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Report No: PAD4940

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT  
IN THE AMOUNT OF US\$150.0 MILLION  
TO THE REPUBLIC OF GHANA

AND

PROPOSED GRANTS IN THE AMOUNTS OF  
SDR77.8 MILLION (US\$105.0 MILLION EQUIVALENT)  
TO THE REPUBLIC OF CHAD

AND

SDR44.5 MILLION (US\$60.0 MILLION EQUIVALENT)  
TO THE REPUBLIC OF SIERRA LEONE

FOR A

WEST AFRICA FOOD SYSTEM RESILIENCE PROGRAM (FSRP)  
PHASE 2

UNDER THE MULTIPHASE PROGRAMMATIC APPROACH  
APPROVED BY THE BOARD ON NOVEMBER 18, 2021  
FOR AN OVERALL IDA FINANCING ENVELOPE OF US\$570.0 MILLION EQUIVALENT  
AND REVISED TO US\$645.0 MILLION EQUIVALENT

July 8, 2022

Agriculture and Food; Water; Environment, Natural Resources and Blue Economy; and Urban,  
Resilience and Land Global Practices  
Western and Central Africa Region

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective May 31, 2022)

Currency Unit = Special Drawing Rights (SDR)

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SDR 0.74090539 = US\$1

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## FISCAL YEAR

January 1 - December 31

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## ABBREVIATIONS AND ACRONYMS

AGRHYMET	CILSS Regional Training and Application Center in Agrometeorology and Operational Hydrology
ANADER	Chad National Agency for Rural Development ( <i>Agence nationale pour le développement rural</i> )
ANAM	Chad National Meteorological Agency ( <i>Agence nationale pour le développement rural</i> )
ANLA	Chad National Locust Control Agency ( <i>Agence nationale de lutte antiacridienne</i> )
AWPB	Annual Work Plan and Budget
EFA	Economic and Financial Analysis
EX-ACT	Ex-Ante Carbon-balance Tool
CCPs	Project Coordination Department under the Ministries in charge of Agriculture
CERC	Contingency Emergency Response Component
CGIAR	Consultative Group for International Agricultural Research
CILSS	Permanent Interstate Committee for Drought Control in the Sahel ( <i>Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel</i> )
CORAF	West and Central African Council for Agricultural Research and Development ( <i>Conseil ouest et centre africain pour la recherche et le développement agricoles</i> )
COVID-19	Coronavirus Disease 2019
CPF	Country Partnership Framework
CSA	Climate-Smart Agriculture
DFIL	Disbursement and Financial Information Letter
EATM-S	ECOWAS Agriculture Trade and Market Scorecard
ECOWAS	Economic Community of West African States
EIRR	Economic Internal Rate of Return
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
FAO	Food and Agriculture Organization
FI	Financial Intermediaries
FLW	Food Loss and Waste
FM	Financial Management
FNSEWS	Sierra Leone Food and Nutrition Security Early Warning System
FSRP	Food System Resilience Program
GBV	Gender-Based Violence
GCAP	Ghana Commercial Agriculture Project
GDP	Gross Domestic Product
GEMS	World Bank Geo-Enabling initiative for Monitoring and Supervision
GGWI	Great Green Wall Initiative
GHG	Greenhouse Gas
GM	Grievance Mechanism
GRS	Grievance Redress Service
Ha	Hectare



HACCPs	Hazard Analysis and Critical Control Points
IAD	Internal Audit Directorate
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technology
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFR	Interim un-audited Financial Report
ILM	Integrated Landscape Management
IPCC	Intergovernmental Panel on Climate Change
IPF	Investment Project Financing
IPMP	Integrated Pest Management Plan
LRR	Loss Reduction Rate
LMP	Labor Management Procedures
M&E	Monitoring and evaluation
MAF	Sierra Leone Ministry of Agriculture and Forestry
MFD	Maximizing Finance for Development
MTR	Mid-Term Review
MoFA	Ghana Ministry of Food and Agriculture
MPA	Multiphase Programmatic Approach
NCoS	National Centers of Specialization
ND-GAIN	Notre Dame-Global Adaptation Initiative
NDPPCO	National Development Partners Program Coordination Office
NGOs	Non-Governmental Organizations
NPSC	National Project Steering Committee
NPV	Net Present Value
NWRMA	National Water Resources Management Agency of Sierra Leone
OECD	Organisation for Economic Cooperation and Development
OHADA	Organization for the Harmonization of African Affairs ( <i>Organisation pour L'Harmonisation en Afrique du Droit des Affaires</i> )
PA	Productive Alliance
PAD	Program Appraisal Document
PDO	Project Development Objective
PrDO	Program Development Objective
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PP	Procurement Plan
PPP	Public-Private Partnership
PPSD	Project Procurement Strategy for Development
PROPAD	Productivity Enhancement Project (Chad) ( <i>Projet d'amélioration de la productivité et de l'agriculture résistante au climat</i> )
R&D	Research and Development
RAP	Resettlement Action Plan
RCoEs	Regional Centers of Excellence
REDD+	Reducing Emissions from Deforestation and forest Degradation
RPCA	Food Crisis Prevention Network ( <i>Réseau de prévention des crises alimentaires</i> )
RPF	Resettlement Policy Framework



RSC	Regional Steering Committee
SEA	Sexual Exploitation and Abuse
SEP	Stakeholders Engagement Plan
SH	Sexual Harassment
SLMA	Sierra Leone Meteorological Agency
SME	Small and medium-sized enterprises
SPS	Sanitary and Phytosanitary
STEP	Systematic Tracking of Exchanges in Procurement
TA	Technical Assistance
ToRs	Terms of Reference
TTL	Task Team Leader
UCTF	Implementation Unit for the Project ( <i>Unité de coordination technique et fiduciaire</i> )
UN	United Nations
USD	United States Dollars
WBG	World Bank Group
WFP	World Food Programme



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DATASHEET

**BASIC INFORMATION**

Country(ies)	Project Name	
Ghana, Sierra Leone, Chad	West Africa Food System Resilience Program (FSRP) Phase 2	
Project ID	Financing Instrument	Environmental and Social Risk Classification
P178132	Investment Project Financing	Substantial

**Financing & Implementation Modalities**

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

Expected Project Approval Date	Expected Project Closing Date	Expected Program Closing Date
29-Jul-2022	30-Sep-2028	30-Sep-2028
Bank/IFC Collaboration	Joint Level	
Yes	Complementary or Interdependent project requiring active coordination	

**MPA Program Development Objective**

To increase preparedness against food insecurity and improve the resilience of food systems in participating countries.

**MPA Financing Data (US\$, Millions)**





MPA Program Financing Envelope	716.00
with an additional request to IDA	75.00

**Proposed Project Development Objective(s)**

To increase preparedness against food insecurity and improve the resilience of food systems in participating countries.

**Components**

Component Name	Cost (US\$, millions)
Digital Advisory Services for Agriculture and Food Crisis Prevention and Management	45.20
Sustainability and Adaptive Capacity of the Food System's Productive Base	180.41
Regional Food Market Integration and Trade	64.19
Contingent Emergency Response (CERC)	0.00
Project Management	25.20

**Organizations**

Borrower: Republic of Chad  
 Republic of Ghana  
 Republic of Sierra Leone

Implementing Agency: Ministry of Agricultural Development - Chad  
 Ministry of Agriculture and Forestry - Sierra Leone  
 Ministry of Food and Agriculture - Ghana

**MPA FINANCING DETAILS (US\$, Millions)**

<b>Board Approved MPA Financing Envelope:</b>	641.00
<b>MPA Program Financing Envelope:</b>	716.00
of which Bank Financing (IBRD):	0.00
of which Bank Financing (IDA):	645.00
of which other financing sources:	71.00

**PROJECT FINANCING DATA (US\$, Millions)**



**SUMMARY**

<b>Total Project Cost</b>	315.00
<b>Total Financing</b>	315.00
<b>of which IBRD/IDA</b>	315.00
<b>Financing Gap</b>	0.00

**DETAILS**

**World Bank Group Financing**

International Development Association (IDA)	315.00
IDA Credit	180.00
IDA Grant	135.00

**IDA Resources (in US\$, Millions)**

	<b>Credit Amount</b>	<b>Grant Amount</b>	<b>Guarantee Amount</b>	<b>Total Amount</b>
<b>Ghana</b>	150.00	0.00	0.00	150.00
National PBA	50.00	0.00	0.00	50.00
Regional	100.00	0.00	0.00	100.00
<b>Sierra Leone</b>	0.00	60.00	0.00	60.00
National PBA	0.00	20.00	0.00	20.00
Regional	0.00	40.00	0.00	40.00
<b>Chad</b>	0.00	105.00	0.00	105.00
National PBA	0.00	35.00	0.00	35.00
Regional	0.00	70.00	0.00	70.00
<b>Total</b>	<b>150.00</b>	<b>165.00</b>	<b>0.00</b>	<b>315.00</b>

**Expected Disbursements (in US\$, Millions)**



WB Fiscal Year	2023	2024	2025	2026	2027	2028	2029
Annual	35.00	50.00	50.00	50.00	50.00	50.00	30.00
Cumulative	35.00	85.00	135.00	185.00	235.00	285.00	315.00

**INSTITUTIONAL DATA**

**Practice Area (Lead)**

Agriculture and Food

**Contributing Practice Areas**

Environment, Natural Resources & the Blue Economy, Urban, Resilience and Land, Water

**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	● Substantial
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Substantial
8. Stakeholders	● Substantial
9. Other	● High
10. Overall	● Substantial
<b>Overall MPA Program Risk</b>	● Substantial



**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

(Chad) Financing Agreement, Schedule 2, Section I.A.2(b)(vi): The Recipient shall recruit a procurement specialist no



later than three (3) months after the Effective Date, with terms of reference, qualifications and experience satisfactory to the Association

Sections and Description

(Chad) Financing Agreement, Schedule 2, Section I.A.2(b)(x): The Recipient shall recruit an external auditor no later than six (6) months after the Effective Date, with terms of reference, qualifications and experience satisfactory to the Association

Sections and Description

(Chad) Financing Agreement, Schedule 2, Section I.A.2(c): The Recipient shall acquire and install a computerized accounting software capable of correctly recording and automatically generating financial statements (interim and annual) in accordance with modalities and specifications satisfactory to the Association, no later than three (3) months after the Effective Date

Sections and Description

(Chad) ESCP, 1.1: The Recipient shall recruit an environmental specialist, a social specialist, a GBV specialist, and a security risk consultant within 30 days after the Effective Date

Sections and Description

(Chad) ESCP, 10.2: The Recipient shall establish the grievance mechanism no later than 60 days after the Effective Date

Sections and Description

(Ghana), ESCP, 1.1: The Recipient shall recruit one Environmental Specialist and one Social Specialist no later than 30 days after Effective Date; and recruit one GBV Specialist no later than three (3) months after Effective Date

Sections and Description

(Ghana) ESCP, 10.2: The Recipient shall establish the grievance mechanism no later than 3 months after the Effective Date

Sections and Description

(Sierra Leone) Financing Agreement, Schedule 2, Section I.A.1.(b).(iii)(A): The Recipient shall not later than ninety (90) days after the Effective Date, recruit for the Project one (1) financial management assistant and one (1) internal auditor both with qualifications, experience and terms of reference satisfactory to the Association

Sections and Description

(Sierra Leone) Financing Agreement, Schedule 2, Section I.A.1.(b).(iii)(B): The Recipient shall not later than six (6) months after the Effective Date, install and customize an accounting software, under specifications and



configuration acceptable to the Association

Sections and Description

(Sierra Leone) ESCP, 1.1: The Recipient shall recruit one environmental specialist, one social specialist, and one GBV specialist no later than three months after the Effective Date

Sections and Description

(Sierra Leone) ESCP, 10.2: The Recipient shall Establish the grievance mechanism as included in the SEP no later than 60 days after the Effective Date

Sections and Description

(Chad) ESCP, 10.2: Adopt the communications plan six (6) months after the recruitment of the social specialist.

**Conditions**

Type	Financing source	Description
Effectiveness	IBRD/IDA	(Chad) Financing Agreement, Article 5.01(a): The Recipient shall have expanded the scope of: (i) the National Steering Committee and (ii) UCTF, including the recruitment of one financial management specialist, one senior accountant and one additional accountant, with terms of reference, qualifications and experience satisfactory to the Association; to include this Project, in accordance with Section I.A.3.(a) and Section I.A.1.(b) of Schedule 2 to this Agreement respectively, both with functions, compositions, terms of reference, resources and staffing satisfactory to the Association
Effectiveness	IBRD/IDA	(Chad) Financing Agreement, Article 5.01(b): The Recipient shall have adopted the PIM, in form and substance satisfactory to the Association, and in accordance with Section I.B.1. of Schedule 2 to this Agreement



Type Effectiveness	Financing source IBRD/IDA	Description (Ghana) Financing Agreement, Article 5.01(a): The Recipient shall have established: (i) the National Project Steering Committee in accordance with Section I.A.3.(a) of Schedule 2 to this Agreement; and (ii) the Project Implementation Unit in accordance with Section I.A.2.(a) of Schedule 2 to this Agreement; both with functions, composition, terms of reference and resources satisfactory to the Association
Type Effectiveness	Financing source IBRD/IDA	Description (Ghana) Financing Agreement, Article 5.01(b): The Recipient shall have recruited for the Project: (i) a Project coordinator, (ii) a financial management specialist, and (iii) a procurement specialist; all three with terms of reference, qualifications and experience satisfactory to the Association
Type Effectiveness	Financing source IBRD/IDA	Description (Ghana) Financing Agreement: Article 5.01(c): The Recipient shall have adopted the Project Implementation Manual, in form and substance satisfactory to the Association, and in accordance with Section I.B.1. of Schedule 2 to this Agreement
Type Effectiveness	Financing source IBRD/IDA	Description (Sierra Leone) Financing Agreement, Article 5.01(a): The Recipient shall have established: (i) the National Steering Committee in accordance with Section I.A.2.(a) of Schedule 2 to this Agreement; and (ii) the Project Implementation Unit in accordance with Section I.A.1.(b)(i) of Schedule 2 to this Agreement; both with functions, composition, terms of reference and resources satisfactory to the Association



Type Effectiveness	Financing source IBRD/IDA	Description (Sierra Leone) Financing Agreement, Article 5.01(c): The Recipient shall have adopted the PIM, in form and substance satisfactory to the Association, and in accordance with Section I.B.1. of Schedule 2 to this Agreement
Type Effectiveness	Financing source IBRD/IDA	Description (Sierra Leone) Financing Agreement, Article 5.01(b): The Recipient shall have recruited for the Project: (i) a Project coordinator, (ii) a financial management specialist, and (iii) a procurement specialist, all three with terms of reference, qualifications and experience satisfactory to the Association





## I. STRATEGIC CONTEXT

### A. Regional Context

1. **This Project Appraisal Document (PAD) covers Phase 2 of the West Africa Food Systems Resilience Program (FSRP) under the Multi-Phase Programmatic Approach (MPA).** Phase 1 of the FSRP MPA was approved by the World Bank's Executive Directors on November 18, 2021 (P172769, PAD4173). Phase 2 is proposed to benefit the Republic of Chad, the Republic of Ghana, and the Republic of Sierra Leone. At the time of Phase 1 approval, the Board approved an overall IDA financing envelope of US\$570 million for the MPA, including US\$330 million in IDA financing for Phase 1, and proposed IDA financing of US\$240 million for Phase 2. Following approval, Phase 2 financial requirements increased, and an additional US\$75 million is proposed for Phase 2 for a total of US\$315 million in IDA resources. Therefore, the overall IDA financing envelope for the MPA is proposed to be revised to US\$645 million.

2. **West Africa is one of the world's most vulnerable regions due to its climatic, institutional, livelihood, social, economic, and environmental context.**<sup>1</sup> This region is home to more than 360 million inhabitants, of whom 55 percent live in rural areas and depend on natural resources for their socio-economic development. Poverty remains high in the region with respectively 38.4 percent, 13.3 and 40.1 percent of people in Chad, Ghana and Sierra Leone living below the international poverty line, and most countries in the region are clustered at the very bottom of the human development rankings (Chad ranks 187, Ghana 138, and Sierra Leone 182 out of 192 countries)<sup>2</sup>. Agriculture contributes 29 percent of the region's gross domestic product (GDP) and is the principal livelihood for more than 60 percent of West Africans. Because the region is highly exposed to major climate, agricultural, and market risks, the performance of agriculture has historically been volatile, unleashing more frequent and worsening food crises. All three Phase 2 countries are sensitive to weather and price shocks, with agriculture primarily rain-fed and subject to erratic weather changes.<sup>3</sup>

3. **The increased incidence of conflict and fragility threatens human security in West Africa.** The past five years have been the most violent on record in West Africa, with over 12,000 conflict events and 50,000 fatalities, largely as a result of conflict in the central Sahel and the Lake Chad region. Climate change is seen as one exacerbating factor of conflict, heightening risk factors associated with marginalization and exclusion of communities from access to basic services, justice and state representation at the local level. Together, these trends pose significant risks to human security. Moreover, in a context of rising armed conflict- itself linked to competition over natural resources - it could well contribute to rising levels of violence by, inter alia, increasing poverty, disrupting informal mechanisms that govern the sharing of scarce and common resources, and fueling grievances against governments and other groups. In Chad in particular, historical inter- and intracommunal conflicts, especially between pastoralists and agriculturalists, are exacerbated by changing transhumance flows

<sup>1</sup> For the purpose of this document, West Africa includes Benin, Burkina Faso, Cabo Verde, Chad, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

<sup>2</sup> United Nations Development Program. 2020. Human Development Report 2020. [hdr2020pdf.pdf](https://hdr2020pdf.pdf) (undp.org)

<sup>3</sup> World Bank and Food Agriculture Organization (FAO). 2021. A Blueprint for Strengthening Food System Resilience in West Africa. <https://openknowledge.worldbank.org/handle/10986/35618> License: CC BY-NC-SA 3.0 IGO



and competition over scarce natural resources.<sup>4</sup>

**4. Perpetual “shock-recovery-shock” cycles have become the norm across the region and seriously threaten its sustainable development.** Multiple shocks, driven by climate change and environmental degradation, markets, conflict and the implications of the Coronavirus Disease 2019 (COVID-19)-induced health crisis and the war in Ukraine, have been costly for human welfare, making food scarcer and more expensive and raising malnutrition and food insecurity. The prevalence of undernourishment in West Africa increased continuously from 2010 and is at its record high with 75.2 million undernourished people (18.7 percent of the population) in Western Africa<sup>5</sup> in 2020. In just one year from 2019 to 2020, it increased by 5.8 percentage points corresponding to 24.6 million additional people, the highest increase in undernourishment world-wide.<sup>6</sup> Food insecurity increased equally dramatically. West Africa is currently in its third consecutive year of food security crisis with 16.7 million people in urgent need of food assistance in 2020 and 27.1 million people in 2021. From June to August 2022, 38.3 million people are projected to be in crisis or worse. In Chad and Sierra Leone, for example, 13 and 19 percent of the population are expected to need food assistance.<sup>7</sup> These projections do not account for implications of the war in Ukraine yet, which is expected to further exacerbate the situation by driving up already high food prices in West Africa. Faced with the onset of these crises, countries generally seek international support to finance a response which is only insufficiently provided.

**5. The population growth and per capita income is fueling a rapid growth of food demand in the region.** The demand for food in West Africa is rapidly increasing due to strong population growth, urbanization, rising incomes and changing consumer preferences. The high population growth rates of Chad (3 percent), Ghana (2.1 percent) and Sierra Leone (2.1 percent, all in 2020)<sup>8</sup> have slowed down per capita GDP growth. In addition, consumers across Chad, Ghana, and Sierra Leone increasingly rely on markets and look for foods that are convenient to buy, prepare and consume - an overarching trend that cuts across all countries and income groups in the region. The growing and increasingly diverse food markets provide greater opportunities for the West African food system to increase production and value addition, thereby generating more jobs, income, and food security. The policy response in the region has been positive, giving agricultural development greater visibility in the political agenda. Yet, several structural and policy constraints continue to threaten the ability of the region to seize these opportunities.<sup>9</sup>

**6. Social institutions restrictions on women’s empowerment opportunities hinder economic growth and opportunities in the region.** Economic empowerment of women is an opportunity to build strong societies: economies are more resilient, productive, and inclusive when they reduce gender

<sup>4</sup> Organisation for Economic Co-operation and Development (OECD). 2020. The Geography of Conflict in North and West Africa. West African Studies. <https://doi.org/10.1787/02181039-en>.

<sup>5</sup> Western Africa includes the following countries: Benin, Burkina Faso, Cabo Verde, Côte d’Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

<sup>6</sup> FAO, International Fund for Agricultural Development (IFAD), United Nations Children’s Fund, World Food Programme (WFP) and World Health Organization. 2021. The State of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all.

<sup>7</sup> Food Crisis Prevention Network (*Réseau de prévention des crises alimentaires* [RPCA]). 2022. <https://www.food-security.net/en/visualise/>

<sup>8</sup> World Bank. 2022. World Bank Data. <https://data.worldbank.org/indicator/SP.POP.GROW?view=chart>

<sup>9</sup> Staatz, J. and F. Hollinger. 2016. West African Food Systems and Changing Consumer Demands. West African Papers No. 04., <http://dx.doi.org/10.1787/b165522b-en>



inequalities and support the equal participation of women and girls in all spheres of life.<sup>10</sup> However, discriminatory social institutions - formal and informal laws, social norms and practices - restrict women's rights and empowerment opportunities across West African countries. These impediments also restrict women's decision-making power in both private and public spheres, thereby decreasing countries' potential growth. Gender-based discrimination in social institutions is estimated to represent a loss of US\$120 billion in income for the region.<sup>11</sup>

## B. Sectoral and Institutional Context

7. **Vulnerability has spread throughout the region as food system productivity has grown more slowly than the population, leading to a reduction in per capita food availability.** The population in Sub-Saharan Africa is growing at 2.6 percent per year.<sup>12</sup> While agriculture productivity grew quickly during the mid-1980s to 2010 and the supply of locally produced food increased from 1,700 to 2,400 kilocalories per person per day, the agricultural productivity growth has slowed to an average of 2 percent in recent years. Yield gaps between West Africa and other regions remain large.<sup>13</sup> In Sierra Leone for example, yields of main crops are estimated to be about a third of their potential productivity levels, making the country unable to meet the local demand of its principal staple food (rice). Similarly, Ghana's average cereal yield is only about a quarter of the potential yield. As a result, Ghana remains a significant importer of ready-to-consume commodities such as rice. The agricultural output of Chad is highly volatile<sup>14</sup> oscillating widely between positive and negative growth.

8. **Multiple interacting factors are responsible for West Africa's worsening per capita calorie availability and deepening food insecurity.** They include (i) climate change; (ii) environmental degradation, driven by population growth and intensifying competition over natural resources; (iii) increasing incidence and severity of conflict and state fragility; (iv) poor regional trade integration; (v) inefficiency of public expenditure; (vi) gender gaps; and (vii) exogenous crises, like COVID-19 pandemic and the war in Ukraine.

9. **Climate change and variability is reducing crop yields and livestock productivity.** West Africa is particularly vulnerable to climate change. Its readiness to improve its resilience against the impact of climate change, seen among others in more frequent extreme weather events such as droughts and floods, is very limited. According to the Global Adaptation Initiative, Chad is the world's most vulnerable country (rank: 186) while Sierra Leone ranks 156 and Ghana 110.<sup>15</sup> In the medium term, regional climate models consistently predict fewer days of rainfall and shorter wet spells in over 70 percent of the region, coupled with a higher intensity of rainfall on wet days.<sup>16</sup> The availability of water for food production and other uses is projected to decrease, and competition for resources between different population groups

<sup>10</sup> Ferrant, G. and A. Kolev. 2016. Does gender discrimination in social institutions matter for long-term growth? Cross-country evidence. OECD Development Centre Working Papers No. 330. <http://dx.doi.org/10.1787/5jm2hz8dgl6-en>.

<sup>11</sup> Bouchama, N., G. Ferrant, L. Fuirot, A. Meneses and A. Tim. 2018. Gender Inequality in West African Social Institutions", West African Papers, No. 13. <https://doi.org/10.1787/fe5ea0ca-en>

<sup>12</sup> World Bank. 2021. Data. <https://data.worldbank.org/indicator/SP.POP.GROW?locations=ZG&view=chart>

<sup>13</sup> OECD. 2013. Global Food Security: Challenges for the Food and Agricultural System

<sup>14</sup> Standard deviation of six percentage points around the mean, compared to only 0.8 percentage points for Sub-Saharan Africa

<sup>15</sup> Notre Dame-Global Adaptation Initiative (ND-GAIN) 2022. Country Index. <https://gain.nd.edu/our-work/country-index/rankings/>

<sup>16</sup> Dosio, Alessandro, Richard G. Jones, Christopher Jack, Christopher Lennard, Grigory Nikulin, and Bruce Hewitson. 2019. What Can We Know about Future Precipitation in Africa? Robustness, Significance and Added Value of Projections from a Large Ensemble of Regional Climate Models. *Climate Dynamics* 53, no. 9–10.



may intensify. The Intergovernmental Panel on Climate Change (IPCC) projects that crop growing periods will shrink on average by 20 percent by 2050 in the absence of climate change adaptation, leading to a 40 percent drop in cereal yields. Most cereals in Ghana, especially maize, exhibit increased vulnerability to climate change, from yield losses of 8–11 percent in 2030 to over 16–21 percent in 2050 compared to a no-climate change baseline<sup>11</sup>. In Sierra Leone for example, rising temperatures, extreme weather events (intense single rainfall episodes, floods, and droughts), and unpredictable cropping calendars are affecting crops production such as rice, which is highly sensitive to increased humidity, intense rainfall, and pests that thrive in higher temperatures. These losses will be accompanied by the expansion of arid and semi-arid agro-ecologies caused by longer and more frequent dry spells and slightly reduced overall precipitation. Climate change already affects pest and disease vectors that harm crops and animals, as shown by the higher probability of major locust outbreaks, e.g., in the Horn of Africa in 2020. Locust outbreaks can also threaten to destroy crops in West Africa, with Chad being the gateway for invasions from the East.<sup>17</sup>

**10. The natural resource base (water, land, and vegetation) needed for food production is deteriorating rapidly as agriculture expands across landscapes<sup>18</sup> with little attention to sustainability.** Land cover has changed significantly over the last fifty years. Villages and cities today cover 140 percent of the area they occupied in 1975. While the area covered by crops doubled between 1975 and 2013, vast areas of forest, savanna, and woodland were lost or fragmented. More than one-third of the region's dense forest cover has been cleared since 1975 for farms and settlements. In savanna and steppe landscapes, bare sandy areas increased by 47 percent as drought and unsustainable land-use practices degraded vegetative cover. Soil erosion is widespread in the region, mainly caused by recurring droughts, deforestation, and unsustainable agricultural practices such as intensive tillage. Fresh water resources have been reduced, such as the lake Chad which, among others due to climate change, decreased from approximately 25,000 km<sup>2</sup> in 1963 to less than 2,500 km<sup>2</sup> threatening the resources and livelihoods of the 50 million people (likely to double by 2030) that live in the area.<sup>19</sup> As the growing population has propelled changes in land-use practices (e.g., shorter fallow periods, greater use of firewood), erosion and soil infertility are expected to further accelerate.<sup>20</sup>

**11. The increased incidence of conflict and fragility in West Africa interacts with the food insecurity challenge in manifold and complex ways.** Many conflicts occur in rural areas and target agricultural assets (infrastructure, ground and surface water, crops, livestock), so the economic impacts on the agricultural sector, particularly on women farmers and women herders, are disproportionately large. Security responses to conflict often restrict movement, preventing farmers from accessing farmland and rangeland and from using traditional mechanisms to cope with climate variability, such as seasonal and circular migration and inter-state border crossings. For instance, beyond low agricultural productivity and impacts from climate change in Chad, conflicts are one of the main drivers exacerbating food

<sup>17</sup> FAO. 2021. Desert Locust Update.

<https://reliefweb.int/sites/reliefweb.int/files/resources/Desert%20Locust%20situation%20update%2012%20August%202021.pdf>

<sup>18</sup> Landscapes are social-ecological systems that consist of a mosaic of natural and/or human-modified ecosystems, often with a characteristic configuration of topography, vegetation, land use, and settlements that is influenced by the ecological, historical, economic, and cultural processes and activities of the area.

<sup>19</sup> Brookings. 2017. Confronting Climate Change: Africa's leadership on an increasingly urgent issue. [https://www.brookings.edu/wp-content/uploads/2017/01/global\\_20170109\\_foresight\\_africa\\_chapter-5.pdf](https://www.brookings.edu/wp-content/uploads/2017/01/global_20170109_foresight_africa_chapter-5.pdf)

<sup>20</sup> World Bank and FAO. 2021. A Blueprint for Strengthening Food System Resilience in West Africa. <https://openknowledge.worldbank.org/handle/10986/35618> License: CC BY-NC-SA 3.0 IGO



insecurity in the country.<sup>21</sup>

12. **The region's poorly integrated food markets cannot accommodate large yearly fluctuations in food crop production by directing surplus food to areas with shortages.** Commodities imported from outside the region account for about 80–90 percent of all food traded by volume in West Africa, with intraregional trade stagnating for several decades at 10–20 percent.<sup>22</sup> Most intraregional food trade is informal and unrecorded, constraining regional value chain integration. Intraregional trade is hindered by limits on the free movement of goods posed by high transaction costs as well as physical, infrastructural, and political barriers.<sup>23</sup> As a result, food markets are fragmented. They cannot accommodate the large variations in local food production that occur from one year to the next by distributing food from surplus to deficit areas across the region. Key challenges facing tradable commodities include high transport and logistics costs (harassment, illegal payments along roads), poor storage infrastructure, poor market organization (commodity standards, market information), and other non-tariff barriers. Localized food shortages and price volatility are common, while farmgate prices remain low. Imported food is often more competitive than domestic production and food imports place severe strain on the region's balance of payments and foreign exchange reserves.<sup>24</sup> Import dependencies also expose countries to the volatility of international cereal markets, as seen during the COVID-19 pandemic as well as following the war in Ukraine. Increasing intra-regional trade would allow the region to untap significant potential, offering economic opportunities for all actors involved in the food system and decreasing dependence on international markets. Moreover, integrated markets would make the region more resilient to shocks, e.g., by allowing food to travel from surplus areas to regions where agricultural production was impeded by extreme weather events, such as droughts.<sup>25</sup>

13. **Rising public funding for agriculture has not sustainably raised yields, as large shares of public funds are spent on ineffective subsidies instead of public goods such as agricultural research.** A large share of agriculture-specific expenditure is used for input subsidies. In Ghana for example, fertilizer subsidies are crowding out public spending on other complementary areas such as extension (60.1 percent spending versus 9.1 percent). While subsidies are popular among policymakers, their effectiveness in sustainably raising agricultural productivity and reducing poverty is limited.<sup>26</sup> Higher returns to poverty alleviation and greater resilience<sup>27</sup> to climate change could result from a shift in spending to infrastructure, agricultural research and development (R&D), and improved extension

<sup>21</sup> FAO and International Food Policy Research Institute. 2017. Conflict, migration and food security: The role of agriculture and rural development.

