World Cocoa Foundation
Cocoa Livelihoods
Program Phase II

Endline Evaluation
Final Report

October 2019

Prepared by Dalberg
(Dalberg Advisors and Dalberg Research)
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<th>Full Form</th>
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<tr>
<td>ANADER</td>
<td>Agence Nationale d’Appui au Développement Rural</td>
</tr>
<tr>
<td>BIRD</td>
<td>Banque Internationale pour la Reconstruction et le Développement</td>
</tr>
<tr>
<td>BMGF</td>
<td>Bill and Melinda Gates Foundation</td>
</tr>
<tr>
<td>CCC</td>
<td>Conseil du Café-Cacao</td>
</tr>
<tr>
<td>CCE</td>
<td>Certification Capacity Enhancement Project</td>
</tr>
<tr>
<td>CHED</td>
<td>Cocoa Health and Extension Division</td>
</tr>
<tr>
<td>CLP</td>
<td>Cocoa Livelihoods Program</td>
</tr>
<tr>
<td>COCOBOD</td>
<td>Ghana Cocoa Board</td>
</tr>
<tr>
<td>CODAPEC</td>
<td>Cocoa Diseases and Pests Control Programme</td>
</tr>
<tr>
<td>CSSV</td>
<td>Cacao Swollen Shoot Virus</td>
</tr>
<tr>
<td>CVC</td>
<td>Cocoa Village Centers</td>
</tr>
<tr>
<td>FBS</td>
<td>Farmer Business School</td>
</tr>
<tr>
<td>GAP</td>
<td>Good Agricultural Practice(s)</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>ICRAF</td>
<td>International Centre for Research in Agroforestry</td>
</tr>
<tr>
<td>IFPRI</td>
<td>International Food Policy Research Institute</td>
</tr>
<tr>
<td>IGA</td>
<td>Income-Generating Activities</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
</tr>
<tr>
<td>MGP</td>
<td>Matching Grant Partner</td>
</tr>
<tr>
<td>MNO</td>
<td>Mobile Network Operator</td>
</tr>
<tr>
<td>MOFA</td>
<td>Ministry of Food and Agriculture</td>
</tr>
<tr>
<td>OPHI</td>
<td>Oxford Poverty &amp; Human Development Initiative</td>
</tr>
<tr>
<td>PERD</td>
<td>Planting for Export and Rural Development</td>
</tr>
<tr>
<td>PMU</td>
<td>Program Management Unit</td>
</tr>
<tr>
<td>PPMED</td>
<td>Policy Planning, Monitoring, and Evaluation (Directorate of the Ghana Ministry of Food and Agriculture, MOFA)</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>VSLA</td>
<td>Village Savings and Loan Association</td>
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<tr>
<td>WCF</td>
<td>World Cocoa Foundation</td>
</tr>
<tr>
<td>WEIA</td>
<td>Women’s Empowerment in Agriculture Index</td>
</tr>
<tr>
<td>WIAD</td>
<td>Women in Agriculture Development Directorate (Directorate of the Ghana Ministry of Food and Agriculture, MOFA)</td>
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<tr>
<td>YIAP</td>
<td>Youth in Agriculture Program</td>
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I. Executive Summary

Smallholder cocoa farmers have historically been trapped in a vicious cycle of low yields, leading to low income and low investment. Smallholder farmers find themselves in a cycle in which low income from cocoa production leads to low use of inputs and improved varieties during the growing season. Farmers also face other external factors, such as high input prices, low farm gate price, poor access to loans or credit, and small farm size. The result of smallholders’ practices and external factors are sub-optimal yields and ultimately lower income from cocoa production. Without a concerted intervention, smallholder farmers are unlikely to break the low yield cycle.

1. Background of the CLP II program

Through its Cocoa Livelihoods Program Phase II (CLP II), the World Cocoa Foundation (WCF) sought to address the challenge of low productivity among smallholder farmers through a package of interventions. WCF’s CLP II has been a six-year program (2014-2019) funded by the Bill and Melinda Gates Foundation (BMGF) and member companies with the goal of supporting smallholder farmers in Cameroon, Ghana, Nigeria, and Côte d’Ivoire to increase farm-level cocoa and food crop productivity as well as marketing. The CLP II program more specifically worked toward the three following objectives:

- **Objective 1:** Increase farm level cocoa productivity to 1,000 kg/ha
- **Objective 2:** Improve service delivery efficiency with a focus on long-term, farm-level cocoa productivity increase
- **Objective 3:** Improve farmer resiliency.

To meet these ambitious goals, WCF used a matching grant mechanism to incentivize companies’ participation and build accountability. For the purposes of the CLP II program, WCF utilized matching grants to ten companies - Matching Grant partners (MGP) - to incentivize investment in the cocoa value chain and to foster innovation in service delivery (as shown in the figure below). While Cameroon benefitted from some activities, the evaluation excludes Cameroon since no Matching Grants were approved for Cameroon.

*Figure 1: List of MGPs*

<table>
<thead>
<tr>
<th>Partner</th>
<th>Country</th>
<th>Food Crop</th>
</tr>
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<tbody>
<tr>
<td>Ecom/Tulip</td>
<td>Nigeria</td>
<td>Cassava</td>
</tr>
<tr>
<td>Hershey</td>
<td>Ghana</td>
<td>Cassava</td>
</tr>
<tr>
<td>Mondelez</td>
<td>Ghana</td>
<td>Cassava, Plantain</td>
</tr>
<tr>
<td>KooKoo Pa</td>
<td>Ghana</td>
<td>Cassava, Plantain</td>
</tr>
<tr>
<td>Toton</td>
<td>Ghana</td>
<td>Cassava, Plantain</td>
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<tr>
<td>ECOM</td>
<td>CDI</td>
<td>Cassava, Plantain</td>
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<tr>
<td>Nestle/Olam</td>
<td>CDI</td>
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<td>Cargill</td>
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<td>Barry Callebaut</td>
<td>CDI</td>
<td>Plantain</td>
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</table>
Over the five-year program (2014-2019), the matching grant partners have provided technical assistance and other resources to approximately 200,000 farmers in Cameroon, Côte d’Ivoire, Ghana, and Nigeria. The numbers for Ghana, Côte d’Ivoire, and Nigeria are as shown in the table below.

Table 1: Number of farmers reached by MGPs through the CLP II program (as of February 2019)

<table>
<thead>
<tr>
<th>Country</th>
<th>Farmers reached by MGPs through the CLP II program (as of February 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>70,665</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>106,219</td>
</tr>
<tr>
<td>Nigeria</td>
<td>19,553</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>196,437</strong></td>
</tr>
</tbody>
</table>

In accordance with the matching grant system, MGPs were awarded incentive payments based on their performance at midline (2017) and endline (2019) against targets established at baseline (2015) for each of the MGPs. Performance was measured against the three indicators below:

Table 2: CLP II target outcome indicators for MGPs

<table>
<thead>
<tr>
<th></th>
<th>Percentage of farmers adopting sanitary pruning of cocoa trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocoa</td>
<td>Percentage of farmers adopting food crop GAPs</td>
</tr>
<tr>
<td>Food Crops (Plantain/Cassava)</td>
<td>Percentage of farmers adopting improved varieties of food crops</td>
</tr>
</tbody>
</table>

2. Evaluation purpose and objectives

Now that the CLP II program is coming to an end, WCF hired Dalberg, a strategy consulting firm, to conduct an endline evaluation of CLP II – with the objectives to:

- Clearly establish the program’s performance in achieving its vision and objectives;
- Assist WCF in better understanding the drivers of impact and adaptations needed to meet the vision of a sustainable and thriving cocoa sector.

This report provides results of this Endline evaluation, conducted between March and May 2019, with the objectives to:

- Understand the extent to which MGPs progressed on their three CLP II target incentive objectives, specifically when it comes to their farmers reached: (i) demonstrating good or excellent skills in applying GAPs for the production of cassava and/or plantain, (ii) adopting good or excellent sanitary pruning practices for cocoa trees, (iii) growing improved varieties of plantain and/or cassava;
- Share results achieved since the program's launch in 2014, when it comes to the CLP II program’s target objectives in terms of cocoa productivity, service delivery efficiency and farmer resilience;
- Synthesize lessons learned from qualitative interviews (with MGPs, ecosystem players and farmers’ focus groups) and propose recommendations on potential actions that can maximize positive impacts and minimize negative outcomes for future programs.
3. Methodology and sampling

Beyond qualitative data collected from interviews and focus groups, three questionnaires were used for the quantitative data collection process with more than 3,000 cocoa farmers supported under the CLP II program across Côte d’Ivoire, Ghana, and Nigeria (as shown in the table below).

Table 3: Number of household surveys and farm visits conducted

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of household surveys conducted</th>
<th>Number of cocoa farm visits conducted</th>
<th>Number of food crops farm visits conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>1,574</td>
<td>620</td>
<td>393</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>1,268</td>
<td>521</td>
<td>368</td>
</tr>
<tr>
<td>Nigeria</td>
<td>278</td>
<td>102</td>
<td>29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,120</strong></td>
<td><strong>1,243</strong></td>
<td><strong>790</strong></td>
</tr>
</tbody>
</table>

4. External factors

Before reviewing the key findings and lessons learned from the CLP II endline evaluation results, it is important to share information on key external factors that impacted the implementation and results of the program over its 2014-2019 period.

To WCF, these factors include:

- Trends of low cocoa prices;
- Government policies and management changes, such as the end of the distribution of free fertilizers and pesticides from COCOBOD in Ghana, or the suspension of the distribution of all improved cocoa planting material to farmers for the 2018-19 cocoa season in Côte d’Ivoire;
- Company-level and WCF-level sustainability initiatives, sometimes competing with the CLP program for the attention of MGP’s managers;
- Weather – especially through the form of droughts and bush fires.

5. Key Endline evaluation findings

a) Incentives objectives

When it comes to the adoption of food crops GAPs, the Endline survey reveals that the adoption of Cassava GAPs and Plantain GAPs has been successful in all three countries, as shown in the table below.

---

1 For the purposes of the endline evaluation, cassava good agricultural practices (GAPs) include 10 items related to planting practices, variety usage, fertility and pest management, post-harvest practice. In terms of ranges, excellent adoption refers to at least 70% of GAP items applied; good adoption refers to 50 – 69.99% of GAP items applied; minimum adoption refers to 30 – 49.99% of GAP items applied; no adoption refers to < 30% of GAP items applied.

2 For the purposes of the endline evaluation, plantain good agricultural practices (GAPs) include 12 items related to planting practices, variety usage, fertility and pest management, post-harvest practice, propping and de-suckering. In terms of ranges, excellent adoption refers to at least 70% of GAP items applied; good adoption refers to 50 – 69.99% of GAP items applied; minimum adoption refers to 30 – 49.99% of GAP items applied; no adoption refers to < 30% of GAP items applied.
Table 4: Evolution of the percentage of farmers with good and excellent adoption of plantain GAP and cassava GAP, between the midline and the endline evaluations

<table>
<thead>
<tr>
<th>Country</th>
<th>Plantain GAP analysis from farm visit (% of farmers with good and excellent adoption)</th>
<th>Cassava GAP analysis from farm visit (% of farmers with good and excellent adoption)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Midline</td>
<td>Endline</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>8%</td>
<td>51.3%</td>
</tr>
<tr>
<td>Ghana</td>
<td>7%</td>
<td>86.5%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>86%</td>
<td>96.6%</td>
</tr>
</tbody>
</table>

Overall, in the Endline assessment, all three countries have achieved satisfactory results in adopting planting materials and growing approved varieties over the course of the CLP II program. In the three countries, all surveyed farmers reported growing improved planting materials and growing approved varieties of food crops.

Table 5: Evolution of the percentage of farmers using improved/approved food crops materials, between the baseline and the endline evaluations

<table>
<thead>
<tr>
<th>Country</th>
<th>Average % of farmers growing improved/approved food crops materials (from household survey)</th>
<th>Evolution between midline and endline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Endline</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>14.4%</td>
<td>100%</td>
</tr>
<tr>
<td>Ghana</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>55.1%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The adoption of sanitary pruning, however, remains mixed from one country to the other during the endline evaluation. Ghana and Nigeria showed good performance in terms of Excellent and Good adoption of pruning practices (respectively 71% and 80%; Côte d’Ivoire, however, showed a lower performance (44%)4).

b) Impact achieved for target outcomes

When it comes to the CLP II target objective to increase farm-level cocoa productivity to 1,000kg/ha, both the quantitative data collected and the estimates from the MGPs rather showed that average yields were around 600kg/ha, ranging between 480 kg/ha and 750 kg/ha depending on the country and the evaluation period (as shown in the table below).

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3 If one improved variety of cassava or plantain is mentioned, the farmer is counted as growing “Improved” varieties.

4 For the purposes of the endline evaluation, adoption of sanitary pruning practices is observed based on the extent to which the trees observed show evidence of chupons, drooping branches and/or dead branches. Chupons are offshoots which develop on the tree and become chupons, growing vertically and forming central axes with their own branch development; these take nutrients away from the tree (though they can also be used for budding and growing new trees). Drooping branches are growing towards the ground and are shaded by the rest of the branches in the crown. Dead branches block air and sunlight from living branches. In terms of ranges, excellent adoption refers to at least 90% of sample trees are well pruned; good adoption refers to 80 – 89.99% of sample trees well pruned; minimum adoption refers to 70 – 79.99% of sample trees well pruned; no adoption refers to < 70% of sample trees well pruned.
Table 6: Evolution of the average cocoa yields, per evaluation wave

<table>
<thead>
<tr>
<th>Country</th>
<th>Baseline</th>
<th>Midline</th>
<th>Endline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d’Ivoire</td>
<td>487 kg/ha</td>
<td>483 kg/ha</td>
<td>720 kg/ha</td>
</tr>
<tr>
<td>Ghana</td>
<td>388 kg/ha</td>
<td>551 kg/ha</td>
<td>630 kg/ha</td>
</tr>
<tr>
<td>Nigeria</td>
<td>515 kg/ha</td>
<td>440 kg/ha</td>
<td>748 kg/ha</td>
</tr>
</tbody>
</table>

Cocoa Yield estimation is from farmer recall and must be interpreted with caution. For the Baseline and Midline Evaluations, cocoa yields were calculated by taking the total amount of cocoa sold (main season and minor season, combined) and dividing by the total farm size (collected by GPS mapping). For the Endline, cocoa yields were calculated by taking the total amount of cocoa sold (main season and minor season, combined) and dividing by the total farm size (as reported by the farmers) – and considering only the farmers owning one cocoa farm. The annex gives more detail on methodology and assumptions used to estimate these average cocoa farm yields per country.

When the band is narrowed with an upper limit at 1,500kg, the mean reduces from 720 to 643 (Côte d’Ivoire), 630 to 616 (Ghana), and 748 to 743 (Nigeria).

More specifically, when it comes to farm management practices, which in part led to these cocoa yield levels:

- In all three countries, while close to 100% of farmers self-reported applying pest management practices during the household survey, the evidence of non-adoption of pest management was extremely high (Côte d’Ivoire 84%, Ghana 97%, and Nigeria 98%) during farm visits.  
- In all three countries, during the household survey, close to 100% of farmers reported clearing weeds and other unwanted plants from around their cocoa trees (Côte d’Ivoire 84%, Ghana 97%, and Nigeria 98%). This performance, however, contrasts with the observations from the farm visits where close to 100% of the farmers reached showed no evidence of minimum adoption.
- The shade tree density increased across evaluation waves in all three countries. At Endline, during farm visits, evidence of shade tree management adoption was 92% in Côte d’Ivoire (vs. 44% at Midline), 96% in Ghana (vs. 87% at Midline), and 71% in Nigeria (vs. 33% at Midline).
- It appeared that soil erosion management practices progressed in all three countries between Midline and Endline: during farm visits, evidence of adoption of soil erosion practices was 99% in Côte d’Ivoire (vs. 68% at Midline), 100% in Ghana (same as at Midline), and 92% in Nigeria (vs. 98% at Midline).
- Like for soil erosion management practices, there is evidence of high adoption of soil health management practices in the three countries with Nigeria at 100%, Ghana at 99%, and Côte d’Ivoire 94%.
- Most of the farmers reached at Endline across the 3 countries showcased evidence of harvest management practices.

When it comes to the CLP II objective to improve service delivery efficiency with a focus on long-term, farm-level cocoa productivity increase, the endline evaluation results showed that:

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5 No Adoption: less than 80% of trees without symptoms
6 Household survey questions on recall of weed occurrence and recall of weeding/weed removal frequency reported by the farmers
Within the last 12 months of the endline evaluation, the cocoa farmers reached in Ghana and Nigeria have planted an increasing share of hybrid cocoa varieties, in comparison to local/traditional varieties; an opposite trend, however, was observed in Côte d’Ivoire.

Within the 12 months of the endline evaluation, in Ghana, 70% of farmers self-reported not having applied any fertilizer to their cocoa trees during that same period vs. 53% in Nigeria, and 48% in Côte d’Ivoire.

While the proportion of cocoa farmers using bank accounts has increased in Ghana (by 17 percentage points to 53% between Endline and Midline) and Nigeria (10 percentage points to 75%), it remains low in Cote d’Ivoire (having decreased by 15 percentage points to 20% during the same period).

When it comes to the CLP II objective to improve farmer resiliency:

- The proportion of farmers reached growing both cassava and plantain has increased between Midline and Endline: it ranged between 31% in Nigeria, 45% in Côte d’Ivoire and 71% in Ghana at Endline, having increased by between 13 and 31 percentage points since Midline.
- Crops grown on the family farms are the major sources of food among the cocoa farmers reached; ranging from 78% of the respondents in Nigeria to 82% in Côte d’Ivoire and Ghana.
- Despite the increases in food crop production, at Endline, in Nigeria, 3% of households had experienced food shortage, while this proportion reached 8% in Côte d’Ivoire and 15% in Ghana.

