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Report No: PAD5326

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A

PROPOSED CREDIT
IN THE AMOUNT OF US$150.0 MILLION
FROM THE SCALE UP WINDOW-SHORTER MATURITY LOANS (SUW-SML)

AND
A PROPOSED CREDIT
IN THE AMOUNT OF US$50.0 MILLION

TO THE
REPUBLIC OF GHANA

FOR THE
GHANA TREE CROP DIVERSIFICATION PROJECT

May 26, 2023

Agriculture and Food Global Practice
Western and Central Africa Region

CURRENCY EQUIVALENTS

Exchange Rate Effective April 19, 2023

Currency Unit =	Ghanaian Cedi
GHC 12.05 =	US$1
US$0.0037 =	SDR 1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Ousmane Diagana
Country Director:	Pierre Frank Laporte
Regional Director:	Simeon Kacou Ehui
Practice Manager:	Chakib Jenane
Task Team Leader(s):	Ashwini Rekha Sebastian

ABBREVIATIONS AND ACRONYMS

AFD	Agence Française de Développement
AM	Accountability Mechanism
AWPB	Annual Work Plan and Budget
BCR	Benefit Cost Ratio
CAGD	Controller and Accountant General's Department
CARD	Climate Adaptation in Rural Development
CBA	Cost-Benefit Analysis
CCB	Climate Co-Benefit
CFI	Cocoa and Forests Initiative
CHED	Cocoa Health and Extension Department
CIAT	International Center for Tropical Agriculture
CLFZ	Child Labor Free Zones
CMS	Cocoa Management System
COCOBOD	Ghana Cocoa Board
COVID-19	Coronavirus Disease
CPF	Country Partnership Framework
CRI	Corporate Results Indicator
CRIG	Cocoa Research Institute of Ghana
CSA	Climate-Smart Agriculture
CSDS-II	Second Cocoa Sector Development Strategy for 2017-2027
CSIR-CRI	Center for Scientific and Industrial Research – Crop Research Institute
CSIR-OPRI	Center for Scientific and Industrial Research – Oil Palm Research Institute
CSPWD	Cape Saint Paul Wilt Disease
CSSVD	Cocoa Swollen Shoot Virus Disease
CMS	Cocoa Management System
DBG	Development Bank of Ghana
E&S	Environmental and Social
EFA	Economic and Financial Analysis
EIRR	Economic Internal Rate of Return
ERP	Emissions Reduction Program
ESF	Environmental and Social Framework
ESCP	Environmental and Social Commitment Plan
ESHS	Environment, Social, Health, and Safety
ESMF	Environmental and Social Management Framework
ESRS	Environmental and Social Review Summary
EU	European Union
EX-ACT	Ex-Ante Carbon-balance Tool

EXIM	Export-Import Bank
FAGE	Federation of Associations of Ghanaian Exporters
FAO	Food and Agriculture Organization
FBO	Farmer-based Organization
FC	Forestry Commission
FDA	Food and Drugs Authority
FIP	Forest Investment Program
FIRR	Financial Internal Rate of Return
FSRP	Food System Resilience Program
GAPs	Good Agricultural Practices
GAS	Ghana Audit Service
GBV	Gender-Based Violence
GCA	Global Center for Adaptation
GCLMS	Ghana Child Labor Monitoring System
GDP	Gross Domestic Product
GEMS	Geo-Enabling initiative for Monitoring and Supervision
GEPA	Ghana Exports Promotion Authority
GHG	Greenhouse Gas
GIFMIS	Ghana Integrated Financial Management Information System
GIPC	Ghana Investment Promotion Center
GIRSAL	Ghana Incentive-Based Risk-Sharing System for Agricultural Lending Project
GLSS	Ghana Living Standards Survey
GPSNP	Ghana Productive Safety Net Program
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Services
GoG	Government of Ghana
GSA	Ghana Standards Authority
GSS	Ghana Statistical Services
HFZ	High Forest Zone
IA	Implementing Agency
IBRD	International Bank for Reconstruction and Development
ICI	International Cocoa Initiative
IDA	International Development Association
IDH	the Sustainable Trade Initiative
IFC	International Finance Corporation
IFR	Interim Financial Report
ILO	International Labor Organization
IPF	Investment Project Financing
IPMP	Integrated Pest Management Plan
ISS	Integrated Social Services

LBC	Licensed Buying Company
LEAP	Livelihood Empowerment Against Poverty
LMP	Labor Management Procedures
M&E	Monitoring and Evaluation
MELR	Ministry of Employment and Labor Relations
MFD	Maximizing Finance for Development
MLGDRD	Ministry of Local Government, Decentralization and Rural Development
MLNR	Ministry of Lands and Natural Resources
MOF	Ministry of Finance
MOFA	Ministry of Food and Agriculture
MOGCSP	Ministry of Gender, Children and Social Protection
MT	Metric ton
NDC	Nationally Determined Contributions
NORC	Nonpartisan and Objective Research Organization
NPV	Net Present Value
PBA	Performance Based Allocation
OHLGS	Office of the Head of Local Government Services
PPP	Purchasing Power Parity
PCU	Project Coordination Unit
PDO	Project Development Objective
PFI	Participating Financial Institution
PFMA	Public Financial Management Act
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PPA	Project Preparation Advance
PPSD	Project Procurement Strategy for Development
PRAMS	Procurement Risk Assessment and Management System
PSC	Project Steering Committee
PSNPRAP	Resettlement Action Plan
R&D	Research and Development
RCN	Raw Cashew Nuts
REDD+	Reduced Emissions from Deforestation and Forest Degradation
RM&E	Results Monitoring and Evaluation
RPF	Resettlement Policy Framework
SEA	Sexual Exploitation and Abuse
SEAH	Sexual Exploitation, Abuse, and Harassment
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SME	Small and Medium Enterprise
SOE	Statement of Expenditure

SPC	Shadow Price of Carbon
SPS	Sanitary and Phytosanitary
STEP	Systematic Tracking of Exchanges in Procurement
SWIMS	Social Welfare Information Management System
TCDA	Tree Crops Development Authority
TCDP	Tree Crops Diversification Project
TTL	Task Team Leader
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
USDOL	United States Department of Labor
VC	Value Chain
WAAPP	West Africa Agriculture Productivity Program
WCF	World Cocoa Foundation

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Ghana	Ghana Tree Crop Diversification Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P180060	Investment Project Financing	High

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
20-Jun-2023	14-Dec-2029
Bank/IFC Collaboration	**Joint Level**
Yes	Historical Project/Activity implemented in sequence with an IFC activity(Loan/Credit/Guarantee/AAA)

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve economic, climate, and social resilience in selected tree crop value chains.

Components

Component Name	Cost (US$, millions)
C1. Institutional Strengthening and Value Chain Governance	16.90
C2. Improving Tree Crops Productivity and Climate Resilience	155.30
C3. Support for Post-Harvest Management, Value Addition, and Market Access	39.30
C4. Project Coordination, Management, Monitoring and Evaluation	16.00

Organizations

Borrower:	The Republic of Ghana
Implementing Agency:	The Ghana Cocoa Board (COCOBOD) The Tree Crops Development Authority (TCDA)

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	227.50
Total Financing	227.50
of which IBRD/IDA	200.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	200.00
IDA Credit	50.00
IDA Shorter Maturity Loan (SML)	150.00

Non-World Bank Group Financing

Counterpart Funding	27.50
Borrowing Agency	27.50

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
Ghana	50.00	0.00	150.00	0.00	200.00
National Performance-Based Allocations (PBA)	50.00	0.00	0.00	0.00	50.00
Scale-Up Window (SUW)	0.00	0.00	150.00	0.00	150.00
Total	**50.00**	**0.00**	**150.00**	**0.00**	**200.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2023	2024	2025	2026	2027	2028	2029	2030
Annual	0.72	10.18	10.58	16.53	23.76	44.53	53.04	40.66
Cumulative	0.72	10.90	21.48	38.01	61.77	106.30	159.34	200.00

INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture and Food

Contributing Practice Areas

Environment, Natural Resources & the Blue Economy, Poverty and Equity, Social Sustainability and Inclusion, Social Protection & Jobs

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	High
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	High

6. Fiduciary	Moderate
7. Environment and Social	High
8. Stakeholders	Moderate
9. Other	Low
10. Overall	High

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

Livelihood Support Payments under Part 2.2(a)(i)

1. In order to ensure the effective implementation of Part 2.2(a)(i) of the Project, the Recipient shall cause COCOBOD to:

(a) enter into agreements acceptable to the Association with farmers and/or landlords who wish to take part in a program of activities for clearing cocoa trees affected by CSSVD, strictly on a voluntary basis ("Livelihood Support Agreements"), as further detailed in the PIM; and

(b) make payments in an amount acceptable to the Association ("Livelihood Support Payments") to eligible beneficiaries in accordance with the eligibility criteria and procedures acceptable to the Association and further detailed in the PIM.

Sections and Description

Livelihood Support Payments under Part 2.2(a)(i)

2. The Recipient shall cause COCOBOD to:
(a) enter into an agreement ("Payment Agreement") with a service provider selected on the basis of terms of reference, qualifications and experience satisfactory to the Association ("Payment Service Provider"), for the transfer of Livelihood Support Payments to eligible beneficiaries, in form and substance satisfactory to the Association and in accordance with criteria and procedures set forth in the PIM;
(b) ensure that each Payment Agreement is: (i) submitted to the Association for its review and approval prior to its signature between the Recipient and a Payment Service Provider; (ii) signed and effective before any proceeds of the Financing are transferred to the Payment Service Provider; and
(iii) implemented with due diligence and efficiency and in accordance with sound technical, financial, and managerial standards and practices acceptable to the Association, including in accordance with the provisions of the Anti-Corruption Guidelines applicable to the recipients of the Transfers proceeds other than the Recipient; and
(c) not amend, abrogate, waive or fail to enforce any provision of the Payment Agreement without the prior written agreement of the Association; provided, however, that in the event of any conflict between the provisions of the Payment Agreement and the provisions of this Agreement, the provisions of this Agreement shall prevail.

Sections and Description
Per ESCP: appoint one Gender Specialist for the TCDA PCU no later than three (3) months after Effective Date, and thereafter maintain this position throughout Project implementation.

Sections and Description
Per ESCP: Establish and/or strengthen the child labor risk mitigation desk at TCDA and COCOBOD not later than three (3) months after Effective Date and thereafter maintain the function throughout Project implementation.

Sections and Description
Per ESCP: Establish the grievance mechanism no later than 3 months after Effective Date, and thereafter maintain and operate the mechanism throughout Project implementation.

Sections and Description
Per ESCP: Conduct Integrated Pest Management training needs assessment no more than 60 days after Effective Date and thereafter implement the training action plan throughout the project.

Conditions

Type	Financing source	Description
Effectiveness	IBRD/IDA	Article 5.01 (a): The Recipient has prepared and adopted a Project Implementation Manual ("PIM") in form and substance satisfactory to the Association
Type	Financing source	Description
Effectiveness	IBRD/IDA	Article 5.01 (b): The Recipient has recruited, appointed or seconded to the COCOBOD PIU the key staff referred to in Section I.A.1(a) of

		Schedule 2 to this Agreement, all with experience, qualifications and under terms of reference satisfactory to the Association
Type Effectiveness	Financing source IBRD/IDA	Description Article 5.01 (c): The Recipient has recruited, appointed or seconded to the TCDA PCU the key staff referred to in Section I.A.2(a) of Schedule 2 to this Agreement all with experience, qualifications and under terms of reference satisfactory to the Association
Type Effectiveness	Financing source IBRD/IDA	Description Article 5.01 (d): The Recipient has set up the Project Steering Committee referred to in Section I.A.3(a) of Schedule 2 in a manner satisfactory to the Association
Type Effectiveness	Financing source IBRD/IDA	Description Article 5.01 (e): The Subsidiary Agreement referred to in Section I.F.1 of Schedule 2 to this Agreement shall have been duly executed and delivered on behalf of the Recipient and COCOBOD, and such Subsidiary Agreement, shall have become effective and binding upon the parties in accordance with its terms
Type Effectiveness	Financing source IBRD/IDA	Description Article 5.01 (f): The Subsidiary Agreement referred to in Section I.F.1 of Schedule 2 to this Agreement shall have been duly executed and delivered on behalf of the Recipient and TCDA, and such Subsidiary Agreement, shall have become effective and binding upon the parties in accordance with its terms.
Type Disbursement	Financing source IBRD/IDA	Description under Category (2) unless COCOBOD has entered into a Payment Agreement with a Payment Service Provider as referred to in Section I.D.2(a) of Schedule 2 to this Agreement
Type Disbursement	Financing source IBRD/IDA	Description under Categories (3) and (5) unless and until the Recipient has prepared and submitted to the Association the Matching Grants Manual referred to in Section I.B.2 of Schedule 2 to this Agreement in form and substance satisfactory to the Association.

I. STRATEGIC CONTEXT

A. Country Context

1. **The Republic of Ghana is a lower-middle income country in which a period of sustained poverty reduction is imperiled by a recent series of macroeconomic shocks.** Ghana doubled its per capita Gross Domestic Product (GDP) between 2000 and 2021 from US$1,020 to $2,014, reducing the proportion of its population living on less than US$2.15 a day from over a half to under a quarter.[1, 2] Economic opportunity grew even faster despite rapid population growth, with cash crop, oil, and gold prices exceeding the country's 3.3 percent average annual population growth rate enough to persistently raise per capita income. Yet by 2021, 42 percent of the population continued to live below the poverty line, at less than US$3.65 a day. 73 percent was living on less than $6.85 a day.[3] Recent economic events threaten to push more Ghanaians into poverty, and to deepen the poverty of those who are already poor. Inter-regional differences are likely to widen further as well, with the most pronounced effects concentrated in Ashanti, Volta, Brong Ahafo, and other northern regions.[4]

2. **A deep macroeconomic crisis following COVID-19 and Russia's invasion of Ukraine three years later represent major setbacks to economic progress in Ghana.** GDP growth fell to 0.5 percent in 2020 after averaging 7 percent between 2017 and 2019. Deteriorating macroeconomic imbalances have reached crisis levels and are projected to worsen: GDP growth is expected to decelerate from 3.2 percent in 2022 to 1.6 percent in 2023 as the fiscal policy adjustment weighs on the non-extractive economy. In 2024, GDP growth is expected to recover only slightly, to about 2.9 percent. Inflation reached its highest level in 21 years at 54.1 percent year-over-year as of December 2022, reflecting accommodating fiscal policy, exchange rate depreciation, and monetary financing of the deficit. Ghana's debt stock is mounting, with a public debt-to-GDP ratio reaching 88.1 percent in 2022 – up from 79.6 percent in 2021. Foreign exchange reserves have dwindled, and the value of the cedi has fallen rapidly, before stabilizing since the beginning of 2023.[1] After peaking in 2022, when exchange rates movements exhibited significant overshooting, the divergence between the Bank of Ghana (BOG) and the market rates has declined significantly. The gap has now declined to around 6.7 percent, almost back to pre-crisis historical levels (5 percent).

3. **Gender-based and geographic inequalities are pronounced in Ghana.** The impacts of COVID-19 fell disproportionately on women and in the north of the country, reflecting longstanding vulnerabilities and higher poverty rates. Poverty rates are higher among women in general. Ghana ranks 108 out of 146 countries in the 2022 Global Gender Gap Index, which is significantly worse than its regional peers in Sub-Saharan Africa at the same level of economic development.[5] Areas where economic opportunities are limited by a lack of roads, electricity, market connectivity, and public services are exceptionally vulnerable as well, and these disadvantages are endemic to the northern savannah agroecological zone of Ghana.[6] These areas also tend to have higher malnutrition, mortality, and

[1] World Bank Indicators, constant 2015 US dollars.
[2] Per the Ghana Living Standards Survey (GLSS), the national poverty rate is 23.4 percent, where $2.15 (2017 PPP) is the international poverty rate.
[3] Estimates from the World Bank Macroeconomic and Poverty outlook.
http://macropovertyoutlook.worldbank.org/mpo_files/mpo/mpo-sm23-gha-scope.pdf
[4] Ghana Poverty Note, 2022: Another storm under the radar? Global food prices and potential poverty impacts in Ghana. World Bank Poverty Global Practice.
[5] World Economic Forum. 2022.
[6] Upper West, Upper East, Northeast, Northern, Savannah, Bono, and Bono East regions.

child labor rates and lower school enrollment and human capital indicators in general. Their spatial isolation moreover lends itself to greater susceptibility to market shocks and vulnerability to the impacts of climate change.

4. **Ghana is vulnerable to climate change.** The impacts that climate change will have on the country's economy and society are dramatic, and potentially cataclysmic. Because of anticipated sea-level rise, half of Ghana's 540-km coastline along which about one-quarter of its population resides is vulnerable to erosion and flooding. Climate-related flooding is expected to damage crops and buildings and infrastructure, while exacerbating pest and disease pressures on both. Since 1960, average annual mean temperature has increased by around 1° Celsius and the average number of 'hot days' has increased by 13 percent.[7] Changes in temperature and more erratic rainfall patterns reduce agricultural productivity, and may, over time, alter the country's agricultural geography as some areas become ill-suited to the crops they currently grow.

5. **Ghanaian markets and institutions have limited capacity to manage environmental risk and vulnerability while the economy itself is highly dependent on the country's natural resource base.** Dependence on export revenues from cocoa, petroleum, and gold leave the country highly exposed to commodity price risk, as well as to vagaries of production, changes in weather, natural hazards, labor and supply chain disruptions, and other shocks. Commodity price volatility is likely to be accentuated by natural resource degradation, climate change, and future global decarbonization efforts. Meanwhile, Ghana's natural resource-based growth has come at a high cost in terms of water pollution, agricultural land degradation, fishery depletion, coastal erosion, and forest loss. These and other changes undermine the long-term potential to continue exploiting natural resources as a source of national income. Sustaining natural resource-based growth hinges on Ghana moving toward more sustainable management models.

6. **The Government of Ghana (GoG) has ambitious plans to diversify and grow the economy by modernizing agriculture and accelerating industrialization, as well as by prioritizing climate resilience and mitigation.** These are among the objectives of the National Medium-Term Development Policy Framework for 2022 – 2025[8] and the GoG's "Ghana Beyond Aid" reform agenda for 2019 – 2028.[9] These aim to capitalize on Ghana's comparative advantages in agro-processing and heavy industries like aluminum, steel, and petrochemicals, improving agricultural productivity, enhancing human capital, and developing the digital economy to increase economic efficiency. Ghana unconditionally has pledged to change the trajectory of its greenhouse emissions, keeping them 12 percent below projected levels by 2025 and 15 percent below by 2030 in compliance with its commitments to the Paris Climate Agreement. Its Nationally Determined Contributions (NDC) included 31 adaptation and mitigation actions across the agricultural, forestry and land-use, energy, transportation, waste management, and industrial sectors.[10]

B. Sectoral and Institutional Context

7. **While industry and services now dominate its national economy, agriculture remains a pillar of Ghana's economic progress.** The sector accounts for 20 percent of Ghana's GDP and employs over a quarter of its workforce. Sixty-eight

[7] World Bank Country Climate Development Report (CCDR), October 2022
[8] *https://ndpc.gov.gh/media/MTNDPF_2022-2025_Dec-2021.pdf*
[9] *http://osm.gov.gh/assets/downloads/ghana_beyond_aid_charter.pdf*
[10] Republic of Ghana. 2015. *Ghana's Intended Nationally Determined Contributions and Accompanying Explanatory Note*. *https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Ghana%20First/GH_INDC_2392015.pdf*.

percent of jobs in the informal sector are related to agriculture[11] and more than 70 percent of the female labor force is engaged in the sector. Agriculture will continue to generate significant export revenues and in 2019, food and agriculture combined accounted for 28 percent of Ghana's total exports by value. Two-thirds of all non-oil manufacturing depend on agriculture for raw materials. Helped by favorable agro-climatic conditions and relatively liberal economic policies, sector growth averaged 6 percent per year from 2017–2021. It reached new heights during the COVID-19 crisis as the rest of the economy was contracting, growing by 7.3 percent in 2020 and 8.4 percent in 2021.[12] The sector is projected to grow at an average annual rate of 4 percent per year from 2021–2023. The pivotal role of agricultural growth in economic resilience has emerged as a key lesson from the COVID-19 experience in Ghana. Subsistence agriculture is the main source of livelihood for most of Ghana's poorest households, making the sector's continued development a major determinant of food security among lower income households. The agribusiness sector in Ghana has a very large multiplier effect on employment, creating over 750 jobs for every additional US$1 million of output.[13] However, the structure of the agriculture sector is dominated by primary production, with limited value-addition (including processing) which does not allow Ghana to capitalize on this job creation potential.

8. **Ghana's tree crops sector plays an outsized role in agriculture and the economy.** Tree crops generate income for subsistence households as well as for commercial producers. While production constitutes just 24 percent of the land area cultivated, and 9 percent of the total volume of crops produced, they account for roughly 85 percent of Ghana's total agricultural exports, 70 percent of which is cocoa.[14] Globally, Ghana is the second largest producer of cocoa after Côte d'Ivoire, having generated 17 percent of the global supply from 2019 - 2022. Ghana is also a more minor supplier of half a dozen other tree crops including cashews (2 percent of global supply in 2020), coconuts, oil palm fruit, natural rubber (each <1 percent but among the top-20), mangos (<1 percent, ranked 36th), and shea nuts (4.5 percent, ranked 4th).[15] Generally, these other tree crops have lagged with lackluster competitiveness and a lesser ranking in global export markets than what could be achieved (Table 1).

Table 1: Production and exports of tree crop products

	Production volume in 1,000 tons (Global ranking) in 2020	**Export value in millions of US$** (Global ranking) in 2019
Cocoa	800 (2nd)	2,681 (2nd) 2,714 (2nd) *including chocolate*
Cashew	82 (15th)	243 (5th)
Coconut	412 (15th)	2.9 (14th) 3.6 (16th) *including copra and copra oil*
Palm oil	2,471 (9th)	110 (11th)
Rubber	50 (19th)	65 (12th)
Shea	34 (4th)	NA
Mango	99,242 (36th)	NA

Source: FAO 2022, and Comtrade 2022. Note: Palm oil includes palm kernel oil. Coconut production is based on coconuts in shell, exports are based on fresh and dried coconuts, copra, and copra oil. Mango production includes guavas and mangosteens.

9. **The tree crop sector can contribute substantially more to Ghana's economy and society than it currently does, in terms of job creation, poverty reduction, and upholding the socio-economic fabric of some of the country's poorest people.** Cocoa, cashew, coconut, and rubber segments employ some 728,000, 100,000, 10,364, and 4,322 farmers

[11] International Labor Organization (ILO) 2019 estimate.
[12] World Bank National Accounts data, *https://data.worldbank.org/*
[13] World Bank. 2017. Creating Markets in Ghana: Country Private Sector Diagnostic.
[14] Data from FAOSTAT, 2022, *https://www.fao.org/faostat/en/#data*
[15] FAOSTAT, 2022.

respectively.[16] On-farm employment in producing these crops accounts for nearly 6 percent of Ghana's total labor force. Yet low farm-level earnings typically undermine the sector as a source of sustainable livelihoods for most growers. In cocoa for example, a 2021 study found that up to 60 percent of producers remain below the international poverty line and that between 75 and 90 percent earn less than US$5.81 (2018 Purchasing Power Parity (PPP) per person per day).[17] Less information is available on poverty in other tree crop segments of Ghana, but most producers are predominantly rural smallholders, and most likely poor.[18]

Challenges facing the tree crop sector

10. **Persistent challenges limit the development of the tree crop sector.** Low and stagnant productivity is the most pressing of these, with low yields despite increases in output in recent decades.[19] Low yields are followed by weak coordination and management[20] which limit farmers' access to inputs, technical capacity, and negotiating power. Producers also remain largely unaware of the practical implications of climate smart agriculture (CSA)[21] and related practices, and of the risks that climate change and biodiversity loss represent for their production. This is highly significant at the macro level as well, given the sector's role as a primary driver of deforestation as well as its considerable potential contributions to reforestation, restoration of degraded lands, and carbon sequestration and storage. Tree crops can be used as a centerpiece of agroforestry. Tree crops are vulnerable to shifts in agroecological zones resulting from climate change. They are also significantly more vulnerable to pests and diseases, and because they take several years to generate yields, tree stocks require proactive rejuvenation efforts, including incentives and financing, to prevent productivity decline. Child labor is common in the sector and well documented particularly in cocoa. Farmers lack connectivity with upstream service providers for inputs such as saplings and fertilizer, and downstream value addition including processing. The capacity to process and add secondary value is limiting the country's optimization of revenue from tree crops. The situation varies by tree crop, cocoa being particularly distinct. Annex 1 provides greater crop level details.

- ***Cocoa.*** Cocoa is primarily grown on small farms of 2–3 hectares that are concentrated along the forest-zone belt running from the Western Region through the regions of Western North, Bono, Ahafo, Ashanti, Central, Eastern and Volta. Its production is an essential part of the Ghanaian economy. In 2022, the country produced about 800,000 tons of cocoa, worth roughly US$2 billion - accounting for 9 percent of Ghana's GDP and 20–25 percent of its foreign exchange earnings.[22] The parastatal cocoa marketing board, Ghana Cocoa Board (COCOBOD), provides services to the sector, protects producers from price volatility in the global market, and retains a monopoly over cocoa purchases and exports. Governance in cocoa is hindered by the financial and organizational capacity of COCOBOD facing a negative net financial position.[23] This provides limited resources to promote sector growth, for instance through its Productivity Enhancement Program (PEP), or to build much needed technical capacity and knowledge on the part of its institutional cadre. The situation has been exacerbated by spiraling

[16] See annex 2 for more details on the cashew and coconut sectors. Employment statistics by the Directorate of Crop Services (DCS) of MOFA, 2022.
[17] A Living Income for Cocoa Producers in Côte d'Ivoire and Ghana? van Vliet Jiska A., Slingerland Maja A., Waarts Yuca R., Giller Ken E. (2021), Frontiers in Sustainable Food Systems, vol. 5,
[18] Cashew, for example, is grown in the northern savannah zone (Upper West, Upper East, Northeast, Northern, Savannah, Bono, and Bono East regions) where the poverty headcount is well above the national average, ranging from 50 to 70 percent.
[19] In raw cashew nuts (RCN) for example, Ghana's production grew ninefold in just ten years, from roughly 9000 tons in 2000 to over 82,000 tons in 2020. Coconut production increased by 33 percent between 2000 and 2020.
[20] The weak coordination and management as it pertain to each crop are described in the proceeding paragraphs.
[21] Climate-smart agriculture (CSA) is an integrated approach to managing landscapes—cropland, livestock, forests and fisheries--that address the interlinked challenges of food security and climate change.
[22] Annex 2 provides greater detail about the cocoa sector in Ghana.
[23] See COCOBOD Annual Report and Consolidated Financial Statements, 2020 and 2021. *https://cocobod.gh/resources/annual-report*

industry costs, from 16 percent of the cocoa price per ton in 2016, to 36 percent in 2021. These costs are primarily driven by an inefficient input (fertilizers and agrochemicals) procurement and distribution regime, construction of roads, and increasing cost of debt servicing by the COCOBOD. These have exerted a depressing effect on the farmer price, excluding the living income differential (LID) [24], as well as margins to private sector entities in the domestic supply chain. In addition, liquidity constraints at the Board have caused delays in the payment of cocoa beans delivered by Licensed Buying Companies (LBCs), thereby contributing to declining purchases as well as smuggling of both beans and subsidized fertilizer to neighboring countries. [25]

Another serious challenge is manifest in the form of pressure from cocoa swollen shoot virus disease (CSSVD) and its effects on the lifespan and yields of infected trees.[26] Yet replanting efforts are lagging. The spread of CSSVD, is the single most critical issue for cocoa productivity, especially in the Western North region. In addition to CSSVD, limited intensification and other pests and disease curtail productivity. Yields averaged 541 kg/ha in 2018–2021, well below the yields of 1,400–3,000 kg/ha attained on research and more productive farms. With limited virgin land left to expand into, closing this yield gap is the main way Ghana can increase cocoa output. Cocoa farming is particularly vulnerable to climate change, and to an extent, a contributor to the phenomenon. The decline in precipitation and temperature rise that Ghana has been experiencing since the 1960s has negatively impacted cocoa harvests. Meanwhile, cocoa is a driver of deforestation through area expansion in forested zone. Since 2000, deforestation increased significantly in Ghana with much of it occurring in Ghana's high forest zone (HFZ).[27] This is the main area for cocoa production in the country, covering over 1.2 million hectares of forest reserve and protected areas.[28] Nonetheless, more recently the impacts of illegal logging and mining especially in HFZ, and agricultural expansion for food crops are the major drivers of deforestation. Deforestation in cocoa is an issue which assumed greater urgency in November of 2021 with the European Commission's new regulation to minimize European consumption of products associated with deforestation or forest degradation.[29] Once the regulation is in effect, exporters are required to provide evidence that cocoa beans have not been grown on land that has been subject to deforestation or forest degradation after December 21, 2020 (the so-called "cut-off date").[30] As part of their due diligence obligations, operators must ensure the full traceability of the covered goods. It is expected that the regulation will be approved by the European Parliament in 2023 and that compliance with the Regulation will become mandatory 12 months after it comes into force. Cocoa rehabilitation, as planned in the proposed project, contributes to reforestation/afforestation and carbon sequestration. Rehabilitation programs of COCOBOD do not engage in forest reserves and focus on CSA (including agroforestry practices of replanting at least 18 – 20 shade trees per hectare). Not least of all, today,

[24] The LID is a fixed premium of US$400 per ton paid on all cocoa contracts sold by Ghana and Cote d'Ivoire to support farmers achieving a living income. The entire LID is transferred directly to farmers.

[25] COCOBOD has recently engaged with a consulting firm (Madison-Pine) to assess, recommend, and implement measures for improving the cooperate governance of COCOBOD. The World Bank has identified Trust Fund resources to leverage the findings of the consulting firm to support on implementation of some proposed recommendations.

[26] Almost 25% of cocoa trees are now around 30 years old and their productivity is declining (COCOBOD, 2015).

[27] Ghana has experienced a high rate of deforestation in recent decades, losing 17 percent of its forestland from 2001–2019, according to the national forest reference level.

[28] Drivers of cocoa sector encroachment on forestland include shifting cultivation as a response to soil fertility decline, limited intensification, the absence of a clear land and tree tenure regime, the shrinking of land that is suitable for cocoa production, and the adoption of full-sun varieties that compete directly with standing forests.

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[30] The Proposal defines "deforestation" as being the conversion of forest for agricultural use, whether human induced or not. Furthermore, "forest degradation" is defined as harvesting operations that are not sustainable and cause a reduction or loss of the biological or economic productivity and complexity of forest ecosystems, resulting in the long-term reduction of the overall supply of benefits from forests, which includes wood, biodiversity and other products or services.

Ghana's cocoa processing capacity is underutilized and post-secondary value addition to beans is limited. While Ghana has developed a reputation for high-quality cocoa, most of the value that is added to cocoa is created after the beans are shipped out of the country.[31]

- ***Cashew.*** Although its volumes and value are nowhere near cocoa's, cashew nuts are among Ghana's major export crops. The crop is primarily grown by smallholders with under 3 hectares of land in the Bono East, Bono, Ahafo, Northern, Upper West, and Upper East regions. Most cashew nuts—over 90 percent—are exported in raw form. Seeing potential in the crop, the GoG issued a 10-year Cashew Development Plan in 2018. Although the government aimed for 250,000 hectares of cashew plantations by 2020, Ghana harvested a little over 155,000 hectares of cashew nuts that year. Yields are higher than they are in some West African countries like Benin and Burkina Faso, but national yields are still low, averaging about 530 kg/ha in 2018–2021, or roughly 30 percent of the crop's technical potential according to the Ministry of Food and Agriculture, MOFA (1,800 kg/ha). Addressing low cashew yields is a major challenge for Ghana. Use of poor agricultural practices, low yielding lower quality unimproved tree varieties, limited use of inputs, pest and diseases are some of the main causes of these relatively low yields. Another challenge facing the subsector is a lack of organization. The Cashew Council operates with a limited governance structure and mandate. It is linked to farmer associations (though its Farmer Based Organizations (FBOs) are mostly unregistered), a processors' association, and an exporter association. For farmers, a lack of access and dissemination of CSA, post-harvest management and storage at the group level, and understanding of quality standards and norms, limits their ability to use collective bargaining power for establishing forward contracts with private off-takers. As of 2021, Ghana reportedly processed less than 10 percent (7.7–9.5 percent) of its raw cashew nuts (RCNs). Many processors use manual or semi-automatic machinery and are not able to operate efficiently; and many struggle to compete with better-resourced foreign buyers to ensure a continuous supply of raw material. Several national processing plants have shut down as a result. Meanwhile, cashew nut byproducts such as cashew apples and shells are usually discarded rather than transformed into marketable products such as food and feed ingredients, leaving value on the table.[32] Developing local processing capacity could have multiple benefits (see Annex 1). Labor-intensive processing is seen as a promising source of additional employment, especially for women, who do about 80 percent of agri-processing.[33] Government regulations supporting the development of processing, RCN quality enhancement, and value addition to exports are currently weak but ramping up (see government strategies section below). Key challenges include an unfavorable business environment and limited access to technology and finance (working capital). Cashew is less susceptible to climate change impacts than cocoa and can be used to derive carbon benefits but is not immune to climate pressure. One concern is that the pest and disease pressures that already weigh down their yields are expected to worsen under changing climate conditions.

- ***Coconut.*** Ghana is a relatively small producer of coconut by global standards, but the crop makes important contributions to the local economy in parts of the country. Coconut is extensively grown in Western, Central, Accra, Eastern, Ashanti, and Volta, and to a lesser extent in Bono, Ahafo, and Oti. It plays a critical role in the parts of the Western region where its production is concentrated, primarily in the Jomoro, Ellembelle, and Nzema East Districts, and it is a significant source of income along Ghana's coast; the tree growing well on marginal lands. Its production is mainly smallholder on an average of 2–5 hectares, though more recently coconut growing is tending towards commercially oriented plantations ranging from 10–200 hectares. Growth in production

[31] It is telling that in 2019, Ghana's exports of cocoa were worth 81 times more than its exports of chocolate. Ghana processes about 30 percent of its cocoa beans and the government aims to increase that share to 50 percent.
[32] One analysis found that Ghana had the lowest gross margins on cashew processing among its African peers (Nigeria, Cote d'Ivoire, Benin, Guinea-Bissau, Mozambique, and Tanzania). USAID-funded ProCashew Project (2022).
[33] It reportedly takes roughly 380 people to process 1,000 tons of cashew.

volumes has primarily resulted from coconut's expansion, the area on which coconut was harvested having grown by 43 percent over the last two decades. Ghana's average yields are not particularly high, averaging a steady 5.4 tons per hectare in 2018–2020. At present, supply of coconut is well below demand for local consumption, processing, and exports. The coconut federation supports the sector but is constrained by weak governance and limited capacity, which in turn limits support to its associations and FBOs to link its farmers and value chain actors to services. Coconuts may also offer an attractive climate adaptation strategy to the extent that, compared to many crops, the trees can tolerate relatively salty and dry conditions. Ghana's coconut sector is still, to an extent, recovering from its devastating encounter with Cape Saint Paul Wilt Disease (CSPWD). Since the early 2000s, efforts have been underway to develop and plant CSPWD-tolerant varieties. More support to research in this area of geographic varietal suitability is needed. Challenges range from aging trees and a lack of access to finance for replanting, to weak land tenure and low investment in production technologies, something that has implied high land preparation and labor costs. Ghana also has limited capacity to process coconut products and weak regulation of the coconut industry. The country could position itself more strongly in relation to market opportunities that are emerging. Those including a rapidly growing regional market for cosmetics and food products and rising European demand for fresh coconuts and coconut-based snacks.[34] Coconuts are perceived as a zero-waste product. Shells can be used to produce charcoal and therefore activated carbon with a variety of uses. These include in air conditioning, car filters, as a source of sustainable fuel, and critically in the mining industry.

