

## FINAL REPORT

### ENDLINE SURVEY OF COCOA SUSTAINABILITY INITIATIVE (CSI) II



PREPARED BY GIMPA CONSULTANCY AND INNOVATION DIRECTORATE  
FOR CARE INTERNATIONAL, GHANA



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**DISCALIAMER**

This report was produced at the request of CARE International in Ghana. It was prepared independently by the Consultancy and Innovation Directorate (GCID) of Ghana Institute of Management and Public Administration (GIMPA), Accra. The authors' views expressed in this publication do not necessarily reflect the views of CARE International in Ghana.

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## TABLE OF CONTENTS

<b>DISCALIAMER.....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iii</b>
<b>Executive Summary .....</b>	<b>viii</b>
<b>1.0 INTRODUCTION .....</b>	<b>11</b>
1.1 Project Background.....	11
1.2 Objective of the Survey .....	11
<b>2.0 METHODOLOGY .....</b>	<b>13</b>
2.1 Main Approach .....	13
<b>2.2 Methods.....</b>	<b>13</b>
2.2.1 Survey Design.....	13
2.2.2 Sample size and Sampling.....	13
2.2.3 Quantitative data collection.....	14
2.2.4 Qualitative data collection .....	15
2.2.5 Field Work to Collect Data.....	15
2.2.6 Propensity Matching Score (PSM) Analysis .....	15
2.3 Desk Review.....	16
2.4 Team formation and training.....	16
2.5 Stakeholder engagement .....	17
2.6 Limitations .....	17
<b>3.0 FINDINGS OF THE ENDLINE SURVEY .....</b>	<b>18</b>
3.1 Demographic profiles of the beneficiary and the control .....	18
3.2 Impact Indicators.....	20
3.2.1 Attribution of changes in impact indicators to the CSI II Project.....	21
3.3 Outcome Indicators .....	24
3.3.1 Adoption of agricultural technologies and productivity of cocoa production.....	24
3.3.2 Financial Services.....	27
3.3.3 Access to Agricultural Inputs.....	28
3.4 Community Action Plans (CAP developed and implemented.....	29
3.5 Access to quality agricultural/livestock extension service.....	30
3.6 Unintended Benefits of the Project .....	34
3.7 Dashboard of the impact indicators and outcome indicators .....	34
3.8 Effectiveness of the CSI II Implementation .....	35
3.9 Most significant changes (success) stories .....	36
3.10 Some challenges identified during implementation of CSI II.....	37
<b>4.0 Conclusion and recommendations.....</b>	<b>39</b>
4.1 Conclusions .....	39
4.2 Recommendations.....	40
<b>Appendix.....</b>	<b>42</b>

## LIST OF TABLES

Table 1: Distribution of household size.....	20
Table 2: Attribution of impacts (change) to the CSI Project.....	21
Table 3: Percentage of farmers reporting change in income due to IGA.....	21
Table 4: Application of Technologies by Cocoa Farmers.....	24
Table 5: Use of Financial Services .....	27
Table 6: Participation Financial Decision .....	27
Table 7: Access to Agricultural Inputs .....	28
Table 8: Summary of the CAP and Needs by Communities.....	29
Table 9: Dashboard of indicators.....	34

## LIST OF FIGURES

Figure 1: Gender of the sample farmers (control and beneficiaries) .....	18
Figure 2: Marital status of the control and beneficiary farmers .....	19
Figure 3: The age distribution the farmers.....	19
Figure 4: Educational level farmers .....	20
Figure 5: Do you have food to feed your household all year round? .....	23
Figure 6: Percentage of women engaged in micro-enterprises .....	29
Figure 7: Access to quality agricultural/livestock extension service .....	31
Figure 8: Number of farmers integrating agroforestry techniques (adding shade trees, etc.) .....	32
Figure 9: households who report a change in nutrition behavior .....	33
Figure 10: households consuming vegetables from household production.....	33

## ACRONYMS

AOB	Asikuma-Odoben Brakwa
ATT	Average Treatment Effect on the Treated
BAC	Business Advisory Center
CAP	Community Action Plan
CHED	Cocoa Health and Extension Division
CARE	Care International Ghana
COCOBOD	Ghana Cocoa Board
DADU	District Agricultural Development Unit
FGD	Focus Group Discussion
GAP	Good Agricultural Practice
GHS	Ghana Cedis
HDDS	Household Dietary Diversity Score
IGA	Income Generating Activity
Kg/Ha	Kilogram per Hectare
MoFA	Ministry of Food and Agriculture
MOU	Memorandum of Understanding
NBSSI	National Board for Small Scale and Industry
ODK	Open Data Kit
PSM	Propensity Score Matching
CSI	Cocoa Sustainability Initiative
TOR	Terms of Reference
VSLA	Village Savings and Loan Group
WEI	Women Empowerment Index

# Executive Summary

## Introduction

This report is on the consultancy assignment to conduct an end line survey of Cocoa Sustainability Initiative (CSI II), a partnership between CARE International and General Mills Foundation (GMI). A team of consultants from GIMPA Consultancy and Innovation Directorate (GCID), conducted the survey within the period of four weeks in December 2020 across twenty communities in the Asikuma Odoben Brakwa District.

## Project Background

The project is targeted at improving the livelihoods of individuals in cocoa-growing communities and optimizing cocoa production through climate change adaptation. The initiative which started in 2017 and ended in August, 2020 is aimed at promoting gender equity, building farmer resilience to mitigate the impact of climate change and strengthen local capacity to initiate and own the process of development in cocoa-growing communities.

## Methodology and limitations

A mix of techniques aimed at encouraging participation was employed to collect performance data to analyze changes brought about by the programme. These included desk reviews, household survey of the project beneficiaries and non-project beneficiaries (control group) across selected districts using questionnaires, focus group discussions and key informant interviews.

A key limitation of the assessment was recall bias which was as a result of having to ask respondents for information from a period in the past concerning farmer's expectation to benefit from future projects. We attempted to mitigate this potential bias by triangulating responses between the quantitative survey with document review and key informant interviews and the implementer, Care International Ghana. Additionally, in an attempt to reduce potential validity issues, we thoroughly analyzed the data to identify significant outliers.

In addition, the evaluation report of the PROCOCO project which was intended to serve as a baseline for the CSI II Project was conducted mainly in districts distributed across Ashanti, Brong Ahafo and Central. Hence our inability to use the average figures of the indicators as a reference point/benchmark for comparing the results from the endline survey. We collected data on control group which served as the benchmark for comparison and a counterfactual.

## Findings

1. The productivity of farmers improved following participation in the CSI II project. The average yield per land for beneficiaries is estimated at 475.15kg/Ha and 411.09kg/Ha for non-beneficiaries.
2. The findings show that CSI II has had a positive impact on the per-capita income levels of beneficiaries. Specifically, 81.2% of the beneficiaries reported improvement in their incomes over the past 2 years has improved while about 12.0% reported that there is no change in income levels, with 6.7% reporting a decrease in their income. Based on the end survey data, the average income of the beneficiary farmers is GHS824.97 per month. On average, every farmer who participates in the CSI II projects earns around **GHS277.98**.
3. Food security among beneficiaries has greatly improved with HDDS estimated at 7.2

among beneficiary farmers. In addition, 48 percent of the beneficiary indicated that their nutrition patterns have changed following nutrition education provided them on the CSI II project.

4. The women empowerment index estimated at 0.80 suggests the intervention empowered women beneficiaries.
5. The analysis of the survey data provides evidence that women's access to financial services, such as loans, savings, especially with the introduction of the Village Savings and Loans (VSLA) were improved.
6. Similarly, the endline survey provides evidence that beneficiary farmers now have improved access to agricultural inputs extension services. The CSI project has facilitated the cocoa extension services to both farmers and also motivated farmer to receive extension services. Hitherto, farmers' attitude towards CHED staff was not very receptive however, following the introduction of the CSI II Project farmers' reception of cocoa extension agents has improved greatly. The project has also collaborated with MoFA for the provision of extension service to farmers regarding livestock production.
7. The analysis shows that there is high level of use (adoption) among men and women in the use of the farm technologies that were introduced to the cocoa farmers in the project communities.
8. The end line survey has also provided evidence that the CSI II has impacted positively on women's ability to establish and operate their own micro-enterprises in the areas of food vending, trading in general goods (provision shops), gari processing, oil processing, bread and pastry making, petty trading among others. The results suggest 39 percent of beneficiaries have taken the initiative to set-up new-micro-enterprises.
9. Majority of farmers (92%) who benefited from the project have adopted and are applying the key technologies that were introduced to them under the CSI II project in both their cocoa and food crop farms with 90 percent of women and 95 percent of men using the technologies. The results show that there is high level of good agricultural technologies, also referred to as good agricultural practices (GAP) for cocoa production among beneficiary farmers.
10. Coupled with the improved access of the men and women farmers to agricultural inputs, information, assistance and the acquisition of alternative livelihood source, the farmers especially women, are economically empowered to help improve the standard of living of their families and the community as a whole.
11. Finally, the results of the endline survey established that a total of 20 community actions plans (CAPs) were developed for implementation. However, out of the 20, The CAPs had different needs identified by the various communities in their plans. The community needs identified in the CAPs range from road, school building, community center, community market, boreholes and their repairs, CHIP compound, among others. In total, 68 community needs were identified the various CAPs. While ten (10) of the community needs in the CAPs are completed (have been provided), 15 of them are in progress and 43 are yet to start.

### **Significant change stories/Success Stories**

Some major significant change stories include increased yields, high adoption of good agricultural practices, improved access to financial service and improved financial decision making by women.

## **Effectiveness of Program**

The synergy derived from the partnership of the various stakeholder during the implementation of the project contributed to the effectiveness of the project. The partnership by these stakeholders brought together the strength of these organizations. In addition, the training, formation of cooperatives, VSLA, and the geographical spread of the beneficiary communities enhanced the effectiveness of the project.

## **Recommendations**

Based on the findings of the endline survey the following recommendations are made for consideration:

- In the event that the project is to be extended or replicated elsewhere, there should be the need to develop a communication strategy as an integral part of the implementation of the project for sharing of knowledge among other farmers and the development world. This will provide a coherent information, such as video documentary, pictures about the project that could be disseminated through national televisions and social media.
- Future partnerships of technical institutions such as MoFA and CHED should have a formal MOU to ensure smooth management of the partnership and the implementation of the project.
- For the security of the VSLA box, the person designated as the ‘keeper’ of the box could do consultation with the Chairman of the group; without the knowledge of the other members. Alternatively, the VSLA could register a mobile money in the name of the group and invite mobile money vendors to the VLSA meetings to collect the moneys directly. The keeper of the VSLA box could keep the phone with the VLSA mobile money number.
- Before the project folds up, CARE should assist the various communities to develop their own customized sustainability plan for implementation. This will ensure that the impact of the project will be seen over a long period of time.
- Future intervention could consider the central communities to enhance the prospect of their productivity and improve their livelihood.

## **1.0 INTRODUCTION**

This report is on the consultancy assignment to conduct an end line survey of Cocoa Sustainability Initiative (CSI II), a partnership between CARE International and General Mills Foundation (GMI). The Consultant conducted the survey within the period of four weeks in December 2020 across twenty communities in the Asikuma Odoben Brakwa District.

### **1.1 Project Background**

The project was targeted at improving the livelihoods of individuals in cocoa-growing communities and optimizing cocoa production through climate change adaptation. The initiative which started in 2017 and ended in August, 2020 was aimed at promoting gender equity, building farmer resilience to mitigate the impact of climate change and strengthen local capacity to initiate and own the process of development in cocoa-growing communities.

The goal of the project was to contribute to the sustainable development of cocoa-farming communities through a community-based approach centered on women's empowerment, food security. Specifically, the objectives of the project include: enhanced women's agency through social, economic and political empowerment, increased equitable access to agricultural resources, increased farmer capacity to mitigate the effects of climate change; and strengthened inclusive governance.

### **1.2 Objective of the Survey**

This endline survey seeks to undertake project evaluation to identify the key impacts and outcome of the project. Specifically, the survey seeks to achieve the following objectives;

1. To document the impact of the program highlighting what were the intended and unintended, positive and negative, long term effects of the program
2. To provide the best practices/recommendations that may be used in the future programming
3. To uncover and document "significant change stories" among beneficiaries;
4. To determine the effectiveness of the program in achievement of results, highlighting reasons for achievement and non-achievement of results and factors contributing/hindering achievement of the results.

In addition, the endline survey covered key institutions the project engaged with, including government agencies, cocoa cooperatives as well as agreed cross-selection of beneficiaries in the 20 project communities. The endline survey focused on the collection of data for a set of performance indicators outlined in the project Monitoring and Evaluation Plan. The key indicators are as follows;

#### **Impact Indicators**

- Yield per unit of land
- Average per-capita income per month
- Household dietary diversity score
- Change in the Women's Empowerment index

#### **Outcome indicators**

- # and % of women who are active users of financial services
- % of farmers who improved their access to agricultural input

- % of farmers who have applied new technologies and/or management practices promoted by the program
- % of farmers who have benefited from a quality agricultural/livestock extension service during the last 12 months
- Number of farmers currently integrating agroforestry techniques (adding shade trees, etc.)
- # and % of households who report a change in nutrition behaviour
- # of households consuming vegetables from household production
- % of women who have taken initiatives to set up micro enterprises
- # and % of women in communities who report an increased income as a result of IGA
- % of women farmers who (report they) are able to equally participate in household financial decision making
- # and % of communities with at least one project implemented in collaboration with the district assembly
- % of CAP projects implemented

## **2.0 METHODOLOGY**

### **2.1 Main Approach**

A mix of techniques were used in a participatory manner to collect performance data to show changes brought about by the programme. These included desk reviews, household survey of CSI II beneficiaries and non-CSI II beneficiaries (control group) across selected communities in the Asikuma-Odoben Brakwa District. The team also used focus group discussions and key informant interviews. The endline survey of the CSI II was both retrospective and prospective. In the retrospective analyses, we estimated the impacts already realized, whereas in the prospective analyses, we provided pointers to outcomes and impact to be realized in the future. The team used performance evaluation approach to critically assess the extent to which the CSI II interventions had impacted on the beneficiary households. Measuring the extent to which the CSI II outcome/outputs/activities have been achieved against the (Theory of Change) results and resources frameworks, and assumptions that hinder or facilitate the CSI II success and failures was the main focus. The assignment that was carried out for the various initiatives captured key lessons to be learnt in regards to various measures and factors that augmented or hampered the achievement of the desired CSI II results. The following steps were adopted as our general approach to undertake the End Line Survey:

- i. Inception meeting with key staff of CARE International to build consensus on the scope of the assignment and approach. The Inception meeting was done via zoom. The needed electronic documents were received through emails. Those that may need to be in hard copies will be gathered and a delegated officer will collect these documents in person.
- ii. Desk review of existing project documents; baseline report, project annual reports and other documents
- iii. Develop appropriate sample plan to capture sample beneficiaries
- iv. Develop survey instruments
- v. Design tools to capture incidental and unintended outcomes that could be attributed to the project.
- vi. Develop online mobile collection plan
- vii. Train enumerators in mobile data collection
- viii. Collect and analyze field data using SPSS and STATA with graphical presentation by Excel

### **2.2 Methods**

#### **2.2.1 Survey Design**

We adopted a cross-sectional mixed-method survey design (quantitative, and qualitative) to draw reliable and useful data from the identified population. The choice of probability sampling designs was to offer a non-zero chance of each sampling unit being selected. Being mindful of the cost implications of these survey designs, the final survey design was guided by element of cost. This formed part our sampling discussion with the CARE project Team. The following tools were adopted:

#### **2.2.2 Sample size and Sampling.**

To ensure representativeness of the sample and sampling rigor, the sample size was guided by the formula (Bartlet et al, 2001);

$$n = \frac{S^2(x)(y)}{(E)^2} \text{-----} 1$$

Where

*n* = Sample size

*x* = the proportion of the population (farmers) who participate in the CSI II Initiative.

