



**World Cocoa Foundation
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Acronyms

ACBG	African Cocoa Breeders' Group
ACI II	African Cocoa Initiative Phase II
AOR	Agreement Officer's Representative
CCC	<i>Conseil du Café-Cacao</i>
CNRA	<i>Centre National de Recherche Agronomique</i>
COP	Chief of Party
CRIG	Cocoa Research Institute of Ghana
CRIN	Cocoa Research Institute of Nigeria
FMARD	Federal Ministry of Agriculture and Rural Development
FTF	Feed the Future
FTFMS	Feed the Future Monitoring System
GDA	Global Development Alliance
GDI	Global Development Incubator
GIZ	German International Development Cooperation
ICRAF	World Agroforestry Centre
IITA	International Institute of Tropical Agriculture
IRAD	<i>Institut de Recherche Agronomique pour le Développement</i>
ISF	Initiative for Smallholder Finance
MINADER	Ministry of Agriculture and Rural Development
PMP	Performance Management Plan
R&R	Rehabilitation and renovation
SNV	Netherlands International Development Organization
ToT	Training of Trainers
TWC	Technical Working Committee
USAID	United States Agency for International Development
USAID/BFS	United States Agency for International Development/Bureau for Food Security
VSLA	Village Savings and Loans Association
WCF	World Cocoa Foundation
WCF/ACI	World Cocoa Foundation African Cocoa Initiative, the first phase of ACI II

Glossary

African Cocoa Breeders' Group (ACBG)

The African Cocoa Breeders Working Group (ACBWG) is made up of breeders from Cameroon, Côte d'Ivoire, Ghana, Nigeria and Togo with representation from the International Institute of Tropical Agriculture (IITA). The ACBWG supports regional collaboration on breeding, given the wide disparities in capacities across the sub-region and the need for improved varieties to meet national rehabilitation goals.

African Cocoa Initiative Phase II (ACI II)

In September 2016, USAID approved a global development alliance program, entitled the African Cocoa Initiative Phase II (ACI II) project, which is purposefully designed to be a direct support to the CocoaAction sustainability platform. ACI II focuses on a limited number of high-value interventions to: 1) increase cocoa production using quality and affordable planting materials and 2) facilitate access to financial services and products in support of the total farm productivity and resilient agri-food systems among smallholder cocoa farmers in West Africa.

Better Than Cash Alliance (BTCA)

A UN-based global partnership of governments, companies, and international organizations that accelerates the transition from cash to digital payments to drive inclusive growth. The Alliance has over 60 members across 30 emerging markets, including companies and business organizations such as Unilever, H&M, Gap Inc and Grupo Bimbo.

Biodiversity International (BI)

A research institute of the Consultative Group for International Agricultural Research (CGIAR) Consortium whose focus is on maintaining tree biodiversity. BI facilitates the development of a standard method for measuring and recording plant performance to support the PSP's crop ontology work in Objective 1.

Centre National de Recherche Agronomique (CNRA)

Côte d'Ivoire's national research institute for agriculture including cocoa. Plays a strong role in cocoa productivity research & breeding. Active in ACBWG. Involved as a national institute in the supply of improved planting material and the assessment of heat/drought tolerant planting material.

Cultivating New Frontiers in Agriculture (CNFA)

A non-profit international development organization based in Washington, DC. CNFA's mission is to increase and sustain rural incomes in less developed areas of the world by assisting farmers and rural entrepreneurs. CNFA works in Eastern Europe, the Caucasus, South and Central Asia, Africa, the Near and Middle East and the Caribbean to improve agricultural economies by strengthening market linkages; building input supply networks; promoting enterprise growth and development; enabling agribusiness financing and improving processing and marketing. CNFA receives funding from a variety of donors, including USAID, USDA, the Millennium Challenge Corporation, and the Rockefeller Foundation

CocoaAction (CA)

CocoaAction was launched in 2014 as a voluntary industry-wide strategy that focuses on world's leading cocoa and chocolate companies' sustainability priorities with those of the governments of Côte d'Ivoire and Ghana. CA common action and coordinated activities and investments with other key stakeholders aim to improve learning and knowledge management across the sector.

Cocoa Research Institute of Ghana (CRIG)

CRIG is the national cocoa research institute of Ghana and host organization for current ACI flavor and sensory laboratory. CRIG has a strong role in cocoa productivity research & breeding; is an active member of the African Cocoa Breeders' Group (ACBG); and is involved in the supply of improved planting material to WCF member companies.

Cocoa Research Institute of Nigeria (CRIN)

CRIN is the national cocoa research institute of Nigerian. CRIN plays a key role in cocoa productivity research & breeding and very active in the ACBWG. CRIN will host the third ACI II flavor and sensory laboratory in 2020.

Conseil du Café-Cacao (CCC)

CCC is the National regulatory authority for the cocoa sector in the Côte d'Ivoire. CCC is responsible for the coordination and policy making for cocoa sector in Côte d'Ivoire, including season price setting, farmer training, rural services, and overall sector performance. CCC will work with ACI II as the government representative and partner.

Ghana Cocoa Board (COCOBOD)

COCOBOD is the National regulatory authority for the cocoa sector in Ghana. COCOBOD is responsible for purchasing all cocoa destined for export. COCOBOD represents the Government of Ghana's interests under ACI II.

Institut de Recherche Agronomique pour le Développement (IRAD)

IRAD is the National research institute for Agriculture in Cameroon including cocoa. IRAD support ACI productivity research & breeding strategies. IRAD is a key member of ACBG and facilitate the dissemination and delivery of improved cocoa planting material to end-users in Cameroon. IRAD will host the fourth ACI II flavor and sensory laboratory in 2020.

Village Savings and Loans Associations (VSLA)

A VSLA is a type of self-managed microfinance that provide communities with access to savings, credit and other capacity building services. Association members are self-selected and self-governed. They meet on a weekly basis to deposit their savings.

Executive Summary

This report contains details of the activities undertaken and progress towards the achievement of ACI II project results from October 2019 to September 2020.

In September 2016, USAID approved a Global Development Alliance program, entitled the African Cocoa Initiative Phase II (ACI II) project implemented by the World Cocoa Foundation (WCF), designed to be a direct support to the CocoaAction sustainability platform. In June 2019, USAID amended the agreement for ACI II to include new activities on Village Savings and Loans (VSLA) in Côte d'Ivoire and extend the end date of the program from September 30, 2021 to May 31, 2022. ACI II focuses on interventions to: 1) increase cocoa production using quality and affordable planting materials; 2) facilitate access to financial services; 3) extend access to VSLAs in Côte d'Ivoire; and 4) improve flavor quality of cocoa. All these actions support total farm productivity and resilient agri-food systems among smallholder cocoa farmers in West Africa.

Under Objective 1, “Increased Production and Use of Quality Cocoa Planting Material”, the Institute of Agricultural Research for Development (IRAD) in Cameroon transferred fruit and permanent shade tree seedlings from the nursery to farmers’ fields for the pilot to introduce clonal planting material to farmers. In Côte d'Ivoire, *Centre National de Recherche Agronomique* (CNRA) has grafted 2,188 potential heat and drought tolerant clones that have been planted in a 2.3 hectare (ha) centralized budwood garden. CNRA also reported second year results on the impact of irrigation on cocoa seed pod production, confirming previous year results, which showed significant differences in the number of pods per tree and on bean quality between irrigated and non-irrigated plots. In Ghana, the Cocoa Research Institute of Ghana (CRIG)’s initial data analysis to identify heat/drought tolerance planting material showed promising Leaf Chlorophyll Content (LCC) and Leaf Fluorescence Content (LFC) levels, both indications of drought tolerance, for nine of the 20 hybrids trialed with one female parent showing promise for rapid stem growth in addition to favorable LFC and LCC characteristics. These results will be confirmed in FY2021.

