FY 13 Food for Progress LIVELIHOOD IMPROVEMENT FOR FARMING ENTERPRISES (LIFE) III in Liberia

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BASELINE SURVEY REPORT

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List of Acronyms

CARI	Central Agriculture Research Institute
CDA	Cooperative Development Agency
CWAP	Center for Women Agriculture Program
FAAB	Farming as a Business
FFS	Farmer Field School
FGD	Focus Group Discussion
GAP	Good Agricultural Practices
ICPM	Integrated Crop and Pest Management
IITA	International Institute of Tropical Agriculture
INGO	International Non – Governmental Organizations
KII	Key Informant Interview
LAADCO	Liberia Agricultural and Asset Development Cooperative
LBA	Local Buying Agents
LIFE	Livelihood Improvement of Farming Enterprise
LPMC	Liberia Produce Marketing Corporation
MOCI	Ministry of Commerce and Industry
NAPEX	National Apex of Village Savings and Loan Clubs
PRD	Plant, Replant, and diversification
UNCDF	United Nations Capital Development Fund
USDA	United States Department of Agriculture
VSLC	Village Saving and Loan Clubs
WOCCU	World Council of Credit Unions

Executive Summary

The Livelihood Improvement for Farming Enterprises, Phase III (LIFE III) is a three year, USDA-funded project awarded to ACDI/VOCA. The $ 7.4 million project runs from October 2013 to September 2016 with the objective of improving the livelihoods of smallholder cocoa farmers by increasing farm-level productivity and profitability; strengthening capacity of producer groups; facilitating agricultural lending; developing agro-dealers and improving access to market information. The project covers six of the 15 counties in Liberia – Nimba, Lofa, Bong, Grand Gedeh, River Gee and Gbarpolu Counties. The primary objective of the baseline study is to assess the pre-project conditions of the project beneficiary population. The information will be used to shape LIFE III activity design and will also be used to measure the impact of LIFE III interventions.

To assess the pre-intervention situation of the targeted beneficiaries, the project's field officers were trained on the data collection instrument to interview and measure the farms of 372 sampled cocoa farmer households.

Of the surveyed population 61percent have their own cocoa farms and are the head of household; 9percent of the household head are female while 91percent are male. Most of the cocoa farms are owned by men; only 34percent of the total farms surveyed are jointly owned. Seventy-four percent of farms owned by female farmers are inherited from their parents; they own the cocoa farms when they had no male siblings or when their male siblings had traveled away. Of the total sampled household, only 7percent have formalized title to their farmland, either legal title or tribal certificate. Eighty-three percent of the farmland is owned through traditional conferment like inheritance and informal family arrangements with no document authenticating the ownership of the land. Survey results show that 66percent have no education or only primary education while 30percent attained secondary education and 3percent tertiary education.

The prerequisite to enrollment in the LIFE program is graduating from farmer field school where improved cocoa husbandry techniques are taught. 5,376 smallholder cocoa farmers graduated from 60 FFS during previous phases of the project. However, the adoption of improved techniques is low with only 20percent of the newly enrolled beneficiaries observed to be applying any 4 of the 6 recommended practices while 27percent of the continuing beneficiaries were observed in the LIFE II final evaluation to have adopted the practices; the weighted average for both new and continuing users was calculated to be 24percent. Some of the reasons contributing to the low adoption of those practices include: weak extension services, labor intensiveness of farm maintenance and high cost of cocoa specific fertilizers and other chemicals. On average, farmers are maintaining 0.9 hectare of their farmland with improved cocoa husbandry techniques.

Smallholder farmers are cultivating an average land area of 1 hectare with 180 kg seasonal harvest. Due to post-harvest losses, the average sale value is reduced by 5percent which gives

farmer the average revenue of $200. Nevertheless, there are about 26percent of the farmers producing more than the average seasonal harvest of 180kg; those farmers were observed to be applying recommended cocoa husbandry techniques such as under-brushing the farm, removing and disposing diseased pods and cutting unwanted branches to boost the trees fertility.

Application of improved farm management practices is a serious challenge. Thirty-four percent of the newly enrolled beneficiaries that were interviewed in this baseline survey are practicing at least two of the four recommended farm management practices, which is higher than 27percent of the continuing beneficiaries that were performing at least two of the farm management practices during the LIFE II final evaluation. The weighted average for both old and continuing beneficiaries for this indicator is 31percent. As evident from the data on education standard, 66percent of the farmers are illiterate resulting in a large number unable to practice recommended farm management such as keeping record, work planning, budgeting etc.

The Cooperative Development Agency (CDA) – a government bureau responsible for strengthening cooperatives in Liberia – has limited staff in the field; there are 14 field officers stretch across the fifteen (15) counties. The staff have not had any standard training on cooperative governance and administration; financial management and conflict resolution. The staff only received brief orientation on CDA's mandate and then deploy to their assigned counties. Moreover, the limited operational support to field staff has constrained routine supervision.

There are 31 farmer groups present in the project targeted communities – 8 cooperatives and 23 associations – with the general membership of 4,782 (3631 men, 1151 women). The groups have poor management structures which results in declining membership and high risk of the groups collapsing. Besides the sale of cocoa beans, 15percent of the surveyed beneficiaries are processing sub-grade of cocoa to produce byproducts such as soap.

Thirty-three percent of the households interviewed reported receiving financial services; the average loan farmers are receiving is $125. Eighty percent of the loan is spent on cocoa farm maintenance while 10percent is used to feed the household and 10percent is used to pay school fees and other household expenses. Thirty-nine percent of the respondent received loan from VSLCs. Farmers are also benefiting from value-chain financing arrangements. Farmer associations received approximately $37,600 from exporters as the result of twelve value-chain arrangements which benefits 4,170 smallholder cocoa farmers.

Four local businesses are present in the targeted communities providing new and improved agricultural inputs including seed varieties and inputs. Those agro-dealers have signed commercial agreement with five producer groups to continuously supply new and improved agricultural packages. However, the agreements are not legal-binding and are not dependable. Despite the availability of improved agricultural inputs, only 42percent of the surveyed

population is promulgating improved cocoa seedlings on an average land area of 0.9 hectare per farmer.

There is minimal updated information on cocoa price disseminated to smallholder farmers by their associations; only 28percent of the newly enrolled beneficiaries are receiving cocoa market information from farmer associations while 15percent get market information from their neighbors that have sold cocoa to traders. Twenty-six percent of the cocoa price information is determined by cocoa traders, which makes smallholder farmers vulnerable to price-abuse. These figures are lower than 30percent of continuing beneficiaries that reported in LIFE II final evaluation that they received cocoa price information from their farmer association; the weighted average for both new and continue beneficiaries for this indicator is 29percent. Cocoa price is not disseminated through standard channels to individual farmers such as mobile phone or local radio; market information is transmitted through a rudimentary method – distributing printouts of cocoa price – and is not covering larger population of farmers.

The households interviewed also included an assessment on how women are involved in the cocoa sector. The result shows that women are rarely involved in cocoa production activities. Women are mostly participating in pod breaking and drying. An interview with female farmers revealed that women solely undertake only 6percent of the activities on their cocoa farms; 54percent is jointly conducted with the husbands and 40percent is done by their husbands on their behalf. Of the total farms managed by women, 49percent are solely owned by them; 45percent are jointly owned with their husband while 6percent of the farms that is managed by women belong to their husbands. Women make decision on 18percent of the income and expenditure; 9percent of the decisions are made by their husband while 65percent are jointly made. The proportion of women to men in the producer groups is 3.1 and female participation is low.

Based on the above-mentioned findings, the following table summarizes the key program indicators, the baseline results, the figures represented by the LOA targets specified in planning documents, and indications regarding how realistic these targets may be in light of the baseline findings.