- **Rubber.** Rubber production in Ghana is modest by global standards at just around 54,800 tons in 2021 and occupying the 19th position internationally in terms of production. Productivity is somewhat low at 0.88 tons/hectare, compared to global leaders in production like Thailand (first) and Vietnam (third) whose yields are 1.39 and 1.69 tons/hectare respectively. Potential for exports is high, wherein 95 percent of rubber produced in Ghana is exported and the country is the 12th largest exporter in value terms. Areas suitable for natural rubber production in Ghana include the forest zones of the Western, Central, Eastern, and Ashanti regions. The tree requires a minimum rainfall of 1,200 mm per annum and is evenly distributed on lower slopes, uplands, and flatlands. Around 70 percent of rubber production in Ghana comes from smallholder farms. Rubber is increasingly becoming a lucrative farming venture for those looking to diversify out of cocoa, coconut, and other tree crops, despite the long gestation period of six to seven years. Planting of rubber trees on non-forested land can contribute heftily to climate benefits by acting as a carbon sink, sequestering carbon in biomass and indirectly in soils. The Ghana Rubber Estates Limited (GREL) controls about 60 percent of the land area in rubber plantation, and around 90 percent of processing.[35]

11. **Child labor is of concern in all agricultural subsectors in Ghana both inside and outside cocoa production**. A 2017 ILO, UNICEF, and World Bank study[36], based on the 2012/13 Ghana Living Standards Survey (GLSS6), estimated that for the 5 – 14 age group, child labor in non-cocoa agriculture is 13.3 percent, and 5.0 percent in cocoa. Roughly 6.6 percent and 5.4 percent of children in the 15-17 age group work in non-cocoa agriculture and cocoa respectively. In the five principal cocoa-growing regions, almost 9 percent of all children are in cocoa child labor, translating into 464,000 children. Of these, 63 percent (294,000 children) were exposed to at least one component of hazardous child labor in cocoa production, two-thirds of all children working in cocoa production self-report at least one injury

[34] Nearly 90 percent of Ghana's coconut exports are already destined for Europe.
[35] GREL was wholly state owned in the 1980's but after support from Agence Française de Development (AFD) to rehabilitate and manage the company's rubber plantation and to build a new rubber processing plant, in 1996 the French management company, Societe Internationale d Plantation d' Hevea (SIPH) became the major shareholder (60%) of the company.
[36] ILO, UNICEF and World Bank. Not Just Cocoa: Child Labor in the Agricultural Sector in Ghana (October 2017), *http://www.ucw-project.org/attachment/12032018169Not_Just_Cocoa_Ghana_child_labour_summary.pdf*

or ill-health episode a frequently overlooked form of workplace hazard.[37] Livelihood interventions can prevent child labor. Among these are a combination of measures that address the root causes of child labor like area-based interventions to improve access to basic social services and child protection, and access to decent work opportunities for children of the minimum age for employment and their adult household members.

12. **Ghana has a comprehensive legal framework to prevent child labor but efforts to translate this to measurable reductions are lagging.** There is a national Ghana Child Labor Monitoring System (GCLMS) covering 40/261 districts, that will soon be linked with the Social Welfare Information Management System (SWIMS) that so far covers 162/261 districts (see Box 1). The Ministry of Gender, Children and Social Protection (MOGCSP) and the Ministry of Employment and Labor Relations (MELR) through its Child Labor Unit have conducted large scale awareness and education campaigns on child labor over the past decade. COCOBOD has complemented these efforts with awareness and education activities with cocoa farmers and communities in cocoa-growing areas. Child labor persists[38] partly due to low coverage, weak convergence, and limited synergy of efforts among the many stakeholders that need to be involved in the prevention, referral and remediation of child labor.

Box 1. Government Policy and Interventions in Child Labor in Ghana

In line with Ghana's decentralization agenda and in accordance with the government's action plans against the worst forms[39] of child labor (the third phase for 2023-2027 is currently being developed), the government's explicit policy priority to prevent and combat child labor is to ensure comprehensive integrated area-based prevention and response systems at the district level in the form of Child Labor Free Zones.

Among the promising initiatives that have moved to the pilot phase is the JICA-supported Child Labor Free Zone (CLFZ) project, for which the MELR has formally adopted guidelines. The Integrated Social Services (ISS) initiative, led by the MOGCSP, is another promising initiative to be included in a UNICEF, ICI, and government-pooled funding mechanism to address child labor in the cocoa sector. Both CLFZ and ISS are complementary initiatives that strengthen decentralized structures to address child labor, leveraging key national systems such as the GCLMS, the MOGCSP Child Protection and Social Welfare Case Management System, and the SWIMS. Metropolitan, Municipal District Assemblies and their Social Services Subcommittees (SSSCs), as well as District Social Welfare and Development Officers and Labor Officers, are at the helm of these local systems and are responsible for managing and reducing the risk of child labor.

The World Bank's Ghana Productive Safety Net Project 2 (GPSNP2, P175588) and GPSNP2 additional financing (P180659) focus on providing beneficiaries access to integrated social protection at a large scale. The program is implemented by the MOGCSP social protection directorate and the Ministry of Local Government, Decentralization and Rural Development (MLGDRD). Among the integrated programs supported are access to (i) Livelihood Empowerment Against Poverty (LEAP) cash transfers; (ii) Ghana National School Feeding Program (GSFP); (iii) National Health Insurance Scheme (NHIS); and (iv) Labor-Intensive Public Works (LIPW) Program.

[37] A NORC survey undertaken in 2018/2019 commissioned by the USDOL, finds 770,000 children in Ghana engaged in child labor in cocoa production. Of these, 92 percent (710,000 children) were exposed to at least one component of hazardous child labor in cocoa production. However, the study does not justify the big difference from the GoG GLSS6 findings and its own, in absolute terms. The GoG's formal letter of objection to the reliability of NORC data and comparisons are presented on Page 22 of the report.
https://www.norc.org/PDFs/Cocoa%20Report/NORC%202020%20Cocoa%20Report_English.pdf

[38] US Bureau of International Labor Affairs (2021) qualified Ghana's efforts to eliminating the worst forms of child labor as "moderate". See: Findings on the Worst Forms of Child Labor - Ghana | U.S. Department of Labor (dol.gov)

[39] See worst Forms of Child labor defined by Article 3 of ILO Convention No. 182,
https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C182

The LIPW includes among its community activities: rehabilitation and maintenance of rural feeder and access roads; climate change mitigation interventions (including afforestation and reforestation, through seedling production, cultivation of fruit trees and cash crops (such as cashew). The vector of interventions under GPSNP2 project promote a child labor prevention and mitigation response among the poorest. The proposed project will build on these existing projects for prevention, mitigation, and remediation of child labor.

13. **Gender inequities are a persistent concern in Ghanaian agriculture.** Women are estimated to contribute up to 41 percent of labor input, but they most often work on their husband's land as unpaid family labor. Customary laws drive access and ownership of land and often dictate that on-farm resources belong to men (women are three times less likely to own farms than men), a situation which leaves women at a disadvantage. It is estimated that if women farmers are granted similar access to productive resources as men, they could increase yields on their farms by 20 to 30 percent, which could raise total agricultural output in Ghana by 4 percent.[40] Women are also less likely than men to have access to formal financial services in rural areas. In addition, 16.3 and 35 percent of urban and rural households engage in the processing of agricultural produce either for sale or own use, respectively. Females represent 90.2 percent of the population responsible for processing agricultural produce, with 90.4 and 90.0 percent in urban and rural areas, respectively.[41] In the cocoa sector women represent 36 percent of farmers at the national level.[42] In this sector, while men are generally in charge of pruning, spraying, fermenting, and selling, all family members are involved in the rest of the activities. Disparities are also noticed in cocoa farmers' organizations. For example, it was estimated that 53.8 percent of male plot managers are members of FBOs, while only 25.5 percent of female plot managers are.[43] In the cashew sector, the main activities are planting either seeds or grafted seedlings, weeding, spraying fertilizer, and pruning. They are typically conducted by men but may also be done by women. Harvesting is conducted by picking from the tree or collecting fallen apples - usually women's work. It was estimated that only 22 percent of cashew farmers are female and 41 percent of women active in the value chain conduct cashew-related activities together with their spouses. Since women are the key actors in local processing, they stand to benefit more from expanding the processing segment. In the overall cashew value chain, women dominate the downstream activities, especially in the processing segment, while men are more present in the upstream activities.

Government Strategies in the tree crop sector

14. **The Government promotes a dual strategy for the development of the tree crop sector; one focused on cocoa and the other on all other strategic tree crops.** For the cocoa sector, the COCOBOD adopted its Second Cocoa Sector Development Strategy for 2017-2027 (CSDS-II) which aims to addresses weakness of the institution's first strategy (CSDS I). CSDS I, focused predominantly on interventions to increase productivity but did not adopt adequate strategies for dealing with CSSVD, and failed to include management information systems for efficient operation. CSDS II addresses these weaknesses by seeking to modernize the industry to be competitive, robust, and resilient. Interventions of CSDS II are geared towards improving productivity and efficiency, adopting innovation and differentiation with a focus on quality management, traceability, and certification.

15. For the other tree crops, the GoG established the Tree Crops Development Authority (TCDA) in 2019 among other

[40] UNDP Ghana Gender Analysis (2019)
https://www.ndcs.undp.org/content/dam/LECB/docs/pubs-reports/undp-ndcsp-ghana-gender-analysis-2019-v4.pdf
[41] Ghana Statistical Service. June 2019. Ghana Living Standards Survey (GLSS) 7. Main Report.
[42] Women represent 37% and 32% of cocoa farmers in Western and Eastern regions. They also represent 35%, 36%, and 30% of the Essam, Adabokrom, and Assamankese districts, respectively. Source, cocoa management system, COCOBOD.
[43] Danso-Abbeam, G., Baiyegunhi, L. J. S., & Ojo, T. O. (2020). Gender differentials in technical efficiency of Ghanaian cocoa farms. Heliyon, 6(5), e04012. https://doi.org/10.1016/j.heliyon.2020.e04012

purposes to support diversification within the sector.[44] In 2022, the TCDA launched a five-year tree crops development strategy (2022–2027) targeting the six-priority tree crops: cashew, shea, mango, coconut, rubber, and oil palm (see Annex 1). This strategy aims to regulate and develop in a sustainable environment the production, processing, and trading of six tree crops, and is articulated around four main strategic/operational areas (i) research support (ii) production and value chain support including commercialization; (iii) capacity building; and (iv) licensing and regulation. TCDA is also enacting measures through parliament via the tree crops regulation to be passed in 2023 like (i) setting farm gate prices[45]; (ii) imposing higher levies on foreign tree crop buyers; (iii) allowing processors to access pre-season tree crop purchases; and (iv) repurposing some of the levies as subsidies for processors. **The proposed project is a critical intervention in the World Bank Group's assistance for the implementation of GoG's tree crops strategies and contribute to the diversification of its agriculture sector.**

Strategic alignment

16. Project design and activities are fully integrated into a multi-pronged, coordinated program which also include (i) key reforms such as the establishment of a comprehensive national cocoa traceability system; (ii) the recently approved Ghana Food System Resilience Program (P178132), supporting the development of promising staple food crop value chains; (iii) the Emissions Reduction Program (ERP, P160339) and the Forest Investment Program (FIP, P163745) reducing emissions and forest degradation; and (iv) other IDA-financed projects in the education sector (Ghana Accountability for Learning Outcomes Project, P165557, Ghana Jobs and Skills Project, P166996) and social sectors (GPSNP2) to improve the quality of social services to fragile rural households. The ERP program makes payments to the Ghana Cocoa Forest REDD+ program for measured, reported, and verified emission reductions related to reduced deforestation, forest degradation and enhancement of forest carbon stocks.[46] The FIP project focuses on improved forest resource management to reduce forest loss and degradation in selected landscapes in Ghana's high forest zone. Some support is provided for forest and tree management in admitted cocoa farms in forest reserves. These projects will be implemented in a coordinated fashion in priority areas selected because of their key importance for sustainable tree crops production. Project activities will also be closely coordinated with activities by other development partners and the private sector under programs such as the Cocoa & Forests Initiative (CFI) and the International Cocoa Initiative (ICI).

C. Relevance to Higher Level Objectives

17. **The proposed project is fully aligned with the Country Partnership Framework (CPF) for fiscal years 2022-2026 (report No. 157249-GH).** It contributes to the CPF's Focus Area 1, *Enhancing Conditions for Private Sector Development and Quality Job Creation*, and directly to objective 1.1 of improving conditions for enterprise development by improving the productivity of rural farm enterprises and smallholders (including by promoting climate-smart technologies and practices), the enabling environment for cocoa and other tree crop supply chains, the national system for the prevention of child labor, and women's participation in all aspects of the sector. It also supports objective 1.2 to increase access to finance by helping commercial agribusinesses in the cocoa and other tree crop value chains identify private sector investment needs and opportunities as well as innovative financing models. It will support objective 1.5 of strengthening market- relevant skills for a productive workforce with a focus on youth

[44] TCDA was established through an act of parliament, the Tree Crops Development Act, 2019 (Act 1010).
[45] An initial attempt to address price volatility was taken when the TCDA set an indicative minimum farmgate price for RCN in December 2021—a measure that is expected to be strengthened going forward.
[46] To date the program focuses more on forest zones and predefined hotspot intervention areas in a few districts.

and women and promoting job creation through SMEs and agri-processing. The project contributes to the CPF's Focus Area 3, *Promoting Resilient and Sustainable Development* and in particular to objective 3.2 of improving the management of natural resources and climate change risks by supporting the integrated and climate-smart management of productive agricultural landscapes, working forests/plantations, and natural resources; ensuring the equitable representation of women in community decision-making and land management; supporting the implementation of environmental strategies and regulations; and supporting sustainable livelihood strategies. The project will help Ghana achieve greenhouse gas emission reduction commitments under its NDC by supporting a zero-deforestation tree crops sector that results in less pressure on standing forests and increases tree cover on plantations that employ agroforestry.

18. **The proposed project is aligned with the following pillars of the World Bank COVID-19 response**[47]: (i) protecting poor and vulnerable people; (ii) ensuring sustainable business growth and job creation; and (iii) strengthening policies, institutions, and investments for rebuilding better. The project is equally aligned with all pillars of the World Bank Global Crisis Response Framework.[48] Therefore, the proposed operation meets the eligibility criteria to receive Scale-Up Window Shorter Maturity Loans (SUW-SML) financing.

19. **The sustainable development of Ghana's tree crop sector requires a transformational approach addressing in a coordinated fashion, the complex and inter-related sustainability and governance issues threatening its future development.** The proposed project is consistent with Ghana's medium-term national development policy framework (MTNDPF, 2022 – 2025)[49] . It will directly contribute to the GoG's priorities for economic and social development laid out in the Coordinated Program of Economic and Social Development Policies (2017–2024)[50], and the Ghana Beyond Aid (2019)[51] strategy, which envisions Ghana becoming a more self-reliant, inclusive, resilient, and sustainable economy. It focuses on: (i) accelerating the implementation of the CSDS II (2017-2027) as well as the Tree Crops Development Strategy (2022-2027[52] which aim at supporting sustained increases in productivity, value added and producers incomes in the sector; (ii) stopping further deforestation of the remaining forest resources by promoting zero-deforestation cocoa and cocoa-based agroforestry; (iii) stepping up the prevention and response to child labor in tree crops plantations; and (iv) improving the governance of the sector and the capacity of key institutions for implementing Government strategies.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

20. The Project Development Objective (PDO) is to improve economic, climate, and social resilience in selected tree crop value chains.[53]

[47] *https://documents1.worldbank.org/curated/en/136631594937150795/pdf/World-Bank-Group-COVID-19-Crisis-Response-Approach-Paper-Saving-Lives-Scaling-up-Impact-and-Getting-Back-on-Track.pdf*
[48] *https://documents1.worldbank.org/curated/en/099640108012229672/pdf/IDU09002cbf10966704fa00958a0596092f2542c.pdf*
[49] https://ndpc.gov.gh/media/MTNDPF_2022-2025_Dec-2021.pdf
[50] https://faolex.fao.org/docs/pdf/gha174137.pdf
[51] http://osm.gov.gh/assets/downloads/ghana_beyond_aid_charter.pdf
[52] The CSDS II and Tree Crops Development Strategy are not available online but can be shared upon request.
[53] For the purposes of the project (i) economic resilience outcomes improve productivity and value addition; (ii) climate resilience outcomes are increase in climate adaptation and mitigation strategies resulting in reduced GHG emissions; (iii) social resilience outcomes address child labor issues and gender gaps in the intervention areas.

21. The PDO level indicators are:
    (i) Increase in yields for targeted tree crops, (percent, disaggregated by tree crop)[54]
    (ii) Increase in value-added (sanitary and phytosanitary standards (SPS), quality assured) commodity sold; (percent, disaggregated by tree crop)
    (iii) Reduction in net greenhouse gas emissions (tCO2eq per year, *Corporate Results Indicator*)
    (iv) Share of households in project communities identified to be at risk and subsequently prevented from child labor (percent, disaggregated by type)[55]

B. Project Components

22. **The project design embodies the following principles:** (i) Combined support to critical tree crops sector-wide activities and reforms and field level investments in priority agro-ecological areas selected on the basis of their potential to achieve critical mass and optimize the efficiency of interventions; (ii) Improvements in the national institutional framework (policy reforms and governance) of the tree crops sector and the capacities of its actors to ensure the economic, social and environmental sustainability of their productions, particularly, improve farmers' income, reverse the current trend of deforestation and contribute to eliminating child labor; (iii) Better inclusion of all actors in sector management—including women and youth—by improving the governance of the sector and the management and efficiency of FBOs, and strengthening the capacity of key institutions overseeing the sector; and (iv) Implementation arrangements that rely on existing national institutions: MOFA, COCOBOD, TCDA, the National Agriculture Research Centers, Ghana Export Promotion Authority (GEPA), Ghana Investment Promotion Center (GIPC), Food and Drugs Authority (FDA), Ghana Standards Authority (GSA), FBOs and their communities and the private sector (by scaling up their on-going activities in support of tree crops development). Annex 2 provides further details on GEPA, GIPC, FDA, GSA.

23. **Geographic focus:** For cocoa, the project will intervene in the Western North (districts of Essam and Adabokrom) and Eastern regions (Asamankese district - see selection description in Annex 2, Table A2.5. and map in Annex 9).[56] Compared to the national poverty rate of 23.4 percent, the poverty levels in Essam, Adabokrom, and Asamankese were 14.6, 24.7, and 11.0 percent respectively. However, these rates are not likely to be representative of the population of cocoa farmers, as this group tends to be amongst the poorest in Ghana. For the other tree crops (cashew, coconut, and rubber), the following districts were prioritized: (a) Cashew in Bole and Sawla-Tuna-Kalba of the Savannah region, Wenchi and Tain in Bono region, Techiman Municipal and Techiman North in Bono East; (b) Coconut in Upper West Akim and Suhum of Eastern Region; and (c) Rubber in Upper West Akim. The poverty levels are very high (well above the national average) in predominant cashew production areas targeted through the project in the Savannah and Bono regions. For Bole and Sawla-Tuna-Kalba in Savannah and Wenchi and Tain in Bono, the poverty incidence was 65.0, 79.4, 41.2, 38.2 percent. In the other project targeted region of Bono East, in Techiman

[54] The yield indicator is included as a PDO indicator even if it takes several years to realize higher yields from rehabilitation or planting as this is a higher-level outcome indicator than the intermediate beneficiary number output indicator. The team has developed yearly targets by crop for yield indicator and expect significant changes after year 3 of the project.
[55] The child labor indicator will be measured via household surveys in beneficiary communities. A baseline project prevalence (i.e., share of households at risk) will be established prior to project implementation. Child labor risk in communities does not imply child labor will be tolerated on project investments per ESS2. Type refers to hazardous and nonhazardous.
[56] Child labor cannot be used as a selection criterion due to lack of available data. Forest zones (and deforestation) were considered for cocoa and cashew. Concerns like CSSVD prevalence and production potential were critical for selection.

Municipal and Techiman North were 14.2 and 15.7 percent. Lastly, for the targeted rubber and coconut producing district of Upper West Akim in the East, poverty was 11 percent, and for coconut in Suhum in the East just 6.5 percent.

24. **The project also has a focus on closing the gender gaps in the tree crops sector by:** (i) increasing women's ability to obtain productive resources and increase incomes through tailored access to inputs, advice, and financial services, (ii) supporting women to open bank accounts and mobile money accounts to receive direct livelihood support payments and farm maintenance payments, (iii) building their entrepreneurial capacities to develop activities in tree crops production, processing, and value addition (via SMEs) – with preference given to women in this segment; and (iv) promoting their participation and leadership in FBOs and decision-making in sector management. By tackling gender gaps in the sector, the project is looking to have a strong long-term impact on women's incomes and associated household welfare. The gender gaps to be addressed respond directly to the World Bank's Gender Strategy[57] to provide more and better jobs and increase control of assets. Annex 8 provides a gender analysis and action plan that aims to describe relevant gender gaps and identify specific actions supported by the project. During implementation further analysis will be done to identify factors preventing women's participation in the identified actions for closing gender gaps, and what can be done to incentivize or increase knowledge and awareness. The project will make efforts to reach out to women through local communities, civil society, women's groups, and other stakeholders.

25. **Project cost and duration.** The proposed project is structured as an Investment Project Financing (IPF) to be implemented over six years, from 2023 to 2029. The total cost of the project is US$227.5 million with US$50 million from IDA Performance Based Allocation (PBA), US$150 million from the SUW –SML, and US$27.5 million in counterpart financing from COCOBOD. Ghana is eligible to receive SUW-SML financing in the current World Bank fiscal year.

26. **Components description.** Reflecting the above principles, the project clusters its activities around three interrelated technical components supporting soft and hard solutions to promoting the tree crops sector development, respectively: (i) Institutional Strengthening and Value Chain Governance; (ii) Improving Tree Crops Productivity and Climate Resilience; and (iii) Support for Post-Harvest Management, Value Addition, and Market Access. The fourth project component focuses on project management and monitoring. Table A7.1. in Annex 7 provides direct climate adaptation and mitigation activities by subcomponent.

Component 1. Institutional Strengthening and Value Chain Governance (US$16.9 million of IDA).

27. **This component aims to strengthen the institutional capacity of COCOBOD and TCDA and improve sector governance for competitive and sustainable development of tree crops**. This will be achieved by: (i) supporting organizational capacity development of both institutions; (ii) operationalizing policies and regulations meant to improve the enabling environment including for private sector investment; (iii) investing in digitizing the value chains for traceability including environmental and social sustainability, and (iv) building the national capacity to monitor and prevent child labor in the tree crop sector. The project will support both TCDA and COCOBOD in their digital transformation for traceability, including setting digital payment and money collection systems, tree tagging and registration, bar coding, and monitoring of output from farm to port. It is expected that the digital management systems that trace every tree crop farmer under the project (and beyond) will contribute to improving the governance of the value chains; especially, in terms of transparency.

[57] *https://documents1.worldbank.org/curated/en/820851467992505410/pdf/102114-REVISED-PUBLIC-WBG-Gender-Strategy.pdf*

Subcomponent 1.1. Institutional capacity, policies, and regulations (US$3.4 million of IDA)

28. Subcomponent 1.1 supports the Ghana Cocoa Board in implementing its Medium-Term Capacity Building strategy.[58] Implementation includes strengthening the operational capacity of its technical departments like the research, monitoring and evaluation department (RM&E), the Cocoa Health and Extension Division (CHED), Quality Control and Cocoa Marketing, as well as the auxiliary departments including human resource, finance, internal audit, and information system departments. The project will also finance the following activities (i) COCOBOD Information Technology (IT) agility and paperless transformation of internal operations, as well as interoperability of administrative processes with the Cocoa Management System (software, IT equipment and training of staff; (ii) technical assistance (TA) to develop a methodology for measuring and monitoring carbon sequestration under cocoa farms, for accessing climate financing;[59] (iii) TA to finalize and implement the policy and standards for cocoa agroforestry. These standards will guide on-farm productivity investments and implementation will result in substantive above and below ground carbon stock[60]; and (iv) a study to evaluate and propose modifications to expand cost-effective access to semi-finished cocoa products (liquor, butter, and powder) from free zones companies through regulatory or policy instrument changes.[61] Support to activities under this subcomponent will strengthen COCOBOD's policy environment. Activities (ii) and (iii) will be done in conjunction with the forestry commission (FC) and CRIG, and directly contribute to agricultural policy development on climate change adaptation. The COCOBOD Project Implementation Unit (PIU) will be responsible for implementing activities under this subcomponent.

29. For TCDA, the project will finance the Authority to build its organizational capacity to deliver efficient agri-value-chain oriented services and improve the ground for private sector investments. This includes the following activities: (i) conducting a needs assessment, developing a capacity building plan, and implementing this plan for organizational development; (ii) financing the development of administrative policies and manuals for TCDA internal operations; (iii) strengthening the governance of the cashew, coconut, and rubber value chain associations and their respective umbrella organizations. Support will be provided to the Federation of Associations of Ghanaian Exporters (FAGE), Cashew Council, Coconut Federation, and Rubber Associations – TCDA's service delivery value chain interlocutors;[62] and (iv) financing the operationalization of the tree crops regulation to be passed by parliament in 2023, that would improve the enabling environment[63], via zonal offices, district assemblies and other entities. TCDA will also carry out consultations and analysis to better understand the impacts of its levies, farmgate pricing policies, and subsidies on farmers, processors, enterprise owners, and other value chain actors' revenues and performance. The project support to implementing TCDA's policy reform will strengthen the enabling environment to favor the development of exports and processing in country. Annex 2, Table A2.1 provides specific regulatory changes and related actions the project will support under production and productivity, pricing of tree crop products, buying procedure, scientific R&D, use of chemicals and pest control. Activities (iii) and (iv) will contribute to policy dialog and development on climate change adaptation. The TCDA Project Coordination Unit (PCU) will be responsible for the implementation of

[58] This strategy is currently being designed building on the GoG's Second Cocoa Sector Development Strategy for 2017-2027 (CSDS-II). It is being developed with financing from the Institutional Support Project funded by the African Development Bank.
[59] COCOBOD will work with Forestry Commission to design a methodology specifically applying to off-reserve rehabilitation of farms involving agroforestry practices. The methodology will allow COCOBOD to tap into climate financing over the course of the project.
[60] This is in line with the Interim Note on GHG Sustainability Demonstration and criteria under 5.6: Agriculture GHG-emission reduction and carbon sequestration of the revised Joint MDB
[61] Reducing the tax on domestic sale of processed products, both semi-finished and tertiary, from free zones companies, will lower the prices of such products in the domestic market.
[62] The Cashew Council and Coconut Federation would benefit from improved governance structures and support for management capacity building.
[63] The regulation is currently under parliamentary review and is expected to be passed by 2023. The regulation deals with several segments of the tree crop value chains as noted under government strategies section above and Annex 2, Table A2.2.

the set of activities.[64]

Subcomponent 1.2. Value chain digitization for traceability (US$5.4 million of IDA).

30. Under this subcomponent, the project finances COCOBOD's "last mile" roll-out of the Cocoa Management System (CMS) in project areas and train staff in the use of the system. The specific activities to finance under CMS include (i) operationalization –rollout of CMS in project districts among farmers, Licensed Buying Companies (LBCs), and other supply chain actors – for traceability (including digital grading and sealing); (ii) making digital payments, input distribution, and other farm management services operational; (iii) training of LBC staff, and COCOBOD staff linked to quality control company (QCC), Cocoa Marketing Company (CMC), CHED, RM&E on how to use relevant applications of the CMS system; (iv) financing logistics for operationalization i.e. computers, tablets, basic connectivity, and vehicles; (v) capacity building, knowledge exchange, and study tours. The subcomponent will also finance the development and implementation of e-extension modules for CHED, leveraging CMS to offer e-extension.[65] The financing will support farm-level tree tagging for tenure security and remote sensing; these are critical for measuring agroforestry practices and ensuring buildup of carbon stocks in rehabilitated farms. The subcomponent will also monitor land use changes, study climate change patterns and their impacts, and estimate on-farm biomass and carbon storage that could benefit from climate financing. The promotion of agroforestry and activities described will contribute to a substantial reduction in GHG emissions, both in and outside project areas within the cocoa landscape in line with the Interim Note on GHG Sustainability Demonstration. COCOBOD's PIU with CMS department will be responsible for implementing these activities. [66]

31. TCDA will be financed to implement an existing blueprint for digitizing the value chains it oversees. Support will be provided for: (i) a web-based platform and apps for licensing and regulating the operations of tree crop value chain actors (including farmers and their FBOs); (ii) the mapping of value chain actors, including the mapping of farm parcels, and other data collection; (iii) the training of value chain associations (the Cashew Council, Rubber Associations, and Coconut Federation) and TCDA staff in the use of the platform; and (iv) the upgrading and maintenance of a database of certified and traceable tree crop value chain actors (on the platform) (v) developing e-extension for beneficiary farmers leveraging the digital system. TCDA's PCU will be responsible for implementing these activities.

32. Both systems at TCDA and COCOBOD will be designed to be interoperable with other databases to ensure that the digitized systems respond to international and regional quality standards around child labor, forest degradation, and deforestation. [67]

Subcomponent 1.3. Preventing and responding to child labor (US$8.1 million of IDA).

33. Under the subcomponent, an integrated, area-based child labor prevention, identification, and remediation strategy will be applied in the 11 project districts. The project will collaborate with the GPSNP2 to identify and

[64] Implementation arrangements section describes the setup of TCDA PCU and COCOBOD PIU.
[65] The development and deployment of e-extension will be supported by the Global Center for Adaptation (GCA) through direct technical and grant assistance.
[66] Work on climate change patterns and impacts, as well as biomass/carbon storage estimation carried out under subcomponent 1.1 will be incorporated into e-extension services to support CSA practices.
[67] For CCB assessment roughly US$2.33 million is assigned to COCOBOD's CMS activities, US$1.03 million is assigned to COCOBOD's study on climate change patterns and their impacts, and US$ 2million is assigned to TCDA's digitization system.

leverage on social protection support (namely LEAP) to project communities. The specific activities to be financed under the subcomponent are (i) alternative livelihood support packages, including in-kind support (inputs, equipment, training etc.) for agriculture income generation opportunities, to households vulnerable to child labor; (ii) implementation of nationally representative child labor surveys for project tree crops and assessment of prior inter-ministerial interventions in child labor; (iii) set up of a national child labor implementation review committee for harmonizing ministerial interventions; (iv) set up of child labor desk or unit at COCOBOD and TCDA; (v) scaling up of MOGCSP SWIMS and MELR's GCLMS in the project districts currently not implementing these child labor monitoring systems; (vi) development of an interface between GCLMS and COCOBOD's CMS and TCDA's digital platform; (vii) increasing awareness, case management and remediation of child labor. This subcomponent will be implemented by COCOBOD's PIU and TCDA's PCU in collaboration with the GPSNP2(P175588), Ministry of Local Government, Decentralisation and Rural Development (MLGDRD), Office of the Head of Local Government Service (OHLGS), MOGCSP, MELR, and Ghana Statistical Services (GSS). Description of subcomponent in detail is explained in Annex 6.

Component 2. Improving Tree Crops Productivity and Climate Resilience (US$127.8 million of IDA and US$27.5 million of COCOBOD counterpart funds)

34. **Component 2 supports the productivity, profitability, and climate resilience of tree crop farms.** These objectives will be achieved by: (i) strengthening research capacity for tree crops and ensuring collaboration with value chain actors to promote demand driven research; (ii) rehabilitating farms affected by cocoa trees disease on a voluntary basis[68] through the use of a livelihood support mechanism and adoption of improved cutting, spraying, and other farming practices; (iii) supporting cashew, coconut and rubber nurseries engaged in climate-smart tree multiplication and input delivery centers; (iv) linking private sector service delivery to farmers via the Coconut Federation, Rubber Associations, Cashew Council, and FBOs; and (iv) strengthening delivery of climate-smart extension and other relevant services. The component promotes reforestation, restoration of degraded lands, and carbon sequestration to maximize Climate Co-Benefits (CCBs). Diversification is a central element of the project at the farm, landscape, and country level that the component will promote. On-farm diversification will be promoted as part of a climate smart strategy for all on-farm investments. Diversification of tree crops in project areas is promoted according to geographic climate suitability to promote landscape level benefits.

Subcomponent 2.1. Demand driven research (US$18.3 million of IDA).

35. Under this subcomponent, the project will finance an update of critical research infrastructure and strengthening of demand driven research in cocoa. Specific activities to be financed are (i) expanding and refurbishing laboratory space and upgrading equipment; (ii) capacity building and formal training of researchers;[69] (iii) documentation of existing knowledge and gaps in current recommendations for CSSVD control, identification of all major CSSVD strains, early detection for CSSVD and ancillary research; and (v) research in priority topics for cocoa farmers.[70] Activities will be implemented by the Cocoa Research Institute of Ghana (CRIG) under COCOBOD PIU's supervision.

36. In cashew, coconut, and rubber research, activities to be financed are (i) establishing and upgrading in-vitro laboratories for cashew and coconut respectively, to develop high-yielding, pest- and disease-resistant, and climate-

[68] A protocol relating to consent of beneficiaries for rehabilitation will be established in the project implementation manual.
[69] Specific support to be identified but can include training of new MSc and PhDs, as well as increasing capacity of existing researchers
[70] The current research priorities are identified as follows but will be further narrowed: (a) mapping of variations of black pod, and cocoa hybrids with higher tolerance with aim of reducing fungicide spray for the disease; (b) integrated disease management protocol for anthracnose developed and epidemiology of anthracnose elaborated; (c) fertilizer use and efficiency.

resilient tree crop varieties; (ii) capacity building and formal training of researchers; (iii) developing and disseminating appropriately stress-tolerant tree crop varieties for different geographical regions including, highly disease prone ones; and (iii) research in other priority areas. The activities will be implemented by CRIG, Oil Palm Research Institute (CSIR-OPRI), and the CSIR Crop Research Institute (CSIR-CRI) under the TCDA PCU's supervision.