*y* = the proportion of the population who did not participate in the Initiative.

*S* = Number of standard deviation for a chosen confidence interval level

*E* = The allowable margin of error

The above formulae take into account the homogeneity/heterogeneity of the target beneficiaries. Assuming at least 30% of smallholder farmers in the participating communities were enrolled on the CSI II initiative, and further assuming 95% confidence level and 5% margin of error, the application of the formula in equation 1 will yield approximately a sample size of 323. However, to account for missing data and potential non-responses, a total sample size of 350 for the beneficiaries was selected. This sample was distributed over the 10 communities.

To ensure that changes that could be attributable to the CSI Project or otherwise (as stated in the Terms of Reference), it is important to draw comparison with non-beneficiaries of the CSI initiative and baseline data. In view of this, 100 control farmers in the non-participating communities but in the Asikuma-Odoben Brakwa district were selected for the data collection and analysis of counterfactual (control group). Thus, the total sample size every 450 (350 participants and 100 non- participants). To avoid information spillover, the control communities was at least 4km from the participating communities.

A two-stage stratification was adopted for the selection of the sample. In the first stage, the 20 communities were stratified into five strata (4 communities in each stratum) using location closeness. A total of 2 communities out of 4 were selected from each of the five strata. This brought to a total of 10 communities that were selected. In the second stage, beneficiaries in each community were stratified by sex into male and female beneficiary groups. This was to ensure fair gender representation based on the implementation of the project. The selection of beneficiaries in each stratum at the community was by random selection after a list of beneficiaries had been obtained from CARE International. The selected communities and their sample are presented in Appendix 5.

### 2.2.3 Quantitative data collection

To collect quantitative data, a survey of beneficiaries was conducted with a structured questionnaire. The Open Data Kit (ODK) Electronic Data Collection tool, which works on Android tablets, was adopted in the data collection. This aided the electronic collection and transmission of field data. The toolkit significantly reduced the time spent on questionnaire administration compared to data being collected using pen-to-paper. It also helped eliminate the element of data coding, data template design, and entry. Data quality was ensured since the necessary logic and controls were incorporated in the design of the electronic template. In the collection of the data, one interviewer per one interviewee was adopted with appropriate social distancing.

#### 2.2.4 Qualitative data collection

The qualitative data was collected within the framework of Outcome Harvesting using Focus Group Discussions (FGDs) and Key Informant Interviews (KII). The outcome harvesting techniques identified some significant changes triggered by the CSI II. In all 6-women and 6-male focused groups were conducted separately. The key informants interview involved 4 key institutions: COCOBOD, MOFA, CARE and NBSSI, all in the District.

#### 2.2.5 Field Work to Collect Data

Two teams were used to conduct the field work between November 30- December 5, 2020. Each team comprised a team leader and 3 enumerators. The team leaders were responsible for the FGDs and interviewing the key informants (stakeholders) and the enumerators were tasked to conduct a face-to-face interview with the selected household beneficiary to collect household level data using Tablet. At the end of each day of field work, the Team Leader ensured that all set of instruments that were administered by each enumerator were properly entered with the correct responses. This helped to identify errors and corrections made before the analyses and report writing. A staff of CARE visited the team at some affected communities to observe the process of data collection.

#### 2.2.6 Propensity Matching Score (PSM) Analysis

The TOR mentioned that the study could be compared to baseline and identify if changes could be attributable to the CSI Project or otherwise (as noted in the Terms of Reference (TOR) and because we had data for control and treatment groups, the following analytical framework was adopted for the distilling the outcome and impact of the CSI II and make the necessary attribution, if any. Therefore, the propensity score matching (PSM) was adopted for the analysis. The PSM helped in making attribution for the estimation of the outcome and impact to the CSI II initiative. Using the PSM helped to reduce potential selection bias. The PSM removes ‘non-similar’ control group members before the estimation is done, i.e. the PSM removes the confounding by matching treated and control farmers. PSM models depend on the potential outcomes model popularized by Rubin (2001)<sup>1</sup>. In this model, assumption is made that every subject has two potential outcomes: one if they were treated, the other if they are not treated. The aim is to compare treated subjects to untreated subject with the same potential outcomes: this ensures that the difference between treated and untreated subjects is due to the treatment by the CSI II initiative, since the outcomes in both groups would have been the same, had the treated subjects not received treatment. Usually, subjects with the same propensity score have, on average, the same potential outcomes, so comparing treated and untreated subjects with the same propensity score gives an unbiased estimate of the effect of treatment provided by the intervention, in this case the CSI II initiative. Because we have data on control and treatment groups, the impact/change using nearest neighbor matching was estimated as (Ren et al, 2016):

$$IM^{k=nearest} = \frac{1}{n} \sum_{i=1}^n Y_{1i} - \frac{1}{k} \sum_{j=1}^k Y_{0j} \quad (2)$$

Where  $IM$  is the change in outcome,  $n$  is the number of observation,  $Y_{1i}$  is the outcome indicator

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<sup>1</sup> Rubin, D. B. (2001). Using propensity scores to help design observational studies: application to the tobacco litigation. *Health Services and Outcomes Research Methodology*, 2(3), 169-188.

treatment (beneficiary) households and  $Y_{oi}$  is the control households.

### **Calculating the impact indicators**

The following approaches were used in calculating the impact indicators:

- **Yield per unit of land**-We calculated the yield per unit of land based on seasonal productions (minor and major) of the crops-average farm size as a ratio of total yields.
- **Average per-capita income per month**: We captured household income based on agricultural production and non-farm activities as well as remittances.
- **Household dietary diversity score (HDDS)**: a measure of food consumption that reflects household access to a variety of foods at the household level. Using the WHO guide, we employed the 12-food group scale for the HDDS estimation. A simple count of food groups that a household has consumed over the preceding 24 hours is followed to calculate HDDS.
- **Change in the Women's Empowerment index**: is a composite index designed to measure progress in the multi-dimensional aspects of women's empowerment by using a variety of questions to calculate the index. WEI is considered to be a factor of both women's achievements as well as of gender parity with men. The WEI measures progress on women's empowerment by aggregating results across five key areas/domains (production, income, leadership, resources and autonomy). Each domain is comprised of a series of metrics (indicators) which quantifies performance in this domain

### **2.3 Desk Review**

To provide a better understanding of CSI II implementation, progress, results, achievement, constraints and lessons learned, the following CSI II and other documents were reviewed: (i) progress report for years 1-3, (ii) evaluation report of the Prococo Project. The evaluation report was intended to serve as a baseline for the CSI II Project. However, our review of the report revealed that the study was conducted in districts distributed across Ashanti, Brong Ahafo and Central. Even though Asiskuma-Odoben Brakwa (AOB) was one of the 5 districts, the focus of the report was not to distil indicators specific to AOB District. Hence our inability to use the average figures of the indicators as a reference point/benchmark for comparing the results from the endline survey. Fortunately, we have data on control which served as a good benchmark for comparison and a counterfactual.

### **2.4 Team formation and training**

The survey was conducted using the GIMPA Evaluation Team made up of six researchers along with a team of enumerators. To equip the enumerators for the survey, a one-day training and pilot exercise were conducted. During the training, various issues related to the survey and methodology, language, questionnaire and survey guidelines were discussed. The training ended with the sharing of the survey schedule for the End line survey with the field survey team.

## **2.5 Stakeholder engagement**

To ensure the findings from the survey reflect the views of all key stakeholders and the performance of CSI II and be able to shape future orientation and strategy, the following entities were engaged: MoFA, BAC, COCOBOD (CHED) and CARE. Their contributions enabled us to plan and execute the field survey successfully.

## **2.6 Limitations**

The limitations encountered during the survey include recall bias. Recall bias results from having to ask respondents for information from a period in the past. We attempted to mitigate this potential bias by triangulating responses between the quantitative data and the FGDs, and KII from implementing partners; especially relating to yield and farm sizes. Although some recall bias is unavoidable, however, there is no reason to believe that recall bias should differ in its severity between the treatment and control groups as this is common across groups and mitigates the threat to the overall comparability of the groups. Additionally, in an attempt to reduce potential validity issues, we also thoroughly analyzed the data to identify any significant outliers.

There are many reasons why farmers may provide a bias or less-than-truthful responses to questions. For instance, they may want to appear worse off than they are in the hopes that doing so may help to attract some donor support, or they may want to appear better off than they are for fear of being judged by enumerators. We attempted to reduce this potential bias by providing farmers with clear information about why they were being interviewed. We informed them that their responses would have no bearing on their participation or lack of participation in any current or future projects. The team assured them that information obtained from them would be highly treated as confidential.

In addition, the evaluation report of the PROCOCO project which was intended to serve as a baseline for the CSI II Project was conducted in districts distributed across Ashanti, Brong Ahafo and Central. Even though Asikuma-Odoben Brakwa (AOB) was one of the 5 districts, the focus of the report was not to distilled indicators specific to AOB District. Hence our inability to use the average figures of the indicators as a reference point/benchmark for comparing the results from the endline survey. We therefore collected data on control group which served as the benchmark for comparison and a counterfactual.

### 3.0 FINDINGS OF THE ENDLINE SURVEY

This chapter presents the main findings of the endline survey. The section discusses the findings based on the key impact indicators and followed by the results based on the outcome indicators. The section also presents the effectiveness of the program in the achievement of results as well as sustainability of the impacts achieved by the project.

#### 3.1 Demographic profiles of the beneficiary and the control

The respondents included 357 beneficiary cocoa farmers (treatment) and 103 non-beneficiary cocoa farmers (control) farmers. The main demographic presented are the respondents' sex, marital status, age, educational level and the household size of the control and the beneficiary farmers. The main gender distribution of the beneficiary and the control farmers are presented in Figure. From the Figure 1, the results reveal that 66% of the selected treatment farmers are women with about 34% of them respondents being men. The proportion of male to female also show similar trend among the control farmers: 62% women and 38% men.

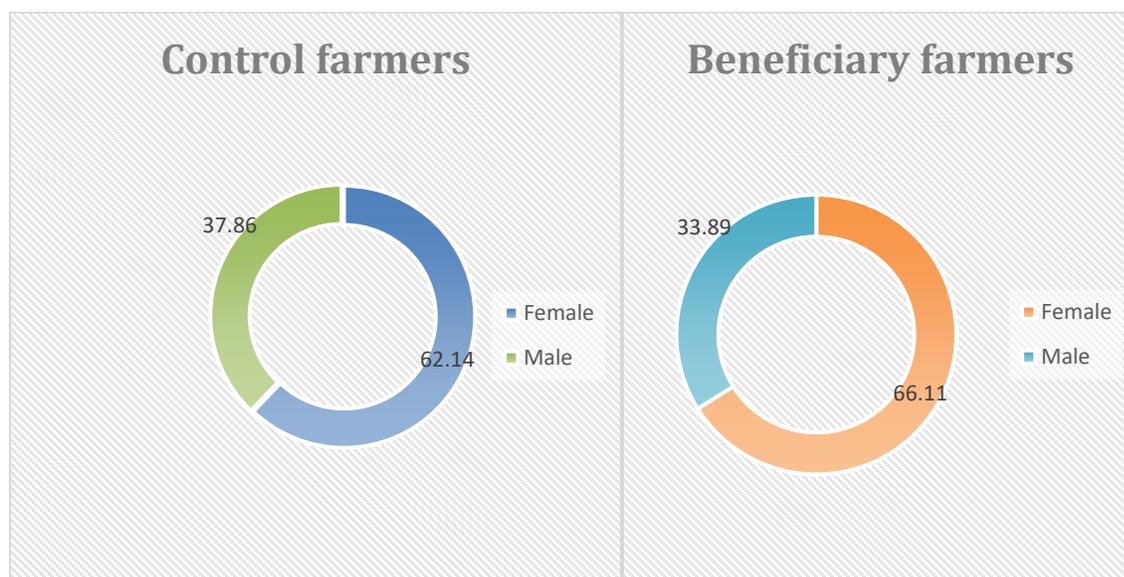


Figure 1: Gender of the sample farmers (control and beneficiaries)

The results on gender show that more women were targeted to participate on the CSI II initiative. Additionally, the results in Figure 2 presents the distribution of the marital status of the farmers. The marital status distribution show that about 80 percent of the treatment farmers are married people with 20 percent unmarried.

However, because marriage involve polling of resources by two people, unmarried people are relatively vulnerable group compared to their counterpart married one. However, it is also a fact that in our sociological context, women in marital unions often do not enjoy their full economic rights within their households and can make them vulnerable as well. When couples pulled their resources together, how much power, access and control would the wives have over household assets and resources compared to the unmarried women is also a concern. Generally, in the developing world and in the context of the study areas, women are more vulnerable compared to men. Therefore, we cross-tabulated the gender and marital status of the unmarried beneficiary farmers to identify the proportion of vulnerable people, by gender, that were enrolled on the

project. The result of this cross tabulation is presented in Figure 3.

