively.

Table 14.1: Number and distribution of agriculture households who have livestock by County in past 12 months

COUNTY	Total Agriculture Households	Agriculture households who reported livestock	Percent of the total
Bomi	**7,912**	186	**2**
Bong	**40,917**	6,516	**16**
Lofa	**48,879**	7,040	**14**
Nimba	**62,905**	26,434	**42**
Total:	**160,613**	40,175	**25**

14.2: Type of Cattle

This section examines the number of cattle owned by both males and females in Lofa and Nimba and the results show that there were about 8,619 herds of cattle owned by the households with females accounting for 5,011(58.14%. The indigenous cattle (beef) constituted 4,137(82.6%) and crossbreed (beef) were 874 (17.4%) compared to the number of cattle owned by males' household's member with the total indigenous cattle of 3,608 (41.9%) in Appendix D

[3] Source: LIGIS; 2011 Liberia Annual Agriculture Survey

14.3: Goats and Sheep

Table 14.3 depicts the number of goats and sheep owned by the households in three out of the four counties. The survey report indicates that Bomi, Lofa and Nimba recorded 48,375 number of goats. Male household members owned 48.3 percent (23,373) compared to 51.7 percent (25,002) owned by females. The total female goats/doe were 15,634 as against 12,396 male goats/buck. Similarly, the number of female goats less than one year old (13,688) was more than the number of male goats (6,657) less than one year old. This indeed portend well for the goat growth of the goat industry.

Table 14.3 in appendix D also shows that the number of sheep was 16,917 with male household members owning 5,656 (33.4%) while the female household members owed 11,261 (66.6%). Unlike goats, the rams (9,911) were about twice the number ewes (3,867). Likewise rams of less than one year were 2,557 compared to 582 ewes of less than one ye

14.4: Other domestic animals by type

Data was collected on other domestic animals like pigs, horses, dogs, and cats. The findings show that 11,541 pigs, 20,852 dogs, 3,164 cats and 26,084 others are in table 14.4 appendix D. There was no horse in any of the four counties surveyed (Table 14.4). For the pigs, male household members owned 1,823 (15.8%) and females owned 9,718 (84.2%).

14.5: Distribution of livestock intake by type

The number of distribution of livestock intake found in Bong and Nimba counties were reported at 1,082 cattle, 17,565 goats, 13,135 sheep, and 3,443 pig. Out of this estimate, 7,143 goats, 3,064 sheep, 1,335 pig and 721 cattle heads of livestock were alive in the farm during the past 12 months compared to 10,422 goats, 10,071 sheep, 2,109 pig and 361 cattle heads of livestock bought or received from other in Table 18.5

Table 14.5: Number and distribution of livestock intake by Type and County during the last 12 months

Bong			
Type of livestock	**Number of livestock bought or received from others**	**How many head of livestock were born alive in the farm during the last 12 months**	**Total livestock intake**
Cattle	-	-	-
Goat	2,607	-	2,607
Sheep	8,962	1,330	10,292
Pig	-	326	326
Nimba			
Type of livestock	**Number of livestock bought or received from others**	**How many head of livestock were born alive in the farm during the last 12 months**	**Total livestock intake**
Cattle	361	721	1,082
Goat	7,815	7,143	14,958
Sheep	1,109	1,734	2,843
Pig	2,109	1,009	3,117

14.6: Distribution of Livestock off-take by type

Table 14.6 show the number of distribution of livestock off-take by type during the past 12 months in Nimba county were reported at 4,731 cattle, 8,064 goat, 582 sheep and 1,275 pig. Out of this, 1,077 cattle,7,391 goat,194 sheep and 420 pig were consumed compared to 2,827 cattle, 673 goats, 388 sheep and 855 pigs were sold.

Table 14.6: Numbers and distribution of livestock off-take by type and County during the last 12 months

Nimba				
Type of livestock	**Number consumed**	**Number sold**	**Number given away/gifts**	**Total livestock off-take**
Cattle	1,077	2,827	827	4,731
Goat	7,391	673	-	8,064
Sheep	194	388	-	582
Pig	420	855	-	1,275

14.7: Distribution of livestock losses by type

The survey highlighted the number of livestock that lost during the reference period. In table 14.7 indicates 1,032 goats, 6,626 sheep, and 416 pig lost in the Bong and Nimba counties. About 725 goats died due to disease and 307 died due to other reasons. About 6,625 sheep died due to starvation and 416 died due to disease.

Table 14.7: Number and distribution of livestock losses by type of livestock, reason for loss and County during the Reference Period

Bong						
Type of livestock	**Deaths due to disease**	**Stolen or lost**	**Lost to predators**	**Dead due to starvation**	**Loss due to other reasons**	**Total livestock losses**
Cattle	-	-	-	-	-	-
Goat	-	-	-	-	-	-
Sheep	-	-	-	6,626	-	6,626
Pig	-	-	-	-	-	-

Nimba						
Type of livestock	**Deaths due to disease**	**Stolen or lost**	**Lost to predators**	**Dead due to starvation**	**Loss due to other reasons**	**Total livestock losses**
Cattle	-	-	-	-	-	-
Goat	725	-	-	-	307	1,032
Sheep	-	-	-	-	-	-
Pig	416	-	-	-	-	416

14.8: Poultry Type

A total of 600,260 poultry of different kinds were documented. Out of this, Lofa account for 208,297 indigenous chicken where female owned 159,796 and male account for the least 48,501 followed by Nimba county accounting for 190,673 poultry of different kinds. In Nimba the total indigenous chicken account for 198,322 where female owned 135,530 higher than male with 53,792. The results clearly show that poultry rearing is the preserve of the female household member accounting for close to 70.3 percent of the total whereas, male households constituted 29.7% in the study areas. At the county level, the number of indigenous chickens were 507,691,

Guinea fowl 1,014, exotic chicken/ broiler 33, and other1,522. Moreover, the number of indigenous chickens owned by females were reported at 421,114 and males 176,577 while females owned 1,014 Guinea fowl and 33 exotic chickens in Table 8.5.

Table 14.8: Number and distribution of poultry by type, and County

Bomi

Type of Poultry	Number of Poultry	Number of Poultry owned by female household members	Number of Poultry owned by male households' members
Indigenous Chicken	26,314	25,348	966
Exotic Chicken (layers)	-	-	-
Exotic Chicken (broilers)	33	33	-
Others, specify	175	-	175
Total	**26,523**	**25,381**	**1,142**

Bong

Type of Poultry	Number of Poultry	Number of Poultry owned by female household members	Number of Poultry owned by male households' members
Indigenous Chicken	173,757	100,440	73,317
Guinea Fowl	1,010	1,010	-
Pigeons	-	-	-
Others, specify	-	-	-
Total	**174767**	**101,450**	**73,317**

Lofa

Type of Poultry	Number of Poultry	Number of Poultry owned by female household members	Number of Poultry owned by male households' members
Indigenous Chicken	208,297	159,796	48,501
Exotic Chicken (layers)	-	-	-
Others, specify	-	-	-
Total	**208297**	**159,796**	**48,501**

Nimba			
Type of Poultry	**Number of Poultry**	**Number of Poultry owned by female household members**	**Number of Poultry owned by male households' members**
Indigenous Chicken	189,322	135,530	53,792
Guinea Fowl	5	5	-
Pigeons	-	-	-
Others, specify	1,346	-	1,346
Total	**190673**	**135,535**	**55,138**

CHAPTER 15: CHALLENGES AND LESSONS LEARNT

- **Listing and Field Exercise**

- Bad road network.
- Lack of internet connectivity/communication.
- Language barrier
- Transportation was inadequate for enumerators
- The time used for training the field teams was too short. Many enumerators including their supervisors could not fully understand the concepts and definitions of terms in the short period.
- MOA / FAO were unable to provide support to technical team for data analysis and report writing, for example, lack of laptops, lack of internet service, No DSA and transportation to do the analysis

- **Recommendations**

Field work should be planned to coincide with the major harvest period to ensure that the crop cutting exercise could be used to properly estimate crop production and crop yield. Any time an annual agriculture survey is to be undertaken, statisticians and data processing personnel should be recruited at same time and work through the instruments (questionnaires, manuals and survey design) together.

Enough time should be given for field training during which time consultants (statistics and data processing) should be around. Again, provision should always be made for the staff of the Secretariat to monitor closely the field exercise. Support should be given to technical team to do the work on time. The final tables which will be delivered by the TCDC Data Processing Consultant should be treated as statistical abstracts.

- **Conclusion**

Despite the challenges encountered, the results generally show that the survey instruments (questionnaires) can help address most of the food security and vulnerability issues in Liberia and the CAPI technology is very effective and efficient in collecting agriculture data.
However, it must be stressed that the data from the Pilot Survey covered only four (4) out of the 15 counties in Liberia and cannot substitute for data from the annual agriculture survey since the TCP was primarily put in place for the FAO to assist the MoA to undertake a pilot agriculture survey based on the CAPI technology. Therefore, the MoA Management should endeavor to ensure that resources are mobilized from the Government of Liberia and other development partners to undertake the main survey as soon as possible.

APPENDIX

A. Glossary of Terms

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

Agricultural holder: The agricultural holder is defined as the civil or juridical person who makes the major decisions regarding resource use and exercises management control over the agricultural holding operation.

Area of holding according to land use types: Land use refers to activities – such as growing crops, raising livestock or cultivating fish – carried out on the land making up the holding with the intention of obtaining products and/or benefits.

Agricultural census reference period: The reference period for agricultural census items varies according to the type of data. The reference periods are usually the day of enumeration (for inventory items) or a twelve-month reference period (for continuing activities).

Agricultural Extension Services: refers to the provision of agricultural advice and information.

Locality: A locality is any place with one or more dwellings, either a compact settlement or to crop and livestock producers etc. Extension services may be provided by Government scattered houses.

Agricultural Equipment: refers to machinery, implements and other facilities

Area harvested: Area harvested refers to the total area from which the crop is gathered.

Arable land: Arable land is land that is used in most years for growing temporary crops. It includes land used for growing temporary crops in twelve months reference period, as well as land that would normally be so used but is lying fallow or has not been sown due to unforeseen circumstances.

Agricultural land: Agricultural land is the total of cropland and permanent meadows and pastures.

Agricultural Season: The main/first agricultural season normally refers to the growing cycle of temporary crops that are planted and harvested in the first half of the year, occasionally extending up to the end of June.

Agro-forestry: farm management system involving growing trees in conjunction with crops and livestock production.

Aquaculture: farming of aquatic organisms including fish, crustaceans, mollusks, and aquatic plants.

Apiary: is the maintenance of honeybee colonies, commonly in hives, by humans.

Collateral is defined as assets pledged as security for a loan of money, which means that if the borrower defaults on the terms of the loan, the collateral may be sold, and the proceeds used to pay off the loan. For the purpose of the agricultural census, collateral is used in a wider sense to also cover guarantee provided for the purchase of goods and services.

Cropland: Cropland is the total of arable land and land under permanent crops.

Drainage: removal of excess water to improve agricultural productivity.

Drip irrigation: A drip irrigation system delivers water directly to the root zone of a plant, where it seeps slowly into the soil one drop at a time. Almost no water is lost through surface runoff or evaporation, and soil particles have plenty of opportunity to absorb and hold water for plants

Economic activity status: a classification describing a person as employed, unemployed or not economically active.

Economically active: a person who is either employed or unemployed.

Economic Production Activities: Other economic production activities are economic production activities undertaken by the household enterprise, other than agricultural production on the holding.

Educational attainment: highest level of education achieved by a person.

Employed: a person with paid work or in self-employment.

Employee: a person in paid employment.

Enumeration area (EA): small geographic unit defined for census enumeration purposes.

Enterprise: an economic unit under single management consisting of one or more than one establishment.

Exotic: Refers to livestock introduced in the country from abroad.

Extension workers: These are individuals employed by the government or non-governmental organizations who work as an agricultural development agent for contacting and demonstrating improved farming methods to farmers. They are responsible for organizing, disseminating, guiding and introducing technical methods in agricultural production directly to farmers and for facilitating farmers coming into contact with cultivation methods to promote agricultural production.