Towards Objective 2, “Increased Provision of Financial Services in support of the Cocoa Value Chain”, WCF, working with the Better Than Cash Alliance (BTCA) conducted a “cost of cash” study, which showed a USD 21.5 million per annum loss to actors in the cocoa value chain in Ghana because of the reliance on cash transactions. The report makes the case for digitizing payments in cocoa supply chains in Ghana, which resulted in almost USD 32,000 in payments for 1,779 (531 female) farmers across 107 cocoa-growing communities.

For Objective 3, “Village Savings and Loans Associations in Côte d'Ivoire”, 258 new VSLAs were established across the cocoa-producing regions of the country. These newly created VSLAs consist of 6,709 members (including 6,187 females). Together, these VSLAs mobilized USD 254,764 in savings of which USD 94,514 was granted as credit to members. Also, 58 mature VSLAs were linked to formal financial institutions in FY2020.

Under Objective 4, “Improved flavor quality of cocoa”, Ghana Cocoa Board (COCOBOD) completed the competitive bidding process for the construction of a new flavor laboratory and training center at CRIG. The new facility, funded by TCHO and parent company Ezaki-Glico, will host larger scale equipment provided under ACI II, which will allow the CRIG team to train more farmers and other stakeholders in the cocoa value chain on flavor quality. Representatives of Cameroon’s IRAD; Côte d'Ivoire’s CNRA, and Nigeria’s CRIN flavor laboratory teams participated in the first coordinated regional sensory analysis session. Training for CNRA’s sensory panel is on schedule, while initial training for the IRAD team started remotely due to COVID-19 related travel restrictions. Renovation works are ongoing in both Cameroon and Nigeria for the lab spaces in preparation for the return to in-person trainings and lab operations.

Finally, we discuss the effect of COVID-19 on program activity implementation and the mitigation measures employed to lessen the impact. In a nutshell, almost all activities (meetings, trainings, workshops, working groups) are now conducted remotely. Activities that require in-person interactions have been postponed indefinitely.

Table of Indicators

FTF Indicator #	Indicator	Life of Project: FY2017-FY2021			Year 4 - FY2020		
		Target	Achieved	% Achieved	Target	Achieved	% Achieved
EG.3.2-24	Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance	100,000	209,331	209%	25,000	127,205	509 ¹ %
EG.3.2-25	Number of hectares under improved technologies or management practices with USG assistance	200,000	191,613	96%	50,000	158,932	318%
EG.3.2-27	Value of agriculture-related financing accessed as a result of USG assistance	\$500,000	0	0%	\$150,000	0 ²	0%
EG.3-10-11-12	Yield of targeted agricultural commodities among program participants with USG assistance	700 kg/ha	602 kg/ha	61%	600	N/A ³	N/A
EG.3-2	Number of individuals participating in USG food security programs	150,000	193,842	120%	45,000	133,914	298%
EG.4.2-7	Number of individuals participating in USG-assisted group-based savings, micro-finance, or lending	20,925	6,709	32%	10,925	6,709	61%
GNDR-2	Percentage of female participants in USG-assisted programs designed to increase access to productive economic resources ⁴	90%	92%	102%	90%	92%	102%

¹ The over-achievement for these indicators (EG. E.2-24, EG.3.2-25, and EG.3-2) in FY2020 is attributable to data from the implementation of CocoaAction, mainly for training on, and the application of, good agricultural practices, through which industry commits resources for the 1:1 minimum match for the ACI II GDA. The results that account for this over-achievement are one-off for this year and will not be repeated in subsequent reporting years.

² None of the financing facilitated through ACI II activities was from formal financial institutions. All financing (USD 94,534 worth of credit) was from internal funds to savings group members. Although linkages of savings groups to formal financial institutions is well underway, the process had not matured enough for formal lending before COVID-19-related restrictions came into force. These restrictions forced savings group members to rely on internally generated funds for credit.

³ Due to COVID-19 restrictions, ACI II could not collect first-hand information from a sample of farmers for this indicator on yield to verify the available secondary CocoaAction data. As such the data is not deemed valid for FTF reporting for FY2020.

⁴ Data for this indicator is for the implementation of the VSLA activity in Côte d'Ivoire, funded under the Women's Global Development and Prosperity Initiative (W-GDP).

Introduction

The United States Agency for International Development (USAID) issued Cooperative Agreement AID-OAA-A-16-00052 for the African Cocoa Initiative (ACI) Phase II through its Global Development Alliance (GDA) mechanism, in concert with relevant government agencies in participating countries. The \$12,000,000 program (\$5M from USAID and \$7M in cash and in-kind leverage from WCF members) was to run from October 2016 to September 2021.

In June 2019, USAID approved a modification to the GDA for ACI II to include a new activity on VSLA Schemes. This VSLA activity is in line with USAID’s Private Sector Engagement Policy and the Women’s Global Development and Prosperity Initiative (W-GDP). The modification added \$1,039,000 to USAID’s funding for ACI II and extended the period of performance by eight (8) months from September 29, 2021 to May 31, 2022.

Focus countries are Cameroon, Côte d’Ivoire, Ghana, and Nigeria, with the bulk of the effort going to Côte d’Ivoire and Ghana as the focus countries of the CocoaAction strategy. ACI II follows the successful implementation of the first phase of the WCF African Cocoa Initiative (WCF/ACI) project, from 2011 to 2016. The program is aligned with the WCF vision of sustainable and thriving cocoa sector, where farmers prosper, communities are empowered, and the planet is healthy. WCF is achieving this vision through a stronger “systems approach” that integrates the various individual actions and actors into a holistic framework to drive the change needed to reach our shared vision.

Initially, the program was strongly aligned with WCF’s CocoaAction framework. CocoaAction is a voluntary industry-wide strategy that focused on the world’s leading cocoa and chocolate companies’ sustainability priorities with those of the governments of Côte d’Ivoire and Ghana, and other key stakeholders for common action, coordinated activities and investments, and improved learning and knowledge management across the sector.

ACI II’s goal is to sustainably increase cocoa productivity among smallholder farmers in West Africa. ACI II objectives are: 1) Increasing production and the use of quality cocoa planting material; 2) Increasing the provision of financial services in support of the cocoa value chain; 3) Improving access to Village Savings and Loans Associations in Côte d’Ivoire; and 4) Improving the flavor quality of cocoa. ACI II is also documenting the relationship between cocoa production and food and nutrition security at the cocoa-based household level.