Table 1 Summary of LIFE III Indicators and Baseline Findings

Activity	Indicator	Baseline
A. Training: Improved Farm Management	Kilograms of cocoa harvested per hectare	180kg
	Number of farmers receiving training under LIFE III	0
	Number of hectares subject to improved cocoa husbandry techniques	2.522 ha
	Number of individuals trained in income diversification activities (i.e. community vegetable gardens, livestock management)	5,376
	Number of cocoa farmers applying improved farm management techniques	31% (3,162)
	Number of farmers receiving training in Farming as a Business principles	5,376
B. Capacity Building: Producer Groups/Cooperatives	Number of CDA field staff completing capacity-building training in farmer organization outreach, assessment and support	0
	Number of farmers implementing pilot grants to groups for artisanal processing capacity to produce byproducts from subgrade cocoa.	15% (420)
	Number of members of project-sponsored farmer associations established under the three phases of LIFE	4,782
C. Financial Services: Facilitate Agricultural Lending	Cocoa farmers accessing financial services	32% (3,266)
	Total value of loans disbursed to farmer associations by financial institutions (USD)	351,702
	Value-chain financing arrangements for the sale of cocoa in a given season (not cumulative)	12

Activity	Indicator	Baseline
	Number of Village Savings and Loans Clubs certified as credit unions	0
D. Inputs: Develop Agrodealers	Local businesses or associations providing new agricultural packages	4
	New or improved kinds of planting material and cocoa-specific fertilizer, pesticides or fungicides available to farmers	3
	Number of public-private partnerships formed as a result of USDA assistance	5
	Cocoa seedling distributed or sold to farmers as a result of the project activities.	825,000
	Cocoa nurseries established that provide improved, reasonably priced planting material available to smallholder farmers	3
E. Market Access: Improved Market Information	Number of cocoa farmer associations that regularly provide updated market information to their members	1
	Number of farmers who are able to access current prices for cocoa	25% (2,592)

1. Introduction

This report summarizes the findings from the baseline survey conducted by the LIFE program staff. The primary objective of the baseline survey was to assess the pre-project conditions of the beneficiary population. The results from the survey will be used to assess the prevailing situation for cocoa farmers in the project counties. The survey also captures current qualitative and quantitative data against performance indicators. The reported data will be a benchmark for comparison during the midterm and final evaluations and will be used to measure the LIFE III progress and impact. A total of 372 households were interviewed about farm productivity, profitability, quality and marketing. The respondents were sampled from all six project implementing counties. The survey also included Focus Group Discussions (FGD) and Key Informant Interviews (KII) with cooperatives, cocoa exporters, agro-dealers and the Cooperative Development Agency (CDA). Those FGDs and KIIs provided narrative detail on the household quantitative data. The information will also be used to shape LIFE III activity design.

The grant agreement between USDA and ACDI/VOCA was signed in September 2013. Due to challenges monetizing the donated commodity, the project went into hibernation while a monetization strategy was devised and approved. Once the monetization plan was approved and a buyer for the commodity was identified, the LIFE III project prepared for the baseline survey, the completion of which aligns with the March 2015 receipt of proceeds and the start of direct project activity.

The baseline protocol was refined from the originally proposed survey approach due to the Ebola outbreak in West Africa. To comply with restrictions imposed by the government of Liberia and to keep project staff and the beneficiaries safe, the LIFE III baseline was conducted internally by the LIFE III M&E Specialist. The survey was supported remotely by the regional M&E Specialist based in Ghana and the ACDI/VOCA headquarters staff in Washington, DC.

2. Baseline Survey Methodology

2.1. Aim and Objectives

The aim of this baseline survey is to track pre-intervention data against the project's performance indicators. The data will then be used as a yardstick for evaluation throughout project implementation. The baseline data will be compared to actual performance in order to measure progress and impact. In accordance with the approved Monitoring & Evaluation Plan, all project evaluations will be designed using similar methodology so that the results of the studies will be comparable. Specifically, the expected objectives of this baseline assessment were to:

1. To establish or validate the indicator targets described in the Indicator Performance Tracking Table (IPTT).

2. Collect pre-intervention data on the project's performance indicator as outlined in the results framework, thus establishing the foundation of the program monitoring and evaluation framework.
3. Document basic socioeconomic data pertaining to smallholder cocoa farmers, including income levels, farmer household size, gender roles, etc.
4. Determine the market development conditions and constraints in the cocoa value chain in Liberia so as to properly design the project's intervention.
5. Record the numbers and locations of businesses providing new agricultural packages including improved kinds of planting material and cocoa-specific fertilizer, pesticides or fungicides available to farmers.

2.2. Evaluation Methodologies

2.2.1. Team Composition

The baseline evaluation was conducted by LIFE III program staff across the six project counties. Twenty field officers served as enumerator for the survey. The staff worked within the counties they are assigned to. They conducted interviews with survey participants and measured cocoa farms of those respondents using GPS devices.

The entire exercise was coordinated and guided by the project M&E Specialist with technical support from ACDI/VOCA's Regional M&E Manager based in Ghana. The data collection was supervised by the M&E Specialist in three of the six counties – Grand Gedeh, River Gee and Nimba, with assistance from the field coordinator for that region – while the IT Officer and a supporting field coordinator supervised data collection in the remaining three counties – Bong, Lofa and Gbarpolu Counties.

2.2.2. Sampling Methodologies

A sample size of 372 household was drawn from the list of 2,803 smallholder cocoa farmers identified to be trained at LIFE III farmer field schools. This sample size was determined through random sampling method using the RAOSoft sample size calculator with confidence level of 95percent, margin of error 5percent and a 10percent provision for non-respondents.

The respondents were drawn from across the six project, proportionate to the percentage of the total targeted population located in each of the counties. To further stratify, the percentage of males and females in the targeted populations was used to determine the gender representation as shown in the matrix below:

Table 2 Population distribution by county

County	Total FFS beneficiary per county	Percentage of the total population per county	Number of selected respondents per county disaggregated by sex			Provision for non-respondent
			M	F	Total	
Grand Gedeh	566	20%	58	16	75	8
River Gee	346	12%	37	9	46	5
Gbarpolu	239	9%	18	14	32	3
Lofa	661	24%	65	23	88	9
Bong	497	18%	46	20	66	7
Nimba	494	18%	54	12	66	7
Total	**2803**	**100%**	**278**	**94**	**372**	**39**

A two-day enumerator training was held on November 13th and 14th, 2014 to discuss the tips of conducting interview, duties of an enumerator, characteristics of a good enumerator. The training was also used to align on the meaning of each question on the household questionnaire and to demonstrate and practice area calculation using the GPS devices. The training session included a field test of the questionnaire. As a result of the enumerators' field experience the instrument was revised to ensure accurate and consistent information.

2.2.3. Data Collection Methodology

A 10 page structured questionnaire was administered to randomly selected smallholder cocoa farmers enrolled in the LIFE III program from each of the six project counties. The questionnaire had closed-ended questions with options that collected data elements to provide quantitative measure for the project's performance indicators. The questionnaire had five sections including household economic security, cocoa farming and marketing, cocoa farm measurement and observation of maintenance practices on the cocoa farm. The sections and questions were designed based on ACDI/VOCA's best practices for baseline data collection and were tailored to meet the needs of the project indicators and the country and commodity context. The enumerators used GPS device to measure the size of each respondent's cocoa farm. Farm size was used to accurately calculate cocoa production per hectare.

In addition to the household interviews, the field supervisors conducted FGDs with farmer cooperatives. The purpose of these discussions was to document qualitative explanations to the statistical findings from the household interviews.