Extension Services: refers to personal contact with extension personnel or direct participation in extension activities such as a farm demonstration.

Environmental conservation: refers to practice of protecting the environment, on individual, organizational or governmental level, for the benefit of the natural environment.

Freehold farms: The permanent ownership of land or buildings which can be legally passed on to heirs

Fertilizers: substances that supply plants with nutrients or enhance plant growth, containing at least 5% of the three primary nutrients.

Forest: land with trees of height 5 meters or more with crown cover of more than 10%.

Frame: the basis used for identifying all the statistical units to be enumerated in a statistical collection.

Field: A field is a piece of land in a parcel separated from the rest of the parcel by easily recognizable demarcation lines, such as parts, cadastral boundaries and/or hedges.

A field may consist of one or more plots, where a plot is a part or whole of a field on which a specific crop or crop mixture is cultivated.

Farm management practices refers to the different activities practiced on the farm, such as use of irrigation, application of fertilizers, use of improved seed, use of pesticides, etc.

Feeder road: is a minor or small road used to bring the traffic to a major road.

Granary: is a special storage house which has been constructed in such a way that e.g., rodents will not easily access the granary.

Household: A household consists of one or more persons related or unrelated who live informal grass-roots organizations, and others, together in one or part of one or more than one housing unit/dwelling unit and have common catering arrangements.

Household food security: the situation where all members of a household always are consuming enough safe and nutritious food.

Household membership: Household size is the number of members of the holder's household. holding solely or partly for agricultural production during reference period. This can be obtained either by listing all household members or asking a direct question on the number of household members.

Head of household: The Head of the household is a person of either sex who is a member of the household and generally runs the affairs of the household and is looked upon by the other members of the household as the main decision maker.

Hired labour: Is labour input supplied by other persons other than the holding members and who are paid for their work either in cash or kind or both. The persons are hired for doing agricultural work on the holding; they can be permanent or temporary.

Irrigation: Irrigation refers to purposely providing land with water, other than rain, for improving pastures or crop production.

Improved/cross refers to livestock which are crosses of exotic and indigenous breed.

Indigenous cattle: refers to livestock of local types e.g. the long-horned cattle.

Joint holder: is a person making the major decisions regarding resource use and exercising management control over the agricultural holding operations, in conjunction with another person.

Legal status: Legal status refers to the juridical aspects under which the agricultural holding is operated. It also refers to other aspects about the type of holding. From the juridical point of view, a holding may be operated by a single individual, jointly by several individuals with or without contractual agreement belonging to the same or to different households.

Land tenure: Land tenure refers to the current status of the land operated by the holding. The collection of data should relate specifically to that land. Land rented out to others should be excluded. The reference period for land tenure data is usually the day of enumeration.

Land temporarily fallow: Land temporarily fallow is arable land at prolonged rest before re-cultivation. This may be part of the holding’s crop rotation system or because the normal crop cannot be planted because of flood damage, lack of water, unavailability of inputs, or other reasons.

Land under temporary crops: Land under temporary crops includes all land used for crops with a less than one-year growing cycle; that is, they must be newly sown or planted for further production after the harvest.

Land under permanent crops: Land under permanent crops refers to: land cultivated with long-term crops which do not have to be replanted for several years; land under trees and shrubs producing flowers, such as roses and jasmine; and nurseries (except those for forest trees, which should be classified under "forest or other wooded land"). Permanent meadows and pastures are excluded from land under permanent crops.

Land under temporary pastures is the land temporarily cultivated with pastures.

Land under permanent pastures means land used permanently (i.e. for five years or more), seeded and cared for or grown naturally (grazing land). Permanent pastures on which trees and shrubs are grown should be classified under this category only if the growing of grass (naturally growing grass) is the most important use of the area.

Land use: classification of land according to the activity undertaken on the land.

Legal status of holder: juridical aspects under which an agricultural holding is operated.

Livestock: animals (including birds and insects) kept or reared in captivity mainly for agricultural purposes.

Loan/Credit: Loan for agricultural purposes refers to any type of credit received for purposes related to the operations of the agricultural holding.

Local produce market: refers to farmers who buy produce at your local farmer market. Farmer's markets feature local farmers who sell their products once or twice a week at stands located in public use areas.

Miller: refers to a person who operates a mill, a machine to grind a cereal crop to make floor.

Mixed or Associated Cropping: Mixed cropping, also called associated and inter-planted cropping, refers to the situation when two or more different temporary or permanent crops are grown simultaneously on the same field or plot.

Mixed stand: This describes different crops simultaneously grown on the same plot.

Module: a separate component of the agricultural census –a modular approach is used for the agricultural census, with core and supplementary modules.

Nurseries refer: to a place where young plants are grown and cared for. E.g. some nurseries sell plants to the general public.

Number of years since cleared (for each parcel): The purpose of this item is to better understand the extent of recent land clearances, especially where shifting cultivation is present or where deforestation is a concern. Usually, it will only be necessary to collect data in broad ranges, such as: in the last one year; 1–3 years ago; 4 or more years ago.

Organic fertilizers: fertilizers prepared from processed plant and animal material other wooded land: land with tree/shrub/bush cover less than that required to be classified as a forest.

Own-account agricultural production: a household characteristic, indicating that the household contains one or more agricultural holdings.

Other wooded land: land with trees/shrub/bush cover less than that required to be classified as a forest.

Parcel: A parcel is any piece of land, of one land tenure type, entirely surrounded by other land, water, road, forest or other features not forming part of the holding or forming part of the holding under a different land tenure type.

Pesticide: substances intended to repel, mitigate, control or destroy diseases and pests in plants or animals and to prevent any harm to agricultural commodity during production, storage, transport, processing and marketing etc.

Permanent crops: Permanent crops are crops with a more than one year growing cycle. Permanent crops may be grown in a compact plantation or as scattered trees/plants and both should be included.

Plot: A plot is defined as a piece of land within the holding on which a specific crop or a crop mixture is grown. A parcel may be made up of one or more plots.

Pure stand: This is a crop cultivated in a crop plot. A pure stand can either be permanent or temporary.

Primary Sampling Unit (PSU): The Primary Sampling Units (PSUs) are the areas where the Survey was conducted.

Period of loan or credit refers to the period over which the loan or credit is to be paid off, as agreed at the time the loan was received.

Range land Management is the carefully use of land management of rangeland resources (plants, animals, soil and water) to meet the needs and desires of society.

Respondent: The respondent is the person from whom data are collected about the agricultural unit.

Random sampling: sampling method used for sample surveys, in which each unit within the scope of the survey has a fixed, but not necessarily the same, probability of selection in the sample.

Reference period: the time period to which a given data item collected in a census or survey refers – for example, an agricultural year for crops; the day of enumeration for livestock.

Soil degradation: Soil degradation is the decline in soil quality caused by natural processes or, more commonly, improper use by humans. Its consequences include loss of organic matter; decline in soil fertility; decline in structural condition; erosion; adverse changes in salinity, acidity or alkalinity; and the effects of toxic chemicals, pollutants or excessive flooding.

Soil erosion: Soil erosion is the displacement of soil material by running water, rainfall, wind or other factors, resulting in a decline of arable layers

Sub-holding: A sub-holding is defined as a single agricultural activity or group of activities managed by a particular person or group of persons in the holder's household on behalf of the agricultural holder.

Sub-holder: A sub-holder is a person responsible for managing a sub-holding on the holder's behalf.

Sampling frame: the means by which all in-scope units are identified for a sample survey.

Sampling error: the error in statistics obtained from a sample survey because data are collected from only a sample of unit

Sector: the institutional category (such as household, corporation, cooperative, government) to which the holding belongs.

Soil degradation: decline in soil quality caused by natural processes or improper use by humans.
Source of Loan refers to who provided the credit.
Specific house/room; refers to a house or room used purely/solely for storage of agricultural produce.
Scope: the geographical area or types of units covered by a statistical collection
Temporary crops: Temporary crops are those with a less than one-year growing cycle.

Total area of holding: Total area of holding is the area of all the land making up the agricultural holding. It includes all land operated by the holding without regard to title or legal form. Thus, land owned by members of a household but rented to others should not be included in the area of the holding.

Under shelter/outside; meaning that there are some shelters for storage, but not a house with complete walls.

Unemployment: a situation where a person of working age is without work, available for work and seeking work. **Wood or Forest land:** includes wood lots or tracts of timber, natural or planted, which have or will have value as wood, timber or other forest products

B. Weighting and Response Rates

Computation of Weights

Weights were computed to take care of the different probabilities of selection in order to obtain the true contribution of each selected EA in the sample based on the first and second stage probabilities of selection.

Let M_{hi} = Number of 2011 Liberia Population households in the i^{th} selected EA (PSU) in the h^{th} stratum or county

M_{hi}* = Number of households listed in the i^{th} selected EA in the h^{th} stratum (county by UR)

ΣM_{hi} = Total number of households in the i^{th} stratum (i.e. number of households in either an urban or rural area in a county)

a_h = Number of samples EAs allocated to the h^{th} stratum (county by UR)

e.g. a_1 = 4 for urban area in Lofa County

and a_{12} = 10 for a rural area in Lofa County

b = 10 (number of selected households per EA in each stratum)

Then the first and second stage probabilities of selection are:

$$P_{1hi} = \frac{a_h M_{hi}}{\sum M_{hi}} \quad \text{and} \quad P_{2hi} = \frac{b}{M_{hi}^{*}}$$

Where,

$P_{1\,hi}$ is the probability of selecting the i^{th} EA in the h^{th} stratum, and $P_{2\,hi}$ is the probability of selecting a household in the i^{th} EA of the h^{th} stratum. The overall probability of selection of a household in the i^{th} selected EA of the h^{th} stratum is given by:

$$F_{hi} = P_{1\,hi} * P_{2\,hi}$$

$$= \frac{a_h b}{\sum M_{hi}} * \frac{M_{hi}}{M_{hi}^{*}}$$

The weighting factor (or expansion factor), W_{hi}, for a household in the i^{th} selected EA in the h^{th} stratum is the reciprocal (inverse) of the overall probability of selecting that household.

That is, $$W_{hi} = \frac{1}{F_{hi}}$$

$$= \frac{\sum M_{hi}}{a_h b} * \frac{M_{hi}^{*}}{M_{hi}}$$

To cater for non-response the number of households successfully interviewed in each EA was used in the computation. Therefore,

The final weight for the sample households in the j-th cluster within the i-th sample PSU in stratum h is given by:

$$W_{hi}^{'} = W_{hi} * \frac{b^{'}}{b^{''}},$$

Where:

$b'=$ The number of interviews plus the number of no interviews in the sample cluster

$b''=$ Total number of interviewed sample households selected in the j-th sample PSU within the i-th sample stratum h.

C. Estimates of Sampling Errors

The SPSS Software Complex Samples (CSPlan) module was used for estimating the sampling errors, the coefficient of variation (CV), the confidence limits, the design effect and the square root of the design effect. A CV exceeding 20% is considered very low and signifies that the sample size is too small.