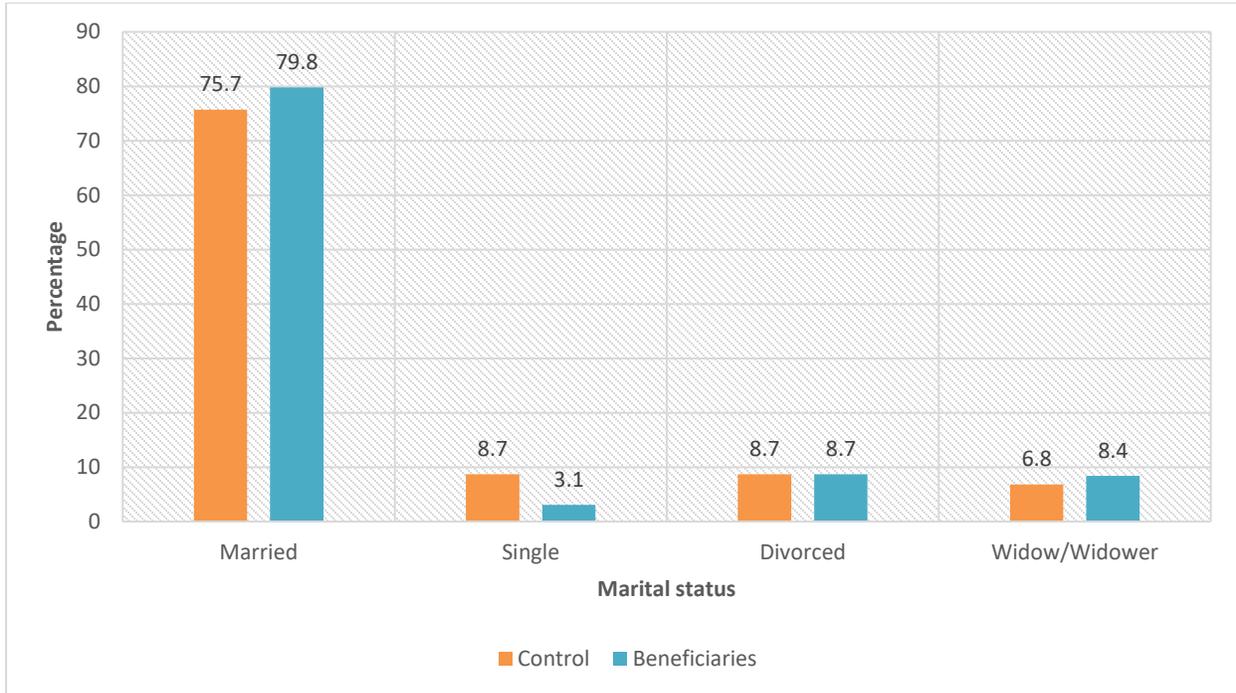


Figure 2: Marital status of the control and beneficiary farmers

The results of the distribution of age among the farmers is also presented Figure 3.

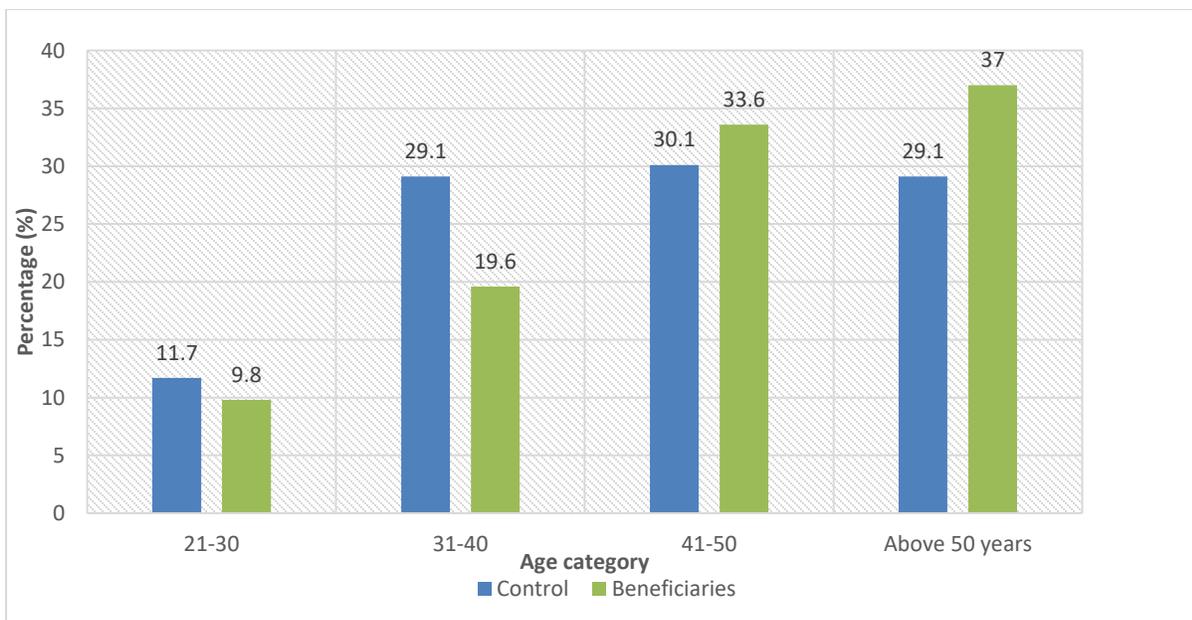


Figure 3: The age distribution the farmers

The results show almost 30 percent of the beneficiary farmers are below 40 years with 70 percent of them being above 41 years and above. Even though cocoa farmers in Ghana are generally older people, the results in Figure 3 show that relatively good proportion of the youth were targeted and enrolled onto the project. The analysis of the results of educational level is presented in Figure 4. The results in Figure 1 show that a good proportion of the beneficiary farmers has no formal education. This has implication for the adoption of farm technologies that are introduced to the farmers.

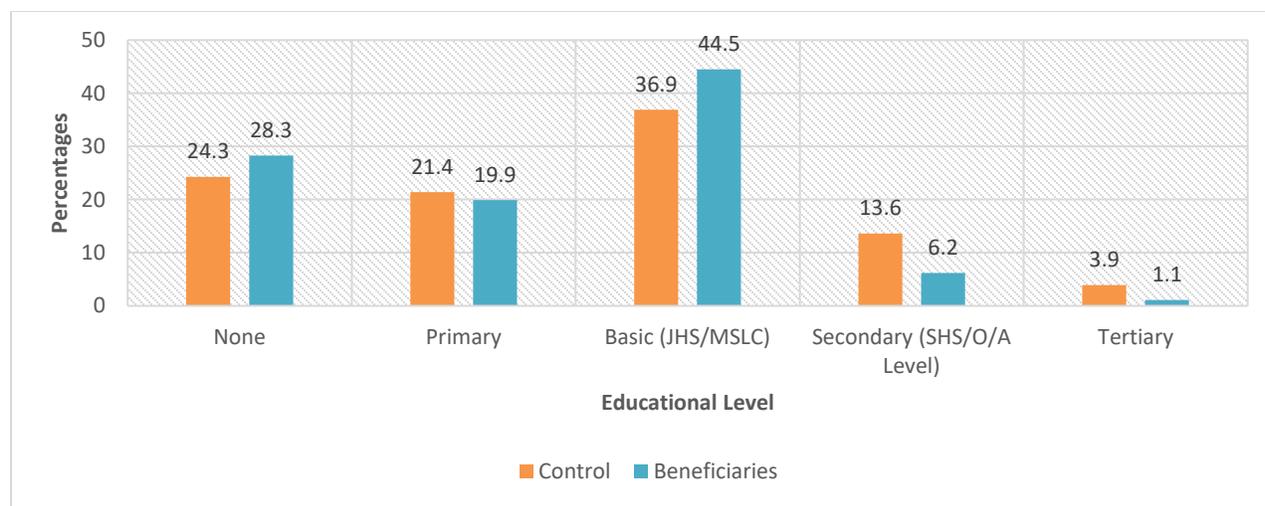


Figure 4: Educational level farmers

The distribution of household size among the beneficiaries and the control farmers is presented in Table 1.

Table 1: Distribution of household size

Farmer category	Obs.	Mean	SD
Control	103	6.41	2.48
Beneficiary	357	6.47	2.72
Total Observation (Obs)	460	-	-

Note: SD means standard deviation

The results in Table 1 show that for the control and the beneficiary farmers, the average household size is estimated at 6.41 and 6.47, respectively. This result and the earlier demographics discussed earlier show similar trend this indicate that the control and the beneficiary farmers are comparable along the lines of age, gender, marital status and household size.

### 3.2 Impact Indicators

The results of key impact indicators of productivity of cocoa (yield per unit of land), average per-capita income per month, and household dietary diversity score (HDDS) are presented in this section. The results are presented in Table 1 below:

### 3.2.1 Attribution of changes in impact indicators to the CSI II Project

The results of the analysis making attributions of the changes in productivity, income and HDDS to the CSI project is presented in Table 3, i.e. the results of the analysis of estimation of impacts using Propensity Score Matching (PSM) analysis. The PSM analysis is based on matching time-invariant and CSI project-invariant characteristics such as age, gender household size and marital status of the of the respondents (both control and beneficiaries). The results in Table 2 indicate the Average Treatment Effect on the Treated (ATT), which measures the impacts are significant for the three indicators.

Table 2: Attribution of impacts (change) to the CSI Project

Impact indicator	Sample	Treated	Controls	Diff.	S.E.	T-stat
Productivity	Unmatched	475.15	416.28	58.87	32.57	1.81*
	ATT (Matched)	<b>475.15</b>	<b>411.09</b>	<b>64.06</b>	<b>26.20</b>	<b>2.45**</b>
Annual Income	Unmatched	9899.61	7678.30	2221.31	1658.92	1.34
	ATT (Matched)	<b>9899.61</b>	<b>6563.81</b>	<b>3335.80</b>	<b>1751.23</b>	<b>1.90*</b>
Monthly per-capita income	Unmatched	824.97	639.86	185.11	138.24	1.34
	ATT (Matched)	<b>824.97</b>	546.98	<b>277.98</b>	<b>145.94</b>	<b>1.90*</b>
HDDS	Unmatched	7.26	6.20	1.06	0.27	3.99***
	ATT (Matched)	<b>7.26</b>	<b>6.22</b>	<b>1.04</b>	<b>0.24</b>	<b>4.39***</b>

Sources: Calculation based on field survey, 2020. Note: \*, \*\*, and \*\*\* means statistically significant at 10 %, 5% and 1% respectively.

The results presented in Table 2 show that while the beneficiary farmers recorded 475.15kg/Ha, the control farmers recorded 411.09kg/Ha of cocoa. This result means that, on the average, beneficiary farmers have 64.06kg/Ha more than the control farmers. The 64kg/Ha is attributable to the CSI II Project. In the case of income, the results indicated that on monthly basis, the beneficiary farmer earn an of average GHS824.97 compared to GHS546.98 by the control farmers showing a difference of GHS277.98 which is significant at 1 percent, and can be attributable to the CSI II Project. A reason for this finding is that the CSI II project has impacted on more sources of income of farmers such as crop faring, livestock production, micro-enterprising in addition to the cocoa farming.

The findings confirm improvement in the incomes of farmers over the last two years. The results of the farmers' assessment of changes in their incomes are presented in Table 3.

Table 3: Percentage of farmers reporting change in income due to IGA

Direction of change	Pool Control		Pool beneficiary	
	Frequency (No)	Percent (%)	Frequency (No)	Percent (%)
Decreased	28	27.2	24	6.7
Remained the same	46	44.7	43	12
Increased	29	28.2	290	81.2
Total	103	100	357	100

	<b>Women Control</b>		<b>Women Beneficiary</b>	
Decreased	19	30.6	14	5.9
Remained the same	27	43.5	35	14.8
Increased	16	25.8	187	<b>79.2</b>
<b>Total</b>	<b>62</b>	<b>100</b>	<b>236</b>	<b>100</b>

The results in Table 3 above show that 81.2 percent of the beneficiaries think that their incomes have improved over the last two years. Also, 79.2 of the women reported their household incomes have changed over the last two years. This is likely to improve their livelihood.

In the various FGD, there was unanimity among both men and women beneficiaries across all the respective communities regarding increased yield and income. The participants expressed that the CSI II project had so far helped to increase the yield of productivity per unit of land of beneficiaries. Not only did beneficiaries achieve improved yield of productivity, but also secured an improved level of income at household levels. Commenting on this a beneficiary said:

*“We have been able to achieve improved yield, for example, we can now get between 3 or 5 bags of cocoa per unit of land. It has improved our income level as well.”* (FGD, Adandan Community)

In the case of HDDS, the impact on HDDS attributable to CSI II is 1.04 representing 17 percent in the improvement of HDDS of the beneficiary farmers compared to the non-beneficiaries. The results mean that the food security of the farmers has improved as HDDS reflects access to food and utilization of food. This implies that following participation in the CSI II initiative, the nutrition security is improving and could lead to better health outcomes especially among children and women who are often the hardest hit in times of food shortages and nutrition insecurity. A reason for this observation is that in most homes in the study areas, fathers and male adults are to be served with the ‘best’ of food as a sign of respect. The CSI II also worked in changing this notion and culture among community members by promoting good nutrition of children and pregnant women and diversifying the household food.

The results of the HDDS also imply farmers have improved access to food for their households. The results of a question seeking to find out if farmers have enough food to feed their household members all year round is presented in Figure 6 below.

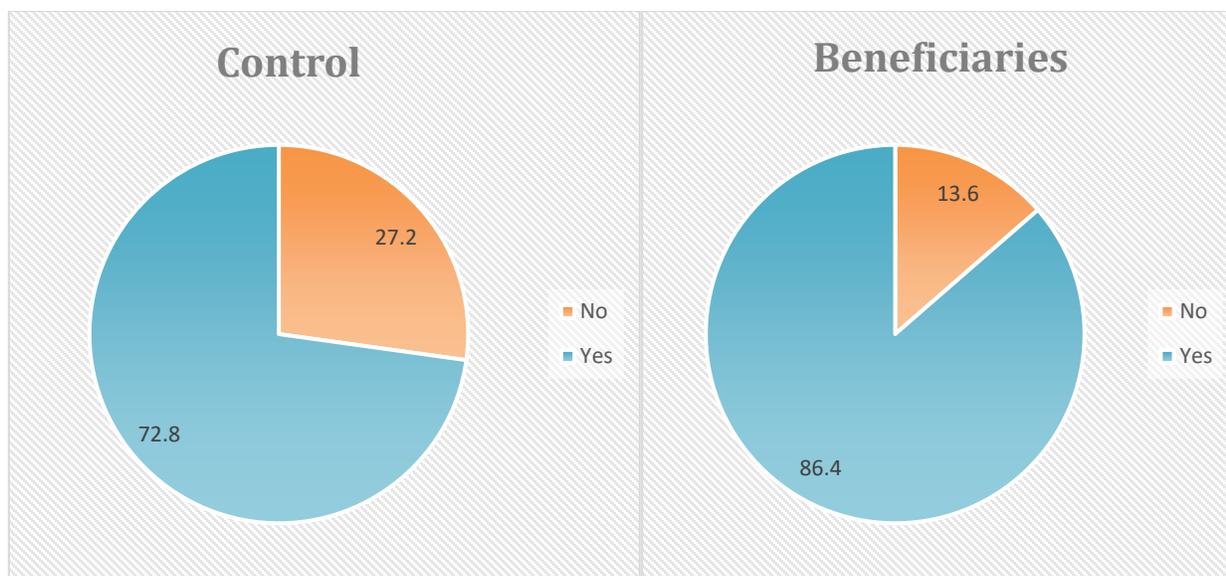


Figure 5: Do you have food to feed your household all year round?