Other discussions were held with several partners within the cocoa value chain including, the Ministry of Commerce and Industry (MOCI), the Liberia Produce Marketing Corporation (LPMC), Liberia Agricultural and Asset Development Cooperative (LAADCO), CDA, Unity Credit Union Bank, WIENCO and National Apex of Village Savings and Loan Clubs (NAPEX).

Furthermore, data collected on the continuing beneficiaries in the LIFE II final evaluation was also used alongside the data collected from the newly enrolled beneficiaries to make the analysis of the baseline values.

2.2.4. Data entry and analysis

A consultancy group, Liberia Monitoring and Evaluation Enterprise, was hired to create a database and conduct the double entry of the 372 household questionnaires. The questionnaires were numerically marked to facilitate counter-verification between the hardcopy and softcopy data. The consultant created a Microsoft Excel spreadsheet with validation rules to avoid wrong entries and also added drop-down list to ease data entry into the spreadsheet. The data for each indicator was analysed using the formula provided by Food for Progress and McGovern Dole Indicator and definition handbook. The baseline values were analysed from data collected on newly enrolled beneficiaries into the LIFE III program and also data collected on old beneficiaries during the LIFE II final evaluation. The results from both surveys were merged by calculating the weighted means for indicators. The findings from those analyses were used to generate baseline value for each of the LIFE III performance indicators.

2.2.5. Discussions of Limitations

Some issues that underlie the findings from the baseline survey are summarized in this session. These are concerns that could possibly distort the results:

- The majority of the respondents did not have invoices/receipts to authenticate the self-reported data on the quantity of cocoa sold. The self-reported data could be overstated or understated by the farmer, which could lead to misrepresentation of the actual baseline value for income generated and farm production. Moreover, some farmers are selling more than they can harvest from their own farm. They gathered cocoa from other, smaller farmers so the production data of those farmers could mistakenly include production of other farmers.
- Adoption of improved husbandry techniques was determined by the enumerator's observation and judgment; therefore, wrong judgment on the application of improved techniques could lead to distortion in the data.
- Data collection on the availability of new or improved planting material was limited to only four known agro-dealers. There could be other local businesses providing new agricultural packages that are not mentioned in this report.
- Secondary data were used to provide context to some of the survey findings and to compare situations in some instances. The quality of those data is not guaranteed.

3. Survey Findings

3.1.Survey Population

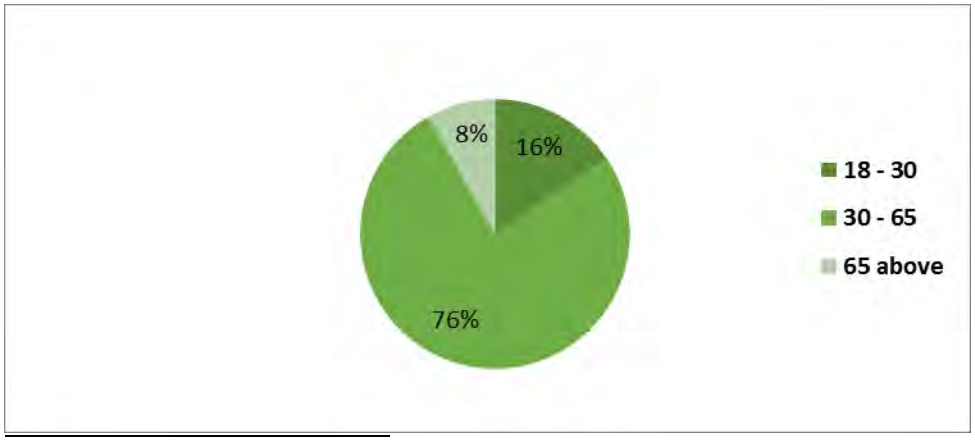
The survey collected data from 372 households[1] out of the total population of 2,803 households to be enrolled into the LIFE program for the first time. There are more male (77percent) than female (23percent) in the surveyed population. The selected households for the survey were smallholder cocoa producers from six counties. The household had an average land area of 1ha under production

Table 3 Characteristics of population by gender

	Male	Female
Proportion of population	77	23
Head of household	93.4	6.6
Level of education		
No education	31.2	54.1
Primary Education	28.6	32.3
Secondary Education	35.7	12.7
Tertiary Education	4.5	0.0

On the average, there are 10 people living in a household with 40percent children and 40percent female. Education levels among the surveyed population are very low. Of the total sampled population, 37percent have never attended school; 30percent had primary education and 30percent attained secondary education while 3percent tertiary education. 76percent of the targeted beneficiaries are in the median age group (30 – 65 years); only 8percent are above the age of 65 while 16percent are below the age of 30.

Figure 1 Age Distribution of Survey Population



[1] Defined as the people living in the same house and eating together

3.1.1. Description of household head

Of the respondents surveyed, 61percent are head of household and cocoa farmers; 91percent male household head and 9percent female household head. The average age of head of household is 47 years. Of the male farm owners interviewed, 93percent were married and 7percent single or separated. Female household heads are mostly widow that have not been remarried, their farm ownership is from inheritance; most women are not involved in planting cocoa.

3.1.2. Household economic security

Of the households surveyed 77percent are harvesting from established cocoa farms; those households are selling cocoa and generating revenue. The remaining 23percent of households surveyed have newly established farms that have not started to produce so there is no cocoa revenue generated by those households. The majority, 83percent, of the surveyed household acquired the farmland by traditional conferment with no legal document to authenticate the ownership. Only 7percent have some sort of legal documents (title deed or tribal certificate from the local government).

3.1.3. Household labor distribution

Cocoa production in most households is a predominantly male activity. On the average, women are involved in only 6percent of cocoa activity; however, they are mostly consulted by their husband on 54percent of the production activities. The economic aspect of the production is handled by men.

Table 4 Household labor distribution

Category	Cocoa Production Activities							
	Buying inputs	Farm maintenance	Harvest	Pod breaking	Fermenting	Drying	Storage	Sales
Male (Self)	22%	37%	20%	13%	37%	24%	30%	34%
Female(Self)	4%	4%	4%	3%	7%	6%	9%	8%
Jointly	18%	37%	63%	80%	44%	56%	44%	38%
Hired labor	1%	11%	2%	3%	1%	1%	1%	1%

In addition, children up to the age of 18 years contribute to cocoa activities, mostly with harvesting, pod breaking and drying.

3.2.Training: Farm Management

LIFE III intends to increase agricultural productivity by providing trainings on improved cocoa husbandry techniques and farm management practices, along with technical assistances, to smallholder cocoa farmers through FFS. The trained farmers are expected to apply the recommended practices on their

respective farms that will lead to increases in their cocoa yield, thus increasing income from cocoa sales. In this baseline survey, the household questionnaire collected data against various benchmarks of this strategic objective to ascertain the pre-intervention status. The findings are explained within the sub-topics that follow.

3.2.1. Training on improved agricultural techniques and technologies

The LIFE III project will build upon previous training interventions carried out under the earlier phases of the LIFE program and then expand to other cocoa farmers. In this effort, the project identified 2,803 new cocoa farmers to be trained at 84 FFS. The 10 month training will provide farmers with knowledge that will help to increase productivity and cocoa quality. Farmers are expected to adopt these concepts to rejuvenate their old cocoa trees where necessary. In preparation for the establishment of the FFS, 55 facilitators were trained to conduct training sessions in the 84 prospective FFS.

3.2.2. Application of approved agricultural techniques and technologies

Farmers who participate in the LIFE III trainings are expected to adopt and apply new agricultural techniques that will help them improve upon their farming performance and increase farm-level productivity and income. In order to understand whether farmers are applying improved farming techniques; the enumerators visited the respondents' farms to observe which of the project-recommended techniques are currently being applied.