D. Appendix D. Tables

Table 2.5: Distribution of population in the agriculture households and holder by sex, age group and relation to household head by County

County	Sex	Agriculture Households Population			Agriculture Holder		Non Holder
		Total	**Male**	**Female**	**Male**	**Female**	
Bomi	**Head**	**7,912**	4,729	3,183	4,357	3,183	371
	Spouse	**5,719**	-	5,719	-	463	5,048
	Son/Daughter	**23,485**	12,592	10,893	51	-	2,660
	Son/Daug. in Law	**33**	-	33	-	-	33
	Parent	**826**	175	651	-	-	826
	Grand Child	**1019**	411	608			84
	Relative	**2294**	834	1459			1,058
	Non-Relative	**722**	186	536			722
	Total	**42,010**	**18,927**	**23,082**	**4,408**	**3,646**	**10,802**
Bong	Head	40,917	**32,555**	**8,362**	**32,555**	**8,362**	-
	Spouse	**22,120**	-	22,120	-	9,742	11,766
	Son/Daughter	**128,651**	65,648	63,003	2,709	978	24,575
	Son/Daug. in Law	**2,363**	1,391	972	-	828	144
	Parent	**691**	-	691	-	-	691
	Grand Child	**2883**	1477	1405	0	0	72
	Relative	**12090**	4656	7433	0	2769	5,530
	Non Relative	**900**	0	900	0	0	900
	Total	**210,615**	**105,727**	**104,886**	**35,264**	**22,679**	**43,678**
	Head	**48,879**	27,145	21,735	27,145	21,735	-
	Spouse	**32,457**	-	32,457	-	3,612	28,446
	Son/Daughter	**94,443**	50,108	44,335	-	1,073	21,013
	Son/Daug. in Law	**1,444**	1,060	383	769	107	251
	Parent	**586**	335	251	335		251

Lofa	**Grand Child**	**3869**	2144	1725			-
	Relative	**5441**	2861	2581	0		1,817
	Non Relative	**2075**	2050	25	1073		291
	Domestic Worker	**800**		800			800
	Total	**189,994**	**85,703**	**104,292**	**29,322**	**26,527**	**52,869**
Nimba	**Head**	**62,905**	52,591	10,314	51,712	10,314	879
	Spouse	**50,119**	-	50,119	-	30,307	19,812
	Son/Daughter	**130,582**	69,393	61,189	566	-	21,290
	Son/Daug. in Law	**8,257**	2,287	5,970	-	-	455
	Parent	**9,937**	8,259	1,678	3,567	-	3,109
	Grand Child	**9149**	2145	7004	0	0	-
	Relative	**3690**	420	3270	416	0	1,900
	Non Relative	**406**	21	384	0	0	395
	Domestic Worker	**5**	0	5	0	0	-
	Total	275,048	135,116	139,933	56,261	40,621	47,840

	Table 2.6: Size of population in the agriculture households, by educational status, sex and County				
		COUNTY:			
	Educational attainment	Total population in the agriculture households		Non holders	Number of Holders
		Male	Female		
Bomi	None	4,013	10,570	5,582	4,494
	Pre-primary	2,561	3,278	1,057	227
	Primary	4,643	4,028	1,557	875
	Junior High	2,932	887	1,447	1,759
	Senior High	497	877	974	181
	Vocational	486	-	186	300
	Degree	219	-	-	219
	DK	-	-	-	-
	Total	**15,350**	**19,641**	**10,803**	**8,054**
BONG	None	35,685	46,589	25,481	36,254
	Pre-primary	28,723	28,906	1,717	5,976
	Primary	12,244	10,261	6,786	4,368
	Junior High	7,399	3,565	4,577	4,216
	Senior High	7,606	3,741	5,046	6,229
	Vocational	-	-	-	-
	Degree	900	72	72	900
	DK	-	-	-	-
	Total	**92,557**	**93,136**	**43,680**	**57,944**
LOFA	None	20,345	50,970	27,668	33,834
	Pre-primary	20,921	16,978	1,778	833
	Primary	10,957	11,645	6,726	3,730
	Junior High	9,430	4,974	6,737	4,194
	Senior High	11,903	8,920	9,114	11,590
	Vocational	2,636	-	582	1,656
	Degree	264	13	264	13
	DK	489	-	-	-
	Total	**76,945**	**93,500**	**52,870**	**55,849**
NIMBA	None	22,625	47,039	23,847	27,463
	Pre-primary	21,071	13,996	1,634	5,942
	Primary	46,350	47,082	17,527	39,119
	Junior High	15,932	7,727	2,667	18,851
	Senior High	4,963	2,021	1,950	4,884
	Vocational	180	99	99	180
	Degree	555	5	117	442
	DK	-	-	-	-
	Total	**111,676**	**117,968**	**47,840**	**96,882**

Table 2.7: Size of population in the agriculture households, by type of MAIN activity and sex and County

Main Activity	Bomi			Bong			Lofa			Nimba			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Grand Total
Crop production	**15,206**	5,668	9,538	**82,799**	41,980	40,819	**100,307**	37,373	62,934	**121,364**	62,989	58,375	319,676

Livestock	**-**	-	-	**-**	-	-	**489**	489	-	**-**	-	-	489
Fisheries	**-**	-	-	**-**	-	-	**-**	-	-	**-**	-	-	
Forestry	**-**	-	-	**-**	-	-	**-**	-	-	**88**	88	-	88
Aquaculture	**-**	-	-	**-**	-	-	**-**	-	-	**-**	-	-	
Trader	**1,458**	809	649	**1,470**	72	1,398	**1,098**	264	834	**1,118**	150	968	5,144
Artisan	**-**	-	-	**-**	-	-	**-**	-	-	**-**	-	-	
Agricultural paid job outside holding	**-**	-	-	**-**	-	-	**-**	-	-	**161**	150	11	161
Non agriculture paid job	**219**	219	-	**1,669**	1,525	144	**-**	-	-	**288**	258	29	2,176
No activity-looking for work	**-**	-	-	**562**	-	562	**990**	-	990	**11**	11	-	1,001
No activity - not looking for work	**509**	33	476	**208**	-	208	**107**	-	107	**852**	150	703	1,676

Student	**12,069**	6,081	5,988	**57,901**	29,775	28,126	**46,498**	28,124	18,374	**53,181**	30,840	22,341	169,649
Household work	**941**	400	542	**15,466**	7,021	8,446	**3,610**	1,285	2,325	**18,174**	3,808	14,366	38,191
Too young	**-**	-	-	**4,246**	860	3,385	**2,395**	740	1,656	**1,720**	624	1,095	8,361
Total	**30,401**	**13,210**	**17,191**	**164,321**	**81,233**	**83,089**	**155,493**	**68,274**	**87,218**	**196,956**	**99,067**	**97,889**	547,171

Table 2.9: Size of population in agriculture households, by type of Secondary activity, sex and County

Number of populations in agriculture Households

	Bomi			Bong			Lofa			Nimba		
Secondary activity	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Crop production	**6,023**	3,958	2,065	**27,194**	12,350	14,844	**89,580**	37,442	52,138	**51,877**	31,305	20,572
Livestock	**-**	-	-	**534**	534	-	**-**	-	-	**1,980**	1,560	420
Fisheries	**-**	-	-	**-**	-	-	**918**	918	-	**-**	-	-
Forestry	**-**	-	-	**-**	-	-	**-**	-	-	**-**	-	-
Aquaculture	**33**	33	-	**-**	-	-	**-**	-	-	**-**	-	-
Trader	**8,483**	2,856	5,627	**20,946**	12,118	8,828	**5,329**	2,009	3,320	**48,588**	24,460	24,128
Artisan	**79**	46	33	**3,064**	2,380	684	**-**	-	-	**-**	-	-

Agricultural paid job outside holding	**-**	-	-	**1,728**	1,520	208	**251**	251	-	**1,895**	1,895	-
Non agriculture paid job	**1,828**	1,449	379	**5,291**	3,846	1,445	**-**	-	-	**4,014**	2,409	1,606
No activity-looking for work	**1,395**	1,298	97	**5,589**	2,013	3,575	**10,310**	4,358	5,952	**906**	858	48
No activity - not looking for work	**1,284**	33	1,251	**11,115**	4,633	6,482	**3,910**	157	3,753	**22,533**	11,787	10,746
Student	**746**	700	46	**30,618**	16,260	14,358	**39,727**	23,628	16,100	**41,561**	21,241	20,320
Household work	**12,865**	3,537	9,328	**61,704**	27,534	34,171	**12,993**	4,755	8,237	**33,895**	11,223	22,673
Too young	**9,274**	5,017	4,257	**42,833**	22,540	20,293	**26,975**	12,183	14,792	**67,799**	28,379	39,420
Total	**42,010**	**18,926**	**23,083**	**210,615**	**105,727**	**104,888**	**189,994**	**85,702**	**104,292**	**275,049**	**135,116**	**139,932**

Table 4.1: Number and distribution of means of acquiring the farm/parcels by location and period acquired

	COUNTY:	**BOMI**				
	Location			**Length of period**		
Means of acquiring the plot	**Within EA**	**Outside EA but within District**	**Outside District**	**Under a year ago**	**1-3 years ago**	**4 or more years ago**
Inherited	4,642	1,912	442	-	671	6,326

Purchased	33	-	-	-	-	33
Cleared	-	-	-	-	-	-
Community land	351	1,447	-	-	-	1,798
Use right from Local Authority	-	-	33	-	33	-
Sharecropping	-	-	-	-	-	-
Borrowed	569	33	-	-	-	602
Rented	-	-	-	-	-	-
Other	-	-	-	-	-	-
Total	**5,596**	**3,392**	**475**	**-**	**704**	**8,759**

	COUNTY:	**BONG**				
	Location			**Length of period**		
Means of acquiring the plot	**Within EA**	**Outside EA but within District**	**Outside District**	**Under a year ago**	**1-3 years ago**	**4 or more years ago**
Inherited	24,180	7,693	361	4,303	8,784	19,146
Purchased	4,156	-	-	-	1,667	2,490
Cleared	-	-	-	-	-	-
Community land	5,295	-	-	889	1,159	3,247
Use right from Local Authority	-	-	-	-	-	-
Sharecropping	-	-	-	-	-	-
Borrowed	1,592	326	-	1,154	72	691
Rented	1,344	-	-	-	1,018	326
Other	612	-	-	-	-	612

Total	**37,179**	**8,019**	**361**	**6,346**	**12,699**	**26,513**
	COUNTY:	**Lofa**				
	Location			**Length of period**		
Means of acquiring the plot	**Within EA**	**Outside EA but within District**	**Outside District**	**Under a year ago**	**1-3 years ago**	**4 or more years ago**
Inherited	43,753	2,742	-	5,119	13,730	27,646
Purchased	1,889	2,039	-	2,039	966	923
Cleared	-	-	-	-	-	-
Community land	1,666	154	-	502	-	1,317
Use right from Local Authority	251	-	-	-	-	251
Sharecropping	-	-	-	-	-	-
Borrowed	179	13	-	38	-	154
Rented	-	154	-	-	154	-
Other	489	-	-	-	-	489
Total	**48,227**	**5,101**	**-**	**7,699**	**14,849**	**30,779**
	COUNTY:	**Nimba**				
	Location			**Length of period**		
Means of acquiring the plot	**Within EA**	**Outside EA but within District**	**Outside District**	**Under a year ago**	**1-3 years ago**	**4 or more years ago**
Inherited	66,797	24,780	-	13,677	14,059	63,840
Purchased	1,569	20	-	1,514	45	31
Cleared	-	-	-	-	-	-
Community land	366	-	-	-	-	366
Use right from Local Authority	29	29	-	-	29	29
Sharecropping	-	-	-	-	-	-

Borrowed	267	62	-	109	70	150
Rented	-	154	-	150	5	-
Other	-	29	-	29	-	-
Total	**69,029**	**25,074**	**-**	**15,480**	**14,208**	**64,416**

Table 4.2: Estimate area of land used by land type and County

Bomi			
Type of land use	**Number of agriculture households**	**Area (ha)**	**% of the total holding**
Land under temporary crops	7,540	26,827	100
Land under temporary meadows and pastures	.	.	
Land temporary fallow	.	.	
Land under permanent crops	.	.	
Land under permanent meadows and pastures	.	.	
Land under farm buildings and farmyards	.	.	
Forest and other wooded land	.	.	
Area used for aquaculture (including inland and coastal waters if part of the holding)	.	.	
Other area not elsewhere classified	.	.	
Total	**7,540**	**26,827**	**100**
Bong			
Type of land use	**Number of agriculture households**	**Area (ha)**	**% of the total holding**
Land under temporary crops	37,860	101,524	85.3
Land under temporary meadows and pastures	833	1,667	1.4
Land temporary fallow	.	.	
Land under permanent crops	1,661	15,761	13.2
Land under permanent meadows and pastures	.	.	
Land under farm buildings and farmyards	.	.	
Forest and other wooded land	.	.	
Area used for aquaculture (including inland and coastal waters if part of the holding)	.	.	
Other area not elsewhere classified	.	.	