The results in Figure 5 revealed that while 73 percent of the control farmers are able to feed their households all year round, 86.4 percent of the beneficiaries have enough food to feed their household all year round. The results mean that the food security of the beneficiary farmers is better than the control comparatively. They mentioned that yields and income are the main reasons for their improvement in their food security.

### Women’s empowerment index

The Women’s Empowerment Index (WEI) was computed based on the project level Women’s Empowerment in Agriculture Index (Pro-WEAI). The Gender Parity Index (GPI) was 0.91 while the 3DE score was about 0.79. From the various computed indicators, the results show that the women empowerment score was 0.8. This thus suggest a relatively high level of empowerment among women beneficiaries of the CSI project in communities within the Asikuma Odoben Brakwa District.

### Summary of the WEI

Pro-WEAI		
Indicator	Women	Men
Number of observations	237	119
3DE score	0.79	0.84
Gender Parity Index (GPI)	0.91	
Pro-WEAI score	0.80	

See Appendix 5 for details of the WEI

One observation that had negative implications for the WEI is the land ownership and the sharing system in the districts with regard to cocoa farming system; under the ‘*abunu*’ system the farms are shared amongst the beneficiaries without right to ownership. This system therefore did not allow the women to have control of the land.

### 3.3 Outcome Indicators

#### 3.3.1 Adoption of agricultural technologies and productivity of cocoa production

The results of the survey show that for the most of the treated farmers are adopting the key technologies that were introduced to them under the CSI II project. The results of the level of usage of the good agricultural technologies, also refer to good agricultural practices (GAP) for cocoa production by the treatment (beneficiary) farmers are presented in Table 4.

*Table 4: Application of Technologies by Cocoa Farmers*

		<b>Women</b>	<b>Men</b>
		<b>Percent</b>	<b>Percent</b>
Applied at least one of the new technologies	Applied	89.4	95.0
	Did not applied	10.6	5.0
Fertilizer Application	Applied	84.7	92.6
	Did Not Apply	15.3	7.4
Seed Selection	Applied	56.6	65.2
	Did Not Apply	43.4	34.8
Nursery Management	Applied	53.8	66.7
	Did Not Apply	46.2	33.3
Weed Control	Applied	83.8	95.8
	Did Not Apply	16.2	4.2
Row Planting	Applied	60.5	75.2
	Did Not Apply	39.5	24.8
Pest Management	Applied	80.9	94.9
	Did Not Apply	19.1	5.1
Biodiversity and Soil Conservation	Applied	56.6	79.5
	Did Not Apply	43.4	20.5
Harvesting and Post-Harvest Handling	Applied	40.1	60.7
	Did Not Apply	59.9	39.3

Sources: Authors calculation based on survey data, 2020

#### **Percentage of farmers who have applied new technologies and/or management practices promoted by the program**

In Table 4, the findings suggest that majority of the farmers have applied new technologies introduced under the CSI II project. Specifically, 89 percent of the women indicated they have applied at least one of the new technologies while 95 percent of the men have applied

technologies. The extent of application of the specific technologies by the farmers is presented in the Table 4.

We find that among the various technologies introduced to the farmers “Fertilizer Application” was mostly adopted by women farmers followed by weed control and pest and disease management. The lowest of the technologies adopted by the women cocoa farmers was harvesting and post-harvest handling. For the male farmers, weed control was the highest adopted technology followed by pest management and fertilizer application respectively. See Table 4 for details.

The results revealed that all the technologies introduced to farmers are being adopted by the farmers. In a male FGD in Kokoda, for instance, the farmers reported that for each acre of cocoa farm, and appropriate shade management, a total of eight (8) ‘average’-size trees are required to provide the required shade for optimal cocoa production that is capable of controlling disease spread. In addition, the farmers reported that if a cocoa farm is infested with the black pod disease, they harvest all infested pods and bury them to control further spread in addition to the use of appropriate fungicide. These demonstrate high level of knowledge and awareness among the beneficiary farmers concerning the various technologies and their benefits and therefore facilitating the adoption of these GAPs. More details of the percentage of women applying new technologies and management practices are presented in Table 4 above.

In addition, the report provide analysis of the educational level of the beneficiary farmers to identify potential effect of education on the adoption of the various technologies among the beneficiary farmers. Details of the results of the cross-tabulation of the adoption of the technologies and the educational levels of the beneficiary farmers are shown in Table 4A. The results show that for all the technologies, farmers with tertiary education had the highest percentage of adoption of the technologies. Also, the results show that farmers with no formal education and those with only primary level of education show the least percentage of adoption. Overall, the results in Table 4A suggest that farmers with higher education adopt the technologies better than those with low levels of educations.

**Table 4A: Cross Tabulation of Education and Percentage Adoption Among Beneficiary Farmers**

Education	Fertilizer Application		Seed selection		Nursery management		Row planting		Weed control		Pest and Disease		Biodiversity		Harvesting and post-harvest handling	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
None	92%	8%	62%	38%	48%	52%	62%	38%	92%	8%	86%	14%	60%	40%	35%	65%
Primary	88%	12%	51%	49%	51%	49%	62%	38%	81%	19%	84%	16%	67%	33%	45%	55%
Basic (JHS/MSLC)	89%	11%	61%	39%	67%	33%	70%	30%	89%	11%	86%	14%	65%	35%	54%	46%
Secondary (SHS/O/A Level)	76%	24%	60%	40%	60%	40%	58%	42%	81%	19%	81%	19%	71%	29%	55%	45%
Tertiary	100%	0%	75%	25%	75%	25%	100%	0%	100%	0%	100%	0%	75%	25%	75%	25%

Yes=mean adopting/using; No=means not adopting/not using

### 3.3.2 Financial Services

#### Number and percentage of women who are active users of financial services

The results presented in Table 5 show 92% of the women are members of the VSLA. In terms of active membership 88% of the women indicated they were active in the established VSLA in the sampled communities. Out of the total sample (235) women, only 27% indicated they had opened bank accounts with formal financial institutions. In the past 12 months, only 30% of the women stated they had applied for loans. In all, a significant number of women in the CSI II project communities have gained access to financial services especially with the introduction of the Village Savings and Loans (VSLA).

Table 5: Use of Financial Services

	Women (n=235)		Male (n=121)	
	Freq	Percent	Freq	Percent
Membership of VSLA	217	92.3	79	65.3
Non-Member of VSLA	18	7.7	42	34.7
Active User of VSLA	207	88.1	77	63.6
Non-Active User of VSLA	28	11.9	44	36.4
Holders of Bank Account	64	27.2	64	47.1
Non-Holders of Bank Account	171	72.8	171	52.9
Applied for Loan	72	30.8	34	28.1
Did not apply Loan	169	69.2	87	71.9

#### Percentage of women farmers who are able to equally participate in household financial decision making

From Table 6 the participation of women farmers in household financial decision making is presented. Out of the total of 235 women beneficiary farmers sampled, 196 representing 84 percent indicated they equally participate in household financial decision making. The focus group discussion points to collective agreement of women with their spouses/men in household financial decisions has improved.

Table 6: Participation Financial Decision

	Women (n=235)		Male (n=121)	
	Freq	Percent	Freq	Percent
Participation in Financial Decision	196	83.8	115	95.0
Non-participation in Financial Decision	38	16.2	6	5.0

### 3.3.3 Access to Agricultural Inputs

#### Percentage of farmers who improved their access to agricultural input

In terms of gaining access to agricultural inputs, about 83 percent of the women have gained access to agricultural inputs such as fertilizers, agrochemicals. From the perspective of the male farmers 91 percent indicated they have gained access to agricultural inputs. Farmers collectively attribute the formation of the Cocoa farmer-based organizations “corporative” enhanced access agricultural inputs which hitherto was a huge challenge. See Table 7 for details.

Table 7: Access to Agricultural Inputs

		Women (n=235)		Men (n=121)	
		Freq	Percent	Freq	Percent
Access to Agric. Inputs	Access	195	83.0	110	90.9
	No Access	40	17.0	11	9.1
<hr/>					
CSI II improved Inputs Access	Yes	184	94.4	107	97.3
	No	11	5.6	3	2.7
<hr/>					
		Freq	Percent	Freq	Percent
CSI II and Cocoa Farmer access to Agricultural inputs	High	121	52.6	84	70.6
	Average	65	28.3	18	15.1
	Moderate	12	5.2	9	7.6
	Low	32	13.9	8	6.7

### 4.4 Engagement in micro-enterprises

The analysis also looked at the percentage of women who are established and are engaging in micro-enterprises in the various communities following their participation in the project.

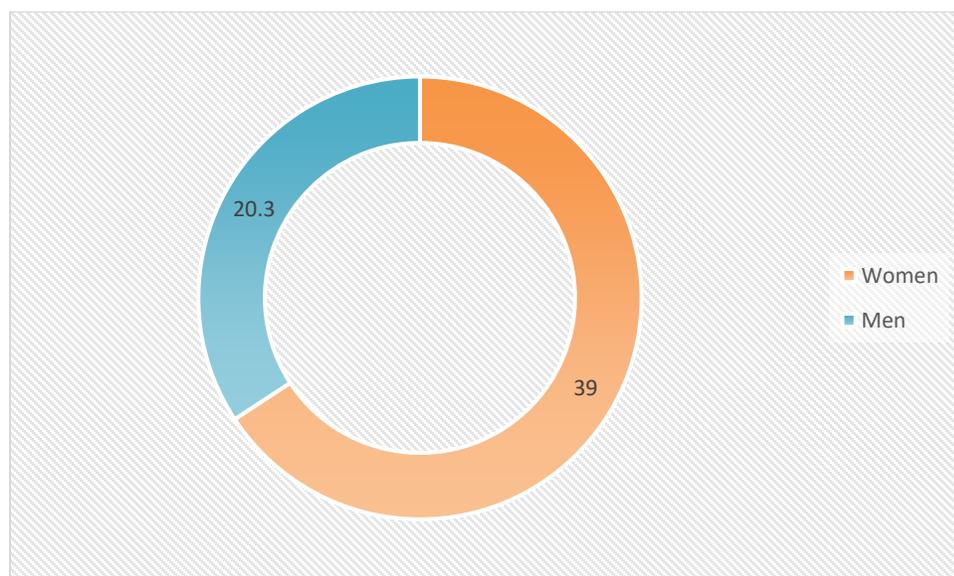


Figure 6: Percentage of women engaged in micro-enterprises

The results in Figure 6 show that 90 of the 231 women-beneficiaries representing 39 percent of the women-beneficiaries have established micro-enterprises and are engaging in it. The micro-enterprises include food vending, trading in general goods (provision shops), gari processing, oil processing, bread and pastry making, petty trading among others. The percentage of men engaging in micro-enterprising (20 percent) show that the CSI II has impacted on women micro-enterprising behavior more than men.

### 3.4 Community Action Plans (CAP developed and implemented

In all, a total of 20 community actions plans (CAPs) were developed for implementation, i.e. one CAP for each community. Each CAP had different needs identified by the various communities in their plans. The community needs identified in the CAPs range from road, school building, community center, community market, boreholes and their repairs, CHIP compound, among others. In total, 68 community needs were identified as the various CAPs. While ten (10) of these needs are completed (have been provided), 15 are in progress and 43 are yet to start as presented in the summary of the CAP status in Table 8. See details of the CAPs and their needs and status are in Appendix 5. The results in Table 8 show that 3 communities out of the 19 CAPs, representing 84 percent, have started the implementing of at least one of the needs in the CAP. Some striking accounts of how some of the ‘projects’ were initiated and implemented in two of the communities (Asarekwaa and Adandan) during the FGD should not escape without mentioning: “We started with KG and Community Clinic with Care International coming to our aid. We initially started with proceeds from community farming. This resulted in the yield of about Gh₵3,000.00. Through this effort, we were able to start with the Community Clinic and KG Project.” (FGD, Asarekwaa Community).

A similar story is told of how cooperative member in Adandan used proceeds from a community farm they established under CSI I for the construction of community center. Even though the construction of the community is in progress (about 70% complete), the community members are thinking of how to use the proceeds of the cooperative’s cocoa farm this year to start the rehabilitation of the Kindergarten School in the community.

Table 8: Summary of the CAP and Needs by Communities

No	Community	Total Needs	Completed	In progress	Not started
1	Abuakuwa	5	1	1	3
2	Adandan	5	1	1	3
3	Amanor	3	0	1	2
4	Asarekwaa	5	1	1	3
5	Asempanaye	3	0	1	2
6	Ato Dauda	2	0	1	1
7	Domeabra	3	0	1	2
8	Eduosia	4	2	0	2
9	Eniehu	4	1	0	3

10	Fankyenekor	4	1	1	2
11	Kawanopado	3	0	1	2
12	Kokoado	3	1	1	1
13	Kwaanana	4	1	1	2
14	Kyirakaa	5	1	1	3
15	Nankese	3	0	1	3
16	Papa Okyere	3	0	0	2
17	Towoboase	3	0	0	3
18	Tweredua	3	0	2	1
19	Wasanbiampa	3	0	0	3
	Total	68	10	15	43

*Authors' calculation based on data from CIG, 2020:* Note: while we are aware that 20 CAPs were developed, we had information on 19 CAPs with no information on Abehanase.

The community needs that are being provided following the implementation of the CAPs are currently having economic and social impacts on all community members including non-beneficiaries of the CSI II project. Thus, the impacts of the CAPs are expected to be relatively larger than expected and linger around for relatively longer periods and sustainable even when the project is ended. While these achievements are commendable and 'good stories' to be told, we did not observe any deliberate strategy by the implementer (CIG) to package these results and disseminate them in a manner that it could be learning points for other donor community in the developing world. Analysis of some of the CAPs indicate that some of the CAPS were too ambitious and would require relatively large financial outlay to implement, and hence could not be implemented because there are no funds to start those activities. Similarly, the community member could not lobby the District Assembly for funds for the implementation of those activities. The certainty of the implementation of some CAPs in some communities is in doubt.