37. The project will additionally finance TCDA to establish and institutionalize a market-led tree crops research agenda platform under this subcomponent. The platform will be a collaboration with research institutions, value chain actors, farmers and development partners and will be self-sustaining after the third year.

38. The project will also collaborate with the Global Center for Adaptation (GCA) through the center's own financing for (i) elaborating a climate risk assessment and adaptation options for cocoa, cashew, coconut, and rubber value chains; (ii) supporting the co-design and rolling out of digital e-extension modules on CSA practices for COCOBOD and TCDA; (iii) co-develop curricula for the implementation of e-extension for capacity building; and (iv) provide capacity building in the delivery of CSA advisory services. The support from GCA will build a special focus on design and delivery of e-extension for youth and women, to close identified gaps in access to extension services.

Subcomponent 2.2 On-farm productivity enhancement and resilience (US$105.2 million of IDA and US$27.5 million of COCOBOD counterpart funds).

39. Under this subcomponent the project will finance COCOBOD's rehabilitation of CSSVD-infested farms.[71] The specific activities to be financed are: (i) core rehabilitation by competitively selected private sector firms -slashing, cutting of diseased and contact trees, application of arboricide, reinspection or retreatment, production and supply of plantain seedlings, production and supply of permanent shade trees, and cocoa saplings; (ii) Livelihood Support payment[72] to farmers and landlords to compensate for a loss of income from cutting of cocoa trees; (iii) individual contracts with farmers for maintenance - weeding, refilling of cocoa and economic shade trees, pesticide, and fertilizer application;[73] (iv) support for rolling out e-extension on CSA practices in agriculture; (v) certification of all rehabilitated farms.[74] The number of women cocoa farmers is a small proportion of all farmers, nationally and in project areas. The project will make a concerted effort to include all women cocoa farmers in rehabilitation for the selected CSSVD contiguous areas and support women to open bank accounts or mobile money accounts to reduce the related gender gap. Through the planting of plantain suckers, farmers would also be able to harvest plantain during the period of cocoa plant growth. The project investment for cocoa rehabilitation will be roughly US$64.49 million to rehabilitate 25,000 hectares, the bulk share of COCOBOD's project budget. COCOBOD would provide counterpart financing of around US$27.5 million.[75] Annex 2 provides more information on cocoa rehabilitation. COCOBOD PIU with its CHED department will be responsible for implementing rehabilitation. RM&E and CRIG will provide support for deploying e-extension.

40. The project financing for TCDA under this subcomponent in cashew, coconut, and rubber, will support private sector to deliver seeds, saplings, other inputs, and CSA practices to farmers. The activities to be financed include (i) matching

[71] Rehabilitation can generate significant CCBs through reforestation and addressing land degradation – contributing both to adaptation and mitigation – using shade trees, food crops and cocoa saplings, as well as CSA practices.
[72] The current levels of livelihood support payments for farmers and landowners are being reviewed through the project PPA.
[73] Contracts will be recorded in the CMS, will include child labor clauses, and would ensure direct payments via the PIU to the farmers savings accounts or mobile money accounts.
[74] An assessment will be made to determine which certification scheme would be used vis-à-vis affordability and ability to meet EU, US and other market standards.
[75] See Annex 3 for sample estimated cost and full details of rehabilitation including phases.

grants for private sector nurseries to be able to access loans to scale up multiplication services; (ii) matching grants to input suppliers for certification and to be able to access loans for scale up;[76] (iii) provision of inputs to farmers via private sector; and (iv) delivery of CSA via e-extension and training. Targeting of farmers for access to quality planting materials and inputs will involve the bulk share of spending of TCDA under component 2.2. Farmers will receive a subsidy for these inputs.[77] TCDA's PCU will be responsible for implementing the above activities with support from MOFA directorates.

Subcomponent 2.3 Strengthening of FBOs (US$4.3 million of IDA).

41. The subcomponent will finance capacity building of FBOs to enhance their ability to implement and absorb the project's productivity investments. Specific activities to finance are (i) training on group dynamics, management, good governance, business development, M&E, and financial literacy; (ii) support the registration of cocoa cooperatives and the development of organizational by-laws if needed, in order to facilitate FBOs' access to rural finance and the establishment of contracts with buyers; (iii) help FBOs develop a strategy to communicate outreach efforts; and (iv) provide technical assistance, including help with logistics and short-term access to expertise and equipment (IT, audio, logistics). Trainings and business development services will include dedicated sessions on responding to weather/ climate risks, promoting climate change resilient practices through the FBOs to the communities and producers, and farming techniques that will result in reduced GHG emissions in line with subcomponent 2.2. COCOBOD's PIU and TCDA's PCU will be responsible for implementation of the sub-component.

Component 3. Support for Post-Harvest Management, Value Addition, and Market Access (US$39.3 million of IDA).

42. **Component 3 supports private investments in secondary value addition of SMEs in cocoa, cashew, and coconut value chains and in cashew and coconut processing units.[78]** The project will finance (i) the promotion, mobilization, and pre-screening of investments proposals via an independent selection committee; (ii) matching grants to partially finance the cost of eligible investments (Annex 2 provides further details); (iii) technical assistance (TA) to investors for detailed preparation of business plans to be presented to financial institutions; (iv) technical assistance to investors for the start-up phase of their investments; and (v) support for export fairs in country to link local businesses to buyers.[79] COCOBOD's PIU and TCDA's PCU will be responsible for implementation of the subcomponent with support from GIPC and GEPA for the mobilization of investors, and the facilitation of their investments and market access. Other entities providing support to the subcomponent will be Participating Financial Institutions (PFIs) meeting eligibility criteria for providing credit to eligible investors and GIRSAL for providing partial guarantees for de-risking the lending of PFIs that it considers eligible under its own specific criteria.[80]

43. Total IDA financing under the component will be US$39.3 million. The project's investment support mechanism will be designed in a way that ensures long-term sustainability. In particular, the following principles will be applied. First, selection criteria of eligible investments will include indicators to assess the mitigation and adaptation benefits of the investments (with the objective that at least 75 percent of supported subprojects are expected to have CCBs). Second, investment proposals will include environmental and social assessments in line with World Bank policies and

[76] TCDA will identify and select eligible commercial nurseries and input suppliers through competitive solicitation (see Annex 3 for further details).
[77] Criteria for size of the subsidy will be establish in the project implementation manual.
[78] Including for the use of byproducts like pods, shells, husks to produce new, innovative products.
[79] See Annex 2 for details on the investment support mechanism.
[80] The subcomponent will connect beneficiary SMEs to PFIs and provide TA and matching grants but will not provide financing directly to PFIs. The project will not trigger ESS9, however, will make every attempt to work with PFIs using World Bank ESMS systems under the World Bank Ghana Development Finance Project (P169742).

environmental and social standards. Third, technical assistance will be provided during the start-up period (a critical phase) to improve sustainability and reduce the risk perceived by PFIs. The component will finance about 185 private investments (25 by SMEs and 160 by smaller investors). The total cost of private investments will be around US$77.5 million, financed through US$32.8 million in project (IDA) support – remaining IDA support of the component (US$6.5 million) will finance the other activities listed under the component and not the matching grants – and an anticipated US$44.7 million of private funding (a ratio of 1.4/1.0 between private capital mobilized and IDA funding). Of this private support, the project estimates leveraging US$29.8 million from PFIs and US$14.9 million from private investors' own funds. It is expected that the project supported investments would create around 20,000 jobs (US$4,200/job) of which about 60 percent for women.

Component 4. Project Coordination, Management, Monitoring and Evaluation (US$ 16.0 million of IDA)

44. **The objective of this component is to support project coordination, management, and monitoring and evaluation (M&E) by the PIU at COCOBOD and PCU at TCDA.** Under this component the project will support the following activities: (i) establishing and maintaining financial management and procurement systems; (ii) reporting on program activities; (iii) ensuring the full implementation of environmental and social safeguards; (iv) maintaining and ensuring the performance of the monitoring and evaluation system; and (v) developing and implementing a knowledge management and communication for development strategy. This component will also be leveraged for designing and monitoring gender, child labor and other inclusion issues that will be internalized to the project. The component will finance the needed recruitments of project personnel and the operating costs of the project. Through Component 4, the implementation of a project baseline and impact evaluation with quasi-randomized control trial (including surveys as baseline, midterm and endline) will be financed through an independent firm/s to be hired with the relevant expertise.

45. **Climate Co-Benefits (CCBs).** The project addresses a range of climate-related challenges. Climate Co-Benefits will be derived from (i) sustainably enhancing productivity; (ii) supporting the resilience of farmers' livelihoods in the face of climate change and weather variability; (iii) reducing GHG emissions per unit of cocoa and cashew produced and increasing carbon sequestration in agroforestry areas; and (iv) restoring degraded lands through replanting, especially coconut. The potential for carbon crediting and other mechanisms through which farmers and supporting institutions investing in climate adaptation and mitigation may derive additional income will be explored. Rehabilitation and replanting in the project's subcomponent 2.2 (40 percent of the project investment) will contribute extensively to reafforestation and carbon sequestration, and increasingly so over the several decades life span of the tree crops. The planting of accompanying shade trees, 25 per hectare, and use of CSA will add to the CCBs. Under Component 1, institutional strengthening, digitization for traceability, paperless initiatives are all intended to mitigate climate impacts. The end objectives of subcomponent 2.1 demand-driven research are a form of adaptation to ensure production adapts climate strategies for long-term climate resilience. Lastly, Component 3 will select only private investors with strong adaptation and mitigation plans integrated into their business plans. Annex 7 provides a summary of adaptation and mitigation benefits under the project.

46. **Citizen Engagement.** Citizen engagement is a critical part of the project. All key stakeholders in the selected tree crop value chains including farmers, FBOs and cooperatives, tree crop associations, processors, exporters, other private sector agribusiness, the public sector, civil society, and the most vulnerable groups (women and youth) were consulted during preparation. Regular consultations with these entities will continue during implementation with

feedback used to inform as needed adjustments in the project. A beneficiary satisfaction survey will be administered, and the following indicator has been included to capture beneficiary feedback: share of target beneficiaries with rating "satisfied" or above with services provided by the project interventions. The indicator will be disaggregated by specific project activities as will be detailed in the project implementation manual. The PIU will use surveys to track the satisfaction of beneficiaries with access and quality of the services provided by the project, as well as action plans to address the survey findings. To respond to complaints or concerns related to project activities, the PCU and PIU will set up a Grievance Redress Mechanism (GRM). This GRM will include multiple uptake mechanisms (telephone, complaints box, website, email, and text messaging). Complaints received by the GRM will be registered, tracked, investigated, and promptly resolved.

47. **Maximizing Finance for Development (MFD)**. The project reflects the WBG focus on MFD approach, aiming to strategically deploy public resources to crowd-in private sector investments in the sector where possible, accelerating economic transformation and developing critical agricultural value chains. It incorporates activities and instruments, including matching grants and de-risking PFI's lending to producers' organizations and agribusiness firms that will lead to leveraging investments from a range of value actors. The project expects to mobilize an amount of US$44.7 million in private investments, including US$29.8 million lending from PFIs through the de-risking facility and US$14.8 million from agribusiness, FBOs, and other value chain actors. The Project's MFD enabling activities largely undertaken through Component 1 include improving the sectors' policy and institutional framework to establish a business environment more favorable to mobilizing private sector investments and increasing their effectiveness in addressing priority productivity, environmental and social issues at all levels of Ghana's tree crop sector (production, processing, marketing). In addition, the project fosters increased collaboration and partnerships through public interventions more focused on the provision of priority public goods, the improvement of sector governance, the strengthening of public-private partnerships. It will pursue a strong collaboration with IFC, private sector entities, financial institutions, and other partners investing in the tree crop sector, under Component 3. As the team identifies an investment lead pipeline in SMEs in cashew and coconut (particularly in processing) for financing, the list will be used to identify viability for Capex financing through IFC. The team will also collaborate with IFC advisory services to coordinate on technical support under Component 3.

C. Project Beneficiaries

48. *Direct beneficiaries* of the project are cocoa, cashew, coconut, and rubber farmers. Project interventions in on-farm productivity will directly benefit 52,775 farmers and their households to improve productivity and incomes. Nearly 40 percent of on farm beneficiaries will be women. Beneficiaries will be in 11 districts in 6 regions (Western North, Eastern, Savana, Bono, Bono East, Eastern). Other direct beneficiaries include nurseries and input suppliers. The project will support 10 nurseries and 5 to 10 input suppliers. Roughly 185 SMEs in cocoa, cashew, and coconut value addition will also be direct beneficiaries through project matching grants, technical assistance support, and access to markets and services. Of these, at least 60 percent will be female owned SMEs. Investments in the private sector through component 3 are expected to leverage significant additional private sector resources and provide jobs for 20,000 beneficiaries. Other direct beneficiaries are cashew, coconut and rubber associations, and FAGE, FBOs and public institutions (including research, COCOBOD, TCDA) that will expand their capacity through training, research facilities, and other support financed by the project.

49. *Indirect beneficiaries* of the project are local communities and cooperatives that would benefit from improved institutional capacity of the parent organizations with impacts from TCDA's levies collection through the digital system, to COCOBOD's own capacity building, operationalization of CMS, R&D, stronger child labor safeguards as well as an expansion of market services. Buyers of certified tree crops will benefit from improved contractual agreements with project communities. Similarly, local, and foreign buyers will receive increased access to SMEs for purchase of tree crop by-products.

50. The project has transformational potential given the numbers of jobs that will be created linking downstream and upstream value chain actors in the cocoa, cashew, coconut, and rubber value chains. The support to nurseries and input suppliers will automatically create employment benefits among these private service providers and leverage private sector resources. The project investment should leverage at least 3 times the amount of resources from these businesses. More so, cashew and coconut processing have the capacity to create thousands of jobs. The project's support to private sector agribusiness is expected to create around 20,000 jobs at roughly an investment of US$4,200 per job including a high proportion for women (60 percent) and directly mobilizing youth.

D. Results Chain

51. Figure 1 depicts the project's Theory of Change, which relies on three critical assumptions: (i) COCOBOD and TCDA supports efforts toward transparency and accountability (C1); (ii) farmers are willing to adopt CSA, undertake rehabilitation (in the case of cocoa) or take on adoption of recommended saplings and inputs (C2) (iii) global demand and market prices remain stable or increase for the selected tree crops (C3); (iv) Ghana can compete in global markets for the selected tree crop value added products (C4).

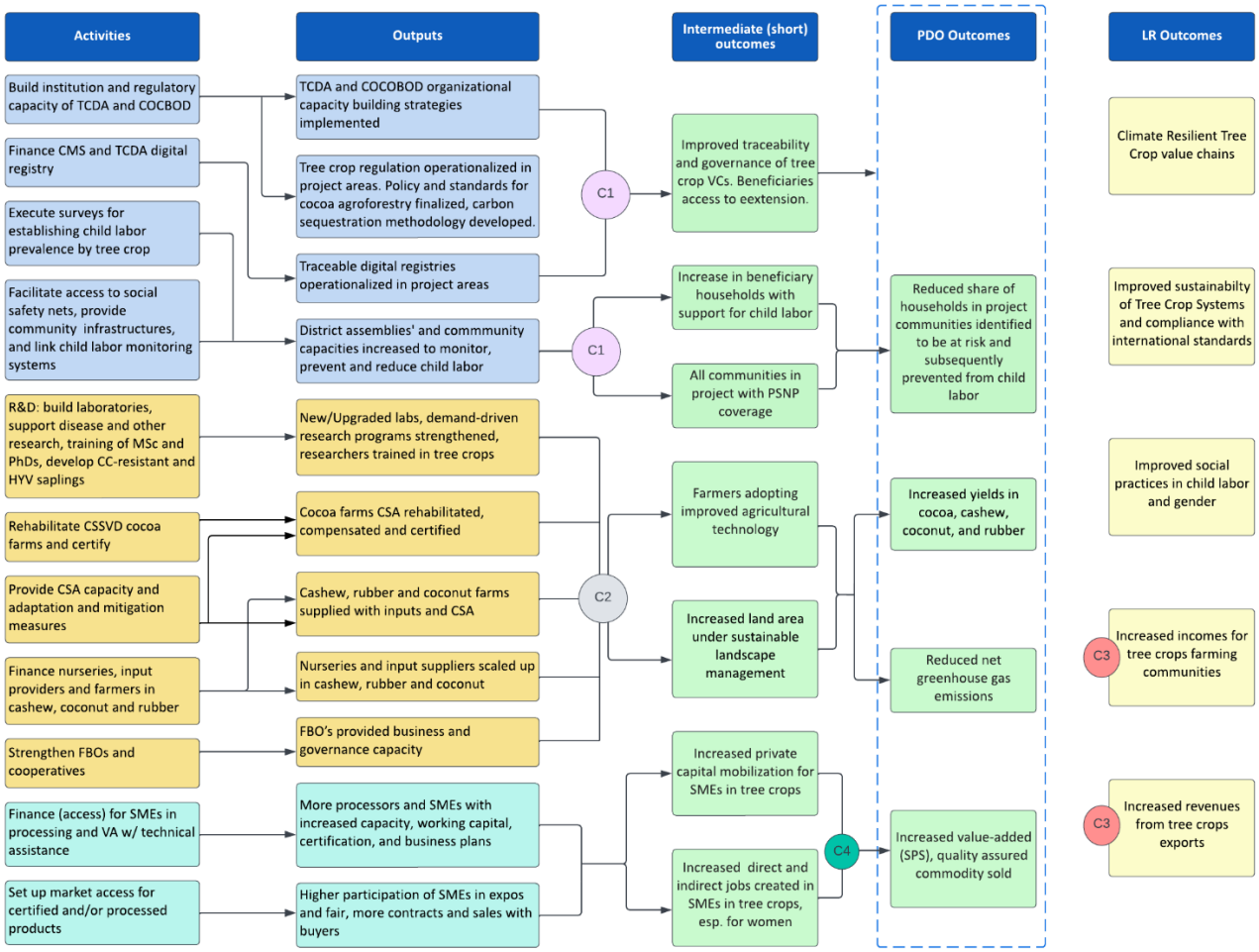
E. Rationale for Bank Involvement and Role of Partners

52. The World Bank has historically been involved in supporting Ghana's agriculture sector development, including with a commercial focus. The World Bank's value added in this case comes from experience supporting tree crop projects in the region and globally. The World Bank has a reputation of bringing knowledge on topics related to strengthening infant institutions capacity to become sustainable, strengthening public sector services, digitization in agriculture, supporting models of public-private partnerships in agriculture, strengthening FBOs and SMEs.
53. The US$200 million of concessional IDA financing is expected to leverage at least 14 percent counterpart public resources from COCOBOD through rehabilitation and CMS. This investment will also leverage public resource from TCDA once it starts generating revenue through levies collected from value chain actors. Therefore, World Bank support is seen as catalytical.

54. The project is also important to national and international goals related to environmental sustainability and social resilience, promoting a reduction in child labor. The GoG will play a key role in supporting these objectives through policy and regulatory actions and implementing an enabling environment for monitoring. In turn, this would create transparent, socially sustainable management of the public goods and services provided by the sector. The project was prepared after many consultations with other development partners including European Union (EU), USAID, Agence Française de Développement (AFD), Netherlands Embassy, Swiss Embassy, Food and Agriculture Organization (FAO), International Labor Organization (ILO), United Nations Children's Education Fund (UNICEF), The Sustainable Trade Initiative (IDH), and United States Department of Labor (USDoL); with civil society organizations, the International Cocoa Initiative (ICI) and private sector partners like the World Cocoa Foundation (WCF) and Partners for Food Solutions (PFS); as well as public entities with which the project aims to collaborate. The project will

complement ongoing interventions of these partners and ensure to collaborate throughout the project implementation period.

Figure 1. Theory of Change



Note: TCDA: tree crops development authority; VC: value chain; R&D research and development; CC: climate change; CMS: cocoa management system; CSSVD: cocoa swollen shoot virus disease; SPS: sanitary and phytosanitary standards.

F. Lessons Learned and Reflected in the Project Design

55. **The project incorporates lessons from an extensive analysis of previous similar projects implemented in Ghana to support transformational growth in the agricultural sector.** It tackles both (i) short-term critical issues such as the management of the CSSVD for which it associates short term actions, i.e. the cutting and rehabilitation of affected farms and (ii) longer-term development issues through the strengthening of the capacities of key institutions like TCDA, COCOBOD, producer associations; supporting targeted research programs (both short term adaptative and strategic) to provide a sustained stream of relevant technologies, and the development of a sustainable national

system to mobilize financing in support of private agricultural investments**.** Key lessons learned providing the basis of project design are as follows:

56. **Sustainability of project actions is only achieved by designing its approach with and embedding its implementation in concerned national institutions.** Project objectives and design have been clearly outlined by its main proponents (TCDA, COCOBOD, and MOFA, producer associations and private actors of the targeted value chains) which have also closely participated in its detailed preparation. TCDA and COCOBOD are fully responsible for implementation, with the collaboration of relevant national institutions. The mobilization of finance to support private investments will be carried out through the existing national system of GIRSAL's Partial Guarantee Fund and its roster of Participating Financial Institutions (PFIs). Project's support for addressing Child Labor is fully embedded in Ghana national strategy and will rely on a strong collaboration with ongoing programs.

57. **Project activities to eradicate CSSVD and rehabilitate eligible farms are based on Ghana's extensive experience in this area.** They address all major issues such as (i) the resistance of farmers to cut down their infected plantations through information campaigns, the involvement of customary chiefs, and appropriate incentives to mitigate the temporary loss of income and the threat to their tenure security from landowners; (ii) the need for adequate technical support and supervision to ensure that the program is implemented according to recommendations; and (iii) an approach promoting environmental sustainability through agroforestry and diversification into other crops in areas no longer suitable for cocoa production.

58. **The project is incorporating a strategy to manage the risk related to child labor that is based upon the lessons learned from decades of work to reduce child labor**. Such lessons promote a multisectoral, integrated and holistic approach to address the multiple, nested drivers and root causes of child labor. Integrated, area-based approaches have proven more effective in addressing the causes of vulnerability than supply-chain only- or single-sector approaches. A fundamental lesson from international work on child protection is that policy makers and donors generally tend to invest in responding to the problem rather than in its prevention. Any strategy to fight child labor therefore needs to balance investments in preventing child labor with support for expanding the capacity to identify, monitor, and respond to this problem.

59. **Support to private investments in the targeted value chains addresses the main issue of SMEs access to finance based on the extensive experience of the World Bank Group**[81] **and other development partners in this area.** The project adopts a comprehensive approach combining (i) the careful selection of promising investment proposals; (ii) the provision of assistance to investors to carry out detailed proposals meeting financing institutions' requirements; (iii) de-risking financial institutions' lending by providing grants complementing investors own funds, providing a partial guarantee for FIs' loans; and (iv) the provision of assistance to investors to launch their activities on a sound basis.

60. **Finally, the Partial Guarantee Mechanism will be provided by GIRSAL which has been established based on recognized best practices.** GIRSAL is an independent legal entity, supervised by the Central Bank of Ghana, with a governance structure preventing undue influences, is adequately staffed and has been successfully operating on a financially sustainable basis since 2019. Its structure and operational policies are in line with the partial guarantee

[81] Project design incorporates the guidelines of WBG's "Maximizing Finance for Development (MFD, 2017) and the lessons from the World Bank review of MGs published in 2016, "How to Make Grants a Better Match for Private Sector Development."

fund established and operated by the Development Bank of Ghana with WBG assistance[82]. It will provide its support to project-supported investment lending in accordance with its usual operational modalities.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

61. The institutional arrangements of the project are summarized below and detailed in Annex 3. The arrangements are designed to facilitate collaboration between the COCOBOD and TCDA, both under the umbrella of MOFA, to facilitate implementation of activities that improve governance and sustainability of the selected value chains. The project is made up of two implementing entities. Among these, the TCDA would host a Project Coordination Unit (PCU) and COCOBOD would host a Project Implementation Unit (PIU). The PCU will have overall administrative, fiduciary, and safeguards coordination responsibility for project implementation. Whereas each entity would be responsible for implementing activities related to their specific value chains and holding responsibility over all aspects of implementation oversight while also managing separate bank accounts. The PIU will monitor and supervise the performance of the specialized service providers and report to the World Bank.
62. The PCU housed in TCDA, will be staffed with a project coordinator, agribusiness expert, value chain expert(s), M&E specialist, environmental specialist, social specialist (with expertise in child labor where possible), gender specialist, communications specialist, procurement specialist, FM specialist, project accountant, and internal auditor. The PIU based in COCOBOD, will consist of a PIU coordinator, 2 M&E specialists, environmental specialist, social specialist (with expertise in child labor where possible), communications specialist, procurement specialist, FM specialist, project accountant, and internal auditor. The key functions of the PCU and PIU will be recruited, under a leave without pay (LWOP) – requiring 100 percent time commitment to the project –, or seconded prior to project effectiveness, and the remaining posts will be filled within three months of project effectiveness. The type of recruitment will be determined on a case-by-case basis. The World Bank team recommends both project coordinator positions be filled with the current project coordinator and PIU coordinator from the project preparation stage.

63. A Project Steering Committee (PSC) chaired by Minister of Agriculture or designated representative and made up of TCDA and COCOBOD CEOs or designated representatives, and representatives of MOF, MOFA, Ministry of Lands and Natural Resources (MLNR), MELR, MOGCSP, MLGDRD, OHLGS. The role of the PSC will be to: (i) supervise and guide the overall implementation and performance of the project; (ii) review and approve the AWPB prepared by the PIU; (iii) evaluate the performance of each project component; (iv) determine and authorize corrective measures aimed at improving the project based on state of progress and results of the implementation; (v) approve the project implementation manual (PIM), including signing off on any changes to the manual; and (vi) validate the periodic technical and financial monitoring reports of the project. The PCU will be responsible for preparing the meetings of the steering committee.

B. Results Monitoring and Evaluation Arrangements

64. **The PCU will have the responsibility for coordinating and reporting on the results monitoring and evaluation.** Both the TCDA PCU and COCOBDOD PIU will establish M&E systems to report on resource use and expected

[82] Ghana Development Finance Project, Report No: PAD3573, 2020.

results and outcomes linked to project targeted tree crops within the mandate of each entity. This includes with respect to gender, child labor, and other safeguards compliance. The M&E systems will use the Geo-Enabling initiative for Monitoring and Supervision (GEMS) with support from the World Bank GEMS team. GEMS will allow for geo-tagging of project activities, communities and beneficiaries. A baseline survey (quasi-impact-evaluation) will be organized by the PCU and PIU M&E team[83] with support from GEMS and a third-party survey data collection team, followed by periodic surveys, a midline survey, and end-line survey. Periodic outside party random verification of results will be carried out by an Independent Verification Authority (IVA). The World Bank team will provide oversight and quality assurance to M&E operations through supervision and technical missions.

C. Sustainability

65. **The project enjoys strong Government ownership because it supports Government key objectives and priorities outlined in** Ghana Shared Growth and Development Agenda (GSGDA), the Medium-Term Development Plan for 2018–2021 and the Investing for Food and Jobs (IFJ, 2018 - 2021): An Agenda for Transforming Ghana's Agriculture. It specifically supports the implementation of Ghana's Tree Crops Development Policy and TCDA's Five-year Strategy and Implementation Plan (2022-2027) which aim at developing growth, diversification, exports, and job creation in Ghana's tree crop sector. The project has been prepared through a participatory process that includes close consultations with a full range of partners and stakeholders (central and local governments, concerned public institutions – TCDA, COCOBOD, GEPA, GIPC, GIRSAL –, actors in the targeted value chains, the banking sector, and others).

66. The project will be implemented through Ghana's existing policies and institutions and includes substantial assistance to strengthen the latter's capacities (Component 1). The main implementing agencies have recognized strong capacities (COCOBOD, GEPA, GIPC) and would be provided with additional support to strengthen their capacities targeted specifically at project implementation. TCDA and GIRSAL have been established in line with international best practices, with governance bodies including private sector shareholders to ensure good corporate governance and prevent undue external influence. They are fully operational, and the project will provide complementary capacity specifically targeted at project activities. The assistance given to research institutions (subcomponent 2.1) will ensure the long-term availability of improved and climate-smart technologies in support of the future development of the targeted value chains.

67. **The rehabilitation of CSSVD farms would be based on COCOBOD extensive experience in implementing these programs, with the technical support of CRIG which is a leading research institution in this area.** Activities will be designed and implemented in collaboration with the Forestry Commission and the private cocoa industry (through the Cocoa-Forest Initiative -CFI) to ensure that they do not involve any deforestation. Finally, all investment will be screened and implemented under the coordination and monitoring of the National Steering Committee on Child Labor and the Child Labor Unit of the Ministry of Employment and Labor Relations, and in partnership with the private sector. The project will support the field operations of the labor inspectors in its target areas. The traceability system set up by COCOBOD and TCDA (for the other value chains) with project assistance will ensure that activities in the targeted value chains are environmentally and socially sustainable.

[83] The baseline will be carried out during the preparation, pre-effectiveness project phase once beneficiaries are selected given selection criteria have already been determined in terms of references drawn up for each activity.

68. **There is a strong demand, both on the domestic and international markets, for commodities/products of the targeted value chains that should attract a strong cohort of private investments.** The latter would be selected based on clear criteria covering all aspects from financial profitability to social objectives such as employment creation (especially for women), prevention of child labor and environmental impact (zero-deforestation). The project will give priority to investments promoting climate resilience (using Climate Smart Technologies) and the minimization of GHG emissions and will give preference to those with direct benefits to vulnerable groups such as women and youth. Investors would be assisted not only for preparing detailed investment proposals but also for launching their operations, which would limit the risks of failure.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis (if applicable)

69. **Economic analysis results and justification for public provisioning of finances are strong.** The economic analysis considers the incremental benefits of improvements in: (i) input supply, postharvest handling services and agribusiness services; (ii) accelerated adoption of improved agricultural technologies; (iii) increased agricultural productivity, sales and income by producers and processors; (iv) enhanced food and nutrition security; (v) increased job creation and youth employment; (vi) enhanced climate resilience using new climate-smart agricultural (CSA) practices; and (vii) and enhanced economic integration of local, regional and international agricultural markets. Total project benefits, with total economic values of US$202.9 million, returns an NPV figure of US$221.7 million, an economic internal rate of return (EIRR) of 18.6 percent, a Benefit-Cost Ratio (BCR) of 1.77, while using a social discount rate of 5 percent, an adoption rate of 50 percent and CARD figures.[84] All figures are without GHG sequestration benefits and shadow price of carbon (SPC).

    GHG Accounting Analysis. The analysis used the Ex-Ante Carbon-balance Tool (EX-ACT) developed by FAO to assess the project's net balance over 92,200 ha. The net balance of tons of CO_2 equivalent (tCO_2e) GHG sequestered totaled -1,234,214 over 20 years, or 61,811 tCO_2e per year, or -13.4 tCO_2e per hectare of -0.7 tCO_2e per hectare per year.

70. **Sensitivity analysis demonstrates that the project can absorb substantial negative impact**, including delays in the start of project benefits, increases in costs and decreases in benefits, an increase in the discount rate and still generate a FIRR/ EIRR above the five percent discount rate. Out of the 45 scenarios tested for, only two return negative - when the discount rate is 12 percent, and the adoption rate drops to 40 percent and when benefits drop by 30 percent. Benefits or costs would have to nearly double for the project to register a negative return.

B. Fiduciary

(i) Financial Management

71. **The key FM arrangements can be summarized as follows:** The project will emphasize the use of country systems in line with the World Bank's practice of using those aspects of the county system deemed reliable. The Project's financial management systems shall, to the extent feasible, expected to be *mainstreamed* as part of the existing

[84] IFAD Climate Adaptation in Rural Development (CARD) assessment tool – Ghana, West Africa.

GoG fiduciary arrangements within the MOFA and the two implementing agencies namely TCDA and COCOBOD**.** Annex 3 provides further details.

72. **From an FM perspective, the justification for adopting and relying on use of country systems in Ghana is that there is a solid foundation for a strong legal and regulatory framework for PFM in Ghana**. This is exemplified by the various laws, regulations, and manuals already in place, e.g. The Public Financial Management Act (PFMA) 921. Under the technical oversight of the Financial Controller of the Ministry of Food and Agriculture (MOFA), the overall financial management responsibility will be handled by assigned dedicated Project Accountants – who are staff of the implementing agencies *embedded* as part of the Accounts Unit of the respective Project Implementing Agencies.

73. **Overall, based on an assessment of the financial management arrangements at the two agencies we conclude that, being government entities, both have the minimum adequate financial management systems and policies that can be relied upon to support implementation.** That said however, it must be stated that TCDA is a relatively new entity established in 2019 and will require significant technical assistance and capacity building to develop systems, improve staff capacity and develop accountability mechanisms.

74. **The financial management residual risk rating for the project is assessed as Moderate.** The reasons include, inter alia; the parent ministry -MOFA, which has oversight responsibility for the two agencies has in recent times successfully implemented IDA funded projects and understands IDA financial management guidelines. In addition, the project financial management arrangements are to a large extent based on the use of country systems and these systems are periodically being reviewed and strengthened as part of the overall Public Financial Management reforms which are supported by the World Bank.

Table 2: Agreed Action Plan

	Action	Date due by	Responsible
i.	Assign dedicated Project Accounts Staff to each implementation agency.	Not later than two months after effectiveness	Chief Director- MOFA
ii.	Development of a Project Implementation Manual	Part of the effectiveness conditions	Project Coordinator

(ii) Procurement

75. **Procurement under the proposed project will be in accordance with the World Bank's *"Procurement Regulations for IPF Borrowers"*** (Procurement Regulations), 4th Edition, dated November 2020 and the *"Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants"*, dated July 1, 2016, as well as other provisions stipulated in the Financing Agreements. Accordingly, the World Bank's Standard Procurement Documents for the international market approach, with relevant modifications for the national market approach, as well as any enhancements to address Environment, Social, Health, and Safety (ESHS) issues including Gender Based Violence, Sexual Exploitation & Abuse (SEA) and Sexual Harassment (SH) will be used.

76. **The Procurement Plan will be prepared in the Systematic Tracking of Exchanges in Procurement (STEP) tool, based on the Project Procurement Strategy for Development (PPSD), and will be updated as and when**

required. The procurement plan for the first 18 months of the project has been prepared and uploaded in STEP. STEP will be the primary software or platform to be used to submit, review, and clear all Procurement Plans and prior review procurement activities. Also, project procurement risk ratings and performance assessments will be undertaken using the World Bank Procurement Risk Assessment and Management System (PRAMS).

77. **The PPSD prepared for the PPA activities has been updated to cover at least the first 18 months and the operating context remains the same apart from economic context which has changed.** The updated PPSD was discussed and agreed with client. Ghana's current macroeconomic situation (i.e. high inflation and currency depreciation) has distorted supply chains affecting price market predictability and pricing. To mitigate this risk, price adjustment provisions will be included on a case-by-case basis for contracts with more than 3 months duration to cater for local price fluctuations due to inflation and the depreciation. It is expected that the micro and macro stability being pursued by the Government will aid in improving the procurement environment to make it more competitive, realistic, and to get value for money.