Total	**40,355**	**118,952**	**100.0**
Lofa			
Type of land use	**Number of agriculture households**	**Area (ha)**	**% of the total holding**
Land under temporary crops	34,088	112,009	63.6
Land under temporary meadows and pastures	.	.	
Land temporary fallow	14,500	63,397	36.0
Land under permanent crops	.	582	0.3
Land under permanent meadows and pastures	.	.	
Land under farm buildings and farmyards	.	.	
Forest and other wooded land	.	.	
Area used for aquaculture (including inland and coastal waters if part of the holding)	.	.	
Other area not elsewhere classified	.	.	
Total	**48,588**	**175,988**	**100.0**
Nimba			
Type of land use	**Number of agriculture households**	**Area (ha)**	**% of the total holding**
Land under temporary crops	51,461	104,959	44.5
Land under temporary meadows and pastures	.	.	
Land temporary fallow	307	307	0.1
Land under permanent crops	5,540	130,635	55.4
Land under permanent meadows and pastures	.	.	
Land under farm buildings and farmyards	.	.	
Forest and other wooded land	.	.	
Area used for aquaculture (including inland and coastal waters if part of the holding)	.	.	
Other area not elsewhere classified	.	.	
Total	**57,308**	**235,901**	**100.0**
Grand Total	153,791	557,668	100

Table 5.2: Number of agriculture households that received Information by information type, source of information and County

Type of information	**County:**	**Bomi**								
	Radio	**Television**	**Internet**	**Newspaper**	**Agric. Magazines/Bulletins**	**Extension**	**Farmer to**	**Farmers' associ**	**Other**	**Total**

						officers	farmer	ations		
A. weather	-	-	-	-	-	186	300	-	-	**486**
B. Crop Varieties	758	-	-	-	-	79	707	-	-	**1,544**
C. New Agric practices	2,216	-	-	-	-	264	407	-	-	**2,887**
D. Farm machinery	-	-	-	-	-	-	-	-	-	**-**
E. Credit Facilities	300	-	-	-	-	-	-	-	-	**300**
F. Plant Diseases and Pests	2,216	-	-	-	-	186	-	-	-	**2,401**
G. Marketing	712	-	-	-	-	-	-	-	300	**1,012**
H. Livestock husbandry & Diseases	-	-	-	-	-	-	-	-	300	**300**
I. Agronomic practices	1,740	-	-	-	-	-	-	-	-	**1,740**
J. Water & Irrigation	300	-	-	-	-	-	-	-	-	**300**
K. Fish farming	-	-	-	-	-	-	-	-	-	**-**
L. HIV/AIDS	-	-	-	-	-	-	-	-	-	**-**
X. Other	-	-	-	-	-	-	-	-	-	**-**
Total	**8,242**	**-**	**-**	**-**	**-**	**714**	**1,414**	**-**	**600**	**10,970**
Type of information	**County:**	**Bong**								
	Radio	**Television**	**Internet**	**Newspaper**	**Agric. Magazines/Bulletins**	**Extension**	**Farmer to**	**Farmers' associ**	**Other**	**Total**

						officers	farmer	ations		
A. weather	-	-	-	-	-	828	72	-	-	**900**
B. Crop Varieties	-	-	-	-	-	828	684	-	-	**1,512**
C. New Agric practices	216	-	-	-	-	828	72	-	72	**1,189**
D. Farm machinery	-	-	-	-	-	-	-	-	-	**-**
E. Credit Facilities	-	-	-	-	-	-	-	-	-	**-**
F. Plant Diseases and Pests	216	-	-	-	-	828	-	-	72	**1,117**
G. Marketing	-	-	-	-	-	-	-	-	-	**-**
H. Livestock husbandry & Diseases	-	-	-	-	-	-	-	-	-	**-**
I. Agronomic practices	216	-	-	-	-	-	-	-	-	**216**
J. Water & Irrigation	-	-	-	-	-	828	-	-	-	**828**
K. Fish farming	-	-	-	-	-	-	-	-	-	**-**
L. HIV/AIDS	-	-	-	-	-	-	-	-	-	**-**
X. Other	-	-	-	-	-	-	-	-	-	**-**
Total	**649**	**-**	**-**	**-**	**-**	**4,141**	**828**	**-**	**144**	**5,762**

Type of information	**County:**	**Lofa**								
	Radio	**Television**	**Internet**	**Newspaper**	**Agric. Magazines/Bulletins**	**Extension officers**	**Farmer to farmer**	**Farmers' associations**	**Other**	**Total**

A. weather	107	-	-	-	-	-	-	-	-	**107**
B. Crop Varieties	-	-	-	-	-	-	-	-	-	**-**
C. New Agric practices	1,389	-	-	-	-	251	-	-	-	**1,640**
D. Farm machinery	-	-	-	-	-	-	-	-	-	**-**
E. Credit Facilities	-	-	-	-	-	-	-	-	-	**-**
F. Plant Diseases and Pests	-	-	-	-	-	251	-	-	-	**251**
G. Marketing	-	-	-	-	-	-	-	-	-	**-**
H. Livestock husbandry & Diseases	-	-	-	-	-	-	-	-	-	**-**
I. Agronomic practices	291	-	-	-	-	-	-	-	-	**291**
J. Water & Irrigation	-	-	-	-	-	-	-	-	-	**-**
K. Fish farming	-	-	-	-	-	-	-	-	-	**-**
L. HIV/AIDS	-	-	-	-	-	-	-	-	-	**-**
X. Other	-	-	-	-	-	-	-	-	-	**-**
Total	**1,787**	**-**	**-**	**-**	**-**	**502**	**-**	**-**	**-**	**2,289**
Type of information	**County:**	**Nimba**								
	Radio	**Television**	**Internet**	**Newspaper**	**Agric. Magazines/Bulletins**	**Extension officers**	**Farmer to farmer**	**Farmers' associations**	**Other**	**Total**
A. weather	504	-	-	-	-	312	420	-	-	**1,237**

B. Crop Varieties	4,061	-	-	-	-	307	9	-	-	**4,377**
C. New Agric practices	7,742	-	-	-	-	-	4,106	150	5	**12,459**
D. Farm machinery	-	-	-	-	-	-	-	-	-	**-**
E. Credit Facilities	-	-	-	-	-	-	-	-	-	**-**
F. Plant Diseases and Pests	3,260	-	-	-	-	29	-	-	-	**3,290**
G. Marketing	-	-	-	-	-	-	-	-	-	**-**
H. Livestock husbandry & Diseases	-	-	-	-	-	-	-	-	-	**-**
I. Agronomic practices	-	-	-	-	-	-	-	-	-	**-**
J. Water & Irrigation	-	-	-	-	-	59	-	-	-	**59**
K. Fish farming	-	-	-	-	-	-	-	-	-	**-**
L. HIV/AIDS	-	-	-	-	-	-	-	-	-	**-**
X. Other	-	-	-	-	-	-	-	-	-	**-**
Total	**15,568**	**-**	**-**	**-**	**-**	**707**	**4,536**	**150**	**5**	**21,422**
Grand Total	**26,246**					**6,064**	**6,778**	**150**	**149**	**40,443**

Table 6.1: Number of agriculture households by type of facility, average distance in minutes and County

Bomi				
Type of facility	**Up to 30 minutes**	**More than 30-60**	**More than 60-120 minutes**	**More than 2 hours**

		minutes		
Fertilizer dealer	-	-	125	175
Pesticides dealer	-	-	46	46
Seed dealer	870	711	1,626	1,761
Credit institution	2,326	-	-	227
Irrigation facilities	-	-	-	-
Area equipped for irrigation	-	-	-	-
Veterinary services	-	-	-	-
A periodic or permanent agricultural produce market	-	445	954	1,320
Agricultural produce collection network	175	-	-	-
Food storage facilities	1,048	1,707	175	186
Agricultural processing facilities	-	-	-	-
Facilities for maintaining agricultural machinery	300	-	-	-
Farmers? associations, cooperatives	300	46	-	-
Agricultural extension service	635	1,766	46	-
Electricity	826	175	-	-
Primary school	3,722	943	517	205
Health facility	1,912	460	979	2,080
Radio, telephone (including mobile phone coverage) and Internet services	6,151	300	46	-
Public transport (bus, train, boat)	-	-	-	51

Bong				

Type of facility	Up to 30 minutes	More than 30-60 minutes	More than 60-120 minutes	More than 2 hours
Fertilizer dealer	1,717	1,440	828	2,485
Pesticides dealer	961	612	828	3,096
Seed dealer	4,915	1,800	900	691
Credit institution	1,535	-	-	-
Irrigation facilities	828	-	-	-
Area equipped for irrigation	-	-	-	-
Veterinary services	-	-	-	-
A periodic or permanent agricultural produce market	5,508	1,923	3,801	2,618
Agricultural produce collection network	-	-	-	-
Food storage facilities	5,292	144	-	-
Agricultural processing facilities	1,734	-	-	-
Facilities for maintaining agricultural machinery	-	828	-	-
Farmers? associations, cooperatives	4,265	5,565	899	833
Agricultural extension service	216	-	-	-
Electricity	144	-	-	-
Primary school	20,142	3,833	2,282	1,383
Health facility	9,960	3,037	3,810	4,522
Radio, telephone (including mobile phone coverage) and Internet services	17,540	3,554	2,066	612
Public transport (bus, train, boat)	7,155	900	-	-

Lofa				

Type of facility	Up to 30 minutes	More than 30-60 minutes	More than 60-120 minutes	More than 2 hours
Fertilizer dealer	251	-	-	-
Pesticides dealer	-	-	-	-
Seed dealer	780	369	251	794
Credit institution	-	-	251	251
Irrigation facilities	-	-	-	-
Area equipped for irrigation	-	-	-	-
Veterinary services	549	-	-	-
A periodic or permanent agricultural produce market	1,601	1,539	2,632	2,440
Agricultural produce collection network	1,608	1,509	1,347	846
Food storage facilities	25,674	13,871	2,103	1,270
Agricultural processing facilities	1,548	369	883	1,335
Facilities for maintaining agricultural machinery	1,131	-	-	-
Farmers? associations, cooperatives	291	251	-	-
Agricultural extension service	825	-	-	107
Electricity	1,073	-	-	-
Primary school	35,618	6,699	3,329	1,230
Health facility	20,492	6,625	3,292	8,051
Radio, telephone (including mobile phone coverage) and Internet services	33,357	1,550	-	154
Public transport (bus, train, boat)	107	-	-	-

Nimba				

Type of facility	Up to 30 minutes	More than 30-60 minutes	More than 60-120 minutes	More than 2 hours
Fertilizer dealer	98	1,445	29	420
Pesticides dealer	93	1,357	29	5
Seed dealer	3,056	2,713	188	159
Credit institution	2,231	3,857	-	-
Irrigation facilities	5	-	-	-
Area equipped for irrigation	5	-	-	-
Veterinary services	828	-	-	-
A periodic or permanent agricultural produce market	4,057	2,344	223	307
Agricultural produce collection network	3,676	-	3,260	416
Food storage facilities	25,817	5,754	4,563	-
Agricultural processing facilities	550	1,098	29	-
Facilities for maintaining agricultural machinery	29	703	29	-
Farmers? associations, cooperatives	460	179	29	416
Agricultural extension service	34	11	29	307
Electricity	511	-	-	-
Primary school	50,081	10,234	180	-
Health facility	15,917	10,612	7,091	4,285
Radio, telephone (including mobile phone coverage) and Internet services	15,573	312	-	416
Public transport (bus, train, boat)	4,071	336	-	-

Table 6.2: Number of agriculture households by water source type and average distance to source in minutes

Bomi				
Main Source of Water (Drinking and Cooking)	**Up to 30 minutes**	**More than 30-60 minutes**	**More than 60-120 minutes**	**More than 2 hours**
Piped water inside house	-	-	-	-
Piped water outside house but in yard	-	-	-	-
Public stand post/water point	481	-	-	-
Community borehole	4,020	-	-	-
River/stream/pond	1,047	-	-	-
Protected well	-	-	-	-
Unprotected well	659	186	-	-
Protected Spring	-	-	-	-
Unprotected Spring	1,518	-	-	-
Other	-	-	-	-
Bong				
Main Source of Water (Drinking and Cooking)	**Up to 30 minutes**	**More than 30-60 minutes**	**More than 60-120 minutes**	**More than 2 hours**
Piped water inside house	-	-	-	-
Piped water outside house but in yard	398	-	-	-
Public stand post/water point	9,098	833	-	-
Community borehole	9,201	828	326	-
River/stream/pond	13,009	1,382	612	-
Protected well	3,975	-	-	-
Unprotected well	562	-	-	-
Protected Spring	-	-	-	-