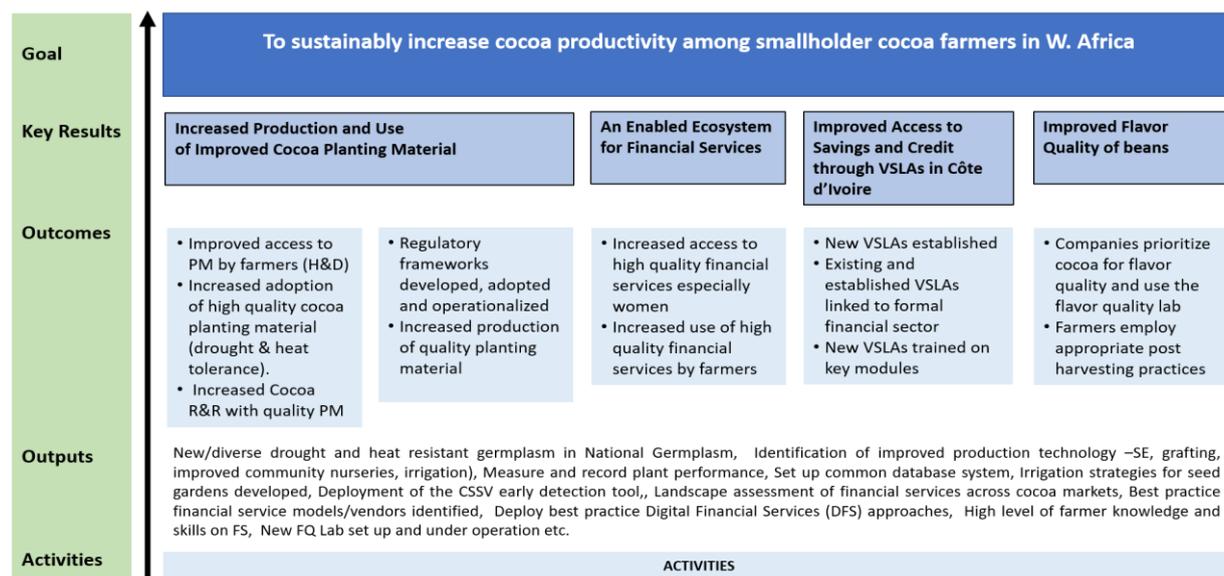


Figure 1: Updated ACI II Results Framework

Objective 1 – Increased Production and Use of Improved Cocoa Planting Material

Over the years, cocoa breeding programs internationally and in West Africa have produced new clones and hybrids with varying levels of tolerance to the most significant biotic and abiotic stressors of the crop. These breeding efforts have focused on increasing the productivity of cocoa alongside tolerance to pathogens and abiotic stressors. Despite the progress made in breeding, many improved varieties have yet to be approved by for distribution to farmers, contributing partially to persistently low and unpredictable yields of cocoa in the region.

Other factors that account for low yields include the limited application of good agricultural practices (GAPs) by farmers, the aging tree stock, recurrent outbreaks of pests and diseases and the use of local (farmer-selected) varieties at the expense of improved planting materials, either genuine hybrid material or clonal plants.

Over the past decade, drought and heat stress have become the most important limitations to the successful establishment and productivity of cocoa farms in West Africa, especially in Ghana. The protracted dry season during the 2015/2016 cocoa season is a prime example of this phenomenon, which is largely attributable to a rapidly changing climate. These effects are exacerbated by soils of very low water holding capacity arising from farming practices that are incompatible with cocoa production.

Previous investigations into the existence of heat and drought tolerant cocoa varieties have identified cocoa genetic groups that contribute to high seedling survival in the field, early fruiting and high, stable yields of mature trees under relatively high soil water stress. However, it remains unclear whether hybrids currently under development will exhibit the same potential when cultivated in benchmark sites of drought prevalence in the cocoa belt.

Objective 1 translates the gains and progress made in breeding for improved planting materials to farmers. This is achieved through identification of heat and drought tolerant varieties as well as increased production and distribution of improved planting material (in the form of hybrid seed pods, hybrid seedlings and clones) to smallholder farmers.

Outcome 1.1 Increased Production of Quality Planting Material Using New Genetic Material and Technologies

To address the challenge of heat and drought stress, ACI II supports Côte d'Ivoire and Ghana to identify tolerant varieties, which farmers can use in areas with high frequency of drought and heat stress during prolonged dry spells. These activities, implemented by CRIG in Ghana and CNRA in Côte d'Ivoire, are using multilocational trials with the best-performing clones and hybrids. The anticipated outcome is a screening protocol for heat and drought tolerant cocoa planting material that will be used in screening national and international cocoa collections and for the identification of promising new and safe material for potential transfer to, and incorporation into, the national breeding programs of ACI II implementing countries.

Beginning in September 2018, ACI II has supported CRIG to conduct research to select cocoa varieties with high levels of tolerance to soil water (a proxy for drought) and heat stress. The aim is to:

- Ascertain the relative growth rates, survival, precocity, and yield of new and existing cocoa hybrids during the first 36 months after planting in areas with high frequency of drought stress.
- Determine the level of genotype x environment interaction of selected cocoa hybrids tested at six benchmark sites for growth and yield traits.
- Validate physiological traits known to contribute to plant survival and yield in the field under conditions of soil water stress and high ambient temperatures.

Complementary to this research, WCF in collaboration with Bioversity International, is using a public-private-civil society partnership to adapt the citizen science “tricot” approach (where farmers select the best performing planting material based on performance on their farms) to cocoa variety testing. In this project WCF and Bioversity are working with women and men farmers to test cocoa hybrids and clones for climate adaptation in a gradient of agroecological zones in Ghana. Anticipated outcomes include:

- New knowledge about how to implement farmer citizen science trials focused on cocoa in Ghana, including validated protocols and concrete experiences, with relevance to other countries and regions and other perennial species, and which may be scaled.
- Increased capacity of national partners to design, execute and analyze citizen science trials using the tricot approach, including the climatic analysis of trial data.
- New knowledge about the influence of climate-induced stress variables on the establishment and early growth of cocoa seedlings under farmer conditions and genotype-specific responses, enabling the identification of adapted improved planting material.
- Establishment of a network of farmer citizen scientists who may contribute to cocoa observational and experimental research in the long-term, including the long-term monitoring of the hybrids and clones present on their farms.
- Increased capacity of women and youth to manage nurseries and budwood gardens, to produce and distribute climatically adapted, stress-tolerant hybrids and clones, ensuring constant varietal renewal depending on the emerging needs of farmers and the findings on climate adaptation from on-farm testing.
- Sharing of this knowledge and research results in the uptake through stakeholder platforms established at the farmer community and national levels.

Over the last three seasons, droughts lasted three to six consecutive months in the main production areas in Côte d’Ivoire affecting yields, bean quality and the establishment of new cocoa farms. Consequently, CNRA and the government of Côte d’Ivoire prioritized heat and drought tolerance cocoa varieties. From 2010 to 2014, CNRA established pilot plots to evaluate the behavior of about 20 hybrids in drought conditions. WCF, under ACI II, is building on this previous work to confirm the heat/drought tolerance of these hybrids planted in different agroecological zones. In the long term, by establishing budwood gardens to host the identified heat/drought tolerant material, the project aims to improve cocoa farmers’ access to heat and drought tolerant hybrids and clones which have good levels of productivity. ACI II anticipates that the first generation of heat/drought tolerant planting materials will be made available to farmers when the ban on productivity enhancing interventions is lifted. This work complements an ongoing CFC/ICCO/Bioversity project to define the parameters for heat and drought tolerance for cocoa by collecting and analyzing data from old cocoa farms in different marginal areas of the country.

In Cameroon, ACI II continued to support IRAD in the work of introducing clonal material to farmers. This involves the transfer of previously developed clonal varieties under WCF/ACI to farmers’ fields and the training of the beneficiary farmers in the appropriate methods and technique for the handling, propagation, production, and maintenance of clonal planting material. This activity is also equipping beneficiary farmers and field technicians with the tools and skills to successfully produce, distribute, and use clonal planting material in farm conditions. Activities are designed to take advantage of existing capacity that WCF member company sustainability programs have built at the farm level over the years.

In FY2019, WCF assessed planting material resources and production potential in Nigeria. The study was intended to provide empirical input for decision making on extending the supply of improved planting material in the country. Unfortunately, efforts to capitalize on the findings of the study to extend the supply of improved planting material in Nigeria have stalled due to inadequate availability of in-country counterpart funding.

Key Achievements and Milestones

Development of heat and drought tolerant planting material in Ghana

The second set of data collected in FY2020, for this activity confirmed the first set of preliminary results, reported in November 2019, which showed clear differences in stem diameter, and by extension early establishment, between the various hybrids. The FY2020 data also confirmed initial leaf chlorophyll content (LCC) and leaf fluorescence content (LFC) measurements show promising results for nine of the 28 hybrids in the trial. The FY2020 results go further to show that three of the hybrids have exceptional stem diameter, LCC and LFC characteristics, which if confirmed in FY2021, would lead to a successful recommendation of the three hybrids for early establishment in marginal areas. These encouraging results notwithstanding, there were significant losses of first year plantings (requiring replanting) on the trial plots during the dry season, bringing to the fore the importance of this research.