### 3.5 Access to quality agricultural/livestock extension service

Beneficiaries and Non-beneficiaries were requested to provide information on whether they have benefited from a quality agricultural or livestock extensions for the past one year when they require their assistance. The results for the number and percentage of farmers who have benefited from a quality agricultural/ livestock extension service during the last 12 months is presented in Figure 7.

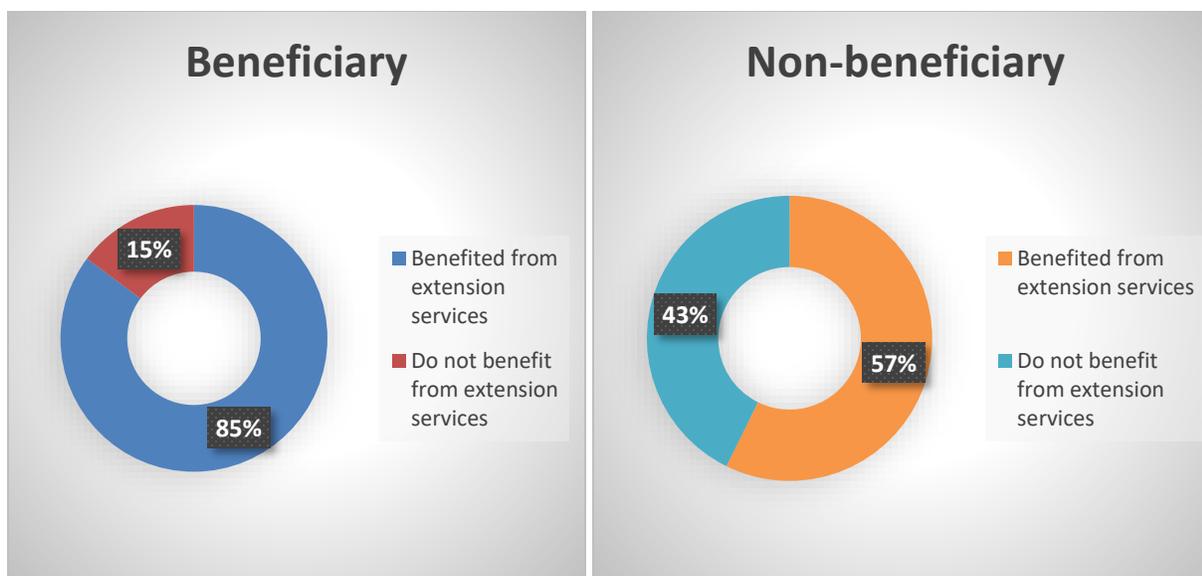


Figure 7: Access to quality agricultural/livestock extension service

The survey results indicated that 85% of the beneficiary respondents benefited from a quality agricultural and livestock extension services, hence improved on their farm management practices as compared to the 57% of the non-beneficiaries that benefited from a quality agricultural and livestock extension services. The results imply that beneficiaries are able to practice fertilizer application, seed selection, nursery management, weed control, row planting, pest and disease management, soil conservation, harvesting and post-harvest handling of vegetables as a result of extension services provided by CARE International, Cocoa Health & Extension Division (CHED) and District Agricultural Development Unit under Ministry of Food and Agriculture (MOFA). During the Focused Group Discussion beneficiaries across the participating communities shared with the Team how the extension services helped them improve on the farm management. They further shared with the Team the application of fertilizer, pruning, pesticide, lining and pegging. They argued that the adoption of these new practices resulted in a positive impact on their yield and income levels. A beneficiary from one community commented thus:

*“Those of us who adopted the new technology experienced higher level of yields as compared to previous practices. It has helped us a lot through the increase of our income.”*  
(Female FGD, Tweredua Community)

An observation identified during the key informant interview with CHED official was the fact that the project has helped CHED to reach out to more farmers to provide extension services on beneficiary communities as compared to non-beneficiary communities. According to CHED, the CSI project has facilitated the cocoa extension services to farmers. Hitherto, farmers attitude towards CHED staff was not very receptive however, following the introduction of the CSI II Project farmers reception of cocoa extension agents has improved greatly.

This was also confirmed by the MOFA officer who explained that “the project offered them, the opportunity to reach out to more women farmers in the community with good agricultural technologies”. Thus, the project has helped them to train more women farmer groups on good

agricultural practices regarding crops and livestock enterprises. Also, farmers were trained, through the women farmer groups, on food nutrition; food utilization; child labour; climate change and coping mechanisms. The improved access of the men and women farmers to agricultural inputs, information, assistance and the acquisition of alternative livelihood source empowers them economically to improve the standard of living of their families and the community as a whole.

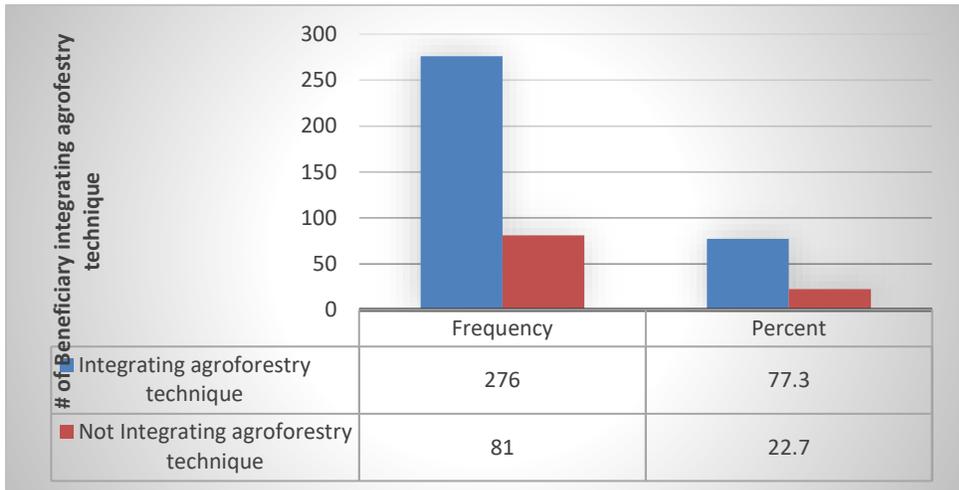


Figure 8: **Number of farmers integrating agroforestry techniques (adding shade trees, etc.)**

The survey results indicated that 276 beneficiary farmers representing 77.3% of the beneficiary respondents are currently integrating agroforestry techniques, hence improved on their farm management practices as compared to 81 beneficiary farmers representing 22.7% of the beneficiary respondents are currently not integrating agroforestry techniques. The results imply that majority of beneficiaries are able to add shade trees practices which support cocoa production and help improve water quality and air quality and soil health. During the Focused Group Discussion beneficiaries across the participating communities shared with the Team how they applied the new technology introduced to them through the Project. They explained that they were taught of how to allow distance or plant trees with eight meters apart to provide shade to their cash crop or food crops to enhance improved yield.

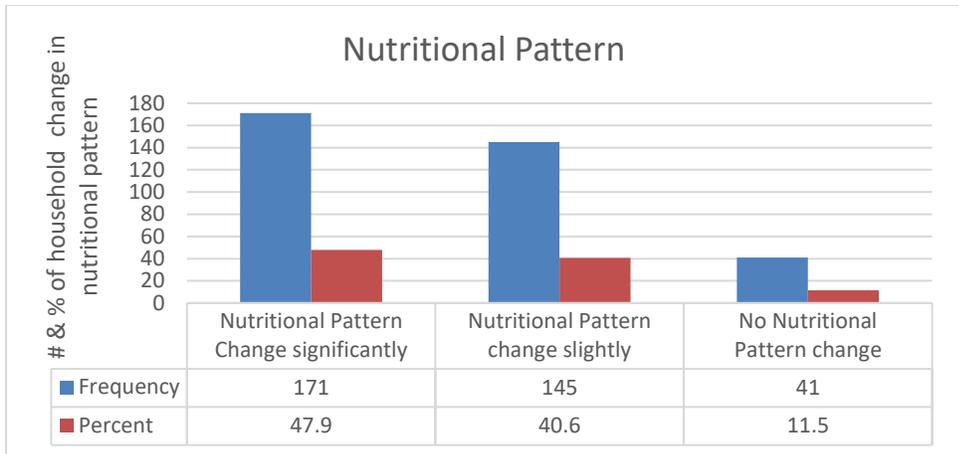


Figure 9: **households who report a change in nutrition behavior**

The survey results indicated that 171 beneficiary farmers representing 47.9% of the beneficiary respondents reported a significant change in nutrition behavior pattern. Whilst 145 beneficiary farmers representing 40.6% of the beneficiary farmers reported a slight change in nutrition behavior pattern. The results imply that majority of beneficiaries reported a nutritional pattern change as a result of the intervention of the project. During the Focused Group Discussion beneficiaries across the participating communities shared with the Team how they have benefited through the Project. They explained majority of beneficiaries received nutritional information, assistance and the acquisition of alternative livelihood source that empowered them economically and also helped to improve the standard of living of their families and the community as a whole.

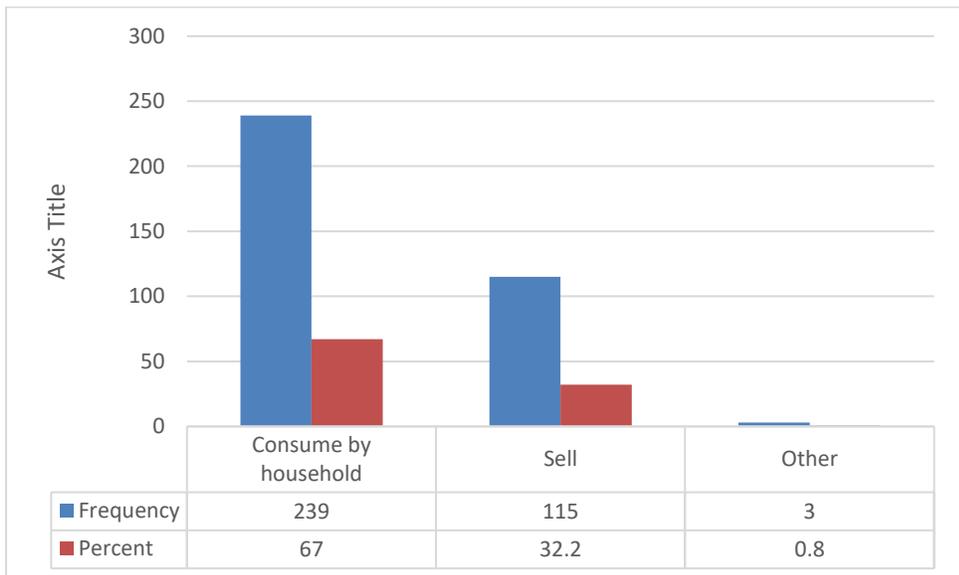


Figure 10: **households consuming vegetables from household production**

The survey results indicated that 239 beneficiary farmers representing 67% of the beneficiary respondents consumes vegetables from household production as compared to 115 beneficiary

farmers representing 32.2% of the beneficiary respondents who rather sells the vegetables from household production. The results imply that majority of beneficiaries consume vegetables from the household production.

### 3.6 Unintended Benefits of the Project

During the FGD in the communities, both men and women mentioned that the various project provided them with education on how to manage oneself to avoid the COVID-19 infection.

This helped to create awareness among community members of the effect, symptoms and what to do in the in the event of suspicion of infection.

Also, a great unintended benefit of the project is the impact on the performance of the CHED. The CHED enumerated the difficulty in reaching out to farmers in the past. However, the project facilitated the formation of farmer cooperatives which serve as vehicles to reach out to more farmers. This increased the number of farmers that CHED could have reached. Thus, the performance of CHED has improved following their involvement in the project. The mandate of CHED is to have relationship with farmers to improve on the cocoa production in communities within the Asikuma-Odoben Brakwa District. The 20 project communities assisted with the establishment of demonstration farms to educate the farmers on modern farming practices appear to be a learning point for learning by know beneficiary farmers as well. The CHED takes other farmers from non-beneficiary communities to the demonstration fields for learning.

In line with MoFA's policies, the DADU seeks to promote gender mainstreaming in all of its programmes. This informed the involvement of women in the CSI II project which helped in promoting women's role in agriculture and also empowered women farmers in the district. The involvement of women in the CSI II project was very high. In the past in the AOB District, most of the women farm with their husbands and so in most cases hide behind their husbands. They therefore do not attend training programmes and fora, or even when they happen to attend, they do not participate in decision making. However, because the group is mainly women-based they made time to attend programmes and were more comfortable in taking part in the decision-making process.

Farmers behavioral patterns have changed; now farmers come for group meeting to learn new farming practices. Both men and women farmers are now more than willing to meet CHED officials.

### 3.7 Dashboard of the impact indicators and outcome indicators

Table 9 presents a summary of both the impact and outcome indicators showing the main findings of the endline survey.

*Table 9: Dashboard of indicators*

No	Indicator	Value at Endline
	<b>Impact Indicator</b>	
1	Yield per unit of land	475.15kg/ha
2	Average per-capita income per month	GHS811.09
3	Household dietary diversity score	7.21

4	Change in the Women's Empowerment index	0.80	
	<b>Outcome Indicator</b>	<b>#</b>	<b>%</b>
5	# and % of women who are active users of financial services	207	88.10
6	% of farmers who improved their access to agricultural input	307	86
7	% of farmers who have applied new technologies and/or management practices promoted by the program	321	91.50
8	% of farmers who have benefited from a quality agricultural/livestock extension service during the last 12 months	304	85.2
9	Number of farmers currently integrating agroforestry techniques (adding shade trees, etc.)	276	77.3
10	# and % of households who report a change in nutrition behavior	316	88.5
11	# of households consuming vegetables from household production	239	67.0
12	% of women who have taken initiatives to set up micro enterprises		39
13	# and % of women in communities who report an increased income as a result of IGA	187	79.2
14	% of women farmers who (report they) are able to equally participate in household financial decision making	196	83.80
15	# and % of communities with at least one project implemented in collaboration with the district assembly	16	84
16	% of CAP projects implemented	-	84

### 3.8 Effectiveness of the CSI II Implementation

The results of the endline survey, especially the summary of the indicators in Table 9 above show that majority of the target for the indicators set by the project were achieved and, in some cases, exceeded targets. This points to effectiveness of the implementation of CSI II in spite of the challenges identified earlier. The key contributors of the effectiveness are enumerated below:

1. The synergy derived from the partnership of the various stakeholder during the implementation of the project contributed to the effectiveness of the project. The partnership by these stakeholders brought to together the strength of these organizations. For instances while CHED had huge expertise in cocoa health and extension, MoFA brought to bear its expertise in the areas of extension for crops and livestock as well as its expertise in Food and Nutrition education. Similarly, the NBSSI (BAC) also made available their knowledge in rural and micro- enterprising development.
2. The formation of cooperatives in the various beneficiary communities also facilitated easy access to farmers for training, delivery of inputs and transfer of information among beneficiary farmers.
3. The formation of VSLA groups among the various communities was a key facilitate for women especially towards their drive for financial service and drive to continue their economic activities to enable them save money for assets acquisitions.
4. The Geographical spread of the project also was a big contributed to the effectiveness of the project. The communities that were selected for the project are all located in the

same district and those not require 'too much' to traveling to other communities. This made the implementers to quick turnaround time to access farmers in the communities and address their needs.