<sup>22</sup> United Nations Conference on Trade and Development. 2020. Annual Report. <https://search.library.wisc.edu/catalog/9911035603502121>

<sup>23</sup> Poor infrastructure and governance of the transport sector has led to high costs of moving goods by road or rail within West Africa. Buyers at farmgate face high transaction costs for bulking and transporting of produce to urban markets, especially perishable products (fruits, vegetables, and animal products). Additional barriers to trade are tariffs, import and export restrictions via bans or quotas in many West African countries.

<sup>24</sup> For instance, West Africa has become one of the largest importers of rice in the world, accounting for about 40 percent of its consumption needs and 18 percent of global imports. In 2014, the rice import bill of Economic Community of West African States (ECOWAS) countries amounted to about US\$5 billion. ECOWAS. 2019. The ECOWAS Rice Factbook, 2019–1st edition, Directorate of Agriculture and Rural Development, ECOWAS, with German Agency for International Cooperation (GIZ). Nigeria.

<sup>25</sup> World Bank and FAO. 2021. A Blueprint for Strengthening Food System Resilience in West Africa.

<https://openknowledge.worldbank.org/handle/10986/35618> License: CC BY-NC-SA 3.0 IGO

<sup>26</sup> Tiftonell, P., and Giller, K. E. 2013. When yield gaps are poverty traps: The paradigm of ecological intensification in African smallholder agriculture. *Field Crops Research*, 143.

<sup>27</sup> FSRP uses the definition of resilience adopted by the Global Alliance for Resilience Initiative - Sahel and West Africa: The capacity of vulnerable households, families, communities, and systems to face uncertainty and the risk of shocks, to withstand and respond effectively to shocks, as well as to recover and adapt in a sustainable manner.



services. Over the last decade, agricultural R&D spending across West Africa as a share of agricultural GDP has declined from 0.53 percent to 0.33 percent, falling far short of the New Partnership for African Development target of 1 percent and considerably below levels seen in other Sub-Saharan African subregions, calling for a rebalancing of the composition of public spending towards a resilient agriculture.<sup>28</sup> For example, in Ghana, research spending accounts for about 0.7 percent of agricultural output (excluding cocoa), above the Sub Sahara African average, but below the target of 1 percent.<sup>29</sup>

**14. Major inequalities persist between women and men in terms of access to resources that can improve their living conditions through agriculture—particularly access to land and equipment, credit, markets, and advisory and support services.** Over the past 15 years, women have assumed a growing share of responsibility for agriculture as men and young people have joined the rural exodus. This trend is changing traditional gender roles as women become increasingly involved in farm management, but several factors continue to undermine women’s participation in the economy, including insufficient access to productive resources; low human capital (inadequate technical education); limited access to markets; a legal framework that renders women dependent on their spouses to access modern financial services; and substantial contributions to the reproductive sphere of their households. For instance, in Chad, women-headed households have a 40 percent lower productivity than that of male-headed households and earn less income due to significant challenges to access/own land, access technical and business skills, and access, use, and supervise agricultural labor.

**15. The COVID-19 pandemic has further strained the food system.** The COVID-19 pandemic has induced value-chain disruptions, increased unemployment and reduced purchasing power, particularly among the urban poor. The economy of Sub-Saharan Africa is estimated to have contracted by 2.0 percent in 2020, the lower bound of what had been anticipated. Fragile countries experienced a stronger decline in growth as COVID-19 exacerbates the drivers of fragility. An overall slower spread of the virus and lower COVID-19-related mortality, strong agricultural growth and a faster-than expected recovery in commodity prices (before the outbreak of the war in Ukraine) have all contributed to minimizing the worst impacts. However, economic recovery still hinges on countries, deepening reforms that create jobs, encourage investments, and enhance competitiveness.<sup>30</sup>

**16. The war in Ukraine is yet another shock that worsens food insecurity in West Africa by driving up global food prices.** A minority of calories consumed in West Africa come from Ukraine, Russia and Belarus and as such, the shortages of supply from these three countries only have a limited direct impact on food insecurity in the region. However, inflated global food prices pose an immediate concern for West African countries as the region is highly dependent on food imports, mostly from Europe and Asia. Global wheat and corn prices have skyrocketed following the outbreak of the war: by the end of March 2022 wheat and corn prices, respectively, were 48 and 28 percent higher than in February 2022 and 79 percent and 37 percent higher than February 2021. This is causing domestic food price inflation in West Africa. Local prices for rice, wheat, oil, sugar and other processed imports have already risen between 20 to 50 percent in different West African countries. It is expected that Ghana and Sierra Leone will be particularly impacted, as (i) they already experience high domestic price inflation before the war started,

<sup>28</sup> Stads, Gert-Jan, and Nienke N. Beintema. 2017. An Assessment of the Critical Financial, Human, and Institutional Capacity Issues Affecting Agricultural Research in West Africa: Synthesis and policy considerations. <https://www.asti.cgiar.org/pdf/ASTI-WAAPP-study.pdf>.

<sup>29</sup> World Bank Public Expenditure Review. 2017.

<sup>30</sup> World Bank: Africa’s Pulse, No. 23, April 2021: An Analysis of Issues Shaping Africa’s Economic Future: <https://openknowledge.worldbank.org/handle/10986/35342>



and (ii) the weakness of the local currencies against the U.S. dollar is additionally driving up consumer prices for imported products. Another concern for food security in the medium term are rising fertilizer prices. Russia is the second most important supplier of fertilizers in the region. Thus, a possible reduction of fertilizer imports from Russia poses a significant risk to agriculture production in the spring planting season (April – June 2022). In the wake of the conflict, fertilizer prices have already soared by more than 30 percent in several West African countries and might rise further. Higher input costs will have downstream effects on food prices, negatively impacting food accessibility, and consequently, food security in the upcoming months.<sup>31</sup>

17. **Overall, the food security situation in West Africa has further deteriorated since the approval of the first phase of FSRP, increasing the need for rapid relief and investments in food system resilience.** Since the start of FSRP preparation in 2020, acute food insecurity has more than doubled (from 16.7 million people in urgent need of food assistance to an estimated 38.3 million people) and will likely further rise due to the implications of the war in Ukraine. Early estimates of the World Food Programme (WFP) predicted that global acute hunger will increase by 17 percent if the war continues beyond April (81 countries with WFP operations analyzed). In West Africa, 7 to 10 million additional people were projected to be driven in food insecurity by the war.<sup>32</sup> Thus, the need for rapid implementation FSRP Phase 1 and Phase 2 become even more pressing.

### C. Relevance to Higher Level Objectives

18. **Investments in the resilience of West African food systems will advance two key World Bank commitments in the region: the Great Green Wall Initiative (GGWI) and the Next Generation Africa Climate Business Plan.** The World Bank is supporting GGWI with investments totaling US\$5 billion to restore 100 million hectares (ha) of degraded land and create 10 million green jobs. The World Bank's African Climate Business Plan commitments support 20 countries to implement climate-smart policies and programs designed to scale up integrated landscape approaches on 60 million ha, provide 150 million people with access to impact-based warnings, and facilitate adoption of Climate-Smart Agriculture (CSA) by 28 million farmers. It will also further the World Bank's 2021 United Nations Food Systems Summit "Food Finance Architecture" pledge to optimize public spending and mobilize private capital for a global food system transformation.

19. **The FSRP aligns strongly with key World Bank strategies, including the Africa Regional Integration and Cooperation Strategy (updated for the period 2021–2023)** (Report No. 121912-AFR), and the related Update for the Period FY21-FY23 (Report No. 154458-AFR). Program interventions will support Pillar 2 (Competitiveness and productivity) and Pillar 4 (Resilience to shocks) of the regional strategy. Program interventions will also contribute to the World Bank Group (WBG) Strategy for Fragility, Conflict, and Violence (2020–25), particularly Pillar 1 (Prevention) and Pillar 3 (Transition out of fragility). The program's approach is fully aligned with the WBG's Country Partnership Frameworks (CPFs) of participating countries.<sup>33</sup> The project also contributes to the Pillar 2 (Protecting Poor and Vulnerable

<sup>31</sup> World Bank. 2022. The war in Ukraine - amplifying an already prevailing food crisis in West Africa and the Sahel region. <https://blogs.worldbank.org/voices/war-ukraine-amplifying-already-prevailing-food-crisis-west-africa-and-sahel-region>

<sup>32</sup> WFP. 2022. Projected increase in acute food insecurity due to war in Ukraine. <https://reliefweb.int/sites/reliefweb.int/files/resources/WFP-0000138155.pdf>

<sup>33</sup> For Chad, CPF for FY16-FY20 (Report No. 137044-TD); for Ghana, CPF for FY21-26 (Report No. 157249-GH) and for Sierra Leone, CPF for FY21-FY26 (Report No. 148025-SL).



People) and Pillar 4 (Strengthening Policies, Institutions, and Investments for Rebuilding Better) of the WBG COVID-19 Crisis Response Approach Paper.

20. **On the client side, the FSRP approach contributes to key sector strategies across the continent and in each Phase 2 country.** At the continental level, food system resilience is a key priority as seen during the Africa Food Security Leadership Dialogue. FSRP supports the African Union Vision 2063 and the priority areas of the African position for the 2021 United Nations Food Systems Summit. It also aligns with key sectoral strategies for each Phase 2 country: in Chad, it is aligned with the National Development Plan 2017-2021 and the Chad National Rural Sector Investment Plan 2016-2022; in Ghana, it is aligned with the Government's Coordinated Programme of Economic and Social Development Policies 2017-2024; and in Sierra Leone it supports the targets of the National Sustainable Agriculture Development Plan 2010-2030 and Sierra Leone's Medium Term National Development Plan (2019-2023).

#### D. Multiphase Programmatic Approach

21. **Phase 2 will retain the same Program Results Chain (Theory of Change), Program Development Objective (PrDO), and PrDO Indicators as Phase 1.** Each is described in detail in the FSRP Phase 1 PAD<sup>34</sup>. Table 1 updates the Program Framework for Phase 2 countries.

22. **The MPA currently consists of two phases, with a possible third phase in the future.** The selection of countries and their sequencing is based on the following four criteria: (i) urgency in terms of immediate imperative to support countries that face food security crisis; (ii) possibility to leverage geographical diversity and complementarity; (iii) readiness in terms of involvement in regional food system mechanisms; and (iv) operational capacity and complementarity with other projects.

23. **Phase 1: This phase, approved by the World Bank Board of Directors on November 18, 2021, with all countries effective as of June 30, 2022.** Phase 1 includes three regional organizations: Economic Community of West African States (ECOWAS), the Permanent Interstate Committee for Drought Control in the Sahel (*Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel*, CILSS) and the West and Central African Council for Agricultural Research and Development (*Conseil ouest et centre africain pour la recherche et le développement agricoles*, CORAF) and three Sahelian countries with high prevalence of food insecurity in transboundary areas (Burkina Faso, Mali, Niger) and one coastal country (Togo). All investments made by the regional organizations under Phase 1 will equally benefit all countries in Phase 2 and future phases.

24. **Phase 2: This Phase will include two additional countries with a high prevalence of food insecurity (Chad and Sierra Leone) as well as another trade hub in the region (Ghana).** With Chad, another Sahelian country with high food insecurity in a transboundary area, the Lake Chad Basin, will become part of FSRP, seeking complementarities with program activities in Niger (Phase 1). Sierra Leone will be the first FSRP coastal country with high food insecurity (19 percent of its population are projected to be in crisis or worse from June to August 2022) which is why it will join the program despite not having common borders with Phase 1 countries. Ghana will be the second trade hub connected via the trans-coastal highway, complementing Togo's FSRP interventions. All Phase 2 countries are integrated in the

<sup>34</sup> FSRP Phase 1 PAD: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/507061641830428029/burkina-faso-mali-niger-togo-chad-ghana-sierra-leone-west-africa-food-system-resilience-program>





regional food system mechanism and will each play a critical role in enhancing food security in the region. The second phase of the program is proposed despite the fact that Phase 1 is still in its initial stages given the urgency to respond to accelerating food insecurity in West Africa, a situation that is worsened by the war in Ukraine.

25. **Planning for a third phase is underway with several countries already identified as potential candidates for inclusion (e.g., Liberia and Senegal).** The World Bank is currently examining the readiness, operational capacity, and IDA availability for Phase 3. The third phase of the MPA (if materialized) would also be presented to the World Bank Board of Executive Directors for approval.

26. **The MPA Program Framework is presented in Table 1.** The horizontal MPA has an anticipated total duration of eight years.

Phase No.	Project ID	Sequential or Simultaneous	Phase's Proposed Project Development Objective (PDO)*	Investment Project Financing (IPF) or other	IBRD Amount (US\$ million)	IDA Amount (US\$ million)	Other Amount (US\$ million)	Approval Date	E&S Risk Rating
1	P172769	Simultaneous	To increase preparedness against food insecurity and improve the resilience of food systems in participating countries.	IPF	0.00	330.00	71.00	November 2021 (approved)	Substantial
2	P178132	Simultaneous		IPF	0.00	315.00	0.00	July 2022 (planned)	Substantial
3	tbd	Simultaneous		IPF	tbd	tbd	tbd	tbd	tbd
Total					0.00	645.00	71.00		
<b>Revised Overall Financing Envelope</b>						US\$716.00			
<b>Revised Overall IDA Financing Envelope</b>						US\$645.00			
Original Board Approved IDA Financing Envelope						US\$570.00			

**Table 1. Overview of the MPA West Africa FSRP Program Framework**



## II. PROJECT DESCRIPTION

### A. Program Development Objective (PrDo)

27. The PrDO is to increase preparedness against food insecurity and improve the resilience<sup>35</sup> of food systems<sup>36</sup> in participating countries.

Table 2: PrDO-level indicators with baseline and end targets for Phase 2

Indicator	Baseline Phase 2	End target – Per Country			End target - Total Phase 2
		Chad	Ghana	Sierra Leone	
Program beneficiaries (number and percentage of female beneficiaries)	0	600,000 (40% women)	1,080,000 (40% women)	365,200 (40% women)	2,045,200 (40% women)
Reduction of food insecure people in program targeted areas (percentage)	0	25	25	25	25
Food system actors accessing hydro and agrometeorological advisory services (number and percentage of female beneficiaries)	0	75,000 (40% women)	211,200 (40% women)	120,000 (40% women)	406,200 (40% women)
Producers adopting CSA technologies and services (number and percentage of female beneficiaries)	0	80,000 (40% women)	240,000 (40% women)	160,000 (40% women)	480,000 (40% women)
Land area under integrated landscape management practices (ha)	0	4,000	4,850	3,000	11,850
Intra-regionally traded production in selected value chains (percentage)	20	30	30	30	30

28. It is estimated that FSRP Phase 2 will reach approximately 2.05 million beneficiaries<sup>37</sup> while Phase 1 will reach 2.3 million. The total number of beneficiaries is thus estimated at 4.35 million.

### B. Project Components

29. The components for Phase 2 countries will remain the same as the Board approved Phase 2 design. The MPA structure provides a flexible framework of potential activities that countries can choose

<sup>35</sup> Resilience is the capacity of vulnerable households, families, communities, and systems to face uncertainty and the risk of shocks, to withstand and respond effectively to shocks, and to recover and adapt in a sustainable manner. Shocks may be driven by climate change, markets, environmental degradation, conflict, or a health crisis to which the food system is exposed.

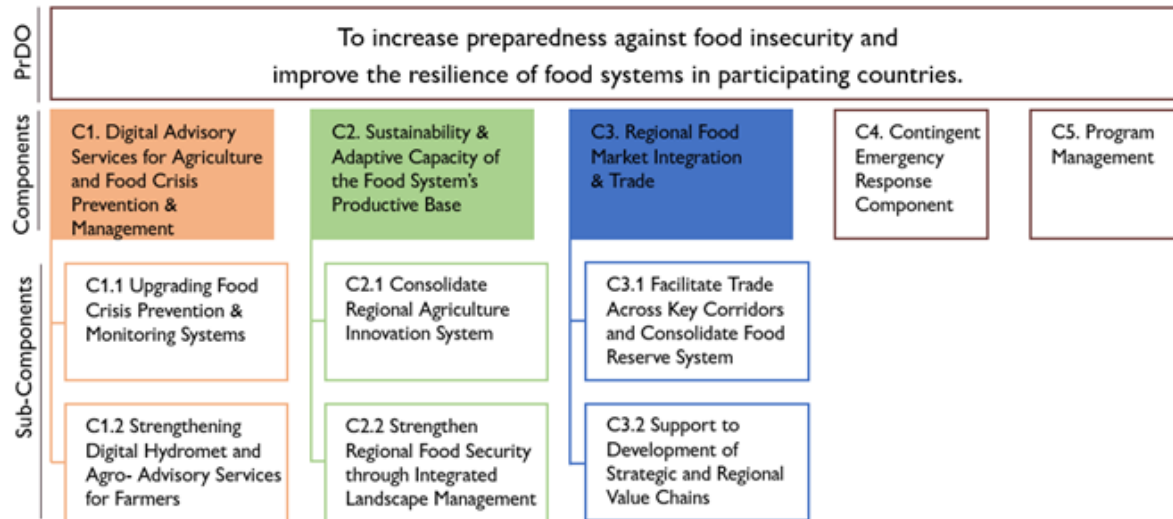
<sup>36</sup> Food systems encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal of food products that originate from agriculture, forestry, or fisheries and parts of the broader economic, societal, and natural environments in which they are embedded. Food system actors are all agents participating in the food system. FAO. 2018. Sustainable Food Systems: Concept and Framework. <http://www.fao.org/3/ca2079en/CA2079EN.pdf>.

<sup>37</sup> 150,000 individual farming families (or 600,000 direct beneficiaries) in Chad, 300,000 individual farming families (or 1,080,000 direct beneficiaries) in Ghana and 182,000 individual farming families (or 365,200 direct beneficiaries) in Sierra Leone.



to pursue. The design balances the need for countries to make investments in regional mechanisms with the need for interventions tailored to country needs. Country-level design processes and consultations were carried out in Chad, Ghana, and Sierra Leone to adapt the MPA structure to country needs. A summary of the components is included below. A detailed high-level description of the components is included in the FSRP Phase 1 PAD and country specific descriptions of Phase 2 countries are included in Annexes 1-3.

Figure 1: Components and subcomponents of the West Africa FSRP



**COMPONENT 1: DIGITAL ADVISORY SERVICES FOR AGRICULTURE AND FOOD CRISIS PREVENTION AND MANAGEMENT** (US\$45.20 million IDA [US\$18.40 million Chad, US\$13.10 million Ghana, US\$13.70 million Sierra Leone])

30. **Component 1 will provide support to:** (i) enhance decision support systems with demand-driven information services in order to increase the effectiveness of agriculture and food crises prevention and management, integrating data and leveraging cutting-edge science, innovation, and technologies; and (ii) strengthen capacity to adapt to climate variability and change, through reinforcing technical capacity of relevant technical agencies and service providers and collaborations among them. Expected outcomes are: (i) link actors in Chad, Ghana and Sierra Leone to upgraded regional food crisis prevention and management systems, specifically agrometeorological (agromet) and hydrometeorological (hydromet), also called agro-hydrometeorological, services and impact-based early warning systems; and (ii) national food system stakeholders accessing and using agro-hydrometeorological information services in their decision-making. CILSS will implement the regional level activities across Phase 1 and Phase 2 countries, utilizing the resources it received under Phase 1. National level activities will be coordinated by the national FSRP Project Implementation Units (PIUs). Collaboration will be ensured with other World Bank projects aimed at supporting early warning and hydromet services, including the Chad “N’Djamena Urban Resilience Project” (P177044) under preparation.

**Subcomponent 1.1: Upgrading Food Crisis Prevention and Monitoring Systems** (IDA US\$17.00 million equivalent [US\$10.10 million Chad, US\$1.60 million Ghana, US\$5.30 million Sierra Leone])



31. This subcomponent will provide support to transform national food security and agriculture information systems in order to support risk management decision-making. Close linkages between existing regional systems and national systems and institutions of Chad, Ghana, and Sierra Leone will be created. On the national level, the component will be closely implemented with (i) Food Security Monitoring System, the Civil Protection Directorate, the Plant Protection and Conditioning Department and the National Locust Control Agency (*Agence nationale de lutte antiacridienne*, ANLA) in Chad; with (ii) the Ghana Meteorological Agency, the National Disaster Management Organization, the Ministry of Food and Agriculture of Ghana (MoFA), and the Ghana Statistical Service; as well as (iii) the Sierra Leone Food and Nutrition Security Early Warning System (FNSEWS) Task Force, the Sierra Leone Meteorological Agency (SLMA), and the National Water Resources Management Agency (NWRMA) in Sierra Leone, among others. It includes investments designed to:

(a) **Improve national capacity to deliver reliable information services on vulnerability, nutrition, and food security.** This activity will strengthen national institutional capacity for monitoring and delivering agro-hydrometeorological information and advisory services on agriculture, climate vulnerability and food security including through the ECOWAS' *Cadre Harmonisé* and Agriculture Regional Information System to support decision-making. This activity will specifically invest in: (i) strengthening Information and Communication Technologies (ICT) infrastructure, data collection, and analysis as well as technical capacity at the national level, making data available to all actors in the region; (ii) developing decision support tools and methods for improved, user-targeted agro-advisory services and early warning and response services for food security; and (iii) introducing innovative technologies to improve data collection, integration, and analysis.

(b) **Reorganize and improve national pest and disease monitoring and management mechanisms.** This activity will support investments in: (i) hardware, software and capacity to strengthen phytosanitary data collection and sharing, including through new and innovative tools, such as drones; (ii) hardware and software to develop and operationalize harmonized phytosanitary data management and forecasting systems; (iii) capacity building activities to strengthen skills in surveillance, data analysis, forecasting; and (iv) training on integrated pest management, including pest and disease identification, integrated control strategies, and Global Good Agricultural Practices certification. In Chad, a large part of the component's activities will be devoted to locust monitoring and control as Chad constitutes the entry point of locust threats coming from the Horn of Africa. In the field of pest control, a specific focus will be put on women to strengthen their knowledge in the identification of diseases and the use of phytosanitary products.

(c) **Strengthen regional collaboration for food crisis prevention** through harmonized approaches and the promotion of collaborative public and private sector partnerships. This activity will invest in: (i) the promotion of collaboration and information exchange between regional and national entities by establishing thematic regional working groups and organizing joint capacity-building and events; and (ii) implementation of data policies based on open data access principles, helping to build the value of data related to agriculture, food security, climate change vulnerability, and hydromet services.

*Subcomponent 1.2: Strengthening Digital Hydromet and Agro-Advisory Services for Farmers (IDA US\$28.20 million equivalent [US\$8.30 million Chad, US\$11.50 million Ghana, US\$8.40 million Sierra Leone])*



32. This subcomponent will provide support to develop new services as well as improve existing ones that increase the quality, accessibility, and use of impact-based and location-specific weather, climate, and hydro- and met information, and its application to agriculture (agromet) to provide tailored and advisory services of various kinds. Special attention will be given to the needs of the most vulnerable groups, such as female, young farmers, and pastoralists. It will invest in technical assistance (TA), services, and goods. Investments under this subcomponent seek to:

(a) **Improve the production of climate, hydromet, agromet, and impact-based information for use by decision-makers, farmers, pastoralists, and other actors in the food system.** This will be done through investments in: (i) technical capacity for use of hydromet infrastructure at the national levels, including the effective use of big data analytics, artificial intelligence and other innovative digital tools; (ii) TA to develop cost-effective regional information systems through streamlining the “chain of information” across regional, national, and subnational levels; (iii) investments to ensure maximum utility of existing infrastructure and services; (iv) support to consultancy services to enhance cooperation between public and private hydromet and agromet service providers; and (v) supporting targeted capacity building. Each country will plan and prioritize the investments in hydromet systems that match the country’s service objectives, absorption capacity and sustainability potential. In Chad, this will also include developing long-term strategic orientations for the meteorological and rural development agencies.

(b) **Support the timely delivery and use of essential agro-hydrometeorological information to key users,** including farmers and pastoralists, with a focus on women, by investing in capacity building, developing multimodal communication channels, and supporting the co-development of a few selected and high priority services by engaging users. Activities in Phase 2 countries will include the development of specialized applications for phones and targeted information campaigns.

(c) **Strengthen the financial and institutional sustainability of national and regional institutions providing climate, hydromet, and agromet information** through investments in: (i) the development and implementation of a strategy for long-term financial and institutional sustainability including TA to leverage public-private agromet and hydromet data collection; (ii) coordination events between public, private, and academic sectors to create a policy environment conducive to collaboration; (iii) software and capacity building for open access to relevant hydrological and meteorological data and basic services; and (iv) state-of-the-art technologies and new business models.

**COMPONENT 2: SUSTAINABILITY AND ADAPTIVE CAPACITY OF THE FOOD SYSTEM’S PRODUCTIVE BASE**  
*(IDA US\$180.41 million equivalent [US\$52.10 million Chad, US\$98.21 million Ghana, US\$30.10 million Sierra Leone])*

33. **Component 2 will provide support to enhance the resilience of the food system’s productive base and contribute directly to the GGWI.** Expected outcomes are: (i) strengthened national agricultural research systems; (ii) a strengthened policy environment for landscape governance (multisectoral inclusive policies and regulations to avoid, reduce, and reverse land degradation); and (iii) landscape units under integrated management that can achieve multiple objectives sustainably (food production, provision of ecosystem services, protection of biodiversity, and improvement of local livelihoods). CORAF will ensure overall coordination of this component across Phase 1 and Phase 2 countries, utilizing



resources it received under Phase 1. National level activities will be coordinated by the national PIUs.

*Subcomponent 2.1: Consolidate Regional Agricultural Innovation System (IDA US\$26.75 million equivalent [US\$9.20 million Chad, US\$7.95 million Ghana, US\$9.60 million Sierra Leone])*

34. This subcomponent will provide support to consolidate the agricultural research and extension systems enabling them to deliver adapted technological innovations for the region's food systems. Priority will be given to delivering technologies that are climate-smart, nutrition-sensitive, gender-sensitive, and youth-friendly to reach and respond to the needs of the agri-value chain actors, including rural communities, smallholder farmers, and pastoralists. This subcomponent will finance TA, capacity building, goods, and services along the following axes:

(a) **Strengthen National and Regional Research Centers.** The subcomponent will support the consolidation of the National Centers of Specialization (NCoS) and Regional Centers of Excellence (RCoEs) established under West Africa Agriculture Productivity Program (P122065), namely the Roots and Tuber RCoE in Ghana and the Mangrove Rice RCoE in Sierra Leone as well as other relevant national research centers such as the Chadian Institute of Agricultural Research for Development and Livestock Research Institute for Development in Chad. The program will also invest in capacity improvements (adaptive research, infrastructure construction, equipment, and scholarships to finance training of young scientists at undergraduate, master's and PhD levels with a particular focus on CSA, plant breeding, soil fertility, seed systems and others).

(b) **Deepen and expand regional R&D networking.** The subcomponent will finance: (i) activities to support regional networking and capacity building activities, including technology exchanges; and (ii) investments in linkages with international research centers, undertaking strategic studies and planning, priority research and exchange of researchers, as well as knowledge sharing and communication. It will specifically highlight the acceleration of regional R&D networking with Consultative Group for International Agricultural Research (CGIAR) centers and other international agricultural research institutes, in synergy with the World Bank-financed Accelerating Impacts of CGIAR Climate Research for Africa Project (P173398). Phase 2 countries will invest in linkages with international research centers through participation to international scientific fora, strategic studies and planning, priority research, exchange of researchers, communication, and knowledge sharing on various topics including CSA.

(c) **Modernize national extension services.** The subcomponent will invest in modern approaches to extension, including by supporting the adoption of digital agriculture and e-extension services. Among others, in Chad and Sierra Leone an assessment/review of the current strategic plan for agricultural extension services/ national agricultural policy and action plan will be financed, and in Ghana TA to train extension workers will be provided. Phase 2 countries will benefit from the regional support of CORAF and invest in equipment and capacity building to upgrade their extension services and strengthen capacity in key agendas.

(d) **Promote technology access and exchange.** The subcomponent will invest in modern technology platforms, including value chain innovation platforms, mechanization services, upgraded national seed systems and soil fertility management capacity (soil map preparation, soil testing, and soil fertility monitoring) based on specific needs in all Phase 2 countries. It will also invest in the rehabilitation of



relevant infrastructure.

***Subcomponent 2.2: Strengthen Regional Food Security through Integrated Landscape Management (ILM)*** (IDA US\$153.76 million equivalent [US\$43.00 million Chad, US\$90.26 million Ghana, US\$20.50 million Sierra Leone]).

35. Subcomponent 2.2 seeks to contribute to improved food security for rural households and build their resilience to climate variability by supporting ILM, a long-term collaborative process with the objective to manage natural resources in a sustainable manner. It will be implemented by targeted countries in close collaboration with CORAF. FSRP will incorporate different land and water uses within a single management framework that balances competing resource-use demands and integrates policies for multiple uses of land and water within a given area considering climate change and vulnerability. It will prioritize areas to maximize spill-over effects. This subcomponent will finance:

(a) **Establish participatory ILM system** by (i) developing ILM plans by landscape stakeholders and (ii) establishing or strengthening a fully operational landscape committee in each FSRP Phase 2 country to supervise the design and implementation of the ILM plans and its supporting identified investments and subprojects<sup>40</sup>. Details on how ILM planning will be carried out, how priority landscapes will be identified, are described in the PAD of FSRP Phase 1.

(b) **Enhance the resilience of eco- and food systems in priority landscapes.** The subcomponent will finance Sub-projects to restore environmental services in priority landscapes and, in turn, build resilience in their ecosystems. Additionally, for Chad, it will also invest in matching grants. Tables detailing all planned investments can be found in Annex 1-3.

(c) **Secure resilient eco- and food systems beyond priority landscapes.** To promote better access to markets at the country level, FSRP will finance TA, capacity building, and provide matching grants to support the development of formal productive alliances (PAs) strengthen the linkages between producers, buyers and the public sector within agriculture value chains, among others with matching grants. The approach of PAs is selected for two reasons: first, it enables the public sector to support the services needs of producers in the form matching grants to ensure greater ownership by producers, and second, it is flexible and can adjust to a wide range of market realities and policy objectives.<sup>38</sup> The program will support groups of small producers in the targeted landscapes (for instance, producers of non-timber forest products), to develop business models and plans and secure contracts with national and international buyers. Based on the specific contractual arrangements and business plans of each PA, support will be provided for capacity building, TA, training, and/or equipment (including refrigeration systems).

**COMPONENT 3: REGIONAL FOOD MARKET INTEGRATION AND TRADE** (IDA US\$64.19 million equivalent [US\$28.20 million Chad, US\$24.79 million Ghana, US\$11.20 million Sierra Leone])

36. **Component 3 will provide support to facilitate trade of agricultural goods and inputs within and across national borders in West Africa.** The component expected outcomes are: (i) increased intra-regional food trade between surplus and deficit areas making the region more resilient to shocks; and

<sup>38</sup> "World Bank Group. 2016. Linking Farmers to Markets through Productive Alliances: An Assessment of the World Bank Experience in Latin America. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/25752> License: CC BY 3.0 IGO."



(ii) increased value creation in regional priority value chains. Component 3 is organized into two subcomponents. ECOWAS will ensure overall coordination of this component across Phase 1 and Phase 2 countries, utilizing the resources it received under Phase 1.