Using the “citizen science” approach in Ghana to test clones and hybrids for climate adaptation

Field activity implementation started in late 2019 following disbursement of the first batch of funding for the project and post-doctoral fellow has arrived in Ghana to coordinate field data collection. ACI II supported the supervision and coordination of field activity implementation in addition to convening review and knowledge sharing meetings.

Field implementing partners have completed selection of farmers and implementation sites in all 20 target communities, established nurseries for both cocoa and food crops. Given the choice between eggplant, okra and pepper, farmers overwhelmingly selected pepper for the tricot trial. Accordingly, seedlings for three varieties of pepper were distributed to the farmers in June 2020. These seedlings have started yielding.

For temporary shade, 222 plantain suckers were distributed for each of 300 farmers involved in the trial. This was followed by the distribution of 16,000 cocoa seedlings to 270 farmers. Data collection on both cocoa and pepper seedlings are ongoing and will be reported in April 2021.

Develop and distribute heat and drought tolerant planting materials in Côte d’Ivoire

By the end of September 2020, CNRA had established six plots totaling 2.3 hectares (more than the planned 2 ha) of budwood gardens, hosting 2,188 grafted plants at their station in Soubré. With 844 more to be planted in 2021, the total number of plants in the budwood garden will be 3,032 by September 2021. Table 1 shows the status of plantings in the budwood garden at Soubré.

Table 1. Status of establishment of budwood garden for potential heat/drought tolerant clones

Plot	Size (ha)	Number of Plants	Balance of plants for 2021
1	0.32	405	13
2	0.32	406	12
3	0.32	389	29
4	0.32	375	43
5	0.51	474	206
6	0.51	139	541
Total	14	2188	844

Observation of the impact of irrigation on pod production in seed gardens

Increasingly challenging environmental factors and prolonged dry spells have increased the need for irrigation in the production of cocoa as more areas of intense production turn marginal. This is more important in seed gardens that supply planting material in the form of hybrid seed pods from which farmers

raise seedlings to establish new farms or to replace old or diseased trees. However, due to significant cost involved in the installation and maintenance of irrigation infrastructure, a clear business case must be made to justify the costs. ACI II is supporting CNRA to document empirical impact of irrigation on seed pod production in seed gardens at CNRA stations at Divo and Soubré to make the business case for irrigation. The irrigation system is established in two of the seed gardens established during WCF/ACI between 2014 and 2016.

This activity compares irrigated and non-irrigated seed gardens of the same age growing under similar conditions over a 36-month (2018 to 2021) period to document the impact of irrigation on the quantity and quality of seed pod produced in these seed gardens. Parameters under consideration include the number of pods formed after pollination, number of matured pods and the quality of beans in matured pods.

At the Divo station, the comparison is between 300 irrigated trees and 300 non-irrigated trees all planted in 2014 and between 150 irrigated trees and 150 non-irrigated trees planted in 1972. At Soubré, the comparison is between 448 irrigated trees and 504 non-irrigated trees planted in 2014 on one hand, and 480 irrigated trees and 520 non-irrigated trees planted in 2019.

In October 2020, CNRA repeated the pod harvests from the plots under observation. These second set of results from the observation, as presented in Tables 2 and 3, continue to show clear differences in all bean quality parameters (Number of matured pods harvested per tree, Pod size, Number of normal beans per pod and Average bean weight) for irrigated and non-irrigated plots.

Table 2. Results of observation of the impact of irrigation after first harvest at Divo

Plot Type	Plot 1				Plot 2			
	Number of Pods	Pod Size (mm ³)	Normal Beans	Bean weight (g)	Number of Pods	Pod Size (mm ³)	Normal Beans	Bean weight (g)
Irrigated	500	629	43	1.25	500	558	47	1.42
Non-irrigated	500	562	41	1.14	500	510	45	1.34

Table 3. Results of observation of the impact of irrigation after first harvest at Soubré

Plot Type	Plot 1				Plot 2			
	Number of Pods	Pod Size (mm ³)	Normal Beans	Bean weight (g)	Number of Pods	Pod Size (mm ³)	Normal Beans	Bean weight (g)
Irrigated	500	824	40	1.66	500	556	41	1.56
Non-irrigated	500	433	26	0.40	500	361	33	1.19

The results obtained (Tables 2 and 3) illustrate the positive impact of irrigation on the number of pods per tree, the average pod size, number of normal beans and bean weight compared to non-irrigated plots. These results will confirm the preliminary data from 2020 and will be further confirmed with the final set of data in 2021. Interestingly, the results demonstrate the need for the application of good agricultural practices when handling clones. This is clear from Plot 1 (establish between 2014 and 2016 with genetically verified material under WCF/ACI) in Soubré, where pods and beans have the most favorable characteristics when the trees are irrigated but fare the worst when the trees are not irrigated.

Introducing clonal planting materials to farmers in Cameroon

IRAD completed the full range of activities for clonal propagation of improved cocoa varieties and subsequent distribution to farmers in FY2020, having completed the first steps in early 2019. The subsequent steps, involving the production and propagation of shade trees, selection and testing of sites and final introduction of the cocoa clonal varieties to the selected farmers were concluded by mid-2020. As of September 2020, 32 pilot plots had been well established and maintained in the two target communities. Each established plot includes hybrid seedlings and permanent shade and fruit trees and grafted/budded plants established for on-farm budwood gardens. Table 5 provides a summary of the status of activities as of September 30, 2020.

Table 5. Summary of activities for introduction of cocoa clonal planting material to farmers in Cameroon

Component	Activity	Specific Tasks	Major Achievements
Capacity building for introduction of clonal planting material to farmers	1. Development of training manuals	Validation and distribution of training manuals through Training of Trainers (ToT) and sessions with farmer groups	The first draft of the clonal planting and management, and the regeneration of old cocoa plantations have been finalized.
	2. Training of farmer groups	Training sessions with members of the two Cooperatives	Trainings delivered during field visits.
	3. Training of master grafters	ToT Sessions	IRAD technical staff trained on cocoa propagation techniques and the master grafters selected from cooperatives' membership.
Establishment of budwood gardens for introducing clonal material to farmers	1. Multiply IRAD best clones to create budwood garden	Budding/Grafting	A budwood garden established and maintained at Nkolbisson, containing 20 well-known IRAD cocoa clones.
	2. Establish central budwood garden for clonal material at IRAD, Nkolbisson and one each in the target communities.	Clonal Production / Land Preparation / Establishment of temporary shade (plantain) / Establishment of cocoa clones	Two on-farm budwood gardens have been established in beneficiary communities.
Support farmers for the introduction of clonal planting material	1. Select farmer groups/farmers for participation in clonal trials	Meetings with farmers groups and Barry Callebaut	35 more farmers selected within two farmers organizations of Barry Callebaut's network: MBAGASSUD (10) and Ets NTSAMA (25) .
	2. Establishment of permanent shade in on-farm clonal plots using recommended tree species	Production of clonal material	10,000 cocoa plants already budded and 17,323 of 25,000 rootstocks successfully budded with a success rate of 73% after 21 days.
		Planting of temporal shade trees in the 35 selected on-farm clonal plots	7,000 plantain seedlings acquired. 416 fruit tree grafted plants produced, distributed to farmers, and planted within the clonal plots on-farm.
		Planting of clonal material	32 on-farm plots of 0.25 hectares each successfully established and maintained in both pilot areas.
	3. Establish farms for selected farmers using fruit tree clonal material	Production of rootstock/grafting	1,000 soursop seedlings under production. 1,000 , of 1,500 avocado rootstocks produced, successfully grafted. 2,500 citrus rootstocks produced and being grafted.