5. The trainings that were provided to the farmers also afforded the farmers greater opportunity to enhance their skills as well as get the needed knowledge to change their perception towards positive ends that facilitated the adoption of the various technologies and good agricultural practices that were introduced to farmers.
6. The formation of demonstration farms/plots and community farms also help community to generated income that helped in the implementation of the some of the CAPs. These farms help facilitate farmers understanding of what they learn and the manifestations of the things they learn. These facilitate the adoption of the technologies introduced.

### **3.9 Most significant changes (success) stories**

Based on the finding and observation from the field some significant changes (success) stories:

***Village Saving and Loan Association (VSLA):*** The VSLA is one of the initiatives by the Project aimed at enhancing the financial standing of the beneficiaries, especially the women through community organization and association. Evidence from both the quantitative and qualitative suggest that the VSLA was indeed a successful one in the respective communities where the Project was implemented. For instance, the quantitative level information suggests that 92% of the women are members of the VSLA. With this high level of percentage, active membership in the established VSLA across the selected communities stands at 88%. In all, a significant number of women in the CSI II project communities have gained access to financial services especially with the introduction of the Village Savings and Loans (VSLA). From the qualitative level information, the FGD revealed that access to credit facilities from the VSLA established by the CARE International in the participating communities was non-cumbersome. It was also revealed that most of these women beneficiaries were able to access credit from the VSLA to establish their businesses, venture into petty trading, expand their trading, and adopt new practices such as fertilizer application and pruning.)

***Decision-Making in Household Financial Issues:*** Hitherto to the implementation of the Project, financial decision-making, especially in the areas of income and expenditure, was dominant in the realm of men across the respective communities. However, in recent times, positive and success stories can be told. From the survey, it was revealed that the participation of women farmers in household financial decision making is positive. Out of the total of 235 women beneficiary farmers sampled, 196 representing 84 percent indicated they equally participate in household financial decision making. The focus group discussion points to collective involvement of women in household financial decisions. Some women beneficiaries explained that the level of control over the income and expenditure at the household level is equal between the women and men in the participating communities. This has translated into access to household resources by women. Overall women observing improvement in their power and control of household resources including farm inputs particularly for married women. However, power and control of land remains a challenge to women farmers due to the land tenure system in the project areas.

***Yields and income:*** Another area that requires highlight as a success story is the yield of production by beneficiaries who enrolled in the project. The results from both the quantitative and qualitative data as gathered from the field survey give credence to this success story. For instance, while the beneficiary farmers recorded 475.15kg/Ha, the control farmers recorded 411.09kg/Ha of cocoa. This result means that, on the average, beneficiary farmers have 64.06kg/Ha more than the control farmers. The 64kg/Ha is attributable to the CSI II Project. In the case of income, the results indicated that on monthly basis, the beneficiary farmer earn on the average GHS824.97 compare to GHS546.98 by the control farmers

showing a difference of GHS277.98 which is attributable to the CSI II Project.

**High usage/adoption of technologies:** From the FGDs and the household analysis, majority of the beneficiaries are adopting the key technologies that were introduced to them under the CSI II project. These demonstrate high level of knowledge and awareness among the beneficiary farmers concerning the various technologies and their benefits and therefore facilitating the adoption of these GAPs.

**Increased performance of institutions which partnered in the Project:** In the implementation of the projects, CARE International partnered with institutions like MOFA, CHED and BAC for technical assistance. The various institutions played a critical role and benefited in the successful implementation of the project and facilitate the achievement of the mandate of these institutions. This led to improved performance of the mandate of these institutions. For instance, an interview conducted with the MOFA/WIAD officer revealed that MOFA was able to train women farmer groups on good agricultural practices regarding crops and livestock enterprises than it had done in the past. They also trained the women farmer groups on food nutrition; food utilization; child labour; climate change and coping mechanisms and assisted them to access certified Agricultural input. WIAD commented thus: *The project offered MOFA officers, the opportunity to reach out to more women farmers in the community with good agricultural technologies. Which has helped MOFA to promote food-based nutrition as well as food utilization for good health and higher productivity in the Asikuma-Odoben Brakwa District.*

### **3.10 Some challenges identified during implementation of CSI II**

The key informant interviews with MoFA revealed that the Memorandum of Understanding (MOU) between the management of CARE International, Ghana and the District Agricultural Development Unit (DADU) of MoFA was never signed. Due to this, details of work could not be clearly defined. Subsequently, payment for allowances due DADU staff could not be fully paid even though DADU staff believed they carried out all of activities with the groups as there was no MOU to support such payment. Similarly, the renewal of MOU with CHED following the expiration of the old MOU was a challenge just like the DADU case. These posed great risk to the success of the project in the event of transfers of committed staff from those partner institutions.

Another critical issue that was identified during the FGD at Tweredua is the security of the VSLA Box. The VSLA members reported that the box was stolen and was reported to the police. The thieves were later arrested and prosecuted and are currently serving various jail terms. Even though there are security measure in the VSLA principle, this issue calls for a need to introduce more security measure to protect the wealth of the VSLA members. The VLSA has started attracting criminals and there is the need to look at various options that are available to further enhance the security of the money collected from the VSLA. Various options available for this were discussed separately with the some VSLA leaders.

Another challenge is the late arrival of women to training programmes. They hardly have time to attend the training programmes because of the multiple roles played at their respective household and community levels. This in turn delays planned activities. Also, the group leaders reported that, there exist petty quarrels among group members, leading to member's apathy toward group activities compared to men.

It was observed during the FGDs that community members did not have enough lobbying skills in lobbying for funds from the various district assemblies to enable them implement some of the activities in the CAP. Indeed, some of the needs/activists in the CAP require huge financial outlay to implement. These often deters community members who then turn to think that these are our need that the District Assembly must do for them.

## 4.0 Conclusion and recommendations

This section summarizes the main findings and provides recommendations for further action to help improve the outcomes of CSI II in line with its objectives and main goal. The analysis of this endline survey reveals a number of ideas that will be helpful in improving upon what worked, working and correct what is not working.

### 4.1 Conclusions

The endline evaluation sought to assess the impact of the CSI II on the beneficiaries of the project using 16 indicators; 4 impact indicators and 12 outcome indicators. Specifically, the following are findings.

1. The productivity of farmers has improved following participation in the CSI II project with the average yield per land estimated at 475.15kg/Ha. Out of this yield, **64.06kg/Ha** is attributed to the CSI II project.
2. The findings show that CSI II has had a positive impact on the per-capita income levels of beneficiaries. Specifically, 81.2% of the beneficiaries reported improvement in their incomes over the past 2 years while about 12.0% reported that there is no change in income levels, with 6.7% reporting a decrease in their income. The average income of the beneficiary farmers is GHS824.97 per month. For every farmer who participates in the CSI II projects earns on the average **GHS277.98**.
3. Food security among beneficiaries have greatly improved with HDDS estimated at 7.2 among beneficiary farmers. In addition, 48 percent of the beneficiary indicated that their nutrition patterns have changed following nutrition education provided them on the CSI II project.
4. The women empowerment index is estimated at 0.80 suggesting relatively high empowered beneficiary women.
5. The analysis of the survey data provides evidence that women who participated in the CSI II project has improved women's access to financial services, such as loans, savings, especially with the introduction of the Village Savings and Loans (VSLA). Women say they are now able to take loan and also have the opportunity to save money when they wish. The women reported in the past they did not have the culture of savings due to the absence of financial institutions in the communities. But now the VLSA has introduced to them how to save money from our economic activities.
6. Similarly, the endline survey provides evidence that beneficiary farmers now have improved access to agricultural inputs and extension services. The CSI project has facilitated the cocoa extension services to both farmers and also motivated them to receive extension services. Hitherto, farmers attitude towards CHED staff was not very receptive however, following the introduction of the CSI II Project farmers reception of cocoa extension agents has improved greatly. The project has also collaborated with MoFA for the provision of extension service to farmers regarding livestock production.
7. The analysis shows that there is high level of use (adoption) among men and women in the use of the farm technologies that were introduced to the cocoa farmers in the project communities.
8. The end line survey has also provided evidence that the CSI II has impacted positively on women's ability to establish and operate their own micro-enterprises in the areas of food vending, trading in general goods (provision shops), gari processing, oil processing, bread

and pastry making, petty trading among others. The results suggest 39 percent of beneficiaries have taken the initiative to set-up new-micro-enterprises.

9. Majority of farmers who benefited from project have adopted and are applying the key technologies that were introduced to them under the CSI II project in both their cocoa and food crop farms with 90 percent of women and 95 percent of men using the technologies. The results show that there is high level of good agricultural technologies, also referred to as good agricultural practices (GAP) for cocoa production among beneficiary farmers.
10. Coupled with the improved access of the men and women farmers to agricultural inputs, information, assistance and the acquisition of alternative livelihood source, the farmers especially women, are economically empowered to help improve the standard of living of their families and the community as a whole.
11. Finally, the results of the endline survey established that a total of 20 community actions plans (CAPs) were developed for implementation. However, out of the 20, The CAPs had different needs identified by the various communities in their plans. The community needs identified in the CAPs range from road, school building, community center, community market, boreholes and their repairs, CHIP compound, among others. In total, 68 community needs were identified as the various CAPs. While ten (10) of the community needs in the CAPs are completed (have been provided), 15 of them are in progress and 43 are yet to start.

## **4.2 Recommendations**

Based on the findings of the endline survey the following recommendations are made for consideration:

- In the event that the project is to be extended or replicated elsewhere, there should be the need to develop a communication strategy as an integral part of the implementation of the project for sharing of knowledge among other farmers and the development world. This will provide a coherent information, such as video documentary, still pictures, about the project that could be disseminated through national televisions and social media.
- Future partnerships of technical institutions such as MoFA and CHED should have a formal MOU to ensure smooth management of the partnership and the implementation of the project.
- For the security of the VSLA box, the person designated as the 'keeper' of the box could do consultation with the Chairman of the group; without the knowledge of the other members, keep the box with another trusted member. Alternatively, the VSLA could register a mobile money in the name of the group and invite mobile money vendors to the VLSA meetings to collect the moneys directly. The keeper of the VSLA box could keep the phone with the VLSA mobile money number.
- Before the project folds up, CIG should assist the various communities to develop their own customized sustainability plan for implementation. This will ensure that the impact of the project will be seen over a long period of time.
- We recommend that future CAP should be less ambitious and also train community leaders on how to lobby for such as funds from the district Assemblies and other institutions/donors.

- Future intervention should have clearly defined gender indicators for measuring implications for married women farmers who farm with their husbands. Specific measures targeted at power, access and control of resources including yields, income and farm inputs.
- Finally, we will recommend that any intervention in the future could purposefully select the control communities as a beneficiary community as a thank you for the data they provided to us.

## Appendix

### Appendix I: Household Questionnaire

#### ENDLINE SURVEY OF THE COCOA SUSTAINABILITY INITIATIVE II Household Questionnaire

Statement of consent:

Hello. My name is \_\_\_\_\_. I am working with CARE. We are conducting a survey on with cocoa farmers. The information provided by the interviewee is treated as highly confidential and will in no way be disclosed to any third party. Information is only collected for research purposes in order to establish the impact of the COCOA SUSTAINABILITY INITIATIVE to enable CARE identify lessons. We therefore request you to feel free and provide frank and honest answers without fearing any negative consequences or disclosure. We will only be looking at the collective feedback of ALL the respondents not the individual responses. The interview will take about 1 hour. Do I have your consent for the interview? **Yes (1) No (0)**

#### **PART A – GENERAL INFORMATION**

ID for Questionnaire\_\_\_\_\_

Name of the Respondents\_\_\_\_\_ Contact of Respondents\_\_\_\_\_

Name of Community: \_\_\_\_\_

Are you a beneficiary of the CSI II? Yes (1) No (0)

#### **SECTION A: DEMOGRAPHICS (Tick/circle as applicable)**

1. What is the gender of the Respondents: Male (1) Female (0)
2. Main occupation of the Household head

Farming	1
Trading	2
Processing	3
Others	4
3. Who is the head of your household?

Husband	01
Wife	02
Grandfather	03
Grandmother	04
Other (please specify)	05
4. What is the marital status of the household head

Married	1
Single	2
Divorce	3
Widow/Widower	4
5. What is the highest level of education of the household head?

None	1
------	---

- Basic 2
- Secondary 3
- Tertiary 4

6. What is the age of the household head?

- Below 20 years 1
- 21-30 years 2
- 31-40 years 3
- 41-50 years 4
- Above 50 years 5

7. How many people are in your household (including you) \_\_\_\_\_

8. Do you belong to any farmer group? Yes (1) No (0)

9. What is the name of this group -----

**Section B: Yield of cocoa**

10. For the crops that you grew during the last farming season, please fill the table below to indicate the acreages and the yields of crops grown by your household.