**c) Impact of the CLP II program at a systemic level on women’s empowerment and gender equity in cocoa farming communities**

On the one hand, all the MGPs reached mentioned that the CLP II program contributed to some level to increased support to female farmers on:

- cocoa and food crops farming;
- access to input and technology;
- gender-specific training on income-generating activities, farmer business school (FBS) modules, or the set-up and management of associations of female farmers (including cooperatives and Village Savings and Loan Associations, VSLAs.

The perceived level of that impact varies, however, from MGP to MGP – as some of them were already implementing programs and interventions with similar objectives.

In addition, although the CLP II program particularly helped women with the production of food crops through learning, facilitated access to technology for savings and planting materials, the impact of the CLP II program on female cocoa farming seems to remain mixed.

**d) Key lessons learned**
The implementation of the CLP II program over the 2014-2019 period allowed to uncover key lessons pertaining to six thematic knowledge areas:

i) **Cocoa farming**: although the endline yield levels remain below the 1000 kg/ha CLP II program target outcome, they show an upward progression from the 400kg/ha levels observed at baseline – both from qualitative and quantitative sources.

ii) **Food crops**: The CLP II program allowed for increased cocoa farmers’ resilience through the promotion of food crop production, facilitated access to improved food crops planting materials and training on food crop farming. Market access for food crops, however, remained challenging.

iii) **Women empowerment**: the gender component of the CLP II program promoted the production of food crops and the establishment of women groups in communities to increase opportunities for revenue generation; the perceived level of that impact varies, however, from MGP to MGP – as some of them were already implementing program and interventions with similar objectives.

iv) **Training**: Across all 3 countries, cocoa farmers showed interest in and highly appreciated the training conducted through the CLP II program, especially Farmer Business School (FBS) modules. On the other hand, some modules were perceived as repetitive especially when covering topics already known by farmers.

v) **Innovative approaches adopted through the CLP II program**: The interviews and focus groups conducted allowed to identify three main types of innovative approaches or technologies adopted through the CLP II program: farming innovations, innovative communication tools or innovative coaching tools. *Digital Green* was the flagship innovative training and communication tool implemented with WCF’s support among MGPs’ cocoa farming communities. The logistics involved in deploying that tool, however, proved challenging – thus limiting the impact on the farmers.

vi) **Access to finance**: Access to finance has been identified as a key challenge for cocoa farming communities – from MGPs and ecosystem players alike. Cooperatives, however, play an important in financing these communities.

6. **Discussions and conclusions**

Beyond lessons learned on the implementation of the CLP II program on an agricultural level, the focus groups and interviews conducted with MGPs, farmers and other stakeholders brought to light:

- MGPs’ perceptions on the extent to which the CLP II program targets and outcome incentive model influenced their activities – especially when it comes to the adoption of a food crop component;
- Stakeholders’ perceptions of WCF’s coordination of the CLP II program – especially when it comes to the coordination with government officials for access to plantain materials.
7. **Prioritized recommendations**

Based on the analysis of the Endline evaluation results, stakeholders’ perceptions of the CLP II program, and the evolution in the overall cocoa sector in Côte d'Ivoire, Ghana, and Nigeria, WCF could consider (i) **overarching recommendations** drawn from the qualitative interviews conducted and (ii) **recommendations specific to the endline quantitative data results**.

More specifically, when it comes to **overarching recommendations** drawn from qualitative interviews, WCF could consider:

- **Three main interventions principles**: holistic approaches, alignment with CocoaAction and the partnerships with entities with similar objectives;
- **Focusing its role** on serving as a knowledge-sharing platform throughout the implementation of the CocoaAction strategy;
- **Prioritizing the four following themes related to cocoa farming**: (i) fight against CSSV; adoption of GAPs related to (ii) soil management, (iii) climate change and (iv) agroforestry;
- **Prioritizing the four following themes related to farmer resilience**: (i) nutrition, (ii) food crop marketing and valorization, (iii) assistance in the structuring and professionalization of farmer cooperatives, and (iv) the concept of decent work for cocoa farmers.

When it comes to the **recommendations specific to the endline quantitative evaluation results**, WCF could consider:

- **Further working on the adoption of GAPs related to** (i) sanitary pruning, (ii) pest management and (iii) weeding practices;
- **Prioritizing farmers’ access to finance, and improved financial literacy.**
II. Background

Smallholder cocoa farmers have historically been trapped in a vicious cycle of low yields, leading to low income and low investment. Smallholder farmers find themselves in a cycle in which low income from cocoa production leads to low use of inputs and improved varieties during the growing season. Farmers also face other external factors, such as high input prices, low farm gate price, poor access to loans or credit, and small farm size. The result of smallholders’ practices and external factors are sub-optimal yields and ultimately lower income from cocoa production. Without a concerted intervention, smallholder farmers are unlikely to break the low yield cycle.

The World Cocoa Foundation (WCF) is a non-profit international membership organization whose vision is a sustainable and thriving cocoa sector – where farmers prosper, cocoa-growing communities are empowered, human rights are respected, and the environment is conserved. WCF’s members comprise farm-level input providers, financial institutions, cocoa processors, chocolate makers and manufacturers, farmer cooperatives, cocoa trading companies, ports, warehousing companies, and retailers.

Through its Cocoa Livelihoods Program Phase II (CLP II), WCF sought to address the challenge of low productivity among smallholder farmers through a package of interventions. WCF’s CLP II has been a six-year program (2014-2019) funded by the Bill and Melinda Gates Foundation (BMGF) and member companies with the goal of supporting smallholder farmers in Ghana, Nigeria, and Côte d’Ivoire to increase farm-level cocoa and food crop productivity as well as marketing. The CLP II program more specifically worked toward the three following objectives:

- **Objective 1: Increase farm level cocoa productivity to 1,000 kg/ha**

  To meet global demand and increase household incomes, farmers must increase cocoa productivity from the current 300-400 kg/ha on land, while protecting soils and the environment. Previous work has found that farmers who receive a ‘full package’ of interventions, can more than double their cocoa yields after several years. The “full package” included 1) training on good agriculture practices (GAP) and farm management, 2) provision of cocoa inputs (agrochemicals and fertilizer), and 3) increasing access to improved (certified) planting materials. The hypothesis was that farmers who participate in CLP II activities in the first two years (~35%) can expect to see cocoa productivity increase reaching around 1,000 kg/ha by the end of the program.

- **Objective 2: Improve service delivery efficiency with a focus on long-term, farm-level cocoa productivity increase**

  The aim of this objective was to work towards a long-term goal beyond the timeframe of Phase II, to increase cocoa productivity to 1,500 kg/ha. The hypothesis was that long term productivity gains would be accomplished if farmers are able to rehabilitate their old and low-productive farms. However, access to improved cocoa planting material remains a challenge across all countries. Efforts were focused on developing strategies to increase access to quality inputs such as fertilizers and pesticides, increase access to financial services for credit, and improve distribution systems for planting materials.

- **Objective 3: Improve farmer resiliency**
Activities under this objective aimed to increase cocoa farming families’ ability to maintain and improve their standard of living while they face risks such as cocoa price fluctuation, climate change, and health and nutrition challenges. The objective focused primarily on increasing the productivity of key food crops: maize, cassava, plantain, and soy, as well as small-scale gardening. Farmers were provided with training in GAP for food crops and the necessary inputs (fertilizer, agrochemicals) and improved seeds/planting materials to increase food crop productivity. Realizing the critical role that women play in cocoa and food crop production and the resiliency of farming families, improved gender outreach was incorporated in all CLP II activities.

To meet these ambitious goals, WCF used a matching grant mechanism to incentivize companies’ participation and build accountability. For the purposes of the CLP II program, WCF utilized matching grants to ten companies - Matching Grant partners (MGP) - to incentivize investment in the cocoa value chain and to foster innovation in service delivery. These MGPs were responsible for implementing the program with their farmers.

The figure below shows the MGPs that implemented the CLP II program, their locations, and targeted food under evaluation during the CLP II program – knowing that:

- two changes were made between the 2015 baseline and the 2017 midline evaluations: a new MGP was added in Ghana (Touton), and Cargill switched focus crops from garden vegetables to cassava and plantain;
- MGPs were free to support their farmers with any other crops under the program but were only evaluated on performance on the production of food crops chosen below for the purposes of the CLP II program.

Figure 2: List of MGPs

<table>
<thead>
<tr>
<th>Partner</th>
<th>Country</th>
<th>Food Crop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecom/Tulip</td>
<td>Nigeria</td>
<td>Cassava</td>
</tr>
<tr>
<td>Hershey</td>
<td>Ghana</td>
<td>Cassava</td>
</tr>
<tr>
<td>Mondelez</td>
<td>Ghana</td>
<td>Cassava, Plantain</td>
</tr>
<tr>
<td>KooKoo Pa</td>
<td>Ghana</td>
<td>Cassava, Plantain</td>
</tr>
<tr>
<td>Touton</td>
<td>Ghana</td>
<td>Cassava, Plantain</td>
</tr>
<tr>
<td>ECOM</td>
<td>CDI</td>
<td>Cassava, Plantain</td>
</tr>
<tr>
<td>Nestle/Olam</td>
<td>CDI</td>
<td>Cassava</td>
</tr>
<tr>
<td>Cargill</td>
<td>CDI</td>
<td>Cassava, Plantain</td>
</tr>
<tr>
<td>Barry Callebaut</td>
<td>CDI</td>
<td>Plantain</td>
</tr>
<tr>
<td>Mars</td>
<td>CDI</td>
<td>Plantain</td>
</tr>
</tbody>
</table>

Over the course of the program, MGPs have provided technical assistance and other resources to 196,437 farmers (as shown in the table below).
Table 7: Number of farmers reached by MGPs through the CLP II program (as of February 2019)

<table>
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<tr>
<th>Country</th>
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<td><strong>196,437</strong></td>
</tr>
</tbody>
</table>

In accordance with the matching grant system, MGPs were awarded incentive payments based on their performance at midline (2017) and endline (2019) against targets established at baseline (2015) for each of the MGPs. Their performance was measured against three indicators below:

- % of farmers demonstrating good or excellent skills in applying GAPs to the production of cassava or plantain
- % of farmers demonstrating good or excellent sanitary pruning of cocoa trees
- % of farmers growing improved varieties of plantain or cassava.
III. **Evaluation purpose and objectives**

Between March and May 2015, WCF conducted a baseline study of the CLP II program, with the support of the company IPSOS, to set performance targets related to farmers’ cocoa and food crop farming practices, farm management practices, and to a lesser extent, cocoa and food crop yields. Data were collected from a random sample of farmers in MGP databases via household surveys and farm visits. All MGPs, except for Touton, participated in the baseline.

Between March and July 2017, WCF carried out a midline evaluation with the support of IPSOS, to gauge impact and measure the performance of the MGPs. Included in the sample were farmers who participated in the baseline – Cohort 1- and a second group who had been added to the programs since the baseline- Cohort 2.

The midline evaluation showed mixed results on key outcomes in Côte d’Ivoire, Ghana, and Nigeria:

- In Ghana, CLP II achieved gains from baseline on all the outcomes - cocoa productivity, service delivery efficiency, and farmer resiliency.
- In Nigeria, the percent of farmers who rehabilitated their farms and/or planted new cocoa hybrids more than doubled. Average cocoa yields declined by 15% which is not surprising given a temporary decline should be expected before the trees recover.
- Côte d’Ivoire saw a reduction in farmers who rehabilitated their farms and/planted new cocoa hybrids and saw limited results on all other indicators, apart from the cassava yields indicator.

Now that the CLP II program is coming to an end, WCF hired Dalberg, a strategy consulting firm, to conduct an endline evaluation of CLP II – with the objectives to:

- Clearly establish the program’s performance in achieving its vision and objectives;
- Assist WCF in better understanding the drivers of impact and adaptations needed to meet the vision of a sustainable and thriving cocoa sector.
An integrated mixed-methods approach was used to generate insights and recommendations for the purposes of this endline evaluation: while it is based on quantitative research and analysis, such as that used for the midline evaluation, it is also based on interviews with key stakeholders, such as Matching Grant Partners (MGPs), farmers and ecosystem players in the cocoa sector, such extension officers, service providers, and public entities.

When it comes to the quantitative data, and when applicable, Dalberg also presented the (cocoa and food crops) farm visit findings in comparison to the household survey findings, to highlight how they may align.

This report aims to share the key results from this endline evaluation of the CLP II program, conducted between March and May 2019. More specifically, its objectives are to:

- Provide the endline evaluation results on the extent to which MGPs progressed on their three CLP II target incentive objectives, specifically when it comes to their farmers reached: (i) demonstrating good or excellent skills in applying GAPs for the production of cassava and/or plantain, (ii) adopting good or excellent sanitary pruning practices for cocoa trees, (iii) growing improved varieties of plantain and/or cassava;

- Share results achieved since the program's launch in 2014, when it comes to the CLP II program's target objectives in terms of cocoa productivity, service delivery efficiency and farmer resilience;

- Synthesize lessons learned from qualitative interviews (with MGPs, ecosystem players and farmers' focus groups) and propose recommendations on potential actions that can maximize positive impacts and minimize negative outcomes for future program.
IV. Methodology and sampling methods

The impact assessment provides preliminary findings for key variables and measures from the Baseline Study (2015), Midline (2017), and Endline (2019) evaluations.

All quantitative results are based on data from the household survey and (cocoa and food crops) farm visits collected from the farmers reached by the MGPs under the CLP II program, knowing that:

- During the baseline, 3,672 farmers were surveyed
- During the Midline, 4,310 farmers were interviewed
- During the Endline, 5,153 farmers were surveyed – out of the 196,437 farmers reached under the CLP II program (as of February 2019).

The table below gives a more detailed overview of the quantitative data collected, across the three countries and across the three data collection tools (household survey, cocoa farm visit, and food crops far visit questionnaires).

It, for example, shows that the number of (both cocoa and food crop) farm visits conducted are based on a convenience sample of 40% of the farmers reached through the household survey; as a result, farm visits findings may not be directly comparable to findings from the household survey. Their geographical distribution is displayed on the maps in the annex.

Table 8: Number of household surveys and farm visits conducted

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of household surveys conducted</th>
<th>Number of cocoa farm visits conducted</th>
<th>Number of food crops farm visits conducted</th>
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<tr>
<td>Côte d'Ivoire</td>
<td>1,574</td>
<td>620</td>
<td>393</td>
</tr>
<tr>
<td>Ghana</td>
<td>1,268</td>
<td>521</td>
<td>368</td>
</tr>
<tr>
<td>Nigeria</td>
<td>278</td>
<td>102</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>3,120</td>
<td>1,243</td>
<td>790</td>
</tr>
</tbody>
</table>

It is important to note that this endline evaluation is cross-sectional and not longitudinal: the same farmers from the baseline and midline evaluations were not systematically followed for the endline evaluation; rather the data collected in this cross-sectional study is from households who are similar in all variables.

However, the variables used for all three evaluations remained constant in the cross-sectional study, from the 2015 baseline to the 2017 midline and the 2019 endline valuations. Such as methodology adopted is unlike a longitudinal study, where variables in the study can change over the course of the survey.

It is also important to note that results from the quantitative data analysis reflect an outlier analysis and trimming of interval scale variables.

The sections below go into more detail on the sampling methodology to select the CLP II farmers reached, and the survey methodology to administer the questionnaires to the farmers selected.
1. Sampling for CLP II Endline

A survey of a sample of farmers was drawn from the main areas supported by the different MGPs. The sampling design used to select farmers for the household survey was intended to be self-weighting; reported results do not reflect post-hoc design assessments or weighting adjustments.

a) Sampling size calculation

The minimum sample size for household surveys was calculated using a precision-based methodology, using the following formula:

\[ n = \frac{Z^2 \sum_{i=1}^{L} N_i^2 p_i(1 - p_i)/w_i}{d^2} \]

Where:
- \( Z \) = z score for the Confidence level (95%)
- \( p_i \) = the proportion of individuals in cluster i that are target population. The proportion of the population in the MGP with prevalence of the outcome of interest.
- \( N_i \) = number of farmers reached by the MGPs as reported by the MGPs in February 2019
- \( N \) = represents the sum of \( N_i \)
- \( d \) = the “d” percentage points to estimate \( p \). This represents the relative precision of the prevalence of outcome of interest at 1.9%.
- \( w_i \) = Proportional allocation for the ith cluster. This is the ratio of the number of farmers reached by the MGP to the total number of farmers reached.
- \( n \) = sample size

Given the variation in the geographic, socio-cultural and socio-economic contexts in the 3 countries and 10 MGPs, the sample size was proportionally allocated based on the farmer populations and one objective of interest (percentage of farmers practicing good pruning practices).

A multistage sampling approach was used to select respondent size; the sample population was obtained from each country.

Then, the target sample size per MGP was stratified. A stratified sampling approach was adopted from Lemeshow et al 1990. The total population was divided into L clusters (10: representing the 10 MGPs) and random samples selected from each cluster.

b) Sample selection for CLP II: Baseline, Wave One, and Endline

Farmers were drawn from MGP-provided farmer databases through WCF, which were assumed to represent valid population-listings of all farmers in the 2014 program cohort (Baseline and Midline); the farmers’ list was updated for the Endline evaluation.
Individual MGP databases varied in content but provided an indication of gender, cooperative/group, village and (generally) higher-order administrative aggregations (districts, regions, states).

The MGP databases did not always contain complete information on farmers, but generally, the amount of missing data was minimal. Data collection field teams were provided with as much information as possible to locate the farmers selected. However, field teams were also instructed to work with the MGP agents to contact farmers if necessary. All MGPs cooperated and we worked with them closely during the entire process only as a guide.