78. **COCOBOD and TCDA are the proposed implementing agencies (IAs) for the project**. Hence, COCOBOD will manage the procurement processes related to the cocoa crop whilst TCDA will be responsible for the other identified tree crops i.e., cashew, rubber, and coconut. However, as TCDA, being a new institution and not having in place procurement structures as required for the implementation of its procurement activities, it is agreed that MOFA, the mother institution of TCDA, will manage the TCDA component of the procurement activities under the project.

79. **The inherent procurement risk is thus assessed as Substantial**, and these risks are associated with: (i) TCDA being a new institution and not having a fully developed procurement structure as well as staff in place; (ii) both proposed IAs have no experience in the use of the World Bank Procurement Framework as well as procurement planning through STEP; and (iii) involvement of two IAs which requires strong coordination mechanisms among them and other concerned stakeholders.

80. The procurement risk mitigation strategies proposed are: (i) TCDA procurement activities to be undertaken by MOFA; (ii) Close World Bank procurement support and supervision as well as provision of hands-on support through regular engagements and monthly procurement clinics; and (iii) a detailed PIM to be prepared before project effectiveness to guide procurement implementation. **The residual procurement risk after implementation of these mitigation measures is thus assessed as moderate.**

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

81. **OP 7.50 is applicable to this project because the project will finance activities that may use or risk polluting**

waters of the use or potential pollution of the Volta River, Bia River and Tano River systems, which are considered international waterways. The exception to the riparian notification requirement according to paragraph 7(a) of the Policy applies because activities are limited to minor expansion of existing, small-scale schemes which will not adversely change the quantity and quality of water flows to other riparians. The exception to the notification requirement was approved by the RVP on 09 May 2023.

D. Environmental and Social

82. **The environmental risk is rated substantial** considering the sensitivity of the recipient environment, the magnitude of the environmental risks and impacts and the capacity of the implementing agencies (TCDA and COCOBOD) to effectively manage the potential risks and impacts associated with the project. The proposed districts for the implementation of interventions on cocoa, coconut, and rubber, fall within the high forest zone of Ghana which is rich in biodiversity with high carbon stock vegetation that influences the microclimate. Interventions on cashew will mainly happen within the savannah vegetation. Key Biodiversity Areas (KBAs) are found in some of the proposed project areas which require prudent environmental management to avoid, reduce and /or mitigate the potential adverse risks and impacts.

83. **Activities proposed under Component 2 including the creation of a CSSVD laboratory; invitro labs for cashew and coconut; plant breeding programs; rehabilitation and investments to increase on-farm productivity; post-harvest management, processing and value addition of selected cash crops will present substantial environmental risks and impacts.** For instance, in the case of cocoa, the proposed rehabilitation of existing farms will entail clearing of CSSVD infested trees which may expose the land to erosion and destruction of some bird nests and habitats of other tree inhabiting organisms. Workers will be exposed to some occupational health and safety risks such as animal attacks, musculoskeletal disorders, cuts, bruises, stress etc. The nurturing of newly planted cocoa seedlings through to maturity will require application of chemicals e.g., fertilizers and pesticides which may be hazardous to personnel and biodiversity and could cause environmental contamination including surface and ground water pollution.

84. **Similarly, interventions associated with the post-harvest management and processing of the proposed cash crops under Component 3 may lead to waste generation (including liquid effluents and solid waste), noise pollution, and occupational health and safety hazards such as exposure of personnel to corrosive juice of cashew pulp, sharp blades, electricity, etc.** As part of support for TCDA and COCOBOD, the project proposes to establish a matching grant window to partially finance eligible investments. Such investments could include support for rehabilitation, expansion and/or construction of warehouses and other civil works including possible connection to the grid and water pipelines. These could present some potential environmental risks and impacts including noise, waste generation, dust and fumes emissions, vegetation clearance and possible forest degradation (depending on the location of the warehouse), soil erosion, disturbances to habitats, depletion of biodiversity, workers exposure to occupational health and safety hazards e.g., vehicular movement, work at height, electricity, sharp blades, trips, slips, dust, etc. Depending on the location of such civil works, the fringe communities may be exposed to traffic and vehicular risks.

85. **The potential environmental risks and impacts are largely envisaged to be localized and direct**. However, those associated with potential surface water contamination through misuse of agrochemicals and pesticides may traverse communities downstream.

86. **Notwithstanding the risks and impacts, the project is expected to contribute to reducing incentive for deforestation and will strengthen the resilience of cocoa production systems through intensification and improvement in productivity of the existing cocoa farms without necessarily expanding the cultivable areas.** The project could generally contribute to a net gain in biodiversity through agroforestry practices and poly-cropping systems as well as through re-revegetation of lands that may currently not be suitable to produce staple food crops but may be excellent to produce the targeted tree crops. For cashew, coconut and rubber, the project will support private nurseries and climate-smart agriculture practices which may increase market opportunities for the establishment of new farms. The project will prioritize the use of marginal lands for the establishment of new plantations.

87. **The project has, prior to appraisal, prepared, consulted upon, and disclosed an Environmental and Social Management Framework (ESMF) which provides principles and guidelines for the management of the potential environmental risks and impacts including guidelines on screening, exclusion list and requirements to prepare appropriate site-specific E&S instruments during implementation.** The ESRS, ESCP, SEP, LMP, RPF, IPMP and ESMF were all disclosed on 08 May 2023.[85] For example, to mitigate the potential environmental risks and impacts associated with the matching grant, the ESMF provides guidelines to screen all such activities and prepare necessary E&S instruments before commencement of the activities. Also, to address the risk associated with pesticides and other agrochemicals, the project has prepared an Integrated Pest Management Plan (IPMP) which has been consulted upon and disclosed before appraisal.

88. Both implementing agencies have each appointed one Environmental Specialist to oversee environmental risks management on the project. However, the capacity of these specialists on the World Bank's Environmental and Social Framework (ESF) is currently weak. The World Bank will strengthen the capacity of these staff in the World Bank ESF through tailored trainings during project implementation.

89. The social risk rating for the project is high due to well documented social risks and impacts associated with agricultural projects and the weak capacity of the implementing agencies to manage such risks and impacts. The project will intervene in cocoa, cashew, coconut, and rubber sub-sectors where child labor risk for instance is widespread and has been documented to some degree in the cocoa sector. The main anticipated social risks and impacts associated with the proposed project include: (i) child labor risk due to high prevalence rates and weak enforcement of existing laws and measures for prevention and remediation, weak institutional collaboration and less clarity of roles and mandates due to the multiplicity of agencies responsible for managing child labor risk and social risk management in general; (ii) localized social conflicts arising from a complex array of interests on land use especially in the cocoa sector; (iii) temporary loss of livelihood and economic displacement under Component 2 activities which includes rehabilitation of diseased cocoa tress; (iv) envisaged challenges in ensuring meaningful consultation, citizens engagement, gender and social inclusion leading to potential exclusion from project benefits; (v) weak grievance management systems; (vi) the use of migrant labor and incidence of Sexual Exploitation and Abuse, Sexual Harassment (SEA/SH) and other forms of gender-based violence (GBV), HIV/AIDS and sexually transmitted diseases/infections (STD/I); (vii) likely security risks posed by activities of illegal small-scale miners especially in the cocoa producing regions; and (viii) community health risk due to potential use of agrochemicals under Component 2 activities. Finally, the establishment of CSSVD laboratory under Component 1.2 can lead to land acquisition and involuntary resettlement. In addition, the proposed project activities under Component 2 .1 can alter land tenure arrangement, with potential adverse risk on rights of tenant farmers causing economic displacement and loss of livelihood.

[85] https://documents.worldbank.org/en/publication/documents-reports/documentlist?qterm=P180060

90. The multiplicity of land rights and the frequent presence of many land users in each parcel of land can pose risks to the project by: (a) presenting difficulties in ascertaining what the landowner characterizes as a voluntary land donation; (b) impeding the ability of farmers to gain access to land for expansion; and (c) increasing the vulnerability of existing land users to displacement, particularly settler farmers and women farmers. The risk of exclusion and elite capture from the project is very likely given the broad array of affected and interested stakeholders along the export trees value-chain particularly farmers, women, and local communities. Mitigating the risk of exclusion would require robust mechanisms for meaningful community and stakeholders' engagement and consultation, gender and social inclusion along the entire value-chain which has been documented in the Stakeholder Engagement Plan (SEP) and Grievance Redress Mechanism developed by the client that will be disclosed within three months of effectiveness. The risk of land acquisition and involuntary resettlement for the creation of a CSSVD lab under subcomponent 1.2 as well as the risk of loss of livelihood and economic displacement to farmers and sharecroppers due to complicated land tenure arrangements will be mitigated by the project adopting the Resettlement Policy Framework (RPF) that has been developed by the client and subsequent site specific Resettlement Action Plan (RAP) that will be developed at the sub-project level during implementation. The SEA/SH rating is low based on the World Bank's SEA/SH risk assessment tool for large infrastructure projects. During project implementation, the project will further assess the risk of SEA/SH in the Environmental and Social Impact Assessments (ESIAs) and develop and implement a SEA/SH Prevention and Response Action Plan as part of the Environmental and Social Management Plans (ESMPs), consistent with ESS4. The project will also monitor SEA/SH risks throughout project implementation.

91. The Borrower will be required to mitigate the assessed specific child labor risks through child labor mitigation measures to be integral to the overall project design and as specifically articulated in subcomponent 1.3, and by recruiting a technical team as described in subcomponent 1.3 for the implementation of activities under this sub-component. Furthermore, child labor risks and impacts and other forms of labor related risks such as labor influx, forced labor and occupational health and safety issues will be mitigated by the project adopting the Labor Management Procedures (LMP) and Action Plan developed by the client that will be disclosed by appraisal and subsequently implemented throughout the project life span. Terms of References (TOR) for the members of the technical team to coordinate and supervise the implementation of sub-component 1.3, LMP and Action Plan will be reviewed and cleared by the World Bank. With regards to the capacity of the implementing agencies (TCDA and COCOBOD) to manage these potential social risks, both TCDA and COCOBOD will be required to establish a child labor desk/unit with requisite expertise to implement the child labor subcomponent. Furthermore, technical assistance on child labor specifically will be provided from the members of the technical team described in sub-component 1.3 to the TCDA and COCOBOD.

92. To manage the overall social risk assessed for the project, COCOBOD has appointed a Social Specialist, whereas TCDA being a nascent agency does not have a social specialist onboard. To mitigate this risk, TCDA is required to appoint a social specialist three months after project effectiveness. The capacity of the COCOBOD social specialist on the World Bank's Environmental and Social Framework (ESF) is currently weak. Hence, before project implementation commences and by when TCDA hires its social specialist, the World Bank will strengthen their capacity in the World Bank ESF through tailored trainings. Both implementing agencies are required to maintain these positions throughout the project life cycle.

93. Notwithstanding the social risks assessed, the project will contribute to improving the productivity of rural enterprises and smallholders including women farmers and women's participation in all aspects of the sector. The

project will also contribute to strengthening area-based systems in project districts for the prevention of child labor through addressing the root causes of child labor; raising awareness on child labor and hazardous child labor; building capacity of a range of stakeholders to activate their mandates in child labor monitoring and case-follow-up, with an aim to strengthen identification, referral, child protection case management, remediation of cases of child labor and rehabilitation of child survivors of trafficking and forced labor. These measures are integral to the project design and are encompassed in sub-component 1.3. The project will also support the optimization and documentation of cocoa rehabilitation practices that enhance improved livelihood especially for women farmers and reduces conflicts due to complicated land tenure arrangements.

V. GRIEVANCE REDRESS SERVICES

94. ***Grievance Redress.*** Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit https://accountability.worldbank.org.

VI. KEY RISKS

95. **The overall risk is deemed high.** The risk analysis using the Systemic Operations Risk-Rating Tool (SORT) shows macroeconomic and institutional capacity for implementation and sustainability risks as high. Political and governance, and technical design as substantial. Environmental and social risks are rated as high; the environmental risk is substantial and social risk is high for reasons described in the assessment above. Although macroeconomic, political and governance risk, and institutional risks are significant, given the current country economic climate, the proposed mitigation measures are aimed at minimizing associated risks to the project.

96. **Political and Governance risk for achieving the PDO is rated substantial**. National elections are anticipated for 2024 and campaigning is already underway which creates a risk of reduced effort and commitment if there is a change in government. This includes potential changes in management and staff of COCOBOD and TCDA and could lead to implementation delays. However, the project has strong support at the national level (within MOFA and MOF) and within the selected region due to the potential contributions of the selected tree crops to national economic growth. With COCOBOD political and governance risks could stem from the nature of operations of the SOE and its current debt structure, management, and future reforms. As TCDA is an infant institution, it is also volatile to political and governance risk that has not been tested. The design of the project, nevertheless, makes implementation less volatile to political and governance pressures under the parent ministry MOFA.

97. **Macroeconomic risk is rated as high.** Macroeconomic instability, policy uncertainty for investors, and contractionary fiscal and monetary policy measures continue to weigh down Ghana's economy. As a result, a deceleration in growth is expected in 2023, 2024 and possibly beyond. External debt sustainability poses a huge risk and restructuring of this debt is critical for macroeconomic stability. Macroeconomic risk is directly linked to the attainment of the project PDO and may affect the project's ability to disburse if budgetary restrictions apply. Government commitment to progress towards domestic debt exchange, receipt of IMF and World Bank support, and overall fiscal stability would put the country on a path to economic recovery and help mitigate these risks. In turn, this would help viability and sustainability of projects like the TCDP.

98. **Technical Design of the project is substantial.** The project relies on cooperation between the TCDA PCU and COCOBOD PIU to work independently but harmoniously. This will be a function of good sequencing of project activities and PCU/PIU teams with strong technical depth. TCDA will be responsible for overall coordination of project reporting, including safeguards, fiduciary, procurement, and M&E. The project will rely on competitive bidding to ensure fairness and traceability of project resources for implementation – particularly in the second component in which most resources are concentrated. The project has taken measures to ensure integrity of the technical design is not compromised. The third component of the project relies heavily on the ability of SMEs supported through TA and matching grants to secure loans from financial intermediaries working through credit risk guarantees of GIRSAL. The functioning of this mechanism poses some risk but has been designed with realistic expectations. The success of the project also hinges on factors like strong climate adaptation and mitigation, addressing and accounting for child labor, and incorporating women. The project's technical design aims to mitigate these risks.

99. **Institutional capacity for implementation and sustainability risk is high.** TCDA is a very new entity created in 2019. To-date, TCDA does not have full complement of staff, offices, and logistics. The project will provide TCDA with its first World Bank loan facility of US$100 million. As such, given a lack of historical information on TCDA performance, institutional capacity for implementation poses a big risk. The World Bank has assessed that with the support of MOFA and some secondments of staff from the ministry, this implementation risk can be reduced. COCOBOD is an institution with a long history and a strong cadre of staff operating in its departments indirectly responsible for implementing the project. PIU staff will be seconded from COCOBOD. However, the level of effort of the PIU for project implementation relative to day-to-day operations of COCOBOD poses a risk for implementation capacity and sustainability. Institutional capacity risks are mitigated through the first project component aimed at building capacity and using a combination of seconded and hired team members in the implementation units.

100. **Environment and Social risks are rated high**. Assessment of environment and social risk as well as proposed risk mitigation measures are provided in Section D above.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY: Ghana
Ghana Tree Crop Diversification Project

Project Development Objectives(s)

The Project Development Objective (PDO) is to improve economic, climate, and social resilience in selected tree crop value chains.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	End Target
Improve economic resilience for selected tree crops among project beneficiaries			
Increase in yields for targeted tree crops (Percentage)		0.00	41.25
Increase in yields in cocoa (Percentage)		0.00	70.00
Increase in yields in cashew (Percentage)		0.00	30.00
Increase in yields in coconut (Percentage)		0.00	40.00
Increase in yields in rubber (Percentage)		0.00	25.00
Increase in value-added (sanitary and phytosanitary standards (SPS), quality assured) commodity sold, disaggregated by commodity (Percentage)		0.00	21.00
Increase in value added cocoa sold (Percentage)		0.00	10.00
Increase in value added cashew sold (Percentage)		0.00	30.00

Indicator Name	PBC	Baseline	End Target
Increase in value added coconut sold (Percentage)		0.00	25.00
Increase in value added rubber sold (Percentage)		0.00	20.00
Improve climate resilience for selected tree crops among project beneficiaries			
Reduction in net greenhouse gas (GHG) emissions (Tons/year)		0.00	381,750.00
Reduction in net greenhouse gas (GHG) emissions in cocoa (Tons/year)		0.00	112,500.00
Reduction in net greenhouse gas (GHG) emissions in cashew (Tons/year)		0.00	33,750.00
Reduction in net greenhouse gas (GHG) emissions in coconut (Tons/year)		0.00	67,500.00
Reduction in net greenhouse gas (GHG) emissions in rubber (Tons/year)		0.00	168,000.00
Improve social resilience for selected tree crops among project beneficiaries			
Share of households in project communities identified to be at risk and subsequently prevented from child labor (Percentage)		0.00	30.00

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
C1. Institutional Strengthening and Value Chain Governance			
Establish a methodology for measuring carbon sequestration in cocoa (Yes/No)		No	Yes

Indicator Name	PBC	Baseline	End Target
Number of TCDA Zonal l offices established and functional (Number)		0.00	4.00
Area of cocoa agroforestry sequestering carbon (ha) - in project districts measured using methodology (Hectare(Ha))		0.00	50,000.00
Traceable tree crop area through digital systems (Hectare(Ha))		0.00	92,000.00
Number of cocoa farmers with access to e-extension and inputs through the CMS (Number)		0.00	10,000.00
Revenue generated for TCDA through the traceability database (Amount(USD))		0.00	3,000,000.00
Beneficiary households with improved support for reducing child labor (Number)		0.00	6,600.00
Percentage of project districts where farmers, farm-groups and community stakeholders have been sensitized and mobilized for prevention, identification, reporting and remediation of child labor cases (Percentage)		0.00	100.00
C2. Improving Tree Crops Productivity and Climate Resilience			
Number of existing varieties that are adaptable for different ecological zones (for coconut, cashew, rubber) (Number)		0.00	12.00
Prevalence rate of CSSVD and Anthracnose in research pilot area (for cocoa) (Percentage)		11.00	8.00
Prevalence rate of CSPWD in research pilot area (for coconut) (Percentage)		20.00	6.00
Number of laboratories built/upgraded (Number)		0.00	3.00
Increase in analysis capacity of laboratories (tests carried out daily) (Percentage)		0.00	90.00
Land area under sustainable landscape management practices (CRI, Hectare(Ha))		0.00	92,200.00
Cocoa land area under sustainable landscape management practices (Hectare(Ha))		0.00	25,000.00

Indicator Name	PBC	Baseline	End Target
Cashew land area under sustainable landscape management practices (Hectare(Ha))		0.00	51,200.00
Coconut land area under sustainable landscape management practices (Hectare(Ha))		0.00	6,400.00
Rubber land area under sustainable landscape management practices (Hectare(Ha))		0.00	9,600.00
Farmers adopting improved agricultural technology (CRI, Number)		0.00	52,775.00
Farmers adopting improved agricultural technology - Female (CRI, Number)		0.00	19,790.00
Farmers adopting improved agricultural technology - male (CRI, Number)		0.00	34,359.00
Farmers adopting improved agricultural technology in cocoa (Number)		0.00	12,800.00
Farmers adopting improved agricultural technology in cashew (Number)		0.00	30,475.00
Farmers adopting improved agricultural technology in coconut (Number)		0.00	3,800.00
Farmers adopting improved agricultural technology in rubber (Number)		0.00	5,700.00
Women cocoa farmers supported to open mobile money accounts or saving accounts receiving direct payments for compensation and farm maintenance (Number)		0.00	2,500.00
Proportion of project FBOs fulfilling or obtaining social and environmental certification in cocoa (Percentage)		0.00	100.00
Proportion of project FBOs fulfilling World Bank environmental and social standards in cashew and coconut (Percentage)		0.00	100.00
Proportion of project FBOs having contractual arrangements with buyers in cocoa, cashew and coconut (Percentage)		0.00	85.00
Minimum average price premium per ton for certified cocoa		0.00	80.00

Indicator Name	PBC	Baseline	End Target
(Amount(USD))			
Increase in the number of women in leadership roles in FBOs over the project implementation period (Percentage)		0.00	15.00
C3. Support for Post-Harvest Management, Value Addition, and Market Access			
Number of SMEs supported to process or add value to byproducts (Number)		0.00	185.00
Share of female owned SMEs supported to process or add value to byproducts (Number)		0.00	60.00
Total cost of investments in SMEs including technical assistance. (Amount(USD))		0.00	77,500,000.00
Total Cost of Investments in SMEs in cocoa including technical assistance (Amount(USD))		0.00	8,000,000.00
Total Cost of Investments in SMEs in cashew including technical assistance (Amount(USD))		0.00	54,500,000.00
Total Cost of Investments in SMEs in coconut including technical assistance (Amount(USD))		0.00	15,000,000.00
Total value of financing leveraged by SMEs from financial intermediaries (Amount(USD))		0.00	29,800,000.00
Total value of financing leveraged by SMEs from financial intermediaries in cocoa (Amount(USD))		0.00	3,000,000.00
Total value of financing leveraged by SMEs from financial intermediaries in cashew (Amount(USD))		0.00	20,600,000.00
Total value of financing leveraged by SMEs from financial intermediaries in coconut (Amount(USD))		0.00	6,200,000.00
Jobs created through investments in SMEs (Number)		0.00	20,000.00
Jobs created for women through investments in SMEs (Number)		0.00	12,000.00
Jobs created through investments in SMEs in cocoa (Number)		0.00	200.00
Jobs created through investments in SMEs in cashew		0.00	15,400.00

Indicator Name	PBC	Baseline	End Target
(Number)			
Jobs created through investments in SMEs in coconut (Number)		0.00	4,400.00
C4. Project Management, Monitoring and Evaluation			
Share of grievances received addressed within the stipulated response time (Percentage)		0.00	100.00
Share of target beneficiaries with rating "satisfied" or above with services provided by the project interventions (Percentage)		0.00	75.00
Share of target female beneficiaries with rating "satisfied" or above with services provided by the project interventions (Percentage)		0.00	75.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Increase in yields for targeted tree crops		Bi Annual			
Increase in yields in cocoa					
Increase in yields in cashew					
Increase in yields in coconut					
Increase in yields in rubber					
Increase in value-added (sanitary and	This indicator at the				

phytosanitary standards (SPS), quality assured) commodity sold, disaggregated by commodity	aggregate level measures an average percentage increase of metric ton volume, for all crops				
Increase in value added cocoa sold					
Increase in value added cashew sold					
Increase in value added coconut sold					
Increase in value added rubber sold					
Reduction in net greenhouse gas (GHG) emissions	This indicator measures the amount of CO2 sequestered as a result of the project intervention specifically through direct investments.				
Reduction in net greenhouse gas (GHG) emissions in cocoa					
Reduction in net greenhouse gas (GHG) emissions in cashew					
Reduction in net greenhouse gas (GHG) emissions in coconut					
Reduction in net greenhouse gas (GHG) emissions in rubber					
Share of households in project communities identified to be at risk and subsequently prevented from child labor	A baseline prevalence of risk of child labor for beneficiary households will be established. Any targeting of child labor related project interventions and subsequent prevention of child labor will be measured				

	for these households in project communities.				

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Establish a methodology for measuring carbon sequestration in cocoa					
Number of TCDA Zonal l offices established and functional					
Area of cocoa agroforestry sequestering carbon (ha) - in project districts measured using methodology					
Traceable tree crop area through digital systems					
Number of cocoa farmers with access to e-extension and inputs through the CMS					
Revenue generated for TCDA through the traceability database					
Beneficiary households with improved support for reducing child labor					
Percentage of project districts where farmers, farm-groups and community stakeholders have been sensitized and mobilized for prevention, identification, reporting and remediation of child labor cases					
Number of existing varieties that are adaptable for different ecological zones (for coconut, cashew, rubber)					

Prevalence rate of CSSVD and Anthracnose in research pilot area (for cocoa)					
Prevalence rate of CSPWD in research pilot area (for coconut)					
Number of laboratories built/upgraded					
Increase in analysis capacity of laboratories (tests carried out daily)					
Land area under sustainable landscape management practices	The indicator measures, in hectares, the land area for which new and/or improved sustainable landscape management practices have been introduced. Land is the terrestrial biologically productive system comprising soil, vegetation, and the associated ecological and hydrological processes; Adoption refers to change of practice or change in the use of a technology promoted or introduced by the project; Sustainable landscape management (SLM) practices refers to a combination of at least two technologies and approaches to increase land quality and restore				

	degraded lands for example, agronomic, vegetative, structural, and management measures that, applied as a combination, increase the connectivity between protected areas, forest land, rangeland, and agriculture land.				
Cocoa land area under sustainable landscape management practices					
Cashew land area under sustainable landscape management practices					
Coconut land area under sustainable landscape management practices					
Rubber land area under sustainable landscape management practices					
Farmers adopting improved agricultural technology	This indicator measures the number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank.			Agricultural technology refers to climate smart technologies and practices.	
Farmers adopting improved agricultural technology - Female					
Farmers adopting improved agricultural technology - male					
Farmers adopting improved agricultural technology in cocoa					

Farmers adopting improved agricultural technology in cashew					
Farmers adopting improved agricultural technology in coconut					
Farmers adopting improved agricultural technology in rubber					
Women cocoa farmers supported to open mobile money accounts or saving accounts receiving direct payments for compensation and farm maintenance					
Proportion of project FBOs fulfilling or obtaining social and environmental certification in cocoa					
Proportion of project FBOs fulfilling World Bank environmental and social standards in cashew and coconut					
Proportion of project FBOs having contractual arrangements with buyers in cocoa, cashew and coconut					
Minimum average price premium per ton for certified cocoa					
Increase in the number of women in leadership roles in FBOs over the project implementation period					
Number of SMEs supported to process or add value to byproducts					
Share of female owned SMEs supported to process or add value to byproducts					
Total cost of investments in SMEs including technical assistance.					

Total Cost of Investments in SMEs in cocoa including technical assistance					
Total Cost of Investments in SMEs in cashew including technical assistance					
Total Cost of Investments in SMEs in coconut including technical assistance					
Total value of financing leveraged by SMEs from financial intermediaries					
Total value of financing leveraged by SMEs from financial intermediaries in cocoa					
Total value of financing leveraged by SMEs from financial intermediaries in cashew					
Total value of financing leveraged by SMEs from financial intermediaries in coconut					
Jobs created through investments in SMEs	The definition of the indicator will include direct and indirect jobs.				
Jobs created for women through investments in SMEs					
Jobs created through investments in SMEs in cocoa					
Jobs created through investments in SMEs in cashew					
Jobs created through investments in SMEs in coconut					
Share of grievances received addressed within the stipulated response time					
Share of target beneficiaries with rating					

"satisfied" or above with services provided by the project interventions					
Share of target female beneficiaries with rating "satisfied" or above with services provided by the project interventions					

ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

1. **Tree crops are associated with particularly strong risks and opportunities.** On the one hand, Ghana's tree crops have a great deal of unrealized potential and could contribute more to economic diversification, jobs creation, and export earnings. Both their yields and value added could be higher, and sometimes significantly so.[86] On the other hand, the agriculture sector and cocoa are known for high prevalence of child labor. Tree crops have also been long considered – though not necessarily fairly or well understood – a leading driver of deforestation and biodiversity loss but could potentially contribute a lot to reforestation. Tree crops are vulnerable to the shifts in agroecological zones and pests and diseases that result from climate change. Because multiple years elapse before they generate yields, tree stocks require proactive rejuvenation efforts, including incentives and financing, to prevent productivity decline. The situation varies by tree crop, cocoa being particularly distinct in the Ghanaian context.

Cocoa

2. **Cocoa dominates Ghana's tree crops landscape.** Both in terms of area harvested and with respect to the issues the industry touches upon, cocoa has an outsized role in Ghanian society and economy. Cocoa producers remain extremely poor. Prices in world markets tend to be volatile and producers capture just a fraction of gross FOB price every year, keeping the majority of its 800,000 growers in poverty. Cocoa is primarily grown on small farms of 2–3 hectares that are concentrated along the forest-zone belt running from the Bono and Ahafo in western Ghana, where most cocoa is produced, to the central and eastern regions of Ashanti, Eastern, and Volta.

3. **Ghana's cocoa sector partly owes its prominence in global markets to substantial public investment in the sector and institutional reforms initiated in the mid-1980s.** This public investment was the cocoa industry's response to economic circumstances at the time as well as to international pressures to liberalize. Rather than abolishing the cocoa marketing board, Ghana set out to reform the parastatal, committing to increase farmers' share of export prices. The marketing board, which would subsequently become COCOBOD, continues to provide services to the sector and retains a monopoly over cocoa purchases and exports.[87] In this capacity, COCOBOD continues to set prices.

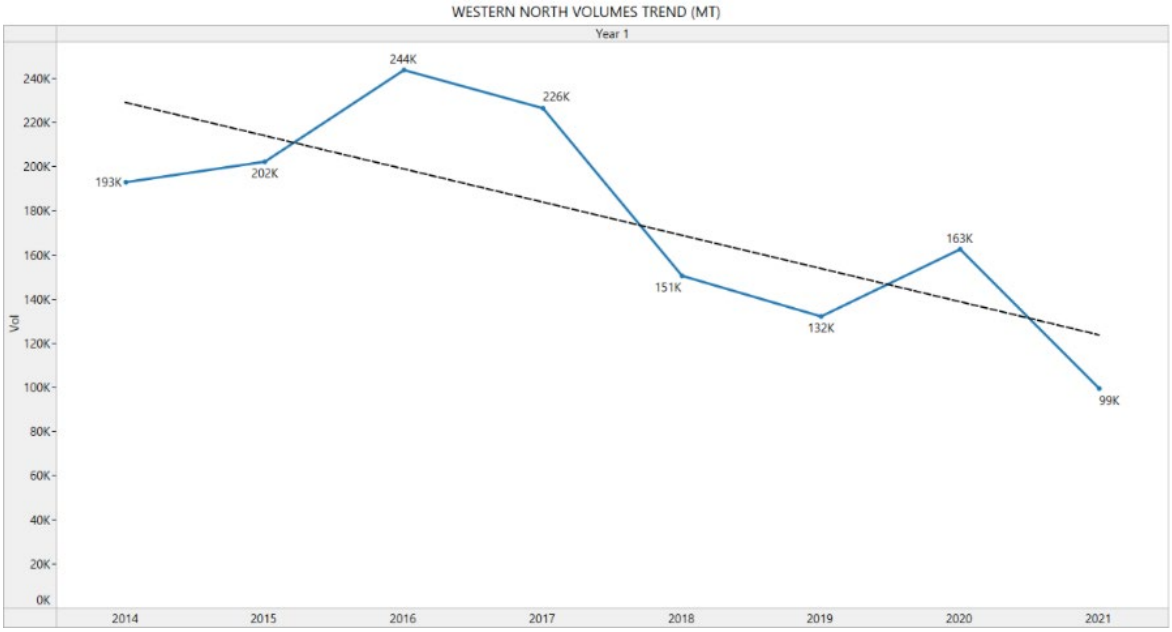
4. **Despite its accomplishments, Ghana's cocoa sector faces challenges relating to performance and sustainability.** Low and stagnant productivity is one of its most persistent and pressing challenges. A large number of cocoa trees are infected by Cocoa swollen shoot virus disease (CSSVD) and are moribund or

[86] Optimal cocoa yields are around 1000 kg/ha, however at present average yields in 2018 - 2020 were at 543, 541, 472, and 439 kg/ha for Ecuador, Ghana, Ivory Coast, and Brazil respectively. This indicates global yields could be potentially much higher. This indicates global yields could be potentially much higher. For cashew, average yields from 2018 - 2022 in Vietnam are 1,069 kg/ha and 712 kg/ha in India. By comparison, cashew yields in Ghana are just 532 kg/ha and 416 kg/ha in Ivory Coast. Average yields in 2018-2020 in coconut were 7,159 kg/ha in India, 6,100 kg/ha in Indonesia, just 5,363 kg/ha in Ghana and 4,024 kg/ha in Philippines.

[87] The parastatal supports production and processing including on-farm productivity through research and extension, fertilizer subsidies and provision of rehabilitation services like cutting and pruning.

overaged, significantly curtailing the lifespan of those affected.[88] Yet replanting efforts are lagging and a recent acceleration in the spread of CSSVD remains the single most pressing issue facing COCOBOD, especially in the Western North region (Figure A1.1). While yields are expected to taper off as trees age, their decline has been accelerated by poor farming practices and a related loss of soil fertility. Issues include shifting cultivation, which can engender a vicious cycle of soil quality loss and land clearing, and the adoption of full-sun varieties, which start off higher-yielding but are quicker to deplete soils and are less resilient. Even at their peak, potential yields are seldom achieved owing to a lack of intensification as well as to pests and diseases which are expected to worsen as the climate changes. By one account, realized cocoa yields are typically one-quarter of their potential, averaging 541 kg/ha in 2018–2021, well below the yields of 1,400–3,000 kg/ha attained on research and more productive farms. With limited virgin land left to expand into, closing the yield gap is the main way Ghana can increase cocoa output.

Figure A1.1 Production volumes by year in Western North region



5. **Farmer Based Organizations (FBOs) are afflicted with weak organization and governance that limit their current potential to become better integrated into the cocoa value chain.**[89] In the current environment cocoa growers struggle with a variety of organizational and managerial issues. They generally deal directly with buying companies and COCOBOD. FBOs play a limited role. COCOBOD is actively engaged in strengthening FBOs in several districts to enable better integration into the cocoa value chain, but persistent challenges need to be overcome.

6. The system is prone to elite capture and governance challenges, and farmers tend to have limited trust in the equitable and transparent distribution of extension services and resources. Access to modern fertilizers, pesticides, and other inputs, as well as climate-smart agriculture (CSA) and good agricultural

[88] Almost 25% of cocoa trees are now around 30 years old and their productivity is declining (COCOBOD, 2015).
[89] Also known as user-based cooperatives or producer groups.

practices (GAPs) will rely in large measure on fostering farmers' confidence in these services.[90] There are limited opportunities for FBOs to exercise collective bargaining power in the sale of beans.[91] Strengthening governance structures, formalization, and capacity building can help to mitigate some of these challenges and to prepare FBOs to assume a greater role in cocoa production and marketing.