Observation of the farms of newly enrolled beneficiaries to the LIFE program shows that only 20percent of the surveyed population are applying at least 4 of 6 improved cocoa husbandry techniques; the variation among men and women in the surveyed population is the same with 20percent of both sexes applying 4 or more of the improved cocoa husbandry techniques. Similarly, 27percent of the continuing beneficiaries were also observed in the LIFE II final evaluation to have adopted the practices; the weighted average for both new and continuing users was calculated to be 24percent. Some of the reasons contributing to the low adoption of those practices among farmers are weak extension services to smallholder cocoa farmers, labor intensiveness of farm maintenance and high cost of cocoa specific fertilizers and other chemicals. Twenty-two percent of the surveyed population is rejuvenating old trees; 24percent is managing disease pods while only 1percent of the respondents are applying fertilizer. The average land area managed under improved techniques is 0.9 hectares per individual farmer who have adopted the techniques. The rejuvenation of old cocoa trees is done by either pruning, coppicing or pollarding.

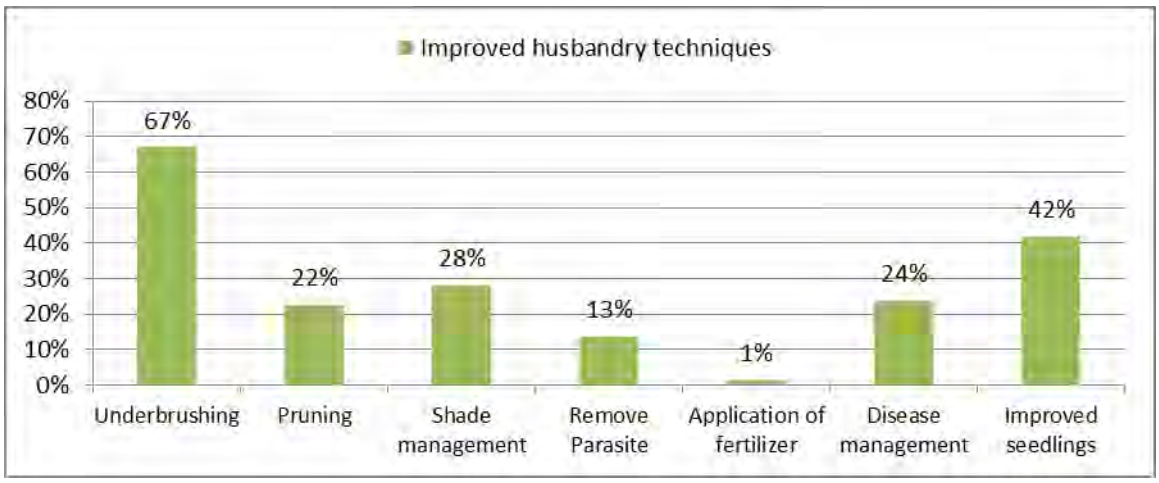


Figure 2 Applied cocoa husbandry techniques

Table 5 New and rehabilitated farm characteristics

	Establishment of new farms	Rehabilitation of old farms
Number of hectares	157	125
Percent (percent) of sample	42percent	33percent
Average area (hectare)	0.9	1.0

Further analysis of the adoption of improved cocoa husbandry techniques made across counties shows that there are more farmers applying improved cocoa husbandry techniques in the older project counties enrolled since LIFE I (Nimba, Lofa and Bong) than those counties that were enrolled only in the second phase LIFE II.

In the household interviews, respondents were asked whether their households planted new cocoa trees, and/or rehabilitated old trees. Enumerators observed that, of the total 125 farmers who did some rehabilitation on their old cocoa trees, 74percent percent of them are from the old project counties while only 26percent are in newer participating counties. In terms of establishing new cocoa farms, 59percent of respondents in the old counties planted new trees while 41percent did so from the new counties.

Most smallholder cocoa farmers in the three newer counties have long abandon their farms and as the result, the cocoa farms reverted to bush. Among the many reason given by farmers for why they abandon their farms, the most common response was low price and very low yield which discouraged them from continuing with cocoa production.

The major problem farmers are experiencing on their cocoa farm is disease management. 74percent of the respondents reported that black pod disease is causing massive loss of cocoa pods; other factors contribute very insignificantly as compare to the damage cause by black pod disease. Farmers are using labor-intensive methods to reduce the prevalence of black pod disease.

3.2.3. Farm level Productivity

Farm area measurement showed that smallholder farmers are cultivating an average land area of one hectare. To determine farm-level productivity, the survey collected data used to calculate the volume of cocoa harvested per hectare. The analysis of the harvest information collected resulted in production data of 180kg/hectare. The average revenue earned by individual farmers is $200. Farmers are investing about $40 on agricultural inputs every farming season.

In addition, the survey assessed some other factors that reduce farmers' cocoa income. One important factor was improper post-harvest handling which reduces the sales value of cocoa by 5percent. Cocoa beans were stored in poor conditions; 71percent of respondents keep their cocoa in their house before selling. As the result, those beans had very high moisture content which degrades the quality and sales price of cocoa.

3.2.4. Application of improved farm management practices

Farm management is a learned set of skills that allows farmers to make informed decisions and to implement changes that will move farm operations toward the farmers' goals. It also requires season or annual planning for the use of resources and day to day management of activities and information to increase profit.

The LIFE project proposed to strengthen these skills by introducing the concept of Farming as a Business (FaaB) at the FFS. This methodology will teach farmers how to keep records on investments, production and sales; how to plan and budget their farming activities; and how to make bulk sales with other cocoa farmers. The application of these improved farm management practices will enable farmers to make informed decision on their farming activities. However, the results from the baseline survey show low applications of these practices; 34percent of beneficiaries newly enrolled in LIFE III that were interviewed in this baseline survey are applying any two of the recommended practices, which is higher than the 27percent of continuing beneficiaries that were observed during LIFEII final evaluation to be applying these recommended farm management practices with the weighted average of 31percent for both old and continue beneficiaries. The application of these practices varies between men and that women; 35percent of men are applying these practices while only 22percent of women are doings. Nineteen percent of the newly enrolled beneficiaries interviewed in this baseline do not keep records or prepare a financial plan (budget); 59percent of them are keeping in mind the plan for farming activity but do not write them, while 13percent participate in bulk sale with other cocoa farmers. These results are not surprising because 66percent of the respondents in the baseline survey either did not attend school or only attained primary level education. The project's standard to determine adoption of the farm management practices is for farmers to adopt at least two of the practices.

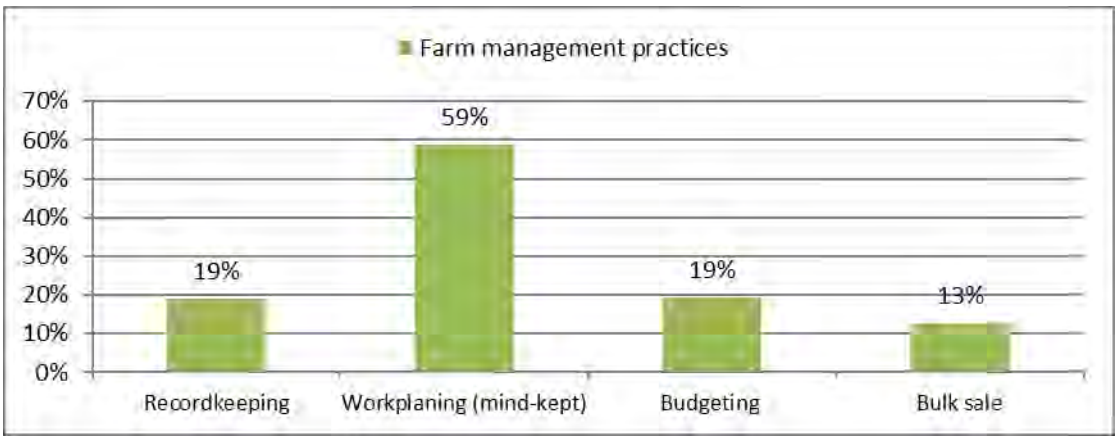


Figure 3 Percentage of farmers practicing improved farm management

3.3. Producer Organization Capacity Building

The LIFE III project takes two approaches to strengthening the capacity of producer groups in the six project counties – 1) providing trainings to farmer organizations on good governance, leadership, effective communication and negotiating skills; and 2) strengthen the capacity of the CDA to be able to efficiently and effectively oversee farmer associations and cooperatives across the six counties. Under his objective, the baseline survey evaluated the following areas.