Unprotected Spring	691	-	-	-
Other	-	-	-	-
Lofa				
Main Source of Water (Drinking and Cooking)	**Up to 30 minutes**	**More than 30-60 minutes**	**More than 60-120 minutes**	**More than 2 hours**
Piped water inside house	-	-	-	-
Piped water outside house but in yard	6,017	-	-	-
Public stand post/water point	10,660	1,050	-	-
Community borehole	21,249	545	-	-
River/stream/pond	8,946	214	197	-
Protected well	-	-	-	-
Unprotected well	-	-	-	-
Protected Spring	-	-	-	-
Unprotected Spring	-	-	-	-
Other	-	-	-	-
Nimba				
Main Source of Water (Drinking and Cooking)	**Up to 30 minutes**	**More than 30-60 minutes**	**More than 60-120 minutes**	**More than 2 hours**
Piped water inside house	-	-	-	-
Piped water outside house but in yard	9,033	-	-	-
Public stand post/water point	7,408	416	-	-
Community borehole	1,561	-	-	-
River/stream/pond	2,738	624	-	-
Protected well	34,696	-	-	-
Unprotected well	4,880	-	-	-

Protected Spring	-	-	-	-
Unprotected Spring	1,238	312	-	-
Other	-	-	-	-

Table 9.4: Number agriculture households who received loan during the last 5 years by source of loan, type of collateral and County

	County:	Bomi						
	Number of agriculture households							
	Type of collateral							
Source of loan	No collateral	Land title	Crops	Lives tock	Salar y	Third Party	Oth er	Tota l
Liberia Bank for Development and Investment	-	-	-	-	-	-	-	-
Commercial Banks	-	-	-	-	-	-	-	-
Micro finances institutions	-	-	-	-	-	-	-	-
Cooperative credit society	300	-	-	-	-	403	-	**703**
Input supplier	-	-	-	-	-	-	-	-
Money lenders	-	-	-	-	-	-	-	-
Self-help group	-	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-
NGO	-	-	-	-	-	-	-	-
Family and friends	361	-	-	-	-	300	-	**661**
Other	-	-	-	-	-	-	-	-
Total	661	-	-	-	-	703	-	1,364
	County:	Bong						
	Number of agriculture households							

	Type of collateral							
Source of loan	No collateral	Land title	Crops	Lives tock	Salar y	Third Party	Oth er	Tota l
Liberia Bank for Development and Investment	-	-	-	-	-	-	-	-
Commercial Banks	-	-	-	-	-	-	-	-
Micro finances institutions	-	-	-	-	-	-	-	-
Cooperative credit society	-	-	-	-	-	-	-	-
Input supplier	-	-	-	-	-	-	-	-
Money lenders	-	-	-	-	-	-	-	-
Self-help group	-	-	-	-	-	828	562	1,391
Government	-	-	-	-	-	-	-	-
NGO	-	-	-	-	-	-	-	-
Family and friends	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	828	562	1,391
	County:	Lofa						
	Number of agriculture households							
	Type of collateral							
Source of loan	No collateral	Land title	Crops	Lives tock	Salar y	Third Party	Oth er	Tota l
Liberia Bank for Development and Investment	-	-	-	-	-	-	-	-
Commercial Banks	-	-	-	-	-	-	-	-
Micro finances institutions	-	-	-	-	-	-	-	-

Cooperative credit society	251	-	-	-	-	-	-	**251**
Input supplier	-	-	-	-	-	-	-	**-**
Money lenders	358	-	-	-	-	-	-	**358**
Self-help group	-	-	-	-	-	-	-	**-**
Government	-	-	-	-	-	-	-	**-**
NGO	-	-	-	-	-	-	-	**-**
Family and friends	-	-	-	-	-	251	-	**251**
Other	-	-	-	-	-	-	-	**-**
Total	**610**	**-**	**-**	**-**	**-**	**251**	**-**	**861**
	County:	**Nimba**						
	Number of agriculture households							
	Type of collateral							
Source of loan	**No collateral**	**Land title**	**Crops**	**Livestock**	**Salary**	**Third Party**	**Other**	**Total**
Liberia Bank for Development and Investment	-	-	-	-	-	-	-	**-**
Commercial Banks	-	-	-	-	-	-	-	**-**
Micro finances institutions	180	-	-	-	88	9	-	**277**
Cooperative credit society	-	-	6,521	88	-	392	-	**7,001**
Input supplier	-	-	-	-	-	-	-	**-**
Money lenders	-	-	-	-	-	3,265	-	**3,265**
Self-help group	-	-	4,673	-	-	885	562	**5,558**
Government	-	-	-	-	-	-	-	**-**

NGO	-	-	-	-	-	-	-	-
Family and friends	194	-	-	-	-	-	-	**194**
Other	-	-	-	-	-	-	-	-
Total	**374**	**-**	**11,194**	**88**	**88**	**4,551**	**562**	**16,857**

Table 13.1: Number of agriculture households who reported use of agriculture equipment by type, ownership status and County in past 12 months

Type of Equipment	Total no. of equipment	Owned solely by the holder or members of the holder ?s household	Owned by the holding jointly with other holdings	Provided by the landlord	Provided by other private holders (excluding cooperatives)	Provided by a cooperative	Provided by a private agricultural service establishment	Provided by a government agency	Rented	Borrowed	other
Hoes	155,709	138,690	11,609	612	5	-	-	-	-	4,793	-
Axes	129,849	110,382	13,437	612	307	-	-	-	-	5,111	-
Slashers	5,594	5,565	-	-	-	-	-	-	-	29	-
Pangas/Machete	83,267	67,823	12,298	-	150	-	-	-	-	2,996	-
Watering cans	2,812	2,812	-	-	-	-	-	-	-	-	-

Wheelbarrows	5,855	4,658	1,151	-	-	-	-	-	-	46	-
Pruning knives	12,998	12,998	-	-	-	-	-	-	-	-	-
Pruning saws	833	833	-	-	-	-	-	-	-	-	-
Fork hoe	4,459	420	4,039	-	-	-	-	-	-	-	-
Tractor	828	-	-	-	-	-	-	-	828	-	-
Sprayer	29	29	-	-	-	-	-	-	-	-	-
Pail	26,446	26,446	-	-	-	-	-	-	-	-	-
Milk can	194	97	-	-	-	-	-	-	-	97	-
Hand Mill (Manual Hammer)	1,156	573	-	-	-	-	-	-	-	583	-
Ox Cart	5,610	5,610	-	-	-	-	-	-	-	-	-
File/sharpening stone	78,056	68,635	5,723	1,440	-	-	-	-	-	2,257	-
Total	**513,697**	**445,573**	**48,258**	**2,664**	**461**	**-**	**-**	**-**	**828**	**15,912**	**-**

Table 13.2: Number of agriculture equipment owned by type; average number owned per agriculture households by County in past 12 months

Type of equipment	Total Number of agriculture households reporting	Number of equipment owned	Average number of equipment per households
Hoes	155,709	646,959	4
Axes	129,849	368,531	3
Slashers	5,594	8,165	1

Pangas/Machete	83,267	430,873	5
Watering cans	2,812	4,560	2
Wheelbarrows	5,855	16,220	3
Pruning knives	12,998	34,372	3
Pruning saws	833	1,667	2
Chain/Handsaw	-	.	-
Sheller spade	-	.	-
Fork hoe	4,459	19,660	4
Tractor		-	-
Plough mechanical	-	.	-
Ox-plough	-	.	-
Trailer	-	.	-
Harrow/Cultivator	-	.	-
Weeder	-	.	-
Planter	-	.	-
Sprayer	29	29	1
Pail	26,446	51,703	2
Milk can	194	189	1
Hand Mill (Manual Hammer)	1,156	665	1
Hammer Mill (Engine Driven)	-	.	-
Ox Cart	5,610	8,053	1
File/sharpening stone	78,056	218,553	3
Other, specify	-	.	-

Total	**513,697**	**1,810,200**	**4**

Table 14.2: Number and distribution of Cattle by type, age and County

Lofa & Nimba Counties

Lofa			
Type of Cattle	**Total Number of Cattle**	**Number of Cattle owned by female households' members**	**Number of Cattle owned by male households' members**
Indigenous cattle (beef)	-	-	-
Exotic (beef)	-	-	-
Crossbreed (beef)	874	874	-
Dairy cattle	-	-	-
Bulls	-	-	-
Cows	-	-	-
Heifers	-	-	-
Female calves < 1 year	-	-	-
Male calves < 1 year	-	-	-
Tollies 1-3 yrs	-	-	-
Oxen	-	-	-
Total Cattle	**874**	**874**	**-**

NIMBA

Type of Cattle	**Total Number of Cattle**	**Number of Cattle owned by female households' members**	**Number of Cattle owned by male households' members**

Indigenous cattle (beef)	7,745	4,137	3,608
Exotic (beef)	-	-	-
Crossbreed (beef)	-	-	-
Dairy cattle	-	-	-
Bulls	-	-	-
Cows	-	-	-
Heifers	-	-	-
Female calves < 1 year	-	-	-
Male calves < 1 year	-	-	-
Tollies 1-3 yrs	-	-	-
Oxen	-	-	-
Total Cattle	**7,745**	**4,137**	**3,608**

Table 14.3: Number and distribution of Goats and Sheep by type, Sex, and County
Bomi, Lofa and Nimba

BOMI

Goat and Sheep	Number of Goats and Sheep	Number of Goats and Sheep owned by female households' members	Number of Goats and Sheep owned by male households' members
Goat (Female) /doe	3,883	3,883	-
Goat (Male)/buck	4,557	612	3,945
Goats (Female) < 1 year	612	-	612
Goat (Male) < 1 year	-	-	-

Total Goat	**9,052**	**4,495**	**4,557**
			-
Sheep (Male)/ ram	5,880	2,074	3,806
Sheep (Female)/ewe	1,888	-	1,888
Sheep (Male)/ ram < 1 year	1,383	-	1,383
Sheep (Female)/ewe < 1 year	-	-	-
Total Sheep	**9,151**	**2,074**	**7,077**

LOFA			
Goat and Sheep	**Number of Goats and Sheep**	**Number of Goats and Sheep owned by female households members**	**Number of Goats and Sheep owned by male households members**
Goat (Female) /doe	2,515	1,456	1,059
Goat (Male)/buck	3,173	291	2,882
Goats (Female) < 1 year	4,200	1,456	2,744
Goat (Male) < 1 year	291	291	-
Total Goat	**10,179**	**3,494**	**6,685**
Sheep (Male)/ ram	1,541	582	959
Sheep (Female)/ewe	690	690	-
Sheep (Male)/ ram < 1 year	633	633	-
Sheep (Female)/ewe < 1 year	582	582	-
Total Sheep	**3,446**	**2,487**	**959**

NIMBA			
Goat and Sheep	**Number of Goats and Sheep**	**Number of Goats and Sheep owned by female households' members**	**Number of Goats and Sheep owned by male households' members**
Goat (Female) /doe	9,236	6,574	2,662
Goat (Male)/buck	4,666	3,882	784
Goats (Female) < 1 year	8,876	2,982	5,894
Goat (Male) < 1 year	6,365	1,946	4,419
Total Goat	**29,143**	**15,384**	**13,759**
Sheep (Male)/ ram	2,490	374	2,116
Sheep (Female)/ewe	1,290	361	929
Sheep (Male)/ ram < 1 year	541	361	180
Sheep (Female)/ewe < 1 year	-	-	-
Total Sheep	**4,321**	**1,096**	**3,225**

Table14.4: Number and distribution of other domestic animals by type and County

County:

Bomi			
Domestic animals	**Number of domestic animals**	**Number of domestic animals owned by female households' members**	**Number of domestic animals owned by male households' members**
Pigs	-	-	-
Horses	-	-	-
Dogs	252	-	252