*Subcomponent 3.1: Facilitate Trade Across Key Corridors and Consolidate Food Reserve System (IDA US\$15.63 million equivalent [US\$6.10 million Chad, US\$6.83 million Ghana, US\$2.70 million Sierra Leone])*

37. This subcomponent will support the preparation and implementation of regional policies and regulations to increase regional flows of agricultural goods and inputs, providing financing to:

(a) **Develop and implement an ECOWAS Agricultural Trade and Market Scorecard (EATM-S) Mechanism.** Phase 2 countries will adopt a scorecard developed by FSRP Phase 1 to track national implementation of regional policies and regulations, as well as implement the ECOWAS trade liberalization scheme and ECOWAP. This will serve to increase transparency and accountability, as well as implement the ECOWAS trade liberalization scheme Economic Community of West Africa Agricultural Policy. ECOWAS will provide technical support for data collection to all FSRP Phase 1 and 2 countries and more importantly serve as peer learning and knowledge sharing platform, helping all countries to identify trade policy bottlenecks and catalyzing policy reforms. This scorecard will include indicators on intra-regional agri-food trade in West Africa as well as important climate metrics.

(b) **Encourage agricultural regional trade policy harmonization on critical food system resilience issues,** including reforms on sanitary and phytosanitary standards for food safety and compliance, as well as related outreach and capacity-building. Phase 2 countries will harmonize and/or implement regional legislation supported by Phase I. Phase 2 countries will strengthen their national institutions and relevant capacity and engage in awareness campaigns.

(c) **Improve Regional Food Security Reserve performance.** Support for the Regional Food Security Reserve will focus on strengthening national capacities to respond to food crises, designing sustainable mechanisms for financing food storage and crisis management systems, and providing direct support to the first (local and community storage), second (national security stocks), and/or third (regional physical and financial reserves) lines of food security defense. It will specifically improve the performance of the regional food security reserve to respond to crises, design sustainable mechanisms for financing food storage and crisis management systems as well as providing direct support to the first, second and/or third lines of food security defense through TA and training for the purpose, including (i) review and upgrade of storage facilities, and (ii) additionally in Sierra Leone, support to establish a national food reserve authority.

*Subcomponent 3.2: Support the Development of Strategic and Regional Value Chains (IDA US\$48.56 million equivalent [US\$22.10 million Chad, US\$17.96 million Ghana, US\$8.50 million Sierra Leone])*

38. This subcomponent will provide support to improve food and nutrition security for smallholders by supporting up to three priority value chains per participating country, focusing on backward and forward segments of the value chains, with tangible positive impacts on regional market integration, food security, nutrition, reduced food loss and waste (FLW) and climate change adaptation. In addition, investments in other value chains may be supported depending on market opportunities and private





sector interest. The focus will be on private businesses led by youth and women. ECOWAS will implement the regional-level activities of Component 3 as outlined in the PAD of FSRP Phase 1, and Chad, Ghana, and Sierra Leone will be responsible for the complementary national investments. The priority value chains of the Phase 2 countries will be maize, sesame and wheat in Chad, rice, maize, and livestock in Ghana and mangrove rice and cassava in Sierra Leone. The impact of climate change on these value chains will be considered. Under this subcomponent, FSRP will finance interventions to:

(a) **Strengthen value chain organization and financing.** This subcomponent will support the restructuring and governance of priority regional value chains. For value chain players organized in PAs, this subcomponent will finance the provision of matching grants<sup>42</sup> to facilitate access to financing for the activities. For value chain entrepreneurs, including youth and women, this subcomponent will invest in activities such as aggregation centers, improved cold-chain infrastructure that reduce FLW, storage facilities to reduce post-harvest losses, warehouse receipt systems, agro-processing, and agricultural trade services, all aimed at integrating the selected value chains with regional markets. This activity will prioritize climate-smart, low-carbon technologies and practices, to reduce emissions and help farmers to adapt to changing climate conditions.

(b) **Support agricultural competitiveness and market access infrastructure.** This subcomponent will finance (i) strengthening the capacity of national institutions for development of standards and regulations for improved product quality, sanitary and phytosanitary services, certifications, traceability and quality control and regional agricultural trade digital platforms; and (ii) provision of TA, financing of related studies and critical investments to leverage private financing, (iii) including additionally for Chad, development of rural road interconnections and rehabilitation of strategic provincial markets. Within this, it will target capacity building of national institutions to develop standards and regulations for improved product quality, Sanitary and Phytosanitary Measures (SPS) services<sup>39</sup>, certifications, traceability, and quality control, which supports growth in the agricultural sector and agricultural trade digital platform. In addition, this subcomponent will finance the needs assessments and critical investments in public infrastructure to leverage private financing along value chains, such as critical market and post-harvest infrastructure. In the case of Chad specifically, the project will invest in the development of rural road interconnections and rehabilitation of strategic provincial markets.

(c) **Strengthen multi-stakeholder coordination and promote a private sector enabling environment,** including public-private dialogue and support policy reforms in the agriculture and food sectors. It will also provide support to public entities in the trade and agriculture sector to improve data collection and access and facilitate transactions and cross-border trade. FSRP will invest in strengthening multi-stakeholder mechanisms for coordinating selected value chains (including the participation of national farmer and private sector organizations in formulating policies and programs and in their implementation) and more broadly improving regional agriculture trade. It will also finance public-private dialogues to catalyze policy reforms in agri-food and input trade (e.g., to identify and overcome policy barriers of selected and emergent value chains). Phase 2 countries will recruit a certified facilitator to help conduct public-private dialogues. This expert will also support the agriculture sector working group in

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<sup>39</sup> Investments in food safety are increasingly relevant from a trade but also health perspective. Climate change, through long-term changes in temperature, humidity, rainfall patterns and the frequency of extreme weather events, favors toxin-producing microorganisms and other pests affecting the occurrence and intensity of some foodborne diseases and promoting the establishment of invasive alien species harmful to plant and animal health.



prioritizing and monitoring policy reforms to enhance the business environment in the agriculture and food sectors.

#### **COMPONENT 4: CONTINGENT EMERGENCY RESPONSE COMPONENT** *(IDA US\$0.0 million)*

39. Component 4 is a mechanism for financing eligible expenditures in the event of a crisis and an emergency precipitated by a natural disaster. Activation of this component allows funds to be disbursed rapidly to reduce damage to infrastructure, ensure business continuity, and recover more rapidly from a disaster. Following a major disaster, the affected participating country may request that the World Bank channel resources from other FSRP components into the CERC. As a condition for disbursement, an Emergency Response Manual will be developed for each country, stipulating the fiduciary, safeguards, monitoring, and reporting requirements related to invoking the CERC, as well as any other essential coordination and implementation arrangements.

#### **COMPONENT 5: PROGRAM MANAGEMENT** *(IDA US\$25.20 million equivalent [US\$6.30 million Chad, US\$13.90 million Ghana, US\$5.00 million Sierra Leone])*

40. This component will strengthen the capacity of the PIU and finance all aspects of project implementation and management including equipment and materials, preparation of Annual Work Plans and Budgets (AWPBs), preparation of project progress reports, overall management of FM and procurement including carrying out of audits, management of (environmental and social) safeguard requirements, monitoring and evaluation (M&E) including a full impact assessment with quasi-experimental design, knowledge management, and communication.

41. On the regional level, the activities will be overseen by the Regional Steering Committee (RSC), created on February 4, 2022, under the leadership of ECOWAS and the component coordination units of ECOWAS (mandated to Regional Agency for Agriculture and Food), CILSS (for Component 1) and CORAF (for Component 2). On the national level, the activities will be performed by the national PIUs.

42. **Maximizing Finance for Development (MFD):** The FSRP Phase 2 design provides avenues for private sector participation in various activities. The project emphasizes the critical role of public-private collaboration in order to achieve food system resilience. Application of the MFD approach estimates that the program will enable at least US\$50 million in capital from the private sector. Under subcomponent 1.2, FSRP Phase 2 will strengthen the financial and institutional sustainability of national and regional institutions providing climate, hydromet, and agromet information through creating a conducive policy environment for collaboration between private, public and academic sectors, which is expected to enable at least US\$20 million in investments from the private sector. Component 2 has MFD-enabling activities which have the potential of attracting private capital - strengthening research centers, modernizing national extension services and promoting adoption of modern technology platforms - which can be financed under the Public-Private Partnerships framework. Subcomponent 3.2 will make use of matching grants as a financing mechanism to strengthen and integrate selected value chains with regional markets. The beneficiaries (youth and women) are expected to contribute at least US\$20 million (or equivalent if in-kind contributions). In supporting establishment of critical market and post-harvest infrastructure, the project will leverage US\$10 million from the private sector. In addition, this sub-component will strengthen multi-stakeholder coordination (public-private dialogues) to catalyze policy reforms in agri-



food and input trade thus promoting and enabling environment for the private sector. FSRP II will also leverage synergies with International Finance Corporation (IFC) mainly by closely coordinative efforts; exchanging technical knowledge; building on the IFC Country Private Sector Diagnostics; and using the IFC Scope-insight tool.

43. **Gender:** FSRP Phase 1 has been gender tagged to achieve inclusive project benefits and meaningful social inclusion and embeds gender-focused interventions in all components to close some of the gender gaps in West African food systems. The FSRP Gender Gap Analysis and Gender Action Plan for Phase 1 countries can be found in the FSRP Phase 1 PAD Annex 15. Phase 2 countries will retain this strong and visible focus on women, with 40 percent of the beneficiaries of the project expected to be women. Phase 2 countries will specifically include activities that will (i) boost women's participation in monitoring and early diagnosis of pests and diseases in target value chains (Component 1); (ii) develop information tools to address women's information requirements and provide learning opportunities (Component 1); (iii) provide scholarships for women researchers to obtain doctoral and master's degrees (Component 2); (iv) target women with agri-vouchers to provide subsidized inputs (Component 2); and (v) support to help women gain better access to assets and services they need to improve the commercialization of their agricultural produce (Component 3). The program's M&E framework will focus on assessing FSRP's impact on women. Three of the PrDO indicators are disaggregated by gender. Moreover, the impact evaluation will evaluate how FSRP contributes to closing gender gaps, among others by using the project-level Women's Empowerment in Agriculture Index developed by the International Food Policy Research Institute.<sup>40</sup> Gender Gap Analysis and Action Plan for Phase 2 countries are provided in Annex 4.

44. **Citizen Engagement:** The program explicitly supports the engagement and participation of stakeholders and beneficiaries through consultative processes, engagement in local-level planning and monitoring, and feedback mechanisms to elaborate and adjust the ILM approach. Feedback mechanisms have been developed to ensure transparency, accountability, and learning, and continuous dialogue will occur with local beneficiaries and other stakeholders. For example, during implementation the program will give particular attention to consulting with local groups (such as Civil Society Organizations) and traditional/local leaders, including women, to incorporate traditional and local knowledge in water and land management planning. The program will also support inclusion in access to economic opportunities, especially for those who are most vulnerable. The specific elements of the framework for citizen engagement include: (i) support for the engagement of local rural communities in landscape planning and management, including monitoring; (ii) support for community engagement in determining local investments; and (iii) a program-level feedback and grievance mechanism (GM), designed to process concerns and questions from beneficiaries and other stakeholders at various levels (regional to local), with to resolving concerns within specific timeframes. The protocol, mechanisms, and elements of the citizen engagement framework will be detailed in the Project Implementation Manual (PIM).

### C. Project Beneficiaries

45. FSRP Phase 2 aims to reach 632,000 farming families with approximately 2.05 million direct

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<sup>40</sup> The Women's Empowerment in Agriculture Index measures the empowerment, agency, and inclusion of women in the agriculture sector in an effort to identify ways to overcome those obstacles and constraints. The Index measures the roles and extent of women's engagement in the agriculture sector in five domains: (i) decisions about agricultural production; (ii) access to and decision-making power over productive resources; (iii) control over use of income; (iv) leadership in the community; and (v) time use.



beneficiaries impacted (300,000 farming families or 1.08 million direct beneficiaries in Ghana, 150,000 farming families or 600,000 total direct beneficiaries in Chad and 182,000 farming families and 365,200 direct beneficiaries in Sierra Leone) with a range of interventions designed to reduce vulnerability to climate change impacts at the individual and food system level. Direct beneficiaries include (women) farmers, youth, small-scale producers and processors, and agricultural micro, small and medium enterprise. FSRP aims to reach at least 40 percent women. Additional beneficiaries will include other food system actors, such as government line ministries, the regional organizations (ECOWAS, CORAF, and CILSS), and other public and private institutions and services. The results framework presents a breakdown of beneficiaries in each Phase 2 country.

46. The program also aims to reach a large number of indirect beneficiaries spanning the range of food system actors, from production to consumer's nutrition by improving food system outcomes through its structural investments. For example, the population living close to Ghana's borders in Côte d'Ivoire, Burkina Faso, Togo, will also benefit from interventions. More productive agricultural systems and increased agricultural revenue in intervention areas will contribute to food security across the region through trade exchanges. In addition, given the region's agro-climatic and socio-economic similarities, neighboring countries may readily adopt technologies developed through the program. Finally, the program will create global public goods to increase food security, decrease vulnerability and provide open access information systems and tools to increase national and regional sustainability.

#### D. Rationale for Bank Involvement and Role of Partners

47. **FSRP offers a unique opportunity for the WBG to work collectively with West African regional organizations and countries to address key drivers of food insecurity in the region and build the resilience of the food system.** The World Bank's intervention under a programmatic framework has the potential to bring about the consolidation of a functional institutional ecosystem and greatly enhanced coordination and cooperation between countries in West Africa. No other institution has (i) the requisite regional resource envelope; (ii) medium-term planning horizon; and (iii) convening power to accompany this process at the regional level across several regional bodies and the national level across countries. The rationale for strong, coordinated leadership by the World Bank becomes even more important with pressing food system challenges presented by ongoing droughts, the lingering impacts of COVID-19, and the war in Ukraine. Moreover, the World Bank has the necessary tools at its disposal to bring about structural changes with a program such as FSRP and, at the same time, to respond to rapidly changing crises, for example with the CERC.

48. **Resource envelope.** The World Bank works with its partners to build food systems that contribute to improving food security, promoting nutrition-sensitive agriculture, and improving food safety. The World Bank is a leading financier of food systems, with US\$6.7 billion in new IBRD/IDA commitments to agriculture and related sectors in 2021<sup>41</sup>. Aside from addressing immediate food security needs, about half of IDA's new commitments for food security focus on longer-term investments in resilience, reflecting IDA's stepped-up focus on the underlying drivers of food insecurity since the 2008 food crisis.

49. **Medium-term horizon.** The World Bank has focused on the underlying drivers of food insecurity

<sup>41</sup> <https://www.worldbank.org/en/topic/agriculture/overview#2>



through efforts to increase climate resilience, reduce the risk of conflict, and limit the negative impacts of shocks such as the COVID-19 pandemic<sup>42</sup>. It has led the dialogue on local response and upgrading pest and disease response for increased resilience. Yet, as financing for food security has increased, so has the magnitude of the challenge, buffeted by strongly rising climate headwinds as well as conflicts, especially in the Sahel and West Africa.

50. **Convening power.** The FSRP proposes to work with a range of partners in the region to ensure that the best available knowledge and capacities are harnessed. There are many small- and large-scale operations in the region operating in the same space but with lack of coordination. This program offers a mechanism to bring other initiatives together, as well as to attract additional financial sources (as evidenced by grant resources attached to the program). In addition to the regional bodies, partners include Food and Agriculture Organization (FAO), the CGIAR, International Institute of Tropical Agriculture, World Meteorological Organization, the Climate Risk and Early Warning Systems initiative, the Organisation of Economic Co-operation and Development (OECD) Club du Sahel, International Fund for Agricultural Development (IFAD), African Development Bank, French Development Agency, the Kingdom of Netherlands, and others. This convening power becomes even more important as partners increase activities across the region in reaction to the current food crisis.

**E. Program Costs**

**Table 3: Program financing, Phase 2 of FSRP**

Component	Chad		Ghana		Sierra Leone		Total	
	Amount (US\$ m)	%	Amount (US\$ m)	%	Amount (US\$ m)	%	Amount (US\$ m)	%
<b>C1 Digital Advisory Services for Agriculture and Food Crisis Prevention and Management</b>	<b>18.40</b>	<b>17.5</b>	<b>13.10</b>	<b>8.7</b>	<b>13.70</b>	<b>22.8</b>	<b>45.20</b>	<b>14.3</b>
C1.1 Upgrading Food Crisis Prevention and Monitoring Systems	10.10	9.6	1.60	1.1	5.30	8.8	17.00	5.4
C1.2 Strengthening Digital Hydromet and Agro-Advisory Services for Farmers	8.30	7.9	11.50	7.7	8.40	14.0	28.20	9.0
<b>C2 Sustainability and Adaptive Capacity of the Food System’s Productive Base</b>	<b>52.10</b>	<b>49.7</b>	<b>98.21</b>	<b>65.5</b>	<b>30.10</b>	<b>50.2</b>	<b>180.41</b>	<b>57.3</b>
C2.1 Consolidating Regional Agriculture Innovation Systems	9.20	8.8	7.95	5.3	9.60	16.0	26.75	8.5
C2.2 Strengthen Regional Food Security through Integrated Landscape	43.00	41.0	90.26	60.2	20.50	34.2	153.76	48.8

<sup>42</sup> ibid



Component	Chad		Ghana		Sierra Leone		Total	
	Amount (US\$ m)	%	Amount (US\$ m)	%	Amount (US\$ m)	%	Amount (US\$ m)	%
Management (ILM)								
<b>C3 Regional Market Integration and Trade</b>	<b>28.20</b>	<b>26.9</b>	<b>24.79</b>	<b>16.5</b>	<b>11.20</b>	<b>18.7</b>	<b>64.19</b>	<b>20.4</b>
C3.1 Facilitate Trade across Key Corridors and Consolidate Food Reserve System	6.10	5.8	6.83	4.6	2.70	4.5	15.63	5.0
C3.2 Support to Development of Strategic and Regional Value Chains	22.10	21.0	17.96	12.0	8.50	14.2	48.56	15.4
<b>C4 Contingent Emergency Response Component</b>	<b>0.00</b>	<b>0.0</b>	<b>0.00</b>	<b>0.0</b>	<b>0.00</b>	<b>0.0</b>	<b>0.00</b>	<b>0.0</b>
<b>C5 Project Management</b>	<b>6.30</b>	<b>6.0</b>	<b>13.90</b>	<b>9.3</b>	<b>5.00</b>	<b>8.3</b>	<b>25.20</b>	<b>8.0</b>
<b>Total</b>	<b>105.00</b>	<b>100.0</b>	<b>150.00</b>	<b>100.0</b>	<b>60.00</b>	<b>100.0</b>	<b>315.0</b>	<b>100.0</b>

## F. Lessons Learned and Progress on Learning Agenda

### Lessons Learned

51. **While the need for a paradigm shift towards building resilient food systems is increasingly recognized, preparing and implementing a program with a food system approach requires more resources and coordination than traditional projects.** In accordance with system thinking promoted at the United Nations Food System Summit in September 2021, FSRP is among the first large-scale programs to move beyond traditional silo thinking and myopic focus on sectoral solutions. Single projects lack the broad landscape view and coordination capacity to make meaningful changes in the food system. Particularly in the fragile context of West Africa, coordination, longevity, and resources are needed for long-term redefinition for resilience. Given the nascent state of this programmatic approach, regional organizations will need to be strengthened and coordination will need to be maximized across countries and sectors. In this way, FSRP contributes not only directly to food system resilience, but also indirectly to the desired paradigm shift to system thinking.

52. **Interventions must be carefully selected and designed with a strong technical focus to maximize investments in cost-effective activities providing mutually reinforcing benefits.** Interventions must prioritize some intervention areas that are most critical to increase food system resilience, such as risk management, CSA and ILM as well as trade and value chain promotion in West Africa. Within the intervention areas, a cost-effective mix of different kinds of activities has to be selected (e.g., for risk management investment in both hard- and software as well as TA to increase collaboration between the sectors, e.g., through public private engagement; or for ILM various kinds of interventions including (but not focusing on) irrigation). Moreover, activities have to be well linked so that they can provide mutually reinforcing benefits (e.g., decision-support systems helping both farmers make smarter on-farm decisions to improve yields and better manage climate risks despite rising weather variability and enable food



traders to make informed decisions based on more accessible and reliable market information). Technical innovation, like recent advances in hydromet services, a new emphasis on collaboration between partners and stakeholders for ILM, and introduction of revolving credit for regional food stores enhance the technical design of the program.

53. **Investing in regional institutional infrastructure and capacity is important for program sustainability.** Across the region, programs suffer from lack of long-term stability after project financing ceases. In particular, regional organizations benefit from support and cash-flow during the duration of projects but lack the core staff and operational abilities to sustain program activities after closing. To overcome this issue, the FSRP will invest in regional organizations, ECOWAS, CORAF and CILSS, and each is committing to contribute an increasing share of counterpart financing as the program progresses. This will help to ensure that by the end of the program, the regional institutions are able to maintain their coordination capacity and services developed under the program.

### *Progress on Learning Agenda*

54. **Learning is an integral part of FSRP.** FSRP Phase 1 developed a Learning Agenda with four mechanisms to generate and disseminate knowledge and learning which will be further implemented under FSRP Phase 2, with the support of the accompanying regional programmatic Advisory Services and Analytics Food System Resilience Facility (FSRF, P172941) funded by the Kingdom of the Netherlands. The following four mechanisms inform Phase 2: (i) Analytical studies inform the program preparation and implementation with policy and strategy notes developed on topics highly relevant for FSRP; (ii) capacity building will be provided to the regional organizations to overcome operational and technical capacity building gaps; (iii) region-wide learning events will be organized to disseminate and mainstream knowledge in response to needs voiced by Borrowers; and (iv) an impact evaluation will be conducted in order to refine delivery mechanisms. More details can be found in the PAD of FSRP Phase 1.

55. **Progress on the Learning Agenda has been achieved regarding all four mechanisms.** (i) A review of lessons learned related to existing trade scorecard mechanisms feeds into ongoing work by AKADEMIYA2063 to develop a trade scorecard; (ii) detailed capacity building plans have been developed for each regional organization with first activities to be implemented once Phase 1 becomes effective; (iii) sessions were held during the launch of FSRP, and more events are planned; and (iv) a concept for the impact evaluation will be developed by AKADEMIYA2063. Additional learning will be further promoted throughout the lifetime of the MPA.

## III. IMPLEMENTATION ARRANGEMENTS

### A. Institutional and Implementation Arrangements

56. The implementation arrangements of FSRP Phase 2 essentially mirror the arrangements of FSRP Phase 1, ensuring the consistent implementation of the two phases and the creation of synergies, as possible.

57. **At the regional level,** implementation will be structured as follows: (i) AGRHYMET will coordinate overall implementation efforts under Component 1; (ii) CORAF under Component 2; and (iii) ECOWAS



under Component 3. In addition, ECOWAS is leading the overall coordination of the program. The regional partners will implement or delegate activities at the regional level across all Phase 1 and Phase 2 countries. An RSC was created on February 4, 2022 as the orientation and decision-making body of the regional components of FSRP. It will oversee all program activities, integrate national programs into regional activities and ensure activities are consistent across the program. The RSC will meet at least once a year, and be informed by experts from the field, including national and regional scientists, to ensure scientific rigor is maintained throughout program activities. For details of regional-level implementation arrangements see the FSRP Phase 1 PAD and Annex 7.

58. **At the country level**, countries will implement or delegate national-level activities, supported by international, regional and national partners providing guidance and support, including mobilizing specialized TA, fostering knowledge management and exchanges, reporting on progress related to the effectiveness of risk mitigation mechanisms, the reduction of food and nutrition insecurity, and market integration and trade. Project implementation will be the responsibility of the respective Borrower/Recipients, through the Borrower/Recipients' Project Coordination Department under the Ministry in charge of agriculture (CCPs), with oversight and orientation by respective National Project Steering Committees (NPSC)<sup>43</sup> and conducted through World Bank funded PIUs (also referred to as the Implementation Unit for the Project (*Unité de coordination technique et fiduciaire*, UCTF) in the case of Chad, established under the CCPs). All projects will leverage existing PIUs. In Chad the project will utilize the PIU of the Climate Resilient Agriculture and Productivity Enhancement Project (*Projet d'amélioration de la productivité et de l'agriculture résistante au climat*, PROPAD, P175614). In Ghana, it will use the PIU that used to execute the Ghana Commercial Agriculture Project (P114264). In Sierra Leone, the project will leverage the strengths of an existing PIU within the current Ministry of Agriculture and Forestry (MAF) that has been used to implement programs with other partners. Where needed, and specifically in Sierra Leone, country-based implementation structures will be strengthened through the recruitment of additional staff/consultants responsible for program management tasks, including administration, M&E, communication, safeguards, procurement, and financial management (FM) Each country will prepare a detailed PIM that will incorporate all operational details at the national level, including technical activities, the M&E manual, as well as administrative and fiduciary procedures. The program will employ participatory and inclusive processes that allow communities to be involved in the identification of priority zones, selection of priority activities, and validation and implementation of the ILM plans. Detailed descriptions of country level implementation arrangements are included in Annexes 1-3.

## B. Results Monitoring and Evaluation Arrangements

59. **Phase 2 will employ the same M&E framework developed under Phase 1.** A detailed description of the regional framework can be found in the FSRP Phase 1 PAD. Descriptions of country-level M&E frameworks can be found in Annexes 1-3.

60. The regional partners and national PIUs will be responsible for the internal monitoring of program outcome and output indicators as defined in the results framework. Each M&E unit, as well as all key implementing entities, will produce semi-annual progress reports along with notes synthesizing

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<sup>43</sup> Each country will establish an FSRP NPSC to provide policy guidance. The committee will meet at least once each fiscal year to undertake, among other tasks, the review and approval of the draft AWPB, approval of the annual report, and a review of the status of implementation progress. The countries will send representatives to the RSC.





information on risks, resilience, and food security at the level of program beneficiaries. External service providers will be recruited to organize the baseline and evaluation surveys to monitor program indicators. The M&E will pay particular attention to evaluating the impact of the program on women farmers, and the monitoring system will include relevant indicators for women in the results chain to track progress in implementation (outputs and process indicators). Moreover, the program's impact evaluation will focus on gender, assessing FSRP's impact on women by using the Women's Empowerment in Agriculture Index developed by the International Food Policy Research Institute. Lessons learned, and best practices will be shared iteratively across countries to ensure that the program continues to internalize learning throughout implementation.

61. External monitoring (supervision and evaluation) and implementation support, including monitoring of obligations under the Environmental and Social Framework (ESF), will be the responsibility of the respective governments of countries in close collaboration with the World Bank. ECOWAS, in partnership with CILSS and CORAF, will be responsible for monitoring program outcomes and impact, including their own ESF obligations, at the regional level, by: (i) subcontracting with appropriate regional and international agencies to update studies on the region's food systems resilience and agricultural market integration; (ii) producing an annual consolidated report, based on reports of participating countries and their specific studies, to be shared with all ECOWAS countries; (iii) informing participating countries on a yearly basis on implementation progress and the use of funds transferred from country proceeds, with all relevant documents (including financial statements and audits, and progress reports) as approved by the RSC; and (iv) maintaining the web-based databases on grant administration and results while developing and maintaining an agricultural research resource database on publications and research skills available in the region. Countries will be responsible for the implementation of ESF requirements as indicated in the prepared instruments and summarized in the Environmental and Social Commitment Plans (ESCPs).

62. Using resources from the Food Systems Resilience Facility, the World Bank has established partnerships with AKADEMIYA2063 to begin the design of an impact evaluation covering Phase 1 and Phase 2. The design will consider a quasi-experimental design across multiple countries to generate high-quality evidence on the effectiveness of the program interventions and alternative approaches implemented through the program. The initial design will be centered around measuring the attribution of the program to the PrDO indicator "Reduction of food insecure people in program targeted areas". The impact evaluation will place a strong emphasis on building resilience to climate and on program's impacts on women. Additional metrics are also being considered, including impact of the program on jobs and migration. Implementation of the impact evaluation will be done with the support of ECOWAS and partly financed through the Dutch contribution to the regional organizations (included in FSRP Phase 1).

### C. Sustainability

63. Achieving a higher degree of sustainability compared to past efforts is critical. The program design focuses on two dimensions of sustainability—institutional and technical.

64. **Institutional sustainability.** FSRP aims to work with and build on the current institutional ecosystem for food system resilience, which comprises multiple bodies and systems. In addition to improving the sustainability of regional infrastructure as detailed in the Phase 1 PAD, it will support the



development and strengthening of national systems. Phase 2 will support the consolidation of digital information systems, climate services, national agricultural research infrastructure, extension services, SPS systems and others. Investments in these national systems will help to strengthen agriculture sectors in each country, yielding benefits far beyond the direct benefits of the program.

65. **Technical sustainability.** All interventions under all program components should have a lasting impact. Under Component 1, for example, the program seeks to involve private providers in the delivery of technical services through self-sufficient business models. Under Component 2, the regional research system will be consolidated (Subcomponent 2.1), and community engagement in meaningful participatory planning will reinforce community ownership of program activities (Subcomponent 2.2). Under Component 3, the program will maximize private sector leadership by rigorously applying the MFD approach (see paragraph 42) and relying on existing commercial structures (financial institutions, for example) to deliver support.

#### IV. PROJECT APPRAISAL SUMMARY

##### A. Technical, Economic and Financial Analysis

66. **The program's agricultural interventions to enhance food security and resilience of food systems in Chad, Ghana, and Sierra Leone are economically justified, generating an indicative net present value (NPV) of the net additional benefits (NPV, using a social discount rate of 6 percent) of US\$151.5 million and an economic internal rate of return (EIRR) of 18.1 percent (over a 15-year period and on a budget of US\$315 million).** These economic results are robust and do not even account for several other project benefits that are unquantified, such as strengthened national capacity to manage future pest events, improved food and nutrition security, etc. When incorporating the social value of carbon mitigation generated by the project (see Annex 6), the economic indicators improve, depending on the social carbon pricing scenario: assuming the low estimate range of social carbon price, the EIRR is 22.9 percent and the NPV is US\$11.9 million higher; assuming the high estimate range, the EIRR becomes 28.3 percent and the NPV is US\$23.8 million higher.

##### Identification of benefits

67. **The program's development objective of increasing preparedness against food insecurity and improve resilience of food system actors, priority landscape and value chains in program areas is expected to lead to three main quantifiable, mutually reinforcing benefits.** First, FSRP-Phase 2 will lead to increased agricultural income thanks to increased productivity and to the sale of the surpluses. The higher productivity will be the direct result of several program outcomes, such as higher availability of improved climate-smart, nutrition-smart technologies and innovations (i.e., improved planting material, landscape management practices, irrigation, and other infrastructure), widespread provision of improved research and extension services, greater access and use of quality, timely information on environmental hazards (i.e., extreme weather events, pests and diseases). Moreover, farmers will record higher sales thanks to their increased integration into domestic and regional markets. Indeed, the program will promote diversification at farm and/or post-farm levels into higher value-added, import-competing and export-oriented agricultural products. It will also promote farmers' competitive integration in regional markets through strengthened value chain organizations and financing, greater access to market price



information and decision-support tools, increased availability of improved value-adding technologies and both hard and soft marketing infrastructure (i.e., last-mile infrastructure and food safety systems).

68. **The second benefit stream resulting from the FSRP-Phase 2 is increased climate change resilience and adaptation.** To mitigate the adverse effects of climate change variability on agriculture, the program interventions will enhance national and regional systems for agriculture and food crises prevention and management, thanks to improved coordination and early warning preparedness mechanisms related to food security and environmental hazards, including the effective dissemination of relevant information and advisory services to end users. Hence, such systems will allow them to secure food production and livelihoods of the affected population. In addition, farmers' resilience and adaptive capacity will be strengthened through the increased availability of CSA technologies and practices (i.e., ILM approach). Consequently, higher climate resilience and adaptation will not only secure the stability of agricultural incomes and rural livelihoods but also ensure their improvement.