3.3.1. Structure and function of the CDA

The CDA has fourteen of its 42 staff members assigned in the department of cooperative development services. The staff have not had any special training on cooperative development other than short-term workshop provided by SOCODEVI.

In addition, there is limited operational support given to field operations which impede routine supervision for cooperative and other producer groups. Presently, producer organizations revive a visit twice per year. The limited oversight and support has resulted in the proliferation of weak cooperatives.

3.3.2. Producer group membership

There are thirty-one producer groups – 23 farmer associations and 8 cooperatives – with current smallholder cocoa farmer membership totaling 4,782 (3,631 men; 1,151 women). Of those members, 1,845 are shareholders and 2,937 non-shareholding members. Shareholding guarantees the sustainability of producer groups and strengthens the capability of the group to repay pre-finance loan. Most groups that have fewer shareholders; overall, only 39percent of the general membership is made up of shareholders.

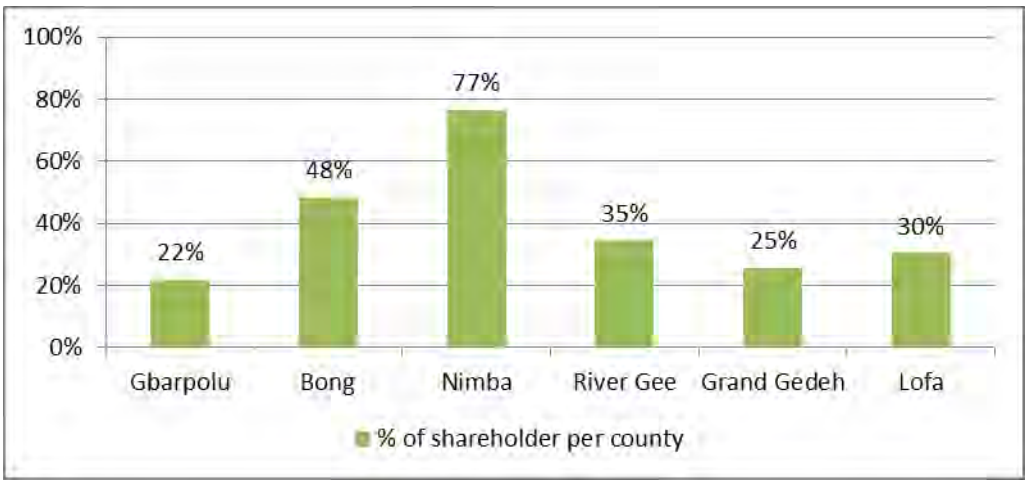


Figure 4 Percentage of shareholders membership per producer group by county

Focus group discussions revealed that there is always low attendance at the regular association meetings; at most 8 members attend, including the leadership. Farmer associations perform poorly because of members' non-compliance with the bylaws and constitution and poor management from leadership. It is evident from the household interviews that one negative effect of poorly managed producer groups is that only 13percent of farmers are continuously bulking cocoa with the farmer associations.

3.3.3. Leadership structure and governance

The governance of a producer group is made up of two distinct entities – the board of directors, elected by the members, and a professional business management team hired by the board. Both have the same overall objective but each has separate and divisible functions. The elected board is the governing body of the cooperative. It has certain legal responsibilities to the members and others like financiers, and holders of marketing, supply, or service contracts, while the hired management team reports to the board and are responsible for the cooperative's day-to-day operations.

Contrary to this democratic governance system, FGDs revealed that 80percent of the leadership is not hosting general assembly meetings to report the financial and operation status to the members. This lack of accountability is causing rapid decline in the membership; thus impeding the warehouse receipt program and the payment of membership dues.

Furthermore, none of the producer groups have been audited as stated in their bylaws and constitutions. Most members see the groups as an institution for only the leadership. In several FGDs, farmers consistently said that the producer groups are only benefitting the management team and not the general membership of the groups.

3.3.4. Financial management of producer groups

The financial management system of organizations is very poor. The baseline survey assessed key areas of financial management including: banking, spending decisions, budgeting and payment procedures. Although 98percent of the farmer groups have bank accounts, transparency remains a serious weakness. None of the producer groups have transaction records. The organizations' money is spent by

the management team without requiring membership approval. Only one of the 30 producer groups has documents that can be audited.

3.3.5. Cocoa bulking capacity of producer organization

Presently, LIFE project participating producer groups are contributing 4percent of the total cocoa export from Liberia. There has been significant decrease in the trend of cocoa bulking by the groups; only 13percent of the surveyed household said that they bulked their cocoa beans in the groups' warehouse despite being members of the group. As discussed earlier, this is largely cause by poor management in the various producer groups.

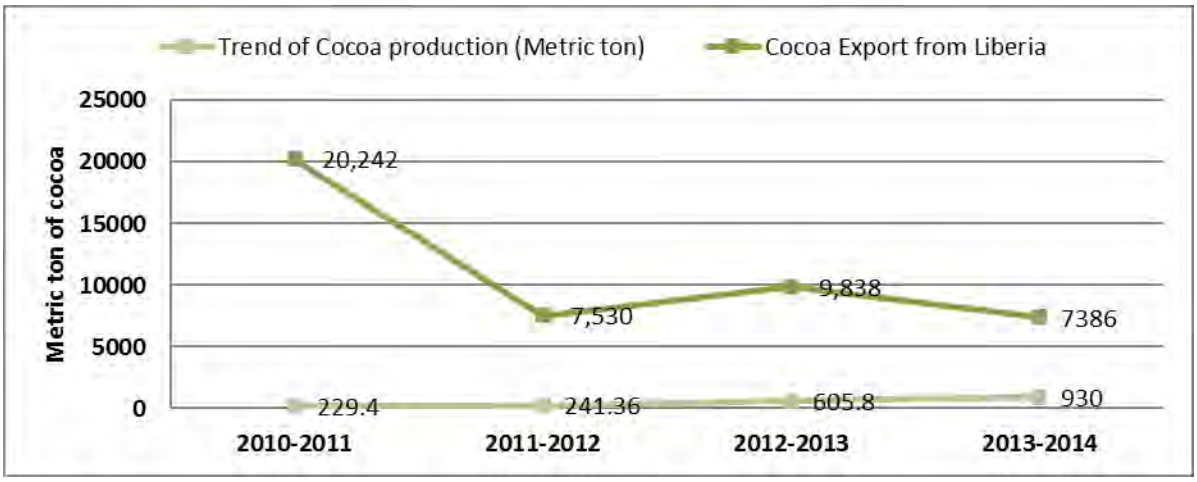


Figure 5 MT of Liberian cocoa exports vs. association sales

Producer groups are competing with traders for farmers' cocoa; 73percent of farmers are now selling their cocoa to agents rather than their respective farmer groups. This diversion is because of the inability of producer groups to secure the cocoa of their registered members. The warehouse receipt programs have been undermined by these agents who are offering higher prices than the cooperative.