Cats	186	186	-
Other specify	-	-	-

Bong			
Domestic animals	**Number of domestic animals**	**Number of domestic animals owned by female households members**	**Number of domestic animals owned by male households members**
Pigs	4,982	534	4,448
Horses	-	-	-
Dogs	1,018	1,018	-
Cats	-	-	-
Other specify	-	-	-

Lofa			
Domestic animals	**Number of domestic animals**	**Number of domestic animals owned by female households' members**	**Number of domestic animals owned by male households' members**
Pigs	489	-	489
Horses	-	-	-
Dogs	2,634	1,364	1,270
Cats	3,008	2,855	153
Other specify	-	-	-

Nimba

Domestic animals	**Number of domestic animals**	**Number of domestic animals owned by female households members**	**Number of domestic animals owned by male households members**

Pigs	6,070	1,289	4,781
Horses	-	-	-
Dogs	16,948	16,397	551
Cats	-	-	-
Other specify	26,084	26,084	-

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Identification and general characteristics[4]

Identification:	**County name**		**CCode**		**District name**		**dCode**		**Clan name**		**ClCode**	
EFEA Code (10 Digits)			Urban/Rural									
S/ No. EA (2 Digits)												
Structure Number					**HH NO.**							
Location of EA	**Latitude**		**Longitude**									
Name of Respondent			**Contact number of respondents**									

[4] ***Ensure that Information from the Selected EA/Listing Excel files (heighted blue) are transferred onto the Cover Page before interview***

Name of Household head

Section 02: Demographic Characteristics

Household member ID	S2q1 List the names of the Household members **(START FROM THE HEAD)**	S2q2 Relationship of (Name) to Head of Household 1= Head 2= Spouse 3= Son/Daughter 4= Son/Daughter in Law 5= Parent 6= Grand child 7= Relative 8= Non-relative 9= Domestic Worker	S2q3 What is (Name) Sex 1= Male 2= Female	S2q4 What is (Name) Age (in completed years i.e. age at last birthday) 00= less than 1 year 98= If 98 or more 99= Don't know	S2q5 What is (Name) Marital Status **(12 YEARS OR OLDER)** 1= Never married 2= Married 3= Living together 4= Divorced 5= Widowed 6=Separated 99=Don't know	S2q6 What is (Name) Educational attainment **(FOR PERSONS 5 YEARS AND OLDER)** 0=None 1=Pre-primary 2=Primary 3=Junior high 4=Senior High 5=Vocational 6=Degree 99=DK	S2q7 LITERACY **(6 YEARS OR OLDER)** Can (Name) Read or Write in any Language? 1= Yes 2= No	**FOR MEMBERS AGED 5 TO 17 YEARS**					
								S2q8 Is [name] currently going to school? 1= Yes **(Go To S2q10)** 2 = No	S2q9 If No, why is [name] not going to school **(SEE CODES)**	S2q10 Is [name's] biological Mother alive? 1 = Yes 2=No, **GO TO S2q12** 8 =DK, **GO TO S2q12**	S2q11 If alive does [name's] biological Mother live in this household? 1 = Yes 2=No 8 =DK	S2q12 Is [name's] biological Father alive? 1 = Yes 2=No, **GO TO S2q14** 8 =DK, **GO TO S2q14**	S2q13 If alive does (name's) biological Father live in this household? 1 = Yes 2=No 8 =DK
01													
02													
03													
04													
05													
06													

Section 02: Demographic Characteristics Cont'd

Household member ID	DISABILITY	S2q16 What is (Name) Main Activity **(8 YEARS AND ABOVE)? (REFER TO CODES)**	S2q17 What is (Name) Status in employment of Main Job activity **(REFER TO CODES)**	S2q18 What is (Name) Secondary Activity **(REFER TO CODES)**	S2q19 What is (Name) Status in employment of Secondary Job activity **(REFER TO CODES)**	S2q20 Does (Name) Manage a farm (field/plot) 1= Yes 2= No	S2q21 Is (Name) a Holder? 1= Yes 2= No **(If S2q16 or S2q18 =1,2,3,4, 5 and S2q20=1)** **If "1" then member is a holder. Copy the ID of member to Section 3 and applicable Sections** **If "2" end interview for member**	S2q22 What is the Main agricultural activity? 1= Mainly crop production 2= Mainly livestock production 3= Mixed (crop and livestock	**CODES FOR MAIN AND SECONDARY ACTIVITIES** 1=Crop production 2= Livestock 3= Fisheries 4= Forestry 5=Aquaculture 6=Trader 7= Artisan 8= Agricultural paid job outside holding 9 = Non agriculture paid job 10= No activity- looking for work 11= No activity - not looking for work 12 = Student 13 = Household work 14 = Too young **CODES FOR STATUS OF MAIN AND SECONDARY ACTIVITY CODES** 1= Employee

	S2q14 Does (NAME) have any serious disability that limits his/her full participation in life activities (such as mobility, work, social life, etc.) Yes.....1 No.....2 **IF NO, GO TO S2q16**	S2q15 What type of disability does (NAME) have? 1=Sight 2=Hearing 3=Speech 4=Physical 5=Intellect 6=Emotional 8=Other (specify)								2= Employer 3 = Own-account worker 4= Contributing family worker 5= Member of producers' cooperative 11= Other (specify) **CODES FOR REASON WHY NOT GOING TO SCHOOL (s2q9)** 1 = illness 2 = work for food or money 3 = help with household work 4 = care for ill or disabled household member, 5 = care for younger sibling 6 = not interested in school 7= distance to school too far 8 = no food at home, 9 = expensive or no money 10= child considered too young 11= pregnancy/marriage, 12 = expelled from school 13 = failure e.g. of exams, 14 = completed High School 15= disability, 21=other, 99=NA
01										
02										
03										
04										
05										
06										

CHAPTER 1: Section 03: Land Use

S3q1 Household member ID	S3q1 ID of Holder (from Section 02, s2q21)	Farm /Parcel No. S3q2	S3q3 List of Crop Name (If Mixed Crops List Each crop in a Row with similar Farm/Field/Plot Number)	S3q4 Crop Code (SEE CROP CODES)	S3q5 Land use Code (LU)	S3q6 Location of farm/field/plot 1= Within EA 2= Outside EA but within District 3= Outside District	S3q7 How did Holder acquire use of farm/field/plot? 1= Inherited 2= Purchased 3= Cleared 4=Community land 5= Use right from Local Authority 6= Sharecropping 7= Borrowed 8= Rented 9= Other	S3q8 Period in years since land Acquired 1= Under a year ago 2= 1-3 years ago 3 = 4 or more years ago	S3q9 Holder Area Estimate	S3q10 Number of Trees for Permanent Crops	S3q11 Number of Trees planted other than trees for permanent crops	**LAND USE CODES (LU)** 1= Land under temporary crops 2= Land under temporary meadows and pastures 3= Land temporary fallow 4. Land under permanent crops 5= Land under permanent meadows and pastures 6= Land under farm buildings and farmyards 7= Forest and other wooded land 8= Area used for aquaculture (including inland and coastal waters if part of the holding) 13= Other area not elsewhere classified

CODES FOR CROPS

Crop Group	Crop Name	Crop Code	New Code	3. Oil seed crops	Crop Name	Crop Code		9. Tree Crop	Crop Name	Crop Code	
1. Cereals	Wheat	1.01	11		Soya Beans	40	31		Lemon and Limes	90	91
	Maize	1.02	12		Ground Nuts	41	32		Mangos	91	92
	Rice	1.03	13		Caster Beans	42	33		Oranges	92	93
	Sorghum	1.04	14		Linseed	43	34		Other fruits and nut	93	94
	Barley	1.05	15		Mustard	44	35		Paw-paws	94	95
	Oats	1.7	16		Simsim	45	36		Naartjie	95	96
	Millets	1.8	17		Sunflower	46	39		Marula Maroela	96	97
	Mixed Cereals	1.14	18						Eembe	97	98
	Other	1.9	19						Enyandi	98	99
				5. Roots/Tubers	Iris Potatoes	55	51		Grapes	99	910
					Sweet potatoes	56	52		Guava	100	911
2. Vegetables and Melon	Asparagus	15	21		Cassava	57	53		Palm/eendunga	101	912
	Cabbages	16	22		Yams	58	54		Omauni	102	913
	Cauliflowers & Broccoli	17	23		Other roots and tubers	59	59				
	Lettuce	18	24								
	Spinanch	19	25								
	Chicory	20	26	7. Leguminous crops	Beans	70	71	10. Forest trees and plantations			
	Cucumber	21	27		Broad Beans	72	72		Natural forest trees	110	101
	Egg plant	22	28		Chick Peas	73	73		Other forest trees	111	102
	Tomotoes	23	29		Cow Peas	74	74		77= Plantation trees	112	103
	Water melons	24	230		Lentils	75	75				
	Pumpkin	25	231		Peas	76	76				
	Carrots	26	232		Pigeon Peas	77	77	11. OTHER LAND USES			
	Turnips	27	233		Leguminous crops	78	78		fallow land	115	111
	Garlic	28	234						grazing land	116	112

	Onion	**29**	**235**	**8. Sugar Crops**	**Sugar Cane**	**85**	**81**		**homestead**	**117**	**113**
	Mushroom	**30**	**236**		**Sweet sorghum**	**86**	**82**		**other land**	**118**	**119**
	other Vegetables	**31**	**239**		**other sugar crops**	**87**	**89**				

CHAPTER 2: Section 04: Extension visits/ services and Agriculture Information

Holders ID	S4q1 Was this holding/farm ever visited by any Extension service provider during the past 12 months? Yes .....1 No.....2 **(IF NO, Go To s4q6)**	S4q2 How many times was this holding/farm visited by any extension service providers?	S4q3 Which of the following extension service providers visited you? **(SELECT ALL THAT APPLY)** A. MoA veterinary staff B. MoA agricultural extension officer C. Farmers' unions D. CDA (Cooperative Devt. Agency) E. Local/INGO F. Fisheries G. Forestry H. Private sector Dealers I. EPA X. Other	S4q4 Which of the following extension services did you receive **(SELECT ALL THAT APPLY)** A. Farm management B. Selection of crop C. Input use D. Credit E. Farm mechanization F. Livestock husbandry G. Plant protection H. Environmental conservation I. Marketing J. Water irrigation and drainage X. Other	S4q5 Which of the following extension service providers' best satisfy your need? **(SELECT ALL THAT APPLY)** A. None B. MoA veterinary staff C. MoA agricultural extension officer D. Farmers' unions E. CDA (Cooperative Devt. Agency) F. Local/INGO G. Fisheries H. Forestry I. Private sector Dealers J. EPA X. Other	S4q6 Did the holding/farm receive any agricultural related information? Yes =1 No = 2 **IF NO, GO TO SECTION 5**	Which of the following agricultural related information were received by this holding?	
							S4q7 Information Topic **(SELECT ALL THAT APPLY)** A. Weather B Crop varieties C. New agricultural practices D. Farm machinery E. Credit facilities F. Plant diseases and pests G. Marketing H. Livestock husbandry & diseases I. Agronomic practices J. Water & Irrigation K. Fish farming L. HIV/AIDS X. Other	S4q8 MAIN information source 01= Radio 02= Television 03= Internet 04= Newspaper 05= Agric. Magazines/Bulletins 06= Extension officers 07= Farmer to farmer 08= Farmers' associations 09= Agric show/exhibitions 10= Neighbour 15= Other
01								
02								
03								