At Baseline and Wave One, a random sample of farmers was drawn per MGP from a list of sampled farmers including replacements to data collection teams. Dalberg applied the same for the Endline survey:

- The sample design was intended to be approximately “self-weighting”, and so the selection of sampling units (smallest aggregation of farmers) was done using a sampling approach based on probability proportional to size (PPS). This applied to Baseline, Midline, and Endline.
- The selection of farmers by gender was also done via probability proportional to size (PPS) within sampling units.
- Sampling was done in a manner that ensured a geographic representation as broad as possible. This was done by stratifying MGP lists (where feasible) by aggregate geographic region (etc.) and ensuring roughly equal sampling rates within strata.

Farmers were selected from the community/group and their eligibility determined by the supervisor for both Cocoa and Food Crop.

c) Replacement methodology – Household Survey

Two types of replacement were allowed for the administration of the household survey – community/sampling units, and farmer replacements:

1- Village/Sampling Unit Replacement: On occasion, communities/sampling units either could not be found or were not eligible for the study. These communities/sampling units were replaced with another village in the same stratum, and with roughly the same probability of selection as the original sampling unit.

2- Individual Farmer Replacement: Certain farmers on the sample list refused to participate in the study or were unreachable. Field teams were instructed that five contact attempts (or refusal) were required before a replacement was allowed. A maximum of three contact attempts was applied during the Endline survey. Where replacement was required, a new farmer was identified at random from a list.

d) Replacement methodology – Farm Visits

Cocoa Farm Visits replacements were allowed if farmers did not have a cocoa farm within one hour of the household/village center. Food Crop Farm Visits replacements were also allowed
if (i) farmers did not have a food crop farm within one hour of the household/village center or (ii) if a farmer did not have the specified crop on the ground at the time of the interview.

The same replacement methodology was used at the Midline, Baseline and at the Endline. WCF has decided not to penalize MGPs based on levels of replacement.

2. **Survey methodology**

Three questionnaires were used for the quantitative data collection process:

- Household Survey Questionnaire
- Cocoa Farm Visit Questionnaire
- Food Crop Farm Visit Questionnaire.

The detail of these questionnaires is provided in the annex.
V. External factors on the Cocoa Livelihoods Program Phase II

Before sharing the key findings and lessons learned from the CLP II endline evaluation results, it is important to share information on key external factors that impacted the implementation and results of the program over its 2014-2019 period. To WCF, these factors include cocoa pricing trends, government policies, and management changes, company-level, and WCF-level sustainability initiatives, and weather.

1. Low cocoa prices

The price of cocoa on the global market, which had risen from an average of US$3,062 per tonne in 2014 to US$3,360 in November 2015, suddenly slumped to a low of US$1,917 by December 2017 and has struggled to recover ever since. This has reduced margins for buyers, the amount of tax revenue for governments, and the amount of money earned by farmers from cocoa. Producer prices have remained flat in Ghana since 2016 at ghc7,600 per tonne; in Côte d'Ivoire, producer prices even decreased from CFA1,100 per kg to CFA700 between 2016 and 2017. Investments in farms suffered during CLP and farmers had to rely on premiums from certification payments.

*Figure 4: World Cocoa Prices, 2013-2019 (January to September)*
2. Government policies and management changes

Government policies and changes in the management of agencies over the course of the program brought new external factors that had a noticeable impact on the sector. For example, over the project’s lifetime, Ghana Cocoa Board (COCOBOD) stopped procuring and distributing free fertilizers and pesticides under the Hi-Tech and CODAPEC programs, respectively. This reduced access to important phytosanitary products and fertilizers for some farmers while also allowing for private sector input delivery to develop.

In response to reaching its target national production of 2 million MT of cocoa in 2017, Côte d’Ivoire’s national cocoa regulator, le Conseil du Café Cacao (CCC), announced a temporary ban on cocoa productivity-enhancing activities in March 2018, and suspended the distribution of all improved cocoa planting material to farmers for the 2018-19 cocoa season. This also had an effect on the CLP Matchings Grantees in Côte d’Ivoire in so far as access to planting material had an impact on the behavior of targeted cocoa farmers.

3. Competing demands of industry and company-level sustainability initiatives

Information collection demands of CocoaAction, the industry’s signature sustainability platform, as well as those of company-implemented programs, may have competed with company managers’ attention to CLP. However, CLP benefited from strong alignment and strategic fit with CocoaAction, which committed to both productivity and community-level interventions. As WCF coordinated CocoaAction and CLP, the Program Management Unit (PMU) explored areas of alignment between both initiatives.

4. Weather

Weather also presented challenges. The prolonged drought periods in 2015 and 2017 may have prevented farmers from investing in pruning for fear of killing their cocoa trees. Bush fires destroyed several cocoa farms in Côte d’Ivoire and Ghana. There was an effort by WCF’s African Cocoa Initiative to support COCOBOD’s Cocoa Health and Extension Division (CHED) and pilot irrigation drip lines, but this has not yet yielded results.
VI. Key endline evaluation findings

As shown in Figure 3, the CLP II endline evaluation was framed around 4 key questions:

- To what extent did CLP II’s MGPs improve on their target incentive objectives?
- To what extent were the target objectives of the CLP II program met?
- To what extent did the CLP II program have an impact at a systemic level – especially when it comes to women’s empowerment and gender equity?
- What are the key lessons learned from the CLP II program for WCF to keep in mind moving forward?

The objective of the sections below is to address these four questions.

1. Incentives objectives

In accordance with the matching grant system, MGPs were awarded incentive payments based on their performance against three indicators below:

- % of farmers demonstrating good or excellent skills in applying GAPs to the production of cassava or plantain
- % of farmers demonstrating good or excellent sanitary pruning of cocoa trees
- % of farmers growing improved varieties of plantain or cassava.

The sections below present the country-level results of these incentive objectives – and more specifically the extent to which the farmers surveyed for each MGP in each country demonstrated the good agricultural practices specified above.

a) Demonstration of Good or Excellent adoption of food crop GAPs

Overall, the Endline survey reveals that the adoption of Cassava GAPs has been successful in all three countries. Nigeria leads with 96% Excellent and Good adoption of Cassava GAPs, followed by Ghana with 93%, and Côte d’Ivoire with 74%. However, in terms of progression between Midline and Endline, Ghana recorded the highest growth with best 38 percentage points while Côte d’Ivoire and Nigeria respectively grew by 13 percentage points and 11 percentage points.

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7 For the purposes of the endline evaluation, cassava good agricultural practices (GAPs) include 10 items related to planting practices, variety usage, fertility and pest management, post-harvest practice. In terms of ranges, excellent adoption refers to at least 70% of GAP items applied; good adoption refers to 50 – 69.99% of GAP items applied; minimum adoption refers to 30 – 49.99% of GAP items applied; no adoption refers to < 30% of GAP items applied.
Figure 5: Adoption of cassava GAP in Côte d'Ivoire (farm visit)

Figure 6: Adoption of cassava GAP in Ghana (farm visit)

Figure 7: Adoption of cassava GAP in Nigeria (farm visit)
The same trend is also observed for the adoption of Plantain GAPs with higher adoption rates at the Endline. Both Ghana and Côte d’Ivoire have achieved significant increases in the proportion of excellent and good adoption. In Côte d’Ivoire, while the excellent and good adoption of Plantain GAPs decreased from 31% to 8% between the Baseline and the Midline, the Endline survey reported 51% of good and excellent adoption. For Ghana, the same trend is noted with a growth of 80 percentage points between the Midline and the Endline.

Figure 8: Adoption of plantain GAP in Côte d’Ivoire (farm visit)

![Figure 8: Adoption of plantain GAP in Côte d’Ivoire (farm visit)](image1)

Figure 9: Adoption of plantain GAP in Ghana (farm visit)

![Figure 9: Adoption of plantain GAP in Ghana (farm visit)](image2)

The adoption of food crops GAPs is even more positive when comparing the midline to the endline performance results. The table below, for example, shows that the percentage of farmers adopting good and excellent plantain GAP multiplied by more than 6 in Côte d’Ivoire and more than 12 in Ghana – between the midline and endline evaluations. The table also shows that this improvement in the adoption of plantain GAP is relatively more

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8 For the purposes of the endline evaluation, plantain good agricultural practices (GAPs) include 12 items related to planting practices, variety usage, fertility and pest management, post-harvest practice, propping and desuckering. In terms of ranges, excellent adoption refers to at least 70% of GAP items applied; good adoption refers to 50 – 69.99% of GAP items applied; minimum adoption refers to 30 – 49.99% of GAP items applied; no adoption refers to < 30% of GAP items applied.
important than the evolution in the adoption of cassava GAP during the same period, and across the three countries.

Table 9: Evolution of the percentage of farmers with good and excellent adoption of plantain GAP and cassava GAP, between the midline and the endline evaluations

<table>
<thead>
<tr>
<th>Country</th>
<th>Plantain GAP analysis from farm visit</th>
<th>Cassava GAP analysis from farm visit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Midline</td>
<td>Endline</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>8%</td>
<td>51.3%</td>
</tr>
<tr>
<td>Ghana</td>
<td>7%</td>
<td>86.5%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>86%</td>
<td>96.6%</td>
</tr>
</tbody>
</table>

b) Adoption of sanitary pruning of cocoa trees

The adoption of sanitary pruning remains mixed from one country to the other during the endline evaluation. Ghana (71%) and Nigeria (80%) showed good performance in terms of Excellent and Good adoption of pruning practices (respectively 71% and 80%, as shown in the figure below); Côte d’Ivoire, however, showed a lower performance (44%)9.

Figure 10: Adoption of sanitary pruning practices – Endline evaluation results per performance per country - Outcome incentive indicators thresholds (farm visit)

9 For the purposes of the endline evaluation, adoption of sanitary pruning practices is observed based on the extent to which the trees observed show evidence of chupons, drooping branches and/or dead branches. Chupons are offshoots which develop on the tree and become chupons, growing vertically and forming central axes with their own branch development; these take nutrients away from the tree (though they can also be used for budding and growing new trees). Drooping branches are growing towards the ground and are shaded by the rest of the branches in the crown. Dead branches block air and sunlight from living branches. In terms of ranges, excellent adoption refers to at least 90% of sample trees are well pruned; good adoption refers to 80 – 89.99% of sample trees well pruned; minimum adoption refers to 70 – 79.99% of sample trees well pruned; no adoption refers to < 70% of sample trees well pruned.
As a result, despite consistent efforts from MGPs, the Endline reveals that farmers classified as not having adopted sanitary pruning practices represent a proportion twice as high in Côte d'Ivoire (39%) compared to Ghana (17%), and three times higher compared to Nigeria (12%).

Figure 11: Adoption of sanitary pruning practices – Endline evaluation results per country - Outcome incentive indicators thresholds (farm visit)

Going into more detail, most farm visits across countries show at least 70% of sample trees observed being well pruned – with Côte d'Ivoire showing the largest percentage of occurrences with less than half of well-pruned sample trees per observation, as shown in the figure below.

Figure 12: Adoption of sanitary pruning practices – Endline evaluation results per country - Thresholds different from the outcome incentive indicators* (farm visit)

(*) Please note the thresholds different from those used to classify excellent, good, minimum, and no evidence of adoption of sanitary pruning practices for the purposes of the outcome incentive performance; the sanitary pruning elements considered (evidence of chupons, drooping branches, and dead branches) remain the same.

Similarly, the sanitary pruning sub-indicators confirm a more limited practice of removing chupons, removing drooping branches and removing dead branches in Côte d'Ivoire, compared to Ghana and Nigeria:
• While evidence of chupons is around 50% of the observations in Ghana and Nigeria (48% and 53% respectively), the level is at 84% in Côte d’Ivoire;
• While evidence of drooping branches is below 50% of the observations in Ghana and Nigeria (45% and 37% respectively), the level is at 75% in Côte d’Ivoire;
• While evidence of dead branches is below 50% of the observations in Ghana and Nigeria (48% and 31% respectively), the level is at 78% in Côte d’Ivoire.

*Figure 13: Evidence of chupons, drooping branches, and dead branches among the farm visit observations, per country*

Looking at the gender lens at Endline, in all three countries, female farmers have a higher share of respondents with no evidence of adoption than their male counterparts. Paradoxically, however, Côte d’Ivoire female farmers have a higher proportion showing evidence of excellent sanitary pruning adoption than their male counterparts. The same is true in Ghana and Nigeria among female farmers showing evidence of good adoption of sanitary pruning.

*Figure 14: Adoption of sanitary pruning practices in Côte d’Ivoire – Endline evaluation results per performance per gender- Outcome incentive indicators thresholds (farm visit)*
c) Use of improved food crops varieties

Overall, in the Endline assessment, all three countries have achieved satisfactory results in adopting planting materials and growing approved varieties over the course of the CLP II program. In the three countries, all surveyed farmers reported growing improved planting materials\textsuperscript{10} and growing approved varieties of food crops.

\textsuperscript{10} If one improved variety of cassava or plantain is mentioned, the farmer is counted as growing “Improved” varieties.
These results are even more satisfactory when comparing the baseline and the endline performance results. As shown in the table below, the self-reports of Côte d’Ivoire farmers show the largest improvement in the use of improved/approved food crop planting materials, followed by Ghana and Nigeria.

**Table 10: Evolution of the percentage of farmers using improved/approved food crops materials, between the baseline and the endline evaluations**

<table>
<thead>
<tr>
<th>Country</th>
<th>Average % of farmers growing improved/approved food crops materials (from household survey)</th>
<th>Evolution between midline and endline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Endline</td>
</tr>
<tr>
<td>Ghana</td>
<td>14.4%</td>
<td>100%</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>55.1%</td>
<td>100%</td>
</tr>
</tbody>
</table>
You will find below a more detailed classification of the improved, approved and/or landrace varieties, used for the purposes of the endline evaluation.

Table 11: Classification of food crops varieties in Nigeria

<table>
<thead>
<tr>
<th>Crop</th>
<th>Varieties</th>
<th>Improved/Landrace/Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cassava</td>
<td>Oko Iyawo</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Agric</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Abovade</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Hybrid</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>7 Months</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>IITA</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Red Cassava</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Idileru</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Pupa</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Texaco</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>TME419 (Armajaro)</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>TMS30572 (Armajaro)</td>
<td>Improved</td>
</tr>
</tbody>
</table>

Table 12: Classification of food crops varieties in Ghana

<table>
<thead>
<tr>
<th>Crop</th>
<th>Varieties</th>
<th>Improved/Landrace/Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cassava</td>
<td>Abasaftaa</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Broni Bankye</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Bankye Hemaa</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>6 Months</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Ampong</td>
<td>Improved</td>
</tr>
<tr>
<td>Plantain</td>
<td>Apanu</td>
<td>Landrace*</td>
</tr>
<tr>
<td></td>
<td>Apem</td>
<td>Landrace*</td>
</tr>
<tr>
<td></td>
<td>Apem Hemaa (FHIA 21)</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Oniaba</td>
<td>Landrace</td>
</tr>
<tr>
<td></td>
<td>Essamienou</td>
<td>Landrace</td>
</tr>
</tbody>
</table>

(*) Varieties classified as “improved” into the scoring but kept as landrace in the analysis; not local.

Table 13: Classification of food crops varieties in Côte d’Ivoire

<table>
<thead>
<tr>
<th>Crop</th>
<th>Varieties</th>
<th>Improved/Landrace/Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cassava</td>
<td>6 months</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Bonoua**</td>
<td>Improved Landrace</td>
</tr>
<tr>
<td></td>
<td>Bocou</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Yace/Yasse</td>
<td>Landrace</td>
</tr>
<tr>
<td></td>
<td>Manioc Blanc</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Manioc Rouge</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>TMS4</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>CNRA</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Yavo</td>
<td>Improved</td>
</tr>
<tr>
<td>Plantain</td>
<td>Pitha3</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>PHIA</td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>Afoto</td>
<td>Landrace* /Approved</td>
</tr>
<tr>
<td></td>
<td>Agninin</td>
<td>Landrace* /Approved</td>
</tr>
</tbody>
</table>
2. Impact achieved for target outcomes

Beyond the extent to which MGPs met their outcome incentive objective, the endline evaluation shed a light on the extent to which the CLP II program met its three target objectives:

- Objective 1: Increase farm level cocoa productivity to 1,000 kg/ha
- Objective 2: Improve service delivery efficiency with a focus on long-term, farm-level cocoa productivity increase
- Objective 3: Improve farmer resiliency.

The figure below provides a more detailed overview of the CLP II program composite Monitoring & Evaluation Results Framework.

*Figure 19: CLP II Composite Monitoring & Evaluation Results Framework*

Source: Cocoa Livelihoods Program Phase II Grant Proposal to the Bill & Melinda Gates Foundation (August 2013)

The sections below present the country-level results of these program target outcomes – knowing that these results might not all be completely attributable to the implementation of
the CLP II program only (but also attributable to company-specific sustainability programs, governmental program, etc.).

**a) Farm-level cocoa productivity**

Farm-level cocoa productivity depends on a series of factors, including the level of adoption of cocoa farming GAP practices (such as sanitary pruning practices, already captured through the MGP target incentives); but also farm management practices (such as pest management, weeding practices, shade management, soil management, or harvest management). The sections below go into detail with the farm management practices impacting cocoa productivity.

**FARM-LEVEL COCOA YIELD**

While the CLP II program objective was to increase average cocoa yields up to 1,000 kg/ha (hectare), the quantitative data collected for the endline evaluation showed average yields around 600kg/ha, ranging between 480 kg/ha and 750 kg/ha depending on the country and the evaluation period (as shown in the table below). It is interesting to note that, regardless of the country, the average farm-level yield increased between baseline and endline.