Crop	Total Acreage in acres	Harvest/acre last coco season	Total Harvest (100 kg bags),	Yield Good or Bad <sup>use code A</sup>
Cocoa				

**Code A:** 1=Bad 2= Normal 3=Good

11. What account for the good/bad yield obtained during the last cocoa season-----

-----

**Section C: Household Income**

Section Income Sources

12. Provide us with details of your other sources of income?

	Sources of Income	Did anyone from your HH gain income from these Yes=1 No=0	How much money is made from [activity] each month?
	<b>Paid Labour</b>		
1	Agriculture wage labour		
2	Non-agriculture: wage labour		
3	Skilled labour		
4	Formal Employee Gov't, NGO, private)		
5	Other		
	<b>Charity</b>		

6	Remittances (foreign, domestic)		
7	Other form of donation		
<b>Business</b>			
8	Small business activities (street/food vending, shopkeeping, trading)		
9	Handicrafts		
10	Other business		
<b>Agriculture</b>			
11	Crop sales (own production)		
12	Livestock sale		
13	Nursery (vegetable, fruits/ forest products, seedlings)		
14	Seed selling		
15	Honey/Bee keeping		
16	Fishing		
17	Processing (gari, oil)		
18	Other		

13. How will you describe your income of the last 2 years? Decrease (1) remains the same (2) Increased (3)

#### Section D: Food Security

14. Does your household have enough food to eat all year round? Yes (1) No (0)
15. On the average how many months within the year does your household experience hunger? -----
16. Mention the months-----
17. Please provide self-assessment of your household's food security situation.
- Food secure year-round* 1
- Slightly food insecure* 2
- Moderately food insecure* 3
- Very food insecure* 4
18. Give reason for your answer in 2 above
- Increase in income 1
- Increase in yields 2
- Increased in access to storage facility 3
- Stable prices of staple foods in the area 4
- Others 5
19. For the past 24 hours, what type of food groups did anyone else in the household ate yesterday during the day and at night that was prepared in the house?

<b>HOUSEHOLD DIETARY DIVERSITY SCORE (HDDS)</b>	
<b>Name of food group</b>	<b>Response Yes(1),</b>

		No(0)
FS1	Cereals (rice, maize, millet etc.)	
FS2	Cocoyam, cassava, yams, potatoes and other tubers	
FS3	Any vegetables (cocoyam leaves, ayoyo, aleefu cassava leaves, spinach, potato leaves, cabbage, tomato, lettuce, cucumber, eggplant, water melon)	
FS4	Any fruits (mango, papaya, other yellow fruits, banana, apple, others)	
FS5	Meat ( beef, pork, lamb, goat, rabbit, wild game, chicken, duck, other birds,	
FS6	Eggs	
FS7	Fish product (Any fresh, dried fish or shellfish)	
FS8	Pulses, legumes (pigeon pea, common beans, other beans)	
FS9	Milk and milk products (cheese, yoghurt, powder milk, condensed milk)	
FS1	Oils, fats (palm oil, coconut oil, sunflower oil, vegetable oil, butter, others)	
FS1	Sugar, honey	
FS1	Miscellaneous (tea, coffee, cake)	

### Section E: Outcome Indicators

20. Are you an active member of the VSLA? Yes (1) No (0)
21. Are you an active user of any of the financial services of the VSLA? Yes (1) No (0)
22. Do you have a bank account? Yes (1) No (0)
23. In the last 6 months, have you made any withdrawal or deposited money in your bank account
24. Have you taken loan over the last year Yes (1) No (0)
25. Do you have access to agricultural inputs? Yes (1) No (0)
26. If yes, the source of the inputs
27. Do you equally participate in household financial decision making? Yes (1) No (0)
28. List some of the agricultural inputs that you have access to
29. Since the implementation of this project CSI II, has your access to agricultural inputs increased? Yes (1) No (0)
30. How will you rate the improvement your access to agricultural inputs following the implementation of the CSI II project?
31. Have you applied any of the new technologies and/or management practices promoted by the CSI II project?

32. Which of the new technologies and/or management practices do you apply in your farm?

Technology/management practice	Yes (1)	No (0)
Fertilizer application		
Seed selection		
Nursery management		
Weed control		
Row planting		
Pest and disease management		
Biodiversity/soil conservation		
Harvesting and post-harvest handling of vegetables		

33. Did you receive agricultural/livestock extension service during the last 12 months? Yes (1) No (0)

34. If yes, where (mention the sources/provider) -----

35. Are you currently integrating agroforestry techniques in your farms (adding shade trees, etc)? Yes (1) No (0)

36. How has your nutrition pattern change over the last three years) No change (1), change slightly (2) Change significantly (3)

37. Describe how the change in your nutritional behavior came about -----  
-----

38. Do you engage in vegetable production? Yes (1) No (0)

39. What do you do with the larger share of the vegetables produced? *Consume by household members (1) Sell (2) Share with neighbors or relatives (3) Other (4)*

40. Have you in the last three years taken the initiative to set up a micro-enterprise? Yes (1) No (0)

41. Describe the new micro-enterprise -----  
-----

## Women Empowerment Index

### I. Production and Income Domains

<i>Activity</i>	<i>Did you (singular) participate in [ACTIVITY] in the past 12 months (that is during the last [one/two] cropping seasons)?</i>	<i>How much input did you have in making decisions about [ACTIVITY]?</i>	<i>How much input did you have in decisions on the use of income generated</i>

		Yes ..... 1 No ..... 0 >> next activity		from [ACTIVITY]
Activity	Activity Description	G2.01	G2.02	G2.03
<b>A</b>	Food crop farming: crops that are grown primarily for household food consumption			
<b>B</b>	Cash crop farming: crops that are grown primary for sale in the market			
<b>C</b>	Livestock raising			
<b>D</b>	Non-farm economic activities: Small business, self-employment, buy-and-sell			
<b>E</b>	Wage and salary employment: in-kind or monetary work both agriculture and other wage work			
<b>F</b>	Fishing or fishpond culture			
			<b><u>G2.02/G2.03: Input into decision making</u></b> No input..... 1 Input into very few decisions 2 Input into some decisions 3 Input into most decisions.4	

**2. Resources Domain**

<i>Productive Capital</i>	<i>Does anyone in your household currently have any [ITEM]? Yes . 1 No ... 0 &gt;&gt; next item</i>	<i>How many of [ITEM] does your household currently have?</i>	<i>Who would you say owns most of the [ITEM]?</i>	<i>Who would you say can decide whether to sell [ITEM] most of the time?</i>	<i>Who would you say can decide whether to give away [ITEM] most of the time?</i>	<i>Who would you say can decide to mortgage or rent out [ITEM] most of the time?</i>	<i>Who contributes most to decisions regarding a new purchase of [ITEM]?</i>
<i>Productive Capital</i>	<b>G3.01a</b>	<b>G3.01b</b>	<b>G3.02</b>	<b>G3.03</b>	<b>G3.04</b>	<b>G3.05</b>	<b>G3.06</b>
Agricultural land (pieces/plots)							
Large livestock (oxen, cattle)							
Small livestock (goats, pigs, sheep)							
Chickens, Ducks, Turkeys, Pigeons							
Fish pond or fishing equipment							
Farm equipment (non-mechanized)							
Farm equipment (mechanized)							

### **Access to credit resources**

Lending sources		Has anyone in your household taken any loans or borrowed cash/in-kind from in the past 12 months?	Who made the decision to borrow from ?	Who makes the decision about what to do with the money/ item borrowed from
Lending source names		<b>G3.07</b>	<b>G3.08</b>	<b>G3.09</b>
<b>A</b>	Non-governmental organization (NGO)			
<b>B</b>	Informal lender			
<b>C</b>	Formal lender (bank/financial institution)			
<b>D</b>	Friends or relatives			
<b>E</b>	Group based micro-finance or lending including VSLAs / SACCOs/ merry-go-rounds			
		<b>G3.07 Taken loans</b> Yes, cash..... 1 Yes, in-kind..... 2 Yes, cash and in-kind ..... 3 No ..... 4 Don't know..... 5	<b>G3.08/G3.09: Decision-making and control over credit</b> Self..... 1 Partner/Spouse..... 2 Self and partner/spouse jointly..... 3 Other household member ..... 4	

**Leadership and Community**

QNo.	Question	Response	Response codes
<b>G4.01</b>	Do you feel comfortable speaking up in public to help decide on infrastructure (like small wells, roads, water supplies) to be built in your community?		No, not at all comfortable-1 Yes, but with a great deal of difficulty.....2
<b>G4.02</b>	Do you feel comfortable speaking up in public to ensure proper payment of wages for public works or other similar programs?		Yes, but with a little difficulty...3 Yes, fairly comfortable.....4
<b>G4.03</b>	Do you feel comfortable speaking up in public to protest the misbehavior of authorities or elected officials?		Yes, very comfortable.....5
<b>G4.04</b>	<i>Do you belong to any group in this community?</i>		Yes (1) No (0)
	<i>If yes, are you in any leadership position)</i>		Yes (1) No (0)

### Autonomy

#### Physical Mobility and satisfaction with time

Use code for **G6.01-G6.06** : EVERYDAY 1

EVERY WEEK AT LEAST ONCE 2

EVERY 2 WEEKS AT LEAST ONCE 3

EVERY MONTH AT LEAST ONCE 4

LESS THAN ONCE A MONTH 5

QUESTION	RESPONSE FOR G6.01 - G6.06: USE CODE G6↓
<b>G6.01</b> How often do you visit an urban center?	
<b>G6.02</b> How often do you go to the market	
<b>G6.03</b> How often do you go to visit family or relatives?	
<b>G6.04</b> How often do you go to visit a friend / neighbor's house?	
<b>G6.05</b> How often do you go to the hospital / clinic / doctor (seek health service)?	
<b>G6.06</b> How often do you go to a public village gathering / community meeting / training for NGO or programs?	
<b>G6.07.</b> In the last 12 months, how many times have you been away from home for one or more nights (in other words,	

sleeping somewhere else for the night)?	
<b>G6.08.</b> In the last 12 months, have you been away from home for more than one month at a time?	YES...1 NO...0
Satisfied with the amount of time available for leisure activities <b>(use scale)</b> Very Dissatisfied 1 Dissatisfied 2 Neither Satisfied Nor Dissatisfied 3 Satisfied 4 Very Satisfied 5	

### Attitudes That Support Gender Equitable Roles

Now I would like to ask about your opinion on the following issues. In your opinion, is a husband justified in hitting or beating his wife in the following situations?		<b>Reponses</b>
<b>SITUATION</b>		<b>G9.01</b>
<b>A</b>	If she goes out without telling him?	YES 1 NO 0
<b>B</b>	If she neglects the children?	YES 1 NO 0
<b>C</b>	If she argues with him?	YES 1 NO 0
<b>D</b>	If she refuses to have sex with him?	YES 1 NO 0
<b>E</b>	If she burns the food?	YES 1 NO 0

**Appendix 3: Focus Group Discussion**

**COCOA SUSTAINABILITY INITIATIVES**

**ENDLINE SURVEY – FOCUS GROUP DISCUSSION**

**Type of FGD:** .....

**Community:** .....

**Date:** .....

**Introduction and consent**

Number of participants in focus group:		Any comments
Consent or dissent to the following:		
Do you agree to be part of this discussion today? ( <i>Write Number of People</i> )		
Do you agree for your discussion to be recorded?		
Do you agree for photos to be taken during the discussion?		

Names of Participants	Male/Female	Age	Number of family members	Length of time participating in CSI II
X1				
X2				
X3				
X4				
X5				
X6				
X7				
X8				

<b>QUESTION</b>	<b>RESPONSES</b>
I. My first question is about cocoa sustainability initiative implemented by CARE International Ghana. One by one, please share with us what you know about	

the programme offered by CARE International in which you have participated.	
2. What did you learn from the programme in which you participated?	
<b>Yield Per Unit of Land</b>	
3. Can you share with us how the project has helped to improve your yield per unit of land in this community	
<b>Women Empowerment</b>	
5. Share with us how you contribute in decision-making at the household level when it comes to farm productivity.	
6. Share with us how the household assets ownership is like in this community.	
7. Who has control over household income and expenditure at the household level?	
8. . Do women in this community have the ability to freely join credit programs or solidarity movements?	
<b>Financial Services</b>	
9. During this phase of CARE's project did you have access to credit or inputs? •What facilitated your access to credit or inputs	
What barriers made access to credit/inputs	

difficult?	
If you were able to use credit or inputs. Please describe the benefits you received from having access to these funds or inputs	
<b>10b. APPLICATION OF NEW PRACTICES:</b> (i) Please share how things went with the application of Seed selection Weed control	
(ii) Please share how things went with the application of LINING AND PEGGING	
(iii) Please share how things went with the application of SHADE MANAGEMENT	
(iv) Please share how things went with the application of FERTILIZER APPLICATION	
(v) Please share how things went with the application of PRUNING	
(vi) Please share how things went with the application of PEST AND DISEASE CONTROL	
(vii) Please share how things went with the application of NURSERY MANAGEMENT	
11. What has been the effect of these new technologies and practices on your production?	
12. If you were able to improve your production, how has this been reflected in your income?	
<b>Micro enterprise initiatives and increased in income</b>	
13a How many of you have set up your	

own businesses?	
13b. Mention these types of businesses you have set up.	
13c. How are these businesses helping you to improve your livelihood?	
14. Do women farmers have the ability able to equally participate in household financial decision making	
How many community actions (CAP) were developed?	
How many of the CAP were implemented and what were the challenges	
15. To close this session, please share with us what you would like to see the CARE cocoa project do in the future to continue improving your production?	