Outcome 1.2 Increased adoption by companies of technologies to produce certified planting material

In Côte d'Ivoire, the infected area of cocoa swollen shoot virus (CSSV) and the cocoa swollen shoot virus disease (CSSVD) was estimated at 100,000 ha in 2017. In 2019, Le Conseil du Café Cacao (le Conseil) estimated that the disease has progressed by 8% for a total of 125,000 ha of CSSV infected farms. Between 2014 and 2017 le Conseil was able to cut 21,000 ha of CSSV infected farms. In 2018 le Conseil cut about 32,000 ha of CSSV infected farms. Le Conseil is targeting 35,000 ha by June 2020 to reach 88,000 ha from the 100,000-ha planned in 2017. Le Conseil expected to complete the cutting-out campaign by May 2021 and to replant when the farmer and farm surveys are completed. However, the status of implementation is not clear.

In Ghana, second country-wide surveys (2017) by the Cocoa Health and Extension Division (CHED) of COCOBOD indicates that (23%) of Ghana cocoa tree stock is infected with CSSV. In February 2020, CHED estimated that they had successfully cut out 8,000 hectares of infected farms and were on course to cut out 160,000 hectares over five years.

WCF industry members have collectively agreed to proactively tackle CSSV and CSSVD within the cocoa supply chains in Ghana and Côte d'Ivoire in alignment with the Abidjan Declaration and inclusive of their contributions to the national cutting out efforts in the two countries. Under ACI II, WCF developed a CSSVD and rehabilitation program as an integrated system approach, the New WCF Partnership for Cocoa Farm Rehabilitation, that combines research, best practices, and technologies to manage CSSVD. It aims to provide effective solutions to manage the virus and its mealybug vectors: this includes supporting the use of high yielding and disease tolerant and heat and drought tolerant varieties developed under ACI II to rehabilitate CSSV infected farms and to identify suitable cropping systems that provide suitable income to farmers post cutting out and reduce the spread of the virus including IPM technologies to manage mealybugs.

Developing technologies to manage the Cocoa Swollen Shoot Virus Disease (CSSVD) and to rehabilitate CSSVD infected farms

ACI II supports the New WCF Partnership for Cocoa Farm Rehabilitation, comprised of three components, namely: 1) research-based solutions; 2) suitable cropping systems; and 3) Integrated Pest Management (IPM) technologies to manage mealybugs and KPIs, by convening partner dialogue and exchange events.

The research-based solutions are focusing on disease detection, disease control and management and the support to breeding for high yielding and disease tolerant varieties. The suitable cropping systems aim to implement cropping systems that provide additional income to cocoa farmers and reduce the spread of the virus and the mealybug vector. The IPM technologies to manage mealybugs will focus on barrier cropping, biological control agents and enhance the capacity of farmers to use current insecticides better and reduce the use of POP and HHP in the cocoa supply.

Key Achievements and Milestones

Distribution of improved hybrid seed pods and seedlings

In Ghana, WCF supported the distribution of 272,125 seed pods from SPD stations to 10 companies in-country. These pods raised more than 3.3 million seedlings. These seedlings helped 22,215 farmers in at least 424 communities to plant 2,947 hectares of farmland. The distribution of improved planting material and the associated training in nursery management, combined with other good agricultural practices help farmers to replace their ageing tree stock with high yielding varieties.

Memorandum of Understanding to Establish a CSSVD Control Laboratory

To be successful, CSSV and CSSVD control requires collaboration at all levels especially between Côte d'Ivoire and Ghana, the two leading producers accounting for more than 60% of global production. ACI II of WCF is contributing to this effort with the establishment of a regional laboratory and center of excellence for CSSV and CSSVD diagnosis in Abidjan, which will aid in early detection of the virus on farm even when there are no visible symptoms. WCF organized several review meetings with le Conseil and COCOBOD for the memorandum of understanding and cooperation for the use of the laboratory. Following these reviews, the final versions of the documents are being prepared for signature in both countries for the lab, which is expected to be fully operational in 2021.

Objective 2 – An Enabled Ecosystem for Financial Services

Recognizing [how digital payments can be a game-changer for farmers](#), under the ACI II program, WCF and the UN-based [Better Than Cash Alliance](#) (BTCA) are working in partnership to support the growth of digital payments in the cocoa value chain to promote inclusive growth, boost productivity and improve the livelihoods of smallholder cocoa farmers, especially women. ACI II of WCF achieves this through: technical assistance to WCF member companies; support to improve farmer access to financial services; and the establishment of a pre-competitive platform for interaction and exchange between and among DFS partners. In Ghana, ACI II of WCF and BTCA are working to promote and support digitization by large cocoa buyers, licensed buying companies (LBC) and other agribusiness intermediaries based on the assumption that there are some hidden costs behind cash transactions in the cocoa sector.

The objectives of this initiative are:

- **Learn:** Better understand the opportunities and challenges of introducing digital payments to cocoa farmers;
- **Disseminate:** Share learnings and best practice knowledge; and
- **Support:** Support WCF members with neutral and responsible DFS-related technical assistance.

Outcome 2.1 Increased availability and use of high-quality financial services by farmers

Following a baseline survey on farmer understanding and use of DFS in 2019, ACI II undertook a sensitization campaign in the target implementation areas to educate farmers on the uses and advantages of DFS for their transactions. ACI II also engaged with the mobile telecommunications companies, selected appropriate merchants, and has assisted willing companies to pilot the provision of digital financial services to farmers in company supply chains on a pre-competitive basis.

LBCs have kicked off the transition from cash in Ghana's cocoa value chain as they seek channels to deliver increased benefits to farmers while improving efficiency, sustainability, and transparency in their cocoa procurement. Staff and agents of LBCs face substantial risks every day by making payment for cocoa purchases in cash. Digitizing payments in the value chain can mitigate these risks while reducing the significant finance costs that threaten the profitability of the sector.

Farmer access to financial services in the cocoa value chain in Ghana has been a challenge. In order to understand the state of play of financial services in the cocoa value chain, interviews were conducted with financial institutions. Forms of financial services provided to cocoa farmers are savings and input credit. Some partnerships in the form of tripartite agreements exist between licensed buying companies, input companies and financial institutions. Village Savings and Loans Associations (VSLA) are a proven way to improve bankability in rural communities that rely on agriculture, like cocoa production, as a main economic activity. ACI II is undertaking a landscape analysis of services providers, financial and technology companies, and developers of digital platforms to assess the scalability of lending products in the cocoa value chain. This could lead to the digitization of VSLAs. The study will verify if companies that provide platforms for VSLAs could be digitized and if they could be engaged to facilitate the linkage of digitized VSLAs to formal financial institutions.

Key Achievements and Milestones

Provide information on digitizing the cocoa value chain

Kicking off the evolution of digital payments, many LBCs that purchase cocoa in Ghana have been debating whether and how to shift from cash to electronic payments. To assist in this decision-making, ACI II of WCF, together with BTCA, commissioned an inquiry into the costs of cash payments in the cocoa value chain, as well as the costs associated with digitizing those payments. A virtual forum organized to disseminate the findings attracted representatives of 24 WCF members (Ferrero, Indecresa, Itochu, Ecom, Mondelēz, Kuapa Kokoo, Adikanfo, Sucden, Lindt, UPL, Cargill, Kookoo Pa, Compañía Nacional de

Chocolates, Guittard, Barry Callebaut, The Hershey Company, Mars, Inc., Nestlé, Olam, Ezaki Glico, Touton, GCB Cocoa, Chocolats Halba and Starbucks) across five (Africa, Europe, Asia, and the Americas) continents.

The cost of cash study, published in late June 2020, estimates a direct cost of cash of \$21.5 million per annum in the Ghana's cocoa value chain. This consists of:

- Delays associated with cash payments increase the interest expense for LBCs by at least \$3.9 million a year.
- \$15.9 million worth of risk from the carrying of cash and bad debts specifically related to cash theft totaling \$113,000.
- Time and travel costs associated with cash of up to \$1.5 million spread across the value chain.