*Table 14: Evolution of the average cocoa yields, per evaluation wave*

<table>
<thead>
<tr>
<th>Country</th>
<th>Baseline</th>
<th>Midline</th>
<th>Endline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d'Ivoire</td>
<td>487 kg/ha</td>
<td>483 kg/ha</td>
<td>720 kg/ha</td>
</tr>
<tr>
<td>Ghana</td>
<td>388 kg/ha</td>
<td>551 kg/ha</td>
<td>630 kg/ha</td>
</tr>
<tr>
<td>Nigeria</td>
<td>515 kg/ha</td>
<td>440 kg/ha</td>
<td>748 kg/ha</td>
</tr>
</tbody>
</table>

Cocoa Yield estimation is from farmer recall and must be interpreted with caution. For the Baseline and Midline Evaluations, cocoa yields were calculated by taking the total amount of cocoa sold (main season and minor season, combined) and dividing by the total farm size (collected by GPS mapping). For the Endline, cocoa yields were calculated by taking the total amount of cocoa sold (main season and minor season, combined) and dividing by the total farm size (as reported by the farmers) – and considering only the farmers owning one cocoa farm. The annex gives more detail on methodology and assumptions used to estimate these average cocoa farm yields per country.

These yield estimates generated from the quantitative data collected are aligned with the levels reported by the MGP railway during qualitative interviews.

**COCOA FARM SIZE**

Information on the farm sizes of the farmers reached was a key input into the estimation of the farm-level cocoa yields. The table below shows that, although the average cocoa farm size in Côte d'Ivoire revolved around 3 ha across the 3 evaluation waves, it decreased by about 40% in Ghana and increased by about 25% in Nigeria.

*Table 15: Evolution of the average cocoa farm sizes, per evaluation wave (farm visit)*

<table>
<thead>
<tr>
<th>Country</th>
<th>Baseline</th>
<th>Midline</th>
<th>Endline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d'Ivoire</td>
<td>3.2 ha</td>
<td>2.9 ha</td>
<td>3.02 ha</td>
</tr>
<tr>
<td>Ghana</td>
<td>2.1 ha</td>
<td>1.53 ha</td>
<td>1.24 ha</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2.2 ha</td>
<td>1.38 ha</td>
<td>2.73 ha</td>
</tr>
</tbody>
</table>
Farm management practices
Five main types of farm management practices were monitored for the purposes of endline evaluation: pest management practices, weeding practices, shade management practices, soil erosion and soil health management practices, and harvest management practices.

Pest management
Information on pest management practices was collected through both household surveys (self-reported responses from cocoa farmers) and farm visit observations. In both cases, the observation of whether a tree has mistletoe, mirid damage (3 or more occurrences on a tree), black pod (3 or more occurrences on a tree), and dieback on cocoa trees was used to evaluate if a farmer was applying appropriate pest control practices.

For the purposes of the endline evaluation, observations were considered as showing:
- no evidence of adoption when only less than 80% of the sample trees were observed without pest symptoms
- minimum evidence of adoption when between 80% and 90% of the sample trees were observed without pest symptoms
- good evidence of adoption when between 90% and 95% of sample trees were observed without pest symptoms
- excellent evidence of adoption when at least 95% of sample trees were observed without pest symptoms.

There is, however, a caveat to this methodology: in times of severe pest/disease outbreaks in an area, the farmer’s best effort may not suffice. This is particularly true if neighboring farms are not being well-maintained and serve as a reservoir for pests/diseases.

In all three countries, while close to 100% of farmers self-reported applying pest management practices during the household survey, the evidence of non-adoption of pest management was extremely high (Côte d’Ivoire 84%, Ghana 97%, and Nigeria 98%) during farm visits.

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11 World Cocoa Foundation, Cocoa Livelihoods Program Phase II Final Evaluation, Cocoa Farm Visit, Training Manual
12 No Adoption: less than 80% of trees without symptoms
Figure 20: Adoption of pest management (household survey)

Figure 21: Adoption of pest management (farm visit)

Weeding Practices
Too many weeds, or unwanted plants, growing around cocoa trees can take away water and nutrients away from cocoa trees.

For the purposes of the endline evaluation, household survey responses and observations were considered as showing:

- no evidence of adoption when there were occurrences of weeds but no counter management
- minimum evidence of adoption when there were occurrences of weeds and counter management
- good/excellent evidence of adoption when there was no occurrence of weeds

13 World Cocoa Foundation, Cocoa Livelihoods Program Phase II Final Evaluation, Cocoa Farm Visit, Training Manual
In all three countries, during the household survey\textsuperscript{14}, close to 100\% of farmers reported clearing weeds and other unwanted plants from around their cocoa trees (Côte d'Ivoire 84\%, Ghana 97\%, and Nigeria 98\%).

\textit{Figure 22: Adoption of weeding practices (household survey)}

This performance, however, contrasts with the observations from the farm visits where close to 100\% of the farmers reached showed no evidence of minimum adoption.

\textit{Figure 23: Adoption of weeding practices (farm visit)}

The large differences between the self-reported information from the farmers through the household survey and the observations made during the farm visit are like those linked to the pest management practices.

\textbf{Shade Management}

\textit{Shade trees are important to understand if cocoa trees are growing under ideal conditions, as they are meant to provide cover for other crops.} For the purposes of the endline evaluation, shade trees are defined (i) as large with a diameter equal to or greater than 15 centimeters; (ii) with a height equal to or greater than 12 meters; (iii) alive; (iv) not

\textsuperscript{14} Household survey questions on recall of weed occurrence and recall of weeding/weed removal frequency reported by the farmers
ringed; and (v) different from oil palm trees, coconut trees or any other type of food crop trees\textsuperscript{15}. This shade tree management observation was done only on existing mature trees.

At Endline, during farm visits, evidence of shade tree management adoption is 92% in Côte d’Ivoire (vs. 44% at Midline), 96% in Ghana (vs. 87% at Midline), and 71% in Nigeria (vs. 33% at Midline). The shade tree density, therefore, increased across evaluation waves in all three countries.

\textit{Figure 24: Adoption of shade management in Côte d'Ivoire (farm visit)}

\textit{Figure 25: Adoption of shade management in Ghana (farm visit)}

\textsuperscript{15} World Cocoa Foundation, Cocoa Livelihoods Program Phase II Final Evaluation, Cocoa Farm Visit, Training Manual
SOIL EROSION MANAGEMENT

WCF considers “soil erosion protection” as the application of best practices to prevent running water from eroding the chemical and physical capacities of soil. Given the contextual aspect of erosion protection, this farm management practice was observed and measured at each farm case by Dalberg’s team of surveyors; these measurements could include planting of hedgerows as wind-barriers, shade-management, vegetative buffer-zones or terrace planting on steep slopes.

Three main types of observations were particularly sought after:

- **Case 1**: If there were dense ground cover and a layered forest profile, and if the trees were not growing too close to a hillside or water, the observation was considered as evidence of soil erosion management and enough soil erosion management practices;
- **Case 2**: If there were some dense ground cover and a layered forest profile, and if most of the trees were not growing too close to a hillside or water, the observation was considered as evidence of soil erosion management, but insufficient soil erosion management practices;
- **Case 3**: If there was no dense ground cover and a layered forest profile, and if trees were growing too close to a hillside or water, the observation was considered as no evidence of soil erosion management.\(^\text{16}\)

At Endline, during farm visits, evidence of adoption of soil erosion practices is 99% in Côte d’Ivoire (vs. 68% at Midline), 100% in Ghana (same as at Midline), and 92% in Nigeria (vs. 98% at Midline). It, therefore, appears that soil erosion management practices progressed in all three countries.

\(^\text{16}\) World Cocoa Foundation, Cocoa Livelihoods Program Phase II Final Evaluation, Cocoa Farm Visit, Training Manual
SOIL HEALTH MANAGEMENT

For the purposes of the CLP II evaluation, soil health management refers to the approach to strengthen the soil and increase soil fertility over the long run through measures to improve its micro-climate, soil fauna & flora, soil composition, and soil texture.
Like observations of soil erosion management practices, three main types of observations were particularly sought after by the Dalberg team when it comes to soil health management practices:

- **Case 1:** If there were crushed cocoa pods, cuttings from weeding and pruning, and general ground cover, and there were no broken pods in big piles in the observation circle, the observation was considered as evidence of soil health management and the practice was considered to be sufficient;
- **Case 2:** If there were a few crushed cocoa pods, cuttings from weeding and pruning, and general ground cover, and there were a few broken pods in big piles in the observation circle – in an inconsistent way, the observation was considered as evidence of soil health management and the practice was considered to be insufficient;
- **Case 3:** If there were scars and/or rotting pods or other evidence of poor harvest management on most of the trees in the observation circle, the observation was considered as no evidence of harvest management\(^\text{17}\).

More specifically, a consolidated set of observations on a farm was considered as showing:

- **Excellent adoption**, when at least 90% of sample spots were good;
- **Good adoption**, when 80% – 89.99% of sample spots were good;
- **Minimum adoption**, when 70 – 79.99% of sample spots were good;
- **No evidence of adoption**, when less than 69.99% of sample spots were good.

Like for soil erosion management practices, there is evidence of high adoption of soil health management practices in the three countries with Nigeria at 100%, Ghana at 99%, and Côte d’Ivoire 94%.

*Figure 30: Adoption of Soil health management (farm visit)*

Harvest management

Information on cocoa harvest management was collected through farm visit observation during the endline evaluation. The World Cocoa Foundation, indeed, considers harvesting

\(^{17}\) World Cocoa Foundation, Cocoa Livelihoods Program Phase II Final Evaluation, Cocoa Farm Visit, Training Manual
mature cocoa pods only as critical to the quality of cocoa beans as the ripening process changes the flavor profile of beans. Ripe cocoa pods also contain larger, heavier cocoa beans. The harvesting of overripe cocoa pods is bad for cocoa quality as these beans are easily damaged. Cocoa beans from overripe or diseased pods can also have mold and fungus growing on them that could damage surrounding cocoa beans during storage. In addition, overripe or unripe cocoa pods negatively impact the flavor profile of cocoa and make the pods less valuable for certain applications\(^{18}\).

Three main types of observations were particularly sought after by the Dalberg team when it comes to harvest management for the purposes of the endline evaluation:

- **Case 1:** If there were no scars and/or rotting pods or other evidence of poor harvest management on any of the trees in the observation circle, the observation was considered as **evidence of harvest management** and **enough harvest management practices**;
- **Case 2:** If there were some scars and/or rotting pods or other evidence of poor harvest management on any of the trees in the observation circle, the observation was considered as **evidence of harvest management but with insufficient harvest management practices**;
- **Case 3:** If there were scars and/or rotting pods or other evidence of poor harvest management on most of the trees in the observation circle, the observation was considered as **no evidence of harvest management**\(^{19}\).

More specifically, a consolidated set of observations on a farm was considered as showing:

- **Excellent adoption**, when at least 90% of the sample trees are good;
- **Good adoption**, when 80% – 89.99% of the sample trees are good;
- **Minimum adoption**, when 70 – 79.99% of the sample trees are good;
- **No evidence of adoption**, when less than 69.99% of the sample trees are good.

Figure 31 below shows that most of the farmers reached at Endline across the 3 countries showcased evidence of harvest management practices.

*Figure 31: Evidence of adoption of harvest management practices (farm visit)*

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\(^{18}\) World Cocoa Foundation, Cocoa Livelihoods Program Phase II Final Evaluation, Cocoa Farm Visit, Training Manual

\(^{19}\) World Cocoa Foundation, Cocoa Livelihoods Program Phase II Final Evaluation, Cocoa Farm Visit, Training Manual
b) Service delivery

The second outcome objective of the CLP II program was to improve service delivery efficiency with a focus on long-term, farm-level cocoa productivity increase, through a series of activities such as:

- Developing access to cocoa planting materials;
- Expanding the input access system (especially when it comes to fertilizers, compost, and agro-chemicals);
- Developing financial services mechanisms to support cocoa farmers.

The sections below go in detail with the performance of key indicators linked to those activities.

**ACCESS TO COCOA PLANTING MATERIALS**

*Within the last 12 months of the endline evaluation, the cocoa farmers reached in Ghana and Nigeria have planted an increasing share of hybrid cocoa varieties, in comparison to local/traditional varieties. An opposite trend, however, was observed in Côte d’Ivoire.*

In Côte d’Ivoire, the endline evaluation results show that cocoa farmers have planted both hybrid and local varieties in the last 12 months (respectively 42% and 57%). However, there has been a decline in the planting of hybrid varieties between Midline (60%) and Endline (42%). This is mainly due to the ban of cocoa productivity-enhancing activities enacted in March 2018, and the suspension of the distribution of all improved cocoa planting material to farmers for the 2018-19 cocoa season in the country. As a result, farmers had to rely more on the local varieties available to them.

*Figure 32: Evolution of the percentage of Côte d’Ivoire cocoa farmers having planted hybrid vs. local/traditional types of cocoa in the last 12 months (household survey)²⁰*

²⁰ Responses to the household survey question: “In the last 12 months, what type of cocoa did you plant? More than 1 variety can be planted”
Figure 33: Evolution of the percentage of Ghana cocoa farmers having planted hybrid vs. local/traditional types of cocoa in the last 12 months (household survey)

Figure 34: Evolution of the percentage of Ghana cocoa farmers having planted hybrid vs. local/traditional types of cocoa in the last 12 months (household survey)

**ACCESS TO OTHER COCOA FARMING INPUTS**

When it comes to farmers’ application of inorganic vs. organic fertilizer on cocoa farms, behaviors vary. Within the 12 months of the endline evaluation, only 12% of farmers reported having applied inorganic fertilizer in Nigeria vs. 28% in Ghana, and 43% in

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21 Responses to the household survey question: “In the last 12 months, what type of cocoa did you plant? More than 1 variety can be planted”

22 Responses to the household survey question: “In the last 12 months, what type of cocoa did you plant? More than 1 variety can be planted”

23 For the purposes of the endline evaluation, “fertilizer” refers to any chemical material applied to the soil to supply nutrients essential for plant growth, while “compost” refers to decayed plant and food matter which serves the same purpose.
Côte d’Ivoire. In Ghana, 70% of farmers self-reported not having applied any fertilizer to their cocoa trees during that same period vs. 53% in Nigeria, and 48% in Côte d’Ivoire.

Figure 35: Distribution of cocoa farmers having self-reported using inorganic fertilizer vs. compost vs. no fertilizer within 12 months of the endline evaluation – Bar charts per country (household survey)

Figure 36: Percentage of the cocoa farmers having self-reported using inorganic fertilizer vs. compost vs. no fertilizer within 12 months of the endline evaluation – Pie charts per country (household survey)

When it comes to fertilizers, it is interesting to note the difference in procurement sources: while most of the farmers reached in Côte d’Ivoire reported receiving or purchasing their fertilizer from cooperatives or farmer groups/organizations/societies, Ghana and Nigeria farmers mainly got their fertilizers from MGPs, the Government or a private shop (as shown in the tables below).
**ACCESS TO FINANCIAL SERVICES**

While the proportion of cocoa farmers using bank accounts has increased in Ghana and Nigeria, it remains low in Cote d’Ivoire.

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24 Responses to the household survey question: “B20.1 In the last 12 months, from where did you purchase or receive fertilizer for your cocoa?”

25 Responses to the household survey question: “B20.1 In the last 12 months, from where did you purchase or receive fertilizer for your cocoa?”

26 Responses to the household survey question: “B20.1 In the last 12 months, from where did you purchase or receive fertilizer for your cocoa?”
Between Midline and Endline, the proportion of cocoa farmers who reported using a bank account in Côte d’Ivoire decreased by 15 percentage points to 20% while Ghana increased by 17 percentage points to 53%, and Nigeria by 10 percentage points to 75%.

Figure 40: Use of bank accounts among Côte d’Ivoire farmers (household survey) 27

Figure 41: Use of bank accounts among Ghana farmers (household survey) 28

Figure 42: Use of bank accounts among Nigeria farmers (household survey) 29

27 Responses to the household survey question: “Do you currently have a bank account that you use to deposit money from cocoa or other farm sales?”
28 Responses to the household survey question: “Do you currently have a bank account that you use to deposit money from cocoa or other farm sales?”
29 Responses to the household survey question: “Do you currently have a bank account that you use to deposit money from cocoa or other farm sales?”
Regardless of the country, at Endline, the share of the female farmers using bank accounts remains lower than their male counterparts. Nigeria remains the country with the largest share of female farmers using bank accounts at Endline (close to 62% vs. 77% for their male counterparts), followed by Ghana (close to 43% vs. 58% for their male counterparts), and Côte d’Ivoire (close to 19% vs. 20% for their male counterparts).

Figure 43: Use of bank accounts by gender (household survey)

In parallel, a larger share of farmers reached in Côte d’Ivoire and Ghana for Endling self-reported having received more cash loans compared to Midline, increasing from 15% to 17% in Côte d’Ivoire and from 13% to 17% in Ghana. In Nigeria, however, there is a decrease in the proposition of farmers receiving cash loans during the same period (9% at Endline vs. 13% at Midline).
Figure 44: Percentage of Côte d'Ivoire farmers having received cash loans in the last 12 months (household survey)

Figure 45: Percentage of Ghana farmers having received cash loans in the last 12 months (Household survey)

Figure 46: Percentage of Nigeria farmers having received cash loans in the last 12 months (Household survey)

30 Responses to the household survey question: “In the last 12 months, have you received a cash loan?”
The main reason farmers evoke for not taking a loan is the perceived lack of need (Côte d’Ivoire: 61%, Ghana: 50%, Nigeria: 45%). The second reason for Côte d’Ivoire and Nigeria is the lack of lenders or loans (Côte d’Ivoire: 28%, Nigeria: 44%). In Ghana, it is the high-interest rates (23%) and the lack of collateral (21%).