Appendix 4: Key informant Guide

**COCOA SUSTAINABILITY INITIATIVE II  
ENDLINE SURVEY**

**GUIDELINES FOR KEY INFORMANT INTERVIEWS WITH *DISTRIC ASSEMBLY, COCOA  
HEALTH AND EXTENSION DIVISION, MOFA, ETC***

---

Name of Organization: \_\_\_\_\_

Date: \_\_\_\_\_ (day/month/year)

Name of Officer and Position:

\_\_\_\_\_

Name of Community / District

\_\_\_\_\_

Name of Interviewer:

\_\_\_\_\_

QUESTION	RESPONSES
1. Please share with me how you became involved with the Cocoa Sustainability Initiative II project?	
2. What was your motivation to become involved with the Cocoa Sustainability Initiative II project?	
3. Now I would like for you to share your level of involvement with the Cocoa Sustainability Initiative II project? 3a. Who have you worked with? 3b. What way have you contributed to the project? 3c. How has the project contributed to your work?	
3d. Of those you have mentioned, which areas of the project have you been most involved with and why? <b>(Read the list)</b> <u>AREAS</u> <i>Agriculture</i> <i>VSLA</i> <i>Women's Involvement</i>	

<p>Nutrition Education Community Organization Leadership Other</p>	
<p>4. How has your involvement in the Cocoa Sustainability Initiative II project helped you in your role?</p>	
<p>5. What difficulties have you encountered in your partnership in the implementation of Cocoa Sustainability Initiative II project?</p>	
<p>6. Describe something that you would have liked to have done differently but could not do because of the Project strategy?</p>	
<p>Now we want to know more about resources... 7. Who were the contributors to the implementation of the Cocoa Sustainability Initiative II project? i. What kind of support did each contribute? ii. What motivated them to make these contributions?</p>	
<p>8. What was the level of involvement of the women in the Cocoa Sustainability Initiative II project development? a. How does this number compare with the involvement of women before the Cocoa Sustainability Initiative II project? Increase? Decrease? The same?</p>	
<p>9. How has your organization benefited from the involvement of women?</p>	
<p>10. What challenges have you had in involving women?</p>	

11. What do you consider the most significant influence of the Cocoa Sustainability Initiative II project in your organization and community in general?	
12. What measures has your organization put in place to retain the outcomes after the project finally ends?	
How many community actions (CAP) were developed?	
How of the CAP were implemented? What were the success factors and the challenges	

Appendix 5: Selected communities for the survey

S/N	Treated Communities	Control Communities
1.	Eniehu	Asabem
2.	Kokoado	Ohurubo
3.	Tweredua	Fosuansa
4.	Domeabra	
5.	Asarekwaa	
6.	Adandan	
7.	Kawanopado	
8.	Papa Okyere	
9.	Kyirakaa	

10.	Wansabiampa	
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Appendix 6: Details of the Women Empowerment Index

<b>Pro-WEAI</b>		
Indicator	Women	Men
Number of observations	237	119
<b>3DE score</b>	<b>0.79</b>	<b>0.84</b>
Disempowerment score (1 – 3DE)	0.21	0.16
% achieving empowerment	0.49	0.6
% not achieving empowerment	0.51	0.4
Mean 3DE score for not yet empowered	0.59	0.6
Mean disempowerment score (1 – 3DE)	0.41	0.4
<b>Gender Parity Index (GPI)</b>	0.91	
Number of dual-adult households	119	
% achieving gender parity	0.61	
% not achieving gender parity	0.39	
Average empowerment gap	0.22	
<b>Pro-WEAI score</b>	<b>0.8</b>	

### Appendix 7: CAP Developed and Implemented under CSI II Initiative

Community	Actions/Needs	Budget	Activites	Timelines	Status (Completed or in progress, not started)
Abuakuwa	Construct a bridge to link Abuakuwa to Asikuma	GHC 50,000	Contact D/A for support Organize communal labour Contact other agencies like COCOBOD for support.	August, 2018 to December, 2020	Not started
	Construct a footbridge to link community and Fankyenkor	GHC 15,000	Contact D/A for support Organize communal labour Contact other agencies like COCOBOD for support.	AUGUST, 2018 to August,2019	Done
	Construct 3-bedroom Teachers quarters with toilet and kitchen	GHC 30,000	Contact D/A for support Contact other agencies for support Contribution of 1 kilo of cocoa by each farmer for support Annual community fund raising	AUGUST, 2018 to August,2020	At foundation level since the development of the CAP
	Construct mechanized borehole	GHC 10,000	Seek water and sanitation support from D/A Contact other agencies for support From WATSAN Committee	August, 2018 to August ,2019	Not started
	Renovation of 3-unit primary school block and office	GHC 20,000	Seek support from D/A	August, 2018 to December, 2019	Not started but the building has been pulled down
Adandan	Construction of teachers quarters Six bedroom with kitchen, toilet and bath.	GHC 50,000	Contact D/A and other organization for support Organize communal labour	August, 2018 to August, 2020	Not started
	Renovate two bedrooms Teachers Quarters available		Contact D/A and other organization for support Organize communal labour	August, 2018 to August ,2019	Not started
	Construction of Borehole	GHC 5,000	Contact D/A for available support Fund raising from sales of water	August, 2018 to March ,2019	Done
	Construction of School Park	GHC 20,000	Hire grader for levelling of site Communal labour for landscaping	August, 2018 to August, 2019	Not started
	Construction of Community Center				In progress
Amanor	Maintenance of Road	GHC 20,000	Contact D/A for support. Seek support for donor and other agencies.	24th August, 2018 to 31st August, 2019	Periodic reshaping made

Community	Actions/Needs	Budget	Activites	Timelines	Status (Completed or in progress, not started)
	Construction of community center	GHC 40,000	Organize community annual harvest. Organize communal labour. Seek support from D/A, MP and cocoa buying companies.	24 August, 2018 to 31st August, 2020.	Not started
	Construction of mechanized borehole	GHC 30,000	Contact WATSAN committee for available fund. Organize communal labour to support Contact D/A for support.	24th August, 2018 to December, 2019	Not started
Asarekwaa	Construction of CHPS Compound	GHC 10,000	Levy community members	August, 2018 to August, 2019	In progress
	Construction of 3-bedroom teachers' quarters.	GHC 5,000	Contribution of PTA dues to support Contact D/A and other benevolent agencies for support	August 2018 to December 2019.	Not started
	Construction of 2- unit KG block with office and store	GHC 100,000	Contact D/A for assistance Seek support from benevolent agencies Contribution of PTA dues to support	December, 2018 to January, 2020	Not started
	Secure access to electricity	GHC 1,000	Contact D/A through Assembly members for support Communal labour Levy community members	August, 2018 to December, 2020	Not started
	Completion of community center	GHC 2,000	Ensure proper management of cocoa farm to support Communal labour	August, 2018 to August, 2019	Not started
	Construction of borehole				Completed
Asempanaye	Construction of KG/Primary school building	GHC 200,000	Organized community harvest and levy community members to support Organize communal labour Seek for support from D/A, GES, NGOs and other agencies	28 <sup>th</sup> August, 2018 to 31 <sup>st</sup> August, 2020	Not started
	Construction of CHPS compound	GHC 100,000	Consult chief and elders to allocate site Organize communal labour to support Seek support from D/A and other organizations	28 <sup>th</sup> August, 2018 to 28 <sup>th</sup> February, 2020	In progress

Community	Actions/Needs	Budget	Activites	Timelines	Status (Completed or in progress, not started)
	Construction of 4-bedroom teachers quarters with toilet bath and kitchen	GHC 50,000	Contact D/A for support Organize communal labour to support Seek for external assistance Levy community members to raise additional funds	28 <sup>th</sup> August, 2018 to 31st December, 2020	Not started
Ato Dauda	Construction of CHP Compound	GHC 100,000	Consult chief/elders to allocate site. Organize communal labour to clear the site Contact D/A for support.	21/08/18 to 31/08/18	In progress
	Construction of community center	GHC 20,000	Consult chief/elders to allocate site. Organize communal labour to clear the site Contact D/A for support.	21/8/18 to 31/12/19	Not started
Domeabra	Construction of 2-unit KG block with office and store	GHC 40,000	Contact D/A for support Levy community members (Women pays 10.00, Mem pays 20.00) Organize communal Labour for support	August, 2018 to September, 2019	Not started
	Construction of 2 bedroom nurses quarters	GHC 50,000	Fundraising (annual community harvest) Community levy Seek support from GHS, NGOs and other agencies	August, 2018 to August, 2020.	Not started
	Construction library for JHS/Primary	GHC 15,000	Seek support from GES	January, 2019 to August, 2020	In progress
	Public Toilet				Completed
Eduosia	Construction of 2- unit KG block with office and store	GHC 1,000	Contact D/A (GES) for support Organize communal labour to support Levy community members (GH¢ 10.00 per person)	August, 2018 to August, 2019	Not
	Repair of three boreholes	GHC 1,500	Contact D/A through Assembly member for Technician Levy community members for fund ( GH¢5) per person	August to December 2018.	Done ( Mechanized)
	Construction of community center	GHC 15,000	Contact chief and elders for land Organize communal labour to clear site and mold blocks	August, 2018 to December, 2021	Not started
	Establish Information Center	GHC 3,000	Register with information service department Search for site (land)	August, 2018 to December, 2018	Completed

Community	Actions/Needs	Budget	Activites	Timelines	Status (Completed or in progress, not started)
			Organize community members to erect poles for P.A System		
Eniehu	Construction of community clinic	GHC 40,000	Delegate people to search for the organization who initiated construction of the community clinic. Organize community harvest to raise fund	August, 2018 to December, 2019	Not started
	Construction of two unit KG block with office and store	GHC 15,000	Organize community harvest to raise fund Contact D/A and agencies for support. Organize communal labour	August, 2018 to August, 2019.	Not started
	Construction of community center	GHC 10,000	Organize communal labour to clear site Levy community members for fund	August, 2018 to December, 2019	Not started
	Water Access	GHC 5,000	Arrange for proper accountability of water Form an accountable WATSAN Committee.	August, 2018 to December, 2018	Done
Fankyenekor	Construction of foot bridge to link community with Kokoado and bridge over river to link Asikuma	6,000.00	Seek support from D/A Organize Communal Labour to support Organize annual fund raising and levy. Seek support from other agencies like cocoa buying companies.	August, 2018 to July, 2019	In progress (Construction of foot bridge to link community with Kokoado)
	Construction of a Mechanized Borehole	GHC 12,000	Contact D/A (WATSAN) for support. Search and contact other agencies for assistance.	August, 2018 to August, 2020.	Completed
	Market center		Seek support from D/A Communal labour to support	August, 2018 to December, 2020	Not started
	Rehabilitation of cocoa Demo farm		Organize Communal Labour to clear land, grow seedlings and other farm management activities Contact CHED for support	August, 2018 to December, 2019	Not started
Kawanopado	Construction of community center	GHC 80,000	Consult chief and elders to allocate site. -Organize communal labour to clear site. -Seek support from D/A and other benevolent agencies	23rd August, 2018 to 31st December, 2019	In progress ( Site allocated)
	Construction of limited mechanization water facility	GHC 25,000	WATSAN committee to render account on sales from existing bore hole -Seek additional support from D/A and other agencies	23rd August, 2018 to 31st December, 2020	Not started
	Construction of 6-unit classroom block with office and store	GHC 200,000	Seek support from GES Organize communal labour to support Community fund raising Seek external assistance	23rd August 2018 to 31st August 2010	Not started

Community	Actions/Needs	Budget	Activites	Timelines	Status (Completed or in progress, not started)
Kokoado	Completion of Primary school block	GHC 50,000	Seek support from D/A and other agencies Organize communal labour	August, 2018 to August 2020	In progress
	Repair of existing borehole and construction of additional one	GHC 1,000	Contact D/A for technician and support Contribution of 1 kilo of cocoa produce to raise funds for support	August, 2018 to August 2019	Completed (Mechanized)
	Construction of JHS Block, office and store	GHC 80,000	Seek support from D/A and other agencies for support Organize community labour to support	August, 2018 to August 2019	Not started
Kwaan	Construction of JHS block	GHC 60,000	Clearing of land Fund raising from benevolent agencies/ city members (Annual community harvest) Contact Assembly for support	August, 2018 to August, 2019	In progress
	Construction of mechanized Borehole	GHC 1,000	Contact D/A for assistance Fund raising	August 2018 to April 2019.	Completed
	Construction of CHPS Compound	GHC 40,000	Contact D/A for assistance Fund raising	August, 2018 to August 2020	Not started
	Construction of community center	GHC 25,000	Clear land Lay foundation Contact D/A and NGOs for support Raise fund	August, 2018 to August, 2019	Not started
Kyrakaa	Construction of 3 unit JHS block	GHC 80,000	Fund raising activities Contact D/A and other benevolent agencies for support	August, 2018 to August, 2019	In progress
	Construction of CHPS Compound	GHC 100,000	Contact D/A for support Communal labour	August 2018 to December, 2019.	Not started
	Construction of Community Center				Not started
	Construction of Mechanized Borehole				Completed
	Construction of 3-bedroom teachers quarters, bath, and kitchen	GHC 90,000	Contact D/A for assistance Communal labour	August, 2018 to December, 2020	Not started
Nankese	Construction of bridge on Boyow river	GHC 60,000	Seek support from D/A -Organize community fund raising to support -Organize communal labour to support	28th August, 2018 to 30th September, 2018 31st December, 2018	Not started

Community	Actions/Needs	Budget	Activites	Timelines	Status (Completed or in progress, not started)
	Repair of two (2) faulty boreholes	GHC 8,000	Contact repairer to assess the fault -Contact D/A (community water office) for support	28th August, 2018 September, 2018	Not started
	Construction of Market		Contact Chief/Elders to allocate site. -Organize communal labour to clear site. Seek support from the DA	28th August, 2018 to 31st December, 2018	In progress
Papa Okyere	Electricity (To be connected to the National Grid)	GHC 2,000	Levy each household GH¢100.00 to raise fund to support. Contact D/A for support	1/09/18 to 31/12/18	Not started
	Construct Borehole (Access to potable drinking water)	GHC 1,000	Levy community members to raise fund. -Contact community water through D/A for support -Seek support from NGOs and other agencies	30/8/18 to 31/12/18	Not started
	Complete community center construction (Parliament House)	GHC 2,000	Levy community members to raise fund. Seek support from D/A and other benevolent agencies	1/9/18 to 28/2/19	Not started
Towoboase	Construction of CHPS compound	GHC 100,000	CDC Assembly Members A67:A69	1 <sup>st</sup> September, 2018 to 31 <sup>st</sup> August 2019	Not started
	Construction of computer lab for the school	GHC 60,000	Contact D/A for assistance Seek support from other philanthropic agencies	1 <sup>st</sup> September, 2018 to 30 <sup>th</sup> August 2019	Not started
	Extension of electricity to new site	GHC 1,000	Contact ECG through D/A for support	30 <sup>th</sup> August 2018 to 28 <sup>th</sup> February, 2019	Not started
Tweredua	Road maintenance	GHC 30,000	Seek support from D/A Organize communal labour to fix petty maintenance issues Levy community members to raise funds	24th August, 2018 to 31st August, 2019	Periodic reshaping in progress
	Construction of CHPS compound	GHC 50,000	Organize communal labour to clear site Seek for support from D/A and other benevolent agencies	24th August, 2018 to 31st December, 2019.	In progress
	Establishment of a nursery school	GHC 500	Discuss with parents to register their wards Seek for a teacher/attendant Agree with parents on fee paying terms Contact GES for assistance	24th August, 2018 to 10th September, 2018	Not started
Wansabiampa	Construction of CHP Compound	GHC 100,000	Consult chief/elders for the allocation of site. -Seek support from D/A and other agencies. -Organize community fund raising.	21/08/18 to 21/08/20	Not started

Community	Actions/Needs	Budget	Activites	Timelines	Status (Completed or in progress, not started)
	Construction of 3-bedroom teachers quarters with toilet, bath and kitchen	GHC 100,000	Organize communal labour to clear the site Community fund raising Contact D/A for support	21/8/18 to 31/12/20	Not started
	Construction of community library	GHC 50,000	Organize annual community fund raising initiative -Seek support from the D/A -Organize community labour to support	21/8/2018 to 31/12/ 2020	Not started