[Provide technical assistance on digital financial services to WCF member companies](#)

ACI II technical assistance resulted in digitized cocoa purchase and premium payments for three brands and two LBCs, involving the transfer of USD 31,972 to 1,779 (531 female) farmers during the 2019/2020 season. Also, 3,703 farmers across 107 communities in six cocoa districts were educated on the benefits of digitized payments through customized voice messages broadcast from public address systems at the community level. The other mode of delivery was through phone calls.

[Digitizing payments in Ghana's cocoa supply chain: Four building blocks for responsible and scalable digitization](#)

Of the USD 21.5 million lost to the cocoa value chain because of the reliance on cash transactions, the cost of cash study implied that LBCs lose USD 4.1 million in revenue, or 3.6% of their margin annually. During the launch of the cost of cash study in June 2020, ACI II of WCF in collaboration with BTCA presented four building blocks with complementary information, which set out *how* to digitize payments in a way that is responsible and scalable, to the benefit of all stakeholders. These building blocks are summarized as follows:

1. Know their smallholder farmers

Responsible digitization starts with understanding the financial lives of farmers, establishing their level of comfort with digital financial services, and gauging their demand for those services. This information helps to put farmers' financial behavior and expectations at the center of digitization measures. It also guides the development of sensitization tools, which build farmers' familiarity with digital payments and help ensure companies move at the appropriate pace as they implement their digitization measures. Creating a clear understanding across the entire value chain of the digitization process is essential for increasing the level of acceptance and uptake by the various value chain actors. This applies equally when making the initial decision to switch to digital payments, selecting a Financial Service Provider (FSP) and agreeing on an implementation approach with the selected FSP. There are two key elements to building this value proposition. First, ensuring there is agreement on the objective and scope of digitization within the company, including with Purchasing Clerks (PCs), district officers of LBCs and other partners. Second, rigorously selecting and overseeing the FSP and ensuring that implementation plans, and timelines are developed and deployed jointly with the FSP.

2. Build an internal and external value proposition for digitization

Creating a clear understanding across the entire value chain of the benefits of digitization is essential to increase the level of acceptance and uptake from the various value chain actors. This applies equally when making the initial decision to switch to digital payments, selecting an FSP and agreeing on an implementation approach with the selected FSP. There are two key elements to building this value proposition. First, ensuring there is agreement on the objective and scope of digitization within the company, including with PCs, district officers of LBCs and other partners. Second, rigorously selecting and overseeing the FSP and ensuring that implementation plans, and timelines are developed jointly with the FSP.

3. Enable farmers to spend funds and access services digitally by building a robust digital payments acceptance ecosystem

Digitizing cocoa payments alone is not sufficient to drive DFS adoption at scale in Ghana's cocoa supply chain. Success in this regard will depend largely on developing an ecosystem in which farmers can purchase goods and services digitally without having to cash-out. Access to digital services (financial or non-financial) that present a good value proposition for the farmers is also critical. Building a robust digital payments acceptance ecosystem in Ghana requires focus on four areas:

- i. **DFS access points**, which need to be numerous and well-located for farmers and PCs.
- ii. **DFS liquidity management**, which helps ensure all farmers can access their funds where and when they need it.
- iii. **DFS merchant acceptance**, which includes targeted efforts to identify and digitize common farmer transactions, such as at input shops, pharmacies, grocery stores, and creates awareness among farmers that they can pay digitally in these places.
- iv. **Access to other digital services** (both financial and non-financial), including digital savings, credit, insurance or pay-as-you-go solar energy panels and products.

4. Sensitize companies' staff and farmers on the value of digitized payments

Given the low level of financial and digital literacy in Ghana's rural areas, helping staff and farmers understand and embrace digital payments is crucial to success. This starts with developing information, communication and educational materials for staff and PCs that explain why digitization is beneficial to the company and materials for farmers that explain the benefits for them to move away from cash to digital payments.

Potential benefits to WCF member companies and private sector

The transition away from the use of cash in Ghana's cocoa value chain has begun. Cocoa buying companies are searching for new ways to deliver greater benefits to farmers while improving efficiency, sustainability, traceability, and transparency in their cocoa procurement. Digitizing payments in the value chain can mitigate substantial risks faced daily by staff and agents of buying companies. At the same time, digital payments can lower the significant financial costs that threaten the profitability of the sector. End-to-end financial transparency can help cocoa processors around the world to verify where their products are sourced and reduce the risk profile of the sector for domestic lenders. For the smallholder farmers who form the backbone of the cocoa sector, digital payments can unlock financial services that will help them afford inputs, manage liquidity, and become more resilient throughout the years.

Collaboration facilitated by ACI II of WCF among FSPs, Financial Technology Companies, Aggregators, Mobile Network Operators (MNOs), on the four blocks of responsible and scalable digitization, will contribute to the achievement of the benefits of digitization.

Mainstreaming WCF member companies' digitization with financial inclusion roadmap

Building on results from the digitization of payments in the supply chains of some WCF members as facilitated by ACI II of WCF and BTCA, there is a need to sustain the gains achieved over the period. This is to ensure that companies leverage digitization to achieve better access to finance, investment in farms, supply chain transparency with a digital procurement tool and efficiency in doing business. However, to ensure broader financial inclusion of farmers in companies' supply chains, other complementary interventions such as organizing farmers into savings groups (i.e. VSLAs), linking of VSLA groups to financial institutions, developing farmer transactional history (e.g. mobile money) or economic ID (i.e. provide financial institutions with data) for banks to assess risk and provide credit and loans products will be facilitated. This will involve sharing workable and successful examples of implementation with service providers such as financial institutions, digital service providers, developers of financial products and agricultural technology organizations.

WCF member companies, in their effort to ensure that farmers within their sustainability program have access to financial services, established savings groups—the Village Savings and Loans Associations through which members (women and youth especially) have access to informal savings and loan products.

However, these services hardly meet the financial needs of group members. To ensure that implemented activities feed into WCF's Pathway to Sustainable Cocoa Production, the pillar of prosperous farmers and empowered communities can be achieved through the linkages of these informal groups to formal banking services sector so the needs of these exclusive groups can be addressed to make them financially inclusive. In isolation, there are efforts by individual companies to address separate sects of the various levels of financial inclusion by implementing the VSLA projects and/or piloting digitized payments. ACI II of WCF is working with WCF member companies to ensure that the steps (described below) of the financial inclusion ladder are implemented.

1. Implementing digital financial services

The objective here is to ensure that the gains chalked from the pilot of digitization with members are consolidated by engaging members to clearly outline internal needs for digitization. Companies are leveraging the four building blocks of responsible and scalable digitization to ensure effective digitization. Payments along the supply chain of members such as base payments (beans purchases) and premium payments via digital platforms (cards, mobile wallets) by companies to their supplying farmers and intermediaries will ensure financial inclusion. This will as well ensure that companies know their smallholder farmers, build the internal and external value proposition for digitization, enable farmers to spend funds and access services digitally by building a robust digital payments acceptance ecosystem.

2. Developing farmer digital procurement tool

The objective is to use digital procurement solutions to enable farmer profile documentation, track information for procurement, develop farmer transactional history (e.g. mobile money), and economic ID (i.e. provide financial institutions with data) for banks to access risk and provide credit and loans products. Vigorous education on digital financial services using tools developed by ACI II of WCF will increase the level of knowledge of farmers and member companies on the financial services that are accessible digitally. Financial services that are delivered through digital tools and channels include savings, loans, (micro)insurance, payments, investments, and pay-as-you-go services. Companies will gain from the benefits of digitization such as secured and transparent transactions.