Figure 47: Reasons that farmers did not take a loan – Endline results (household survey)\(^{31}\)

<table>
<thead>
<tr>
<th>Reason</th>
<th>CDI (n=1,304)</th>
<th>GH (n=1,048)</th>
<th>NGR (n=251)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No lender/loans not available</td>
<td>28%</td>
<td>12%</td>
<td>44%</td>
</tr>
<tr>
<td>Did not need a loan</td>
<td>61%</td>
<td>50%</td>
<td>43%</td>
</tr>
<tr>
<td>Loan application rejected</td>
<td>6%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Lack of collateral</td>
<td>8%</td>
<td>21%</td>
<td>6%</td>
</tr>
<tr>
<td>High interest rates</td>
<td>7%</td>
<td>23%</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>7%</td>
<td>2%</td>
</tr>
</tbody>
</table>

It is also important to emphasize that cooperatives serve as a relatively important source of the loans taken by farmers in all three countries, as shown in the figure below. As cooperatives tend to get most of their revenues from cocoa sales, their ability to extend loans to their farmers would be directly linked to cocoa prices. As a result, cocoa prices would be another key factor to consider when assessing farmers’ access to loans in all three countries.

Figure 48: Source of loans in Côte d’Ivoire, Ghana, and Nigeria (household survey)\(^{32}\)

<table>
<thead>
<tr>
<th>Source</th>
<th>CDI (n=28)</th>
<th>GH (n=225)</th>
<th>NGR (n=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative</td>
<td>21%</td>
<td>18%</td>
<td>11%</td>
</tr>
<tr>
<td>Bank</td>
<td>8%</td>
<td>28%</td>
<td>7%</td>
</tr>
<tr>
<td>Cooperative</td>
<td>57%</td>
<td>28%</td>
<td>50%</td>
</tr>
<tr>
<td>Input Dealer</td>
<td>4%</td>
<td>12%</td>
<td>14%</td>
</tr>
<tr>
<td>Grantee</td>
<td>0%</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>13%</td>
<td>11%</td>
</tr>
</tbody>
</table>

\(^{31}\) Responses to the household survey question: “What were the reasons you did not take a loan? Multiple responses allowed”

\(^{32}\) Responses to the household survey question: “From whom did you receive the loan? Referring to the cash loans received in the last 12 months and captured from the endline survey.”
Given the link between access to loans and cooperatives, it is interesting to shed a light on the extent of farmers’ membership in cooperatives. Farmers' organizations also support their members in the implementation of sustainable farming practices. **Between Midline and Endline, all three countries recorded growth in farmers' participation in cooperatives.** In Côte d'Ivoire, 95% of farmers belong to a cooperative at Endline (vs. 88% at Midline), in Ghana, 83% (vs. 74% at Midline), and in Nigeria 96% (vs. 62% at Midline).

*Figure 49: Percentage of Côte d'Ivoire farmers identifying as members of cooperatives or farmer associations/organizations (household survey)*

*Figure 50: Percentage of Ghana farmers identifying as members of cooperatives or farmer associations/organizations (household survey)*
c) Resilience

The third outcome objective of the CLP II program was to improve farmer resilience, through a series of activities such as:

- Training farmers in food crop production practices;
- Providing farmers with food crops inputs (especially when it comes to fertilizers and agrochemicals);
- Establishing farm-field demonstration plots.

The sections below go in detail with the performance of key indicators linked to those activities and farmers’ households’ ability to self-sufficient in terms of nutrition needs.

**Food Crop Production Practices**

The proportion of farmers reached growing both cassava and plantain ranges between **31% in Nigeria, 45% in Côte d’Ivoire and 71% in Ghana at Endline.** This proportion of farmers growing both crops between the baseline and the endline evaluations, confirming the food crop diversification trend across all three countries. More specifically the proportion of these farmers increased by:

- 29 percentage points between midline and endline in Côte d’Ivoire
- 13 percentage points between midline and endline in Ghana
- 31 percentage points between midline and endline in Nigeria.

In addition, it is interesting to note an increasing share of Nigeria cocoa farmers growing plantain as a food crop – although only their production of cassava was monitored as a target food crop for the purposes of the CLP II program.

It is also interesting to note that in all countries, cocoa farmers do not limit their food crop production to cassava and/or plantain only. In Côte d’Ivoire, the cocoa farmers who participated in the 2 focus groups, for example, mentioned growing eggplant, taro, yam,
tomato, pepper, corn, and okra as additional food crops. In Ghana, the focus groups participants also mentioned growing okra, maize, garden vegetable, sugar cane, cocoyam, yam, rice, pepper, tomato, beans, groundnut, potatoes, pineapple, palm fruit, maize, pawpaw, pear, coconut, orange – in addition to plantain and cassava.

Figure 52: Food crops grown by farmers in Côte d’Ivoire (household survey)\textsuperscript{33}

Figure 53: Food crops grown by farmers in Ghana (household survey)\textsuperscript{34}

\textsuperscript{33} Responses to the household survey question: “What food crops do you grow?”, with multiple responses allowed

\textsuperscript{34} Responses to the household survey question: “What food crops do you grow?”, with multiple responses allowed
Regardless of the target food crop produced, it is interesting to note an increase in the number of varieties of cassava grown by each farmer in Côte d’Ivoire and Nigeria. Both countries experienced an increase in the number of farmers growing 2 to 3 varieties of cassava, between the baseline and the endline evaluations, as shown in the figure below. In Ghana, however, the number of farmers growing one variety only of cassava increased during the same period.

35 Responses to the household survey question: “What food crops do you grow?”, with multiple responses allowed
A similar trend is observed with plantain – when it comes to the increase in the number of varieties grown in Côte d’Ivoire. In Ghana, however, contrary to cassava, farmers have increased the number of plantain varieties grown between the baseline and the endline evaluations, as shown in the figures below.
In terms of farm sizes, most farmers in Ghana and Nigeria have cassava and plantain farms of less than one hectare. In Nigeria, however, a higher proportion of farmers (33%) have farms between one and two hectares.
**PRIMARY SOURCES OF FAMILY FOOD**
Beyond information on the production of CLP II target food crops per MGP, the endline evaluation results allowed us to assess the extent to which food crops grown by cocoa farmers are actual sources of food for their households.

Figure 62 below does confirm that the crops grown on the family farms are the major sources of food among the cocoa farmers reached; ranging from 78% of the respondents in Nigeria to 82% in Côte d’Ivoire and Ghana.

The other identified sources of food for cocoa farmers’ families include, to a lesser extent, purchases of food and food received from other family members.

Figure 62: Primary sources of food for cocoa farmers’ families (household survey)

**FOOD SHORTAGE AND COPING MECHANISMS**
During the Endline household survey, farmers were asked if, in the last 12 months, their household had experienced a shortage of food. In Nigeria, 3% of

36 Responses to the household survey questionnaire: “How do you primarily obtain food for your family?”
households had experienced food shortage, while this proportion reached 8% in Côte d’Ivoire and 15% in Ghana.

In Côte d’Ivoire and Ghana, however, this proportion of cocoa farmers having experienced food shortage was more prominent among female respondents compared to male respondents:

- In Côte d’Ivoire, while 10.7% of the female farmers self-reported having experienced food shortage within the 12 months prior to the endline evaluation, 7.3% of the male farmers reached did.
- In Ghana, while 16.5% of the female farmers self-reported having experienced food shortage within the 12 months prior to the endline evaluation, 13.9% of the male farmers reached did.
- In Nigeria, interestingly, no female farmer self-reported having experienced food shortage within the 12 months prior to the endline evaluation, compared to 3.8% among male farmers.

Figure 63: Experience of food shortage among the farmers reached during the endline evaluation, per country and per gender (household survey)

While the proportion of farmers reached having experience food shortage has increased in Côte d’Ivoire and Ghana between Baseline and Endline, the proportion decreased in Nigeria.

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37 Female farmers here correspond to the female cocoa farmers selected for the purposes of the endline survey during sample selection of the respondents.

38 Responses to the household survey question: “In the last 12 months, has your household experienced a shortage of food to eat?”
Figure 64: Experience of food shortage among the farmers reached in Côte d’Ivoire - across the baseline, midline and endline evaluations (household survey)\textsuperscript{39}

![Pie chart for Côte d’Ivoire](chart_diagram)

Figure 65: Experience of food shortage among the farmers reached in Ghana - across the baseline, midline and endline evaluations (household survey)\textsuperscript{40}

![Pie chart for Ghana](chart_diagram)

Figure 66: Experience of food shortage among the farmers reached in Nigeria - across the baseline, midline and endline evaluations (household survey)\textsuperscript{41}

![Pie chart for Nigeria](chart_diagram)

\textsuperscript{39} Responses to the household survey question: “In the last 12 months, has your household experienced a shortage of food to eat?”

\textsuperscript{40} Responses to the household survey question: “In the last 12 months, has your household experienced a shortage of food to eat?”

\textsuperscript{41} Responses to the household survey question: “In the last 12 months, has your household experienced a shortage of food to eat?”
More specifically in Ghana, where the highest proportion of farmers having experience food shortage at Endline had been recorded, the most important occurrences were observed in the following municipal districts:

- Bia West, with 25% of the occurrences
- Kookoo Pa, with 14% of the occurrences
- Juaboso, with 11% of the occurrences
- Assin South, with 9% of the occurrences
- Sefwi Wiawso Municipal, with 9% of the occurrences.

Additional tests were conducted to understand the occurrence of food shortage. More specifically, a statistical exercise was carried out on all three countries to test whether: “Farmers who experience food shortage are likely to score low on either cassava or plantain food GAPs”. The statistical exercise did not provide enough information to prove that hypothesis. As a result, the farmers who scored low on cassava or plantain food GAPs did not necessarily experience food shortage.

The endline evaluation results also allowed to collect information on the food shortage coping mechanisms adopted by cocoa farmers.
Figure 67 below shows that while purchasing/borrowing food on credit remains one of the top options across countries:

- Côte d’Ivoire farmers also tend to borrow food or rely on help from friends and relatives;
- Ghana and Nigeria farmers also tend to limit their meal portions.
### Figure 67: Food shortage coping mechanisms, per country, at endline (household survey)\(^{42}\)

<table>
<thead>
<tr>
<th>Purchase/borrow food on credit</th>
<th>Côte d'Ivoire n=118</th>
<th>Ghana n=197</th>
<th>Nigeria n=9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38%</td>
<td>50%</td>
<td>33%</td>
</tr>
<tr>
<td>Limit portion size at mealtimes</td>
<td>16%</td>
<td>42%</td>
<td>44%</td>
</tr>
<tr>
<td>Borrow food or rely on help from friends or relatives</td>
<td>39%</td>
<td>18%</td>
<td>22%</td>
</tr>
<tr>
<td>Reduce number of meals eaten per day</td>
<td>14%</td>
<td>29%</td>
<td>22%</td>
</tr>
<tr>
<td>Skip entire days without eating</td>
<td>3%</td>
<td>14%</td>
<td>11%</td>
</tr>
<tr>
<td>Feed on rice and maize for the whole period</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Sell household items to be able to purchase food</td>
<td>4%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Females eat less</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>18%</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

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**Figure 68, Figure 69 and**

\(^{42}\) Responses to household survey question: “How did your household cope with this shortage? (multiple responses allowed)”
Figure 70 below show that cocoa has remained among the top 3 sources of income among the cocoa farmers reached (>99%) across the baseline, midline and endline evaluations, and across all 3 countries.

The results also show that agricultural activities, beyond the production of cocoa, whether through food crops and non-food crops, have been an increasing source of income among the cocoa farmers reached. Non-agricultural activities (such as trade, wage jobs or government work) have also increasingly become part of the top 3 sources of income among the cocoa farmers reached, with:

- an increase by more than 30 percentage points between midline and endline among Côte d’Ivoire farmers;
- an increase by more than 36 percentage points between midline and endline among Ghana farmers;
- an increase by more than 40 percentage points between midline and endline among Nigeria farmers.

Figure 68: Sources of income for Côte d’Ivoire cocoa farmers family needs (household survey)\(^{43}\)

\(^{43}\) Response to household survey question: “What are the three most important (or main) sources of income for your family? Multiple responses allowed”; “non-food crops” include rubber, oil palm etc.; “non-agricultural sources” include trading, wage jobs, labor, government work, etc.
Figure 69: Sources of income for Ghana cocoa farmers family needs (household survey)
3. Impact of the CLP II program at a systemic level on women’s empowerment and gender equity in cocoa farming communities

Beyond results on the target outcome incentives and progress made towards the CLP II results’ framework target outcomes, the endline evaluation collected specific information on the extent to which CLP II contributed to women’s empowerment and gender equity.

The section below provides results on key indicators on gender equity, as well as women’s participation and empowerment in cocoa farming communities, such as:

- The participation of women in the management of cocoa farms and in generating cocoa income;
- The perception of the input from female farmers in making food crop farming decisions, cash crop farming decisions, non-farm economic activities decisions, and wage/salary employment decisions – as well as decisions on the use of the income generated from these activities.

Some of these indicators have been mirrored against some of those displayed in the “Women’s Empowerment in Agriculture Index” (USAID, IFPRI, OPHI) – for comparison purposes.

a) Women participation in cocoa farming activities

This subsection presents the gender characteristics of cocoa farmers reached in the three countries for the purposes of the endline evaluation. At Endline, the involvment of women in the cocoa sector is more important in Ghana with 33% of the cocoa farmers reached for the purposes of the survey being female. The proportion of women farmers remains low in Nigeria and Côte d’Ivoire where they respectively represent 15% and 5% of the farmers’ population.
While the actual proportion of cocoa female farmers is greater in Ghana, the perception of “young women being willing to cultivate cocoa in the country” is greater in Nigeria (82%) among all the cocoa farmers reached regardless of gender (compared to Côte d’Ivoire (70%) and Ghana (73%)), as shown on Figure 72 below.

**Figure 72: Extent to which endline respondents (both male and female) agree with the statement: “Young women in my community are willing to cultivate cocoa in the country” (household survey)**

*b) Management of cocoa farms and cocoa production income among female farmers*

As far as cocoa farm management is concerned, in the three countries, most of the cocoa farmers reached (both male and female) agree with the statement that “Most women manage their cocoa farms and take decisions on cocoa production income.” The proportion is slightly higher in Ghana (83%) and Nigeria (86%) vs. Côte d’Ivoire (66%).
It is interesting to note that, while female farmers agree more with that statement than male farmers in Côte d’Ivoire and Nigeria, male farmers agree more with that statement in Ghana than female farmers do. More specifically:

- In Côte d’Ivoire, while 80% of the female farmers reached agree or strongly agree with the statement, 64% of the male farmers do;
- In Ghana, while 66% of the female farmers reached agree or strongly agree with the statement, 82% of the male farmers do;
- In Nigeria, while 93% of the female farmers reached agree or strongly agree with the statement, 85% of the male farmers do.

Figure 74: Extent to which Côte d’Ivoire farmers reached at endline agree with the statement: “Most women manage their cocoa farms and take decisions on cocoa production income.” – by gender (household survey)
Figure 75: Extent to which Ghana farmers reached at endline agree with the statement: “Most women manage their cocoa farms and take decisions on cocoa production income.” – by gender (household survey)

c) Perception of input in making food crop farming decisions and the use of income generated

**Decision on food crop farming**
Most of the farmers reached at endline perceived having had input into most of their food crop farming decisions in the last 12 months; ranging from 58% in Ghana to 63% in Côte d'Ivoire and 68% in Nigeria.
The gender-specific results differ, however, by country. While in Côte d’Ivoire and Nigeria, more male farmers than female farmers stated having had input in most or all their food crop farming decisions, in Ghana more female than male respondents stated having had input in most or all their food crop farming decisions.

**Figure 78:** Extent to which Côte d’Ivoire farmers reached at endline perceive having: “input [...] in making decisions about food crop farming in the last 12 months” – by gender (household survey)

**Figure 79:** Extent to which Ghana farmers reached at endline perceive having: “input [...] in making decisions about food crop farming in the last 12 months” – by gender (household survey)
Figure 80: Extent to which Nigeria farmers reached at endline perceive having: “input [...] in making decisions about food crop farming in the last 12 months” – by gender (household survey)

**Decision on the Use of Income Generated from Food Crop Farming**

Like for the food crop farming activities, most of the farmers reached at endline perceived having input into most or all decisions on the use of income generated from food crop farming. That perception is, however, lower in Ghana (58%), compared to Côte d’Ivoire (63%) and Nigeria (68%).

Figure 81: Extent to which endline respondents (both male and female) perceive having: “input [...] in decisions on the use of income generated from food crop farming in the last 12 months” (household survey)

The gender-specific results on input on the use of income generated from food crop farming mirror the results on input on food crop farming activities. While in Côte d’Ivoire and Nigeria, more male farmers than female farmers stated having had input into most or all the decisions on the use of income generated from food crop farming, in Ghana more female than male respondents made that statement.
Figure 82: Extent to which Côte d’Ivoire farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from food crop farming in the last 12 months” – by gender (household survey)

Figure 83: Extent to which Ghana farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from food crop farming in the last 12 months” – by gender (household survey)

Figure 84: Extent to which Nigeria farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from food crop farming in the last 12 months” – by gender (household survey)
d) Perception of input in making cash crop farming decisions and the use of income generated

DECISION ON CASH CROP FARMING

Like for food crop farming, most of the farmers reached at endline perceived having had input into most of or all their cash crop farming decisions in the last 12 months; ranging from 56% in Ghana to 70% in Côte d’Ivoire and 77% in Nigeria.