7. **Low farm earnings make it challenging for growers to depend on cocoa income alone for sustaining their livelihoods.** While cocoa earnings have contributed to poverty reduction, one 2021 study found that between 30–60 percent of growers remain below the international poverty line and that 75–90 percent do not earn living wages of US$5.81 (2018 PPP) per person per day. COCOBOD is presently focused on helping farmers fetch a higher price for their beans, including by supporting sustainability and certification efforts. Transforming and marketing cocoa byproducts may be another means of increasing the incomes of cocoa growing communities. Cocoa pulp can be turned into juice, while cocoa pod husks can be used to make soap, dietary fiber, bio-based packaging and chemicals, pellets used for energy, and organic fertilizer. Value addition, including artisanal chocolate production via SMEs can create community jobs, especially for women. Koa-Impact, a Ghanaian SME that was created in 2017 and now employs 1,600 people to process cocoa juice from the pulp, illustrates the opportunity.[92]

8. **Today, Ghana's cocoa processing capacity is underutilized, post-secondary value addition to beans is limited, and supply chain inefficiencies undermine the sector's performance.** While Ghana has developed a reputation for high-quality cocoa and has invested in building processing capacity, most of the value that is added to cocoa is created after the beans are shipped out of the country. It is telling that in 2019, Ghana's exports of cocoa were worth 81 times more than its exports of chocolate. Ghana processes about 30 percent of its cocoa beans and the government aims to increase that share to 50 percent. Despite the sector's strong performance, there is room for improvement in supply chain efficiency transparency, and governance; and in COCOBOD's organizational capacity and accountability.

9. **Cocoa farming is particularly vulnerable to climate change.** The decline in precipitation and temperature rise that Ghana has been experiencing since the 1960s has negatively impacted cocoa harvests. Seedlings can be lost to drought and the crop only grows well in a narrow range of conditions. Changes in humidity and rainfall are also expected to exacerbate the pest and disease pressures that already affect plantations.[93] In this respect, cocoa trees' relatively high level of genetic homogeneity is an added source of climate vulnerability. Meanwhile, cocoa production is also contributing to climate change.

10. **Cocoa is a driver of deforestation in Ghana, and at the same time an underutilized resource in mitigating and building resilience to climate change.** According to the national forest reference level since 2000 deforestation increased significantly in Ghana with much of it occurring in Ghana's high forest zone (HFZ).[94,95] The HFZ is the main area for cocoa production in the country, covering over 1.2 million hectares of forest reserve and protected areas. Cocoa contributes to deforestation through area expansion in

[90] In terms of cocoa production, studies have found that for Ghana a more judicious use of modern inputs in terms of fertilizers, pesticides and other implements led to a 19 percent (42 kg) higher per hectare yields for FBO members.
[91] FBO members typically receive fairer weight (and quality) evaluations of their beans. As a result, members receive higher revenues per bag and hectare, including bonuses to FBO members for yield and weight. Quality is not relevant in the case of Ghana as farmers are paid the same price regardless of quality.
[92] https://koa-impact.com/
[93] Too much rainfall (> 2,500 mm a month) makes trees more vulnerable to diseases like black pod and swollen shoot virus.
[94] Further details are provided in the Emission Reduction Agreement Project Appraisal Document (P160339).
[95] Ghana has experienced a high rate of deforestation in recent decades, losing 17 percent of its forestland from 2001–2019.

forested zones.[96] Illegal logging and mining especially in HFZ, and agricultural expansion for food crops are other major drivers.[97] Cocoa rehabilitation can also contribute to reforestation/afforestation and carbon sequestration. Rehabilitation programs of COCOBOD do not engage in forest reserves and focus on climate smart agriculture (CSA) practices, including replanting at least 18 – 20 shade trees per hectare. These importantly provides Climate Co-Benefits. Ghana's challenge is to tackle the remaining deforestation hotspots where cocoa production is contributing to the problem. It will require geospatial mapping and traceability to prove cocoa is not sourced from forested areas.

11. **Fueled in part by international pressure, in part by growing concern over rapid forest loss, the GoG has adopted several strategies to increase sustainable forest management and improve traceability within cocoa systems.** Ghana is actively engaged in efforts to achieve Reduced Emissions from Deforestation and Forest Degradation (REDD+) with support from the Forest Carbon Partnership Facility (FCPF) to ensure transparent and sustainable forest management. World Bank environmental projects including the Emissions Reduction Program (ERP, P160339)[98], and the Forest Investment Program (FIP, P163745)[99] support these efforts. These and similar projects promoting the partnership of COCOBOD with the Forestry Commission (FC) have been considered largely successful.

12. **In 2017 Ghana, together with Cote d'Ivoire, launched a public-private partnership known as the *Cocoa & Forests Initiative (CFI)*.** CFI works with the world's leading cocoa and chocolate companies grouped under the World Cocoa Foundation (WCF), which aims at ending cocoa-induced deforestation.[100] Under the CFI, Ghana and the private sector signed a *Joint Framework for Action* to stop conversion of forests for cocoa production and gradually eliminating cocoa production in gazette forests and forest reserves. Ghana and Cote d'Ivoire have also adopted a new *African Regional Standard for Sustainable Cocoa norm (ARS 1000)* that addresses all aspects of sustainability, including child labor and mandates the establishment of a full traceability system from the plots to the point of export. Ghana's cocoa management system (CMS) has made significant strides in mapping out farmers, their farm polygons, and in developing a traceability linked system.

13. **COCOBOD's initiative to implement a functional and credible traceability CMS is linked to its adoption of the EU regulation on deforestation free supply chains and requires last mile support.**[101] A provisional political agreement was reached between the European Parliament and the Council on the regulation.[102] The purpose of the agreement is to ensure that a set of key goods placed on the EU market will no longer contribute to deforestation and forest degradation.[103] The regulation also applies to rubber and palm oil tree crops. Once in effect, the regulation places the burden of demonstration on private operators. They

[96] Drivers of cocoa sector encroachment on forestland include shifting cultivation as a response to soil fertility decline, limited intensification, the absence of a clear land and tree tenure regime, the shrinking of land that is suitable for cocoa production, and the adoption of full-sun varieties that compete directly with standing forests.
[97] Simon Abugre, Emmanuel Kwaku Sackey, Diagnosis of perception of drivers of deforestation using the partial least squares path modeling approach, Trees, Forests and People, Volume 8, 2022, *https://doi.org/10.1016/j.tfp.2022.100246*.
[98] ERP makes payments to the cocoa forest REDD+ program for emissions reductions.
[99] FIP improves forest and tree management practices by cocoa farmers, community resource management areas (CREMA) and forest reserve managers.
[100] Thirty-five companies, accounting for about 85% of global cocoa usage, have now joined CFI.
[101] *https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_5919*
[102] It is expected that the Regulation will be approved by the European Parliament by February 2023 and that compliance with the Regulation will become mandatory 12 months after it comes into force.
[103] The EU regulation remains silent on a potential economic incentive that can be offered to host countries on as a premium for adapting these measures beyond the living income differential (LID). For the governments of Ghana and Cote d'Ivoire, price takers for cocoa in global markets despite supplying 70 percent of global output, the recent boycott of WCF industry meetings in October 2022 was a demonstration of the heightening price dispute.

need to substantiate that tree crop products have not been produced in areas subject to deforestation or forest degradation after 21 December 2020 – the cutoff date.[104] In Ghana, the private sector is largely already adhering to these regulations for cocoa, but industry led monitoring systems of child labor are not yet connected to national monitoring or remediation systems. Furthermore, while the CMS initiative will centralize traceability and ensure farm to port traceability for all cocoa beans, integration of the CMS with systems that can provide real-time data on child labor is still to happen and will be required for compliance with the ARS 1000. These concerted actions are starting to show visible results and support is needed for the operationalization of the CMS.

14. **COCOBOD's initiative through the cocoa management system (CMS) to establish a functional and credible traceability system accounting for child labor and deforestation requires last mile support in the face of impending European Commission regulation.** The regulation covers six commodities including cocoa, as well as derived products such as chocolate. Firms that seek access to EU markets are required to undertake due diligence related to deforestation and traceability.[105] It is expected that the Regulation will be approved by the European Parliament by February 2023 and that compliance with the regulation will become mandatory 12 months after it comes into force.

15. **The GoG and COCOBOD remain highly mobilized in relation to the sector's development.** The GoG's Second Cocoa Sector Development Strategy for 2017-2027 (CSDS-II) aims to enhance cocoa productivity by empowering smallholders to adopt modern technologies, and to increase the cocoa industry's efficiency, effectiveness, and sustainability by modernizing the business environment and increasing access to certified product markets. CSDS-II proposes investments in climate-smart productivity enhancement including R&D and extension, soil fertility management, rehabilitation and replanting, and disease and pest control, as well as in the marketing and pricing of cocoa products.

Other Tree Crops

16. **Value chain governance for tree crops has tended to be loosely defined and organized, leaving industries poorly equipped to respond to opportunities and challenges.** Ghana's tree crops hold huge potential for boosting on-farm productivity, diversification, off-farm value addition, and job creation. In 2019, the GoG created the Tree Crops Development Authority (TCDA) to support the sustainable commercial development of six designated tree crops through research, service provision (production and value chain services), capacity building, licensing, and regulation. In 2022, the TCDA launched a five-year tree crops development strategy (2022–2027) targeting the six-priority tree crops: cashew, shea, mango, coconut, rubber, and oil palm. The strategy aims to double their output and better respond to market opportunities as a means of promoting inclusive economic diversification. Market opportunities stem notably from the expansion of global demand for tree crops in general, and for sustainably, ethically, and inclusively sourced products in particular. To these ends, in 2022, the Authority, which sits under the MOFA, developed a set of tree crops regulations. Still underway for parliamentary approval, legislation

[104] The Proposal defines "deforestation" as being the conversion of forest for agricultural use, whether human induced or not. Furthermore, "forest degradation" is defined as harvesting operations that are not sustainable and cause a reduction or loss of the biological or economic productivity and complexity of forest ecosystems, resulting in the long-term reduction of the overall supply of benefits from forests, which includes wood, biodiversity and other products or services.

[105] To ensure: (i) the products have been produced on land that has not been subject to deforestation or forest degradation after December 21, 2020; (ii) the products have been produced in accordance with the relevant legislation of the country of production. As part of their due diligence obligations, operators must: (i) ensure the full traceability of the covered goods; (ii) carry out a risk assessment to demonstrate that there is no or only a "negligible" risk of non-compliance; and (iii) take adequate mitigation measures: where the risk assessment indicates that there is a non-negligible risk of non-compliance.

may include producer price guarantees and the taxation of unprocessed products. It is also TCDA's intention to build and leverage public-private partnerships.

17. **In other tree crops, including cashew and coconut, and like cocoa, a significant challenge for competitiveness is a lack of organization of farmers in FBOs.** Maximum value chain efficiency for the distribution and use of inputs and services cannot be achieved because FBOs lack organizational training, group management and business skills.
This limits their access to information on production standards, including good agriculture practices (GAPs), post-harvest management, and storage at the group level. It also limits their understanding of quality standards and norms, and their ability to use collective bargaining power for establishing forward contracts with private off-takers. It may also be easier for FBOs to work through the Cashew Council and Coconut Federation with more fair and equitable governance structures.[106]

Cashew

18. **Although its volumes and value are nowhere near cocoa's, cashew nuts a major export crop in Ghana.** The crop is primarily grown by smallholders with under 3 hectares of land in the Bono East, Bono and Ahafo,[107] Northern, Upper West and Upper East regions. Most cashew nuts—around 95 percent—are exported in raw form. In 2019, cashew exports were valued at US$243 million. Global demand for cashew products is trending upward; and its labor-intensive processing is seen as a promising source of additional employment, especially for women, who do about 80 percent of agri-processing.[108] Interplanting cashew with other crops also has the potential to enhance returns and food production on cropland – a common practice that could readily be expanded. Seeing potential in the crop, as well as the progress made by neighbors like Cote d'Ivoire and Burkina Faso in developing the sector, the GoG issued a 10-year Cashew Development Plan in 2018. Although the government aimed for 250 thousand hectares of cashew plantations by 2020, Ghana harvested a little over 155 thousand hectares of cashew nuts that year (FAO 2022). That said, Ghana's production of raw cashew nuts (RCN) grew ninefold in just ten years, from roughly 9,000 tons in 2000 to over 82,000 tons in 2020.

19. **With its favorable growing conditions, Ghana can become a more prominent global supplier of cashew nuts if low productivity and other challenges are overcome.** Realizing the sector's full potential will rest on it overcoming several production constraints. Some of these are similar to issues in cocoa production, others are unique to cashew. Ghana's cashew yields are higher than they are in some West African countries like Benin, Burkina Faso, and Cote d'Ivoire, but national yields are still low relative to what they could be, averaging about 530 kg/ha in 2018–2021, or roughly 30 percent of the crop's technical potential according to MOFA (1,800 kg/ha). Over that period, Vietnam obtained yields of over 1,000 kg/ha. Poor agricultural practices, the use of low yielding lower quality unimproved tree varieties, limited use of inputs, pest and diseases are some of the main causes of these relatively low yields.

20. **Low processing and value addition capacity, weak value chain governance and grower vulnerability pose a huge challenge in the cashew sector.** In parts of Ghana, cashew production adheres to high quality standards. This is the case for example in the Northern Savannah Zone. In Community Resource

[106] At present these organizations operate at a very limited capacity with no governance structures, no clear mandate, and limited personnel. The organizations require more support. Each organization is linked to farmer association, processors association, exporter association, and others.
[107] previously Brong-Ahafo region
[108] It reportedly takes roughly 380 people to process 1,000 tons of cashew—method unspecified.

Management Areas, organic production practices are de facto the norm. However, farms are not widely obtaining the certification they would need to sell at a premium. In addition, storage conditions are not always optimal for preserving the nuts' quality. As of 2021, Ghana reportedly processed less than 10 percent (7.7–9.5 percent) of its RCNs. Many processors use manual or semi-automatic machinery and are not able to operate efficiently; and many struggle to compete with better-resourced foreign buyers to ensure a continuous supply of raw material. Several national processing plants have shut down as a result. Meanwhile, cashew nut byproducts such as cashew apples and shells are usually discarded rather than transformed into marketable products such as food and feed ingredients, leaving value on the table. One analysis found that Ghana had the lowest gross margins on cashew processing among its African peers in 2021.[109] Developing local processing capacity could have multiple benefits (Box A1.1). To date, Ghana's cashew value chain has not been among the best governed or organized. Typically, farmers sell directly to cashew processors (mostly foreign) as well as from traders and their agents. As a result, compared to cocoa growers, cashew producers enjoy more limited protections from price fluctuations and take home a lower share of export prices.

Box A1.1. Benefits of Local Processing

Local processing offers many benefits. One is that it significantly reduces transportation costs by eliminating the shipping of raw cashews to Asia for initial processing and the onward shipping of kernels to European and US markets. Developing local processing capacity may also help stabilize farmgate prices, something that would also be expected to incentivize investment in raising quality and yields. It also has the potential to improve soil health by making it possible for cashew residues to be returned to the land, provided they are not transformed into marketed products.

Local processing also has the potential to ease the traceability of products, an increasingly sought-after option in international markets. Downstream in the supply chain, food manufacturers and retailers are generally looking to shorten their supply chains and work with more limited numbers of preferred suppliers (importers and producers) to whom they transfer the responsibility for product traceability, safety, and quality. Lastly, cutting down the miles the product is transported to reach end consumers can help shrink its carbon footprint, a feature that may have market value and lend suppliers a competitive edge in a sector that is increasingly being shaped by values-driven purchasing.

At present government regulations supporting the development of processing, RCN quality enhancement, and the addition of value to exports are weak but ramping up in Ghana. Key challenges include an unfavorable business environment and limited access to technology and finance (working capital).[110] Ghana's processing segment is at a risk of collapse if competitive gaps are not addressed, notably by applying lessons learned from sector reforms undertaken by other countries.[111]

21. **Cashew is less susceptible to climate change impacts than cocoa and can be used to derive carbon benefits, though it is not immune to climate pressure.** While cashew trees are expected to be less

[109] Compared to Nigeria, Cote d'Ivoire, Benin, Guinea-Bissau, Mozambique, and Tanzania. Analysis carried out in 2022 for the USAID-funded ProCashew Project.
[110] Ghana Cashews & sector policies review in global context report, Projet West Africa PRO-Cashew, USDA, 2022
Benchmarking shows that overcoming these challenges requires a careful consideration of investment incentives for processing – that have been highly effective among other cashew producing and processing countries. These include tax and VAT exemptions, high export duties of RCN, regulation of purchase at farm gate from foreign buyers.
[111] Benin's cashew sector is expecting a big shift from a competitive exporter of RCN to a net exporter of processed kernel. Big investments in cashew processing hub to process majority of Benin nuts (accommodating over 150K mt of RCN processing, fully functional by Dec. 2023) within a devoted area framework.

adversely affected by climate change than cocoa trees and may even offer an alternative to the latter in some instances, cashew is not out of harm's way. One concern is that the pest and disease pressures that already weigh down their yields are expected to worsen under changing climate conditions.

22. **The GoG has already made notable efforts to address these and other sector challenges.** It undertook a mass spraying exercise initiative in Wenchi in an attempt to root out pathologies and buoy yields. To encourage more processing, the government established tax-exempt zones and customs duty exemptions on imported equipment and spare parts. An initial attempt to address price volatility was taken when the TCDA set an indicative minimum farmgate price for RCN in December 2021—a measure that could be strengthened going forward. And as of 2022, the taxation of unprocessed, raw cashew nuts was under consideration.

Coconut

23. **Ghana is a relatively small producer of coconut by global standards, accounting for under 1 percent of global supply (0.7 percent in 2020), but the crop makes important contributions to the local economy in parts of the country.** Coconut is extensively grown in Western, Central, Accra, Eastern, Ashanti, and Volta, and to a lesser extent in Bono, Ahafo, and Oti. It plays a critical role in the parts of the Western region where its production is concentrated, primarily in the Jomoro, Ellembelle, and Nzema East Districts. It is a significant source of income along Ghana's coast, the tree growing well on marginal lands. Its production is estimated to involve some 360,000 farmers tending plantations of 2–5 hectares, though more recently coconut growing is tending towards commercially oriented plantations ranging from 10–200 hectares.[112]

24. **While Ghana is not about to rival the largest global players in coconut, the country could position itself more strongly in relation to market opportunities that are emerging.** These include a rapidly growing regional market for cosmetics and food products and rising European demand for fresh coconuts and coconut-based snacks. Nearly 90 percent of Ghana's coconut exports are already destined for Europe. Coconuts are perceived as a zero-waste product. Shells can be used to produce charcoal and therefore activated carbon with a variety of uses. These include in air conditioning, car filters, as a source of sustainable fuel, and critically in the mining industry (in lieu of mercury which pollutes waterways). Coconuts may also offer an attractive climate adaptation strategy to the extent that, compared to many crops, the trees can tolerate relatively salty and dry conditions.

25. **Supported by the Ghana Exports Promotion Authority (GEPA), coconut production increased by 33 percent between 2000 and 2020, allowing Ghana to steadily maintain its contribution to global supply.** Growth in production volumes has primarily resulted from coconut's expansion, the area on which coconut was harvested having grown by 43 percent over those two decades. Ghana's average yields are not particularly high, averaging a steady 5.4 tons per hectare in 2018–2020, although they are higher than those of the Philippines, which is the world's second largest producer of coconut. Some land productivity gains may materialize going forward as the GoG has supported the development and planting of more resilient and higher-yielding varieties, and these trees are expected to start bearing fruit in short order. At present, supply of coconut is well below demand for local consumption, processing, and exports. An acceleration of multiplication and distribution of seedlings could help alleviate the mismatch between supply and demand because of explosive demand.

[112] Stakeholder engagement with Coconut Federation.

26. **Ghana's coconut sector is still, to an extent, recovering from its devastating encounter with Cape Saint Paul Wilt Disease (CSPWD).** Between the 1980s and early 2000s, this lethal yellowing disease (LYD) decimated the industry. By 2002, the insect-borne parasite had devastated about one-quarter (11 thousand hectares) of Ghana's coconut plantations. Production volumes were affected to an extent that many small-scale processors went out of business. Since the early 2000s, efforts have been underway to develop and plant CSPWD-tolerant varieties.[113] More support to research in this area of geographic varietal suitability is needed.

27. **Opportunities for growth lie in overcoming a host of sector challenges, including but not limited to crop pathologies.** Challenges range from aging trees and a lack of access to finance for replanting, to weak land tenure and low investment in production technologies, something that has implied high land preparation and labor costs. Ghana also has limited capacity to process coconut products and weak regulation of the coconut industry.

Rubber

28. **Rubber production in Ghana is modest by global standards** at just around 54,800 tons in 2021 and occupying the 19th position in terms of production. Productivity is somewhat low at 0.88 tons/hectare, compared to global leaders in production like Thailand (1st) and Vietnam (3rd) where yields are 1.39 and 1.69 tons/hectare respectively. Potential for exports is high, wherein 95 percent of rubber produced in Ghana is exported and the country is the 12th largest exporter in value terms. Areas suitable for natural rubber production in Ghana include the forest zones of the Western, Central, Eastern, and Ashanti regions. The tree requires a minimum rainfall of 1,200 mm per annum and is evenly distributed on lower slopes, uplands, and flatlands. Around 70 percent of rubber production in Ghana takes place on smallholder farms. Rubber is becoming an increasingly lucrative farming venture for those looking to diversify out of cocoa, coconut, and other tree crops, despite the long gestation period of six to seven years. Planting of rubber trees on non-forested land can contribute heftily to climate benefits by acting as a carbon sink, sequestering carbon in biomass and indirectly in soils.[114] The Ghana Rubber Estates Limited (GREL) which use to be wholly state owned in the 1980's but after support from *Agence Française de Development* (AFD) to rehabilitate and manage the company's rubber plantation and to build a new rubber processing plant, in 1996 the French management company, *Societe Internationale de Plantation d' Hevea* (SIPH) became the major shareholder of the company. GREL controls about 35 percent of the land area in rubber plantation, and 90 percent of processing.

29. **Limited access to finance is a key constraint for the development of SMEs in Ghana.** In 2019, Ghana's credit to the private sector was only 12 percent of GDP, significantly lagging behind its peers (19.6 percent in Cote d'Ivoire and 27.5 percent in Kenya), and the share of bank loans to agriculture was very low at 5 percent.[115] The low level of financing of agriculture and agribusiness reflects both demand and supply constraints. On the supply side, banks consider lending to agriculture/agribusiness finance (i) risky due to unstable revenue flows, lack of collateral, and limited legal avenues for enforcing contracts; and (ii) costly

[113] In 1999, the GoG initiated the Coconut Sector Development Programme in response to the crisis.

[114] A study by Biplab Brahma et al., (2016) revealed total biomass of rubber increased from 41 kg/tree under 5–10 years to 307 kg/tree under 30–40 years age group of plantations. Total vegetation carbon stock ranged from 16.00 Mg/ha (5–10 years) to 105.73 (30–40 years) which is more than many tropical forestry and agroforestry systems across the world.

[115] The key private sector financing partners are primarily commercial banks (e.g., Ghana Commercial Bank, Agriculture Development Bank and Société Générale), microfinance institutions, private equity investors and specialized credit providers.

given the small loans usually involved. May banks moreover have limited understanding of agriculture/agribusiness and lack suitable lending instruments. Finally, the availability of long-term finance is another constraint for financing longer-gestation investments such as those in agriculture. On the demand side, critical factors limit agricultural SMEs' access to finance: (i) real lending rates are high; (ii) most SMEs have deficient accounting practices and lack credit history and/or adequate collateral; and (iii) most also lack financial and business skills to prepare business plans of the quality required by financial institutions. Most Ghanaian enterprises are therefore forced to forgo long-term, value-addition investments.

30. **The Government has recently taken further steps to improve SMSEs access to investment finance.** The National Investment Bank (NIB), the Agricultural Development Bank (ADB) and the Ghana Export-Import (EXIM) Bank were restructured and recapitalized in 2019 and assigned a renewed focus on the financing of the development of economic sectors. The Government has also established the Development Bank of Ghana (DBG) with the mandate of providing loans to PFIs for their on-lending for financing private investment in key sectors (including agriculture and agribusiness), partial credit guarantees and technical services to retailing banks.[116][117] Finally, the *Ghana Incentive-Based Risk-Sharing System for Agricultural Lending Project (GIRSAL)* was established in 2019 as a non-banking financial institution to de-risk lending to the agricultural sector. GIRSAL is fully operational. It has established strategic alliances with key financial institutions – commercial banks (including the Agricultural Development Bank), Ghana EximBank, the DBG and ARB APEX. Most of the on-going projects supporting agricultural value chains are using GIRSAL for de-risking lending to their target beneficiaries.

[116] In 2020, the Government allocated US$100 million (of a totally planned US$250 million) in capital contribution to the DBG. It has also secured debt financing commitment of €170 million from the European Investment Bank (EIB) and €46.5 million from the German state-owned development bank (Kreditanstalt für Wiederaufbau, KfW). The Development Bank of Ghana is receiving support from the IDA-financed seven-year, US$250-million Development Finance Project.

ANNEX 2: Project Description

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

1. **The project design embodies the following principles:** (i) Combined support to critical tree crops sector-wide activities and reforms and field level investments in priority agro-ecological areas selected on the basis of their potential to achieve critical mass and optimize the efficiency of interventions; (ii) Improvements in the national institutional framework of the tree crops sector and the capacities of its actors to ensure the economic, social and environmental sustainability of their production, particularly, improve farmers' income, reverse the current trend of deforestation and contribute to eliminating child labor; (iii) Better inclusion of all actors in sector management—including women and youth—by improving the governance of the sector and the management and efficiency of FBOs, and strengthening the capacity of key institutions overseeing the sector; and (iv) Implementation arrangements that rely on existing national institutions: the Ministry of Food and Agriculture (MOFA), COCOBOD, TCDA, the National Agriculture Research Centers, the Ghana Export Promotion Authority (GEPA), Ghana Investment Promotion Center (GIPC), Food and Drugs Authority (FDA), Ghana Standards Authority (GSA), FBOs and their communities and the private sector (by scaling up their on-going activities in support of tree crops development).

    - **The Ghana Export Promotion Authority (GEPA),** under the Ministry of Trade and Industry (MOTI), is responsible for the promotion and facilitation of Ghanaian exports. GEPA's clientele include both private companies and sector/value chain associations. GEPA provides a comprehensive menu of services to exporters and would-be exporters including: (i) carrying out campaigns among the Ghanaian business community about opportunities in international markets (with an internet-based Export Trade Information Centre); (ii) international market research to identify promising markets and products with export potential; (iii) trade fairs, buyer-seller meetings and; (iv) Technical Advisory Services to facilitate product and market development and supply chain management; training of exporters and personnel of export institutions to upgrade their skills in export marketing (through an Export School that carries out courses in export management, product development and market development for export companies, trade facilitators and businesses) ; and (v) personalized advisory services regarding market requirements, certification, product development, etc.

    - **The Ghana Investment Promotion Centre (GIPC), under the Office of the President, is Ghana's foremost investment promotion agency**. The Center is responsible for the promotion of domestic and foreign direct investment in Ghana through (i) the collection, analysis and dissemination of information about investment opportunities in Ghana; (ii) the identification of promising national and international investors; (iii) the provision to investors of information on available incentives, the sources of investment financing and policies/regulations on setting up and operating businesses in Ghana; (iv) the facilitation of administrative procedures for the establishment and operations of private businesses including acquiring permits, accessing land (the Center maintains a database of land available for investment purposes), mobilizing incentives, etc.; and (v) the provision of aftercare assistance to investors for the resolution with relevant national institutions and services of any issues arising during their activities. The GIPC also formulates investment

promotion policies and strategies to attract foreign and local investments (and proposals to address the concerns of the private sector) and maintain a monitoring and evaluation system of all approved investments.

2. **Two other national institutions will be involved in project activities in relation to private investments and production.**

- The Food and Drugs Authority (FDA) which is the mandated institution responsible for the management of food safety across the country including product registration, premises registration and post approval market surveillance of food and feed. It organizes training programs for the local Industry; carries out gap assessments and provides technical support for local industry; and develops programs to build capacity of local industry to comply with national and/or international standards; and

- The Ghana Standards Authority (GSA), responsible for the management of (i) the nation's quality infrastructure (lab testing of food and agricultural products); and (ii) certification.

3. **Table A2.1. The policy and regulatory changes and actions to be operationalized from tree crops regulation**

Specific Policy	Regulatory Changes	Actions Taken
Support Increased Production and Productivity	Registration and licensing of a producer (i.e., breeders and nursery operators) of tree crop planting materials.	(a) Issuance of plant multiplication licence for breeders and nursery operators. (b) Procure source material or seeds from a stock approved by TCDA. (c) Licenced operators to provide documentation at the request of TCDA to ascertain that the source material or seeds were certified by the relevant agency. (d) All operators in the value chain except for farmers (producers) should obtain appropriate licence to operate.
	Planting material for seeds or a scion bank and plant material for commercial propagation shall be approved by a mandated tree crops research institution and the Ministry of Food and Agriculture.	
	Importation and exportation of planting materials shall be approved by TCDA in consultation with the Ministry of Food and Agriculture.	

Specific Policy	Regulatory Changes	Actions Taken
Pricing of tree crop products	TCDA shall determine the minimum farmgate price of a tree crop produce based on a formula approved by the TCDA Board in consultation with the value chain actors and relevant stakeholders concerned.	Public announcements on the approved minimum prices are made periodically and monitored to assure adherence.
	Price of a tree crop product shall be determined by market forces	
Buying Procedure	TCDA shall inform officially launch the buying season for a tree crop produce where seasonality is applicable.	To promote local processing of tree crop produce (i.e., RCN). (a) Processors may purchase produce for processing before the season is launched, (b) Specified percentage of produce is reserved to be sold to local processors at the prevailing market price where export of produce is applicable. Foreign companies cannot buy RCN directly from farmers. They must work through local aggregators.
Scientific Research and Development	TCDA shall establish a tree crop fund to support industry driven scientific research.	Support breeding and development of high yielding climate resilient planting materials, processing technologies for tree crops; and best practices in technological, ecological, economic, and social practices in tandem with sustainability standards of the value chains.
Use of chemicals and Pest Control	TCDA shall collaborate with relevant agencies to implement approved pest management; and safe use of agrochemicals in any segment of the value chain of the respective tree crops.	(a) Regulate the use of agrochemicals and inputs in the tree crops value chains. (b) Implement IPM and discuss pest control systems on farms, (c) Management of a farm for pest control takes into consideration, the compensation, and the livelihoods of the affected actors. (d) Train farmers to report pests and disease infestation in their fields. (e) Establish an emergency response team for pests, disease control, fire and other natural disasters that affect tree crops.

4. **Components description.** Reflecting the above principles, the project clusters its activities around three interrelated technical components supporting soft and hard solutions to promoting the tree crops sector development, respectively: (i) Institutional Strengthening and Value Chain Governance; (ii) Improving Tree Crops Productivity and Climate Resilience; and (iii) Support for Post-Harvest Management, Value Addition, and Market Access. The fourth project component focuses on project management, monitoring and evaluation.

Details of cocoa rehabilitation under Component 2, subcomponent 2.2. On-farm productivity enhancement and resilience

5. Under this subcomponent the project will finance COCOBOD's rehabilitation of CSSVD-infested farms. The specific activities to be financed are: (i) core rehabilitation by competitively selected private sector firms assigned to slash and cut diseased and contact trees, application of arboricide, reinspection or retreatment, production and supply of plantain seedlings, production and supply of permanent shade trees, and cocoa saplings; (ii) standard payment to farmers and landlords to compensate for a loss of income from cutting of cocoa trees; (iii) individual contracts with farmers for maintenance - weeding, refilling of cocoa and economic shade trees, pesticide, and fertilizer application; (iv) support for rolling out e-extension on CSA practices in agriculture; and (v) certification of all rehabilitated farms.

6. Project investments will center on rehabilitating CSSVD-infested and moribund farms, by planting high-yielding and disease-resistant varieties. In the process, farms will be encouraged to plant shade trees and adopt CSA practices to both mitigate climate change and increase or diversify sources of income. Rehabilitation can generate significant Climate Co-Benefits (CCBs) through reforestation and addressing land degradation – contributing both to adaptation and mitigation – using shade trees, food crops and cocoa saplings, as well as CSA practices. Table A2.2. provides estimated costs of rehabilitation.

Table A2.2. Sample estimated costs of rehabilitation

	Estimated Cost of Rehabilitation			
		Cost per ha (US$)		
		Bank	COCOBOD	Total
1	Cost of Cutting Diseased tree	161.95		161.95
2	Livelihood Support Payments	200.00		200.00
3	Re-establishment	1,293.76	516.39	1,810.15
4	Maintenance (2 years)	868.54	561.30	1,429.84
	Total Cost per Ha	2,524.25	1,077.69	3,601.94
5	Target Hectares			25,550.00
6	Total Estimated Cost			92,029,567.00
	o/w COCOBOD Contribution			27,534,940.19
	o/w Bank Contribution			64,494,626.81
	Logistics			563,300.00

	Certification			211,750.00
	Total Bank Contribution			**65,269,676.81**

7. To carry out this work, COCOBOD will issue a competitive call for proposals using World Bank procedures to select private sector firms.[118] While the main rehabilitation activities will be carried out by firms, farmers will receive the standard payment to compensate for a loss of income from cutting of cocoa trees. The project will also pilot a new mechanism in which individual contracts are signed with cocoa farmers whose trees were cut for farm maintenance – as opposed to with the private firm. Contracts will be recorded in the CMS, will include child labor clauses, and ensure direct payments via the PIU to the farmers savings accounts or mobile money accounts. Through the planting of plantain suckers, farmers can harvest plantain while growing cocoa.

8. Rehabilitation in cocoa is broken into five implementation phases that the project will finance. These are the preparatory phase, core rehabilitation and farm maintenance, certification, monitoring and evaluation and exit strategy. The preparatory phase will include re-mapping and assigning reference numbers to farms in target areas, farmer engagement and sensitization, training and capacity building, livelihood support payments. Then the farmer engagement phase will identify risks and develop mitigation measures and develop and implement a communication strategy. The communication will entail (a) area specific plans for farmer buy-in and ownership; (b) educate farmers on modalities of the World Bank project; and (c) farmer involvement throughout the project life cycle. Farmers will be provided livelihood support payments and sign binding agreements directly with the PIU.

9. The scope of services of the private sector are treatment, production and supply of plantain seedlings, production and supply of permanent shade trees, and cocoa saplings. Treatment would cover slashing, cutting of diseased and contact trees, application of arboricide, reinspection or retreatment. Farm maintenance, for which farmer cooperatives will be trained through extension agents and FBOs are weeding, refilling of cocoa and economic shade trees, pesticide, and fertilizer application.

10. The investments will link with COCOBOD research and extension, and CRIG to disseminate technical advisory services on CSAs through COCOBOD's extension agents leveraging on e-extension. Farms benefitting from support will all be certified (for example under rainforest or fair-trade standards) and traced. Certification is expected to improve sustainability and farm incomes. Geographic cocoa suitability will be assessed through soil testing. For high acidic soils unsuitable cocoa, fertilizers will be provided to mitigate nutrient depleting soil qualities. Farmers will be supported in pursuing diversification activities. Support will also be provided for finding market access for shade trees on cocoa farmers like banana.