3. Strengthening farmer professionalization through the inclusion of financial and digital literacy in training curriculums and farm business services

This involves educating company staff and farmers on the value of digital payments to ensure buy-in and acceptance. Company efforts have been to build the capacity of farmers within their supply chain to professionalize their production. Financial and digital literacy is key to ensuring that farmers are aware of the kind of financial services to which they can have access through traditional banking and digital tools. Farmers should be made aware of financial products such as (micro)insurance for crops and productive assets to mitigate risks such as drought and crop losses or cushion transactions.

4. Organize target beneficiaries into savings groups and build their capacity

Member companies are supporting VSLAs in their supply chains to facilitate access to financial products such as savings and loans. But VSLA groups cannot sufficiently meet the loan needs of members. ACI II of WCF is working to link these groups to formal financial institutions to have access to bigger loans to boost production. Group dynamics training for such informal savings groups must be strengthened. A matrix of parameters for determining groups strength, solidarity, and their suitability to be linked to financial institutions is developed and will be used for group assessment.

5. Link savings groups to financial institutions and co-design financial products

Product development is understanding the needs of farmers and developing tailored financial products to address such needs. ACI II of WCF with BTCA is supporting a collaborative effort between groups and providers of financial services, facilitated by member companies, to develop

products addressing the need for input credit using tried and tested methods such as tripartite agreements, savings and loans products for fees, microinsurance (assets, transactions, premium, health and crop), investments and any other needs of the group using group solidarity as collateral. The implementation of the WCF financial inclusion roadmap will ensure capacity building of value chain actors in financial services, leverage the gains of DFS interventions and facilitate other financial inclusion interventions such as formalize informal savings groups, co-design financial products such as microinsurance, developing farmer digital procurement tools and economic ID to meet actors needs and, in the long term, ensure financial inclusion.

Objective 3 – Village Savings and Loans Associations (VSLA) in Côte d’Ivoire

Village Savings and Loan Associations (VSLA) are community-based women's associations/organizations with an average of 25 members each. VSLA members regularly contribute to a savings fund based on an unanimously agreed amount and, from the funds saved, grant each other loans. The repayment of the loans is made with an interest rate that increases the amount available in the fund. At the end of each cycle, members share the total amount of the fund between themselves. Each member therefore recovers his or her contributed savings with an additional gain, via the interest.

The objective of the VSLA Program in Côte d’Ivoire is to increase the capacity of impoverished cocoa growing households, and especially their female members, to manage their financial resources and withstand shocks to their livelihoods by providing access to three basic financial services – savings, credit and enhanced household income. This VSLA activity, which is in line with USAID’s Private Sector Engagement Policy and the Women’s Global Development and Prosperity Initiative (W-GDP), is developing and strengthening savings and credit in communities where Barry Callebaut, Blommer, Cargill, Hershey, Mars, Mondelēz, Nestlé, and Olam source cocoa in Côte d’Ivoire.

This activity focuses on the establishment of 384 new VSLAs and the linkage of 550 existing VSLAs (including 74 of the total new VSLA’s created) to the formal financial sector by May 2022, which is a crucial step in supporting small and micro-enterprises to access adapted financial services.

Key Achievements and Milestones

Creating new VSLAs

In FY2020, VSLA activity implementation in the field was significantly hindered by COVID-19-related restrictions on movement, which were in force in Côte d’Ivoire from March to August 2020. This limitation notwithstanding, the six implementing companies created 285 new VSLAs in the Departments of Abengourou, Adzope, Agnibilekro, Bolequin, Daloa, Divo, Duekoué, Fresco, Guitry, Meagui, Oume, San-Pedro, Sassandra, Sinfra, Soubré Taabo, Tabou, Toumodi, Vavoua and Yamoussoukro. These newly created VSLAs consist of 6,709 members (6,187 female).

Early in FY2020, ACI II organized awareness-raising and information meeting with groups of potential VSLA members to jointly discuss and agree on the functioning, the basic principles, the criteria for choosing members and especially the importance of the VSLA to empower rural women and better protect children in communities. In general, the communities welcomed this new project with great interest and exceptional mobilization in most of the target communities. Between February and March 2020, at least 2,000 people, mostly women, took part in these activities, which were attended by village chiefs, community leaders, producers' wives and young men and women.

As a result of these activities, the VSLAs mobilized USD 254,764 in savings, of which USD 94,514 was granted to members as loans. The bulk of these loans (72%) was invested in trade to increase income generation, while 10% was invested in cocoa production. Investment in cocoa production decreased

significantly between April and September 2020 due to the impact of COVID-19. Loans (7%) for agricultural purposes were oriented towards food crops.

Linking established VSLAs to formal financial institutions

An analysis of more mature VSLA groups was conducted to assess their performance and readiness to be connected to formal financial services. VSLA promoters received training on e-banking and started linking VSLAs to microfinance institutions to help them better manage funds and access credit for larger-scale business initiatives. Although implementing companies linked 58 VSLAs to a formal financial institution, with savings of USD 57,221, none of these VSLAs accessed credit from formal financial institutions between October 2019 and September 2020. It is anticipated that savings made now will form the basis to obtain credit for large-scale business initiatives in FY2021.

VSLA trainings

VSLAs have provided a platform for members to have access to both informal financial services and training in selecting, planning, and managing income-generating activities. Even in the first few months of implementation, members started to save money and planned and implement income-generating activities. Using lessons from VSLA trainings, members contributed tools, equipment, and labor to construct water reservoirs and drip irrigation systems to improve food crop production within their communities. They also anticipate that water availability will boost sanitation and hygiene in their respective communities.

Gender, child health, and nutrition

Activities related to gender within the VSLAs facilitated couples' dialogue. Gender Committees were set up for each group, with five members per committee. Committee members (women and men) were drawn from among VSLA members and community leaders. They were chosen according to criteria, proposed by the VSLA groups, such as their sensitivity to gender, being a man or woman with recognized good behavior in one's household by the community, being known for not discriminating between men and women, and being influential and respected in the community. In FY2020, 10 Gender Committees were trained on gender concepts and how to conduct couples' dialogues. After the training, the Gender Committees organized 86 couple dialogue sessions on two modules: Gender as a Concept and Stereotypes.

VSLA groups receive coaching support services to help members to plan activities on child protection, along with income generating activities. In FY2020, 1,030 VSLAs members from 36 VSLAs received support on Child Health and Nutrition in the form of:

- Training on health and nutrition, the training being focused on hand hygiene. In parallel with training, community has been sensitized on COVID-19: first signs, preventive measures, and health compliance.
- Training on taking care of child from 0 to 28 days: risk to fragile child, birth certificate, breastfeeding.
- Prenatal consultations and the importance of vaccination
- Sleeping under mosquito nets to avoid malaria.
- Awareness-raising sessions on child labor: COVID-19-related school closures in March and April 2020 caused children to be exposed to hazardous labor at a higher rate than usual.

Challenges

Obviously, the impact of COVID-19 was the biggest challenge in FY2020, as activities that require interactions at close quarters, like VSLA formation engagement meetings, were banned. This significantly reduced the pace at which new groups could be formed. As a remedy, group meetings were adapted for smaller numbers, and postponed where adaptation was not possible.

In some communities, conflicts between influential community members delayed group formation. Other communities were disillusioned, having tried, and failed at previous attempts at forming VSLAs. Also, there was markedly low participation of women in some communities because of the long distances between farms and the settlement and the intensity of agricultural activities. Finally, identification documents

demanded by existing financial institutions (following strict “know your client” rules), which most farmers do not have, has been another main constraint preventing successful VSLA group formation.

The issue of conflicts and disillusionment were addressed through targeted information sessions on VSLAs, dedicating more time for discussion with community leaders and more space for discussion for community members. For the low mobilization of women, WCF in collaboration with participating companies is working on incentives targeting women hesitant to join VSLA activities. To address the issue of documentation, implementers are meeting with local authorities for information on the process for obtaining the required legal documentation. VSLA members are paying the prescribed fees for the documentation.