69. **Third, the program will stimulate agricultural growth and transformation through broader and more effective regional agricultural integration between ECOWAS member countries and other countries, such as Chad.** This will directly follow from several program outcomes, such as the increase in intra-regional food trade between surplus and deficit areas and the subsequent stabilization of food prices through harmonized rules and regulations, the removal of barriers to trade and improved national and regional food reserve systems. Moreover, ECOWAS integration will be realized also through enhanced value creation in regional priority value chains resulting from different program interventions aimed at strengthening regional agricultural R&D, technology, and knowledge exchange (e.g., increasing access to affordable climate- and nutrition-smart inputs). In turn, a stronger regional integration will minimize import dependency and enhance regional food and nutrition security.

70. **Fourth, increased positive environmental externalities will be generated by the program.** As many natural resources are regionally shared, addressing their degradation through ILM (e.g., measures to reduce carbon sequestration, soil erosion, water pollution) each program country will have positive spill-over effects on riparian countries. Moreover, these effects will be reinforced by the cross-border coordinated strategy implemented by the program and will lead to sustainable restored natural ecosystems ensuring climate resilience and sustainable production systems.<sup>44</sup>

71. **The FSRP-Phase 2 program will also have other positive impacts, non-quantifiable at this stage due to data availability.** These include employment growth, particularly women and youth employment, as all program components incorporate gender- and youth-focused interventions (e.g., prioritizing their access to land, innovative technologies and practices, finance, and markets). Besides, the program will lead to increased food security, improved nutrition, and health (e.g., resulting from greater, stable access to diversified, nutrition-dense food, clean air, and water), demonstration effects (the number of beneficiaries could result in a significant outreach considering the adopted highly participatory, community-based ILM approach), enhanced institutional capacity and policy and regulatory frameworks, greater community participation, etc.

72. **The Ex-Ante Carbon-balance Tool (EX-ACT) was applied to assess the aggregate net carbon-**

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<sup>44</sup> A preliminary evaluation of the environmental benefits brought about by the FSRP-Phase 2 will be conducted through a GHG emission accounting exercise and included in the EFA. The details of the GHG analysis are provided in a separate annex.



**balance of Phase 2 countries.** The carbon balance results indicate that the Phase 2 activities will lead to a total of 2,847,123 tons of CO<sub>2</sub>e to be mitigated over a period of 15 years starting from project implementation. By country, the mitigation will be 1,610,173 tons of CO<sub>2</sub>e in Chad, 755,932 in Ghana, and 481,018 in Sierra Leone. More details can be found in Annex 6.

## B. Fiduciary

### (i) Financial Management

73. **In line with the guidelines as stated in the FM Practices Manual issued by the FM Sector Board on March 1, 2010, an FM assessment was conducted for the PIUs responsible for the FM of FSRP in Chad, Ghana, and Sierra Leone.** The objective of the assessment was to determine whether the FM arrangements of the respective implementing entities are adequate to ensure that: (i) project funds will be used for purposes intended in an efficient and economical way; (ii) project financial reports will be prepared in an accurate, reliable, and timely manner; (iii) project assets will be safeguarded; and (iv) the project is subjected to a satisfactory auditing process.

74. **The overall residual FM risk for the program, with the expected risk mitigation measures adequately implemented, is Substantial.** The FM assessment finds that the PIUs in Chad, Ghana, and Sierra Leone have basic FM arrangements in place, although it is critical to strengthen those arrangements to comply with minimum requirements under World Bank Policy and Procedures for Investment Project Financing (IPF) operations. At implementing agency level, with risk mitigation measures adequately implemented, the risk is deemed **Substantial** for Chad and Sierra Leone, and **Moderate** for Ghana. The residual FM risk of Chad and Sierra Leone is mainly due to the weak capacity of the administration to supervise the activities in Chad, and inexperience of the PIU in Sierra Leone which could lead to low quality FM support to the project and ineffective implementation. The moderate risk rating of Ghana is due to the strengths of the existing FM capacity of the staff of the PIU who have complied fully with all FM covenants in previous implementations.<sup>45</sup> The FM risk rating will be assessed periodically during implementation.

75. **The risks of Chad, Ghana, and Sierra Leone will be mitigated through the following measures:** (i) provision of training to all FM teams during the first year of the project implementation in the World Bank disbursement and FM rules by the country World Bank FM teams and further TA, as needed; (ii) the preparation and adoption of a PIM, including FM provisions for Ghana and Sierra Leone, since there are no FM manuals in place in these two countries and the update of the FM manual of procedures for Chad; (iii) recruitment or appointment of qualified and experienced staff where needed, recruited with Terms of Reference (TORs) for which the World Bank provided no-objection; (iv) assurance that appropriate accounting systems are used; (v) undertaking of internal and external auditing; (vi) agreement on unaudited Interim Financial Report (IFR) formats for the project's quarterly or semi-annual reports; and (vii) increased awareness of the importance of transparency and availability and use of GM.

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<sup>45</sup> Other reasons include, the GCAP PIU has in recent times successfully implemented World Bank-financed projects and project management are familiar with and understand World Bank FM guidelines and consistently through the implementation the Borrower complied fully and satisfactorily with the FM covenants as per the respective Financing Agreements. In addition, the project FM 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 FM reforms which are supported by the World Bank.



(ii) Procurement

76. For the three countries, procurement under the proposed program will be carried out in accordance with World Bank procedures<sup>46</sup>. The final Procurement Plans (PP), will be inputted into the Systematic Tracking of Exchanges in Procurement (STEP), based on the Project Procurement Strategy for Development (PPSD), which will be updated as and when required. In accordance with clause 5.9 of the procurement regulations, STEP will be the primary platform to be used to submit, review, and clear all PPs and prior review procurement activities, as well as real-time repository for the post review procurement activities.

77. All procuring entities as well as bidders and service providers (namely, suppliers, contractors, and consultants) shall observe the highest standard of ethics during the procurement and execution of contracts financed under the program in accordance with paragraph 3.32. When procurement is done in the national market, as agreed in the PP, the country's own procurement procedures may be used with the requirements set forth or referred to in paragraphs 5.3 to 5.6 related to National Procurement Procedures. For all works contracts, procurements that apply standard procurement documents will adopt World Bank provisions related to environmental, social (including Sexual Exploitation and Abuse [SEA] and Gender-Based Violence [GBV]), health, and safety risks and impacts. This includes codes of conduct that include prohibitions against sexual harassment (SH).

78. **PPSD and PP.** All FSRP Phase 2 implementing agencies have developed PPSDs. While open national competition is generally the preferred method, the market and security in some areas might lead to other options based on recommendations in the PPSD. The procurement activities will benefit from the options and flexibility offered in the World Bank Procurement Regulations to help the project meet its objectives. During implementation, the PPs will be updated as required and at least annually, to reflect actual program implementation needs and improvements in institutional capacity.

79. **Procurement capacity assessments.** Consistent with the above procurement arrangements, procurement assessments have been carried out for the implementing agencies in the various countries during preparation in accordance with the World Bank Procurement Risk Assessment and Management System. The procurement arrangements will be the same set up as for FSRP Phase 1. The overall procurement risk is **High**, but after the implementation of the following proposed mitigation measures, the risk will be **Substantial**. The mitigation measures include for each designated implementing agency: (i) finalizing a procurement strategy; (ii) renewing the employment of, or hiring on a competitive basis, a Procurement Specialist who is experienced and familiar with World Bank procurement procedures and policies, to be located in each implementing agency; (iii) training all program staff involved in the procurement regulations; (iv) developing a section on procurement procedures as part of the PIM to clarify roles for each team member involved in the procurement process, defining the maximum delay for each procurement stage (specifically with regard to review and approval systems, and the signing of contracts), and defining measures to fast-track procurement in eligible countries; (v) developing contract

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<sup>46</sup> The World Bank's 'Procurement Regulations for IPF Borrowers' (Procurement Regulations), dated November 2020, per the World Bank's Procurement Framework (PF) and (ii) "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants," dated October 15, 2006 and revised in January, 2011 and as of July 1, 2016 and other provisions stipulated in the Financing Agreements, using the Standard Procurement Documents accompanying the Regulations.



management plans for prior review contracts; and (vi) improving the filing system to ensure compliance with the World Bank procurement filing manual.

C. Legal Operational Policies

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

80. The World Bank Policy OP 7.50 (Projects on International Waterways) is applicable to this Program because the activities will involve the potential use and risk pollution of the Niger River, the Lake Chad, the Volta River and the Mono River. The Regional Vice President for Western and Central Africa approved an exception to the riparian notification requirement under OP 7.50 on May 10, 2022. An approval was also granted for Phase 1 countries on September 14, 2021. The Borrower and Recipients shall ensure that any activities involving the use or risk of pollution of the waters of an international waterway will be limited to the rehabilitation or minor additions or alterations of existing schemes or existing installations that will not cause adverse impact to other riparian countries or will not be adversely affected by other riparian’s possible water use, as further set forth in the PIM.

D. Environmental and Social

81. **Environmental risks**, both contextual risks and potential risks induced by the program, are deemed **Substantial** due to the unique and extensive diversity present in the environments where the program will operate. The activities to be funded are expected to have predominantly positive environmental impacts. The main negative environmental risks or impacts are related to natural resources activities (water, soil, vegetation) and sensitive biodiversity in the areas where the project will operate. The potential for cumulative impacts exists, but they can be readily avoided or mitigated by adequate mitigatory and/or compensatory measures. Integrated Pest Management Plans (IPMPs) have been prepared for all countries and disclosed in-country and on the World Bank website. Waste Management Plans will be included in all ESMFs and with guidance for its preparation in all ESMFs.

82. **Social risks**, both contextual risks, client capacity and potential risks induced by investments, are deemed **Substantial**. Key risks include differences in institutional capacity and readiness at the national level; Fragility, Conflict, and Violence risks; possible physical and economic displacement impacts from activities; risks related to SEA/SH and violence against children; and the exclusion of women, pastoralists, migrants, refugees, persons with disabilities, the landless, elders, and youth from participating in and benefiting from the program if it is not properly monitored or designed. Additional risks are related to labor risks (including child and forced labor); community health and safety; social fragmentation and disruption of traditional livelihoods; and stakeholder risks. Mitigation measures to address these risks are included in Environmental and Social Management Framework (ESMFs) including SEA/SH Prevention and Response Action Plan for all countries and Security Risk Assessment for Chad, Resettlement Policy Framework (RPFs), Labor Management Procedures (LMPs), and Stakeholder Engagement Plans (SEPs) inclusive of a project-level grievance mechanism and a process for responding to SEA/SH incidences, with



associated monitoring measures. In each participating country, a project specific GM has been developed and shall be operational within three months of Effective Date to uptake and address stakeholders' complaints. The GM is designed to collect, review, and address stakeholders' complaints, questions, and grievances and be responsive and accessible and provide timely resolution and feedback. The GM will be accessible to all stakeholders throughout the project life. It will also be communicated to all relevant stakeholders and will include multiple communication and uptake channels, and it is expected to be operational by the project effective date. Given the expanded scope of the ESF and the lack of experience and familiarity with the ESF in the PIUs, the Borrower/Recipients' institutional capacity to implement FSRP under the ESF is considered weak.

83. **The overall SEA/SH risk** for this project is rated **Substantial**.<sup>47</sup> Drivers of risk include context-specific risks, such as high rates of child marriage and female circumcision, general social acceptability of GBV, conflict, high risks of human trafficking, and lack of legislation on domestic violence and SH in public places across the countries. The number of women farmers in the region increases risks that program staff, often mostly male, may come into contact with beneficiaries under a power dynamic that increases risks of SEA/SH. Aligned with the requirements outlined in the SEA/SH Good Practice Note,<sup>48</sup> the ESF requirements, and a survivor-centered approach, the project will further assess risks of SEA/SH as part of the social assessment and reflect the findings in key social risk management instruments, contractual obligations, the PIM, and other key documents related to project implementation. A SEA/SH Prevention and Response Action Plan have been included in all three ESMFs and will be included in all ESMPs when they are prepared during implementation. A SEA/SH Prevention and Response Action Plan have been included in all three ESMFs and will be included in all ESMPs when they are prepared during implementation. A SEA/SH-sensitive GM for the safe and confidential documentation, response, and management of SEA/SH complaints have been drafted and will be operational within three months of the Effective Date for Ghana, and two months of Effective Date for Sierra Leone and Chad, following mapping of GBV services to be conducted during that time for all three countries.

84. **Supported by the World Bank, each Borrower/Recipient has the overall responsibility for assessing, managing, and monitoring environmental and social risks and impacts throughout the project life cycle** to meet the requirements of the Environmental and Social Standards (ESSs) in a manner and within a timeframe acceptable to the World Bank.

85. **To make the project compliant with the ESSs**, the Borrower/Recipients have prepared, with the support of the World Bank, ESCPs, setting out the necessary actions to ensure that the project complies with the ESSs. The ESCPs identify the material measures and actions that are required as well as their timeframe and dates of completion and define the responsibilities of different institutional partners. ESCPs and all instruments: ESMF, RPF, LMP, IPMP, and SEP were finalized and disclosed on the World Bank

<sup>47</sup> Except for Togo which is rated moderate for SEA/SH risk.

<sup>48</sup> World Bank (2020), "Addressing Sexual Exploitation and Abuse and Sexual Harassment in Investment Project Financing involving Major Civil Works." <http://pubdocs.worldbank.org/en/741681582580194727/ESF-Good-Practice-Note-on-GBV-in-Major-Civil-Works-v2.pdf>



website<sup>49</sup> and in-country.<sup>50</sup>

## V. GRIEVANCE REDRESS SERVICES

86. Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the World 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 World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and World Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org).

## VI. KEY RISKS

87. **The overall risk for FSRP Phase 1 is rated Substantial and Phase 2 will retain this rating, owing to the context in which the project will operate (protracted conflict, insecurity, and fragile governance), the impact of the ongoing COVID-19 pandemic and the threat of the war in Ukraine.** The country programs in Ghana and Sierra Leone are rated Substantial, and Chad is rated High. In-depth descriptions of risks are included in the Phase 1 PAD (regional) and Annexes 1-3 (national).

88. **Political and Governance risk is Substantial**, given the potential for political uncertainty, fragility and instability to delay implementation. The multidimensional crisis in the Sahel region is the product of violent conflict, political instability, large-scale displacement, and deep fragility—all of which could deteriorate further. In Chad, threats from jihadist groups operating in the Lake Chad basin and the political shadow cast by the events surrounding the disappearance of the President in 2021 further heighten the risk. In Sierra Leone, political tensions continue to escalate in advance of the 2023 elections. Mitigating these political and governance risks will rely on national and international instruments as well as a combination of policy dialogue, partnerships, and flexibility in project design and implementation.

89. **Macroeconomic risk is rated Substantial.** With the region's economies contracting, the duration

<sup>49</sup> The World Bank disclosed the ESCP of all Phase 2 countries on June 27, 2022 and the SEPs of all Phase 2 countries on May 16, 2022. The ESMF of Chad was disclosed on April 24, 2022, of Ghana on February 27, 2022 and of Sierra Leone on March 23, 2022. The IPMPs were disclosed on March 15, 2022 (Chad), February 8, 2022 (Ghana), and April 23, 2022 (Sierra Leone). The RPFs were disclosed on February 8, 2022 (Chad), February 27, 2022 (Ghana) and February 28, 2022 (Sierra Leone). The LMP of Chad was disclosed on February 9, 2022, of Ghana on February 23, 2022 and of Sierra Leone on February 28, 2022. *World Bank, 2022. ESS Documents of FSRP Phase 2.*

[https://documents.worldbank.org/en/publication/documents-](https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword_select=allwords&srt=score&order=desc&qterm=P178132&lang_exact=)

[reports/documentlist?keyword\\_select=allwords&srt=score&order=desc&qterm=P178132&lang\\_exact=](https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword_select=allwords&srt=score&order=desc&qterm=P178132&lang_exact=)

<sup>50</sup> **Chad** disclosed all six instruments (ESCP, ESMF, RPF, LMP, SEP, PMP) on April 30, 2022 <https://projetpropad.com/fsrp/>

**Ghana** disclosed the ESMF, RPF, LMP, IPMP on March 10, 2022 on the MoFA [www.mofa.gov.gh](http://www.mofa.gov.gh); SEP on May 4,

2022 [www.mofa.gov.gh/site/programmes/fsrp](http://www.mofa.gov.gh/site/programmes/fsrp) and negotiated ESCP on July 1, 2022 Ghana\_ESCP\_P178132\_FSRP2.pdf (mofa.gov.gh)

**Sierra Leone** disclosed all six instruments (ESCP, ESMF, RPF, LMP, SEP, IPMP) on May 9, 2022 at <https://maf.gov.sl/food-system-resilience-program/>





of the pandemic uncertain, the possibility for reduced fiscal space for rural and agriculture spending in Phase 2 countries and the new war in Ukraine impacting food and fuel across the region, the residual risk is considered “Substantial.” To mitigate this risk, the FSRP will rely on the ongoing dialogue between the World Bank and the Clients on the macroeconomic framework. The implementing agencies of FSRP will closely monitor economic developments that could jeopardize the quality and regional nature of the program. The World Bank will use its convening power to crowd in partners and additional resources to address some of the worst impacts of the Ukraine war.

90. **Risk related to Institutional Capacity for Implementation and Sustainability is rated Substantial.** ECOWAS has not been involved directly in implementing IDA-funded programs in agriculture. Constraints in staff numbers and capacity limit the ability of ECOWAS to adequately plan, implement, and monitor programs. Given that each of the three regional organizations will be in charge of coordinating across all countries, considerable emphasis must be placed on stimulating cooperation across agencies and seeking economies of scale, particularly in project management functions to oversee Phase 1 and Phase 2 countries. In Sierra Leone, lingering impacts of the civil war has weakened institutions. In Chad and Sierra Leone, government agencies are severely underfunded. CILSS, CORAF, and ECOWAS will benefit from ad hoc technical support for proper implementation of activities assigned to them under FSRP.

91. **Fiduciary risk is rated Substantial.** Phase 2 countries will use existing national PIUs to manage the fiduciary aspects of implementation. Differences in capacity for procurement, fiduciary management, and project management among participating countries could lead to uneven progress in implementing activities and achieving targets. Based on the capacity assessments undertaken during preparation, specific risk mitigation measures were developed for each participating country. See Annexes 1-3.

92. **Environmental and Social risks are rated Substantial.** The environmental and social risk rating of FRSP Phase 2 is classified as Substantial. Potential environmental risks could include soil degradation, surface and ground water contamination, waste generation (including domestic and hazardous), destruction of vegetation and habitats, pesticide poisoning, noise and dust production, vibration, animal attacks and other occupational and community health and safety issues etc. The associated impacts will be largely significant and direct and localized. However, the risks of surface water contamination which could arise from misuse of agrochemicals and leakages of petroleum and hazardous materials from construction related activities could be carried through downstream fringe communities. The key social risks that may potentially arise from the implementation of the FRSP Phase include (i) economic and/or physical displacement; (ii) disturbances to cultural and historical sites; (iii) social exclusion of vulnerable groups; (iv) pastoralist/farmer conflict and inter-ethnic group conflict; (v) child and forced labor; and (vi) community health and safety. Economic and/or physical displacement may arise from activities involving rehabilitation works and expansion of agricultural farms. In addition, SEA/SH risks are rated Substantial due to the potential for transactional project-related services and weak implementation of laws and legislation on GBV prevention. Also, the potential presence of migrant labor can pose a risk of social conflict, Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome (HIV/AIDS), sexually transmitted diseases/infections, as well as communicable diseases (such as COVID-19) which will require a mitigation and monitoring plan during implementation. Environmental and social mitigation measures will stem from the ILM approach, which promotes new patterns of environmental governance to avoid, reduce, and reverse land degradation, restore soil fertility, increase organic matter and carbon storage in soils, encourage climate-smart and nutrition-sensitive agriculture, and improve inclusive and participatory



rangeland management and planned livestock grazing practices. The program more generally seeks to increase tenure security with respect to individually held and communally held land, support and reinforce sustainable institutional arrangements for the use of and access to natural resources (co-management agreements between local user associations, the private sector, municipalities, and deconcentrated line departments), and strengthen social capital and solidarity networks. All measures aimed to mitigate environmental and social risks are set out in Environmental and Social risk management instruments, such as ESMF, RPF, SEP, LMP, IPMP, Security Risk Assessments in the ESMF (for Chad), and the SEA/SH Prevention and Response Action Plans (included in the ESMFs and eventually Environmental and Social Management Plans [ESMP]). These instruments were prepared, consulted upon, and disclosed. Security risk assessments are also included in ESMFs and will be reflected in Environmental and Social Impact Assessments (ESIAs) and ESMPs. Depending on the security risk level, a separate Security Management Plan may be required and developed during implementation. Institutional capacity strengthening measures will also be developed and implemented. Commitments regarding these risks are captured in the ESCP.

93. **Other risk is rated High.** For FSRP, the foremost “other risk” is related to security and, in the case of Sierra Leone climate. The security risk pertains to every aspect of FSRP and is particularly heightened in Sierra Leone and Chad. It has been discussed in conjunction with most of the other risks mentioned because of its potential to augment them. Climate risk is particularly high in Sierra Leone due to the frequency of floods, drought, and erratic rainfall. Mitigation measures include the promotion of CSA, and improving weather forecasting capability and alert systems.



**VII. RESULTS FRAMEWORK AND MONITORING**

**Results Framework**

**COUNTRY: Western and Central Africa**  
**West Africa Food System Resilience Program (FSRP) Phase 2**

**Project Development Objective(s)**

To increase preparedness against food insecurity and improve the resilience of food systems in participating countries.

**Project Development Objective Indicators**

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<b>Increase Preparedness Against Food Insecurity</b>							
Intra-regionally traded production in selected value chains (Percentage)		20.00	22.00	24.00	26.00	28.00	30.00
Reduction of food insecure people in program targeted areas (Percentage)		0.00	5.00	10.00	15.00	20.00	25.00
Ghana (Percentage)		0.00	5.00	10.00	15.00	20.00	25.00
Chad (Percentage)		0.00	5.00	10.00	15.00	20.00	25.00
Sierra Leone (Percentage)		0.00	5.00	10.00	15.00	20.00	25.00
Program beneficiaries (Number)		0.00	465,000.00	930,000.00	1,395,000.00	1,780,000.00	2,045,200.00
Of which women (Percentage)		0.00	10.00	20.00	30.00	35.00	40.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Ghana (Number)		0.00	270,000.00	540,000.00	810,000.00	1,000,000.00	1,080,000.00
Chad (Number)		0.00	120,000.00	240,000.00	360,000.00	480,000.00	600,000.00
Sierra Leone (Number)		0.00	73,040.00	146,080.00	219,120.00	292,160.00	365,200.00
<b>Improve Resilience of Food Systems in Participating countries</b>							
Food system actors accessing hydro and agrometeorological advisory services (Number)		0.00	81,240.00	162,480.00	243,720.00	324,960.00	406,200.00
Ghana (Number)		0.00	42,240.00	84,000.00	126,720.00	168,960.00	211,200.00
Chad (Number)		0.00	15,000.00	30,000.00	45,000.00	60,000.00	75,000.00
Sierra Leone (Number)		0.00	24,000.00	48,000.00	72,000.00	96,000.00	120,000.00
Of which women (Percentage)		0.00	10.00	25.00			40.00
Land area under sustainable landscape management practices (CRI, Hectare(Ha))		0.00	2,370.00	4,740.00	7,110.00	9,480.00	11,850.00
Ghana (Hectare(Ha))		0.00	900.00	1,800.00	2,700.00	3,600.00	4,850.00
Chad (Hectare(Ha))		0.00	800.00	1,600.00	2,400.00	3,200.00	4,000.00
Sierra Leone (Hectare(Ha))		0.00	600.00	1,200.00	1,800.00	2,400.00	3,000.00
Producers adopting climate-smart agricultural technologies and services (Number)		0.00	96,000.00	192,000.00	288,000.00	384,000.00	480,000.00
Ghana (Number)		0.00	48,000.00	96,000.00	144,000.00	192,000.00	240,000.00
Chad (Number)		0.00	16,000.00	32,000.00	48,000.00	64,000.00	80,000.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Sierra Leone (Number)		0.00	32,000.00	64,000.00	96,000.00	128,000.00	160,000.00
Of which are women (Percentage)		0.00	10.00	25.00	30.00	35.00	40.00

**Intermediate Results Indicators by Components**

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<b>Digital Advisory Services for agriculture and food crisis prevention and management</b>							
Satisfaction of farmers have access to usable weather, climate and ag-advisory services (Percentage)		0.00	20.00	30.00	50.00	70.00	80.00
Ghana (Percentage)		0.00	20.00	30.00	50.00	70.00	80.00
Chad (Percentage)		0.00	20.00	30.00	50.00	70.00	80.00
Sierra Leone (Percentage)		0.00	20.00	30.00	50.00	70.00	80.00
Improved access to local climate information services with digital information platforms (Yes/No)		No	No	No	No	Yes	Yes
Ghana (Yes/No)		No	No	No	No	Yes	Yes
Chad (Yes/No)		No	No	No	No	Yes	Yes
Sierra Leone (Yes/No)		No	No	Yes	No	Yes	Yes
Agreements involving co-production of agro-hydro-meteorological services		0.00	2.00	3.00	4.00	5.00	6.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
between the public and private sectors (Number)							
Ghana (Number)	0.00	1.00	1.00	1.00	1.00	2.00	2.00
Chad (Number)	0.00	1.00	1.00	1.00	1.00	2.00	2.00
Sierra Leone (Number)	0.00	0.00	1.00	1.00	1.00	2.00	2.00
<b>Sustainability and Adaptive Capacity of the Food System's Productive Base</b>							
Technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes (Number)	0.00	27.00	28.00	45.00	57.00	74.00	
Ghana (Number)	0.00	5.00	5.00	10.00	10.00	15.00	
Chad (Number)	0.00	20.00	20.00	30.00	40.00	50.00	
Sierra Leone (Number)	0.00	2.00	3.00	5.00	7.00	9.00	
Percentage of nutrition sensitive technologies (Percentage)	0.00	10.00	10.00	20.00	20.00	30.00	
Sub-projects selected from the integrated landscape management plans with climate-resilient measures implemented (Percentage)	0.00	30.00	30.00	60.00	60.00	70.00	
Ghana (Percentage)	0.00	30.00	30.00	60.00	60.00	70.00	
Chad (Percentage)	0.00	30.00	30.00	60.00	60.00	70.00	
Sierra Leone (Percentage)	0.00	30.00	30.00	60.00	60.00	70.00	
Spatial information system established and operational for designing and planning	No	No	No	Yes	Yes	Yes	



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
climate-resilient land management practices (Yes/No)							
Ghana (Yes/No)		No	No	No	Yes	Yes	Yes
Chad (Yes/No)		No	No	No	Yes	Yes	Yes
Sierra Leone (Yes/No)		No	No	Yes	Yes	No	Yes
<b>Regional Food Market Integration and Trade</b>							
Private-sector actors involved in regional agriculture trade that are supported by the Project (Number)		0.00	60.00	120.00	180.00	240.00	300.00
Ghana (Number)		0.00	20.00	40.00	60.00	80.00	100.00
Chad (Number)		0.00	4.00	8.00	12.00	16.00	20.00
Sierra Leone (Number)		0.00	36.00	72.00	108.00	144.00	180.00
Women farmers reached with assets or services to improve commercialization in selected value chains (Number)		0.00	20,460.00	40,920.00	61,380.00	81,840.00	102,300.00
Ghana (Number)		0.00	2,400.00	4,800.00	7,600.00	10,000.00	12,000.00
Chad (Number)		0.00	2,000.00	4,000.00	6,000.00	8,000.00	10,000.00
Sierra Leone (Number)		0.00	18,000.00	36,000.00	54,000.00	72,000.00	90,000.00
<b>Project Management</b>							
Beneficiaries satisfied with the Project's interventions (Percentage)		0.00	60.00	60.00	80.00	80.00	80.00
Ghana (Percentage)		0.00	60.00	60.00	80.00	80.00	80.00
Chad (Percentage)		0.00	60.00	60.00	80.00	80.00	80.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Sierra Leone (Percentage)		0.00	60.00	60.00	80.00	80.00	80.00
Grievances registered and addressed by the Program (Percentage)		0.00	90.00	90.00	90.00	90.00	90.00
Ghana (Percentage)		0.00	90.00	90.00	90.00	90.00	90.00
Chad (Percentage)		0.00	90.00	90.00	90.00	90.00	90.00
Sierra Leone (Percentage)		0.00	90.00	90.00	90.00	90.00	90.00

**Monitoring & Evaluation Plan: PDO Indicators**

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Intra-regionally traded production in selected value chains	Share of intra-regionally traded production in selected value chains	Annual	Customs and Ministry of trade statistics	Statistics from Customs and the Ministry of trade	PIUs
Reduction of food insecure people in program targeted areas	This indicator measures the reduction of food insecure people in the targeted areas. The food insecure people are those in phase 3 and 5 based on the Integrated Food Insecurity Phase Classification (IPC).	Twice per year	Cadre harmonise, Early warning systems report	Cadre Harmonisé methodology	Early Warning System Office, PIUs





Ghana					
Chad					
Sierra Leone					
Program beneficiaries	<p>This indicator will measure the number of beneficiaries in project target areas which are provided with agricultural assets or services as a result of project activities. Agriculture assets or services in the context of this indicator refer to infrastructure, goods and services that are provided as a result of project activities. Services include, for example, early earning advice, agriculture advices or trainings. The values of this indicator will be measures as total and also broken down by gender and country.</p>	Twice a year	Project reports	Baseline study and subsequent studies twice a year	PIUs
Of which women					
Ghana					
Chad					



Sierra Leone					
Food system actors accessing hydro and agrometeorological advisory services	This indicator measures the number of Food system actors who are benefiting from the FSRP support for accessing hydro and agrometeorological advisory services	Annual	Activity reports, surveys	Total number of food system actors who have access to hydro and agrometeorological advisory services thanks to the Project support	M&E Specialists, National Hydromet Department
Ghana					
Chad					
Sierra Leone					
Of which women	Percentage of women reached by services				
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.				
Ghana					
Chad					
Sierra Leone					
Producers adopting climate-smart agricultural technologies and services	This indicator measures the total number of the Program beneficiaries who have adopted technologies/practices that can lead to improve resilience to climate variability, increase productivity and/or	Annual	Country progress reports	Sum of the total beneficiaries benefitting from CSA technologies/practices, advisory services and trainings from the Project's support	M&E Specialists



	mitigation and also for advisory services under the Project support				
Ghana					
Chad					
Sierra Leone					
Of which are women					

**Monitoring & Evaluation Plan: Intermediate Results Indicators**

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Satisfaction of farmers have access to usable weather, climate and ag-advisory services	Percentage of beneficiaries who express satisfaction with the weather, climate and ag-advisory services provided in the project areas based on formal surveys. It is expected that a survey to measure this indicator will be carried out twice throughout the project. The sample size should be representative of the total number of beneficiaries.	Mid term, and end of project	Progress reports/FSRP M&E system	Survey	PIUs, M&E specialists
Ghana					



Chad					
Sierra Leone					
Improved access to local climate information services with digital information platforms	This indicator informs on the on the delivery of climate information services to the Project's beneficiaries through digital information platforms provided by the Project.	Yearly	Progress report/FSRP M&E system, Hydromet services reports	Yearly information collection	PIUs
Ghana					
Chad					
Sierra Leone					
Agreements involving co-production of agro-hydro-meteorological services between the public and private sectors	Number of agreements and contracts involving co-production of agro-hydro-meteorological services between the public and private sectors	Annual	Progress Report	Progress report review	Meteorology Department, PIUs
Ghana					
Chad					
Sierra Leone					
Technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes	Number of technologies developed by the consortium of NCoS, CGIAR and other international research institutes and	Every six months	Progress report, FSRP M&E system, NCoS and CGIAR	Data collection, surveys	PIUs



	made available to farmers by the extension system		institutions reports		
Ghana					
Chad					
Sierra Leone					
Percentage of nutrition sensitive technologies					
Sub-projects selected from the integrated landscape management plans with climate-resilient measures implemented	Share of sub-projects selected from the integrated landscape management plans with climate-resilient measures implemented out of the total sub-projects	Every six months	SRP Progress reports, M&E system	Sub-projects database	PIUs
Ghana					
Chad					
Sierra Leone					
Spatial information system established and operational for designing and planning climate-resilient land management practices	Existence of an operational spatial information system for designing and planning climate-resilient land management practices	Yearly	Progress report		PIUs
Ghana					
Chad					
Sierra Leone					



Private-sector actors involved in regional agriculture trade that are supported by the Project	This indicator measures the number of private-sector led initiatives involved in regional agriculture products, inputs and output trade that are supported by the Program.	Twice a year	Progress report	Review of progress reports	National PIUs
Ghana					
Chad					
Sierra Leone					
Women farmers reached with assets or services to improve commercialization in selected value chains	This indicator measures the number of farmers reached with assets or services to improve the commercialization of agricultural products as a result of project activities. It is to note that while the word "farmer" includes for the purposes of this indicator livestock, herders and fishermen and primary agro-processors.	Twice a year	Progress reports, M&E system	Review of activity reports and field visits	PIUs
Ghana					
Chad					
Sierra Leone					
Beneficiaries satisfied with the Project's interventions	Percentage of beneficiaries who express satisfaction	Mid term, and end of	Progress reports	Surveys	PIUs



	with the services provided in the project areas based on formal surveys. It is expected that a survey to measure this indicator will be carried out twice throughout the project. The sample size should be representative of the total number of beneficiaries.	project			
Ghana					
Chad					
Sierra Leone					
Grievances registered and addressed by the Program	This indicator measures the percentage of grievances relayed through the GM system that are adequately addressed.	Every six months	GM activity reports	Review of GM activity reports	PIUs, LGA
Ghana					
Chad					
Sierra Leone					





## ANNEX 1: FOOD SYSTEM RESILIENCE PROGRAM FOR CHAD

### I. STRATEGIC CONTEXT

#### A. Country Context

1. **Chad is a low-income, landlocked Sahelian country with a population of 16.2 million inhabitants, most of whom 78 percent live in rural areas.**<sup>51</sup> It has a low average population density, estimated at 8.5 inhabitants per km<sup>2</sup>. However, population is very unevenly distributed over the territory, with densities ranging from 0.6 inhabitants per km<sup>2</sup> in the northern provinces (Borkou, Ennedi Est, Ennedi Ouest and Tibesti) to 63 inhabitants per km<sup>2</sup> in Logone Occidental<sup>52</sup>. With a GDP per capita estimated at US\$ 614 in 2020, Chad is one of the poorest countries in the world.