In addition to marketing cocoa beans, 15percent of survey participants are processing sub-grade cocoa into byproducts such as soap; this practice is higher among the men, at 15percent, than women with only 11percent processing cocoa byproducts.

3.4. Financial Services: Facilitate Financial Lending

A critical point in the cocoa value chain is farmers' access to agricultural lending. This underpins the efforts to build vibrant producer groups that are able to conduct variety of business activities with their members.

The LIFE project engages this objective with two-dimensional approaches: establishing Village Saving and Loan Clubs and facilitating value-chain financing, including pre-financing partnerships between associations and buyers, and input-credit mechanisms with agro-dealers. The baseline findings on these approaches are summarized below.

3.4.1. Village Savings and Loan Clubs

Presently, there are thirty seven Village Savings and Loan Clubs (VSLC) established in the project targeted communities with total membership of 1,360 (583 men, 777 women) and a total loan portfolio of about $83,000. The groups are using a rotational loan scheme primarily among its members with an average interest rate of 20percent. An estimate of 4,080 smallholder farmers are benefiting from those VSLCs. Each registered members can recommend up to three other smallholder farmers for a loan.

None of the VSLCs are certified as credit union by the CDA and therefore cannot benefit from larger loans from the Central Bank of Liberia. Currently, the groups have been linked with the National Apex of Village Savings and Loan Clubs (NAPEX) and Liberia National Credit Union to strength their capacity for CDA's certification. The VSLCs have been mobilized to open an account with the Unity Saving Credit Union Bank – a micro-lead revitalization program financed by MasterCard Foundation with support from the United Nations Capital Development Fund (UNCDF) implementing by the World Council of Credit Unions (WOCCU). These linkages will bolster the project's effort to design appropriate financial products and collateral mechanisms for smallholder farmers.

3.4.2. Pre-finance loans from exporters to cooperatives

Value-chain pre-financing arrangements are one of the effective ways to get smallholder farmers access to credit. These arrangements provide producer groups with capital to finance advance purchases from their members; helping farmers with funds to buy agricultural inputs and cover domestic expenses while awaiting the harvest. The credited amount is repaid in cocoa – the producer group deducts the credited amount from the creditors' total cocoa sale value. The cocoa beans are shipped to the financier to pay off the loan.

The baseline survey revealed that twelve such arrangements are formalized in a signed MOU between producer groups and cocoa traders. The total monetary value disbursed as the result of those arrangements is $351,702[2], benefiting about 2,297 (1,838men, 459women) cocoa farmers from 12 producer groups. Nevertheless, in an interview with the financier, they disclosed that there is a hurdle to the continuation of these arrangements with four of the cooperatives because of the poor management of the loan and non-compliance of those cooperatives. The repayment rates for those groups remain low.

[2] Cash loan disbursed by LAADCO 2013/2014 season

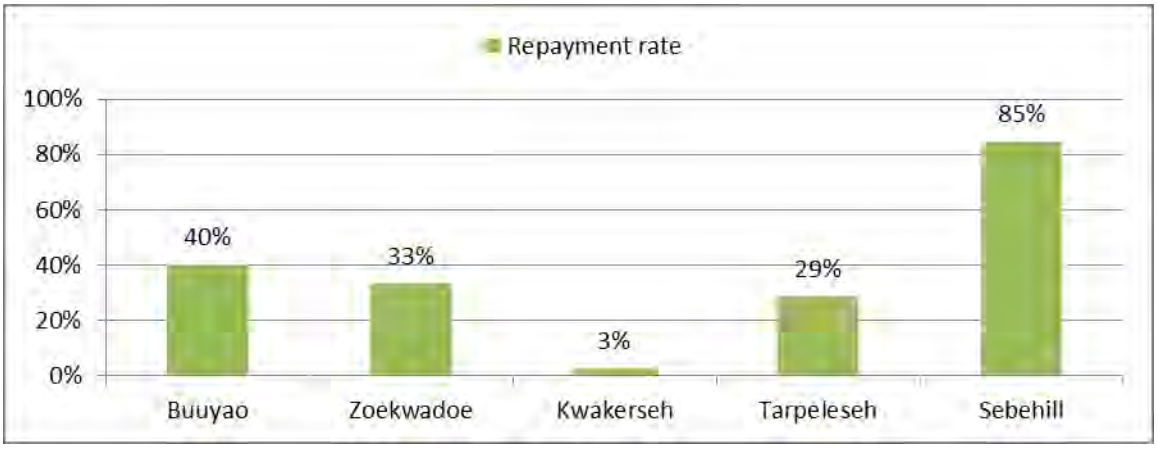


Figure 6 Loan repayment of producer groups

Besides seasonal cash loans, exporters also provide long-term investment loans through cocoa farm rehabilitation and the provision of improved cocoa seedlings. For this loan scheme, four cooperatives received about 156,220 improved cocoa seedlings and the sum of $37,200 for partial rehabilitation of about 300 farms covering 3,100 acres at the rate of $12 per acre. Farmers are also repaying this loan in cocoa. To-date, only 46 farmers have repaid.

3.5. Develop Agrodealers

The Liberia National Cocoa Strategy identifies technology transfer initiatives is an important step to offset the technology gap that continues to restrict the Liberian cocoa sector. Limited spread of technology has resulted in reduced processing capabilities and low production yields. LIFE III plans to contribute sustainable agronomic solutions to those challenges with two approaches – 1) availability of improved cocoa inputs to farmers; and 2) Partnership with private sector agro-dealers.

3.5.1. Availability of improved cocoa inputs to farmers

Through interviews with three commercial nursery providers the LIFE III project confirmed that 825,000 cocoa seedlings were made available to smallholder cocoa farmers during last cocoa season as a result of the sustainability measures built into the grants issued during LIFE II. The agro-dealers, however, registered concern that smallholder cocoa farmers are not buying the cocoa seedling despite the low price.

This information was confirmed from the household data in which 47percent of the farmers said that they could not buy improved seedling because of the lack of land space for planting while another 32percent responded that their old farms needed rehabilitation so they could not afford to buy new seedlings. The survey gathered that 42percent of the farmers planted improved varieties of cocoa seedlings three to five years ago; 55percent of the new trees planted were sourced from traditional varieties of seeds planted by other farmers, while 29percent were improved varieties from commercial nursery and 17percent donated by INGOs.

Further interviews and document review with agro-dealers revealed that there are currently seven varieties of improved cocoa seeds available to smallholder farmers; however, another 24 varieties of cocoa bud wood were brought to Liberia's Central Agriculture Research Institute (CARI) from the

International Cocoa Quarantine Center, Reading University - a leading cocoa research institution and the only temperate zone quarantine station in the world.

The team also had an interview with WIENCO, an agricultural company that specializes in the importation and distribution of high quality agro-inputs. The interview revealed that three kinds of improved cocoa specific fertilizers, pesticides and fungicides are available to farmers in three of the six project counties (Nimba, Bong and Lofa Counties) with several outlets for distribution to farmers in those counties.

Table 6 Improved inputs available to farmers

Insecticides	Herbicides	Fungicides	Fumigants	Supplement	Seed treatment
Confidor 200SL	Lumax 537.5	Ridomil gold plus 66	Phostoxin	Cropmax	Apron star 42WS
Karate 5EC	Touchdown 360SL	Nordox super 75WG			

3.5.2. Partnership between private agrodealers and farmer groups

Five of the producer groups in the project targeted communities signed an agreement with two different agro-dealers (WIENCO and CWAP) to supply improved agriculture inputs. As a result of these agreements, three farmer groups (Quardu Masine, Gbondi Bengoma and Ngeetomba) received three different kinds of cocoa specific chemicals from WEINCO; 225 shareholders (171 men, 54 women) in those groups benefited. The Center for Woman Agriculture Program (CWAP) provided 38,000 improved seedlings valued at $19,000 to another two cooperatives in Nimba County (Tarpeleseh and Kwakerseh).