CHAPTER 3: Section 05: Access to Facilities

Facility No.	SECTION 5a: Facility	S5q1 Does the household have access to any of the following facilities?	S5q2 Travelling time to nearest facility (To and Fro)		SECTION 5b: Main source of Water		SECTION 5c: Toilet
		Yes = 1 No = 2 IF NO, **GO TO S5q3**	1=Up to 30 minutes 2=More than 30-60 minutes 3=More than 60-120 minutes 4=More than 2 hours		S5q3 What is the Household's **MAIN** source of water (drinking & cooking) 1=Piped water inside house 2=Piped water outside house but in yard 3=Public stand post/water point 4=Community borehole 5=River/stream/pond 6=Protected well 7= Unprotected well 8=Protected Spring 9= Unprotected Spring 14=Other (specify)	S5q4 Travelling time to nearest water source 0=Facility in dwelling 1=Up to 30 minutes 2=More than 30-60 minutes 3=More than 60-120 minutes 4=More than 2 hours	S5q5 Type of **MAIN** Toilet facility 1=Flush/pour toilet inside house 2=Flush/pour toilet shared by other households 3=Dry sanitation toilet (VIP) outside yard 4=Dry sanitation toilet (VIP) shared by houses 5=Pit latrine 6=Public pit latrine 7=No toilet (use bush) 8=River/beach 13=Other, specify
01	Fertilizer dealer						
02	Pesticides dealer						
03	Seed dealer						
04	Credit institution						

05	Irrigation facilities			
06	Area equipped for irrigation			
07	Veterinary services			
08	A periodic or permanent agricultural produce market			
09	Agricultural produce collection network			
10	Food storage facilities			
11	Agricultural processing facilities			
12	Facilities for maintaining agricultural machinery			
13	Farmers' associations, cooperatives			
14	Agricultural extension service			
15	Electricity			
16	Primary school			
17	Health facility			

18	Radio, telephone (including mobile phone coverage) and Internet services			
19	Public transport (bus, train, boat)			

CHAPTER 4: Section 06: Means of Transportation

Facility No.	**Means of transport used**	S6q1 Did the household use any of the following means of transport?	S6q2 Source of Main access	S6q3 If Owned , how many NOTE: QUESTION IS APPLICABLE IF AND ONLY IF s6q2 = 1
		Yes = 1 No = 2 **IF NO, NEXT TRANSPORT ITEM**	1= Owns 2= Borrow 3= Rent/hire 8= Others Note: if s6q1 is Head loading/porter, then 1 and 2 is N/A If S6q1=2, S6q2 is blank	
01	Head loading/porter			
02	Car/Pick up			
03	Buses/Lorry			
04	Tractor			
05	Bicycle			
06	Tricycle			
07	Motorbike			
08	Boats/Ferry			

09	Wheelbarrow			
10	Trailers /Truck			
11	Canoes			
16	Others (Specify)			

CHAPTER 5: Section 07: Storage facility

Storage/ Facility No.	**Storage facility**	S7q1 Does the household use any of this type of storage facility?	S7q2 Type of unit used to fill the storage facility	S7q3 Number of units used	S7q4 Weight in Kg. (FOR OFFICE USE ONLY) (S7q2*S7q3)
		Yes = 1 No = 2 **IF NO, NEXT FACILITY**	1=25kg 2= Bags (50kg) 3= bags (100kg) 4=4 corner Tin (12.5kg) 5=Round Tin (15 kg) 10=Other (specify)		
01	Granary/barn				
02	In the house				
03	Specific house/room				

04	Under shelter/outside/kitchen				
05	Sealed containers				
06	Bags				
07	Drums				
08	Silo				
09	Cold storage				
10	Under ground				
15	Other (specify)				

CHAPTER 6: Section 08: Access to Loan/Credit

Holder ID	S8q1 Did this holding apply for a Loan for agricultural purposes	S8q2 Was the loan granted? 1= Yes 2 = No, Go to s8q7	S8q3 **MAIN** Source of Loan received during last 5 years **(MOST RECENT LOAN)** 01= Liberia Bank for Development and Investment 02= Commercial Banks	S8q4 Loan Period 1= Less than 1 Year 2= Between 1 and 3 years 3= More than 3 years 8= Others	S8q5 What was the **MAIN** reason for the Loan? 01= Agriculture labour 02= Seeds 03= Fertilizer 04= Agro chemicals 05= Farm implements and machinery 06= Irrigation structures 07= Livestock 08= Aquaculture (marine resources and fisheries)	S8q6 **MAIN** Type collateral security 0= No collateral 1= Land title 2= Crops 3= Livestock 4= Salary 5= Third party	S8q7 If it was not granted, why not? **(MAIN)** 1= Lack collateral security 2= Not profitable 3= Income too low 4= Previous debt problems 5=Could not get a guarantor

	in the last 5 years? 1= Yes 2 = NO, **NEXT HOLDER**		03= Micro finances institutions 04= Cooperative credit society 05=Input supplier 06= Money lenders 07= Self-help group 08= Government 09= NGO 10= Family and friends 15= Other		09= Trading agricultural produce 10= Tractor 11= Borehole 12= De-bushing (clearing of land) 13= Threshing 18= Other agricultural purpose	11= Other	6= Amount applied for too high 7=Inappropriate purpose of loan 12=Other
01							
02							
03							

CHAPTER 7: S

ection 09: Irrigation/Farm management Practices (ONLY FOR CROP FIELDS)

09a: Irrigation

ID of Holder (from Section 02)	Farm/Parcel No.	**Use of irrigation on the holding**					
		S9q1 Did you use any type of irrigation during the last 12 months 1= Yes 2= No IF NO GO TO S9q7	S9q2 Which irrigation method was used on the irrigated area? 1= Surface irrigation 2 = Sprinklers 3 =Localized irrigation (Drip irrigation)	S9q3 What was the source of irrigation water? 1= Surface water (River /Lake/Pond/Mountain (by gravity)) (go to s9q7) 2= Surface water (River /Lake/Pond (by pumping)) (go to s9q7) 3= Ground water (Deep Well/Tube well) 4= Ground water (Shallow well) 5=Mixed surface water and groundwater 6= Municipal/Town Council Water supply 7= Harvested 8 = Borehole 9 = Treated Waste water/semi purified	S9q4 Did the holder pay for irrigation 1 = Yes 2 = No Skip to s9q7	S9q5 Payment terms for irrigation water 1= water fee per area irrigated (acres) 2 = water fee per volume of water 3 = other	S9q6 What was the frequency of water payment for irrigation 1= Monthly 2 = Quarterly 3= Annually 4= Others

				10 = Rural Water Supply 15= Other Canal			

CHAPTER 8: 0

9b: Farm management

ID of Holder (from Section 02)	Farm/Parcel No.	Farm management practices (ONLY FOR CROP FIELDS)								
		S9q7 Seed Inputs **(SELECT ALL THAT APPLY)** A. Local seeds B. Improved seeds	S9q8 MAIN source of supply of seed inputs 1=Own 2=Exchanges within community 3=Local markets 4=Seed company 5=Donation 6=Cooperatives	S9q9 Did you use any type of fertilizer in the past 12 months ? 1=Yes 2=No (Go to S9q12	S9q10 Type of fertilizer 1= Mineral fertilizers (Inorganic fertiliser) 2=Organo-mineral fertilizers 3= Organic fertiliser 4=Biofertilizers	S9q11 MAIN source of supply of fertilizer inputs 1=own 2=markets 3=cooperatives 4=government 5=NGOs	S9q12 Did you use any type of Pesticide in the past 12 months ? 1=Yes	S9q13 Type of Pesticides A. Insecticides B. Herbicides C. Fungicides D.Rodenticides X. Other pesticides **CHAPTER 9:**	S9q14 MAIN source of supply of pesticides inputs 1=own 2=markets 3=cooperatives 4=government 5=NGOs	S9q15 (If the response in s9q1 is ONLY "A" reason for not using improved input 1= no knowledge 2 = too expensive

		C. Hybrid seeds D. Geneticall y Modified (GM) seeds	7=Governmen t 8=NGOs		5=Manure 10=Other organic materials to enhance plant growth		2=No (GoTO S9q15)			3 = not available 4 = do not see usefulnes s 9= other

CHAPTER 10: Section 10: Aquaculture (Fish Farming)

Holder ID	S10q1 Was Fish Farming	S10q2 What type of aquaculture do you have?	S10q3 Size of type used in m2	S10q4 Source of fingerlings	Number of stocked Fingerlings	S10q9 Number of fish Harvested	S10q10 Total Weight (Kg) of Fish Harvested during the last 12 months

	carried out by this holding during the past 12 months ? 1= Yes, 2 = No IF NO, NEXT HOLDER	1 = Still water culture (Pond) 2 = Running water culture 3 = Water recycling system 4 = Pens, cages and hapas (Cage culture/ Dam) 5=Rice-cum-fish culture 6=Floating rafts, lines, ropes, bags and stakes 7=Tanks and race ways		1 = Government 2 = NGO/Project 3 = Private trader 8 = Other	S10q5 Tilapia	S10q6 Catfish (Clarias)	S10q7 Carp	S10q8 Other Specify		
01										
02										
03										

Section 10: Aquaculture (Fish Farming) Cont'd

Holder ID	S10q11 Was partial harvest from fish farming carried out on this farm during the past 12 months? 1 = Yes	S10q12 What was the reason for partial harvest? 1= Own Consumption 2= Marketing 3 = Other	S10q13 For how many years did the farmer practice aquaculture? 1 = The last three years 2= The last five years 3 = The last ten years 4 = Over ten years	S10q14 What is the water type used? 1= Freshwater 2 = Brackish water 5 = Other	S10q15 What is the water source used? 1 = Rain-fed 2 = Groundwater//borehole 3 = Rivers/canals 4 = Lakes/reservoirs 5 = Dams	S10q16 How do you manage the site? (Type of Activity) 1 = Feeding 2 = Water monitoring 3 = Cleaning 4 = Feeding & Water monitoring 5 = Feeding & Cleaning 6 = Harvesting/fishing 7= Watering & Cleaning 8 = All of the above	Management of Site	
							S10q17 Number of male workers	S10q18 Number of female workers

	2 = No, GO TO s10q14							
01								
02								
03								

CHAPTER 11: Section 13: Food Security

Household ID	S13q1 [During the last 12 MONTHS, was there a time when] you [or any other adult in your household] were worried you would not have enough food to eat because of a lack of money or other resources? Yes = 1 No = 2	S13q2 [During the last 12 MONTHS, was there a time when] you [or any other adult in your household] were unable to eat healthy and nutritious food because of a lack of money or other resources?	S13q3 [During the last 12 MONTHS, was there a time when] you [or any other adult in your household] ate only a few kinds of foods because of a lack of money or other resources? Yes = 1 No = 2	S13q4 [During the last 12 MONTHS, was there a time when] you [or any other adult in your household] had to skip a meal because there was not enough money or other resources to get food? Yes = 1 No = 2	S13q5 [During the last 12 MONTHS, was there a time when] you [or any other adult in your household] ate less than you [he/she] thought you [he/she] should because of a lack of money or other resources?	S13q6 [During the last 12 MONTHS, was there a time when] your household ran out of food because of a lack of money or other resources? Yes = 1 No = 2	S13q7 [During the last 12 MONTHS, was there a time when] you [or any other adult in your household] were hungry but did not eat because there was not enough money or other resources for food? Yes = 1 No = 2	S13q8 [During the last 12 MONTHS, was there a time when] you [or any other adult in your household] went without eating for a whole day because of a lack of money or other resources? Yes = 1 No = 2

		Yes = 1 No = 2			Yes = 1 No = 2			

Section 13: Food Security Cont'd

Household ID	S13q9 Did the household experience any Food shortages during the past 12 months?	S13q10 Main Reasons Food Shortage **(SEE CODES)**	**Codes for s13q10** 01= Loss of crops/Insufficient production 02= Lack of jobs 03= Inability to work because of illness or injury	S13q11 What was the households' immediate	By which HH member			
					S13q12 Adult Male	S13q13 Adult Female	S13q14 Boys	S13q15 Girls

	Yes = 1 No = 2 **GO TO S13q21**		04= Disabled, old age 05= Lack of adequate land 06= Lack of adequate capital 07= Family too big 08= Lack of adequate labour 09= Over selling produce 10= Loss of livestock 11= environmental or political crises 15= Others	response to food shortage? IMMEDIATE RESPONSE(CHANGE IN EATING PATTERN) 1= Skipping meals 2= Eating less preferred food 3= Reducing the size of meal	1 = Yes 2 = No	1 = Yes 2 = No	1 = Yes 2 = No	1 = Yes 2 = No