Figure 85: Extent to which endline respondents (both male and female) perceive having: “input [...] in making decisions about cash crop farming in the last 12 months” (household survey)

Once again, when it comes to gender-specific responses, Ghana showcased a higher proportion of female farmers (68%) stating having input into most or all cash crop farming decisions compared to their male counterparts (49%). In Cote d'Ivoire and Nigeria, a lower proportion of women perceived having input into most or all decisions (55% for Cote d'Ivoire, 56% for Nigeria).

Figure 86: Extent to which Côte d’Ivoire farmers reached at endline perceive having: “input [...] in making decisions about cash crop farming in the last 12 months” – by gender (household survey)
**Figure 87:** Extent to which Ghana farmers reached at endline perceive having: “input […] in making decisions about cash crop farming in the last 12 months” – by gender (household survey)

**Figure 88:** Extent to which Nigeria farmers reached at endline perceive having: “input […] in making decisions about cash crop farming in the last 12 months” – by gender (household survey)

**Decision on the use of income generated from cash crop farming**

Like for the decisions on income generated from food crop farming, most of the farmers reached at endline perceived having input into most or all decisions on the use of income generated from cash crop farming. That perception is, however, lower in Ghana (54%), compared to Côte d’Ivoire (70%) and Nigeria (77%).

**Figure 89:** Extent to which endline respondents (both male and female) perceive having: “input […] in decisions on the use of income generated from cash crop farming in the last 12 months” (household survey)
The gender-specific results on input on the use of income generated from cash crop farming also showcase a higher proportion of male farmers in Côte d’Ivoire and Nigeria stating having a say in that income use decision – compared to the female counterparts. The opposite is, however, true in Ghana, where a higher proportion of female farmers (compared to male farmers) stated having a say in the use of income generated from cash crop farming.

Figure 90: Extent to which the Côte d’Ivoire farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from cash crop farming in the last 12 months” – by gender (household survey)

Figure 91: Extent to which the Ghana farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from cash crop farming in the last 12 months” – by gender (household survey)

Figure 92: Extent to which the Nigeria farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from cash crop farming in the last 12 months” – by gender (household survey)
e) Perception of input in making decisions on non-farm economic activities and the use of income generated

**Decision on non-farm economic activities**

When it comes to non-farm economic activities like running a small business or self-employment, most of the farmers reached at endline perceived having had input into most of the decisions on their activities in the last 12 months; ranging from 64% in Nigeria to 68% in Ghana and 70% in Côte d’Ivoire.

*Figure 93: Extent to which endline respondents (both male and female) perceive having: “input [...] in making decisions about non-farm economic activities in the last 12 months” (household survey)*

When it comes to gender-specific data, once again, the proportion of female farmers stating having input into the decisions of their non-farm economic activities is higher than for their male counterparts in Ghana.

The difference between male and female results is however smaller in Nigeria and Côte d’Ivoire for non-farm economic activities than for farming activities. Like for farming activities, we also find that, in both countries, there is a higher proportion of male farmers perceiving having input into most or all the non-farm economic activities (compared to their female counterparts).

*Figure 94: Extent to which Côte d’Ivoire farmers reached at endline perceive having: “input [...] in making decisions about non-farm economic activities in the last 12 months” – by gender (household survey)*
DECISION ON THE USE OF INCOME GENERATED FROM NON-FARM ECONOMIC ACTIVITIES

Like for the decisions on income generated from farming activities, most of the farmers reached at endline perceived having input into most or all decisions on the use of income generated from non-farm economic activities. That perception is, however, lower in Nigeria (61%), compared to Ghana (66%) and Côte d'Ivoire (69%).
The gender-specific results on input on the use of income generated from non-farm economic activities remains the same as for the farm activities: while in Ghana a higher proportion of female farmers (compared to male counterparts) stated having most or all the say in the decision on the use of income generated from non-farm economic activities, the trend is the opposite in Côte d’Ivoire and Nigeria.

In Côte d’Ivoire and Nigeria, however, the difference between the female and the male results is relatively small compared to other activities, going from one percentage point difference in Côte d’Ivoire to three percentage points in Nigeria.
f) Perception of input in making decisions on wage/salary employment and the use of income generated

**DECISION ON WAGE/SALARY EMPLOYMENT**

While most of the farmers reached at endline stated having a say into most or all the decisions linked to their wage/salary employment, their perception of their ability to do so is lower than for farming and non-farm economic activities. Comparing across countries, Côte d’Ivoire farmers had the lowest proportion of farmers in that category (50%), followed by Ghana (53%) and Nigeria (59%).

These lower numbers might be due to the perception of lower freedom in employed roles compared to self-employed activities.
Contrary to farming and non-farming self-employed activities, both Côte d’Ivoire and Ghana showed higher a proportion of female respondents having a say on their salary/employment activities, compared to their male counterparts. The opposite remains the same in Nigeria.
**Figure 103:** Extent to which Ghana farmers reached at endline perceive having: “input [...] in making decisions about wage/salary employment in the last 12 months” – by gender (household survey)

<table>
<thead>
<tr>
<th>Decision on Use of Income Generated from Wage/Salary Employment</th>
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<tbody>
<tr>
<td>At the exception of Nigeria, the proportion of farmers stating most if not all the say in the decision on the use of income from wage/salary employment is even lower than on the extent to which they perceive having input on their wage/salary activities.</td>
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</tbody>
</table>

Comparing across countries, Côte d’Ivoire farmers had the lowest proportion of farmers in that category (49%), followed by Ghana (52%) and Nigeria (64%).

**Figure 104:** Extent to which Nigeria farmers reached at endline perceive having: “input [...] in making decisions about wage/salary employment in the last 12 months” – by gender (household survey)
When it comes to gender-specific information, another interesting difference between wage/salary employment activities with the rest of the activities – is how there is a larger proportion of female respondents Côte d’Ivoire and Nigeria stating only having no or some input into the decisions linked to the revenue generated. The characteristic is the opposite, however, in Ghana.

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**Figure 105:** Extent to which endline respondents (both male and female) perceive having: “input [...] in decisions on the use of income generated from wage/salary employment in the last 12 months” (household survey)

**Figure 106:** Extent to which Côte d’Ivoire farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from wage/salary employment in the last 12 months” – by gender (household survey)
Figure 107: Extent to which Ghana farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from wage/salary employment in the last 12 months” – by gender (household survey)

Figure 108: Extent to which Nigeria farmers reached at endline perceive having: “input [...] in decisions on the use of income generated from wage/salary employment in the last 12 months” – by gender (household survey)
4. Key lessons learned

The implementation of the CLP II program over the 2014-2019 period allowed to uncover key lessons pertaining to six thematic knowledge areas:

vii) **cocoa farming**, especially related to yield, access to planting materials and soil management;
viii) **food crops**, especially related to planting materials, commercialization and revenue diversification strategies;
ix) **women empowerment**, especially related to the impact of the women empowerment and gender equity initiatives conducted during the CLP II program
x) **training**, especially in terms of modules requested by farmers, and key success factors and challenges;
xi) **innovative approaches adopted through the CLP II program**, and
xii) **access to finance** among cocoa farmers.

These lessons were most specifically drawn from interviews with MGPs as well as ecosystem stakeholders, focus groups with farmers in Ghana and Côte d’Ivoire, and WCF steering committee meetings in Abidjan and Accra.

Where relevant, the lessons learned from these qualitative data sources were put into perspective with some of the quantitative findings presented above.

It is also important to caveat that lessons learned from activities implemented during the program cannot be fully attributed to CLP II as other programs implemented during the same period focused on similar interventions.

a) Cocoa farming

**Cocoa yield**

During the qualitative interviews conducted with MGPs, seven of the 10 companies met shared estimations of their yield levels at Endline. These estimations averaged around 600 kg/ha and roughly ranged between 500kg/ha and 700 kg/ha. These estimations are in line with the cocoa yield estimations computed from the quantitative data results (as shown in Table 14).

Although these endline yield levels remain below the 1000 kg/ha CLP II program target outcome, they show an upward progression from the 400kg/ha levels observed at baseline – both from qualitative and quantitative sources.

Some of the farmers met during the endline evaluation confirmed that yield increase perception over the duration of the CLP II program. Some specifically attributed it to the implementation of the CLP II program:

“CLP phase II contributed to improving cocoa yield”. *Cocoa farmer in Côte d’Ivoire*

**Access to cocoa planting materials**

In Côte d’Ivoire, the March 2018 ban on cocoa productivity-enhancing activities and the suspension of the distribution of all improved cocoa planting material to
farmers for the 2018-2019 cocoa season made farmers rely on lower quality cocoa (“any type of cocoa”).

“If CLP wants to help farmers access inputs, there needs to be an open discussion with Conseil du Café-Cacao (CCC)”. M&E Manager in Côte d’Ivoire

Besides this recent policy change, the distribution of planting materials and quality seedlings was made easier during the CLP II program. The program allowed better control over the distribution system of quality planting materials to farmers – facilitating access and ensuring a certain level of quality. The program leveraged organized cooperatives with good links to farmers as well as MGPs, public entities, Cocoa Village Centers (CVC).

"CLP II farmers are now more involved in cooperatives which helps with dissemination and distribution. Before the implementation of the program, there were trust and transparency issues". M&E Manager in Côte d’Ivoire

“Helping farmers increase productivity is a long-term journey and it takes a lot to achieve the objectives. We can only help with putting in place the enabling environment”. Cocoa Manager in Ghana

The program also promoted the development of nurseries among or close to community farmers and managed by skilled dedicated operators – to reduce transportation costs, reduce delivery time and limit the mortality rate of the seedlings.

However, for seedlings raising activities to be sustained, involvement and a strong feeling of ownership among farmers is required. Specific capacity building/skills development activities around nursery management should be considered going forward. In addition, in Côte d’Ivoire, the lack of quality planting materials due to the suspension of the distribution of improved cocoa planting materials for the 2018-2019 season, led to challenges with the set-up and management of some nurseries.

COCOA GAPS

Although sanitary pruning is a critical GAP to improving yield, and despite the improved awareness among farmers of its importance, its adoption at large scale remains difficult. A key success factor has been the use of dedicated youth teams paid by the farmer. Some MGPs have considered the introduction of innovative approaches to GAP training with the use of slashers and mechanized pruners. Despite these efforts, the adoption, at scale, of sanitary pruning GAPs remains difficult. This is mainly due to:

• Limited access to equipment for farmers
• Limited access to skilled labor (especially in a context of shortage in the labor force in rural areas).

Pest and disease management is also a GAP critical to improving yield. Ghana ecosystem players reached for the endline survey, especially among public entities, repeatedly warned about the spreading of the Cacao Swollen Shoot Virus (CSSV) in the Ghanaian cocoa sector, which has proven to kill a significant share of the cocoa trees in the Western North region of the country. Côte d’Ivoire public sector actors reached also advocated for better pest and disease management to fight current threats – especially against CSSV – as contagion risks limit opportunities to apply promising new techniques, such as grafting.
The contrast between the (positive) self-reported household survey results and the (negative) observed farm visit results on pest management practices from the endline quantitative data calls for more in-depth analysis on this GAP, its actual vs. perceived adoption among farmers and its actual impact on coca yield.

**SOIL MANAGEMENT**

Integrated Soil Fertility Management is key to raising good seedlings and providing the required nutrients to farms. Though soil management is an increasing concern for farmers, farmers struggle to have access to fertilizers (even in Ghana where they are subsidized).

Some of the MGPs, however, supported their farmers’ access to natural fertilizers/compost (e.g., training on the usage of cocoa pods/leaves, poultry manure, etc.). One MGP supported the outsourcing of composting activities to remunerated youth teams. Another MGP helped its farmers benefit from soil health management training (including organic manure) with the support of external partners. Another MGPs trained its farmers annually on soil preparation/fertilization techniques, including compost preparation – but found that the adoption rate was relatively small.

A focus group participant, in Côte d'Ivoire, found it difficult to implement composting activities as they are lengthy and labor-intensive.

“Yes, they taught us how to compost, but it is difficult. Composting is labor-intensive. You can't do it by yourself. It's green manure that requires dry or green leaves an animal waste. It takes up to 6 months and it’s very difficult.”  *Côte d'Ivoire mixed focus group participant*

**b) Food crops farming among cocoa farmers**

Food crops as sources of revenue diversification

The CLP II program allowed for increased cocoa farmers’ resilience through the promotion of food crop production, facilitated access to improved food crops planting materials and training on food crop farming. The CLP II program indeed served as a platform for piloting innovative activities around additional livelihoods from food crop farming.

"In terms of the impact of CLP II, the food crop element is indisputable. Now, we see that all programs targeting cocoa farmers also have a food crop component. This should definitely be kept and increased in future programs".  *General Manager of Sustainable Management Services in Côte d'Ivoire*

Cocoa sustainability activities benefitted from the integration of food crops and support to Income Generating Activities (IGAs). This has increased resilience over the period of the program.

"People are growing more cassava to earn extra income and become more resilient. Cassava is mainly used by farmers’ wives to produce food (e.g. garri)".  *Development and Sustainability Manager in Nigeria*
The CLP II program indeed focused on engaging women in income-generating activities (IGAs): food crop farming was promoted as a way to mitigate the fact that cocoa farming is usually not enough to sustain the household; additional revenue could be generated for households from the sale of food crops.

THE QUANTITATIVE DATA COLLECTED CONFIRMED THE TREND TOWARDS REVENUE DIVERSIFICATION WITH ADDITIONAL FOOD CROPS FARMING ACROSS THE THREE COUNTRIES (AS SHOWN IN Figure 68, Figure 69 AND
As previously mentioned, Côte d’Ivoire focus groups participants specifically mentioned growing eggplant, taro, yam, tomato, pepper, corn, and okra – beyond cassava and plantain. Ghana focus groups participants also specifically listed okra, maize, garden vegetable, sugar cane, cocoyam, yam, rice, pepper, tomato, beans, groundnut, potatoes, pineapple, palm fruit, maize, pawpaw, pear, coconut, orange as additional food crops grown on their farms.

**FOOD CROPS PLANTING MATERIALS**
In addition to positioning food crop farming as a source of revenue diversification among cocoa farmers, the CLP II program also facilitated the sourcing and provision of improved varieties of cassava and plantain (CLP II selected focus food crops).

Four out of the ten MGPs reached through qualitative interviews, for the purposes of the endline evaluation, however, stated that some of the varieties of cassava and plantain selected for the program were not necessarily the farmers’ preference for consumption or sales.

**FOOD CROPS COMMERCIALIZATION**
**Market access is a problem for many cocoa farmers growing food crops, especially those in smaller or more remote locations.** Half of the MGPs reached during qualitative interviews for the purposes of the endline evaluation indeed specifically stated that food crop commercialization remains a challenge for farmers, limiting the associated revenue diversification potential.

"Accessing markets proved complex for some of the farmers”. *Sustainable Sourcing Business and Innovations Manager in Ghana*

"Increased productivity only works if one can sell the excess produce at a good price - hence the importance of a marketing strategy”. *Cocoa Manager in Ghana*

Market access constraints are linked to lack of transportation, poor roads, lack of communication, and poor information flows. For example, in Ghana, the Soilless Plantain Sucker Multiplication Technology that was transferred to farmers led to an increase in plantain production, but farmers had difficulty selling their excess production. In addition, the lack of storage and preservation infrastructure for plantain and cassava, leading to post-harvest losses, result in discouragingly low prices for farmers.

"Some farmers produced a lot more cassava than they could consume. I personally took it on myself to contact brewers to offtake the excess cassava. However, transportation costs were higher than the selling price and discouraged farmers". *Project manager in Ghana*

MGPs and ecosystem players alike made recommendations to conduct research on the market opportunities, linking food crops trade to community development activities (e.g., canteens), and supporting small processing (e.g., *garri*, *attiéké*).

"Every year, we were promised an expert to support market access for food crops. Unfortunately, the resources never came through for that”. *General Manager of Sustainable Management Services in Côte d’Ivoire*
c) Women empowerment within cocoa communities

The gender component of the CLP II program promoted the production of food crops and the establishment of women groups in communities to increase opportunities for revenue generation. All the MGPs reached mentioned that the CLP II program contributed to some level to increased support to female farmers on:

- cocoa and food crops farming;
- access to input and technology;
- gender-specific training on income-generating activities, farmer business school (FBS) modules, or the set-up and management of associations of female farmers (including cooperatives and Village Savings and Loan Associations, VSLAs.

"CLP II contributed to improving women’s access to input and technology". M&E Manager in Côte d’Ivoire

The perceived level of that impact varies, however, from MGP to MGP – as some of them were already implementing programs and interventions with similar objectives.

"We already had gender empowerment initiatives before the CLP II program so it is hard to say if the program itself had an effect on women’s participation in cocoa farming". Project manager in Ghana

In addition, although the CLP II program particularly helped women with the production of food crops through learning, facilitated access to technology for savings and planting materials, the impact of the CLP II program on female cocoa farming seems to remain mixed.

On the one hand, the endline quantitative data showed that most cocoa farmers reached (both male and female, and in all three countries) agreed with the statements that:

- “Young women in my community are willing to cultivate cocoa in the country,” as shown on Figure 72 below - with higher levels in Nigeria (82%), followed by Ghana (73%) and Côte d’Ivoire (70%)

- “Most women manage their cocoa farms and take decisions on cocoa production income,” as shown in Figure 73 – with higher levels in Nigeria (86%), followed by Ghana (83%) and Côte d’Ivoire (66%).

The quantitative data also showed a higher proportion of cocoa farmers being female in Ghana (33% of the farmers reached), compared to Côte d’Ivoire and Nigeria (as shown in Figure 71).

On the other hand, some of the qualitative interviews and focus groups in Ghana and Côte d’Ivoire, however, nuanced these perceptions.