Moreover, there is an established collaboration among CARI, the University of Reading, and two other regional research institutes in Cote d'Ivoire and Ghana. These collaborations will result in improved seedling varieties available in Liberia and, when strengthened, the collaboration will also provide for increased capability of local research institutes and suppliers to provide high-quality seedlings.

3.6. Market Access: Improved Market Information

Presently, the channel use by the LIFE program to disseminate cocoa price information to smallholder farmers is rudimentary – printing and distributing hardcopies to farmers – this way of broadcasting makes it very difficult to cover larger farmer population. Access to information in rural Liberia is challenging, as shown in the table below.

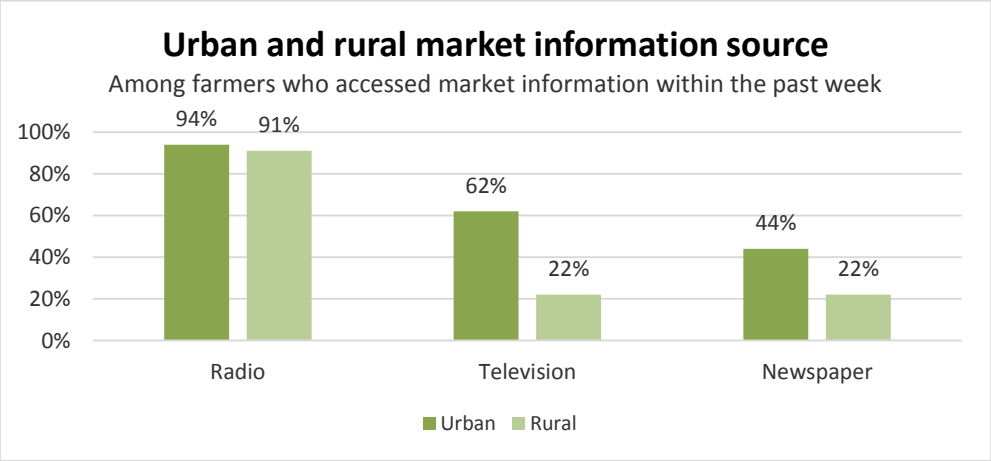


Figure 7 Media sources of market information

Through the baseline survey, smallholder farmers were asked about the source of information that they used to gain cocoa price and market information. Of the surveyed population, 15percent responded that they received information through their neighbors; 28percent received information through farmers groups while 26percent gets the price provided by the traders.

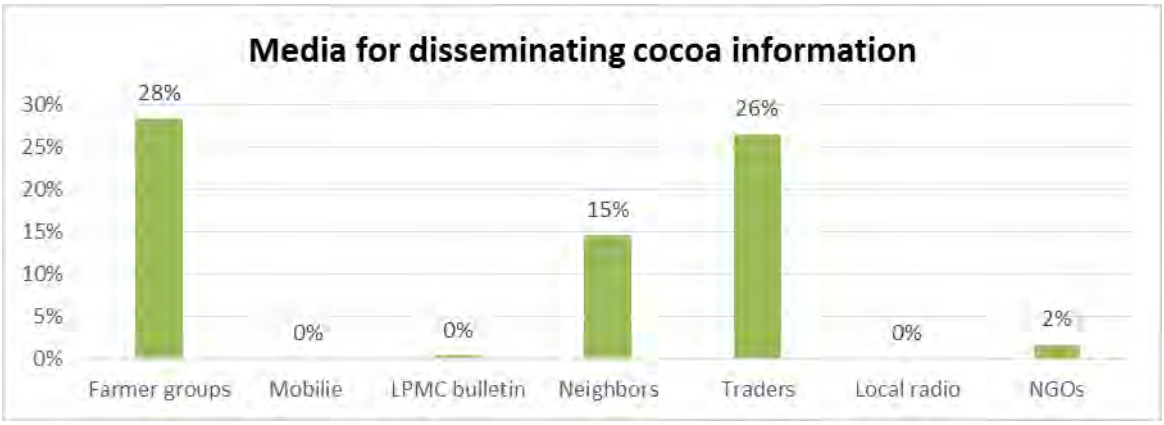


Figure 8 Source of cocoa price and market information

Lack of trade information subjects smallholder farmers to price abuse by traders in communities with little market competition.

3.7.Women's Empowerment in Cocoa Production

Gender balance in cash crop production is an essential approach in bridging the gap between gender roles in rural households. However, women's involvement in cocoa farming is very low as compare to men. An interview with female farmers shows that women in the household undertake 6percent of the activities on cocoa farms, mostly related to post-harvest activities. They are, however, consulted on 54percent of household decisions related to cocoa production while their husbands conduct 40percent of the activities. In terms of ownership, women sole proprietorship of cocoa farms accounts for 49percent of farms held by women, while 45percent is jointly owned with their husbands and 6percent of the farms managed by women belong to their husbands. Women have unilateral control over

18percent of the decisions made on their income and expenditures; 9percent is decided by their husbands while 65percent of the decisions are made jointly and 8percent are made by their children on their behalf. Producer group memberships consists of only 24percent women and their participation is generally overshadowed by men during group meetings. Women in cocoa production do not have sufficient time for non-productive activities as compare to the men; women who are sole-owners of cocoa farms are obliged to manage their time between their farming activities and their domestic tasks.

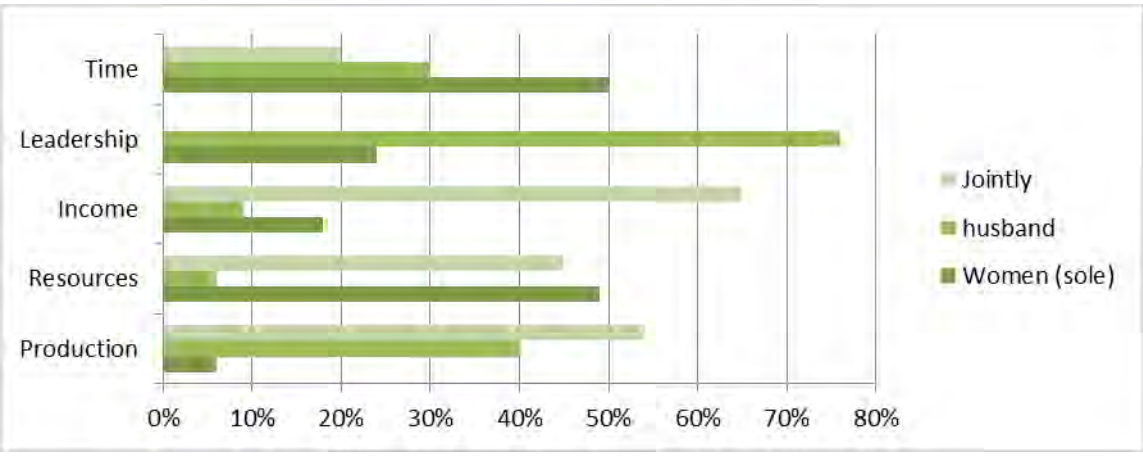


Figure 9 Responsibilities by gender on women-owned farms

4. Conclusions and Recommendations

4.1. Conclusions

This report presented analytical findings on data collected through the LIFE III baseline survey on household socio-economic status, cocoa productivity, financial services to producer groups, and availability of agricultural inputs. Specifically, the report provided pre-intervention values for indicators defined in the project's PMP with contextual information. The results of the survey will be used to shape project interventions and measure progress toward achieving the LIFE III objective.