Section 13: The Food Security Cont'd

Household ID	S13q16 What steps were taken to alleviate food shortage? 1= Use savings to buy food 2= Take out a loan 3= Sold land 4= Sold livestock 5= Get another job 6= Social grant 7= Food relief	By which HH member				S13q21 Is the household likely to experience food shortage during the next 12 months?
		S13q17 Adult Male	S13q18 Adult Female	S13q19 Boys	S13q20 Girls	1 = Yes 2 = No

	8= Help from charities 13=Other (Specify)	1 = Yes 2 = No	1 = Yes 2 = No	1 = Yes 2 = No	1 = Yes 2 = No	

Section 13: The Food Security Cont'd (Natural and manmade disasters)

Household ID D	Which of the following natural disasters did the household experience in the last 12 months? EXTENT OF DAMAGE 0 = No damage 1 = Slight 2 = Moderate 3 = Severe						Which of the following man-made disasters did the household experience in the last 12 months? EXTENT OF DAMAGE 0 = No damage 1 = Slight 2 = Moderate 3 = Severe	
	S13q22 Floods and tidal waves	S13q23 Drought	S13q24 Typhoons or hurricanes/ Hailstorms	S13q25 Pests/diseases	S13q26 Erratic rains	S13q27 Wild fires	S13q28 Other	S13q29 Insecurity	S13q30 Wild fires

CHAPTER 12: Section 14: Other Economic Activity

Holder ID	S14q1 Is Holder engaged in any of the following Other Economic Activities? 1 = Yes 2 = No go to Section 15	**CODES FOR OTHER ECONOMIC ACTIVITIES**	S14q2 What are your other sources of income? A. No other income source B. Income derived from economic production activities other than agricultural production C. Income from paid employment D. Investment income E. Remittances - Internal (within Liberia) F. Remittances - External (outside Liberia) G. Veteran social grant H. Social grant I. Disability pension J. Old age pension grant
01		A. Support agriculture and post-harvest crop activities	
02		B. Hunting, trapping, game propagation and related service activities	
03		C. Forestry and logging	
04		D. Fishing and aquaculture	
05		E. Processing of agricultural products (agro-processing) Handicrafts	
06		F. Wholesale and retail trade	
		G. Repair of motor vehicles and motor cycles	
		H. Hotels and restaurants (excluding agrotourism)	
		I. Agrotourism	
		X. Other	

CHAPTER 13: Section 15: Labour Inputs

Holder IDD	**Number of household members who worked permanently on holding/farm during the past 12 months**				**Number of household members who worked temporary on holding/farm during the past 12 months**			
	S15q1 ADULT MALES 15 years and above	S15q2 ADULT FEMALES 15 years and above	S15q3 CHILDREN BOYS less than 15 years	S15q4 CHILDREN GIRLS less than 15 years	S15q5 ADULT MALES 15 years and above	S15q6 ADULT FEMALES 15 years and above	S15q7 CHILDREN BOYS less than 15 years	S15q8 CHILDREN GIRLS less than 15 years

Section 15: Labour Inputs Cont'd

Household ID	S15q9 Did you have any paid employees during the past 12 months? 1= Yes **2= No GO TO S15q18**	**Number of permanently paid employees during the past 12 months**				**Number of temporary paid employees during the past 12 months**				**Kuu System**			
		S15q10 ADULT MALES 15 years	S15q11 ADULT FEMALES 15 years and above	S15q12 CHILDREN BOYS less than 15 years	S15q13 CHILDREN GIRLS 15 years below	S15q14 ADULT MALES 15 years	S15q15 ADULT FEMALES 15 years and above	S15q16 CHILDREN BOYS less than 15 years	S15q17 CHILDREN GIRLS less than 15 years	S15q18 Did you use the Kuu system during the past 12 months?	S15q19 Which of the following activities did you use	S15q20 ADULT MALES 15 years and above	S15q21 ADULT FEMALES 15 years and above

		and above				and above				1=Yes 2=No, **GO TO NEXT SECTION**	the Kuu for? **(RECORD ALL THAT APPLY)** A. Brushing B. Felling C. Clearing D. Planting E. Weeding F. Harvesting G. Fencing		

CHAPTER 14: Section 16: Equipment

Household ID	Type of Equipment	S16q1 Did your household use (Name of Equipment) during the past 12 months? Yes = 1 No = 2 **IF NO, NEXT ITEM**	S16q2 Type of ownership	**Codes for Ownership (s16q2)** 1 = Owned solely by the holder or members of the holder's household 2=Owned by the household jointly with other households 3=Provided by the landlord 4=Provided by other private holders (excluding cooperatives) 5=Provided by a cooperative 6=Provided by a private agricultural service establishment 7=Provided by a government agency 8 = Rented 9 =Borrowed 14 = other (specify) **IF 3 TO 14 GO TO NEXT ITEM**	S16q3 Enter the number of the agricultural equipment owned by the household If s16q2 = 1 or 2	If used during past 12 months	
						S16q4 If the equipment used was owned, when was it acquired? 1= Less than 1 year ago 2= 1-4 years ago 3=5-9 3= 10 years and over	S16q5 How many of the equipment are in working conditions?
	01= Hoes						
	02= Axes						
	03= Slashers 4= Pangas/Machete						
	05= Watering cans						
	06= Wheelbarrows						
	07= Pruning knives						
	08= Pruning saws						
	09= Chain/Handsaw						

	10= Sheller spade						
	11= Fork hoe						
	12= Tractor						
	13= Plough mechanical						
	14= Ox-plough						
	15= Trailer						
	16= Harrow/Cultivator						
	17= Weeder						
	18= Planter						
	19= Sprayer						
	20= Pail						
	21= Milk can						
	22= Hand Mill (Manual Hammer)						
	23= Hammer Mill (Engine Driven)						
	24= Ox Cart						
	25=File/sharpening stone						
	30= Other, specify						

CHAPTER 15: Section 17: Production and disposition of crop products (All Holders)

Holder ID	S17q1 Crop Name	S17q2 Crop Code (REFER TO SECTION 03)	What is the quantity harvested and in what conditions/ state?			**Codes for Condition** **If Rice or Cassava** 1= Fresh **Maize:** 2= Green harvested: with shell/cob and stalk 3= Green harvested: with shell/cob and without stalk 4= Green harvested: in the shell/cob 5= Fresh/raw harvested: with shell/cob and with stalk 6= Fresh/raw harvested: with shell/cob without stalk 7= Fresh/raw harvested: in the shell/cob 8= Dry at harvest	What is the quantity sold and to whom was it sold?			
			S17q3 Unit of measurement (refer to the codes provided in manual)	S17q4 Number of Units harvested	S17q5 Condition/State (refer to list of codes provided)		S17q6 Cost per unit of measurement L$	S17q7 Quantities sold (For Rice i.e. Paddy)	S17q8 Total value of production sold in L$	S17q9 Mostly sold to: 1= Govt. organizations 2= Private trader local market village 3= Private trader district market 4= Consumer at market 5= Neighbour/Relative 11= Other, specify
01										
02										
03										

Section 17: Production and disposition of crop products Cont'd

Holder ID	Crop Name	Crop Code (REFER TO SECTION 03)	Fill in quantities which were used for other purpose							Where most losses happen
			S17q10 Processed for sale	S17q11 Processed for animal feed	S17q12 Given to A.land lord / proprietor B.For labour C.Friends/relatives D.Exchange for other goods X.Others (specify)	S17q13 Consumed by Household (including that before harvest)	S17q14 Used for seed	S17q15 Quantities stored/Currently in storage	S17q16 Portion lost after harvest (%)	S17q17 Where did most losses occur? 1= on the field 2= during the storage 3 = during the transport 4=Loss at Processing 5=Loss at Packaging 6=Loss at Sales 8 = others
01										
02										
03										

CHAPTER 16: Section 18a: Livestock (All Households)

Household	Livestock (excluding poultry)

	Serial No. of Livestock	S18q1 Did any member of the household raise or own any livestock during reference period (past 12 months)? 1=Yes 2=No, **Go To Poultry S18q18**	S18q2 How many head of livestock did the holding raise or own?	S18q3 How many owned by female Household members?
	01= Indigenous cattle (beef)			
	02= Exotic (beef)			
	03= Crossbreed (beef)			
	04= Dairy cattle			
	05= Bulls (male)			
	06= Cows (female)			
	07= Heifers (young Female cow)			
	08= Female calves < 1 year			
	09= Male calves < 1 year			
	10= Tollies 1-3 yrs			
	11= Oxen			
	Total Cattle			
	12= Goat (Female) /doe			
	13= Goat (Male)/buck			

	14= Goats (Female) < 1 year			
	15= Goat (Male) < 1 year			
	Total Goat			
	16= Sheep (Male)/ ram			
	17= Sheep (Female)/ewe			
	Sheep (Male)/ ram < 1 year			
	19= Sheep (Female)/ewe < 1 year			
	Total Sheep			
	20=Pigs			
	21=Horses			
	22=Dogs			
	23=Cats			
	28=Other specify			

Section 18a: Livestock Cont'd

HH ID	**S18q4** Livestock Serial No.	**Livestock Type**	**Livestock Intake 2018/2019 (during the last 12 months)**			**Livestock Off-take 2018/2019**				**Livestock Losses (2018/2019)**					
			S18q5 Number of livestock bought or	**S18q6** How many head of livestock were born alive in the	**S18q7** Total livestock intake	**S18q8** Number consumed	**S18q9** Number sold/traded, or	**S18q10** Number given away	**S18q11**	**S18q12** Number of deaths	**S18q13** How many of livestock were	**S18q14** How many of livestock were	**S18q15** How many of livestock died due	**S18q16** Number of losses due to other reasons	**S18q17** Total livestock Losses

			received from others	farm during the last 12 months		by the Household	otherwise disposed of for slaughter	(gifts, traditional fines)	Total livestock off-take	due to disease	stolen or lost?	lost to predator ?	to starvation ?	(Specify) e.g. drowning, accidents)	
	1	Cattle													
	2	Goat													
	3	Sheep													
	4	Pig													

Section 18b: Poultry

Household ID	Poultry			
	Serial No. of Poultry Type	S18q18 Did any member of the household raise or own any poultry during reference period? 1=Yes 2=No go to next section	S18q19 Total number	S18q20 How many owned by female Household members?
	1=Indigenous Chicken			
	2=Exotic Chicken (layers)			
	3=Exotic Chicken (broilers)			
	4=Ducks			
	5=Geese			
	6=Turkeys			

	7=Guinea Fowl			
	8=Pigeons			
	13=Others, specify			

CHAPTER 17: Section 19: LIST OF FARMS FOR CROP-CUTTING PLOT SELECTION

Household ID (From s3q1)	Holder ID (From s3q2)	Farm/Parcel No. (From s3q3)	Crop Name (Rice) (From s3q4	Crop Code (Rice) (From s3q5)	Is Rice Farm selected for Crop cutting? 1=Yes COPY HH ID; FARM NO.; CROP CODE TO SECTION20 2=No	Crop Name (Cassava) (From s3q4)	Crop Code (Cassava) (From s3q5)	Is Cassava Farm selected for Crop cutting? 1=Yes COPY HH ID; FARM NO. CROP CODE TO SECTION20 2=No
S19q1	S19q1	S19q2	S19q3	S19q4	S19q5	S19q6	S19q7	S19q8

CHAPTER 18: Section 20: Farm Area Measurement

				Note 2: Only consider fields more than 0.001 Ha for measurements		

Household ID (From s19q1)	Location	COORDINATES		Farm/ Parcel No. (From s19q3)	Crop Code (From s19q5/8)	Area in Ha measured with GPS (Clockwise)	Area in Ha measured with GPS (Anti-clockwise)
		Latitude	Longitude				
S20q1	S20q1	S20q2	S20q3	S20q4	S20q5	S20q6	S20q7

CHAPTER 19: Section 21: CROP-CUTTING RESULTS

S21q1	S21q1	S21q2	S21q3	S21q4		S21q5		S21q6		S21q7	
Household ID (From s20q1)	Farm/Parcel No. (From s20q5)	Crop Name	Crop Code (From s20q6)	Crop –cutting		Fresh Weight of the harvest		Dry Weight		Dry Weight	
				Day	Month	Kilograms		Day	Month	Kilograms	