In Ghana, the mixed focus group44 unearthed the fact that some women in cocoa farming communities are reluctant to engage in cocoa production preferring other activities: office jobs, mining, etc. More specifically, the focus group participants explained that young women preferred to engage in illegal small-scale mining (called “galamsey”) for quick cash rather than cocoa farming which has a 5 to 6 -year gestation period. Other participants to the same mixed

44 Made of 10 female and male cocoa farmers
focus group mentioned that young women preferred white-collar jobs – and thus prefer to remain in school to meet that professional goal. In the end, the participant of this focus group perceived that the CLP II did contribute to the increase in participation in the cocoa sector – but among older women, and not the younger generation.

In Côte d’Ivoire, while there is a consensus around women are willing to produce cocoa, there are mixed views on the extent to which they can (i) have access to inputs as well as male farmers and (ii) have a say in the use of income from cocoa farming.

When it comes to access to inputs, the female participants of the mixed focus groups all strongly disagreed with the statement that the majority of women can access inputs and technology to enhance the production of cocoa; explaining that “male farmers keep all of it for them.” It is interesting to note that, on the contrary, the participants to the women-only focus group agreed with that statement.

When it comes to deciding on the use of income from cocoa farming, participants in the mixed Côte d’Ivoire focus group explained that only female farmers that own their farms make decisions on the income generated from cocoa production. During the women-only focus group, however, 62.5% of the participants disagreed with the statement that most women take decisions on income generated from cocoa production. They explained that men generally make the decisions and that it had always been the case.

An important caveat needs to be put on focus groups statements given their limited representativity (only 8-10 participants in each focus group, focus group only in one region of Côte d’Ivoire and Ghana).

The qualitative interviews conducted also allowed to identify land acquisition as another key challenge to women empowerment in some cocoa farming communities. To address that challenge, one MGP shared an example of a program they implemented, in some of their farmers’ communities, to promote the registration of acres of land by women to help them be officially considered as farmers and benefit from opportunities specific to farmers.

d) Training provided through the CLP II program

Across all 3 countries, cocoa farmers showed interest in and highly appreciated the training conducted through the CLP II program, especially Farmer Business School (FBS) modules. The training sessions conducted in the context of the CLP II program: i) included community development components in the training (e.g., reaching out the spouses of male farmers); ii) provided opportunities for one on one coaching, and iii) provided tailored follow-up from training sessions. Farmers in Ghana and Côte d’Ivoire highly appreciated the quality of the training and its timeliness (aligned with agricultural calendar). The fact that demo-plots and "elite producers" were used to showcase best practices was highly appreciated. In some cases, follow-up training was also performed directly on the farm, which is another appreciated aspect of the support provided to farmers. Farmers did not have to change their daily routines. They went to the farm as they always would and would receive coaching based on a farm management plan after diagnostic. The training was also done by

45 Made of 8 female and male cocoa farmers
46 Made of 8 female and male cocoa farmers
observation and with hands-on practice, allowing the farmers to try their hands on what they were being taught.

"All participants rate the training sessions as excellent and of high quality. MGP agents took a whole day, on their own farms, to show them what an ideal farm should look like". **Focus group in Ghana**

Interviewees pointed out that not all training should be done in a “standard” workshop setting. Technical capacity (knowledge and skill) is better transferred through practical work on the field rather than in multiple workshops. Coaching based on farm development plans may be costly but achieves results when farmer segmentation and typology are considered. More of such on the ground training should be included in future interventions.

"Thanks to the training I received, I now remove black pods with my children. I also do sanitary pruning. We did not know good agricultural practices and we thought that the low yields were due to the soil conditions which proved to be incorrect". **Cocoa farmer in Côte d’Ivoire**

However, it should be noted that the low literacy level among farmers was one of the main constraints for the training – making some training modules (especially linked to FBS and financial literacy) not adapted to the target audience. As shown in Figure 109 below, a significant portion of the farmers reached during the endline evaluation, self-reported either not having received education, or not having completed primary level; more specifically:

- 52% in Côte d’Ivoire;
- 53% in Ghana;
- 33% in Nigeria.

On the other hand, some modules were perceived as repetitive especially when covering topics already known by farmers.

**Figure 109: Distribution of the education levels of the farmers reached during the endline evaluation (household survey)**

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**e) Innovative approaches or technologies adopted through the CLP II program**
**Digital Green** was the flagship innovative training and communication tool implemented with WCF’s support among MGPs’ cocoa farming communities. As a video extension training tool, **Digital Green** created opportunities to reach farmers through flexible training times and locations via PICO video projectors. The tool proved particularly adapted to suit female farmers’ busy schedules and provides content specifically adapted to women’s needs.

The MGPs reached particularly appreciated:

(i) the versatility of the video formats, which can showcase techniques on different crops and in different languages;

(ii) the opportunity to use the digital versions of the videos to integrate them into mobile applications;

(iii) the level of interest created among the farmers participating in these sessions

The logistics involved in deploying that tool, however, proved challenging – thus limiting the impact on the farmers. Four of the MGPs reached at Endline specifically reported challenges those challenges; more specifically:

(i) difficulties accessing the projecting equipment;

(ii) the need to sometimes to rely on cheap technology which sometimes has an impact on the speaker quality;

(iii) the difficulties to sometimes find appropriate spaces to make the projections, often reverting to hot/dark spaces.

The interviews and focus groups conducted also allowed to identify three main types of innovative approaches or technologies adopted through the CLP II program: farming innovations, innovative communication tools or innovative coaching tools (as shown in Table 2 below).

**Table 16: Overview of the types of innovative approached and technologies adopted through the CLP II program**

<table>
<thead>
<tr>
<th>Farming innovations</th>
<th>Communication tools</th>
<th>Coaching tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Grafting – as it has not been widely practiced in West Africa</td>
<td>o Use of podium trucks (like village movie theaters) - to raise awareness about key topics linked to the cocoa farming community (health, child labor, access to finance, etc.)</td>
<td>o Use of a digital tool to support farmers in the elaboration of their business plans (in pilot phase)</td>
</tr>
<tr>
<td>o Intensive/heavy pruning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Pelle Bongo cocoa harvesting tool, used to more safely and efficiently open ripe cocoa pods, and more easily remove the seeds only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o New pruning tools: Motorized pruner/mechanized slashers (being tested)</td>
<td></td>
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</tr>
</tbody>
</table>
f) Access to finance among cocoa farming communities

Access to finance has been identified as a key challenge for cocoa farming communities – from MGPs and ecosystem players alike.

On the one hand, financing is important for a business-oriented and enterprising cocoa sector. Apart from purchasing inputs, credit is generally used by farmers to support their households during the off-season, to hire or to buy land to expand their farms, to purchase inputs or to facilitate the trade of their products. On the other hand, cocoa farmers are faced with a lack of adequate credit facilities and rural banking infrastructure.

More specifically, stakeholders reached at Endline for example stated:

- lack of collaterals among farmers, preventing them from getting access to financial products and services;
- perceived high-interest rates;
- loan repayment conditions not in line with the revenue generation patterns from cocoa farming.

“Accessing credit is very complex and limits our ability to increase production. If we had loans, we could produce more food crops and sell it”. **Women focus group in Côte d’Ivoire**

"Farmers find it difficult to access loans as the number of creditors around are few and they usually charge high-interest rates”. **Cocoa farmer in Ghana**

"Replanting is expensive and requires a lot of money, sometimes you have to get a loan and the repayment conditions are too difficult. How can we be asked to pay back a loan when the farm has not started producing yet? It’s really hard”. **Cocoa farmer in Côte d’Ivoire**

As a result, two of the MGPs reached at Endline specifically reported implementing initiatives to improve access to finance within their cocoa communities, such as:

- The digitalization of payments to cocoa farmers from MGPs, through an e-wallet via a Mobile Network Operator (MNO) – although the transaction fees, especially cash-out fees, remain high for cocoa farmers;
- Initiatives to create a link between e-wallets and banks, to provide further access to banking to cocoa farmers and allow for alternate credit scorings;
- Financial literacy programs in collaboration with financial institutions to facilitate access to bank accounts and financial products after financial literacy training.

“MNOs’ charge fees to withdraw money from mobile money accounts. This makes it expensive for farmers to use technology”. **Farm Manager in Côte d’Ivoire**

Some of the meetings and focus groups conducted also confirmed that cooperatives play an important role in financing cocoa farming communities, in line with the quantitative data collected at Endline (as shown in Figure 48). Cooperatives have indeed helped increase access to credit and financial institutions’ appetite to lend to farmers. Often, in a cooperative with strong trust and loyalty, a literate and dedicated cooperative member would oversee facilitating repayments.

Challenges accessing adequate financial products and services, however, remain:
• As shown with the limited share of farmers having received cash loans at Endline in Figure 44, Figure 45 and Figure 46;
• As shown with the financial literacy needs hinted by the significant share of farmers stating not needing a cash loan in Figure 47.
VII. Discussions and conclusions

Beyond lessons learned on the implementation of the CLP II program on an agricultural level, the focus groups and interviews conducted with MGPs, farmers and other stakeholders brought to light:

- MGPs’ perceptions on the extent to which the CLP II program targets and outcome incentive model influenced their activities
- Stakeholders’ perceptions of WCF’s coordination of CLP II program
- Interesting emerging trends in Ghana’s and Côte d’Ivoire’s national cocoa sectors

1. MGPs’ perception of the CLP II Program Targets and Outcome Incentive Model

Attributing specific results to the implementation of the CLP II program can be difficult for MGPs due to similarities with their own company programs. MGPs were, however, able to share some perceptions on the impact of working towards the CLP II program targets and their individual outcome incentive targets.

"Lots of the [program] activities were already being done [at the MGP level]."
– CLP II MGP

MGPs observed a positive impact of the CLP II program’s food crop targets on their farmers’ resilience. Half of the MGPs reached (across the 3 countries) specifically explained that the incentive model either generated or further increased their activities supporting cocoa farming communities with revenue diversification initiatives through the promotion of food crops farming.

"We would not have done cassava without CLP II (…) we would not have done cassava training and handed cassava stems to farmers." – CLP II MGP

Three of the MGPs, however, regretted the fact that the food crops program component did not have a stronger focus on nutrition targets.

In addition, nine out of the 10 MGPs regretted that the Program did not provide additional assistance for access to markets.

MGPs expressed mixed perceptions on the impact of CLP II on cocoa GAP adoption. On the one hand, Three MGPs specifically expressed how participation in the CLP II program led them to increase their efforts in sanitary pruning adoption.

"We would not have done pruning by ourselves without CLP II” – CLP II MGP

On the other hand, most of the MGPs already had cocoa yield improvement efforts – including through the promotion of sanitary pruning. Moreover, while the CLP II program further helped in raising awareness on the impact on pruning practices on yield among farmers, driving adoption remains a challenge – as specifically expressed by six of the MGPs reached for the purposes of the endline evaluation.
"More farmers know that they need to prune cocoa trees, but in practice, they don’t prune their cocoa trees." – CLP II MGP

MGPs also expressed mixed perceptions on the impact of the CLP II program on women empowerment in cocoa communities. Four of the MGPs indeed specifically mentioned that they already had gender-related initiatives through the sustainability programs. Through the CLP II program, MGPs, however, benefitted from gender training and further implemented initiatives for the promotion of female farmers joining groups advocating for financial independence – such as through food crop farming.

Some MGPs also explained that the target setting exercise could have been improved for two main reasons. First, three of them specifically shared the opinion that the targets per incentive indicator should have been set based on (i) indicator levels at the launch of the program information and (ii) proven experience on how fast farmers could meet the targets set – to objectively assess the extent to which they could realistically be met by the end of the program. As a result, the targets have often been perceived as high – especially for the program cocoa yield target of 1,000 kg/ha.

Second, although the program target objectives have been agreed on after discussions with BMGF and other stakeholders at the 8th (October 2012) and 9th (May 2013) CLP Steering Committee Meetings, some of the MGP representatives met at Endline voiced that they received the information on the final targets relatively late (including due to internal company changes) – limiting the time they had to work on meeting them.

"The productivity targets set were "overambitious"." – CLP II MGP

2. Perceptions of the CLP II Program Coordination

MGPs have appreciated WCF’s ability to coordinate access to planting materials with government officials. More specifically, Côte d’Ivoire and Ghana-based MGPs highlighted the usefulness of WCF interacting with COCOBOD and Conseil du Café-Cacao (before the distribution ban) for cocoa planting materials, or with the Ministry of Food in Agriculture (MOFA) for food crops seedlings in Ghana.

MGPs also appreciated the knowledge-sharing component of the program. It is, however, important to note that many MGPs would have wanted even more knowledge shared among them, which they sometimes have perceived as limited mainly due to the industry competition among them.

MGPs, however, would have appreciated more direct logistical support from WCF during the implementation of the program. Many of them specifically shared the Digital Green example in that regard: although most of them found this innovative training program promising and appreciated by farmers – they would have preferred tighter project implementation milestones (with a quicker launch) and more support in the deployment of the activities, especially to access and disseminate adequate screening equipment (Pico video-projectors) in a timely manner and in sufficient quantities. As explained in the “Key lessons learned” section, four out of the 10 MGPs reached at Endline specifically reported either one of these challenges:

(i) difficulties accessing the projecting equipment;
(ii) the need to sometimes to rely on cheap technology which sometimes has an impact on the speaker quality;

(iii) the difficulties to sometimes find appropriate spaces to make the projections, often reverting to hot/dark spaces.

Some MGPs would also have appreciated receiving more assistance in terms of monitoring and evaluation – both in terms of frequency and methodology. One MGP, for example, noted the importance to keep track of specific yearly country and area circumstances in the monitoring exercises – such as bad harvest, prolonged drought, etc. Two others expressed a need for more consensus on the methodologies used to calculate some indicators, such as cocoa productivity, etc.

MGPs would also have appreciated more direct contacts with the gender consultant. Although MGPs appreciated attending the WCF-sponsored gender training, most of those based outside Côte d'Ivoire found it more difficult to take advantage of the follow-up activities – as some of the training materials received were in French, and no field trips were planned in Nigeria.

Beyond MGPs, Côte d'Ivoire Government officials expressed a lack of information shared on the program and its advancement – especially after the CLP I program. Many of them, for example, expressed interest in visiting CLP II cocoa farms or receiving key results from the CLP program to learn about best practices.

3. Key stakeholders’ perceptions of the evolution of the cocoa sector

Outside the CLP II context, meetings with MGPs, farmers, and other cocoa stakeholders conducted in Côte d'Ivoire and Ghana highlighted key sector challenges and opportunities affecting the evolution of the cocoa market.

a) Key insights on Ghana’s cocoa sector

In addition to national production objectives, Ghana is increasingly focusing on value addition in the cocoa sector. The country has set a national cocoa production target of 1.6 million tons by 2026. Beyond efforts to increase production and exports, the recently validated COCOBOD strategy included the promotion of local cocoa consumption – through measures to increase the domestic processing of cocoa beans.

The Cacao Swollen Shoot Virus (CSSV) remains, however, a major obstacle for the growth – and even the survival – of the Ghanaian cocoa sector. Many of the public stakeholders contacted strongly recommend the implementation of strategies to fight the virus – especially with the significant proportion of the dying trees in the Western North region of the country. Some specifically warned that a lot of the national cocoa production could be lost within the next 2 to 3 years without any additional effort to fight the virus.

Beyond CSSV, cocoa communities are faced with limited access to cocoa seedlings year-round. More specifically, stakeholders interviewed widely attributed the lack of cocoa seedlings year-round to the limited number of nurseries throughout the country able to provide modern and disease-free planting materials (including during the dry season.
Cocoa communities are also aging – limiting the labor force available to meet the national production targets. As a result, MOFA is currently implementing the “Youth in Agriculture Program” (YIAP) aiming to limit the number of youths moving away from rural areas, while increasing their interest in the agriculture sector. The COCOBOD is also promoting the structuring of the dedicated youth teams for pollination and pruning.

Despite these challenges, the evolution of the national cocoa sector has served as a blueprint for the development of other food crops in the country. The “Planting for Export and Rural Development” (PERD) Program, for example, aims to replicate the cocoa “success story” in nine other tree crop value chains, including cotton, shea, coffee, oil palm, rubber, etc.

Two main public entities continue to play an important role to meet the national objectives and address the key sector challenges: COCOBOD and MOFA. COCOBOD remains a key player when it comes to cocoa GAP training (from pruning practices to pollination program), the provision of free cocoa seedlings, and the supply of subsidized fertilizers. Beyond technical assistance specific to cocoa farming, COCOBOD has also prioritized promoting:

- The structuring of farmers into cooperatives (to facilitate their access to inputs and finance) through rallies or cooperative business schools
- Farmer Business School (FBS) training to change farmers’ mindsets and encourage them to run their farms as businesses

It is also interesting to note that, like the CLP II program, both COCOBOD and MOFA are committed to supporting revenue diversification among cocoa farmers. COCOBOD representatives, for example, explained providing food crops farming training to cocoa farmers that showed interest – including for cocoyam, cassava, pepper, maize, etc. They also provide training in processing of cassava into garri, snail rearing, etc. MOFA can also provide beekeeping training modules to cocoa farmers.

b) Key insights on Côte d’Ivoire’s cocoa sector

Like Ghana, Cote d’Ivoire is also increasing efforts to generate more value along the cocoa value chain. One of the current national objectives is to process 50% of the raw cocoa produced locally by 2020. As a result, initiatives are underway to increase the cocoa grinding capacity from 50,000 tons to 100,000 tons in San Pedro, and to set up a 50,000-ton grinding facility in Abidjan.