The survey finds that the average volume of cocoa production per hectare among the project's targeted beneficiaries is 180kg/ha, which is far lower than 300-400 kg/ha that is achieved in other cocoa producing countries in the region. The major constraint identified for the low cocoa production among the surveyed population is the old age of trees. Fifty-six percent of the respondents have cocoa trees planted more than 25 years ago with little or no significant replanting activities conducted during that time. As a consequence of long years of neglect, cocoa farms have degenerated into secondary forest. Moreover, farming techniques used by those cocoa farmers are basic and unsophisticated, resulting in low productivity yields. Farmers have an overall lack of understanding of, and expertise with, sustainable land management techniques and best practices such as Global Good Agricultural Practices (GAP). The project's intention to train smallholder cocoa farmers, coupled with rehabilitation activities, will address the major constraints that the baseline survey identified and will contribute to increased yield.

Implementing the concept of farm management requires significant use of managerial skills to maximize farm profits. These practices include decision making functions to evaluate and choose between alternative strategies. The project verifies adoption of these practices by the farmer's ability to set production goals; to negotiate market price; and to keep basic records, which include but are not limited

to financial records and operation records. The baseline concluded that only 34percent of farmers have attempted to minimally apply at least two of the recommended practices.

Improper post-harvest handling is a contributing factor to farmers' low cocoa yields. The quality of cocoa beans diminishes due the lack of secondary infrastructure like warehouses, sorting yards and covered solar dryers. In addition, processing practices – fermentation and drying – are not conducted properly, degrading the quality of the cocoa beans. Processing methods that are being applied are very basic, consisting mainly of bamboo mats to dry cocoa.

There are farmer groups present in all of the project counties but with the groups lack strong leadership structures. The weak governance and financial management practices have resulted in reduced membership and business potency. Consequently, exporters have inadequate trust in the groups which undermines the groups' access to financial services. The warehouse receipt program that allows the groups to bulk and sell cocoa on behalf of their members has diminished due to the untrustworthiness of the management teams.

There are good opportunity for value chain financing arrangements between exporters and producer groups. Due to the groups' limited knowledge of loan management, however the result has been a liability for the groups with very low repayment rate. This non-compliance has the propensity to discourage future arrangements.

The criteria used by CDA to transform VSLCs into formal credit unions includes membership retention and increases in the club's loan portfolio. None of the project targeted VSLCs have been transformed into credit unions by the CDA; therefore, they cannot benefit from the Central Bank rural loan scheme.

Farmers' knowledge on the importance of planting new and improve varieties of cocoa seedlings remains low due to weak extension services. Fifty-eight percent of farmers continue to promulgate traditional varieties of seeds, not tested for their yield potential, quality and pest resistance. Consequently, despite the availability of improved varieties of cocoa seedlings at the commercial nurseries, farms continue to underperform.

Current channels for disseminating cocoa price and market information are not benefiting the population of farmers at large and, therefore, farmers continue to be subjected to price-abuse by cocoa traders who have monopoly over the cocoa price. Printouts of reference price posted at the associations' warehouse is not benefiting communities that are far away from the groups' headquarters. However, 91percent of the farmers have access to local radio.

Women undertake only 6percent of cocoa production activities; they constitute 24percent of the membership of producer groups and they are charged with 50percent of the workload between domestic tasks and farming activities.

4.2.Recommendations

Upon analyses of the baseline findings and contextual information provided in this report, the assessment team is of the candid opinion that if the below recommendations are considered, some of the issues identified can be resolved.

- For production to increase, it is essential to conduct farm rehabilitation scheme to rejuvenate old cocoa trees that have decline in fertility. The rehabilitation should cover the 56percent of farmers who planted more than 25 years. The funds for establishing cocoa nursery should be redirected to undertaking this rehabilitation program. It is unworthy to invest in establishing new cocoa nursery when the farmers remain unresponsive to buying cocoa seedlings from sustained commercial nursery established from grants provided by previous phases of the LIFE project.
- To minimize post-harvest losses, it is important to make available secondary infrastructure for cocoa processing such as warehouses and solar dryers in the targeted communities. Farmers should be asked to provide local materials for this venture while the project provides technical guidance and other imported inputs. The involvement of the farmers will not only reduce the cost of the project but also serves as a sustainability measure.
- To strengthen technical support from extension services – the project should provide specialized training to its field staff. The field officers have inadequate training on their assigned areas of supervision.
- To secure the continuation of value-chain financing arrangements, the project should establish and define a collaborative relationship with financiers providing pre-financing to the project sponsored producer groups. A focal person (Access to Credit Specialist) should be designated by the project to supervise the loan management.
- As regard to strengthening the leadership capacity of producer groups, it is advisable that the project's Farmer Business Organization Officers always liaise with their CDA counterpart to do a joint supervision visit. The team should develop an assessment checklist that evaluates key aspect of the organization in order to identify areas for improvement.
- There is a potential opportunity for VSLCs to receive loan from the Central Bank through the Liberia National Credit Union. To guarantee this opportunity, the project should liaise with the CDA and the national credit union to strengthen these groups by providing trainings on loan management and internal auditing. The clubs stand to benefit the loan value of $200,000 USD which will directly increase the members' access to capital.
- Considering the low levels of education of the project's targeted beneficiaries, it will be prudent to engage the management teams of producer groups to manage the business activities of their members. The management teams should negotiate marketing on behalf of their members, and also keep basic records such as area of production, quantity harvested and quantity sold. The goal of illiterate farmers adopting the project's recommended farm management practices is unfeasible.
- To disseminate cocoa price and market information to a larger population of the illiterate rural farmers, the project should consider having an agreement with local radio stations with wider coverage to regularly broadcast the reference price. Community radios serve as an important medium to disseminate information, as 91percent of rural farmers have access to radio.
- To enhance field monitoring, data collection and validation, it is essential to employ at least two field monitoring assistants that will collect routine data on field activities. The M&E Specialist is charged with the monitoring the six project counties.
- Lastly, there is a need to define indicators exactly as it is mentioned in the Food for Progress Indicator handbook also to include some process/output indicators, per the table below.

Table 7 Recommended revisions and proposed Indicators

Objectives	Indicators in the PMP	Recommended revised indicator	Rationale
Training: Improved Farm management practices		Number of farmers who received agriculture extension service	To provide an opportunity for farmers to practically know how to apply improved cocoa husbandry techniques
		Number of storage capacity installed	To track progress be made to reduce post-harvest losses
	Number of individuals trained in income diversification activities (i.e. community vegetable gardens, livestock management)	Number of individual who have received short-term agricultural sector productivity training as a result of USDA assistance	The proposed indicator is USDA's standard indicator; so should be reported as define in FFPr indicator handbook
Capacity Building: Producer Groups/Cooperatives	Number of members of project-sponsored farmer associations established under the three phases of LIFE	Number of **shareholders** of project-sponsored farmer association established under the three phases of LIFE	Shareholding guarantees the sustainability of producer groups and not ordinary membership
		Number of VSLC linked to Liberia National Credit Union	Linking the VSLC to the National Credit union qualifies them for bigger loan
		Number of Joint organization development supervision visit with CDA	Enhance the supervision of producer group; thus facilitate improvement.
		Number of financial audit conducted for producer group	Strengthen financial management system of producer group
Financial service: Facilitate Agricultural Lending		Number of producer group that repay value-chain loan	To assess possible continuation of value-chain arrangement
Inputs: Develop Agrodealers		Number of project sponsored farmers	To know farmers' responses to the

		that planted improved variety of cocoa seedlings	improved seedlings made available
Market Access: Improved Market Information		Number of local radio broadcasting current cocoa price	

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