Details of matching grant mechanism under Component 3, Support for Post-Harvest Management, Value Addition, and Market Access

11. The project will operate through the existing national institutional infrastructure: COCOBOD for investments in the cocoa value chain; TCDA for investments in the cashew, coconut value chains; GIPC and GEPA for the mobilization of investors and the facilitation of their investments; financial institutions

[118] The exact nature of the model to be used will be determined during project preparation up to implementation.

for providing credit to eligible investors; and the *GIRSAL* for de-risking the lending by these financial institutions and providing technical assistance to investors.

12. The component will involve three activities: (a) the promotion, mobilization, and pre-screening of investments proposals, both international and domestic; (b) the establishment of a matching grant window within TCDA to partially finance (i) the cost of eligible investments; (ii) the technical assistance provided to investors for the detailed preparation of business plans to be presented to financial institutions; and (iii) the start-up phase of their investments. The investment support mechanism will be as follows:

- *Identifying and mobilizing investment proposals.* Promising investment proposals from SMEs and FBOs will be mobilized through (i) the detailed value chain analysis undertaken under the PPA and (ii) investors' information/promotion campaigns carried out by COCOBOD/TCDA in cooperation with GIPC and GEPA to provide information on the opportunities/requirements of export markets, the competitiveness of Ghana for the production of the target commodities, the support provided to investors (Investment Code, support for business establishment) and by the project itself (objective of the project, eligible investments, selection criteria and types of support). This will involve access to the proposed data base, the organization of/participation in national/international trade fairs and events, business-to-business meetings. TCDA and COCOBOD will establish agribusiness investment desks to maintain a specialized database on (i) market information/opportunities and their quality/standard requirements (in collaboration with GEPA and GIPC); (ii) typical investment opportunities in the selected value chains; and (iii) more general data on agronomic conditions, available equipment, available service providers, etc. These databases will be freely available to potential investors and financial institutions.

- *Investment pre-selection*. Investment proposal from SMEs and FBOs will be screened by a committee established within TCDA (with representatives from MOFA, COCOBOD, GIRSAL, GIPC and GEPA and financial institutions) against a set of agreed upon criteria including inter alia: (i) a negative list of possible investments; (ii) the projected financial viability and employment creation potential of the investment proposal; (iii) the expected environmental impact of the proposal; (iv) the need for SMEs to be formally registered and for start-up investors to be willing to be registered with project's assistance; and (v) the documented evidence of the availability of the resources (in kind or cash, as relevant) required for investors' expected contribution to the financing of the proposed investment. Proposals presented by women investors or creating employment for women will be particularly targeted. The selection committee would be assisted by a technical secretariat established within TCDA that would analyze investment proposals.

- *Investment support mechanism.* The mechanism will involve the following steps:

  a) A matching grant instrument will be established to partially finance (i) the technical assistance provided to investors for the detailed preparation of business plans to be presented to financial institutions; (ii) the cost of eligible investments; and (iii) the start-up phase of their investments.

  b) An initial grant will be provided to finance the technical assistance necessary for improving and

finalizing the business plans of pre-selected investments to meet the standards required by participating Financial Institutions (PFIs). When completed, the detailed investment proposals will be submitted to the PFIs for possible funding provided that GIRSAL would agree to provide its partial guarantee.

c) When financing is provisionally agreed by a PFI, the latter will submit the proposal to GIRSAL which will carry out its independent review and decide whether to provide a partial guarantee, based on its own eligibility criteria and its assessment.

d) If a guarantee is obtained from GIRSAL, (i) the PFI will approve the loan and open an account in the name of the investor; and (ii) TCDA/COCOBOD will approve the investment matching grants to partially finance both the cost of the investments and that of the technical assistance to assist investors during the start-up phase of their activities.[119]

e) Finally, GIPC will provide the necessary after care services to investors (to facilitate the resolution of problems they may encounter with the concerned public institution) and TCDA will establish a *Private Investment Tracking System* and a *Grievance Redress Mechanism (GRM)*.

13. The investment support mechanism will have two separate windows for two categories of investments/investors, with specific levels of assistance as shown in the table below: (i) Window 1 will target bigger investments by agribusiness SMEs; (ii) Window 2 will target small investments by individuals (especially women and youth), producer groups (with SMEs), traders, processors, and service providers. Each window would have specific assistance/financing modalities, for both technical assistance and investment matching grant.

Table A2.3. Investment Support Mechanism Windows

Size of subproject and type of activities supported	Coverage ratio	Eligibility criteria
Window 1. SMEs (from US$200,000 up to US$4,000,000)		
Technical assistance for the detailed preparation of the investment proposals. **Investment cost.** **Technical assistance for start-up activities**	• Grant of 50 percent of total cost of technical up to a maximum of US$ 80,000. • Maximum grant of 30 percent of the cost of the investment subproject with own funds 20 percent and credit from a PFI.	• Must have (or be willing to have) formal registration • Age of business: 2+ years • Private or collective ownership • No previous public assistance for similar activities • Must have (or be willing to have) a

[119] Possible assistance may concern selection of sites (secured access to land) and equipment; access to inputs and technology; financial and accounting systems; safety and quality issues (including SPS, traceability); contractual relations with out-growers/raw material suppliers to secure the necessary supply.

Size of subproject and type of activities supported	Coverage ratio	Eligibility criteria
	• Grant of 50 percent up to a maximum of US$80,000.	bank account with a financial institution
Window 2. Small (from US$50,000 up to US$200,000)		
Technical assistance for the detailed preparation of the investment proposals. **Investment cost.** **Technical assistance for start-up activities**	• Grant of 80 percent of total cost of technical assistance up to a maximum of US$30,000. • Maximum grant of 50 percent of the cost of the investment subproject, with own funds 10 percent and credit from a PFI. • *(For women and youth enterprises, maximum grant of 80 percent of the cost of the investment subproject with own funds 10 percent).* • Grant of 80 percent of total cost of technical assistance up to a maximum of US$30,000.	• Must be willing to have formal registration • Private (or collective) ownership • No previous public assistance for similar activities • Must have (or be willing to have) a bank account with a financial institution

14. The project's investment support mechanism will be designed in a way that ensures long-term sustainability. In particular, the following principles will be applied: (i) selection criteria of eligible investments will include indicators to assess the mitigation and adaptation benefits of the investments (with the objective that at least 50 percent of supported subprojects are expected to have CCBs); (ii) investment proposals will include environmental and social assessments in line with World Bank policies and environmental and social standards; and (iii) technical assistance will be provided during the start-up period (a critical phase) to improve sustainability and reduce the risk perceived by PFIs.

15. TCDA and COCOBOD will be responsible for managing the program and monitoring its implementation. The two entities will chair the selection committee and maintain fiduciary responsibility for all aspects of the component. It will (i) disburse the matching grant to eligible investors; and (ii) monitor sub-project implementation and maintain a Grievance Mechanism (GM) to assist investors with possible difficulties in the implementation of their sub-projects. Technical assistance to investors will be managed/provided by a well-qualified agribusiness firm recruited competitively (which will mobilize the specific expertise required from experienced suppliers). Participating FIs will have to comply with the WBG ESS9 to ensure

that they can manage the environmental and social risks and impacts of their lending. If necessary, PFIs capacities will be strengthened through specific training provided under the project.

16. The total cost of the component would be US$84.0 million of which US$39.30 million from IDA (and US$29.8 million from PFIs and US$14.9 million from private investors). The project (IDA) will finance the following: (i) the matching grants for the selected investments (investments and technical assistance (US$32.8 million); (ii) the establishment and operating costs of TCDA's selection and management committee (US$2.0 million); (iii) TCDA/COCOBOD information/promotion campaigns (US$3.0 million); and (iv) the establishment and operations (on a declining basis) of TCDA and COCOBOD's specialized data bases (US$1.5 million). It is anticipated that about 185 private investments (25 by SMEs and 160 by smaller investors) would be financed under the project. The total cost of these investments would be US$77.5 million (US$66 million for investments and US$11.5 million for technical assistance), financed through US$32.8 million in project (IDA) support, US$29.8 million of PFIs lending and US$14.9 million of investors' own funds (table A2.4). It is expected that the project supported investments would create around 20 000 jobs (US$4,200/job), of which about 60 percent for women, and then would create more jobs as their activities develop.

Table A2.4. Proposed Investment in SMEs

Window	Number of Sub-Projects (SP)	Cost /sub-project US$	Total cost 1/ US$ million	Matching grant Total cost 2/ US$ million			PFI lending 3/US$ million	Beneficiary contribution US$ million
				TA	Investment	Total		
Window 1; SMEs								
Technical assistance	25	140 000	3.5	1.8	-	1.8	-	1.7
Investments	25	2 000,000	50.0	-	15.0	15.0	25.0	10.0
Total Window 1	**25**	**-**	**53.5**	**1.8**	**15.0**	**16.8**	**25.0**	**11.7**
Window 2: small investors								
Technical assistance	160	50 000	8.0	6.4	-	6.4	-	1.6
Investments	160	100 000	16.0	-	9.6	9.6	4.8	1.6
Total window 2	**160**	**-**	**24.0**	**6.4**	**9.6**	**16.0**	**4.8**	**3.2**
TOTAL								
Technical assistance	**185**	**-**	**11.5**	**8.2**	**-**	**8.2**	**-**	**3.3**
Investments	**185**	**-**	**66.0**	**-**	**24.6**	**24.6**	**29.8**	**11.6**
TOTAL	**185**	**-**	**77.5**	**8.2**	**24.6**	**32.8**	**29.8**	**14.9**

1/Including TA, 2/ IDA financing, 3/ Benefitting from GIRSAL partial guarantee

Table A2.5. Project target districts

Region	District	Target Crop	Description	Poverty incidence rate (%)
Western North	Essam (Bia West)	Cocoa	High forest zone, predominant production area, high prevalence of CSSVD, available contiguous areas for rehabilitation, high farmer willingness for rehab.	14.6
	Adabokrom (Bia East)	Cocoa	High forest zone, predominant production area, high prevalence of CSSVD, available contiguous areas for rehabilitation, high farmer willingness for rehab.	24.7
Eastern	Asamankese (West Akim)	Cocoa	High forest zone, predominant production area, high prevalence of CSSVD, available contiguous areas for rehabilitation, high farmer willingness for rehab.	11.0
Savana	Bole	Cashew	High cashew production. High levels of poverty. Decline in quality and productivity levels due to inappropriate management practices	65.0
	Sawla-Tuna-Kalba	Cashew	High Level of production Potential for expansion. High levels of poverty. Decline in quality and productivity levels due to inappropriate management practices	79.4
Bono	Wenchi	Cashew	Major cashew production. Processing area. Research Station. Decline in quality and productivity levels due to inappropriate management practices	41.2
	Tain	Cashew	High cashew production. High levels of poverty. Decline in quality and productivity levels due to inappropriate management practices	38.2
Bono East	Techiman Municipal	Cashew	Major production and trading hub of cashew in Ghana. Decline in quality and productivity levels due to inappropriate management practices	14.2
	Techiman North	Cashew	Major production area, Decline in quality and productivity levels due to inappropriate management practices	15.7
Eastern	Upper West Akim	Rubber	Predominant production area in Eastern region. Potential Expansion	11
Eastern	Upper West Akim	Coconut	Predominant production area in Eastern region. Potential Expansion due to proximity to urban market.	11
	Suhum	Coconut	Emerging production area in Eastern region. Potential Expansion due to proximity to urban market.	6.5

ANNEX 3: Institutional and Implementation Arrangements

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

A. Institutional and Implementation Arrangements

2. **The project will be implemented by a PCU and PIU that will be newly established within TCDA and COCOBOD respectively.** The PCU and PIU will follow all World Bank fiduciary and procurement guidelines applicable in the country context and will be directly responsible for entering into any competitive selection for firms and service providers, as well as contractual agreements with other partner entities like research institutions. The PCU and PIU will monitor and supervise the performance of the specialized firms, service providers, and partners and report to the World Bank. The PCU and PIU will coordinate all activities of all components. Some core responsibilities for resources allocated to each will include (i) consolidation of annual work plans and budget (AWPB); (ii) facilitating the implementation of project activities; (iii) compliance of project implementation with the PIM, administrative, financial and procurement procedures, M&E manual, and disbursement procedures agreed between the PIU and the World Bank; (iv) monitoring and evaluation of project activities; (v) maintaining oversight over implementation partners and activities; and (vi) preparation and transmission of activity reports to Steering Committee, the World Bank and other key stakeholders. The PCU will ensure coordination of all activities, and inclusivity of PIU, in submitting procurement, FM, safeguards, M&E and reporting on all other technical and non-technical project investments. The PCU will be primarily responsible for preparation of project steering committee (PSC) meetings in coordination with PIU. All reporting and coordination will be done in a fair and equitable way between PCU and PIU. Any issues on coordination between PCU and PIU will be duly reported to the World Bank for further action and may result in downgrading of project performance and/or suspension of project activities.

3. **The PCU housed in TCDA**, will be staffed with a project coordinator, agribusiness expert, value chain expert(s), M&E specialist, environmental specialist, social specialist (with expertise in child labor where possible), gender specialist, communications specialist, procurement specialist, FM specialist, project accountant, and internal auditor. The TCDA will also establish a child labor desk or unit within the PCU with relevant expertise in child right, child development, social protection, labor management, to coordinate and oversee the implementation of the TCDA's related activities of the child labor subcomponent. The World Bank technical teams' assessment has determined that the positions will be seconded, under a leave without pay (LWOP) arrangement - requiring 100 percent time commitment to the project – or recruited. The type of recruitment will be determined on a case-by-case basis. To the extent possible PCU staff will be seconded or LWOP from MOFA with the expectation to build institutional capacity. The PCU will work with MOFA's departments including directorate of crop services (DCS), policy, planning, monitoring, and evaluation directorate (PPMED), women in agricultural development directorate (WIAD) and others.

4. **The PIU based in COCOBOD,** will consist of a PIU coordinator, 2 M&E specialists, environmental specialist, social specialist (with expertise in child labor where possible), communications specialist, procurement specialist, FM specialist, project accountant, and internal auditor. COCOBOD will also strengthen a child labor desk or unit within the PIU with relevant expertise in child right, child development, social protection, labor management, to coordinate and oversee the implementation of COCOBOD's related activities of the

child labor subcomponent. The PIU will work directly with departments within COCOBOD including CHED, CMS, Seed Production Division (SPD), and RM&E among others.

5. The key functions of the PCU and PIU will be recruited, LWOP, or seconded prior to project effectiveness, and the remaining posts will be filled within three months of project effectiveness. The World Bank team recommends both project coordinator positions be filled with the current project coordinator and PIU coordinator from the project preparation stage. Given the level of expertise and knowledge needed in technical design, detailed budgeting, knowledge of internal and external departments, and project continuity it is expected that the roles would be difficult to fill with external candidates.

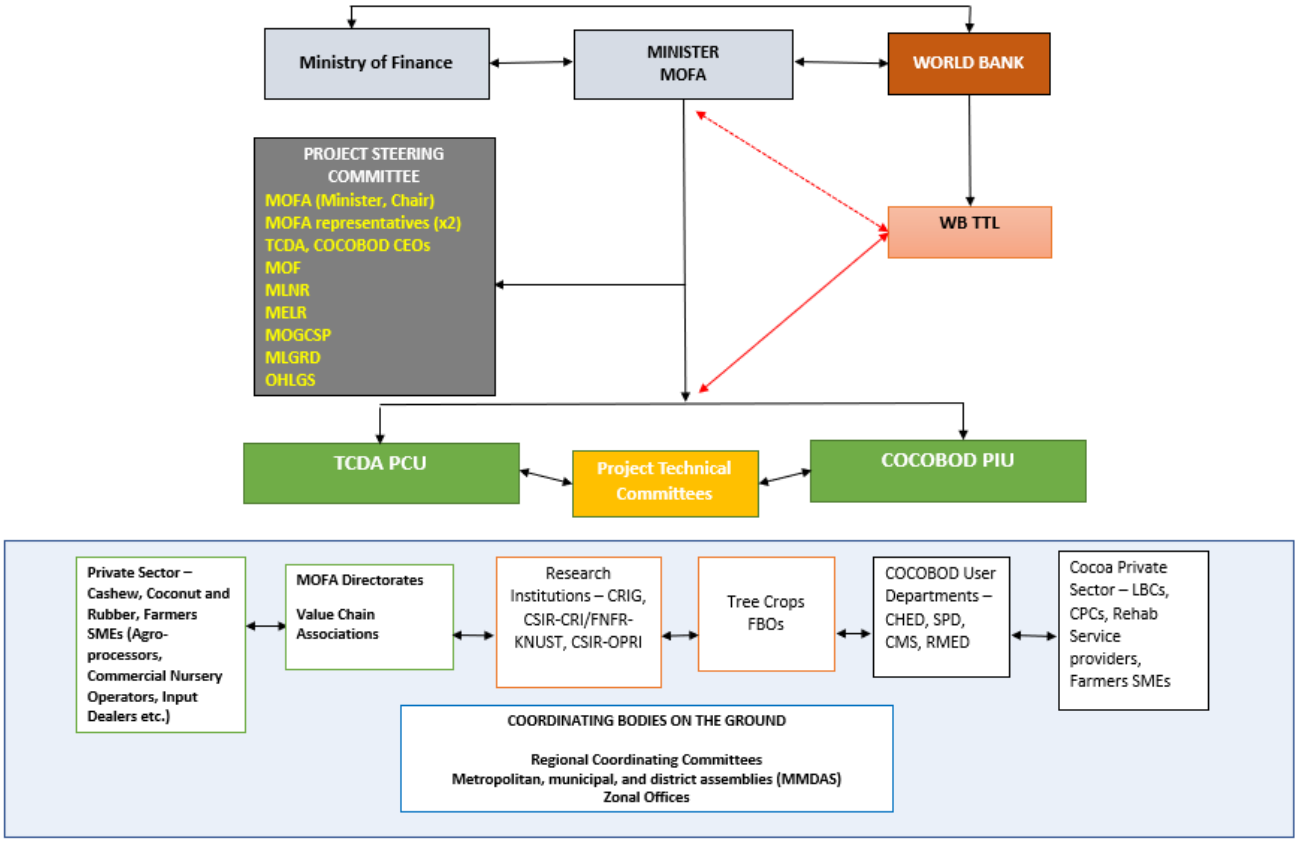
6. **Project Steering Committee (PSC).** A PSC chaired by the Minister of Agriculture or designated representative, and vice chaired by the CEOs of TCDA and COCOBOD or their designated representative, will be established to provide general oversight of the project. The PSC will be responsible for defining, guiding the general policy, and evaluating the project, within the limits set by the project development objective, in accordance with the legislation in effect.

7. More specifically, the role of the PSC will be to: (i) supervise and guide the overall implementation and performance of the project; (ii) review and approve the AWPB prepared by the PIU; (iii) evaluate the performance of each project component; (iv) determine and authorize corrective measures aimed at improving the project based on state of progress and results of the implementation; (v) approve the project implementation manual (PIM), including signing off on any changes to the manual; and (vi) validate the periodic technical and financial monitoring reports of the project.

8. The PSC shall be comprised of, inter alia, representatives of MOFA, TCDA, COCOBOD, MOF, MLNR, MERL, MOGCSP, MOLGRD, OHLGS. The PCU will be responsible for preparing the meetings of the Steering Committee. Representatives of partners involved in the implementation of the Project may participate in the work of the Committee as observers in an advisory capacity. The PSC will meet two times a year but can also meet in extraordinary session when convened by its president or by one third of its members.

9. **Project Technical Committees.** The project will set up technical committees consisting of project implementing entities, MOFA, and collaborating ministry entities, as well as private sector and producer representatives. Technical committees may be formed inter alia at crop specific level related to on-farm intervention, for the post-harvest management, value addition, and market access component, and to implement other specific components. For example, the Project Child Labor Implementation Review Committee (CLIRC) will be set up for the implementation of subcomponent 1.3 on child labor.

Figure A3.1. Implementation Structure



B. Financial Management

10. **The key FM arrangements are as follows.** Given that the project's financial management arrangements will, to the extent feasible adopt the country systems, the Financial Controller (FC) of the Treasury Unit of MOFA will have overall financial management responsibility. The responsibility of the Financial Controller is to ensure that throughout implementation there are adequate financial management systems in place which can report adequately on the use of project funds. However, in carrying out this mandate, the specific day to day transaction processing and reporting will be assigned to dedicated Project Accountants (staff of Controller and Accountant General's Department (CAGD) and COCOBOD) with acceptable qualifications and experience in managing donor funded projects. The Project Accountants shall be supervised directly by their respective head or director.

11. On behalf of their respective Heads of Accounts or Director's, the primary responsibility of the Project Accountants will be to ensure that throughout implementation, there are adequate financial management systems in place to report on the use of project funds. In addition, and with the supervisory role of their respective Heads, the Project Accountants will be tasked with maintaining oversight responsibilities such as processing Withdrawal Application, ensuring compliance with financial covenants for, submitting unaudited Interim Financial Reports (IFRs), maintaining internal controls over project expenditure, and engaging external auditors. On behalf of the Chief Director of the MOFA, the Project Accountants will also

be responsible for maintaining and operating the project's designated account and support the processing of transactions and payments to contractors and service providers and ensuring the eligibility for all contracts and activities under this project.

TCDA: Strengths and weaknesses of the Financial Management System

12. From an FM perspective, the key strength of the project is that there is a solid foundation for a strong legal and regulatory framework for PFM in Ghana and this is exemplified by the various laws, regulations, and manuals already in place, e.g. The Public Financial Management Act (PFMA) 921. The respective Finance and Accounts Departments have fully functioning accounts unit which is staffed with a mix of qualified and unqualified accountants with varying levels of experience particularly in public sector accounting and management of donor funds including IDA.

13. Within the MOFA. the Accounts team, together with consultants have been implementing IDA funded projects and presently are responsible for Ghana Commercial Agriculture Project(P114264) and the Ghana Peri-Urban Commercial Vegetables Value Chains Project (P150369) and the West Africa Food System Resilience Program (P178132).

Summary Financial Management Assessment

Budgeting Arrangements

14. The Finance and Accounts Unit of the TCDA and COCOBODCOCOBOD follows the budget preparation guidelines as per the *Public Financial Management Act (921) 2016* and the annual budget guidelines issued by the Ministry of Finance. Specifically, for this project the budget will be derived from the IDA allocations which will serve as the basis for preparing the consolidated Annual Work Plan & Budget (AWPB), Procurement Plans, and Cash Forecasts.

15. In line with the Government budget guidelines the Director/Project Coordinator shall be responsible for initiating the budgeting process for the Project and obtain inputs (*activities, schedules, timelines, cost*) from other participating implementing agencies e.g., COCOBOD. The yearly allocation will be budgeted as parted as part of the Annual budgeting processes and once the budgets are completed it will be approved by the Chief Director or the Chair of the Steering Committee for onward submission to the World Bank for review and clearance. The assessment indicates that budgeting processes used for government discretionary budget are adequate and **satisfactory** and can be relied upon to correctly allocate resources to the various components under the project.

Accounting Arrangements

16. The Financial Controller of the MOFA has the overall technical responsibility regarding ensuring compliance with the GoG public financial management as per the *Public Financial Management Act (921) 2016.* Under the oversight and supervision of their respective Head of Account, the dedicated Project Accountants shall be responsible for overall fiduciary aspects of the Project.

17. Within TCDA, the Deputy Director in charge of Finance shall in collaboration with the Financial Controller

of MOFA be responsible for ensuring compliance to accounting and other public financial management regulations and policies *including inter alia;* the accounting, recording, approvals, authorization of transaction and reporting on the uses of funds. As discussed, and agreed with TCDA, specifically for this project, the daily transaction processing will be managed by a dedicated Project Accountant (*a staff of CAGD*) assigned to the project. The accountant will have been assigned during the PPA phase of preparation and on terms and conditions acceptable to the World Bank.

18. The Project Accountant shall be part of the Finance and Accounts Unit of TCDA and shall be responsible for overall fiduciary aspects of the project. Specific accounting issues such as recording and processing of payment vouchers etc., will be handled within the Accounts Unit which is expected to be staffed with an adequate number of staff with various levels of skills and competences. It is envisaged that with the coming on board of this project, there is the need to strengthen the capacity by engaging two additional accounts staff. These may be requested from the CAG Department or assigned from the main MOFA Accounts or recruited competitively to support implementation.

19. **COCOBOD.** Within the COCOBOD, the Deputy Chief Executive in charge of Finance and Administration is responsible for ensuring fiduciary compliance and oversight. In undertaking this mandate, the financial management aspects are the responsibility of the Finance Director. However, specifically for the proposed project, within COCOBOD, the role of ensuring adequate financial management compliance is that of the Deputy Director of Finance. In terms of regulatory policy, the COCOBOD as an SOE is also governed by the *Public Financial Management Act (921) 2016* and in addition the Ghana Cocoa Board Financial Policies, Regulations and Procedures Manual. The manual has been reviewed and considered sufficient to provide the framework for fiduciary compliance as it sets out principles, procedures, and rules to be followed to ensure proper initiation, authorization, recording, control, and accounting for all transactions.

20. In terms of accounting systems, the GoG is in the process of rolling out an automated integrated financial management system (GIFMIS) using Oracle Financials and is currently transitioning from a manual bases system to an automated accounting system. It is expected that the project will be implemented using the GIFMIS system. Prior to, or during the implementation of the follow on-project, the Financial Controller in collaboration with the GIFMIS Secretariat will arrange for the necessary systems set ups and training for all the staff. For COCOBOD, the agency uses *Sage Accounts* for transaction processing and recording and it is expected that this will be the default system for accounting and recording of use of project funds.

21. Our assessment concludes there are adequate accounting personnel, systems, and established procedures to support implementation.

Internal Control and Internal Auditing

22. Consistent with the decision to adopt some aspect of the use of country systems (UCS) for implementation, the project's internal controls will rely on the government established accounting and internal control guidelines as documented in the Public Financial Management Act (921) 2016 and informed by the Internal Audit Agency Act (2003).

23. Presently, the Ministry/TCDA has a functioning internal audit department headed by the Head - Internal Auditor who is qualified and experienced to helps to ensure a sound control environment throughout

implementation. In addition, the expenditure initiation and related controls will follow the authorization and approval processes as pertains within the Ministry of Agriculture/TCDA and complimented by additional guidelines as per the World Bank approved Project Implementation Manual (PIM).

24. Within the COCOBOD, the Director of Audit is responsible for ensuring compliance to internal controls and shall be responsible for the use of project funds. Our assessment indicated that the internal audit and control environment at both agencies is adequate for project implementation. The polices procedures and guidelines regarding internal controls are outlined in the Financial Policies, Regulations and Procedures Manual, as complemented by the Internal Audit Manual.

25. Our assessment indicated that the internal audit and control environment is adequate for project implementation; the role of the internal audit will be regularly assessed during supervision missions by reviewing their reports and management responsiveness to their findings. This is to ensure that the role is not limited to transactional reviews (pre-auditing) but adds value to the overall control environment through risk assessment. The Internal Auditor of the MOFA shall work with the various internal auditors of the other participating or beneficiary agencies to ensure that there is compliance to fiduciary and accountability arrangements. The Chief Internal Auditor (MOFA) is required to include the project in their annual audit work plan and therefore, required to periodically perform risk-based audits to monitor project activities and provide periodic, twice yearly internal audit reports. If due to any challenges whereby the above functions cannot be fully performed, the project may competitively engage a firm to undertake such periodic reviews of the control environment.

Funds Flow & Disbursement Arrangements

26. The proposed project financing is estimated at **US$200,000,000** to be allocated to the MOFA and beneficiary agencies in the form of an IDA Credit. Proceeds of the finance will be used by the identified Departments and Agencies for payment for eligible expenditures as defined in the Financing Agreement and further detailed in the respective Annual Work Plans & Budgets and Procurement Plans.

27. Disbursement arrangements have been designed in consultation with the Borrower after considering the assessments of the Implementing Agency's FM capacities and anticipated cash flow needs of the operation.

28. The proposed arrangement is to have a **two separately managed US dollar Designated Accounts** (DA) located at the Bank of Ghana (denominated in US dollars).

    i. Designated Account **A** – owned and managed by the MOFA/TCDA PCU (Category 1)
    ii. Designated Account **B** – owned and managed by the COCOBOD PIU (Category 2)

29. **TCDA** - Within the Ministry of Agriculture (TCDA) the Designated Account (**A**) shall be under the direct responsibility of the Chief Director, in collaboration with the Project Coordinator/Director of TCDA. The daily routine and transactional processing will be managed and operated by the Deputy CEO in charge of Finance (TCDA) and the Project Accountant assigned to the project.

30. **COCOBOD** - For COCOBOD, the Designated Account (**B**) shall be under the direct responsibility of the

Deputy CEO in charge of Finance & Administration.

31. In addition to the single US dollar Designated Accounts, the Implementing Agencies may open a local currency (GHS) subsidiary "Project Operations Accounts" to support operational activities and transactional processing and payments in local currencies. On receipts of funds into the US dollar Designated Account, the Authorized signatories for the respective agencies may approve and authorize further transfers in the form of **"advances"** to other beneficiary agencies or project offices participating in the project. These advances will be based on approved budgets as presented in the AWPB. The daily transactional processing and periodic reporting on the Designated Accounts shall be assigned to the respective Project Accountants under the supervision of their respective Heads of Accounts. The subsidiary project accounts shall be managed by the respective Heads of Finances in the various agencies and that the operations and utilization of funds will follow the GoG approval and authorization hierarchy as pertains in the respective agency and in line with the PFM Act, Act 921.

Disbursement Arrangements

32. Proceeds of the financing will follow the standard Bank procedures for Investment Project Financing (IPF) for use by the Borrower for eligible expenditures as defined in the Financing Agreement. Based on the FM assessment of the Implementing Agencies, fund flow and disbursement will be implemented under the principles of traditional IPF arrangements using the **report-based disbursement** arrangements.

33. Upon Project effectiveness, the Borrower may request for the initial advance based on the consolidated expenditure forecast for six months, subject to the World Bank's, (Task Team Leader (TTL) and FMS), approval of the cashflows estimates. Under this arrangement, the allocated project financial resources will be ***advanced*** to the respective designated account of /TCDA PCU's and COCOBOD's based on *half year forecast* of activities and commitments as per the approved Annual Work Plan.

34. Funds advanced will subsequently be documented and replenished quarterly for further periods of six months using Interim Unaudited Financial Reports (IUFR). The submission of acceptable IFR shall be the basis for requesting for further advances and also for documentation of expenditure. *Additional instructions regarding disbursements will be provided in the Disbursement and Financial Information Letter (DFIL).*

Disbursement Categories

35. Based on the FM Assessment and the description of project activities, there shall be two separate omnibus disbursement categories for each Implementing Agency to support implementation.

Table A3.1. Disbursement Categories

Category	Portion A of the Amount of the Credit Allocated (expressed in USD)	Portion B of the Amount of the Credit Allocated (expressed in USD)	Percentage of Expenditures to be Financed (inclusive of Taxes)

COCOBOD (1) Goods, works, non-consulting services, consulting services, Training and Operating Costs for Parts 1.1(a); 1.2(a); 1.3(b)(i); 2.1(a); 2.1(b)(i); 2.1(c)(i); 2.2(a)(ii); 2.3(a); 3.1(a) (except 3.1(a)(ii)); and 4.1(a) of the Project	21,550,000	64,650,000	100%
(2) Livelihood Support Payments under Part 2.2(a)(i)	1,250,000	3,750,000	100%
(3) Matching Grants under Part 3.1(a)(ii) of the Project	1,750,000	5,250,000	100% of the amount disbursed
TCDA (4) Goods, works, non-consulting services, consulting services, Training and Operating Costs for Parts 1.1(b); 1.2(b); 1.3(a)(ii); 1.3(b)(ii); 2.1(b)(ii); 2.1(c)(ii); 2.1(d); 2.2(b)(iii) and (iv); 2.3(b); 3.1(b) (except 3.1(b)(ii)); and 4.1(b) of the Project	17,556,851	52,670,554	100%
(5) Matching Grants under Part 2.2(b)(i) and (ii); and 3.1(b)(ii) of the Project	6,940,649	20,821,946	100%
(6) Refund of Preparation Advance	952,500	2,857,500	Amount payable pursuant to Section 2.07(a) of the General Conditions
TOTAL AMOUNT	50,000,000	150,000,000	

Category	Portion A of the Amount of the Credit Allocated (expressed in USD)	Portion B of the Amount of the Credit Allocated (expressed in USD)	Percentage of Expenditures to be Financed (inclusive of Taxes)
COCOBOD (7) Goods, works, non-consulting services, consulting services, Training and Operating Costs for Parts 1.1(a); 1.2(a); 1.3(b)(i); 2.1(a); 2.1(b)(i); 2.1(c)(i); 2.2(a)(ii); 2.3(a); 3.1(a) (except 3.1(a)(ii)); and 4.1(a) of the Project	21,550,000	64,650,000	100%
(8) Livelihood Support Payments under Part 2.2(a)(i)	1,250,000	3,750,000	100%
(9) Matching Grants under Part 3.1(a)(ii) of the Project	1,750,000	5,250,000	100% of the amount disbursed
TCDA (10) Goods, works, non-consulting services, consulting services, Training and Operating Costs for Parts 1.1(b); 1.2(b); 1.3(a)(ii); 1.3(b)(ii); 2.1(b)(ii); 2.1(c)(ii); 2.1(d); 2.2(b)(iii) and (iv); 2.3(b); 3.1(b) (except 3.1(b)(ii)); and 4.1(b) of the Project	17,556,851	52,670,554	100%
(11) Matching Grants under Part 2.2(b)(i) and (ii); and 3.1(b)(ii) of the Project	6,940,649	20,821,946	100%

(12)Refund of Preparation Advance	952,500	2,857,500	Amount payable pursuant to Section 2.07(a) of the General Conditions
TOTAL AMOUNT	50,000,000	150,000,000	

36. *If ineligible expenditures are found to have been made from the Designated Accounts, the Recipient will be obligated to refund them, and IDA will have the right to suspend disbursement of the funds if reporting requirements are not complied with as provided for in the Financing Agreement. The World Bank's FM team will periodically assess the adequacy of FM systems, and this will form the basis of any change in disbursement methods. Further details on disbursement arrangement will be provided in the Disbursement Letter.*

37. For payments made prior to the Signature Date, except that withdrawals up to an aggregate amount not to exceed $40,000,000 may be made for payments made prior to this date but on or after July 1, 2023, for Eligible Expenditures.

Financial Reporting Arrangements

38. Each Implementing Agency will be required to prepare and submit **quarterly** Interim Unaudited Financial Reports (IFRs) to account for and document expenditure funded under this credit. The Project Accountants on behalf of their respective direct supervisors, are responsible for preparing and submitting acceptable quarterly Interim Unaudited Financial Reports (IFRs).