2. **The country's economic growth has been severely affected since 2015, first by the drop in oil prices and more recently by the COVID-19 pandemic.** Chad experienced three years of consecutive negative growth during the period 2015-2017. A modest economic recovery in 2018 and 2019 (GDP growth rate of 2.4 percent and 3.2 percent respectively) was reversed by the impact of COVID-19, leading to a contraction in GDP of 0.8 percent in 2020. Restrictive measures aimed at protecting the population against the spread of the COVID-19 pandemic slowed down economic activity and disrupted supply chains. Economic recovery is projected to remain sluggish in the short-term (0.9 percent in 2021, and 2.4 percent in 2022).

3. **Poverty remains pervasive in Chad, with 42 percent of the population living below the international poverty line of US\$ 1.90 per day (2011 purchasing power parity).** Although the poverty rate remained stable between 2018 (40.2 percent) and 2019 (40.1 percent), it edged up slightly in 2020 (41.7 percent) due to COVID-19 related disruptions, driving an additional 0.5 million people into poverty. Poverty is projected to edge up further in the near term (42.9 percent in 2022), with implications on food security. While from October to December 2021, 963, 244 people (6 percent of the population) were in need of food assistance (Phase 3-5 of the *Cadre Harmonisé*), this number is projected to increase to 1,737,245 (11 percent of the population) for the period of June to August 2022.<sup>53</sup>

#### B. Sectoral and Institutional Context

4. **Agriculture remains the backbone of Chad's economy, contributing 48 percent to GDP in 2020 and 75 percent to employment in 2019.** The main agro-ecological zones of Chad, from North to South, are the Saharan (up to 200 mm of average annual rainfall), Sahelian (200-700 mm) and Sudanian (more than 750 mm). These separate zones provide a unique opportunity to diversify agricultural production and develop dynamic and complementary value chains for crops and livestock. The country has a total cultivable land estimated at 39 million ha of which about 4.5 million ha, on average, were cultivated annually over the last five years (less than 12 percent of the potential).

<sup>51</sup> National Institute of Statistics for Economic and Demographic Studies. 2018. Population projection.

<sup>52</sup> National Institute of Statistics for Economic and Demographic Studies. 2009. General Population and Housing Census.

<sup>53</sup> RPCA. 2022. <https://www.food-security.net/en/visualise/>



5. **Most of the agriculture is subsistence and rainfed (less than 1 percent is irrigated).** The main crops are cereals (sorghum, millet, maize, and rice), mainly intercropped with legumes and roots and tubers, and mostly cultivated for household consumption. Some farmers grow cotton, which is exported, although cotton production is in sharp decline due to poor organization of the value chain. Sesame cultivation has picked up in recent years, most of it intended for export to Asia via Nigeria. Berbere is also commonly grown. The Sudanian agro-ecological zone is also classified as a breeding (and transhumance) zone. The collection of fruits and wild plants remains common, in particular the collection of shea nuts.

6. **The agricultural sector continues to underperform.** Over the past 10 years (2011-2020), Chad's agricultural sector has grown by an average of 2.9 percent annually, against Sub-Saharan Africa's annual average agricultural growth of 3.3 percent over the same period.<sup>54</sup> More remarkable, however, is the volatility in Chad's agricultural output, with a standard deviation of 6 percentage points around the mean, compared to only 0.8 percentage points for Sub-Saharan Africa during this period. Chad's agricultural output constantly oscillates widely between positive and negative growth principally due to excessive variability in precipitation patterns compounded by poor adaptation to climate change.

7. **Chad is considered the world's most vulnerable country to the adverse effects of climate change and the least resilient.**<sup>55</sup> There is large variability in precipitation from one year to another as well as from one decade to another while Chad lacks reliable systems for weather forecasting, analyzing the impacts of the forecasts on various value chains, packaging the analytical results into relevant messages for disseminating to farmers and other stakeholders, and efficiently communicating this information to enable stakeholders (including smallholder farmers) to undertake appropriate actions. In addition, climate change could increase the severity of existing hazards (e.g., drought and floods) thus amplifying adverse impacts on Chad's agricultural capacity. As a result, estimates indicate increases in potential land suitable for agriculture by 2050, but harvest yields are expected to fall. Furthermore, due to climate change, historical inter- and intracommunal conflicts, particularly those between pastoralists and agriculturalists, are exacerbated by changing transhumance flows and competition over scarce natural resources. Improved farming methods are particularly needed to increase productivity<sup>56</sup> and cope with the effects of climate change in Chad.

8. **However, inadequate institutional capacity, particularly in technological innovation and dissemination, hampers efforts to attain stable and accelerated agricultural growth.** The sector is characterized by weak agricultural R&D due to limited human resources, poor physical infrastructure, and inadequate operational budgets. Links with research institutions in the subregion to share knowledge and maximize synergy are insufficient. As a result, the use of improved technologies is very limited. Presently, less than 5 percent of the farmers use improved seeds. Also, the extension services available are limited in terms of geographical coverage and highly uneven in quality. The national agency for rural development in charge of providing extension services, National Agency for Rural Development

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<sup>54</sup> Calculated based on World Bank data.

<sup>55</sup> Global Adaptation Initiative. 2022. ND-GAIN Country Index. <https://gain.nd.edu/our-work/country-index/rankings/>

<sup>56</sup> The average yields of sorghum are between 720 kg/ha and 785 kg/ha respectively for the Sahelian and Sudanian zones, against an average of 980 kg/ha in the ECOWAS region. For example, cereal yield (2018) in Chad is 0,893 kg/ha against 2,278 kg/ha in Cote d' Ivoire, 1,646 kg/ha in Cameroon, 1,302 kg/ha in Senegal and 1,796 kg/ha in Mali.



(*Agence nationale pour le développement rural, ANADER*), has only 720 extension agents for more than 10 million farmers.

9. **The combination of low agricultural productivity, reliance on rainfed agriculture, impact from climate change, crop damage from locusts, and conflicts is a threat to food security in Chad.** Based on the results of the *Cadre Harmonisé*, it is predicted that 5.4 million people will be food insecure for the period August - September 2022, with 1.8 million in need of food assistance between June-August 2022. Already a food deficit country, this alarming situation in Chad is exacerbated by the decrease in total cereal production (maize, rice, millet, and sorghum) of 6 percent mainly due to poor spatial rainfall distribution in the Sahelian and Soudanian agricultural areas and the residual effects of COVID-19's restrictive measures which disrupted supply chains of food and agricultural products as well as rising prices of certain commodities. Also, the next pastoral lean period is starting early in areas with strong fodder deficits in Chad namely in the provinces of Hadjer Lamis, Barh El Gazal, Kanem, Lake, Batha, Ouaddai, Wadi Fira, Ennedi East, and Ennedi West. Because of this growing threat, there is a need for strengthening monitoring systems for food security in the country to ensure timely and informed actions.

10. **Additionally, pestilence - especially locusts - remain a threat to food security in West Africa with Chad being the gateway of locust from East Africa.** Locusts are a major threat to food security and agriculture sustainability in Chad and West Africa. Chad, as the gateway of locust from East, has experienced several outbreaks in the past, e.g., from 2003 to 2005 with significant damage to agricultural production.<sup>57</sup> In 2020, the FAO Locust Information Service projected that the locust crisis of the East Africa region, would expand westwards affecting Chad, and potentially Niger, Burkina, Mali, Mauritania and Senegal threatening to place an additional 9.3 million West Africans in food crisis or worst.<sup>58</sup> Fortunately, the projections have not been materialized and only scattered adult desert locust and small-scale breeding was reported for August 2021 in Chad and Niger.<sup>59</sup> Locust remain a major threat to Chad's and the region's food system, however, especially as studies estimate that climate change and global warming could favor more damaging locust swarms.<sup>60</sup> In line with and in support of the locust control framework provided by the World Bank Emergency Locust Response Program<sup>61</sup>, Chad aims to implement preventive controls and investments in national planning and readiness through institutional development, capacity building, training, and strategic partnerships. The Chadian authorities have set up a dedicated organization, the ANLA, and adopted a National Locust Emergency Plan to implement the Government's strategy. At the heart of this strategy is surveillance and regional coordination. However, the monitoring system and regional collaboration mechanisms need to be strengthened, including effective eradication mechanisms when locusts invade.

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<sup>57</sup> In 2004 alone nearly 80,000 ha were infested. The consequences of the damage to the population were, among others: (i) severe food losses; (ii) food price inflation; (iii) scarcity of grazing areas; (iv) low selling prices for livestock; (v) earlier transhumance of herds; (vi) serious recurrent conflicts between pastoralists in transhumance and local farmers; and (vii) significant migration to urban areas.

<sup>58</sup> FAO. 2020. Desert Locust threat in the Sahel and West Africa.

[https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/dl\\_resilience\\_wg\\_meeting\\_update\\_11september2020.pdf](https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/dl_resilience_wg_meeting_update_11september2020.pdf)

<sup>59</sup>FAO. 2021. Desert Locust Update.

<https://reliefweb.int/sites/reliefweb.int/files/resources/Desert%20Locust%20situation%20update%202012%20August%202021.pdf>

<sup>60</sup> United Nations Environment Programme. 2020. Locust swarms and climate change. <https://www.unep.org/news-and-stories/story/locust-swarms-and-climate-change>

<sup>61</sup> The Emergency Locust Response Program is a US\$500 million program providing flexible support to countries in Africa and the Middle East if they are affected by the locust upsurge. The program provides policy advice, TA and financial support in Djibouti, Ethiopia, Kenya, Uganda, and Somalia.



11. **Chad would greatly benefit from increased regional trade.** Due to the precarious nature of the country's agriculture, trade in food items is critical to ensuring the country's food security. Chad's food trading partners include Senegal, Nigeria, and Cameroon. Although accurate statistics are rare, given the informal nature of some of these transactions, Chad is reported to have imported 50,000 tons of rice and 30,000 tons of maize between 2017 and 2019, and 75,000 tons of cereals in 2020. Some of the policy measures needed to ensure market efficiency include domestication of ECOWAS norms and standards, removing non-tariff barriers, and better market infrastructure, and improved coordination with other countries in the subregion about food availability and demand.

12. **Chad is ranked 160th out of a total of 162 countries on the gender inequality index.**<sup>62</sup> GBV is widespread, and an estimated 28.6 percent of women in the country have experienced physical or sexual violence from an intimate partner at some point in their lives.<sup>63</sup> This inequity can also be noticed in access to agricultural services. Indeed, women are particularly facing significant challenges including (i) accessing/owning land (quantity and quality); (ii) accessing technical and business skills (compounded by paucity of female extension agents); and (iii) accessing, using, and supervising agricultural labor. As a result, women-headed households have a 40 percent lower productivity than that of male-headed households and earn less income. In response to the above challenges, the Government has adopted a five-year action plan (2019-2023) which calls for, among other things, mainstreaming gender activities in all government programs. However, implementation remains weak due to multiple factors including weak capacity and engrained beliefs, customs, and practices.

13. **The Government of Chad recognizes the potential impact of these threats and challenges to the resilience and productivity of the food system.** It further recognizes the benefits of a regional approach to tackling them. Therefore, Chad has enrolled in the FSRP.

### C. Relevance to Higher Level Objectives

14. **FSRP is well aligned with Chad's National Development Plan (2017-2021)** which lays the foundations for Chad's vision of an emerging country with a middle-income economy by 2030. FSRP is particularly aligned with Pillar 3 (developing a competitive and diversified economy), and Pillar 4 (aspects related to adaptation to climate change).

15. **At the sectoral level, FSRP is fully aligned with the National Rural Sector Investment Plan.** The plan aims at making the rural sector an important source of economic growth and ensuring food and nutritional security in a context of sustainable development and it implemented through five programs, namely: sustainable management of natural resources and adaptation to climate change; development of infrastructure and equipment in the rural sector; development of agro-silvo-pastoral and fishery sectors; food and nutrition security, gender and strengthening the resilience of rural households; and research, adoption and dissemination of technologies, human and institutional capacity building.

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<sup>62</sup> UPDP.2018. Gender Inequality Index

<sup>63</sup> Demographic and Health Survey. 2015



16. **In addition, FSRP is well aligned with the strategic objectives of the WBG in Chad.** FSRP will contribute to the World Bank’s strategic objectives which have been reconfirmed through the Performance Learning Review 2020 of the WBG’s CPF for FY16-FY20 (Report No. 137044-TD). FSRP will help Chad improve returns to agriculture and building value chains (theme 2) and building human capital and reducing vulnerability (including prevention and resilience allocation) (theme 3). It is also aligned to key pathways of the Strategic Country Diagnostic (approved June 2022) on *Increasing Human Capital Accumulation with a Focus on Gender Inclusion* and on *Promoting Sectors with a Strategic Advantage for more and better jobs* (including increasing agricultural productivity and livestock exports and supporting light agro-processing). In addition, FSRP is aligned with the WBG Climate Action Plan 2021-2025, especially with respect to integrating climate and development.

**II. PROJECT DESCRIPTION**

**A. Project Development Objective**

17. **The PDO** is to increase preparedness against food insecurity and improve the resilience of food systems in Chad.

**B. Project Results Indicators**

18. **Progress** towards obtaining the PDO will be measured by the following results indicators as shown in Table A1.1.

**Table A1.1: PDO-level and intermediate result indicators**

Indicator	Baseline	End Target
<b>PDO-level (Outcome) Indicators</b>		
Program beneficiaries (number and percentage of female beneficiaries]	0	600,000 (40% female)
Reduction of food insecure people in program targeted areas (percentage)	0	25%
Food system actors accessing hydro and agrometeorological advisory services (number and percentage of female beneficiaries)	0	75,000 (40% female)
Producers adopting supported CSA technologies and services (number and percentage of female beneficiaries)	0	80,000 (40% female)
Land area under integrated landscape management practices (ha)	0	4,000
Intra-regionally traded production in selected value chains (maize, rice) (percentage)	20	30
<b>Component 1: Digital Advisory Services for Regional Agriculture and Food Crisis Prevention and Management</b>		
Satisfaction of farmers who have access to usable weather, climate and ag-advisory services (by gender) (percentage)	0	80
Improved access to local climate information services through digital information platforms (yes/no)	No	Yes
Agreements involving co-production of services between the public and private sectors (number)	0	2
<b>Component 2: Sustainability and Adaptive Capacity of the Food System’s Productive Base</b>		
Technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes (number)	0	50



Nutrition-sensitive technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes (percentage)	0	30
Sub-projects selected from the integrated landscape management plans with climate-resilient measures implemented (percentage)	0	70
Spatial information system established and operational to design and plan climate resilient land management practices (yes/no)	No	Yes
<b>Component 3: Regional Market Integration and Trade</b>		
Private sector beneficiaries involved in regional agricultural trade that are supported by the project (number)	0	20
Women farmers reached with assets or services to improve marketing in certain value chains (number)	0	10,000
<b>Component 5: Program Management</b>		
Beneficiaries satisfied with project interventions (percentage)	0	80
Grievances registered and resolved by the program (percentage)	0	90

### C. Project Beneficiaries and Project Intervention Areas

19. **Beneficiaries.** The project will primarily target rural farmers who cultivate areas less than 5 hectares. It is estimated that the project will reach approximately 600,000 direct beneficiaries<sup>64</sup> with a range of interventions designed to reduce their vulnerability to climate change impacts. Beneficiaries will include women farmers, youth, small-scale producers and farmer processors, and agricultural micro, small, and medium enterprises. At least 30 percent of the project beneficiaries will be young people, and 40 percent will be women. Additional beneficiaries will include other food system actors, such as government line ministries, and other public and private institutions, and the service providers participating in project implementation which could represent an additional 50,000 beneficiaries. Indirect beneficiaries will include individuals and entities outside Chad that will benefit from the technologies generated in Chad and made available through the information sharing arrangements under this project

20. **Project intervention areas.** Project activities are mostly concentrated in the Saharan-Sahelian and the Sudanian zones that are considered to have high agricultural potential, and currently have high levels of poverty and food and nutrition insecurity. The intervention areas, which correspond to the boundaries of the administrative provinces (see Annex 8), were chosen based on the following four criteria: (i) sensitivity to locust invasion and/ or potential to coordinate locust control and response regionally; (ii) potential of the area for the value chains identified; (iii) complementarity with other interventions executed by the Government, the World Bank (in particular the extension of ProPAD, P162956) and other partners; and (iv) the incident of food insecurity. Two blocks of intervention areas were chosen: (i) Block 1, covering Kanem, Bahr Ghazal, Batha, Borkou, Ennedi Est, Ennedi Ouest, Tibesti, Wadi Fira, where mostly interventions of Components 1 and 2 will be implemented given the importance of cross-border/ regionally coordinated locust control and response in these areas, and (ii) Block 2, covering Sila, Ouaddaï, Hadjer-Lamis, Chari Baguirmi, Lac, Mayo Kebbi Ouest, Logone Oriental where primarily but not exclusively activities of Components 2 and 3 will be implemented due to the regional potential of the

<sup>64</sup> Calculation made on the basis of six people per households (in line with national census of 2020) and approximately 10,000 households per province where the project is going to intervene.



selected areas in these provinces. The incidence of food insecurity in the two blocks is high with 603,374 and 666,120 people in crisis or emergency, respectively.

21. These selected areas are also host provinces for refugees and returnees who are displaced by conflict and insecurity in neighboring countries: in the Central African Republic and in South Sudan (Darfur). Although the refugees and returnees are not the direct beneficiaries of the project, activities aimed at strengthening food security, particularly support for the maize value chain, will help alleviate food insecurity and nutrition problems in these regions<sup>65</sup>.

#### D. Project Components

22. The interventions range from a focus on the immediate response to the current food insecurity crisis (including locust control activities), to medium- and longer-term investments aimed at strengthening the resilience of the food system and its production base.

#### Component 1. Digital Advisory Services for Agriculture and Food Crisis Prevention and Management (IDA US\$18.4 million equivalent)

23. **Sub-component 1.1: Upgrading Food Crisis Prevention and Monitoring Systems (US\$10.1 million equivalent).** This sub-component will provide support to strengthen the evidence base for more effective national food and agricultural risk management. This sub-component will be implemented in close collaboration with regional institutions including the AGRHYMET Regional Center, the *Cadre Harmonisé* and the ECOWAS Agriculture Regional Information System and institutions mandated to fulfill these functions at the national level including the Food security Monitoring System, the Civil Protection Directorate, the Plant Protection and Conditioning Department and the ANLA as well as systematically engaging the private sector. Under this sub-component, the project will:

- (a) Improve national capacities for delivery of reliable information services on vulnerability, nutrition and food security through ECOWAS' *Cadre Harmonisé* and agriculture regional information systems. The activities will strengthen national institutional capacity for monitoring and delivering agro-hydrometeorological information and advisory services on agriculture, climate vulnerability and, food security to support decision-making through (i) strengthening information and communication infrastructure, data collection and management including by automating data flows into food security and agriculture information systems, data analysis as well as dissemination of data to intended users; (ii) developing decision support tools and methods by supporting national food security surveys with integration of nutrition indicators; and (iii) introducing innovative technologies for data collection, integration and analysis, including through capacity building for the Working Group in food crises management, in particular, data collection, management and analysis. The sub-component will boost the decentralized food security risk monitoring and analysis system through modernizing data infrastructure and analytical methods, and the creation of Community Early Warning Systems and Emergency Response Systems.

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<sup>65</sup> The politico-security crisis triggered in the Central African Republic in 2013 led to the arrival of several waves of displacement in Chad. To date, more than 147,000 people, including 102,000 Central African refugees and 43,000 Chadian returnees who have lived in Central African Republic for several generations, have settled in camps and villages in the south of the country. In eastern Chad, 336,000 Sudanese refugees, of whom 54 percent are women and girls, 56 percent children and 4 percent elderly, are in 12 camps, one site and in host villages, in the provinces of Wadi Fira, Ouaddai, Sila, Salamat, Ennedi East and Logone Oriental.



- (b) **Reorganize and improve national pest and disease monitoring and management systems.** The sub-component will strengthen pests and diseases surveillance and decision support, with an emphasis on national locust management. This will be done through: (i) strengthening phytosanitary data collection and sharing; (ii) developing and operationalizing harmonized phytosanitary data management and forecasting systems; (iii) capacity-building to strengthen skills, including policy and regulatory as needed, in surveillance, data analysis and forecasting; and (iv) training on pest management, disaster risk and good agricultural practices. In particular, the Plant Protection and Conditioning Department and ANLA will be supported through strategic diagnostics, an update of the National Locust Risk Management Framework, investments in the provision of surveillance and data collection equipment including drones and new information and communication technologies, and capacity building activities to strengthen skills in surveillance, data analysis, forecasting, and control, hence allowing the deployment of rapid and more targeted short-term responses and long-term adaptation planning. The system will be strengthened in close coordination with neighboring countries to ensure a regionally coherent approach, complement the locust control program currently being invested in East Africa, and consider the norms and good practices of international and regional organizations.
- (c) **Strengthen regional collaboration for food crisis prevention.** The sub-component will promote the exchange of relevant data and information among and between national and regional entities as well as establish learning platforms for public and private sector entities involved in agriculture, food security, vulnerability, and hydromet services. The project will finance TA to develop an enabling environment for collaboration between the public, private, and academic sectors and enhance the use of pertinent data by all sectors based on open access principles. Under this sub-component, Memorandums of Understanding will be signed between the Government of Chad and regional institutions (among others CILSS) as well as national institutions responsible for climatic and nutrition data collection in order to facilitate the exchange of national data related to food crisis prevention with the regional level to allow for a faster dissemination of alerts, and an improved ability to anticipate and respond collectively to food crisis.

24. **Sub-component 1.2: Strengthening Digital Hydromet and Agro- Advisory Services for Farmers (US\$8.3 million equivalent).** This subcomponent will provide support to develop demand-driven hydromet and agro-advisory services and increasing access to and use of specific and relevant information services by policymakers and producers (farmers, herders, pastoralists), in particular by building the technical systems and capacities of the staff of the ANADER and the National Meteorological Agency (*Agence nationale pour le développement rural*, ANAM), as well as through innovative public private engagements. The activities will pay a specific attention on supporting the participation of female experts in technical training. Specifically, the project will:

- (a) **Improve the production of climate, hydromet, agromet, and impact-based information for use by decision-makers, farmers, pastoralists, and other actors in the food system.** This activity will build the capacity of and provide institutional support to public and private national suppliers of agro-and hydromet services to improve the quality and quantity of available information services through (i) the development of long-term strategic orientations for ANAM and ANADER; (ii) strengthening of the observation and forecasting systems, including the installation and operationalization of existing
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radars as well as the effective use of regional and global data; (iii) develop and implement modern climate data processing tools; (iv) provide targeted technical trainings for ANAM and ANADER; (v) developing user-oriented agro-advisory, and impact-based forecasting and advisory services to improve the ability of farmers and pastoralists to timely act on changing conditions and better manage hydromet risks on agricultural production; and (vi) a better cooperation between public and private agro-and hydromet service providers.

- (b) **Support the timely delivery and use of essential agro-hydrometeorological information to key users.** This activity will support the timely dissemination of agro-meteorological information and bulletins to farmers using multimodal communication channels, including information and communication technology (ICT), through partnerships with the private sector (such as mobile telephone companies, agro-entrepreneurs, climate information service providers), the ANADER, the Livestock Research Institute for Development, the National Development Research Center, the Chadian Institute of Agricultural Research for Development and the civil society. It will also promote access to agro-climatic information for producers and especially women including those vulnerable and socially excluded, through a communication strategy adapted to their needs and preferred way of getting information.
- (c) **Strengthen the financial and institutional sustainability of national and regional institutions providing climate, hydromet, and agromet information<sup>66</sup>.** Activities to be supported under this subcomponent will include: (i) developing and implementing a strategy for long-term financial and institutional sustainability of agromet and hydromet service providers (ANAM and ANADER, in particular) that includes leveraging public-private approaches in the collection and dissemination of information; (ii) policy recommendations to foster public-private collaboration and facilitate open access to data; (iii) implementing such recommendations to promote a regulatory framework conducive to public, private, and academic sectors collaboration and removing legal blockers to such approach; and (iv) developing more financially sustainable business models for the production and delivery of public agromet and hydromet services.

## **Component 2: Sustainability and Adaptive Capacity of the Food System's Productive Base (IDA US\$52.1 million equivalent)**

25. **Subcomponent 2.1: Consolidate the Regional Agriculture Innovation System (US\$9.2 million equivalent).** This sub-component will provide support to consolidate the national research and extension systems to deliver, in a sustainable manner, adaptive technological innovations for the country's food system. The sub-component will:

- (a) **Strengthen the national and regional Research Centers.** Capacity building will be provided to the national research system, among others to the Chadian Institute of Agricultural Research for Development and the Livestock Research Institute for Development, which should also benefit from infrastructure renovation/construction and acquisition of equipment. Moreover, trainings on climate risks, climate-smart practices, plant breeding, soil fertility management, nutrition and seed systems

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<sup>66</sup> Including the National Meteorological Agency; Chamber of Commerce, Industry, Agriculture, Mines and Handicrafts; National Agency for Investments and Exports; National Rural Development Support Agency; etc.



will be provided to young researchers (at Master and PhD levels as well as in short qualification courses) selected through a competitive selection process.

- (b) **Deepen and expand R&D networking.** This activity will finance the participation of Chadian researchers in regional research activities (research, scientific meetings, training, etc.).
- (c) **Modernize National Extension Services.** The project will finance the modernization of agricultural extension services through the assessment of the current strategic plan for Chadian Institute of Agricultural Research for Development and ANADER, reinforce the link between research and extension services, and update it to take into account new approaches such as the approach of Integrated Agricultural Research for Development which allows the establishment of innovation platforms on the priority value chains selected under the FSRP; also to take into account agricultural advisory approaches proven by the private sector and producer organizations as well as supporting the use of digital solutions for better extension services delivery (specifically the e-agriculture approach developed with e-voucher, agriculture call center, and tablet/ mobile phone-based agriculture advisory, both PROPAD. Also, the project will support access to agro-climate services (varietal maps and calendar crops, agro-hydro-meteorological data, etc.) developed by PROPAD with ANAM.
- (d) **Promote technology access and exchange.** This activity will finance the generation and dissemination of climate-smart and nutrition-sensitive technologies and know-how on value chains through carrying out joint agricultural research with counterparts in the sub-region through commissioned or competitive agriculture research grant. In addition, the project will finance the access to technologies such as climate-smart innovations by consolidating innovation platforms developing a unified inventory of all technologies generated by agricultural research conducting workshops to identify technologies and innovations with regional potential.

26. **Subcomponent 2.2: Strengthen Regional Food Security through Integrated Landscape Management (ILM) (US\$43.0 million equivalent).** This sub-component will promote the ILM approach. It seeks to improve food production and sustainable ecosystem management in selected target regions. The choice of intervention landscapes for this sub-component was made according to the following criteria: (i) food insecurity level; (ii) the agro-sylvo-pastoral potential; (iii) fragility due to social conflicts; (iv) national and regional importance; and (v) complementarity with past/ongoing projects. Based on the above criteria, five priority landscapes were proposed. They are located in the four groups of provinces: Provinces of Dar Sila and Ouaddaï; Provinces of Chari Baguirmi, Hadjer-Lamis, and Lake Chad; Provinces of Mayo Kebbi West and Logone Oriental; and Provinces of Wadi Fira Ennedi East and Ennedi West.

27. At the start of the project, a workshop in each province will be organized and will bring together the various stakeholders to agree on an action plan for the implementation of three groups of activities which are at the heart of ILM:

- (a) **Establish participatory ILM system.** A committee will be developed to carry out mobilization and awareness-raising activities for participatory landscape management. The committee will work with particular initiatives developed within the framework of the Local Development and Adaptation Project (P171611) on integrated spaces. The expected results are: (i) the characterization and
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delimitation of the different landscapes; (ii) the co-construction of a shared development vision and the elaboration of an integrated landscape development plan; and (iii) the establishment or strengthening of the committees and their capacity building.