“There is a need to prepare minds (...) to develop the whole supply chain and not only semi-finished products (...) if we want to process 50% [of raw cocoa, we] need to consume 30% locally, and take example from Kenya with 80% local consumption of the locally produced coffee.” – Public sector representative

Despite this ambitious objective, three public stakeholders out of the four met in Côte d’Ivoire deplored the lack of promotion of local consumption (such as within school, public entities, etc.), the lack of promotion for innovative products beyond chocolate (such as cocoa wine or soap), and the limited access to finance to invest into processing equipment. All these
are hindering the country’s ability to meet its targets. When it comes to local consumption, however, representatives from Conseil du Café-Cacao (CCC) stated that some negotiations were underway with the World Bank, under the BIRD-Enclave mechanism, to support the development of the national cocoa value chain through the analysis of local consumption opportunities.

**In terms of production, Cote d’Ivoire’s objective is to reach a maximum of two million tons of raw cocoa per year focusing on productivity optimization rather than increases in farming surfaces.** More specifically, the goal for Conseil du Café-Cacao is to get to a lower number of more productive, professional, and climate-resilient farms (with yields over 1 ton per hectare). In comparison, the market is currently characterized by an important number of smallholder farmers with yield levels around 500 – 600 kg per hectare according to representatives from the Conseil du Café-Cacao.

"It’s not just about getting to the 1 ton/ha target, as it may yield to a lot of waste. It’s more about optimization.” – Conseil du Café-Cacao representative

Cocoa farmers and MGPs were clearly aware of government policy changes. However, they would favor the removal of the ban for the distribution of cocoa planting materials in the country, as it would contribute to controlling the quality of cocoa planted and harvested.

“The goal is a production of quality and in quantity allowing to get to the best prices.” – Conseil du Café-Cacao representative

It is also important to note that, like Ghana, Côte d’Ivoire cocoa sector is increasingly threatened by diseases. Public organizations are specifically advocating for better pest and disease management to fight current threats – especially Cacao Swollen Shoot Virus (CSSV) and to prevent new ones from appearing in the country (such as through transfers from other regions or because of climate change). Such contagion risks limit opportunities to apply promising new techniques, such as grafting.

When it comes to cocoa farmers, it is interesting to note the mixed views on the extent to which the cocoa farming community is aging in Côte d’Ivoire. Aging is indeed perceived to have a negative impact on GAPs adoption and on productivity (labor and cocoa yield). Although the industry view has often been that both cocoa farmers and their farms are aging, some of the public sector actors pointed to emerging studies suggesting the contrary. Some actors, however, hinted to the complexity of the debate with two hard to assess variables:

- How to define cocoa farmers (cocoa farm owner, manual workers on a farm, etc.)
- How to assess the age of a cocoa farm when farmers tend to replant progressively.

Public sector actors are also pushing for a change of mindsets within the cocoa farming community towards more business-oriented farmers – including women, youth and cooperatives. Conseil du Café-Cacao is, for example, aiming for increased professionalization of cocoa farmers (through cooperatives) – to facilitate the dissemination of cocoa GAPs and of an entrepreneurial mindset in the sector. It is also targeting women and youth in cocoa communities with revenue diversification programs through food crops farming, fish farming, beekeeping, etc.
In line with the push to structure and professionalize cocoa farmers, an increasing number of actors are trying to support cocoa farmers’ access to financial products and services. The Sustainable Trade Initiative (IDH) is setting a fund in partnership with Conseil du Café-Cacao to support cooperatives and their cocoa farmers (potentially coffee farmers as well) to facilitate access to finance and professionalization. The mechanism, based on shared subsidies, aims to support the cost associated with the development, by Financial Services Providers, of financial products and services tailored to cocoa farmers and cooperatives.

The financial institution, Advans is also offering financial products and services specifically tailored to the cocoa farmers (cropping calendar, revenue stream, input credit needs, etc.) and targeting structured cooperatives that are often already involved in the cocoa certification programs. It is interesting to note that the company showed appreciation for the involvement in the CLP I program, as it allowed them to better learn about opportunities catering to cocoa farmers in Côte d’Ivoire. Moreover, in partnership with the Non-Governmental Organization (NGO) Care International, Advans is also promoting the creation of Village Savings and Loans Associations (VSLAs) – particularly to contribute to the resilience of households and support female farmers in their revenue diversification activities.
VIII. Prioritized recommendations

Based on the analysis of the Endline evaluation results, stakeholders’ perceptions of the CLP II program, and the evolution in the overall cocoa sector in Côte d’Ivoire, Ghana, and Nigeria, WCF could consider (i) overarching recommendations drawn from the qualitative interviews conducted and (ii) recommendations specific to the endline quantitative data results.

More specifically, when it comes to overarching recommendations drawn from qualitative interviews, WCF could consider:

- three main interventions principles: holistic approaches, alignment with CocoaAction and the partnerships with entities with similar objectives;
- focusing its role on serving as a knowledge-sharing platform throughout the implementation of the CocoaAction strategy;
- prioritizing the four following themes related to cocoa farming: (i) fight against CSSV; adoption of GAPs related to (ii) soil management, (iii) climate change and (iv) agroforestry;
- prioritizing the four following themes related to farmer resilience: (i) nutrition, (ii) food crop marketing and valorization, (iii) assistance in the structuring and professionalization of farmer cooperatives, and (iv) the concept of decent work for cocoa farmers.

When it comes to the recommendations specific to the endline quantitative evaluation results, WCF could consider:

- Further working on the adoption of GAPs related to (i) sanitary pruning, (ii) pest management and (iii) weeding practices;
- Prioritizing farmers’ access to finance, and improved financial literacy.

1. Overarching recommendations

a) Recommended interventions principles

Regardless of the recommended role and themes to prioritize, the qualitative interviews show that three main principles should remain top-of-mind for WCF moving forward:

1. Favoring a holistic approach balancing strategic objective setting with concrete implementation activities—and shying away from favoring one aspect over the other;
2. Ensuring alignment with CocoaAction;
3. Striving to leverage partnerships with entities working towards the same goals rather than duplicating efforts in silos (especially when it comes to cocoa farming and farmers’ resilience).

b) Ecosystem roles to consider crystallizing or undertaking

Based on the needs expressed by sector stakeholders, WCF could focus on serving as a knowledge-sharing platform, throughout the implementation of the CocoaAction strategy.
This recommended role is in line with two key pieces of information on WCF’s future – both of which communicated during the July 2019 CLP II Steering Committee meeting in Accra, Ghana:

- WCF will continue to bring companies together to share lessons learned – but will shift from a project-based platform to a core organizational capability;
- WCF’s support to stakeholders when it comes to external evaluation for learning and knowledge management purposes will depend on companies’ approaches to their CocoaAction reporting.

Such a knowledge-sharing role could be derived into four main types of assistance:

(a) “Ready-to-disseminate” training materials: companies often have limited resources (especially in terms of time) to put together training materials. The experience with the CLP II program indeed showed how many of them reached out to third parties like ANADER, GIZ or COCOBOD to develop and/or implement training modules. To address this need, and as recommended by some MGPs, WCF could consider putting together training materials – ready to be used and disseminated with cocoa farmers.

“We need something to run with – [our] role [should be] more [about] dissemination than creation” – MGP

One MGP gave the specific example of the Certification Capacity Enhancement (CCE) initiative, supported and financed by the German Initiative on Sustainable Cocoa. The particularity of that initiative is that, in the long-term, the training materials and the responsibility to update them are passed on to qualified local training organization, with the training materials remaining public. The materials are used for practice-oriented training to farmers on GAP, as well as environmental and social standards; these modules also enable farmers to meet the requirements for the CCE certification47.

WCF, potentially in partnership with entities having developed similar tools, could:

i) Consolidate the training materials needs from member companies committed to CocoaAction;
ii) Formalize the content of the training materials – in a way that can be easily used by MGPs through their trainers and master trainers;
iii) Share the training materials in formats adapted to the training needs of the MGPs – and at periods adapted to the agricultural calendar of the MGPs’ cocoa farming communities;
iv) Frequently update the content of the materials – based on feedback received from MGPs and industry-wide standard updates.

(b) Guidance on M&E methodologies: MGPs often expressed interest in receiving assistance in the set-up of sound monitoring and evaluation mechanisms – from assistance in the identification of sound yield calculations to the set-up of appropriate monitoring mechanisms for specific farmers by cohort.

47 German Initiative on Sustainable Cocoa: CCE – Certification Capacity Enhancement
WCF could consider facilitating the sharing of such types of expertise – especially based on its own monitoring and evaluation experience, through knowledge sharing workshops or toolkits.

WCF could also serve as a platform to build consensus on methodologies to calculate key indicators and set-up best practices in terms of M&E mechanisms.

(c) **Sharing of innovative and scalable training and business models:** farmers, and private and public entities met expressed interest in learning about innovative approaches and technologies to meet their objectives. As a knowledge-sharing partner, WCF could take on the role of identifying and informing key sector stakeholders on innovative and economically viable business models or strategies to drive GAP adoption among farmers.

Some of the stakeholders met specifically suggested that WCF plays an active part in further scaling up tools such as *CocoaLink* or *Digital Green*.

(d) **Sharing of key sector-specific statistics:** there is an increasing need to develop practices and initiatives tailored to specific farmers profiles (financial products and services, training, coaching, etc.), specific soil characteristics (for adequate fertilizers, etc.), specific farming regions (food crops to promote, etc.). WCF could consider taking an active part in sourcing and disseminating such types of data – leveraging internal resources (such as data collected through programs like CLP II) and potential external resources (such as through sector partners).

These recommended ecosystem roles have been selected based on i) their potential positive impact on cocoa farmers’ livelihoods and MGPs’ activities in the cocoa sector, and ii) their perceived implementation feasibility at the WCF level.

**c) Cocoa farming intervention themes to prioritize**

The interviews and focus groups conducted highlighted the need for WCF to prioritize the four following **cocoa farming themes:** (i) fight against CSSV; adoption of GAPs related to (ii) soil management, (iii) climate change and (iv) agro-forestry.

**Fight against CSSV**
The fight against CSSV is a growing priority for a variety of public and private stakeholders – as it has a direct implication on the survival and the growth of cocoa production. Many of the Ghana public stakeholders contacted strongly recommended the implementation of increased efforts to fight the virus – especially with the significant proportion of the dying trees in the Western North region of the country. Some specifically warned that a lot of the national cocoa production could be lost within the next 2 to 3 years without any additional effort to fight the virus. As a result, it seems important for WCF to continue its contribution to the fight against the disease and the rehabilitation of the contaminated areas.

**Adoption of GAP related to soil management**
Support in soil fertility management practices is another recommendation made by stakeholders. WCF could play a role in the identification of scalable soil analysis systems and
the dissemination of specific GAPs promoting the adequate use of fertilizers tailored to the specific crop and soil needs.

**Adoption of GAP related to climate change**

There is increasing need and interest for climate-resilient agriculture, especially considering changing weather patterns, droughts, and emerging diseases. The prolonged drought periods in 2015 and 2017 may have prevented farmers from investing in pruning for fear of killing their cocoa trees. Bush fires also destroyed several cocoa farms in Côte d’Ivoire and Ghana. As a result, WCF could play a role in the identification and dissemination of information on climate-resilient best practices for cocoa farming areas.

**Adoption of GAP related to agro-forestry**

WCF could participate in the identification and dissemination of economically viable agroforestry practices to benefit the livelihood of cocoa farming communities. One ecosystem actor met in Côte d’Ivoire particularly emphasized the value that could be added in focusing on the economic viability of agro-forestry models, to more easily generate interest from farmers.

**d) Farmer resilience intervention themes to prioritize**

Beyond cocoa farming themes, the interviews and focus groups conducted highlighted the need for WCF to prioritize the four following themes related to **farmer resilience**: (i) nutrition, (ii) food crop marketing and valorization, (iii) assistance in the structuring and professionalization of farmer cooperatives, and (iv) the concept of decent work for cocoa farmers.

**Nutrition**

Beyond the promotion of selected food crops, WCF could consider promoting efforts more directly linked to improving the nutrition within cocoa farming communities, in association with the monitoring of nutrition indicators within those communities. Some MGPs and public stakeholders also recommended working towards improved access to food items with high nutritional value like soy.

**Food crop marketing and valorization**

In order to effectively support cocoa farmers with revenue diversification opportunities through food crop production, WCF should consider helping on the marketing and processing components. Many MGPs and cocoa farmers met during the Endline evaluation indeed pointed to post-harvest losses issues due to lack of access to market and valorization equipment. As a knowledge-sharing platform, WCF could facilitate the conduct of region-based marketing and commercialization strategies of key food crops, thanks to data collection and dissemination.

**Assistance in the structuring and professionalization of farmer cooperatives**

The research results have shown the increasing interest in the structuring of farmers into professionalized groupings, especially for women empowerment, easier access to finance, certification purposes, easier GAPs dissemination. WCF should, therefore, consider assisting
other ecosystem players (NGOs, public sector entities, MGPs, etc.) with the promotion and professionalization of such groupings.

**Decent Work**

In line with the resilience and access to finance themes, there seems to be an increasing interest among stakeholders to ensure cocoa farmers’ access to enough income to have a decent standard of living – an integrated approach to resilience that one of the stakeholders met defined as including nutrition, habitat, health, education, etc. and not just productivity and revenue generation. It is interesting to note that development agencies are also such as GIZ are also looking into that development theme in the agriculture sector, which offers partnership opportunities.

2. **Recommended specific to the endline evaluation results**

When it comes to the **recommendations specific to the endline quantitative evaluation results**, WCF could consider:

- Further working on the adoption of GAPs related to (i) sanitary pruning, (ii) pest management and (iii) weeding practices;
- Prioritizing farmers’ access to finance, and improved financial literacy.

a) **Adoption of GAPs**

When it comes to GAPs, four main priorities arise from the quantitative data results:

- **Adoption of sanitary pruning practices**: The endline evaluation results showed that the adoption of sanitary pruning remained mixed from one country: Ghana and Nigeria showed good performance in terms of Excellent and Good adoption of pruning practices (respectively 71% and 80%, as shown in the figure below); Côte d’Ivoire, however, showed a lower performance (44%). The adoption of sanitary pruning on a large scale remains difficult is mainly due to (i) limited access to equipment for farmers and (ii) limited access to skilled labor (especially in a context of shortage in the

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48 The International Labor Organization (ILO) defines decent work as “the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.” : https://www.ilo.org/global/topics/decent-work/lang--en/index.htm

49 For the purposes of the endline evaluation, adoption of sanitary pruning practices is observed based on the extent to which the trees observed show evidence of chupons, drooping branches and/or dead branches. Chupons are offshoots which develop on the tree and become chupons, growing vertically and forming central axes with their own branch development; these take nutrients away from the tree (though they can also be used for budding and growing new trees). Drooping branches are growing towards the ground and are shaded by the rest of the branches in the crown. Dead branches block air and sunlight from living branches. In terms of ranges, excellent adoption refers to at least 90% of sample trees are well pruned; good adoption refers to 80 – 86.99% of sample trees well pruned; minimum adoption refers to 70 – 79.99% of sample trees well pruned; no adoption refers to < 70% of sample trees well pruned.
labor force in rural areas). As a knowledge-sharing platform, WCF could research and share information on innovative and scalable strategies driving adoption of sanitary pruning at scale.

- **Adoption of pest management practices**: In all three countries, while close to 100% of farmers self-reported applying pest management practices during the household survey, the evidence of non-adoption of pest management was extremely high (Côte d’Ivoire 84%, Ghana 97%, and Nigeria 98%) during farm visits. WCF could play a role in further understanding the gap between farmers’ perception of good pest management practices and GAP practices and share some recommendations to increase the adoption of pest management GAP among farmers.

- **Adoption of weeding practices GAP**: In all three countries, during the household survey, close to 100% of farmers reported clearing weeds and other unwanted plants from around their cocoa trees (Côte d’Ivoire 84%, Ghana 97%, and Nigeria 98%). This performance, however, contrasts with the observations from the farm visits where close to 100% of the farmers reached showed no evidence of minimum adoption. Once again, WCF could play a role in further understanding the gap between farmers’ perception of good weeding practices and GAP practices.

It is also interesting to note that, when it comes to GAPs MGP’s would prefer to see a higher emphasis on driving GAP adoption – and not just the disseminating the information available.

"After years of sharing knowledge, there is a need to focus on driving adoption among farmers". – MGP

**b) Access to finance and financial literacy**

Limited access to finance among cocoa farmers – whether for input, equipment or household needs (insurance, school fees, etc.) - has a direct negative impact on cocoa farmers’ resilience. This challenge has very often been stated by the stakeholders met for the CLP II final evaluation – farmers, companies, and public entities alike.

The endline quantitative data results more specifically showed that:

- **While the proportion of cocoa farmers using bank accounts has increased between Midline and Endline in Ghana (by 17 percentage points to 53%) and Nigeria (by 10 percentage points to 75%), it remains low in Cote d’Ivoire (decreased by 15 percentage points to 20%);**

- **Regardless of the country, the share of the female farmers reached at Endline using bank accounts remains lower than their male counterparts:**

  - Nigeria remains the country with the largest share of female farmers using bank accounts at Endline (close to 62% vs. 77% for their male counterparts), followed by Ghana (close to 43% vs. 58% for their male counterparts), and Côte d’Ivoire (close to 19% vs. 20% for their male counterparts).

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50 No Adoption: less than 80% of trees without symptoms
51 Household survey questions on recall of weed occurrence and recall of weeding/weed removal frequency reported by the farmers
• The main reason farmers evoke for not taking a loan is the perceived lack of need (Côte d'Ivoire: 61%, Ghana: 50%, Nigeria: 45%) – which might be a sign of support needed in terms of financial literacy.

Based on these 3 key lessons, WCF could consider playing a role in linking farmers and players in the agricultural finance ecosystem to address those challenges, as it did with Advans during phase I of the CLP program.

As a knowledge-sharing platform, WCF could also facilitate the collection and dissemination of the information on the financial needs (in terms of products, services, and financial literacy modules) specific to the different types of cocoa farmers.