39. IFRs for the project are expected to be submitted not later than 45 days after the end of each quarter. The financial reports have been designed to provide relevant and timely information to the project management., transfers to beneficiary agencies, and also for monitoring the project's financial performance. The formats, content and frequency of reporting will be agreed prior to negotiations. These reports should at a minimum include:

    i. A statement of sources and uses of funds showing the use of funds by components as per the PAD (useful in monitoring implementation of the components)
    ii. A statement of sources and uses of funds showing the expenditure by category as per the Financing Agreement (for allocating expenditure as per the Financing Agreement)
    iii. A budget variance report comparing the utilization of approved budget against expenditure (useful to the TTL to monitor implementation and fund utilization)
    iv. A Designated Account reconciliation statement
    v. A cash forecast for six months (to be the basis of requesting for additional funding)
    vi. Any other report that shall be required to provide further and relevant information on project expenditure.

Auditing

40. Per the Ghana Audit Service Act (Act 584), the Auditor General is solely responsible for the auditing of all

funds under the Consolidated Fund and all public funds as received by Government ministries, agencies, and departments and generally the capacity of the GAS is assessed as satisfactory. In this regard, and consistent with the use of country FM systems, the Ghana Audit Service (GAS) will conduct the audit of the project's financial statements.

41. That said, however, if due to other constraints of the GAS or to ensure timeliness of submission of audits, it is recommended that the project engage an external auditor in line with IDA Procurement processes. There will be a single audit report and opinion for the entire project, but the management letter will outline any control issues pertaining to the specific implementing agencies. Prior to engaging the auditors, the MOFA shall submit the Terms of Reference (ToR) to the World Bank for review and clearance. Aside from the annual audit, the Association may at any time request performance audits, technical audits, or any other such reviews to determine the appropriateness of how project funds are being used.

Conclusion of the Assessment

42. A description of the project's financial management arrangements as documented in the preceding paragraphs indicates that they satisfy the World Bank's minimum requirements as per Bank Policy. Overall, the financial management residual risk is assessed and rated as **Moderate**. The moderate risk rating is because of strengths of the existing financial management capacity of the staff of the MOFA who have over the years complied fully with all financial management covenants in previous implementations. *In addition, Ghana Cocoa Board (COCOBOD) is a State-Owned Enterprise which has a full complement of staff, systems and processes which can be relied upon.*

43. *Other reasons include, the MOFA has in recent times successfully implemented IDA funded projects and project management are familiar with and understand IDA financial management guidelines and consistently through the implementation the Borrower complied fully and satisfactory with the FM covenants as per the respective Financing Agreements. In addition, the project financial management arrangements are to a large extent based on the use of country systems and these systems are periodically being reviewed and strengthened as part of the overall Public Financial Management reforms which are supported by the World Bank.* The FM risk rating will be assessed periodically) during implementation.

Implementation Support Plan

44. Based on the risk rating of the project and the current FM arrangement it is expected that in the first year of implementation there will be two half yearly onsite visits to ascertain adequacy of systems and supplemented by desk reviews of IFR and audit reports. The FM supervision mission's objectives will include ensuring that strong financial management systems are maintained for the project throughout project tenure. In adopting a risk-based approach to FM supervision, the key risk areas of focus will include assessing the accuracy and reasonableness of budgets, their predictability and budget execution, compliance with payment and fund disbursement arrangements and the ability of the systems to generate reliable financial reports.

C. Procurement Arrangements

45. **Procurement Management:** Procurement under the proposed project will be in accordance with the

World Bank's *"Procurement Regulations for IPF Borrowers"* (Procurement Regulations), 4th Edition, dated November 2020 and the *"Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants"*, dated July 1, 2016, as well as other provisions stipulated in the Financing Agreements. The procurement documents will be based on the World Bank's Standard Procurement Documents for the international market approach, with relevant modifications for the national market approach, as well as any enhancements to address Environment, Social, Health, and Safety (ESHS) issues including Gender Based Violence, Sexual Exploitation & Abuse (SEA) and Sexual Harassment (SH). Procurement complaints' review and resolution will be undertaken by the Borrower in line with World Bank requirements in the Procurement Regulations.

46. A PIM will be prepared for the project which will elaborate on the procurement procedures, standard procurement documents, and model contracts associated with the market approaches and selection methods for the various procurement categories.

47. Furthermore, project procurement risk ratings and performance assessments during project implementation will be undertaken using the World Bank Procurement Risk Assessment and Management System (PRAMS) as required.

48. **PPSD Summary.** The PPSD prepared for the PPA activities has been updated to cover all procurements to be undertaken by the two IAs for the first 18 months of the project. The sections on economic context, procurement risks and market financial capacity have accordingly been updated to reflect the current macroeconomic situation in Ghana (high inflation and currency depreciation) following the COVID19 pandemic aftershocks as well as Russia's invasion of Ukraine. The PPSD shall be a "living" document on the project and will be updated as and when needed throughout the project duration to reflect relevant changes in operating context, identified risks, procurements packages/contracts etc. The PPSD procurement plan has also been updated by including the main project activities, the applicable procurement approach along with the cost estimate, procurement methods, timing, etc.

49. The high inflation and depreciation of the Ghana Cedis was identified to be the main economic risk to the procurement activities to be undertaken under the project which could affect market predictability and pricing. To mitigate this risk, price adjustment provisions will be included in all procurements on, a case-by-case basis, for contract with more than three (3) months duration to cater for local price fluctuations due to the inflation and the depreciation of the Ghana Cedis.

50. Nonetheless, the operational context is generally good with a lot of opportunities to leverage including good procurement governance and systems, anti-corruption mechanisms, strong ESHS systems, advanced cutting edges technologies amongst others. Also, there are several competent and capable service providers in the agricultural sector of Ghana as witnessed under Ghana Commercial Agriculture Project (GCAP, P114264), West Africa Agriculture Productivity Program 1A and 2A (WAAPP, P09408 and P129565) projects to undertake the procurement activities under the project towards the achievement of the PDOs.

The procurement packages will therefore be structured in such a way to attract qualified and potential bidders in a transparent and participatory approach to ensure value for money with integrity.

51. **Procurement Planning.** The Procurement Plans will be prepared in the Systematic Tracking of Exchanges in Procurement (STEP) based on the cleared and latest version of the PPSD. STEP will be the primary software or platform to be used to submit, review, and clear all Procurement Plans and prior review procurement activities. Each IA will prepare its own Procurement Plans and submit them to the World Bank for review and clearance through STEP. The Procurement Plan will be updated in agreement with the World Bank Project team at least annually or as required to reflect the actual project implementation needs.

52. The initial Procurement Plan covered only the PPA activities but have been updated to cover at least the first 18 months of project implementation.

53. **Procurement Implementation Arrangements.** The government proposed two (2) Implementing Agencies (IAs) namely, COCOBOD and TCDA. The IAs shall implement and manage their respective sector related procurements under the project. Hence, COCOBOD will manage the procurement processes related to the cocoa crop. However, as TCDA is a new institution and do not have in place fully developed procurement structures, MOFA, the mother institution of TCDA, will manage the procurement processes (both the PPA and main project activities) for the other identified tree crops i.e., cashew, rubber, and coconut on behalf of TCDA.

54. **IAs Procurement Capacity Assessment.** The assessment has been conducted as part of project preparation and in accordance with the Operations Core Services Procurement Policy and Services Guidelines and the P-RAMS. The assessment confirmed that both MOFA and COCOBOD are government agencies mandated to undertake procurements per the Public Procurement Act, 2003 (Act 663), as amended in 2016 by Act 914.

55. Both MOFA and COCOBOD have in place the stipulated procurement structures, per the Public Procurement Act, including the Procurement Unit, Head of Procurement Unit, and Entity Tender Committee. MOFA and COCOBOD also follow the procurement planning, review, and clearance processes as well as procedure as stated in the Public Procurement Act. They also have considerable experience in procuring and administering big-ticket contracts on projects worth more than US$100 million with donor funding.

56. MOFA has also in recent times undertaken World Bank-funded projects, which include the ongoing West Africa Food System Resilience Program (FSRP, P178132) and are familiar with the World Bank Procurement Regulations. It is noted that although the MOFA has handled World Bank and other donor-funded projects recently, the procurement activities are usually undertaken by external consultants engaged on these projects.

57. COCOBOD on the other hand has not undertaken World Bank funded projects in recent time and thus has no experience as well as knowledge in the use of the World Bank Procurement Regulations. Upon the World Bank's recommendation, the assigned procurement staff of both COCOBOD and MOFA have completed the World Bank Procurement Framework Course being run by Ghana Institute of Management and Public Administration (GIMPA). The World Bank Procurement Team has also undertaken STEP training for the COCOBOD and MOFA staff assigned on the project and enrolled them in the World Bank monthly procurement clinics as part of measures to build their knowledge and capacity in the use of the World Bank Procurement Regulations.

58. **Summary of Procurement Risk Assessment:** The inherent procurement risk as assessed is Substantial, and these risks are associated with: (i) TCDA being a new institution and not having a fully developed procurement structure as well as staff in place; (ii) Both proposed Implementing Agencies (TCDA and COCOBOD) have no experience in the use of the World Bank Procurement Framework as well as procurement planning through STEP and (iii) involvement of two IAs which requires strong coordination mechanisms among them and other concerned stakeholders.

59. The procurement risk mitigation strategies proposed are: (i) TCDA procurement activities to be undertaken by MOFA for the whole project including the PPA; (ii) Close Bank procurement support and supervision as well as provision of hands-on support through regular engagements and monthly procurement clinics; and (iii) a detailed PIM to be prepared before project effectiveness to guide procurement implementation. The residual risk after implementation of these measures is thus Moderate and the respective prior review and methods thresholds based on the Moderate-risk rating are indicated in the table below.

Table A3.2. Procurement Methods

Thresholds Effective 1 January 2017												
	Prior Review Threshold in (US$ '000)				Procurement Method s Thresholds (in US$'000)							
					Works			Goods, IT and non-consulting services			Shortlist of National Consultants	
RISK RATING	Works	Goods, IT Systems+ Non Con. Serv	Consultant: Firms	Consultant: Individuals	Open International or ICB	Open National or NCB	Request for Quotation/ National Shopping	Open International or ICB	Open National or NCB	Request for Quotation/ National Shopping	Consulting services	Engineering & construction supervision
MODERATE	≥$15,000	≥$4,000	≥$2,000	≥$400	≥15000	<15000	≤200	≥3000	<3000	≤100	<300	≤500

60. **Operating Cost Procedures.** Operating costs financed by the project are incremental expenses related to implementation and will thus not be captured in the procurement plan. The procedures for managing these expenditures will be governed by the Borrower's own administrative procedures acceptable to the World Bank.

61. Training, workshops, conferences, and study tours will be carried out based on approved annual work programs. The programs will identify the general framework of training and similar activities for the year,

including the nature of training/study tours/workshops, the number of participants, caliber of personnel involved, duration of the event, and cost estimates. However, this should not be presented in the Procurement plan.

62. **Procurement Management Reports.** These reports will form part of the project quarterly report and cover all procurements on the project related to each IA. It must essentially give a snapshot of the procurement progress, updated Procurement Plans and write up on achievements, challenges, lessons learned, and the way forward. The World Bank Procurement Specialist will share with the IAs the template for the procurement report for adoption.

63. **Independent Procurement Audit.** Irrespective of the World Bank Annual Procurement Post Review, the project shall undertake the Annual Independent Procurement Audit, as required, and submit the same by May 31 of each year at the latest.

64. **Frequency of Procurement Supervision**. In addition to the prior review supervision, which will be carried out by the World Bank, one supervision mission will be conducted each year to visit the field to carry out post review of procurement actions to determine whether they comply with the requirements of the Legal Agreement. The procurement post reviews will be carried out by the World Bank (or the World Bank may use Ghana Audit Services to carry out the post reviews) and should cover at least 20 percent of contracts subject to post review. In addition, post reviews of in-country training will be conducted periodically to review the selection of institutions/facilitators/course contents of training as well as justifications thereof and costs incurred.

Summary of Procurement Plan

Table A3.3. Procurement Plan for COCOBOD

N°	Description	Estimated Cost (US$)	Selection Method	Bank Review (Prior/Post)	Planned Start Date	Market approach	Expected Completion
1	Consultancy to conduct technical audit of CMC, assessment of IT infrastructure and logistics for COCOBOD	100,000	CQS	Post	December 2022	Open - National	December 2023
2	Consultancy for capacity assessment; strengthening of R & D towards development of an integrated management of CSSVD at CRIG	80,000	IC	Post	December 2022	Open - National	December 2023
3	Consultancy for climate change monitoring, acquisition of carbon credits by farmer etc.	250,000	CQS	Prior	December 2022	Open - National	December 2023
4	Consultancy for review and updating of protocols for rehabilitation of CSSVD infested and Moribund/over aged farms	150,000	CQS	Prior	December 2022	Open - National	December 2023
5	Consultancy for the development of manual for Cocoa Extension	150,000	CQS	Prior	December 2022	Open - National	December 2023
6	Consultancy for strategy to increase adoption of GAP by Farmers	70,000	CQS	Post	December 2022	Open - National	December 2023
7	Consultancy to conduct studies to determine the adequacy of compensations payments for farmers	30,000	IC	Post	December 2022	Open - National	December 2023
8	Consultancy to develop a strategy document for the implementation of sustainable intensification, finance mechanism	50,000	IC	Post	December 2022	Open - National	December 2023
9	Consultancy to conduct input subsidy programme assessment	60,000	IC	Post	December 2022	Open - National	December 2023
10	Consultancy to undertake market scoping	70,000	CQS	Post	December 2022	Open - National	December 2023
11	Consultancy to conduct assessment and design of components pertaining to support to private investment in postharvest and processing infrastructure for value additions and financing mechanism needs	50,000	IC	Post	December 2022	Open - National	December 2023

Table A3.4. Procurement Plan for TCDA/MOFA

N°	Description	Estimated Cost (US$)	Selection Method	Bank Review (Prior/Post)	Planned Start Date	Market Approach	Expected Completion
1	Consultancy to conduct a TCDA organizational capacity needs assessment and design an appropriate organizational development (OD) training programme for TCDA.	200,000	QCBS	Prior	December 2022	Open - National	December 2023
2	Consultancy to conduct capacity assessment of selected research institutions	100,000	CQS	Post	December 2022	Open - National	December 2023
3	Consultancy for the development of web-based platform, mobile app for TCDA	400,000	QCBS	Prior	December 2022	Open - National	December 2023
4	Consultancy to carry out feasibility studies and design the proposed Hub and Spoke concept for private sector input delivery system	300,000	QCBS	Prior	December 2022	Open - National	December 2023
5	Consultancy to develop a Project strategy for implementation of hub and spoke (modalities, responsibilities/ implementing), including financing mechanism for cashew and coconut.	50,000	IC	Post	December 2022	Open - National	December 2023
6	Consultancy to examine the opportunities in the tree crop value chain (cashew and coconut) and the challenges within the private sector involved	100,000	CQS	Post	December 2022	Open - National	December 2023
7	Consultancy to conduct studies on creating enabling environment (policies, regulations and penalties etc.) for VCs.	50,000	IC	Post	December 2022	Open - National	December 2023
8	Consultancy for the strengthening coconut sanitary and phytosanitary advisory in Ghana.	50,000	IC	Post	December 2022	Open - National	December 2023
9	Consultancy for understanding the potential through value addition and processing for coconut by product as well as climate adaptation, mitigation impact etc.	50,000	IC	Post	December 2022	Open - National	December 2023

Table A3.5. Procurement Plan for Joint Activities

N°	Description	Estimated Cost (US$)	Selection Method	Bank Review (Prior/Post)	Planned Start Date	Market Approach	Expected Completion
1	Consultancy for assessment of key target areas by crop (and jointly) and establish criteria for selection of target communities + selection of beneficiaries for implementation manual use	30,000	IC	Post	December 2022	Open - National	December 2023
2	Consultancy for the baseline study for GTCDP	40,000	IC	Post	December 2022	Open - National	December 2023
3	Consultancy for development of Project implementation manual (PIM)	30,000	IC	Post	December 2022	Open - National	December 2023
4	Consultancy for development of M&E manual	20,000	IC	Post	December 2022	Open - National	December 2023
5	Consultancy for the development of Environmental and Social Management Instruments	210,000	CQS	Post	December 2022	Open - National	December 2023
6	Consultancy for the elaboration of communications strategy	20,000	IC	Post	December 2022	Open - National	December 2023

ANNEX 4: Economic and Financial Analysis

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

1. **This annex presents the ex-ante economic and financial analysis (EFA) for the Tree Crop Diversification Project in Ghana.** The EFA applies the Cost-Benefit Analysis (CBA) approach to a range of key agricultural activities, using data from the TCDA, COCOBOD, key statistics and past project experiences. The analysis uses an input-output model for each of the tree crops (new/existing) and runs an analysis of cash flow to determine the financing needs at the farm level, the incentives behind the project's assistance package to drive change and checks for profitability at the farm, SME and project level.

2. **The annex is structured around three key questions.** The first asks, "what is the project's development impact?" This is an underlying question to cost-benefit analysis, which considers the expected stream of project benefits and costs; and establishes an explicit causal framework linking project activities to targeted outcomes. The second asks, "is public sector provision or financing the appropriate vehicle?" It probes the rationale for public financing and/or implementation, and explicitly considers alternative modes of financing. The third asks, "what is the World Bank's value added?" It examines the World Bank's contribution to the project outcomes; and seeks to determine the benefit from the World Bank's involvement, or whether the proposed project maximizes the development impact.

3. **The results from the analysis provide strong financial and economic justification for the proposed project.** Approximately 52,775 farming households on 92,200 hectares of land are expected to experience substantial net incremental benefits. Total project benefits, with total economic values costing US$ 202.9 million, returns an NPV figure of US$ 221.7 million, and an economic internal rate of return (EIRR) of 18.6 percent, while assuming an adoption rate of 50 percent to factor in drop-out rates, and while using a social discount rate of 5 percent and CARD figures[120]. All figures are without GHG sequestration benefits and shadow price of carbon (SPC).

4. **Identification of benefits.** The project is expected to generate substantial on-site and off-site benefits, of which, the EFA considers the incremental net benefits of improvements in: (i) input supply, postharvest handling services and agribusiness services; (ii) accelerated adoption of improved agricultural technologies; (iii) increased agricultural productivity, sales and income by producers and processors; (iv) enhanced food and nutrition security; (v) increased job creation and youth employment; (vi) enhanced climate resilience using new climate-smart agricultural (CSA) practices; and (vii) and enhanced economic integration of local, regional and international agricultural markets.

5. **The analysis draws a link between the project's investments in multiple tree crops that assumes direct interactions between climate smart agricultural practices and more resilient livelihood activities, increased productivity and increased sales, and poverty reduction.** The project's expected results are

[120] IFAD Climate Adaptation in Rural Development (CARD) assessment tool – Ghana, West Africa.

driven by investments in upstream areas related to improved institutional development of public offices and capacity building of key participants in the generation and dissemination of technology and related spill over effects, and downstream areas around specific value-chains, resulting in increased agricultural productivity, sales, market access and incomes for agricultural producers and processors, to improved food access and access to local, regional and international markets. The present analysis focuses primarily on net incremental gains in productivity and income for project beneficiaries involved in tree crops and value-addition activities along the value chain by micro-processors, while assuming related improvements in research and development and improved public policies, agrobiodiversity, and CSA. Therefore, the results are to be considered conservative, given the project's full potential.

6. **To estimate the benefits of the project's investments, the CBA seeks to determine whether the dollar benefits of the project are likely to outweigh dollar costs, by comparing the "without-project" and "with-project" scenarios as two hypothetical scenarios to generate the net incremental benefit.** The project-level aggregation is based on reasonable adoption rates and value for money principles for achieving developmental impact. In addition, the analysis incorporates the estimated benefits resulting from the greenhouse gases (GHG) accounting, using the EX-ACT methodology. The EFA also benefits from previous *ex-ante* project analyses[121] in agricultural investment, documented literature reviews that take up the issue of spill over effects and good practice AKIS[122] notes on economic analyses.

7. **Some quantified and unquantified general assumptions are based on local, regional and global conditions.** For local they include: (i) operation and maintenance costs are 6 percent; (ii) discount period is 20 years; (iii) agricultural activities increase productivity between 20-30 percent; and (iv) grant subsidies are between 50-100 percent of project financed activities. For regional: (i) better management of ecosystem services results in the reduction of soil loss and better nutrient retention; (ii) soil nutrient replacement improves resilience of agricultural production that is affected by a warming climate and potential water deficit; and (iii) increased capacities and reduced repair and maintenance costs supported by the project increases the overall resilience of public authorities and private households to adapt to forces of change. Global assumptions include carbon sequestration per hectare using market and shadow prices of carbon - based on World Bank Guidance Notes on Shadow Price of Carbon, 2017. Low and high social values of carbon start at US$43 and US$86 in 2023 and increase up to US$65 and US$131 in 2042.

8. **Project development impact.** The modelling considers capturing the collective "technology capital", generated by human, physical, and institutional research and extension stock, and its impact on driving agricultural productivity, at the most basic and fundamental – crop and farm – level. The modelling aggregates the number of anticipated farmers and hectares harvested at the project-level. The modelling factors in qualitative and quantitative improvements in: (i) input supply, postharvest handling services and agribusiness services; (ii) accelerated adoption of improved agricultural technologies; (iii) increased agricultural productivity, sales and income by producers and processors; (iv) enhanced food and nutrition security; (v) increased job creation and youth employment; (vi) benefits from green and marketing

[121] West Africa Agricultural Productivity Program (WAAPP), East Africa Agricultural Productivity Program (EAAPP) and Eastern and Central Africa Agricultural Transformation Program (ECAATP).
[122] Agricultural Knowledge and Information Systems (AKIS)

infrastructure; (vii) enhanced climate resilience across agricultural landscapes using improved management practices and technologies, (viii) broad use of climate-smart agricultural practices and (ix) enhanced economic integration of local, regional and international agricultural markets. These benefit streams suggest the project can produce a positive level of return, due to historic underinvestment in the sector at large. The estimated returns when calculating the financial internal rate of return (FIRR) for TCDP investments is 23.5 percent, while the net present value is estimated at US$ 447.5 million. Such returns can be explained by the limited level of investment until now. In terms of GHG accounting, the results are very positive, with the total reduction in CO2e emissions estimated at -1.23 million tonnes over a 20-year period due to replanting over a sizeable area of the project area, which is in line or close to the targets figures in the results framework.

9. **Spill over effects.** At the local level, the anticipated on-site benefits are likely to continue beyond the immediate beneficiary target areas, into off-site areas, as the spread of disease is reduced, dissemination of technologies that can lead to increase in yield is expanded and chemical fertilizer, pesticide and water usage are better managed. Some of the other off-site benefits are captured in the analysis, such as improved carbon sequestration, but not all off-site benefits are included. It is anticipated that after the project is implemented, lessons learned will be transferable, and replicable as a model for other vulnerable communities.

10. **Cocoa beans production.** According to FAO Stat data, cocoa production in Ghana has remained stable for the past five years, averaging around 900,000 MT per year, dipping and peaking between 811,000 MT in 2019 and 1,047,000 MT in 2020 on 1.4-1.8 million hectares of land. Nevertheless, cocoa production in Ghana remains an important export crop that accounts for 60 percent of exports and remains the second largest producer globally. Yet, while the average yield is around 0.5 MT per hectare, yields can potentially reach 2 MT per hectare sustainably as demonstrated in field research and well-run farms. However, COCOBOD has stated a target of 1 MT per hectare, which would rely on replacing cocoa swollen shoot virus disease infected trees with planting material that is more drought resistant, under the project. The maturation period is around 10 years, so is likely to reach the target after the project period. Alongside the improved seedlings, the project envisages the intercropping of plantain trees to provide several benefits, including: 1) income during the early years before cocoa maturation, 2) to protect cocoa seedlings from direct sunlight, 3) to improve soil fertility by fixing nitrogen in the soil – all of which would contribute to improving yields. Additional ‘economic shading trees’ with a maturation of over 20 years will also be planted which provide further canopy cover for the cocoa and returns beyond the discount period of the analysis.

11. The cocoa model is based on planting and maintenance cost coverage by the project on 25,000 hectares for the first three years, when thereafter maintenance is provided with family labour. The reality is more likely to result in earlier engagement of family labour due to issues around the availability of hired labour as well as the wish for earlier ownership by beneficiary households in the care of trees. Nevertheless, the impact on returns is not expected to differ. The estimated financial IRR (FIRR) is 76.7 percent, the NPV is US$ 10,067 and BCR is 2.09 per hectare.

12. **Cashew.** There are several benefits in expanding and improving cashew production in Ghana. As a relatively low-cost crop, it can provide a good return on investment to farmers with low-input, low risk. Additionally, cashews are in high demand globally, and the international market for cashews is growing. Which means that there is potential for farmers to earn more from cashew production. Cashews also help to diversify the agricultural sector, so that farmers are growing a variety of crops and are less vulnerable to market fluctuations and weather-related risks. It can also be grown in regions whether other crops such as cocoa and oil palm may not be suitable and contribute to the conservation of the environment since it grows well in degraded soils and can help restore soil fertility, and so is considered a good source of agroforestry. The estimated FIRR does not return a figure due to the high return, however the NPV is US$17,212 and BCR is 1.22 per hectare for new cashew. Total intervention area is estimated at 64,000 ha (10,000 ha new, 41,200 ha existing).

13. **Coconut.** As well as being a low-cost crop, coconut is known for its positive impact on the environment, as it grows on marginal land and does not require heavy use of fertilizers and pesticides, while known also for its ability to protect coastal ecosystems and prevent coastal erosion. The global demand for coconut and coconut products, such as coconut oil and coconut milk, is growing through its use in a range of industries in food, cosmetics and pharmaceuticals for the production of products, such as soaps, cooking oil, with further possibilities to utilise the by-products of husk, shells and leaves, making it an attractive crop to further develop with value addition. The project envisages working to the benefit of existing plantations with improved agronomic practices. The estimated FIRR is 69 percent, the NPV is US$16,922 and BCR is 1.53 per ha. Total intervention area is estimated at 6,400 ha.

14. **Rubber.** As with the other trees crops, in addition to the main product, rubber can grow on marginal lands, while help to protect natural ecosystems, reduce deforestation, and promote biodiversity. The global market for the main product needs no explanation and offers Ghana a chance to diversify the economy and reduce vulnerability to market fluctuations and weather-related risks. The project envisages working on new and existing plantations with improved agronomic practices and new planting material where relevant. The estimated FIRR is 68 percent, the NPV is US$9,646 and BCR is 2.09 per hectare for existing rubber. Total intervention area is estimated at 9,600 ha (4,800 ha new, 4,800 ha existing).

15. **Value addition activities.** The modelling assumes that a significant part of the margins remain with the farmer and that value addition in the form of aggregation, sorting and grading is left for the Farmer-based Organisation (FBO) to provide commercial linkage services to its members with MSE and SME that do the bulking and packaging. The point of the FBO is to provide services to its members, and to recover any costs of linking them to the market on a competitive basis. This said, the investments generate a positive net return for Cashew FBOs with a FIRR of 20 percent, an NPV of US$7,140 and a BCR of 1.01, Coconut FBOs with a FIRR of 24 percent, an NPV of USD 24,098 and a BCR of 1.02. Total number of FBOs is estimated at 200 in total. In addition, it is estimated that 150 MSEs and 20 SMEs will be supported through the project, while operating with reasonably low margins of 20 percent. The FIRR for MSEs and SMEs was 7 percent and 151 percent, respectively, while the NPVs were US$3,283 and US$4.5 million.

16. **Youth employment.** An analysis of the incremental number of jobs created as a result of the project is based on the additional days of labour hired per hectare, multiplied by the total number of area under intervention, as well as the total number of person days and months created by the FBOs for value addition activities. On average, it is estimated that 3,300 additional jobs per year would be created because of the project over 20 years, which equates to a job creation cost of about US$151 per job per year, suggesting value for money.

17. **Project summary table.** The project-level results are tested with various discount rates to account for short-term volatility and risk by using a discount rate of 10 percent and the long-term nature of infrastructure investments by using a 3 percent discount rate, while the standard 5 percent discount rate is considered the norm. In all instances, the project returns are estimated to be positive.

Table A4.2. Project summary table of project-level results

	Risk scenario		
	Medium	High	Low
Discount rate	0.05	0.10	0.03
EIRR	18.6%	18.6%	18.6%
NPV (USD MN)	221.7	95.4	302.1
NPVb (USD MN)	510.3	325.5	624.3
NPVc (USD MN)	288.6	230.1	322.1
Switching values - benefit	-0.43	-0.29	-0.48
Switching values - cost	0.77	0.41	0.94
BCR	1.77	1.41	1.94

18. **Sensitivity Analysis.** The EFA uses the incremental net benefit base scenario to run sensitivity analysis of the results against various scenarios to check for robustness across key variables over the 20-year discount period. Sudden changes in pricing and delays in implementation are key. The below heatmap table highlights the scenarios with distinctly high and low returns. Out of the 45 scenarios tested for, only two return negative - when the discount rate is 12 percent and the adoption rate drops to 40 percent and when benefits drop by 30 percent.

Table A4.2. Sensitivity analysis results table.

	IRR			NPV		
Scenarios	0.06	0.12	0.03	0.06	0.12	0.03
base scenario	19%	19%	19%	189.25	63.75	302.12
costs +10%	16%	16%	16%	161.81	42.41	269.91
costs +20%	14%	14%	14%	134.37	21.07	237.70
costs +30%	12%	12%	12%	106.92	-0.26	205.49
benefits +10%	21%	21%	21%	235.61	91.47	364.55
benefits +20%	24%	24%	24%	281.98	119.18	426.97
benefits +30%	26%	26%	26%	328.35	146.90	489.40
benefits -10%	16%	16%	16%	142.88	36.04	239.70
benefits -20%	13%	13%	13%	96.52	8.32	177.27
benefits -30%	10%	10%	10%	50.15	-19.39	114.85
benefits delayed 1 year	15%	15%	15%	145.87	28.67	252.63
benefits delayed 2 years	12%	12%	12%	110.89	-0.79	215.44
Adoption rate of 40%	11%	11%	11%	72.78	-4.32	143.59
Adoption rate of 50%	17%	17%	17%	159.57	47.95	260.02
Adoption rate of 60%	23%	23%	23%	246.37	100.21	376.44

19. **Public provisioning of finances.** There are several reasons why public funding might finance tree crop development in Ghana, including, but not exclusive to, the following reasons. (1) Economic development: structural transformation of the Ghanian economy, which is dominated by agriculture, remains incomplete, while productivity growth remains low. To kick-start a process of improved growth, predictability, resilience and transformation, a combination of strategic investments, conducive policies and effective institutions requires a public coordinating body to guide the process, to build institutional capacities and to trigger and crowd-in private sector involvement; and boost economic growth and development. Support to TCDP will help galvanize agents of change and help start the needed positive change. (2) Poverty reduction: ever increasing threat of events to tree crop production from disease, natural disaster and climate change can diminish the food resilience of smallholder tree crop farmers already challenged by structural issues. Low productivity, low surplus production and low incomes in agriculture are problems that are strongly linked to poverty reduction which a project of a public good nature can address directly. (3) Sustainable agriculture: tree crops promote the use of best practices in farming, such as agroforestry systems, which help to preserve soil fertility, biodiversity, and water resources, all of which are important public goods for local and regional communities. (4) Youth unemployment: Ghana, like much of sub-Saharan Africa, is facing the challenge of a youth bulge and a high youth unemployment rate, even while investments in tree crops can provide significant youth employment opportunities. Providing decent rural employment is an important factor for youth and future generations to remain active within agriculture. (5) Long-term sustainability: faced with aging trees, low yields and disease, investment in tree crops is an important way to help Ghana address these challenges and secure long-term sustainability. Production from certain tree crops has stagnated over the past five-years and closing the yield gap is the most effective way to increase productivity and to counter the effects of climate change. (6) Climate change: investing in sustainable tree crop development can help Ghana to adapt to and mitigate the effects of climate change – especially through carbon sequestration, which is a clear public good that the project is well placed to support.

ANNEX 5: Greenhouse Gas (GHG) Analysis

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

World Bank Mandate

1. In its 2012 Environment Strategy, the World Bank adopted a corporate mandate to conduct greenhouse gas (GHG) emissions accounting for investment lending. The quantification of GHG emission is an important step in managing and ultimately reducing emissions and is common practice for many international financial institutions. The World Bank had adopted the Ex-Ante Carbon-balance Tool (EX-ACT) developed by FAO in 2010 to assess a project's net carbon-balance.[123] This is the net balance of tons of CO_2 equivalent (tCO_2e) GHGs that were emitted, or carbon sequestered as a result of project implementation compared to a "without project" scenario compared to the "initial" scenario. EX-ACT thus estimated the carbon stock changes as well as GHG emissions per unit of land, expressed in tCO_2 per hectare, per year.

Data Inputs in EX-ACT

2. Ghana has Tropical Moist climate and Low Activity Clay soil type. The project duration is six years, the capitalization period is assumed to be 14 years. Dynamics of evolution are assumed to be linear. Default "Tier 1" coefficients are used.

3. The project proposes several activities that can be captured with the GHG accounting tool EX-ACT. Under component 2 the project aims to invest in existing and new plantations - where disease or aging tree stock is replaced with new plantings, land husbandry and innovation and services for agri-business development. Changes in the current, without-project and with-project scenario are presented with the above investments incorporated, using aggregate figures for land use over 92,200 ha, as per the economic and financial analysis.

Table A5.1 Data inputs to EX-ACT in the current, without project and with project scenario

Activities	Current scenario	Without project scenario	With project scenario
Agriculture	Traditional: Cocoa 25,000 ha Cashew - existing 51,200 ha Coconut 6,400 ha Rubber - existing 9,600 ha		Improved: Cocoa 25,000 ha Cashew - new 10,000 ha - existing 41,200 ha Coconut 6,400 ha Rubber - new 4,800 ha - existing 4,800 ha

[123] http://www.fao.org/in-action/epic/ex-act-tool/en/

First results show that the project sequesters a significant amount of carbon of around -**1,236,214 tCO_2e** equivalent over 20 years, -**61,811 tCO_2e** annually, due to replanting of cocoa, cashew and rubber trees as well as climate smart agricultural practices in coconut.

Table A5.2. Preliminary EX-ACT Results - All GHG in tCO2e

Component	Positive	Negative	Balance
Agriculture			
Perennial	-17,338,961	-18,575,175	-1,236,214
Total	-17,338,961	-18,575,175	-1,236,214
Per hectare	-188.1	-201.5	-13.4
Per hectare per year	-9.4	-10.1	-0.7

ANNEX 6: Technical Annex on Child Labor

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

1. This technical annex covers: (i) child labor context and priorities; (ii) project activities to prevent and ensure appropriate response to child labor in Tree Crop Diversification Project-sites; and (iii) summary results and accountability framework.