- (b) **Enhance resilient eco- and food systems in priority landscapes.** This activity will finance climate-smart landscape restoration practices to restore the physical, productive and cultural functions of landscapes to diversify local population revenues and improve their resilience to climate and food security risks, as summarized in Table A1.2.<sup>67</sup> The project will support the preparation and financing of around 400 agricultural intensification sub-projects of existing food producing systems to encourage producers in the targeted provinces (the contribution of beneficiaries will be 20 percent). It will also finance 200 sub-projects of income-generating activities also including non-farm activities (the contribution of beneficiaries will be 30 percent). It will also finance 100 CSA sub-projects and/or non-timber forest product sub-projects. The matching grant mechanisms will be the same as the one implemented under PROPAD. This targeted subsidy mechanism will primarily target women's groups (at least 40 percent) and youth groups (at least 30 percent). It will also finance other actions that will be identified in the ILM plans, among others, (i) practices such as forest restoration and sustainable forest management; (ii) sustainable land management practices and good management of permanent plant cover; and (iii) sustainable management of pastures and livestock. These activities will benefit from the orientations and innovations proposed in Subcomponent 2.1 in terms of research and innovation.
- (c) **Secure resilient eco- and food systems beyond the priority landscapes.** This activity will finance matching grants for ILM interventions outside of the priority landscape that will (i) promote better access to markets for small producers by supporting PAs and (ii) prevent locust outbreaks. With regards to the latter, the project supports: (i) the acquisition of spraying equipment, protective equipment, and data collection systems; (ii) training on safety measures related to the treatments; (iii) sensitization and information to the local populations and administrative and traditional authorities of the area in order to encourage their involvement in the reporting of locust information and to make them aware of the risks associated with the application of bio- pesticides; and (iv) the establishment of a communication system to facilitate synergies of the interventions. These preventive, integrated control strategies with early interventions will reduce the financial and environmental costs associated with large-scale plague treatments.

Table A1.2: Interventions in Priority Landscapes

Dar Sila Ouaddai	Chari Baguirmi Hadjer-Lamis Lake Tchad	Mayo Kebbi West Logone Orientale	Wadi Fira Ennedi West	Ennedi Est Wadi Fira
<b>Land and watershed restoration</b>				

<sup>67</sup> The investments do not depend directly/entirely on the results of planning activities, although they are obviously linked. The priority investments identified during preparation by the stakeholders will not be compromised by possible delays in the implementation of the integrated landscape vision and its action plan.



Dar Sila Ouaddai	Chari Baguirmi Hadjer-Lamis Lake Tchad	Mayo Kebbi West Logone Orientale	Wadi Fira Ennedi West	Ennedi Est Wadi Fira
1000 ha treated with small anti-erosion structures	Reforestation with soil-protecting species (1000 ha)	Reforestation with soil-protecting species (1000 ha)	Reforestation with soil-protecting species (900 ha) 1000 ha treated with small anti-erosion structures	Reforestation with soil-protecting species (1000 ha) 1000 ha treated with small anti-erosion structures
- Minor work on dikes and farm fence - Development of basic living spaces	- Minor work on dikes and farm fence - Development of basic living spaces	- Minor work on dikes and farm fence - Development of basic living spaces	- Minor work on dikes and farm fence - Development of basic living spaces	- Minor work on dikes and farm fence - Development of basic living spaces
Rehabilitation of three drainage channels, deepening of five pastoral ponds	Water drainage and exploitation of flood-prone areas	Water drainage and exploitation of flood-prone areas	Water drainage and exploitation of flood-prone areas	Exploitation of surface runoff water
Rehabilitation of - Three micro-dams 100 ha of small irrigated perimeters, - 20 km of slopes - 10 market garden wells	- Rehabilitation of 50 small boreholes to irrigate 500 hectares - Rehabilitation of 60 km of slopes - Rehabilitation of two pumping stations around the rivers and the lake to irrigate 2000 ha	Rehabilitation of two pumping stations to irrigate 500 ha	Rehabilitation of - Four micro-dams -100 ha of small irrigated perimeters, -60 km of slopes -15 market garden wells	Rehabilitation of - Three micro-dams - 80 ha of small irrigated areas, -15 sparse wells
-500 ha placed under improved seed technology -One mobile semen processing unit -One cereal combine harvester -One digital animation and training center	-500 ha placed under improved seed technology -One mobile semen processing unit -One cereal combine harvester -One digital animation and training center	-500 ha placed under improved seed technology -One mobile semen processing unit -One cereal combine harvester -One digital animation and training center	-500 ha placed under improved seed technology -One mobile unit for processing and processing vegetables -One digital animation and training center	-500 ha placed under improved seed technology -One mobile unit for processing and processing vegetables -One digital animation and training center
<b>Floodplain Restoration</b>				
Rehabilitation of three drainage channels eight pastoral ponds to be over-dug	Water drainage and valuation of flood-prone areas	Water drainage and valuation of flood-prone areas	Water drainage and valuation of flood-prone areas	
<b>Water control and development of irrigation in the plains and terraces</b>				



Dar Sila Ouaddai	Chari Baguirmi Hadjer-Lamis Lake Tchad	Mayo Kebbi West Logone Orientale	Wadi Fira Ennedi West	Ennedi Est Wadi Fira
Rehabilitation of - Three micro-dams - 100 ha of small irrigated perimeters, - 20 km of slopes - 10 pastoral wells - 10 market garden wells	Rehabilitation of - 200 boreholes to irrigate 1,000 hectares - Four pumping stations around the rivers and the lake to irrigate 5,000 ha	Rehabilitation of two pumping stations to irrigate 5,000 ha	Rehabilitation of - Seven micro-dams, - 100 ha of small irrigated perimeters, - 60 km of slopes - 15 pastoral wells - 15 market garden wells	
<b>Provision of climate-smart technical and technological packages adapted to the local context</b>				
	- 1000 ha placed under improved seed technology - One mobile semen processing unit - One grain combine harvester - A digital animation and training center	- 1000 ha placed under improved seed technology - One mobile semen processing unit - One grain combine harvester - A digital animation and training center	- 1000 ha placed under improved seed technology - One mobile semen processing unit - One grain combine harvester - A digital animation and training center	- 1000 ha placed under improved seed technology - One mobile vegetable processing unit - A digital animation and training center
<b>Total Direct beneficiaries</b>			<b>600,000</b>	

**Component 3: Regional Food Market Integration and Trade (IDA US\$28.2 million equivalent)**

**Box 1: Collaboration of Chad and ECOWAS**

Within the context of ongoing collaboration of ECOWAS and Chad, Chad is going to benefit from the interventions implemented by ECOWAS, despite not being a member state but an observer. Chad already collaborates with ECOWAS in several initiatives and interventions and is technically supported by technical partners of ECOWAS (e.g., collaboration with CILSS in the Regional Sahel Pastoralism Support Project II (P1733197) and with CORAF in various projects). Chad also collaborates with ECOWAS member states in multilateral institutions, such as the G5 Sahel, and mutual bilateral relationships. Chad benefits from ECOWAS’s interventions in the context of FSRP as these aim to promote interregional trade, also beyond the borders of its member states.

28. **Sub-component 3.1: Facilitate Trade across Key Corridors and Consolidate Food Reserve System (US\$6.1 million equivalent).** Under this subcomponent, FSRP will support the preparation and implementation of policies and regulations to increase regional flows of agricultural goods and inputs and consolidate the Regional Food Reserve System. The project aims to tackle crippling policy constraints on the development of regional resilient food crop value chains along trade corridors that have a significant impact on the food security and nutrition of smallholder farmers. The activities that will be funded under this sub-component are as follows:

- (a) **Develop and implement an EATM-S Mechanism.** The project will finance TA for the development and adaptation of a national dashboard intended to increase transparency and accountability by tracking national implementation of national and regional policies and regulations. The scorecard



will help Chad to identify bottlenecks that limit its trade with ECOWAS countries and can catalyze policy reforms to overcome these.

- (b) **Encourage agricultural regional trade policy harmonization on critical food system resilience issues** FSRP will support advocacy with political decision-makers for the country's integration into ECOWAS and finance the process of harmonizing and aligning the country's trade policies through trade policy consultation. To the end of the latter, the project will: (i) support advocacy and participation in multi-stakeholder dialogue sessions to harmonize national trade policies on food safety and standards with regional policies and instruments; (ii) organize roadshows and workshops to sensitize relevant stakeholders on the standards and policies as well as train officials involved in trade in agricultural products on regional regulations (ECOWAS and the West African Economic and Monetary Union) relating to trade and movement of people and goods; (iii) domesticate key regional policies and regulations related to trade in agricultural inputs, biotechnology/food safety, norms, standards and free movement of food; and (iv) domesticating key regional policies and regulations related to agricultural input trade, biotechnology/food safety, standards and free movement of agricultural products. Any regulations will take into account and add on the existing regulations of the Central African Economic and Monetary Community of which Chad is a member.
- (c) **Improve Regional Food Security Reserve Performance.** The project will support the first line of defense (local and community storage) and the second line of defense (national security stocks). Activities include equipping storage facilities, strengthening national stock management (physical and financial), assessment and management of food crisis, and adapting, if necessary, the national crisis response mechanisms. Support will also be provided to Chad for its effective participation in the third line of defense (regional stocks). Activities in this regard include the design of contingency plans, and constitution of regional food security stocks.

29. **Subcomponent 3.2: Support the Development of Strategic and Regional Value Chains (US\$22.1 million equivalent).** This subcomponent aims to improve food and nutrition security for smallholders by supporting up to three priority value chains, focusing on backward and forward segments of the value chains, with tangible positive impacts on regional market integration, food security, nutrition and reduced food loss and waste. Investments in other value chains may be supported in addition. The focus will be on private businesses led by youth and women, who will be the primary beneficiaries. Chad has chosen the value chains of sesame, maize, and wheat for the following reasons: (i) sesame from Chad is consumed in the region and exported in Nigeria, Cameroon, Niger and also Benin; (ii) wheat production in Lake Chad could be shared with Niger, Nigeria, Cameroon and the Central African Republic; and (iii) maize produced in all provinces of Block 2 could be interchanged with all West African countries to ensure regional food security stocks contributing to regional food security. The project will:

- (a) **Strengthen value chain organization and financing.** For value chain players organized in PAs, the project will finance matching grants to facilitate access to financing. For value chain entrepreneurs, including youth and women, this subcomponent will invest in activities such as aggregation centres, improved cold-chain infrastructure that reduce FLW, storage facilities to reduce post-harvest losses, warehouse receipt systems, agro-processing, and agricultural trade services, all aimed at integrating the selected value chains with regional markets. The project will also finance (i) the development and implementation of a development plan focused on conquering the regional market and the
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sustainable strengthening of the competitive advantage of Chad for value chains (primarily maize, sesame and wheat and secondarily spirulina and sorghum); (ii) the strengthening of national institutions responsible for regional trade (among others the Directorate of the Ministry in Charge of Trade, the National Investment Agency, the Chamber of Commerce, professional organizations in the agriculture, livestock and forest sectors etc.); and (iii) the setup of a mechanism for improving the products and by-products of agricultural value chains (grades, norms and standards of the products of the value chains to be defined and popularized, certification and identification of origin, equipment for product quality laboratories, quality control and inspection, incentive for quality improvement).

- (b) **Support agricultural competitiveness and market access infrastructure.** The project will finance: (i) the development of rural roads for interconnection between secondary and main agricultural markets; (ii) new opportunities to facilitate access to regional markets (including construction/renovation and equipment of strategic provincial markets); (iii) the facilitation and support to trade in agricultural products (border facilitation, simplified control procedures, export consolidation, trade promotion and market prospecting); and (iv) the strengthening of inter-professional organizations (quality control, traceability, commercial promotion, statistics).
- (c) **Strengthen multi-stakeholder coordination and promote a private sector enabling environment.** The project will finance: (i) the strengthening of the consultation framework with the private sector to ensure co-leadership for interventions in priority value chains: (ii) the identification of public entities intervening in the trade of agricultural products and providing them with information on intra-regional trade as well as weather, climate, and hydromet information (see Component 1) (e.g., the Food Quality Control Centre<sup>68</sup>, ministries in charge of customs, trade, industry, agriculture, transport, investment and export promotion structure, etc.); (iii) support of the National Institute for Statistics and Economic and Demographic Studies in the production and improvement of statistics on trade in agricultural products and economic and financial information on the value chains selected: and (iv) critical and catalytic investments in partnership with the private sector to facilitate trade in agricultural products along the main cross-border corridors. Finally, the project will finance the operationalization of the national strategy for private agricultural sector and industrialization, in particular by providing subsidies and TA for, among others, formalizing companies, establishing linkages with smallholder farmers/producers, the use of digital technologies for market/price prospecting, the facilitation and security of payments and transactions for companies and small to medium-sized agribusiness, agro-traders, agro-wholesalers, producer associations operating in the trade of agricultural products and inputs at national and regional levels (including e-commerce).

30. **Climate co-benefits.** Activities under sub-component 2.2 and 3.2 include measures to improve carbon sequestration, prevent land degradation, increase the use of renewable energy, and restore land, conserve landscape biodiversity, and promote climate-smart biodynamic agriculture, especially regarding the three selected value chains (with high potential for mitigation co-benefits). Advisory services distributing weather, climate, and hydromet information, as promoted under Component 1, as well as information on value chain vulnerability to climate change will inform farmers' practices enabling them to adapt to climate change. Technologies that improve drought tolerance and practices that

<sup>68</sup> In French: [Le Centre de contrôle de la qualité des denrées alimentaires](#)



conserve water (such as zero tillage) will reduce water evaporation, with adaptation co-benefits. Beyond carbon mitigation, investments in ecosystem restoration, such as irrigation networks and tree planting, will enhance resilience to extreme weather by increasing water availability, supporting food security, and building natural resilience against droughts, floods, wildfires, and other climatic factors and natural disasters. The provision and regulation of ecosystem services also improves public health by providing vulnerable communities with clean air and water and fertile soil. These carbon co-benefits can be measured through the implementation of a simple and effective geo-referenced monitoring and evaluation system designed and implemented to assess the impacts of decisions made and actions taken at the landscape scale. The measurement of carbon as well as its commercialization and the sharing of the benefits generated will be explored, where feasible, with the support of the Reducing Emissions from Deforestation and forest Degradation (REDD+) platform.

#### Component 4: Contingent Emergency Response Component (US\$0 million).

31. Component 4 is a mechanism for financing eligible expenditures in the event of an emergency precipitated by a natural disaster. Following a major disaster, Chad may request that the World Bank channel resources from other components into the CERC. As a condition for disbursement, an Emergency Response Manual will be developed for Chad, stipulating the fiduciary, safeguards, monitoring, and reporting requirements related to invoking the CERC, as well as any other essential coordination and implementation arrangements.

#### Component 5: Project Management (IDA US\$6.3 million equivalent)

32. This component will finance the establishment of an effective coordination, management, and monitoring and evaluation system for the project. Key activities will include: (i) establishing and maintaining FM 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 M&E system; and (v) developing and implementing a knowledge management and communication strategy. To ensure targeted social inclusion of project activities, including inclusion of women, youth and vulnerable groups, and nutrition, a social inclusion strategy will be developed as part of the PIM, and a social inclusion action plan will be developed prior to the implementation of project activities. It will also support consultancy services for conducting the project's baseline and impact studies. This component will be implemented by the PIU under the oversight of a NPSC.

33. **FSRP activities will build upon lessons learned from other ongoing interventions of the World Bank and other partners in the sub-region and in Chad.** In particular, it complements the Climate Resilient Agriculture and Productivity Enhancement Project (P162956), Second Regional Support Project for Pastoralism in the Sahel (P147674), Local Development and Adaptation to Climate Change Project (P171611), and the Lake Chad Region Recovery and Development Project (P161706) as well as projects funded by other development partners<sup>69</sup>.

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<sup>69</sup> Including among others the following: IFAD (Strengthening Productivity and Resilience of Agropastoral Family Farms Project, Project to Improve the Resilience of Agricultural Systems); African Development Fund (Programme to Build Resilience to Food and Nutrition Insecurity in the Sahel-2); the Islamic Development Bank (Programme to Build Resilience to Food and Nutrition Insecurity in the Sahel-2, Program for the Development of Resilience and the Fight against Food Insecurity in Chad).





**E. Project Costs**

**Table A1.3: Project Costing by Component – Chad**

<b>Components</b>	<b>Amount (US\$ million)</b>	<b>Percentage of total amount</b>
<b>C1. Digital Advisory Services for Agriculture and Food Crisis Prevention and Management</b>	<b>18.4</b>	<b>17.5</b>
C1.1 <b>Upgrading Food Crisis Prevention and Monitoring Systems</b>	10.1	9.6
C1.2 Strengthening Digital Hydromet and Agro-Advisory Services for Farmers	8.3	7.9
<b>C2. Component 2: Sustainability and adaptability of the productive base of the food system</b>	<b>52.1</b>	<b>49.7</b>
C2.1 Consolidating Regional Agriculture Innovation Systems	9.2	8.8
C2.2 Strengthen Regional Food Security through Integrated Landscape Management (ILM)	43.0	41.0
<b>C3. Regional Market Integration and Trade</b>	<b>28.2</b>	<b>26.9</b>
C3.1 Facilitate Trade across Key Corridors and Consolidate Food Reserve System	6.1	5.8
C3.2 Support to Development of Strategic and Regional Value Chains	22.1	21.0
<b>C4. Contingency Emergency Response Component</b>	<b>0.0</b>	<b>0.0</b>
<b>C5. Program management</b>	<b>6.3</b>	<b>6.0</b>
<b>Total</b>	<b>105.0</b>	<b>100.0</b>

**III. IMPLEMENTATION ARRANGEMENTS**

**A. Institutional and Implementation Arrangements**

34. The institutional arrangements for the project are organized around the following functions: (i) oversight and orientation by a NPSC, which is already established and responsible for all the projects and programs in the agricultural sector; (ii) overall coordination of activities and partners by PROPAD existing PIU; (iii) management of the Designated Account and fiduciary responsibilities, entrusted to the PIU; and (iv) technical execution of project activities, vested with strategic government entities. The PIM, to be prepared by the Ministry in charge of Agriculture and finalized by project effectiveness, will detail all coordination, management, implementation, M&E, and reporting functions.

35. The main functions and responsibilities of the NPSC are to: (i) advise the project on strategic directions and supporting activities; (ii) approve the Annual Work Plan and Budget (AWPB); (iii) ensure effective collaboration and cooperation between all key stakeholders; and (iv) review the PIU’s Implementation Progress Reports, advise on the effectiveness of ongoing activities, and advise on any adjustments needed in the AWPB. The NPSC will be chaired by the Secretary General of the Ministry in charge of Agriculture’s, the membership composition and mandate of which will be specified in a Ministerial Decree prior to the signing of the Financing Agreement. The committee will meet at least once a year and will include representatives of the farmers and communities so that they may contribute to good governance and voice their concerns as needed.

36. PROPAD self-standing PIU, with the support of dedicated personnel, will oversee planning and budgeting of project activities and execute the approved AWPB. It will also oversee subproject agreements, technical supervision and quality control, gender inclusion, environmental and social



safeguards, and M&E. The PIU will have responsibility for managing and coordinating project activities, including procurement and FM and the daily management of the Designated Account.

37. The PIU will be headed by PROPAD National Coordinator, who will be assisted in day-to-day project operations by a Technical Director, four regional coordinators, an internal auditor, an administrative and financial manager, a senior accountant, a procurement manager, an environmental specialist, a gender and gender-based violence specialist, a social development specialist, a monitoring and evaluation and knowledge management officer, a communication officer, an agriculture specialist, an agro-meteorology specialist, a rural engineering specialist, a value chain and food trade facilitation specialist, an accounting assistant, four M&E assistants and a procurement assistant. The PIU will also contract private service providers as needed for cross-cutting activities such as supporting the implementation of field activities, training, institutional development of ministries, departments and agencies that are associated activities undertaken by the project (such policy reforms), producer group organizations, etc.

## **B. Monitoring and Evaluation**

38. In line with the broad framework of ECOWAS results-based M&E system, the proposed project will implement a robust M&E system to monitor and evaluate the project's performance indicators as defined in the results framework. The system will collect and process high-quality data and allow the World Bank and government to assess progress and react immediately should any issues arise. To collect data, the M&E system will use a mix of conventional approaches and participatory methods involving beneficiaries and other external stakeholders. It will serve both as a day-to-day management tool and as a mechanism to assess project impacts. The system will support supervision by ensuring that baseline and follow-up surveys and data for key performance indicators are available and regularly updated. By linking technical and financial data on the project's progress, the system will pave the way for developing a comprehensive Management Information System.

39. The PIU will oversee M&E and compliance with the agreed reporting requirements. It will provide support to the internal M&E systems of participating institutions by assisting them with data collection, management, and analysis, including development of computerized data management and mapping system. The PIU will prepare aggregate M&E reports every six months covering project physical implementation and results monitoring. These reports will serve as the basis for semi-annual progress reports to be circulated to sector ministry and other partners. The progress reports will also inform the semi-annual joint supervision missions fielded by the World Bank and government to ensure compliance with legal covenants and assess the status of project implementation and results. They will be important inputs for the Mid-Term Review, to be conducted no later than three years after the first disbursement, as well as the final independent evaluation, to be conducted in the last semester of implementation to assess overall achievement of expected project results.

40. The M&E manual will provide details regarding the definition of the results framework, the methodology and instruments to be used for data collection, the institutional arrangements for M&E functions, the GM, and the mechanism to be used for disseminating information. M&E results will inform a communication strategy that will be developed and implemented by the PIU. A baseline survey will be conducted during the first year of implementation to verify and complete the baseline data and targets presented in the results framework. The project will use specialized M&E software for data collection



and processing. An M&E specialist located at the PIU will be responsible for all M&E activities. S/he will be assisted by four M&E assistants located in the four regional areas.

#### IV. PROJECT APPRAISAL SUMMARY

##### A. Technical, Economic and Financial Analysis

41. **An assessment was carried out to determine the technical, financial, and economic viability of the proposed project.** The project design incorporated lessons learned from the implementation of several regional projects, including West Africa Agricultural Productivity Program (P094084), West African Regional Fisheries Program (P106063), and Regional Sahel Pastoralism Support Project (P147674). The project also benefitted from experiences of other countries mainly in PA's key features and ILM. More important, the design of the project aligns with Chad's context and specific features (mainly capacity, financing, and private sector readiness). The World Bank portfolio in Chad has accumulated extensive experience in major technical aspects of this project related to provision of light rural infrastructure items and irrigation development. The Ministry in charge of Agriculture has over the years acquired experience to undertake procurement, distribution, and operation and maintenance of the procured items. Additional capacities needed for effective implementation of the project will be sourced from partners, collaborators, and other appropriate agencies and service providers.

42. **Direct economic benefits from interventions across the selected value chains and the priority landscapes** are projected to derive from: (i) informed decisions by farmers regarding the most appropriate farm operations thanks to reliable weather forecasts; (ii) enhanced productivity through the dissemination and use of improved and suitably adapted technologies and capacity building; (iii) increased operating efficiency at farm level through improvements in production and marketing processes, logistics, and market institutions; (iv) greater value addition at farm and/or post-farm levels with more linkages among key players along the value chains; (v) improved market access through business alliances and provision of last mile infrastructure connections to link farmers to markets; (vi) reduction in post-harvest losses; and (vii) income generated from jobs, created by new agro-processing enterprises.

43. **The project's NPV was estimated at US\$34.2 million, and the EIRR at 11 percent. The project remained viable even after an assumption of a 20 percent increase in costs, 20 percent decrease in projected revenue, or both.** Project worth was assessed through the NPV, and the EIRR using "with" and "without" project scenarios. The economic value from improved meteorological services was estimated through avoided loss using the Climate Adaptation in Rural Development Assessment Tool developed by IFAD, and pro-rated with the scope of the project. For irrigation development and other sub-projects, standard output valuation methods were used. Assumptions included a 20-year investment horizon, and 5-15 percent of investment costs going for operation and maintenance after the investment phase. For internationally traded goods such as maize, paddy rice, soybean, and fertilizers, farmgate economic prices were determined on an import parity basis. Economic prices of non-traded goods were obtained by applying a Standard Conversion Factor to financial prices.

44. **Rationale for Public Sector Intervention.** Activities envisaged under this project, which are aimed at creating resilience against climate change and enhancing food safety, are largely public goods. These



include improving meteorological services, research in and promotion of CSA, and fostering regional cooperation to promote regional trade enhancing food security.

45. **The EX-ACT was applied to assess the project's net carbon-balance.** The calculations were based on agro-ecological characteristics of the project area in Chad (tropical dry climatic conditions with high-activity clay soils) and on the parameters of crop management practices aligned to the economic and financial analysis (EFA). The carbon balance results indicate that the project activities will lead to a total of 1,610,173 tons of CO<sub>2</sub>e to be mitigated over a period of 15 years starting from project implementation. Per year, the mitigation potential is roughly 46.7 tons of CO<sub>2</sub>e, or 3.1 tons of CO<sub>2</sub>e per hectare.

## B. Fiduciary

### Financial Management

46. The assessment determined that the PIU is familiar with the World Bank FM requirements and is currently implementing the PROPAD (P162956). The PIU's current FM staffing consists of a FM specialist, a Senior Accountant, an internal auditor and two accounting assistants including one accounting assistant located at the regional level. The project will leverage the existing FM arrangements of PIU for its implementation. The FM performance of PROPAD was most recently rated Moderately Unsatisfactory mainly due to the vacancy of the FM specialist position, the delay in justification of advances granted to partners and inadequate monitoring of the budget and follow up of activities performed by partners. However, the recent recruitment of a new FM specialist is expected to help improve FM performance, in addition, the PROPAD project has no overdue IFRs and the last audited financial statements (for accounts closed 31 December 2020) were submitted on time with an unqualified opinion.

47. The FM capacity of the PIU will be further strengthened by: (i) the updating and adoption by the PIU of the FM procedures manual currently in use by PROPAD before project effectiveness; (ii) the customization of the existing Tom2Pro Accounting software to record all the project's transactions following World Bank guidelines and to prepare the financial statements for the project within three months of effectiveness; (iii) the recruitment one FM Specialist and one senior accountant to be fully dedicated to the project as an effectiveness condition; (iv) the recruitment of an external auditor to audit annually the project's financial statements according the ToR acceptable to the World Bank, not later than six months after project effectiveness.

48. The overall FM residual risk rating for the project is assessed as **Substantial**. Based on the mitigation measures outlined above, the proposed FM arrangements for this financing are considered adequate to meet the World Bank's minimum FM requirements under the FM Manual for World Bank for IPF. FM risk assessment and mitigation measures along with FM Action plan are detailed in Annex 9.

### Procurement

49. **Applicable procurement rules and procedures:** Procurement will be carried out in accordance with: (i) the World Bank Procurement Regulations for IPF Borrowers Procurement dated November 2020; (ii) the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects financed by IBRD Loans and IDA Credits and Grants', dated October 15, 2006, revised in January 2011 and as of July



1, 2016; and (iii) the provisions stipulated in the Financing Agreement. STEP will be the platform for preparing, submitting, reviewing and clearing PPs and prior review procurement activities. STEP will also be used for uploading the documents and evaluation reports for Post Review Contracts. The PIM will elaborate on the procurement procedures, and model contracts associated with the market approaches and selection methods, for various procurement categories.

50. **Assessment of procurement capacity.** The project will be managed by the same coordination unit as the PROPAD (P162956). The procurement management capacity assessment reveals that procurement staff involved in the PROPAD are recruited on a competitive basis and have a good experience of procurement rules and policies at the national level and those of the World Bank. It is proposed to competitively recruit another procurement specialist who will be devoted to the project.

51. **Procurement risk assessment.** As part of the Procurement Risk Assessment Management System exercise carried out by the World Bank, the overall procurement risk of the project is assessed, and a risks mitigation strategy defined. The main risks identified are related to the country Procurement System that may cause delays in procurement, inadequate communication, and interaction between beneficiaries and PIU can lead to procurement delays and poor cost forecasting, insufficient competition, poor contract management and the lack of classification and archiving of documents and complaint in STEP.

52. The overall procurement risk is **Substantial**, but it will be regularly assessed and adjusted as needed based on the outcomes of risk mitigation measures. These measures include: (i) recruiting a full-time procurement specialist who is experienced and familiar with World Bank procedures and policies; (ii) training all project staff involved in Procurement Regulations; (iii) developing a section on procurement procedures as part of the PIM to clarify roles of each team member involved in the procurement process and define the maximum delay for each procurement stage (specifically with regard to review and approval systems and the signing of contracts); (iv) developing contract management plans for prior-review contracts; (v) transferring the major risks identified in the Procurement Risk Assessment and Management System exercise) to a day-to-day monitoring matrix and monitoring it through project implementation monthly meetings with the client during the first two years of the project, to ensure things are on track; and (vi) improve the filing and archiving system for procurement documentation in accordance with the World Bank Procurement Archiving Manual.

53. **PPSD and PP:** A PPSD and a PP detailing the first 18 months of implementation was prepared by the Recipient and approved by the World Bank. The PPSD will provide the basis and justification for procurement decisions, including the approach to market and selection methods. The PPSD found that the dynamics of the market according to the major types of markets are: in consultancy services, studies and consultancy services will mainly be consulted by firms, NGOs, state agencies and individual consultants; in procurement of goods (supply contracts), the needs of the project are expressed in terms of acquisition of commonly known supplies (office furniture, computer equipment, internet connection, vehicles, etc.); in works (works contracts), in particular the development of multidisciplinary pilot farms, the construction of premises for office use and living bases, and hydro-agricultural developments such as micro-dams and weirs spreading, the construction of economic infrastructure (stores, rural roads, etc.), there are competent national companies likely to respond to the consultations launched.



54. A PP sets out the procurement selection method as well as prior and post review thresholds to be followed for the first 18 months and include the key contracts. The PP as well as all procurement transactions will be recorded into the World Bank STEP system. During implementation, the PP will be updated as required, at least annually, to reflect actual program implementation needs and improvements in institutional capacity.

C. Legal Operational Policies

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

55. The Policy is applicable to this project because the activities will involve the potential use and risk pollution of Lake Chad. On May 10, 2022, the World Bank Western and Central Africa Region Vice President approved an exception to the riparian notification requirement under OP 7.50.

D. Environmental and Social Management

56. **Environmental risks and impacts.** The project utilizes the World Bank’s ESF, which provides a holistic tool for identifying and managing environmental and social risks and opportunities in the design and assessment of the project. Six ESF instruments (ESCP, ESMF, RPF, LMP, SEP, IPMP) were prepared and disclosed in-country and on the World Bank website.<sup>70</sup> The PROPAD PIU has Safeguards Specialists – an Environmental Specialist, a Gender specialist as well as a Social Development Specialist with requisite expertise needed, such as Land Acquisition, Resettlement and Livelihood consultants to assist with involuntary land acquisition process that may result from project implementation and/or community-based Non-Governmental Organizations (NGOs) to assist with stakeholder engagement, GM and the monitoring and implementation of the project’s mitigation and response measures.

57. **Potential environmental impacts include:** (i) reduction in biodiversity at some project sites developed for irrigation; (ii) pollution and poisoning from plant nutrition and protection materials; and (iii) construction-related impacts, among others. These impacts are mainly site specific and can be managed with the application of well-defined and site-specific ESIA and ESMP such as: (i) restricting clearance of vegetation to construction and farming areas and re-vegetation by planting of trees/grassland management; (ii) rehabilitation and filling of the exposed or excavated soil soon after completion of works and avoiding or minimizing compaction of soils; (iii) training on sustainable land management practices; (iv) integrated pest management; and (v) reduction of greenhouse gas (GHG) emissions by ensuring well serviced machinery is used and proper waste management.