Objective 4 – Increased Flavor Quality of Cocoa

Outcome 4.1 Companies prioritize cocoa from West Africa for flavor quality and use the Flavor Quality Lab to support their Purchasing Decisions and Practices

ACI II is working to ensure that flavor quality, which is the reason chocolate makers include cocoa from specific origins in their recipes, is not lost in the pursuit of other desirable traits like higher yields and disease resistance during breeding. ACI II achieves this through the cocoa flavor quality laboratories that provide the tools to enable national cocoa research institutes to integrate flavor characteristic into their cocoa breeding programs. The flavor laboratories also make liquor from cocoa beans for the training of cocoa extension staff and subsequently cocoa farmers on the effects of harvest and post-harvest practices on flavor development.

During the first phase of ACI, from 2011 to 2016, WCF supported the establishment of a flavor quality laboratory at the Cocoa Research Institute of Ghana (CRIG). WCF supported the transitioning of the laboratory to CRIG, which operated the lab without WCF support from December 2016 to March 2018. In April 2018, a new MOU was signed between WCF and CRIG to implement activities under ACI II, which includes WCF providing larger scale equipment, and in February 2020, WCF member Ezaki Glico cut the sod for the construction of a new flavor laboratory and Centre of Excellence at CRIG. WCF has also supported the establishment of a second flavor quality laboratory at the *Centre National de Recherche Agronomique* (CNRA) in Côte d’Ivoire in 2019 and is in the process of establishing a new lab in Cameroon and Nigeria. These laboratories have provided the two countries with the capacity to train cocoa extension staff and farmers on appropriate harvest and post-harvest techniques to ensure that traditional flavor quality is maintained.

ACI II engaged a consultant, Dorine Kassi, who is working directly with staff of CRIG, CNRA, CRIN and IRAD to bring the flavor labs up to international standards and to document the standard operating procedures (SOP) for the operations of the labs and equipment, fermentation and drying, tasting sessions and trainings. It is expected that each country will adapt the SOP documents, which are currently in the draft format, and will include these SOPs in their standard manuals for flavor quality laboratory management.

Outcome 4.2 Increased use of appropriate post-harvest practices by farmers that ensures high flavor quality of cocoa

Improve the knowledge and skills of government extension agents and farmers on flavor quality

With the sustained low price of cocoa on the global market over the years, farmers could earn more by producing and selling better quality beans as cooperatives that supply niche chocolatiers have been doing. In FY2019, ACI II developed long-term flavor quality work plans in collaboration with CNRA and CRIG to train cocoa farmers to produce beans with improved flavor quality. Similarly, ACI II is facilitating discussions between cooperatives and the lab teams at CRIN and IRAD to provide flavor quality trainings to their farmers once the newly established labs are up and running in both countries. Unfortunately, the

period for implementation of these activities in FY2020 coincided with COVID-19 restrictions on movement. ACI II will pick up these activities in FY2021 with engagements in all four countries.

Key Achievements and Milestones

Expanding capacity of flavor quality laboratory in Ghana

To enable the flavor quality laboratory at CRIG to train more farmers, ACI II supported the acquisition of larger scale equipment for the lab. This new equipment expands the lab's capacity from 30kg of samples per week to close to 100kg, which will enable CRIG to produce enough cocoa liquor to train all cocoa farmers in Ghana on flavor quality. Unfortunately, there is not enough room to host the new larger scale equipment. In February 2020, WCF member TCHO, and parent company Ezaki-Glico provided a boost for the expanded capacity with the sod cutting ceremony for the construction of a new flavor laboratory and training center. The facility, which will cost almost USD 170,000, was expected to be completed ahead of Ghana's National Cocoa Day on October 1, 2020. However, a decision by COCOBOD to modify the design delayed the process. As of September 2020, competitive tendering and bidding for the project has been completed and the winning contractor is expected on site before the end of 2020.

Supporting training on flavor quality in Côte d'Ivoire

ACI II of WCF completed the establishment of a second flavor laboratory at CNRA at Bingerville in 2019 and provided laboratory management training to the CNRA team after CNRA completed all required civil works for the lab. Between October 2019 and September 2020, members of the lab team participated in the 2019 International Cocoa Awards, where they interacted with and learned from members of the Cocoa of Excellence Technical Committee. The team undertook fermentation, drying and prepared liquor from cocoa clones from CocoaAction trial plots as well as hybrid introduced to farmers at different periods over the past few decades.

In a first for West Africa, these liquor samples were distributed to WCF company flavor quality experts for use in a live regional sensory analysis session. This tasting session, held in September 2020 and attended by representatives of laboratories in Cameroon, Côte d'Ivoire, and Nigeria helped to calibrate and to verify the results of tastings of the CNRA lab team.

Establishing new flavor quality laboratory in Cameroon and Nigeria

CRIN in Nigeria and IRAD in Cameroon have received the equipment for their respective flavor labs. Both institutes nominated four-member teams to manage the lab. The ACI II Flavor Quality Consultant undertook a review of the lab in Nigeria in December 2019 followed by the lab in Cameroon in March 2020 and made recommendations for improvements, which are ongoing in both countries.

Training for the lab teams, planned for April 2020, before the imposition of COVID-19 related travel restrictions, are being organized virtually, with the first two on lab equipment set up and cocoa liquor preparation conducted in September and October 2020 respectively. The ACI II team is working with the Consultant to deliver further training, to the extent possible, remotely until WCF lifts travel restrictions for staff and consultants.

Impact of COVID-19 on ACI II activities

COVID-19 affected field implementation of ACI II activities, especially between March and August 2020, when strict restrictions on movement were in force in Cameroon, Côte d'Ivoire, Ghana, and Nigeria. The impact was most significant for the establishment of VSLAs in Côte d'Ivoire, where 104 members of functioning VSLAs dropped out due to this travel restriction.

Usually, the ACI II team conducts verification visits to field implementation sites ahead of the semi-annual report in March and April and ahead of the annual report in September and October each reporting year. Unfortunately, the team could not undertake all of these visits scheduled ahead of the FY2020 semi-annual report due to COVID-19 related national and international travel restrictions. For the annual report, the

team was able to undertake verification in Cameroon and in Ghana. But due to WCF travel restrictions on international travel and tentative election and other related security concerns in Côte d'Ivoire and Nigeria, the team was not able to conduct field verification in these countries. This means that not all the information presented in this report has been verified. Depending how the current WCF restrictions evolve over the next few months, the ACI II team will undertake verification trips to update FY2021 and life of project reporting.

Mitigation measures

While the travel restrictions remain in force, ACI II, following WCF policy and protocol, is conducting all business remotely. All team members, including consultants, are working from home. Regular remote meetings and conference calls continue as scheduled. The team is undertaking other engagements, like trainings and meetings, that required in-person interactions remotely (by phone, WebEx, Skype, Microsoft Teams, etc.) where possible. Larger gatherings like conferences, or activities that require interactions at close quarters like VSLA formation engagement meetings, have been adapted for smaller numbers, and postponed where adaptation is not possible. A good example was the Regional Conference on Flavor Quality, which had been scheduled for March 26 and 27 in Abidjan, but was eventually held as a webinar on the application of international standards on cocoa quality and flavor on September 2, 2020, with more than 100 representatives of companies, government agencies, and ACI II implementing partners participating.

Annexes

1. Success Stories- VSLA and COVID 19
2. Digitizing Payments in Ghana Cocos Supply Chain
3. The Hidden Costs of Cash to Ghana's Cocoa Sector
4. Cameroon Flavor Lab Verification Trip Report
5. Report of First Regional FQ Tasting and Calibration Session
6. Standard Operating Procedures for Flavor Laboratories