Child Labor context and priorities

2. Child labor is endemic in Ghana. The most recent national household survey found an average prevalence rate for child labor of 27.9 percent and 20.7 percent for hazardous child labor[124]. Most child labor occurs in agriculture[125] and the cocoa sector, especially, has attracted significant international attention for child labor. A 2017 ILO, UNICEF, and World Bank study[126], based on the 2012/13 Ghana Living Standards Survey (GLSS6), estimated that for the 5 – 14 age group, child labor in non-cocoa agriculture is 13.3 percent, and 5.0 percent in cocoa. Roughly 6.6 percent and 5.4 percent of children in the 15-17 age group work in non-cocoa agriculture and cocoa respectively. The study also finds that child laborers working outside of cocoa production are generally worse off in terms of their ability to attend school. The overwhelming majority of children in the cocoa sector (93 percent) work either on the weekend (89 percent) or during holidays (3 percent) when school is not in session. Other child laborers by comparison are relatively more likely to work at some point during the school day, when the interference with schooling is more direct. In the five principal cocoa-growing regions, almost 9 percent of all children are in cocoa child labor, translating into 464,000 children. Of these, 84 percent (294,000 children) were exposed to at least one component of hazardous child labor in cocoa production, two-thirds of all children working in cocoa production self-report at least one injury or ill-health episode a frequently overlooked form of workplace hazard.[127] [128] Child labor in the cashew nut, coconut, and rubber agricultural subsectors is poorly researched but has been documented[129] as child labor is prevalent in all agricultural subsectors in Ghana[130]. Research has shown that about 75 percent of all children involved in child labor in Ghana work in sectors other than cocoa production, and that child laborers involved in agriculture outside of cocoa production are relatively

[124] MICS 2017/18
[125] Ministry of Economy and Industry, 2020. Agriculture Sector in Ghana Review. Online. Available at: *https://itrade.gov.il/ghana/files/2020/05/Agriculture-Sector-Review.pdf#:~:text=The%20agriculture%20sector%20in%20Ghana%20is%20very%20informal,%28including%20cocoa%29%2C%20livestock%2C%20forestry%20and%20logging%20%26%20fishing*. (Accessed 8 September 2022).
[126] ILO, UNICEF and World Bank. Not Just Cocoa: Child Labor in the Agricultural Sector in Ghana (October 2017), http://www.ucw-project.org/attachment/12032018169Not_Just_Cocoa_Ghana_child_labour_summary.pdf
[127] A survey undertaken in 2018/2019 commissioned by the USDOL, NORC Final Report: Assessing Progress in Reducing Child Labor in Cocoa Production in Cocoa Growing Areas of Côte d'Ivoire and Ghana (2020) reports a significantly higher number of children undertaking child labor. The NORC study finds 770,000 children in Ghana engaged in child labor in cocoa production. Of these, 92 percent (710,000 children) were exposed to at least one component of hazardous child labor in cocoa production. However, the study does not justify the big difference from the GoG GLSS6 findings and its own in absolute terms. The GoG's formal letter of objection to the reliability of NORC data and comparisons are presented on Page 22 of the report. https://www.norc.org/PDFs/Cocoa%20Report/NORC%202020%20Cocoa%20Report_English.pdf
[128] The NORC cocoa study reports for ages 5-11, 12-14 and 15-17, the average hours worked are 5, 13, and 9 hours respectively (the maximum allowable limits are 1, 14 and 42 hours per week to be defined as child labor). The study also found that school attendance among children in cocoa growing areas was 96 percent.
[129] The Guardian (2013). Ghana's cashew nut farmers struggle to profit from fruits of their labor. Online. Available at: *https://www.theguardian.com/global-development/2013/nov/25/ghana-cashew-nut-farmers-profit* (Accessed 6 October 2022)
[130] UNICEF, ILO and the World Bank Group, 2017. Understanding Children's Work: Not Just Cocoa. Child labor in the agriculture sector in Ghana

more likely to work during the school day, when disruption to school attendance is most immediate.[131]

3. Ghana is currently working on its third national action plan against child labor, the Ghana Accelerated Action Plan Against the Worst Forms of Child Labor 2022-2026 (NPA 3). It articulates strategic priorities for several sectors, including cocoa and other agricultural products. Multiple donors and the private sector support the Government of Ghana's efforts to address child labor, such as the Child Labor Free Zones (CLFZ) concept, which is an example of an area-based approach to child labor that has been adopted by the government. To create more synergies among different stakeholders in the fight against child labor, UNICEF, and the International Cocoa Initiative (ICI) are currently working with the government to establish a multi-donor pooled funding mechanism to reduce child labor in cocoa. It builds on the priorities identified in the multi-stakeholder Children First in Cocoa initiative and aims to support the implementation of the NPA 3 and to support Metropolitan Municipal District Assemblies (MMDAs) in cocoa-growing areas to scale up integrated, multi-sectoral approaches (area-based approaches) that address the root causes of child labor.

4. A central strategy to address child labor risk in the Tree Crop Diversification Project is to complement existing interventions funded by World Bank Ghana Productive Safety Nets Project 2 (GPSNP2, P175588) and other donors and support the scale-up of selected initiatives and approaches in project districts to build comprehensive area-based systems for the prevention and response to child labor.

Project activities to prevent and ensure appropriate response to child labor in TCDP-districts

5. The action plan to prevent and respond to child labor, as encompassed in sub-component 1.3 of the TCDP design, will contribute to identifying households at risk and preventing child labor in the tree crop growing households in project areas (PDO-level indicator). The activities, funding, and collaborations that will enable the achievement of each outcome are described below. COCOBOD and TCDA will be responsible for implementation of the activities under the subcomponent in collaboration with MOFA, MOGCSP, MOLGDRD, OHLGS, MELR, Ghana Statistical Services, District Departments of Social Welfare and Community Development, Attorney General's office.

6. **Outcome 1: Area-based alternative livelihood support and empowerment interventions to prevent and mitigate child labor (CL) impacts in project districts, complementing World Bank social protection interventions.** In addition to the specific activities to be funded under this outcome, the project will collaborate with the GPSNP2(P175588) to leverage social protection support to project communities. It will finance alternative livelihood support packages and support training on vocation skills, financial literacy, and alternative farming practices for beneficiaries in project communities. The project outcome will be assessed via the number of beneficiary households with improved support for reducing child labor.

    (i) **Activity 1.1. Alternative livelihood support package to vulnerable beneficiary households at risk of child labor in project communities**. The livelihood support package includes a mix of income generating and empowerment support to address the specific needs and risk-factors in each household:

[131] UNICEF, ILO, and the World Bank Group, 2017. Understanding Children's Work: Not Just Cocoa. Child labor in the agriculture sector in Ghana

Sub-activity 1.1.1. Most project resources under activity 1.1 will be dedicated to this sub-activity for in-kind (equipment, inputs, training etc.) support for additional and alternative farming livelihoods (such as backyard gardening, vegetable gardening, bee keeping) to beneficiary households that are vulnerable and at risk of child labor in targeted project communities.

Sub-activity 1.1.2 Support to women and youth of households that are vulnerable and at risk of child labor in targeted project communities to expand opportunities for employment, enable financial empowerment and sustainability of households. This includes: (a) training on diversification of marketable skills, vocational training and other income generating activities; crop diversification and activities to strengthen food security; (b) training of women and youth in farming communities on financial literacy, financial management, vocational skills, referrals to access financing to expand income generating opportunities and creation of Village, Savings and Loans Associations (VSLA) and financial literacy programs.

Sub-activity 1.1.3. Parental skills training for parents and care providers in households that are vulnerable and at risk of child labor in targeted project communities.

Sub-activity 1.1.4. Coaching, counselling, legal support, healthcare support for households that are vulnerable and at risk of child labor in targeted project communities to effectively care for children.

7. **Outcome 2: Identifying and narrating concrete and empirically rigorous evidence on CL in tree crops and improving inter-ministerial coordination.** Under this outcome for project targeted crops (i) assessing crop specific CL national prevalence rate; (ii) updating COCOBOD's and TCDA's CL policy, guidelines, and frameworks in line with most recent Hazardous Child Labor Activity Framework and ILO's standards (iii) identifying previous inter-ministerial interventions in CL for project targeted crops and related impacts and recommendations; (iv) and harmonizing institutional efforts among mandated government agencies in the fight against CL in the tree crop subsector.

(i) **Activity 2.1. Comprehensive assessment of CL prevalence and impact at national level in cocoa, cashew, coconut, and rubber.** Specifically, this activity will support:

Sub-activity: 2.1.1. Crop-specific national surveys of CL prevalence in the project tree crops. The sub-activity will (i) develop a standard survey methodology for assessing the prevalence of child labor in cocoa, cashew, coconut, and rubber; (ii) conduct a crop-specific, national survey assessment to establish a baseline using the methodology; and (iii) monitor and evaluate crop-specific child labor risk mitigation interventions throughout the project life cycle.

Sub-activity: 2.1.2. Assessment of previous interventions in crop-specific (i.e., cocoa, cashew, coconut, and rubber) CL investments, degree of public financing to each ministry. This activity will aim at assessing the impact of these CL risk mitigation interventions carried out over the past ten (10) years and provide recommendations therein.

(ii) **Activity 2.2. National level planning and preparation for CL risk mitigation and monitoring**. Specifically, this activity will support:

Sub-activity 2.2.1. Preparation or update of COCOBOD and TCDA's child labor policies/guidelines/ framework documents for cocoa, cashew, coconut, and rubber to be in line with ILO's standards and national standards and guidance documents on child labor.

Sub-activity 2.2.2. Establish a national Project Child Labor Implementation Review Committee (CLIRC) made up of all relevant stakeholders in the fight against CL. The committee will be responsible for ensuring coordination, accountability for rigorous and evidence-based implementation of subcomponent activities and will hold semi-annual meetings to review progress reports and provide feedback on implementation strategies.

8. **Outcome 3: Build functional capacity of project implementing entities (COCOBOD and TCDA) on CL identification, implementation of mitigation measures, and representation in international arena, with donor partners and civil society.**

(i) **Activity 3.1 Strengthen organizational capacity of TCDA and COCOBOD for quality oversight, coordination, and monitoring of CL interventions in their value chains.** This specific activity will support:

Sub-activity 3.1.1. Strengthening capacity of the Child Labor Desk at COCOBOD and establishing a Child Labor Desk at TCDA. This involves developing TORs, KPIs, expected competences/expertise, and sustainability plan (with entity own operating budget support post-project) for enhancing their functional capacity to operate effectively. This sub-activity will focus on identification of gaps and building capacity of designated/recruited staff of the Child Labor Desks, strategic communication on CL and related matters.

Sub-activity 3.1.2: Capacity building for CL staff of all lead and collaborative agencies. Annual joint technical workshops will be held, which will include management level staff of all mandated government agencies in the fight against CL.

9. **Outcome 4: Improved CL awareness and systems for monitoring, case management and remediation in line with standard operating procedures and certification requirements.**

(i) **Activity 4.1 Sensitization of FBOs/Farmers on CL in project districts.** This activity will support FBOs on CL in cocoa, cashew, coconut, and rubber farming in project districts. There will be 120 Trainer-of-Trainers (ToT) sessions for 6,000 farmers from 400 FBOs to disseminate the acquired knowledge to other farmers. On cocoa, cashew, coconut, and rubber farms, the training will focus on child labor concepts, practices, and the consequences of engaging in child labor.

(ii) **Activity 4.2: Scale up the new simplified GCLMS in project districts.** This activity will specifically support the following:

Sub-activity 4.2.1: Organizational capacity building of national, regional, and district stakeholder teams, with the participation of regional stakeholders from five regions and national stakeholder teams from CLU and MELR, including training, equipment, logistics and operational costs for running the system.

Sub-activity 4.2.2. Activate community level child protection structures for identification and referrals of child labor cases in accordance with CLFZ-concept and Ghana Child Labor Monitoring System.

Sub-activity 4.2.3. Develop interoperability between the Ghana National Child Labor Monitoring system and COCOBOD's and TCDAs management information systems.

(iii) **Activity 4.3. Capacity building for improved case management, referrals, and remediation by social welfare and child protection staff.**

Sub-activity 4.3.1. Expand SWIMS coverage in project districts and its interoperable with COCOBOD and TCDA digital systems. This activity will concentrate on providing material support and tools for outreach, case management and implementation, monitoring, and reporting.

Sub-activity 4.3.2. Continuous sensitization, advocacy and capacity building for law enforcement agencies, prosecutors, judges, and attorney general office**.**

Sub-activity 4.3.3. Knowledge exchange and technical assistance program for district social welfare and community development officers, COCOBOD, and TCDA representatives.

Sub-activity 4.3.4. DDSWCD field monitoring and evaluation across the MDAs/MMDAs level for compliance.

Collaboration*: This activity complements the contribution of International Cocoa Initiative (ICI), World Cocoa Foundation (WCF) and individual companies for basic social services and child labor monitoring and remediation systems in cocoa districts. It will complement the ongoing investments of UNICEF and USAID for the scale up of Integrated Social Services (ISS). Finally, the funding will complement ILO and US Department of Labor (USDOL) Global Accelerator Lab Project: Intensifying Action Against Forced Labor and Child Labor 2021-2025 that supports extending social protection coverage to vulnerable households and improve worker voice in Ghana as well as the USDOL and Winrock project that supports cocoa cooperatives with child labor monitoring and the provision of remediation services.*

ANNEX 7: Summary of Adaptation and Mitigation Benefits under the Project

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

1. The project's strong foundation in climate adaptation and mitigation practices is centred around four key tree crop actions, notably on: (i) sustainably enhancing productivity; (ii) supporting the resilience of farmers' livelihoods in the face of climate change and weather variability; (iii) reducing GHG emissions per unit of cocoa, and cashew, produced and increasing carbon sequestration in agroforestry areas; and (iv) restoring degraded lands through replanting, especially coconut and rubber . These are based on the vulnerability narrative of the tree crop country context.

2. Tree crops in Ghana are particularly vulnerable to the impacts of climate change, with significant implications for the country's agriculture-dependent economy and its people. The country's tree crops, including cocoa, cashew, coconut, and rubber, are particularly vulnerable to the effects of extreme weather events, such as droughts and floods, which are becoming more frequent and severe due to climate change. Erratic, uneven rainfall and rising temperatures are affecting the evapotranspiration rates, including that of tree crops. In 2022, Ghana reached an important tipping point, where trendlines for evapotranspiration rates exceeded precipitation rates for the first time. This is likely reflected in increased water and heat stress, reduced crop yields and increased susceptibility of trees to pests and diseases, including CSSVD.

3. In Ghana, the impact of climate change on evapotranspiration rates is a significant concern with farmers already experiencing water shortages during the cropping season. The delayed onset and early cessation of the rains, along with changes in the intensity and frequency of rainfall, have further compounded the problem. These changes in precipitation patterns, coupled with increased temperatures, will lead to increased water loss from plants, further exacerbating the water stress in tree crops, and increase the demand for water supply and irrigation.

4. The country's agricultural sector is also vulnerable to the loss of biodiversity and the degradation of natural resources, which are key to the resilience of agriculture and food security. Deforestation and land degradation, driven by unsustainable agricultural practices, are major threats to the country's natural resources and ecosystems, exacerbating the impacts of climate change on tree crop production and livelihoods. Unsustainable practices contribute to soil erosion, reducing the capacity of the soil to retain moisture, thus affecting evapotranspiration rates. This, in turn, can lead to further water stress and reduced yields in tree crops. Deforestation is a particularly strong challenge in the cocoa and cashew growing environments.
5. In addition, smallholder farmers in Ghana, who make up the majority of the country's agricultural workforce, are particularly vulnerable to climate change impacts due to their limited access to resources, technology, and information. Many of these farmers lack the knowledge and resources to adopt climate-smart agricultural practices (including agroforestry practices) that could help them adapt to changing

conditions and mitigate the impacts of climate change on their livelihoods. They are less likely to gain access to institutional arrangements to support them and are more likely to experience more difficulty in accessing external sources of finance, credit and insurance services, and face increasing costs related to storage, irrigation, and transportation, due to climate change, which, in turn, is likely to exacerbate the former.

6. Furthermore, the country's dependence on tree crops for its economy makes it vulnerable to market fluctuations, with prices often determined by global demand and supply. Changes in climate patterns, such as prolonged dry spells or heavy rainfall, can impact tree crop yields and ultimately, the income of farmers and the country's economy.

7. Overall, the vulnerability of Ghana's tree crop country context is characterized by a range of interconnected factors, including climate change impacts on tree crop production, natural resource degradation, and the limited capacity of smallholder farmers to adapt to changing conditions. These challenges pose significant risks to the livelihoods and well-being of smallholder farmers, in the country, who require urgent action to address them.

Table A7.1. Direct Climate Adaptation and Mitigation activities by sub-component

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
Component 1: Institutional Strengthening and Value Chain Governance (US$ 16.8 MN)		
Sub-component 1.1: Institutional capacity, policies, and regulations (US$ 3.35 MN). -Support to capacity building of TCDA staff and agribusiness promotion desk. -Support to strengthening the institutional governance structures of cashew, coconut and rubber value chain associations and their umbrella organization. -New tree crops regulation and modification of existing policies and regulations that address climate change, namely: policy on increased productivity, policy on pricing on tree crop produce and products, policy on buying procedures, policy on scientific research and policy on chemicals and pest control. - COCOBOD Information Technology (IT) agility and paperless transformation of internal operations, as well as interoperability of administrative processes with the Cocoa Management System (software, IT equipment and training of staff -Technical assistance (TA) to develop a methodology for measuring and monitoring	A policy and regulatory environment that supports agricultural research in climate adaptation will see to several positive developments related to: (i) increased prioritization of research in climate adaptation related subjects, such as drought resistant and heat-tolerant strains, and (ii) increased dissemination and adoption of systems, practices, knowledge among farmers and other stakeholders. COCOBOD and TCDA conduct of extensive consultations will ensure the development of conducive policies and regulatory are in place to advance the process in future years.	Efforts at improving agricultural climate mitigation Co-Benefits at the policy and regulatory level can result in the reduction of GHG emissions through better standardisation of measurements and benchmarking from soil improvement activities resulting in soil carbon sequestration, soil health improvement and biodiversity conservation, emissions reductions from fossil fuel consumption and renewable energy utilisation, crop diversification systems and intercropping and policies to foster precision agriculture to optimise resource use. Further efforts at paperless operations will also contribute to mitigation.

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
carbon sequestration under cocoa farms, for accessing climate financing. TA to finalize and implement the policy and standards for cocoa agroforestry. These standards will guide on-farm productivity investments with environmental benefits		
Sub-component 1.2: Value chain digitization for traceability (US$ 4.33 MN). Web-based platform for licensing and regulating VC actors, mapping of VC actors, training on the platform, upgrading and maintenance of database, last-mile roll-out of cocoa's CMS with geo-tagging, and e-extension services to cashew and coconut as well.	Digitisation and improved mapping will result in better decision making as value chains become digitized and data on production processes, inputs and environmental factors become better informed on how to adapt to climate change. Such data, information and knowledge can identify areas of greater climate risk and vulnerability to pest and disease, drought, and flooding.	Digitization of delivery mechanisms of e-extension. optimisation of journey routes by value chain actors, reduction of post-harvest losses and food waste or improvement in energy consumption are all opportunities to reduce GHG emissions throughout the value chains. As is digitization that will allow for greater piloting of e-extension on climate smart and agroforestry practices through the systems to reach more farmers. Digitization will also support tree tagging (via surveys) and registration to promote and monitor agroforestry. CMS will monitor changes in deforestation and/or reforestation in project areas to ensure no deforestation is occurring but also track changes in environment. Renewable energy integration using digitization can help integrate off-

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
Explore potential of carbon credits and other mechanisms through which farmers and supporting institutions investing in climate adaptation and mitigation may derive additional income **(US$1.02 MN)**		grid sources, such as solar and wind power, into the value chain, and thereby reduce reliance on fossil fuels. Increased digitisation can also secure sourcing from sustainable sources, such as organic farmers, certified forests, or even circular economy principles, which promote sustainable practices and typically involve lower carbon emissions and footprint tracking, as well as result in paperless operations – most notably for e-extension services. Increased consumer engagement is made possible as more data is available on the processes, making information more available - leading to contribution to greater consumer awareness and more sustainable and climate-friendly society. The standardisation of metrics needed for measuring sequestration under a carbon credit system will be explored and instituted, as a potential legacy of the project. Investments in data collection, processing and automation, and verification networks and reward systems will be explored.

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
Sub-component 1.3: Preventing and responding to child labour (US$8.11 MN) Raising awareness on new hazardous child labour framework, labour inspection and child labour monitoring in the district assemblies, strengthening outreach and referral capacities.	Tackling child labour in agricultural production can also contribute to climate adaptation by building the resilience of vulnerable communities to the impacts of climate change, in several ways that include: (i) promoting sustainable land management practices can help build the resilience of communities to climate change impacts, such as disease and drought, while also help retain soil moisture, reduce soil erosion, and provide a buffer against extreme weather events; (ii) supporting sustainable livelihoods can help reduce poverty by promoting diversified income sources and dependence on a single crop; (iii) promoting education and awareness on sustainable practices can help build the capacity of communities to adapt to the impacts of climate change. By promoting sustainable practices, such as soil conservation, water management, and agroforestry, the value chain industries can help build the resilience of communities to climate change impacts; (iv) encouraging responsible consumption practices, by reducing waste and choosing products that are sustainably produced, which are products often associated with child labour and can promote sustainable production and consumption. Overall, tackling child labour can promote social protection measures, education and healthcare and the reduction of inequalities.	Tackling child labour can help with climate mitigation by reducing GHG emissions in the following ways: (i) by promoting sustainable land practices that reduce deforestation and promote sustainable farming practices that can lead to increased carbon sequestration; (ii) encouraging responsible consumption practices that reduce waste and promote products produced sustainably; (iii) focusing on reducing child labour can build the resilience of communities and reduce rural poverty, which then reduces the pressure on natural resources and the negative impacts of climate change - such as extreme weather events, changes in temperature and precipitation patterns and biodiversity loss.
Component 2: Improving productivity and climate resilience (US$127.9 MN)		

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
Sub-component 2.1: Demand-driven Research (US$18.35 MN)	Both COCOBOD and TCDA will support key crops of cocoa, coconut, cashew, and rubber through existing research institutions in areas related to disease, pest and stress-tolerant varieties and CSA. Additional subjects include: (i) the development of climate-resilient crop varieties that are more resistant to climate change impacts, such as drought, heat stress, disease and pest; (ii) the promotion of sustainable agricultural practices that support agroforestry and integrated cropping that enhance ecosystem resilience and increase productivity while reducing greenhouse gases emissions, (iii) enhancement of soil health and fertility practices, such as zero tillage, cover cropping, and organic soil enhancements, which help to build resilience in the face of climate change and reduce the carbon footprint of agriculture, (iv) improvements in water management practices, such as rainwater harvesting, efficient irrigation systems, and drought-tolerant crop varieties, which can help farmers adapt to increasingly variable rainfall patters and water scarcity, (v) the development of early warning systems that provide farmers with timely information on weather and climate patterns, and for them to take appropriate remedial action to protect trees and crops from climate-related risks.	The devised research agenda, after extensive consultation, will guide mitigation related activities that promote: (i) low-emission farming practices in reduced tillage, agroforestry, (ii) carbon sequestration in soils and vegetation, (iii) sustainable bioenergy systems that use crop residues to produce energy, and which can help reduce GHG emissions from fossil fuel use, and (iv) reduce post-harvest and food waste.

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
Sub-component 2.2. On-farm productivity (US$132.77 MN) Rehabilitation and investment to increase on-farm productivity.	A significant part of CCB will derive from the actions undertaken to rehabilitate farms that have been devastated by CSSVD and land degradation caused by climate change. By investing in high-yielding and disease-resistant varieties, shade trees and adopting climate-smart agriculture (CSA) practices, the project will generate CCB by reforestation and address land degradation, which will help improve local ecosystems and the resilience of communities to climate change impacts, while finding markets for alternative crops such as plantain can reduce the reliance on single crops, increase incomes and build resilience. The project will finance such outcomes through activities that include, but are not exclusive to: (i) slashing-cutting diseased cocoa trees; (ii) payment to farmers for loss of income and maintenance of trees; (iii) matching grants for private sector nurseries to be able to access loans to scale up multiplication services; (iv) matching grants to input suppliers for certification and to be able to access loans for scale up; (v) provision of inputs to farmers via private sector; (vi) delivery of CSA via e-extension and training.	The planting of 25,000 ha of new cocoa farms, 10,000 ha of new cashew and 4,800 ha of new rubber, along with shade trees, as well as the existing perennial plantings, will sequester an estimated 1.24 MN tCO2e or approximately 62,000 tCO2e per year in total. Rehabilitating existing lands will reduce the need to clear new lands for annual crops and the associated carbon emissions. While certification efforts will encourage farmers to adopt practices that reduce environmental impact, and the establishment of new nurseries will improve the functioning of commercial input distribution channels and improve efficiency and sustainability of the supply chain, thereby reducing emission from transportation and reducing waste.
Sub-component 2.3. Strengthening of FBOs (US$4.29 MN)	Support extended to FBOs can have important multiplier effects with respect to climate adaptation, including: (i) capacity building - of FBOs and their members that results in better understanding and responses to the challenges posed by climate change; (ii) sustainable practices – by providing training on good agricultural practices and business	Promoting the adoption of agroforestry and soil conservation techniques through FBOs can potentially contribute to climate mitigation by reducing GHG emissions from the sector, while adoption of greener and cleaner technologies, which may rely on off-

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
	development, the subcomponent can encourage the adoption of sustainable practices that enhance the resilience of cocoa production systems to climate change; (iii) financial literacy – by providing FL and supporting the registration of cocoa cooperatives, the project can help farmers access rural finance and establish contracts with buyers, which can provide financial stability and reduce their vulnerability to climate-related risks; (iv) technical assistance – including help with logistics and short-term access to expertise and equipment, the project can support the implementation of CSA practices and enhance the resilience of coca production systems to climate change.	grid power sources, among value chain actors can also contribute to emissions reductions and the energy transition movement.
Component 3: Support for post-harvest management, processing, value addition, and market access (US$34.70 MN)		
Matching grants, credit guarantee and loans in support of investments to micro-enterprises, with technical assistance and aftercare services. (34.7 MN, leveraging additional US$24.5 million from PFIs and US$12.2 million from private investors' own funds)	The focus on promoting private investments in agro-processing by SMEs and FBOs in targeted value chains will encourage local value addition and downstream agri-food job creation. This will reduce the dependence on a single source of income, such as farming, which is often vulnerable to climate change impacts. Diversification of income sources can enhance the resilience of communities and households to climate change impacts such as crop failures and floods. Investment proposals will include environmental and social assessments in line with World Bank policies and environmental and social standards. Supporting private investments in agro-processing can help increase agricultural	Promoting private investments in agro processing will increase the value of agricultural produce, reduce waste, and help in enhancing resource use efficiency. The establishment of a matching grant window within TCDA to partially finance eligible investments, the technical assistance provided to investors for the detailed preparation of business plans, and the start-up phase of their investment will help in reducing the investment risk and make investments in agro-processing more attractive. This will lead to a

Sub-components and Activities	Climate Adaptation Benefits	Climate mitigation Benefits
	productivity by reducing post-harvest losses and increasing the shelf-life of crops. This can lead to more efficient use of resources such as water and energy, which can help mitigate the impacts of climate change. The creation of downstream agri-food jobs can help improve food security by enhancing the availability, access, and utilization of nutritious food. This can also help reduce the vulnerability of communities to climate change impacts on agriculture and food production. By supporting local value addition and downstream agri-food hob creation, the project can strengthen local supply chains, reduce produce deterioration by using solar and wind off-grid sources of energy, enhance market access by reducing transportation distances, and promote the use of locally sourced materials. This can reduce GHG emissions associated with transportation and promote more sustainable production and consumption patterns.	reduction in the GHG emission associated with the production and processing of agricultural produce. The promotion of private investments in agro processing will help in reducing post-harvest losses, which will help in reducing GHG emissions associated with the decomposition of organic matter.

ANNEX 8: Gender Annex: Gender Analysis and Action Plan

COUNTRY: Ghana
Ghana Tree Crop Diversification Project

1. Despite the importance of women in the Ghanian agriculture, persistent gender inequities constrain their ability to reap higher benefits. These also limit the productivity and resilience of the sector overall. This annex reviews the main gaps identified by the Tree Crop Diversification Project (TCDP) (part A) and how it addresses them (part B).

A. Analysis

The gaps addressed by the TCDP can be categorized into three major categories.

2. **Access to inputs and productive capacity**. Most small-scale farmers (especially women, people living with disabilities, youth, and socially excluded men) have difficulty accessing certified high-yielding and climate smart seeds and saplings. The proper application of fertilizer and chemicals is limited among the illiterate and among most women farmers. Most commercial farmers are men, who tend to be better positioned financially to procure pumping systems to irrigate their farms.[132] In the cocoa sector, male plot managers use higher amounts of fertilizer (470.44 kg for males versus 420.29 kg for females) and pesticides (6.52 kg for males versus 5.48 kg for females).[133] The use of traditional processing technologies, mostly by women, was predominantly laborious, resulting in poor product quality, low turnover, and limited availability of appropriate, women-friendly, and labor-saving technologies coupled with imbalances in the delivery of extension services which eventually had a negative impact on the productivity of women producers.[134]

3. **Access to financial services**. In rural areas, the proportion of persons with a bank account or contributing to a savings scheme is 22 percent and 16.2 percent for males and females respectively. This gap characterizes the TCDP's targeted regions, including the Western (28.7 percent versus 22.6 percent), Eastern (30.1 percent versus 23.6 percent), Brong Ahafo (28.0 percent versus 20.4 percent), and Northern (13.5 percent versus 9.2 percent).[135] In the cocoa sector, women represent 30 percent of farmers with bank accounts. This figure corresponds to 33 percent and 24 percent in the Western North and Eastern regions, respectively. It also corresponds to 41, 32, and 20 percent in Essam, Adabokrom, and Assamankese districts, respectively. Likewise, 36, 40, and 33 percent of cocoa farmers having a mobile money account are female at the national level, the Western North and Eastern regions, respectively. This figure corresponds to 43, 36, and 35 percent for the Essam, Adabokrom, and Assamankese districts, respectively.[136]
4. **Access to extension services**. Males and females access to extension services were estimated at 34.4 and 9.5 percent respectively, and only 13 percent of agricultural extension agents were females. Extension

[132] FSRP Gender Action Plan-WAFSRP Ghana. Gender action plan. West Africa Food Systems Resilience Programme. Draft document
[133] Danso-Abbeam, G., Baiyegunhi, L. J. S., & Ojo, T. O. (2020). Gender differentials in technical efficiency of Ghanaian cocoa farms. Heliyon, 6(5), e04012. https://doi.org/10.1016/j.heliyon.2020.e04012
[134] FSRP Gender Action Plan-WAFSRP Ghana. Gender action plan. West Africa Food Systems Resilience Programme. Draft document
[135] Ghana Statistical Service. June 2019. Ghana Living Standards Survey (GLSS) 7. Main Report.
[136] Cocoa Management System

approaches favored commercial farmers, mostly men, who agricultural extension agents had greater incentives to reach out to.[137]

B. Action plan

5. The TCDP will contribute to closing the gender gaps since several activities impact benefits during and beyond the period of the project, as explained in this section.

6. To address the gaps in terms of **access to inputs and productive capacity**, the TCDP
   - will reinforce women's productive capacities through training and support (e.g., on CSA practices, SLM, land restoration, agro-forestation, value addition, and certification), and effort to include all women cocoa farmers in rehabilitation.
   - will provide inputs via the private sector, ensuring effective delivery to women and men.
   - will reinforce women-led FBOs and promote women's participation and leadership in farmers' organizations and value-addition activities.
   - will train women associations in tree crops value chains, capacity building, knowledge exchange and study tours, smart input subsidies, e-extension targeting specifically women.
   - promote cash transfers to vulnerable women via the national safety nets program (LEAP)
   - support the training of young female scientists, gender sensitive agriculture research, and gender sensitive climate smart technologies.
   - use standard payment to women farmers to compensate a loss of income and mitigate deforestation.
   - will guarantee equal access to men and women to training in hard and soft skills required to enhance the productivity and resilience of their farms or manage a farmer-based organization.
   - will ensure equal participation in TCDA's proposed activities, such as facilitating producer groups' access to productivity-enhancing technologies, facilitating farmer access to quality planting materials, and facilitating the establishment of Farmer Field Schools. These activities will impact the gaps in terms of adoption of improved inputs and climate resilient technologies and practices.
   - will make a concerted effort to include all women cocoa farmers in rehabilitation for the selected CSSVD contiguous areas.
   - stimulate women's demand for inputs and complementary services by raising their access to financial services.
   - will generate opportunities for skills development and jobs for women in the areas of quality storage infrastructure (for example, warehouses, packhouses, and other post-harvest management facilities for cashew and coconut storage), in the processing and value addition of cocoa, cashew, and coconut at both SMEs and FBOs levels.

7. To address the gaps in terms of **access to financial services**, the TCDP will:
   - support women to open bank accounts or mobile money accounts.
   - ensure equal payment to men and women by using a mechanism of direct payments into mobile money accounts.
   - will improve the productivity and resilience capacity of men and women farmers in terms of skills, knowledge, and organizational management competencies. Doing so will subsequently improve female and male farmers' ability to obtain loans since elements of their productive and resilience capacity are considered in the agricultural credit approval process.

[137] FSRP Gender Action Plan-WAFSRP Ghana. Gender action plan. West Africa Food Systems Resilience Programme. Draft document

- grants for production and agro-processing technology adoption are provided to women.

8. To address the gaps in terms of **access to extension services**, the TCDP:
   - will enhance the commercial nature of women's agricultural enterprises, which will improve their ability to deal with extension agents.
   - will accelerate the development and use of the e-extension system and encourage the provision of technical advice in local languages. The latter is important given the importance of illiteracy among women farmers.

   For component 4, the project staff will include a gender specialist.

C. Alignment with the Country Partnership Framework (CPF)'s gender-related objectives

9. The project is aligned with the Country Partnership Framework (CPF) for fiscal years 2022-2026. The CPF's focus areas contribute directly or indirectly to closing the gender gap.

10. Specifically, the project is aligned with the CPF's Focus Area 1, Enhancing Conditions for Private Sector Development and Quality Job Creation, and Focus Area 3, Promoting Resilient and Sustainable Development. Both Focus Areas aim to improve women's participation in the cocoa sector and other tree crop supply chains and improve women's participation in decision-making.

11. Specifically, in alignment with Focus Area 1, the project will contribute to objective 1.1 of improving conditions for enterprise development by improving the productivity of rural enterprises and smallholders (including by promoting climate-smart technologies and practices), the enabling environment for cocoa and other tree crop supply chains, the national system for the prevention of child labor, and women's participation in all aspects of the sector. The project will also support objective 1.5 of strengthening market-relevant skills for a productive workforce focusing on youth and women and promoting job creation through SMEs and agro-processing.

12. In alignment with Focus Area 3, the project will contribute to the CPF's objective 3.2 of improving the management of natural resources and climate change risks by supporting the integrated and climate-smart management of productive agricultural landscapes, working forests/plantations, and natural resources, ensuring the equitable representation of women in community decision-making and land management.

ANNEX 9: Map of project locations to district level

COUNTRY: Ghana
Ghana Tree Crop Diversification Project