58. **Potential negative social impacts include:** (i) risks of land loss and expropriation; (ii) loss of income among small-scale producers through discriminatory, non-inclusive, or non-transparent practices and failure to implement mitigating measures; (iii) health risks related to the use of pesticides (due above

<sup>70</sup> The World Bank disclosed the ESCP on June 27, 2022, the SEP on May 16, 2022, the ESMF on April 24, 2022, the IPMP on March 15, 2022, the RPF on February 8, and LMP on February 9, 2022. [https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword\\_select=allwords&srt=score&order=desc&qterm=P178132&lang\\_exact=Chad](https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword_select=allwords&srt=score&order=desc&qterm=P178132&lang_exact=Chad) disclosed these documents on April 30, 2022 at <https://projctpropad.com/fsrp/>



all to the absence of integrated pest management); (iv) water-borne diseases that can lead to loss or displacement of labour; (v) poor management of pesticide packages; (vi) loss of grazing land with the development of agricultural perimeters; (vii) pollution of wells and water points by livestock; and (viii) the exclusion of vulnerable groups, especially women, in the allocation and management of agricultural land. These issues are being handled through strict adherence to the ESIA and ESMP. A RPF has been developed and disclosed to guide the process and measures for developing a Resettlement Action Plan (RAP) to compensate for land or livelihood loss. The RAP will strictly follow the National Law for expropriation, and the principles laid out in the RPF, which will be developed, consulted upon, and implemented before commencement of sub-project civil works.

59. **Most of the gender gaps relates to:** (i) access to land and farming equipment; (ii) access to extension services delivery; (iii) access to certified seeds, fertilizer, and crop protection materials; (iv) access to agricultural technologies, and (v) access to credit and financial services, among others. The project will rigorously implement the Gender and Agriculture Strategy. Project mitigation activities include: (i) ensuring adequate representation and active women participation in decisions made in selecting project beneficiaries; (ii) sensitizing extension agents engaged in project activities about Gender issues and ensuring adherence to fair and equal access to services; and (iii) funds which have been set aside for grants to women (and youth) groups.

60. **The overall GBV/SEA/SH risk for this program is rated Moderate.** There are risks of project staff (including third party service providers), often mostly male, coming into contact with beneficiaries with a power dynamic that increases SEA/SH risks. This will be mitigated through training and strict application of the related safeguard measures. The ESMF has a SEA/SH Risk Mitigation and Response Action Plan. This will be rigorously implemented. The SEP of the project specifically addresses GBV related issues. The SEA/SH Risk Mitigation and Response Action Plan also includes the availability of an effective GM with multiple channels to initiate a complaint with specific procedures for GBV including confidential reporting with safe and ethical documenting of GBV cases.

## V. RISKS

61. **The overall risk** of the project for Chad is considered **high**.

62. **Political and governance risks** are **high**, accentuated by threats from jihadist groups operating in the Lake Chad basin and the political shadow cast by the events surrounding the disappearance of the President of the Republic on April 20, 2021. The risk rating is based on ongoing political transition in Chad that may affect the government's priorities. Cross-regional conflict spill overs have increased insecurity along Chad's borders with Nigeria and Cameroon, compounding an already fragile situation at the borders with Libya, Central African Republic and, to a lesser extent, Sudan. The security issue continues to pose a risk of escalation exacerbating an already acute humanitarian situation. Internally, failure to pay civil servants or the armed forces given current liquidity constraints could result in social or armed unrest. Climate change will continue to exacerbate tensions over access to resources across the country. These issues could divert scarce institutional and financial resources away from development to security priorities.



63. On the political front, although the transitional authorities have indicated their commitment to transfer power following the elections, the timeline and outcome of the transition remain uncertain. The support of the international community, including through intensive monitoring of the areas for relevance for the Prevention and Resilience Allocation, offers an opportunity to accompany this process within Chad's overall efforts to reduce the risk of conflict. Also, the project will put in place a GM that would help mitigate the risks caused by intercommunity conflicts. To mitigate this political risks, project design and implementation are moved closer to communities and other efforts to increase transparency and accountability will help mitigate and manage the risk. Specifically, the project will support delegation of selection processes of project activities to technical selection committees at the local and regional levels and ensuring that they strictly abide by the selection procedures set forth in the PIM. Reporting on the selection of beneficiaries will be closely monitored and reviewed during implementation support missions.

64. **Macroeconomic risks** are also considered **high**, in view of the anaemic economic projections, exacerbated by the uncertainty around lingering impacts of COVID-19 and the ongoing war in Ukraine. Risks related to the oil sector, debt distress, weak public finances and COVID-19 impacts on employment, remittances and inflation continue to pose the most immediate and severe macroeconomic threat. Volatile oil prices would put additional pressure on fiscal accounts, further compromising the government's ability to finance vital expenditures. Successful conclusion of current discussions to restructure debt will be key to the program's success. To reduce these risks, the macroeconomy and fiscal agenda, including debt management, revenue stabilization mechanisms and other government-related measures are critical focus areas of the engagement. Coordinated engagements between the WBG, the IMF and other development finance institutions should help to mitigate fiscal risks. At the project level, support will be given to the introduction of innovative solutions to diversify the economy and build resilience of the smallholders. Such innovative solutions include CSA, resilient value chains building or use of digital technologies (e-voucher and e-extension).

65. **Fiduciary risk is considered high**; the proposed executing body has some track record of implementing a project financed by the World Bank and is generally familiar with their financial and procurement procedures. The team will need capacity building, including augmenting staff numbers. The country's overall fiduciary environment is characterized by low capacity, the weak regulatory environment and weaknesses in FM and procurement practices. Governance issues have also been observed. The fiduciary risk is mitigated by a stronger PIU with qualified procurement and FM staff with track record of implementing a project financed by the World Bank and is generally familiar with their financial and procurement procedures. The PIU fiduciary capacity will be further strengthened by augmenting staff numbers and continuously by day-to-day interaction and regular training with the World Bank fiduciary team. The risk is mitigated by the provision of clear description of roles and responsibilities for the PIU staff to strengthen accountability, minimize gaps in the implementing agency's governance structure and further provide the required checks and balances. Training and capacity building to the PIU will be provided on risk identification and mitigation, and contract management. Expanded hands-on implementation support (HEIS) could also be considered to support implementation of high critical high value/high risk contracts subject to the request from the Recipient and agreement by the World Bank.





**Table A1.3: Risks Identified for the Chad FSRP program**

<b>Assessment by risk category</b>	<b>Assessment</b>
1. Politics and governance	High
2. Macroeconomic	High
3. Sector strategies and policies	Moderate
4. Technical design of the project	Moderate
5. Fiduciary	High
6. Environmental and social aspects	Moderate
7. Institutional Capacity for Implementation and Sustainability	Moderate
8. Stakeholders	Low
9. Other (Security)	High
Overall	High



## ANNEX 2: FOOD SYSTEM RESILIENCE PROGRAM FOR GHANA

### I. STRATEGIC CONTEXT

#### A. Country Context

1. **Since the mid-2010s, Ghana has been among the fastest growing economies in Africa and at the forefront of poverty reduction.** With a per capita income of US\$5,470 in 2020, Ghana is classified as a lower-middle income country and was the first country in Sub-Saharan Africa to meet the Millennium Development Goal target of halving extreme poverty by 2015. In 2017, Ghana was the second-fastest growing economy in Africa with a GDP growth rate of 8.1 percent, driven by the mining and oil sectors. However, GDP growth has slowed (6.5 percent in 2019) due to a slowdown in industry, as well as lower mining and quarrying output<sup>71</sup>. Ghana's poverty rate dropped from 47.4 percent in 1991 to 10.5 percent in 2020, a level that is not only lower than the mean poverty rate for Sub-Saharan Africa, but also below the mean poverty rate of lower-middle income countries.<sup>72</sup>

2. **Starting in 2017, the country has embarked on an ambitious plan for economic transformation but faces macro-economic and social challenges.** The Government of Ghana has launched the “Ghana Beyond Aid” reform agenda, which, among others, is aimed at expanding and exploiting Ghana’s perceived comparative advantages in agro-processing and heavy industries (like aluminum, steel, and petrochemicals). The reform agenda also focuses on improving agriculture productivity, fostering human capital accumulation, and improving efficiency through digitalization. However, the country faces multiple challenges, including low domestic tax revenue (around 13 percent of GDP for the past two decades) and high public debt (78.9 percent of GDP in December 2020), both of which are squeezing the fiscal space critical for delivering on social and economic services needed for robust long-term growth.<sup>73</sup> Beyond the macro-economic problems, the slowdown in poverty reduction and persistent income inequalities are holding back lagging areas and increasing vulnerabilities, and remain a hurdle to Ghana’s social wellbeing agenda.

3. **The disruptions caused by the COVID-19 pandemic have hit Ghana hard and exacerbated inequalities in the country.** The macroeconomic environment deteriorated rapidly following the COVID-19 pandemic outbreak. The poverty rate is estimated to have increased by 14.2 percentage points (pushing an additional 1.2 million Ghanaians into poverty)<sup>74</sup> and the GDP growth rate declined by 6.1 percentage points in 2020.<sup>75</sup> The pandemic also magnified existing gender disparities and inequalities faced by vulnerable groups.<sup>76</sup>

<sup>71</sup> GDP growth slowed down to 0.4 percent in 2020 because of economic disruptions related to the COVID-19 pandemic. This was an anomaly as growth is estimated at 4.9 percent in 2021.

<sup>72</sup> At 2011 Parity Purchasing Power (PPP) of \$1.90 per person per day. World Bank Data

<sup>73</sup> Ghana Country Partnership Framework FY22-26, Report No. 157249-GH.

<sup>74</sup> Sena A., Seth A., Karl P. and James T. 2020. Impacts of COVID-19 on Production, Productivity and Food System in Ghana.

<sup>75</sup> GDP growth is estimated to have fallen to 0.4 percent in 2020 following the emergence of the COVID-19 pandemic, a growth rate which is dramatically lower than the 2019 rate of 6.5 percent. World Bank. Macro Poverty Outlook.

<sup>76</sup> International Food Policy Research Institute 2021. Assessing the impact of COVID-19 on rural women and men in northern Ghana. <https://doi.org/10.2499/p15738coll2.134446>



## B. Sectoral and Institutional Context

4. **The agri-food system is a key driver of the Ghanaian economy, despite its declining contribution over the last three decades due to the expansion of other more productive sectors which has attracted labor out of agriculture.** Agriculture (including fisheries, forestry, and value-addition) went from contributing 30 percent of GDP in 2010 to 17.3 percent in 2019. At the same time, the sector's contribution to employment reduced from 51 percent in 2010 to 30 percent in 2019. Despite this, agriculture remains a major source of government revenue, contributing 22 percent of the country's total foreign exchange earnings in 2019<sup>77</sup>, and accounting for an estimated two-thirds of Ghanaian non-oil raw material needs for manufacturing.<sup>78</sup> In addition, COVID-19 highlighted the importance of the agriculture sector for economic resilience in the face of shocks. When the economy and key subsectors, such as services and industry, contracted in 2020 because of the impact of COVID-19, the agriculture sector expanded, posting an annual growth rate of 7.4 percent. One emerging lesson from the recent performance of the sector is that growing agricultural production is key to economic resilience.

5. **Agriculture is the most important sector for jobs and livelihoods in the rural areas.** Agriculture comprises 30 percent of total formal employment in Ghana and 68 percent of jobs in the informal sector are related to agriculture or agro-related services all along the value-chain. 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.<sup>79</sup> However, the structure of the agriculture sector is dominated by primary production, with limited agro-processing and value-addition which does not allow Ghana to take advantage of this job creation potential.

6. **The combination of low agricultural productivity, reliance on rainfed agriculture, and climate change have exacerbated food insecurity in Ghana.** According to the WFP's Food Security Highlights, the number of people in Phase 3 to 5 of food insecurity were estimated at one million for the period January-May 2021, and at 0.4 million for the period June-August 2021).<sup>80</sup> Access to reliable and timely information on vulnerability, nutrition, and food security within Ghana and across the sub-region remains low, thus hampering the ability to prepare for and implement an effective response to food crises.

7. **Despite the growth of the agriculture sector even during COVID-19, the agri-food system still faces some challenges to its performance and sustainability.** The following are the main challenges:

(a) **Low productivity of key staples constrains the structural transformation of the agriculture sector.** The productivity for the staples is low due to weak linkages between research and extension, poor extension delivery, low adoption of modern technology, and unsustainable cultivation practices. As a result, Ghana remains a significant importer of ready-to-consume commodities such as rice, tomatoes, sugar, and poultry where there is excess demand. About 90 percent of Ghana's rice and other cereals are produced under rainfed conditions by small-scale farmers, mainly in Northern Ghana, where frequent episodes of drought and floods, limited irrigation, and inadequate infrastructure (roads, storage), among others, constrain production.

<sup>77</sup> World Bank. World Integrated Trade Solution

<sup>78</sup> World Bank. 2017. Ghana: Agriculture Sector Policy Note Transforming Agriculture for Economic Growth, Job Creation and Food Security.

<sup>79</sup> World Bank. 2017. Creating Markets in Ghana: Country Private Sector Diagnostic

<sup>80</sup> WFP. 2021. The World Food Program's Food Security Highlights, West Africa Issue 2



(b) **Climate change is already adversely affecting Ghana, lowering agricultural production, and decreasing opportunities for future prosperity.** Future climatic projections modelling in the Ghana CSA Investment Plan<sup>81</sup> show increasing mean annual temperatures of 1.4-4.2°C and decreasing rainfall, particularly in Northern Ghana. The most serious impacts are related to increased frequency and magnitude of extreme weather events leading to droughts and floods, and worsening vulnerability. These climatic changes are resulting in yield losses and increased pestilence. Under the business-as-usual scenario, most cereals are projected to experience yield losses between 8–11 percent by 2030, and 16–21 percent by 2050. Also, post-harvest losses are projected to increase due to increased incidence of pests and diseases. It has been estimated that the Fall Army Worm, a major maize pest which struck Ghana in 2017, caused maize yield losses of up to 26.6 percent (equivalent to US\$177 million). Further, about 70 percent of water resources used in Ghana are in a transboundary river basin (the Volta) which depends on amount of rainfall and discharge from neighboring countries, making Ghana, located on the downstream of the Volta, highly vulnerable to floods. Hence, managing risk, including scaling up resilience enhancing investments in water management and irrigation, other climate-smart technologies and services as well as integrated pest and disease surveillance and management, will be critical in adapting to the effects of climate change. This calls for effective coordination between Ghana and its neighboring countries.

(c) **Another challenge is the low capacity to produce and disseminate weather and climate information to all stakeholders.** Ghana’s weather forecasting capability remains inadequate, collaboration between national organizations and regional networks such as AGRHYMET remains weak, and lack of a national digitized hub to consolidate and coordinate information generation and ensure its effective dissemination to stakeholders hampers informed planning on the part of farmers, Government, and other stakeholders.

(d) **Agricultural commodities in Ghana are traded both in the local and external markets but challenges remain.** Ghanaian foods traded across the sub-region include maize, cassava, groundnut, millet, rice, and soybean. Between 2018 and 2019, the fastest growing export markets for Ghanaian rice were Togo, Gambia, and Benin. Key challenges to increased trade include high transport and logistics costs, including harassment, illegal payments along roads, poor storage infrastructure, poor market organization (commodity standards, market information), and other non-tariff barriers within the region, among others. Moreover, low food safety standards and thus a high prevalence of mycotoxin contamination constrains regional trade, especially for maize and groundnut. Sanitary and Phytosanitary laboratories are either underequipped or understaffed.

(e) **There is a high incidence of gender inequality in Ghana’s agricultural value chains.** Although women contribute around 70 percent of the country’s agricultural production, marketing and processing, there are several inequalities regarding land possession, access to improved seedlings and other modern inputs, training and education, financial and extension services, and livestock, among others. For example, men hold 3.2 times more of the total farms than women and 8.1 times more of

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<sup>81</sup> The Ghana CSA Investment Plan was developed with the World Bank support and has a financing requirement of US\$389.54 million. It prioritizes a set of nine investments areas needed to boost crop resilience and enhance yields for nearly 1.7 million beneficiaries and their families, helping them adapt to climate change. Investments identified are based on the principle of sustainable intensification (growing more without using more land), lowering emission (sustainable cocoa and rice), and without contributing to further water insecurity (water management for rice).



the medium and large farms.<sup>82</sup> These disparities hinder the productivity and earnings of Ghanaian women in agriculture.

**8. The Government of Ghana recognizes these threats and challenges to the resilience and productivity of the food system.** It further recognizes the benefits of a regional approach to tackling them. Therefore, Ghana has enrolled in the FSRP.

### C. Relevance to Higher Level Objective

**9. The project is in full alignment with the Government’s policy documents as well as its Intended Nationally Determined Contribution, and low emission climate resilient agriculture development pathway.** The Coordinated Programme of Economic and Social Development Policies 2017-2024 calls for: (i) strengthening early warning and emergency preparedness systems; (ii) promoting the application of information and communications technology in the agricultural value chains; (iii) supporting adaptation actions focusing on agriculture and food security, among other areas; (iv) facilitating the provision of community owned and managed small-scale irrigation facilities across the country; and (v) working towards the realization of all the objectives of ECOWAS, including rapid enforcement of an ECOWAS regional market. It is also consistent with *Ghana Beyond Aid* that calls for agricultural modernization, especially promoting climate resilient farming and improved farm yields, and Government’s other major programs, including Planting for Food & Jobs, Rearing for Food & Jobs, Planting for Export and Rural Development, One-Village-One-Dam, and Fall Army Worm Control. Further, the project will support the implementation of the Agriculture Low carbon Development pathway, which is the revised Nationally Determined Contribution. The project is also in line with the Pathway to Food System Transformation, as developed in the context of the United Nations Food System Summit 2021.

**10. In addition, this proposed project is well aligned with the World Bank CPF for Ghana FY22-26 (Report No. 157249-GH).** It is well aligned with focus area 2 (Enhancing Conditions for Diversified Growth and Job Creation) and focus area 3 (Promoting Resilient Development). Specifically, the project would contribute to Objective 2.1 which relates to improved access to markets and increased productivity. The project’s support to developing a resilient food system and livelihoods would also contribute to Objective 3.2 which relates to improved natural resource and environmental management. Given the focus of the project on the use of digital technology, gender, and youth, it would also directly contribute to the CPF’s cross-cutting issues of gender and digital transformation.

**11. Investments in the resilience of West African food systems will advance two key World Bank commitments in the region: the GGWI and the Next Generation Africa Climate Business Plan.** Ghana officially joined GGWI in 2015 focusing efforts on the degraded lands of the north and west of the country, which face a significant threat of desertification. It is also well aligned with 3 of the 5 strategic directions of the Next Generation Africa Climate Business Plan, namely strengthening food security, contributing to environmental stability, and fostering climate resilience.

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<sup>82</sup> FAO. 2012. Gender Inequalities in Rural Employment in Ghana -an Overview.



**II. PROJECT DESCRIPTION**

**A. Project Development Objectives**

12. **The PDO** is to increase preparedness against food insecurity and improve the resilience of food systems in Ghana.

**B. Project Results Indicators**

**Table A2.1: Results Indicators for Ghana**

Indicator	Base-line	End Target
<b><i>PDO-level (Outcome) Indicators</i></b>		
Program beneficiaries (number and percentage of female beneficiaries)	0	1,080,000 (40% women)
Reduction of food insecure people in program targeted areas (percentage)	0	25%
Food system actors accessing hydro and agrometeorological advisory services (number and percentage of female beneficiaries)	0	211,200 (40% women)
Producers adopting supported CSA technologies and services (number and percentage of female beneficiaries)	0	240,000 (40% women)
Surface area under integrated landscape management practices in ha	0	4,850
Intra-regionally traded production in selected value chains (maize, rice) (percentage)	20	30%
<b>Component 1: Digital Advisory Services for Regional Agriculture and Food Crisis Prevention and Management</b>		
Satisfaction of farmers who have access to usable weather, climate, and advisory services (by gender) (percentage)	0	80%
Improved access to local climate information services through digital information platforms (yes/no)	No	Yes
Agreements involving co-production of services between the public and private sectors (number)	0	2
<b>Component 2: Sustainability and Adaptive Capacity of the Food System's Productive Base</b>		
Technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes (number)	0	15
Nutrition-sensitive technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes (percentage)	0	30%
Sub-projects selected from the integrated landscape management plans with climate-resilient measures implemented (percentage)	0	70
Spatial information system established and operational to design and plan climate resilient land management practices (yes/no)	No	Yes
<b>Component 3: Regional Market Integration and Trade</b>		
Private sector beneficiaries involved in regional agricultural trade that are supported by the project (number)	0	100
Women farmers reached with assets or services to improve marketing in certain value chains (number)	0	12,000
<b>Component 5: Program Management</b>		
Beneficiaries satisfied with project interventions (percentage)	0%	80%
Grievances registered and resolved by the program (percentage)	0%	90%



### C. Project Beneficiaries and Intervention Areas

13. **The primary beneficiaries are smallholder and medium scale farmers.** At least 1,080,000 beneficiaries (40 percent female) are expected to benefit directly from the project's interventions. Beneficiaries will include: (i) farmers who grow rice, maize, and other crops, and keep livestock as an integral part of their livelihoods; and (ii) vulnerable groups in the targeted areas, particularly unemployed youth. Other direct beneficiaries are: (i) key public institutions involved in agricultural support services, such as the MoFA (ii) the service providers participating in project implementation; and (iii) private agribusiness investors as well as operators of farmers' organizations and micro, small, and medium enterprises in the targeted areas. In total, the project will have at least 300,000 farming families' benefits. These beneficiaries will be selected based on criteria that will be elaborated in the PIM. The project will place special emphasis on women and youth drawing from the Gender Action Plan developed for the project. Together with the household members of selected farmers, , total direct beneficiaries will be 1,080,000 individuals.<sup>83</sup>

14. **The population of the countries bordering Ghana (in Côte d'Ivoire, Burkina Faso, Togo), will also benefit from project interventions.** More productive agricultural systems and increased agricultural revenue in project areas will contribute to food security across the region through trade exchanges. In addition, given the region's agro-climatic and socio-economic similarities, neighboring countries may readily adopt technologies developed through the project.

15. **Intervention areas.** The proposed project will operate nationwide. However, interventions for the selected value chains will be focused in the Lower Volta Basin (Greater Accra, Eastern and Central Regions); White/Red Volta Basin (Upper East, Upper West, and Northern Regions); and Middle Belt or forest transition areas (Ashanti, Bono and Bono East Regions). Two of the prioritized selected areas (Lower Volta and White/Red Volta) are home to the highest proportion of food-insecure households. They are bordering Burkina Faso (Central trade basin between southern Burkina Faso and Northern Ghana) and Togo where many transborder activities, including trade in the regional value chains, are taking place. The third area (Middle Belt), which is more centrally located, is a food surplus area that can facilitate surplus food production for export to other countries. Therefore, addressing structural challenges in these areas, such as mitigating against the impact of flash floods from Bagre Dam<sup>84</sup> and against the frequent episodes of drought, offers huge regional benefits that range from improved food security and nutrition to better intra-regional trade as articulated in the ECOWAS Agricultural Policy, speedier flow of technology, and enhanced economic activities. Also, transhumance is a significant challenge across the selected areas that can be addressed through the project's interventions, reducing negative spillovers into Ghana.

### D. Project Components

16. In line with the overall program, Ghana's interventions will support immediate response to the food insecurity crisis as well as increase medium- and longer-term investments to build the resilience of the country's food system and its production base. The following are the components and activities.

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<sup>83</sup> Average 3.6 people per household. [www.census2021.statsghana.gov.gh](http://www.census2021.statsghana.gov.gh)

<sup>84</sup> As a permanent solution to the issue, the Government of Ghana intends to construct a Dam at Pwalugu. Prior to the resolution of this issue, FSRP will facilitate smooth flow of information among various parties so that the affected communities receive timely and useful information to minimize human and property loss.



## Component 1. Digital Advisory Services for Agriculture and Food Crisis Prevention and Management (IDA US\$13.1 million)

### 17. **Sub-component 1.1: Upgrading Food Crisis Prevention and Monitoring Systems (US\$1.6 million).**

Relying on a combination of TA, training, and investments in equipment, activities under this subcomponent will:

- (a) **Improve the national and regional capacity to deliver reliable information services on vulnerability, nutrition, and food security.** The project will finance consultancy services to: (i) conduct an assessment of the food security and nutrition vulnerability data generation tools and systems, identify capacity gaps and equipment, and train staff of relevant Ministries, Departments and Agencies, principally the Ghana Meteorological Agency, the National Disaster Management Organization, MoFA, and Ghana Statistical Service, to collect and process reliable data on food security and vulnerability, bush fires, drought, and floods for informed decision making – using regional early warning tools such as the *Cadre Harmonisé*, the ECOWAS Agriculture Regional Information System, as well as Ghana’s Comprehensive Food Security and Vulnerability Assessment; (ii) review and develop a framework to integrate the National Food Security and Nutrition Monitoring System and link it with the regional framework for data exchange and collaboration; and (iii) collect food security and nutrition vulnerability data.
- (b) **Reorganize and improve the national and regional pest and disease monitoring and management mechanisms.** The project will finance TA to: (i) upgrade the existing system for monitoring and reporting on national and regional pests and diseases; (ii) provide training on integrated pest management, including pest and disease identification, integrated control strategies, and Global Good Agricultural Practices certification; and (iii) review and develop regulations on the use of digital technologies such as drones and other equipment in monitoring pests and diseases.
- (c) **Strengthen regional collaboration for food crisis prevention.** The project will finance: (i) TA and equipment to establish cooperation and data/information exchange among the relevant national digital entities and between the national entities and the regional AGRHYMET platform and other stakeholders from the public, private and academic sector. This includes the provision of TA to formulate and implement data policies based on open access principles that enhance the usage and build more value from data related to agriculture, food security and climate change vulnerability; (ii) participation in regional capacity building activities including graduate training (MSc/MPhil) relevant to the objective of FSRP at AGRHYMET<sup>85</sup>; and (iii) participation by relevant national institutions and other stakeholders from various sectors in the regional food security forum and the annual agro-hydro-meteorological fora led by AGRHYMET.

18. **Sub-component 1.2: Strengthening Digital Hydromet and Agro- Advisory Services for Agriculture Producers (US\$11.5 million).** This sub-component will provide support to new services, improving the quality of, increasing access to and use of location-specific weather, climate and hydromet and agromet information. Specifically, the project will:

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<sup>85</sup> AGRHYMET offers training on agrometeorology, hydrology, equipment maintenance, plant protection, food security, climate change, and sustainable natural resources (land and water) management.





- (a) **Improve the production of climate, hydromet, agromet, and impact-based information for use by decision-makers, farmers, pastoralists, and other actors in the food system.** The project will finance consultancies and TA for assessing the state of Ghana’s existing hydromet infrastructures, reviewing the format and type of information offered to stakeholders, and developing a framework for improving and consolidating these systems. This activity will be implemented by leveraging and coordinating with ongoing programs (such as the Flood Early Warning System - of the Ghana Greater Accra Resilient and Integrated Development Project (P164330)) and opportunities for collaboration with the private sector. The project will also finance: (i) the supply and installation of selected meteorological and hydrological equipment based on findings from assessments and feasibility studies (such studies would focus on the cost effective and efficient way to develop priority information services by assessing trade-offs between, for example, owning a high-resolution satellite and downscaling global/regional products or other remote sensing techniques, and different options to reach last mile communities ); (ii) development of a strategy for further use of artificial intelligence and big data to produce climate, hydromet and agromet information in conjunction with public private engagement discussion; and (iii) TA to develop and pilot joint hydromet projects between public and private hydromet and agromet service providers to develop relevant services and products as well as strengthen hydromet systems.
- (b) **Support the timely delivery and use of essential agro-hydro-met information to key users.** The project will finance TA to: (i) develop a digitized agro-advisory hub and related infrastructure (soft- and hardware) in collaboration with the private sector; and (ii) carry out nationwide campaigns to raise farmers’ awareness of the usefulness of early warning alerts and climate information and to raise farmers’ capacity to access and use these information services to support planning of agricultural operations such as cultivation, seeding and harvesting, etc.
- (c) **Strengthen the institutional and financial sustainability of national institutions providing climate, hydromet, and agromet information.** The project will finance: (i) TA to develop a strategy for long-term financial and institutional sustainability that includes leveraging public-private approaches in the collection and dissemination of agromet and hydromet information and policy recommendations to foster collaboration and data access and utilization; and (ii) consultancy services for assessing and implementing a business model that will ensure sustainability of the established digital system.

19. Component 1 will be implemented in collaboration with the AGHRYMET and other regional centers at the regional level as well as relevant national institutions.<sup>86</sup>

## **Component 2: Sustainability and Adaptive Capacity of the Food System’s Productive Base (IDA US\$98.3 million)**

20. ***Subcomponent 2.1: Consolidate the Regional Agriculture Innovation System (US\$8.0 million).*** This subcomponent will strengthen the regional research and extension systems to deliver improved technological innovations including climate-smart, nutrition-sensitive, gender and youth friendly technologies in a sustainable manner. Specifically, the project will:

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<sup>86</sup> Ghana Meteorological Agency, MoFA, Centre for Remote Sensing and Geographic Information Services, Hydrological Services Department, University of Energy and Natural Resources, the Greater Accra Resilient and Integrated Development Project and the Famine Early Warning Systems Accra.



- (a) **Strengthen the national and regional agriculture research centers.** Activities to be financed include:
  - (i) TA and laboratory equipment for the Root and Tuber RCoE, which is hosted by the Crop Research Institute of Ghana; and (iii) training of researchers (four PhDs, four MPhil/MSc, and four Technicians) on climate-smart plant breeding and seed systems.
- (b) **Deepening and expanding R&D networking.** This activity will primarily finance the participation of national agricultural research institutes in trainings on CSA, nutrition and gender sensitivity, land and water management, mechanization, bio-risk technologies, governance systems for RCoEs and NCoS, etc. at the regional level.
- (c) **Modernize national extension services.** The project will invest in modern approaches to extension services, including developing, operationalizing, and training extension workers on an e-extension system and digital agriculture tools within the MoFA.
- (d) **Promote technology access and exchange.** The project will finance the delivery of CSA, nutrition- and gender-sensitive, land, and water management technology packages by the coalition of NCoS-RCoE, CGIAR Centers, other international agricultural research institutes and the MoFA. The project will finance:
  - (i) events, demonstrations, farmer field schools, and materials to expose farmers to climate-smart technologies related to the priority value chains;<sup>87</sup> (ii) the rehabilitation/upgrade of five Agricultural Stations (Asuansi, Babile, Kpeve, Mampong, Wenchi) to function as Technology Transfer Centers for adaptive trials and implementation of CSA and nutrition-sensitive technologies; (iii) construction and equipment of a new laboratory for land and water management at the Soil Research Institute; (iv) training for existing Innovation Platforms based on assessed needs to enable them to participate more effectively in the priority value chains and regional programs; (v) the rehabilitation and equipping of the Seed Laboratory (which is under the Grains and Legumes Development Board) and the National Gene Bank and Tissue Culture Laboratory at the Plant Genetic Resource Institute; (vi) farmers and women groups to produce quality certified seeds of the priority value chains in collaboration with the private seed companies; (vii) rehabilitate irrigation system for two foundation seed multiplication sites for Grains and Legumes Development Board; (viii) support the activities of National Varietal Release Committee.

21. **Subcomponent 2.2: Strengthen Regional Food Security through Integrated Landscape Management (US\$90.3 million).** This sub-component will finance investments combining natural resource management with environmental and livelihood activities using an ILM approach. It seeks to contribute to improved food security for rural households and build their resilience to climate variability by supporting ILM as a long-term collaborative process. The choice of intervention landscapes for this sub-component was made according to the following criteria: (i) food insecurity; (ii) the agro-sylvo-pastoral potential; (iii) fragility due to social conflicts; (iv) national and regional impact; and (v) complementarity with past/ongoing projects. The intended outcome is a food system that makes more-efficient use of already limited land and natural resources and has a significantly smaller environmental footprint including climate mitigation and adaptation measures. More specifically, this subcomponent will:

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<sup>87</sup> Including drought tolerant varieties, agroforestry, soil conservation technologies such as stone lining, bunding, tie-ridging, no tillage, etc.



- (a) **Establish participatory ILM system.** The project will finance TA and consultancy services to assist target communities in the constitution of governance structures, participatory spatial landscape planning, and elaboration of ILM plans and critical subproject documents.
- (b) **Enhance the resilience of ecosystem and food system in priority landscapes.** Activities will be carried out at the landscape level to restore ecosystem functions and resilience as summarized in Table A2.2.<sup>88</sup> The project will finance grants for the preparation and financing of a broad range of sub-projects including activities associated with reducing potential conflicts with transhumant communities (such as the establishment of fodder banks and watering facilities); development of a livestock management system for more effective pasture utilization and livestock disease monitoring; rehabilitation of irrigation infrastructure and development of floodplains/inland valleys; delivery of CSA technologies such as re-afforestation, conservation agriculture, promotion of early maturing/drought tolerant varieties; linkage of farmers and other stakeholders to the digital Agro-Advisory Hub, facilitation of market linkages; construction of market infrastructure, and improvement in accessibility, etc. In addition, the project will support the control of pest and diseases in crops and animals (e.g., fall armyworm activities and other zoonotic diseases), alternative livelihoods, and nutrition sensitive interventions.
- (c) **Secure resilient eco- and food systems beyond priority landscapes.** To improve access to markets, FSRP will finance TA for (i) the formation of at least 10 PAs (or groups of small producers of commodities in the priority value chains in the targeted landscapes,) (ii) the development of business plans, and (iii) capacity building for business plan implementation. Based on the specific contractual arrangements and business plans of each PA, the Project will also finance matching grants for infrastructure, and equipment (including storage facilities, access roads, market/truck stations). This is complementary to sub-component 3.2 as it focuses on small local producers and helps them connect to markets, which they cannot access on their own.

**Table A2.2: Interventions in Priority Landscapes**

Landscape of Lower Volta Area (Lower Volta Basin)	
Intervention Menu	Finance implementation of investments to mitigate negative impacts associated with transhumance (support mapping, gazetting and establishment of cattle grazing reserve, establishment of fodder banks and production of silage at Kpong Irrigation Scheme); support rehabilitation of existing irrigation schemes towards intensification of rice cultivation; fund soil tests and promote use of bio resource in soil amendments; promote CSA techniques such as re-afforestation/community woodlots, conservation agriculture (minimum/zero tillage); support development of high yielding pure rice and maize seed, identify producer groups and facilitate linkages for support and market access; establish fodder banks; intensify rice production at rehabilitated irrigation schemes; intensify production of yellow maize and high-quality protein maize production; process cassava into cassava derivatives such as chips, flour and gari; secure land tenure for development/production (updating the framework documents developed under the GCAP)
Targets	13,000 ha natural grazing reserve; 900ha rehabilitated irrigated land; 105ha reclaimed irrigated land; 600ha re-afforestation/woodlot, three PAs (two PAs in rice value chain and one PA in other (processed cassava derivatives, local cottage industry); 320 ha nutrient

<sup>88</sup> Whereas some indicative subprojects were identified by stakeholders during project preparation, subprojects will be firmed up (and more identified) by the beneficiary communities during project implementation under procedures to be elaborated in the PIM.



	improvement through high protein maize and cassava (yellow fleshed cassava)
<b>Landscape of Northern Belt Area (Upper East, Northeast, Northern Regions) - White/Red Volta Basin</b>	
Intervention Menu	Support closer collaboration among governmental/ non-governmental actors in Ghana, authorities of Bagre and Kopenga dams and AGHRYMET Centre on early warning and predictive hydrological, climate and weather information on White/Red Volta basins; support farmers to access reliable and predictive climate and hydrological information (see Component 1); fund the supply of last mile equipment to farmers within dead zone reception areas; support the promotion of CSA techniques – early maturing seed, drought tolerant varieties with inputs; support re-afforestation/community woodlot, conservation agriculture; promote nutrition improvement; support government actors with flood risk management; support post flooding water, sanitation and hygiene/health campaigns; fund testing of water bodies, water purifiers; support sub-projects for development of floodplains/lowlands, and rehabilitation of Vea, Libga and other small irrigation schemes; establish fodder banks and intensification of rice/tomato production at rehabilitated Tono and Vea irrigation schemes; support intensification of production of yellow maize and high quality protein maize; secure land tenure for development/production (updating the framework documents developed under GCAP); fund soil tests and promote use of bio resource in soil amendments; support development of high yielding pure rice seed, identify producer groups and facilitate market access in south Ghana and sub-region.
Targets	Rehabilitation of 750ha irrigated land, rehabilitation of 1000 ha floodplains, 250ha community woodlot/re-afforestation; 1,200ha cropping using residual moisture after flooding; 30km of farm access roads; 3 PAs (1 each in rice, maize and soya bean).
<b>Landscape of Middle Belt (Forest Transition and Guinea Savana)</b>	
Intervention Menu	Support rehabilitation of Tanoso irrigation scheme; support the development of inland valleys/valley bottoms; support smallholder youth and women in poultry production; support development of the plantain value chain, establishment of plantain model farms; support promotion of CSA techniques, re-afforestation/community woodlot, conservation agriculture, support sub-projects for development of floodplains, support intensification of production of yellow maize and high quality protein maize and soya for nutrition improvement and support poultry value chain; secure land tenure for development/production (updating the framework documents developed under GCAP); fund soil tests and promote use of bio resource in soil amendments; support development of high yielding pure rice seed, identify producer groups and facilitate market access in south Ghana & sub-region and other subregional markets; fund soil tests and promote use of local bio-resources in soil amendments; support activities of predominantly female Plantain Producers and Exporters Association and support construction of plantain market cum export truck station.
Targets	Development of 600 ha of inland valleys; rehabilitation of 520ha irrigable lands; 4 ha model plantain farm in each of 5 districts; plantain export market/ truck station; PAs (rice, maize, soya, poultry and other value chains including 1 plantain producer/ export group). Woodlots 300ha

**Component 3: Regional Food Market Integration and Trade (IDA US\$24.8 million)**

22. **Sub-component 3.1: Facilitate Trade across Key Corridors and Consolidate Food Reserve System (US\$6.8 million).** Under this sub-component, FSRP will finance the preparation and implementation of



regional policies and regulations to increase regional flows of agricultural goods and inputs, and to consolidate the Regional Food Reserve System. The project will:

- (a) **Develop and implement an EATM-S Mechanism.** The scorecard is intended to increase transparency and accountability by tracking national implementation of regional policies and regulations. The project will finance TA for the development and adaptation of a national scorecard in line with ECOWAS policies and regulations.
- (b) **Encourage agricultural regional trade policy harmonization on critical food system resilience issues.** The project will finance the process of harmonizing and aligning the country's trade policies through trade policy consultation. The project will: (i) support a consultative process to harmonize national trade policies on food safety and standards with regional policies and instruments; and (ii) organize roadshows and workshops to sensitize relevant stakeholders on the standards and policies.
- (c) **Improve Regional Food Reserve System Performance.** Ghana is one of the four countries holding food stocks on behalf of the ECOWAS Regional Agency for Agriculture and Food. The project will work with the National Food Buffer Stock Company and other relevant agencies to: (i) assess the state of storage facilities holding regional food stock in terms of capacity, standards, and quality; (ii) improve existing and/or establish storage infrastructure close to major production areas, and to expected places of need/various border posts to reduce losses in transit; and (iii) train staff on management of these facilities.

23. **Sub-component 3.2: Support the Development of Strategic and Regional Value Chains (US\$18.0 million).** This sub-component aims to improve food and nutrition security for smallholders by supporting priority value chains, focusing on backward and forward segments of the value chains, with tangible positive impacts on regional market integration, food security, nutrition and reduced FLW. The focus will be on private businesses led by youth and women, who will be the primary beneficiaries. Ghana has chosen the value chains of rice, maize, and livestock. Five criteria were used to prioritize these value chains, namely: (i) existing market demand, (ii) high growth potential, (iii) potential for poverty reduction, (iv) relevance to Government and Bank priorities; and (v) potential for broad outreach. The project will:

- (a) **Strengthen value chain organization and financing.** FSRP will finance: (i) matching grants to value chain entrepreneurs, including youth and women, to invest in activities such as aggregation centres, improved cold-chain infrastructures that reduce FLW, storage facilities to reduce post-harvest losses, agro-processing, and agricultural trade services, pilot innovative technologies such as alternative feed sources to reduce the cost of poultry feed and production of local vaccines<sup>89</sup>, all aimed at integrating the selected value chains with regional markets; (ii) TA to farmer-based organizations from the priority value chains to improve their operations and profits using the IFC Scope-insight;<sup>90</sup> (iii) TA to expand

<sup>89</sup> Financial support will be in the form of grants and revolving funds to women, the youth, and smallholder farmers, as well as matching grants to Small and Medium-sized Enterprises (SMEs) and other actors along the value chain

<sup>90</sup> This is a tool developed to assess farmer organizations / agribusiness SMEs' ability to function competitively within their respective production and market systems – i.e. a needs assessment to focus on where specific training is needed by measuring/ benchmarking within the following areas: internal management, operations, sustainability, financial management, production base, market, external risks and enabling environment and design specific training packages to their actual needs to make them more credit worthy to build an investable pipeline for development/ commercial finance to scale – assessments and training have been designed to be online to reduce costs and improve effectiveness.



outreach of the Ghana Commodity Exchange warehouse receipts system;<sup>91</sup> (iv) TA to coordinate sector-wide CSA activities (in particular, the Agriculture Low carbon pathway-LTS), and implement the water harvesting and irrigation management for rice, cereal -legume integration and climate resilient poultry production investments areas of the national CSA Investment Plan.

- (b) **Support agricultural competitiveness and market access infrastructure.** The project will finance: (i) TA and consultancies to assess the state of the current product certification regime in the selected value chains, and develop an action plan for improving it, including improving standards for rice paddy and maize;<sup>92</sup> (ii) training and equipment to modernize the SPS laboratories to more effectively inspect, test (using low-cost test kit), and certify goods traded across borders to ensure that they are free of mycotoxins; (iii) a needs assessment of the poultry sector and development of a hatchery management and capacity improvement plan to promote the production of Day-Old Chicks that meet international standards;<sup>93</sup> and (iv) the organization of agriculture hackathons to support young IT start-ups and AgTech innovators, on competitive bases, to develop inspirational agricultural technologies aimed at addressing key challenges in the food system, particularly those that most affect women farmers and agripreneurs.
- (c) **Strengthen multi-stakeholder coordination and promote a private sector enabling environment.** The project will finance: (i) a public-private sector (and non-state actors) platform to dialogue around removing the legal and regulatory impediments to regional trade; (ii) expanding access to information on markets and regional trade requirements by upgrading the functionality of websites for the Ministry of Trade and Industry and the Ghana Commodity Exchange and MoFA; and (iii) simplifying custom formalities for regional trade (no certificate of origin required for agriculture produce and livestock), improvement of border information centres and trainings for drivers and third-party logistics enterprises on documents required for smooth inter- state transportation.

#### Component 4: Contingent Emergency Response Component (US\$0 million)

24. **The CERC will make available resources to strengthen the response capacity of the Government of Ghana in case of emergency.** Some of the project proceeds will be redirected from other components to respond to eligible emergencies or crises. During such periods, systems will be put in place to ensure that timely, reliable, and relevant data are systematically used to improve decision-making to address such crises. In such a case, resources will be allocated to relevant government structures responsible for emergency crises such as MoFA, Environmental Protection Agency, and National Disaster Management Organization under a well-established technical committee to deal with the situation.

#### Component 5: Project Management (IDA US\$13.9 million)

25. This component will establish an effective coordination, management, and M&E system for the project. Key activities will include: (i) establishing and maintaining FM and procurement systems; (ii) reporting on program activities; (iii) ensuring the full implementation of environmental and social risk

<sup>91</sup> The Ghana Commodity Exchange launched the warehouse receipt financing system in November 2019, and by 2020 over 150 smallholder farmers across the country had accessed working capital through the system.

<sup>92</sup> Working with the responsible agencies, including the Plant Protection and Regulatory Services Directorate of MoFA, the Ghana Standards Authority, the Food and Drugs Authority, and the Customs Division of the Ghana Revenue Authority.

<sup>93</sup> Working with Animal Production Direction - MoFA and Veterinary Services



management measures; (iv) maintaining and ensuring the performance of the M&E system; and (v) developing and implementing a knowledge management and communication for development strategy and study tours. It will also include a strategy for targeting youth, gender, and nutrition. It will finance operating costs and support consultancy services for conducting the project’s baseline and impact studies. This component will be implemented by the PIU under the oversight of a NPSC.

26. **Climate Co-Benefits.** Activities under the project include measures to improve carbon sequestration, prevent land degradation, restore land, conserve landscape biodiversity, and promote biodynamic agriculture (with high potential for mitigation co-benefits). Technologies that improve drought tolerance and practices that conserve water (such as zero tillage, system of rice intensification, and alternate wetting and drying for rice) will reduce water evaporation, with adaptation co-benefits. Beyond carbon mitigation, investments in ecosystem restoration, such as irrigation networks and tree planting, will enhance resilience to extreme weather by increasing water availability, supporting food security, and building natural resilience against droughts, floods, wildfires, and other climatic factors and natural disasters. Improved access to near real time climate and hydromet information will improve adaptive capacity of households and communities. The provision and regulation of ecosystem services also improves public health by providing vulnerable communities with clean air and water and fertile soil. These carbon co-benefits can be measured through the implementation of a simple and effective geo-referenced monitoring and evaluation system designed and implemented to assess the impacts of decisions made and actions taken at the landscape scale. The measurement of carbon as well as its commercialization and the sharing of the benefits generated will be explored, where feasible, with the support of the REDD+.

**E. Project Costs**

**Table A2.3: Project Costing by Component**

Component	Amount in US\$ million	Percentage
<b>C1 Digital Advisory Services for Agriculture and Food Crisis Prevention and Management</b>	<b>13.1</b>	<b>8.7</b>
C1.1 Upgrading Food Crisis Prevention and Monitoring Systems	1.6	1.1
C1.2 Strengthening Digital Hydromet and Agro-Advisory Services for Farmers	11.5	7.7
<b>C2 Sustainability and Adaptive Capacity of the Food System’s Productive Base</b>	<b>98.3</b>	<b>65.5</b>
C2.1 Consolidating Regional Agriculture Innovation Systems	8.0	5.3
C2.2 Strengthen Regional Food Security through Integrated Landscape Management (ILM)	90.3	60.2
<b>C3 Regional Market Integration and Trade</b>	<b>24.8</b>	<b>16.5</b>
C3.1 Facilitate Trade across Key Corridors and Consolidate Food Reserve System	6.8	4.6
C3.2 Support to Development of Strategic and Regional Value Chains	18.0	12
<b>C4 Contingent Emergency Response Component</b>	<b>0.00</b>	<b>0.00</b>
<b>C5 Project Management</b>	<b>13.90</b>	<b>9.3</b>
<b>Total</b>	<b>150.00</b>	<b>100.0</b>



### **III. IMPLEMENTATION ARRANGEMENTS**

#### **A. Institutional and Implementation Arrangements**

27. The institutional arrangements for the project are organized around the following functions: (i) oversight and orientation by a NPSC; (ii) overall coordination of project activities and partners and management of the Designated Account and fiduciary responsibilities by a PIU; and (iii) technical execution of project activities, vested with strategic government entities. The PIM, to be prepared by MoFA and finalized by project effectiveness, will detail all coordination, management, implementation, M&E, and reporting functions.

28. The main functions and responsibilities of the NPSC are to: (i) advise the project on strategic directions and supporting activities; (ii) approve the AWPB; (iii) ensure effective collaboration and cooperation among all key stakeholders; and (iv) review the PIU's Implementation Progress Reports, advise on the effectiveness of ongoing activities, and advise on any adjustments needed in the AWPB. The NPSC will be chaired by the Minister for Food and Agriculture (or the Minister's representative) and comprise the Ministers (or Representatives) for Finance, Trade and Industry, and other Ministries and Government agencies deemed relevant to the successful implementation of the project. The committee will meet twice a year.

29. The Borrower has decided to retain the PIU of the closed GCAP to implement the FSRP. The PIU will oversee planning and budgeting of project activities and execute the approved AWPB. It will also oversee subproject agreements, technical supervision and quality control, gender inclusion, environmental and social risks management, and M&E. The PIU will have overall responsibility for managing and coordinating project activities, including procurement and FM and the daily management of the Designated Account.

30. The PIU will be headed by a Project Coordinator, who will be assisted by a Project Team comprised of relevant technical staff (Agriculture Economist, Infrastructure Engineer, and an Agri-business Specialist, Agromet/ hydromet Specialist), Operations Manager, FM Specialist and Accounting Staff, Procurement Specialist, Social Specialist, Environmental Specialist, a GBV Specialist, a M&E specialist and a Communication and Knowledge Management Specialist. The PIU will also contract private service providers as needed for cross-cutting activities such as gender and youth mainstreaming, training, institutional development of government agencies, producer group organizations, etc. Additionally, the project will work with MoFA to establish Zonal offices. Further information will be provided in the PIM.

#### **B. Monitoring and Evaluation**

31. In line with the broad framework of ECOWAS results-based M&E system, the proposed project will implement a robust M&E system to monitor and evaluate the project's performance indicators as defined in the results framework. The system will collect and process high-quality data and allow the World Bank and government to assess progress and react immediately should any issues arise. To collect data, the M&E system will use a mix of conventional approaches and participatory methods involving beneficiaries and other external stakeholders. It will serve both as a day-to-day management tool and as a mechanism to assess project impacts. The system will support supervision by ensuring that baseline and





follow-up surveys and data for key performance indicators are available and regularly updated. By linking technical and financial data on the project's progress, the system will pave the way for developing a comprehensive Management Information System.

32. The PIU will oversee M&E and compliance with the agreed reporting requirements. It will provide support to the internal M&E systems of participating institutions by assisting them with data collection, management, and analysis, including development of computerized data management and mapping system. The PIU will prepare aggregate M&E reports every six months covering project physical implementation and results monitoring. These reports will serve as the basis for semi-annual progress reports to be circulated to the sector ministry and other partners. The progress reports will also inform the semi-annual joint supervision missions fielded by the World Bank and government to ensure compliance with legal covenants and assess the status of project implementation and results. They will also be important inputs for the Mid-Term Review, to be conducted no later than three years after the first disbursement, as well as the final independent evaluation, to be conducted in the last semester of implementation to assess overall achievement of expected project results.

33. The M&E manual will provide details regarding the definition of the results framework, the methodology and instruments to be used for data collection, the institutional arrangements for M&E functions, the GM, and the mechanism to be used for disseminating information. M&E results will inform a communication strategy that will be developed and implemented by the PIU. A baseline survey will be conducted during the first year of implementation to verify and complete the baseline data and targets presented in the results framework. The project will use specialized M&E software for data collection and processing. An M&E specialist located at the PIU will be responsible for all project M&E activities and will be assisted by three M&E assistants located in the three project regional areas.

#### IV. PROJECT APPRAISAL SUMMARY

##### A. Technical, Economic and Financial Analysis

34. **An assessment was carried out to determine the technical, financial, and economic viability of the proposed project.** The project design incorporated lessons learned from the implementation of several regional projects, including West Africa Agricultural Productivity Program (P094084), West African Regional Fisheries Program (P106063), and Regional Sahel Pastoralism Support Project. The project also benefitted from experiences of other countries, mainly in PA's key features and ILM. More important, the design of the project aligns with Ghana's context and specific features (mainly capacity, financing, and private sector readiness). The World Bank portfolio in Ghana has accumulated extensive experience in major technical aspects of this project related to provision of light rural infrastructure items and irrigation development. The MoFA has over the years acquired experience to undertake procurement, distribution, and operation and maintenance of the procured items. Additional capacities needed for effective implementation of the project will be sourced from partners, collaborators, and other appropriate agencies and service providers.

35. **Direct economic benefits from interventions across the selected value chains and the priority landscapes** are projected to derive from: (i) informed decisions by farmers regarding the most appropriate farm operations due to reliable weather forecasts; (ii) enhanced productivity through the dissemination



and use of improved and suitably adapted technologies and capacity building; (iii) increased operating efficiency at farm level through improvements in production and marketing processes, logistics, and market institutions; (iv) greater value addition at farm and/or post-farm levels with more linkages among key players along the value chains; (v) improved market access through business alliances and provision of last mile climate proof infrastructure connections to link farmers to markets; (vi) reduction in post-harvest losses (reduction in GHG emissions); and (vii) income generated from jobs, created by new agro-processing enterprises.

36. **The project's NPV was estimated at US\$165.9 million, and the EIRR at 30 percent. The project remained viable even after an assumption of a 20 percent increase in costs, 20 percent decrease in projected revenue, or both.** Project worth was assessed through the NPV, and the EIRR using “with” and “without” project scenarios. The economic value from improved meteorological services was estimated through avoided loss using the Climate Adaptation in Rural Development Assessment Tool developed by IFAD, and pro-rated with the scope of the project. For irrigation development and other sub-projects, standard output valuation methods were used. Assumptions included a 20-year investment horizon, and 5-15 percent of investment costs going for operation and maintenance after the investment phase. For internationally traded goods such as maize, paddy rice, soybean, and fertilizers, farmgate economic prices were determined on an import parity basis. Economic prices of non-traded goods were obtained by applying a Standard Conversion Factor to financial prices.

37. **Rationale for Public Sector Intervention.** Activities envisaged under this project, which are aimed at creating resilience against climate change and enhancing food safety, are largely public goods. These include improving meteorological services, research in and promotion of CSA, and fostering regional cooperation to promote regional trade thus enhancing food security.

38. **The EX-ACT was applied to assess the project's net carbon-balance.** The calculations were based on agro-ecological characteristics of the project area in Ghana (tropical moist climatic conditions with low-activity clay soils) and on the parameters of land use and crop management practices aligned to the economic and financial analysis. The carbon balance results indicate that the project activities will lead to a total of 755,932 tons of CO<sub>2</sub>e to be mitigated over a period of 15 years starting from project implementation. Per year, the mitigation potential is roughly 54.9 tons of CO<sub>2</sub>e, or 3.7 tons of CO<sub>2</sub>e per hectare.

## B. Fiduciary

### Financial Management

39. In preparing FSRP, an FM assessment of the implementing entity was conducted to determine whether the FM arrangements are adequate for ensuring that: (i) project funds will be used for the purposes intended in an efficient and economical way; (ii) the project financial reports will be prepared in an accurate, reliable, and timely manner; (iii) project assets will be safeguarded; and (iv) the project is subjected to a satisfactory auditing process. Project implementation will be coordinated by MoFA but day to day project activities will be carried out by PIU. The PIU has experience with the implementation of a World Bank-financed IPF operations. This PIU has been audited every year under the recently closed project financed by the World Bank and no significant audit findings have been reported. The FM



assessment found the implementing entity to have basic FM arrangements in place, and the overall residual FM risk for the Project is deemed Moderate. To mitigate fiduciary risk to the extent possible, the following actions need to be implemented: (i) update the FM manual of procedures for the PIU to reflect the specificities of this new project, and integrate these FM procedures into the PIM; (ii) update the current computerized accounting system to handle transactions under the proposed project; (iii) agree upon the IFR format for the project’s quarterly and semi-annual reports; (iv) strengthen the FM arrangements with the assignment of two additional accounts staff to the Accounts Unit to accommodate the demands of the new project; and (v) notify the Ghana Audit Service to serve as the project’s external auditors. The project may use private audit firms if the Ghana Audit Service experiences any challenges.

**Procurement**

40. Procurement under the project will be undertaken in accordance with the World Bank’s ‘Procurement Regulations for IPF Borrowers’ (Procurement Regulations) dated November 2020, per the World Bank’s new Procurement Framework; the ‘Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants’, dated October 15, 2006, and revised in January 2011 and as of July 1, 2016; and other provisions stipulated in the Financing Agreements. The procurement documents will be based on the World Bank Standard Procurement Documents for international market approach, with modification for national market approach, as well as the recently enhanced documents to address Environmental, Social, Health and Safety, GBV, and SEA and SH as appropriate issues. The PP, which will be prepared in the STEP, based on the approved PPSD, will be updated as and when required. STEP will be the primary platform to be used to submit, review, and clear all PPs and prior review procurement activities, as well as real-time repository for the post review procurement activities.

41. Procurement implementation will be undertaken by MoFA/ GCAP through their Procurement Unit that is responsible for procurement processes, with technical inputs and contract management from the appropriate units. The Procurement and Contract Management team of FSRP PIU are retained by the Government of Ghana to complete the preparation of FRSP and implement same. The Procurement Unit is headed by an experienced and proficient Procurement Consultant supported by able Procurement officers, while there is an experienced and proficient Contract Management Consultant heading his team. The staff have gained experience and proficiency in World Bank Procurement requirements and processes to date. Nonetheless, procurement risk is High. The major risks to procurement are: (i) slow procurement processing and decision making with potential implementation delays; and (ii) disruptions caused by the COVID-19 pandemic. To mitigate these risks, the following actions are recommended: (i) maintaining accountability following the expedited approval processes; and (ii) assigning staff with responsibility of managing each contract. The World Bank’s oversight of procurement will be done through increased implementation support, and increased procurement post review based on a 20 percent sample initially and varied based on the dynamic procurement risk rating, in addition to the World Bank’s prior review of specific procurements as appropriate and duly reflected in the PP.

**C. Legal Operational Policies**

Legal Operational Policy	Triggered?
Projects on International Waterways OP 7.50	Yes



Projects in Disputed Areas OP 7.60	No
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42. The Policy is applicable to this project however Ghana is on the downstream of the Volta and activities would not have any impact on riparian countries. On May 10<sup>th</sup>, 2022, the World Bank Western and Central Africa Region Vice President approved an exception to the riparian notification requirement under OP 7.50.

#### D. Environmental and Social Management

43. **Environmental risks and impacts.** The project utilizes the World Bank’s ESF, which provides a holistic tool for identifying and managing environmental and social risks and opportunities in the design and assessment of the project. Six safeguard instruments were prepared and disclosed for the project.<sup>94</sup> The GCAP PIU has Safeguards Specialists – Environmental Safeguards Specialists and Social Safeguards Specialists with requisite expertise needed, such as Land Acquisition, Resettlement and Livelihood consultants to assist with involuntary land acquisition process that may result from project implementation and/or community-based NGOs to assist with stakeholder engagement, GM, and the monitoring and implementation of the project’s mitigation and response measures.

44. **Potential environmental impacts include:** (i) reduction in biodiversity at some project sites developed for irrigation; (ii) pollution and poisoning from plant nutrition and protection materials; and (iii) construction-related impacts, among others. These impacts are mainly site specific and can be managed with the application of well-defined and site-specific ESIA and ESMPs such as: (i) restricting clearance of vegetation to construction and farming areas and re-vegetation by planting of trees/grassland management; (ii) rehabilitation and filling of the exposed or excavated soil soon after completion of works and avoiding or minimizing compaction of soils; (iii) training on sustainable land management practices; (iv) integrated pest management; and (v) reduction of greenhouse gas emissions by ensuring well serviced machinery is used and proper waste management.

45. **Potential negative social impacts include:** (i) risks of land loss and expropriation; (ii) loss of income among small-scale producers through discriminatory, non-inclusive, or non-transparent practices and failure to implement mitigating measures; (iii) health risks related to the use of pesticides (due above all to the absence of integrated pest management); (iv) water-borne diseases that can lead to loss or displacement of labour; (v) poor management of pesticide packages; (vi) loss of grazing land with the development of agricultural perimeters; (vii) pollution of wells and water points by livestock; and (viii) the exclusion of vulnerable groups, especially women, in the allocation and management of agricultural land. These issues are being handled through strict adherence to the ESIA and ESMPs. An RPF has been developed to guide the process and measures for developing a RAP to compensate for land or livelihood loss. The RAP will strictly follow the National Law for expropriation, the principles laid out in the RPF and will be developed, consulted upon, and implemented before commencement of sub-project civil works.

<sup>94</sup> Ghana disclosed the ESMF, RPF, LMP, Pest Management Plan on March 10, 2022 on the MoFA [www.mofa.gov.gh](http://www.mofa.gov.gh); SEP on May 4, The World Bank disclosed the instruments of Ghana on the following dates: ESCP on June 27, 2022, SEP on May 16, 2022, ESMF on February 27, 2022, IPMP on February 8, 2022, RPF on February 27, 2022 LMP on February 23, 2022. [https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword\\_select=allwords&srt=score&order=desc&qterm=P178132&lang\\_exact=\2022 www.mofa.gov.gh/site/programmes/fsrp and negotiated ESCP on July 1, 2022 Ghana\\_ESCP\\_P178132\\_FSRP2.pdf \(mofa.gov.gh\).](https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword_select=allwords&srt=score&order=desc&qterm=P178132&lang_exact=\2022 www.mofa.gov.gh/site/programmes/fsrp and negotiated ESCP on July 1, 2022 Ghana_ESCP_P178132_FSRP2.pdf (mofa.gov.gh).)



46. **Most of the gender gaps relates to:** (i) access to land and farming equipment; (ii) access to extension services delivery; (iii) access to certified seeds supply, fertilizer, and crop protection materials; (iv) access to agricultural technologies; and (v) access to credit and financial services, among others. The project will rigorously implement the Gender and Agriculture Strategy. Project mitigation activities include: (i) ensuring adequate representation and active women participation in decisions made in selecting project beneficiaries; (ii) sensitizing extension agents engaged in project activities about Gender issues and ensuring adhering to fair and equal access to services; and (iii) funds have been set aside for grants to women (and youth) groups.

47. **The overall GBV/SEA/SH risk for this program is rated Moderate.** There are risks of project staff (including third party service providers), often mostly male, coming into contact with beneficiaries with a power dynamic that increases SEA/SH risks. This will be mitigated through training and strict application of the related safeguard measures. The ESMF has a SEA/SH Risk Mitigation and Response Action Plan. This will be rigorously implemented, and the client will ensure that GBV risks are reflected in all safeguard’s instruments (i.e., Project ESMP and Contractor’s C-ESMP). The SEP of the project, which will be implemented over the life of the project to keep the local communities and other stakeholders informed about the project’s activities, to specifically address GBV related issues. The SEA/SH Risk Mitigation and Response Action Plan will also include the availability of an effective GM with multiple channels to initiate a complaint. It should have specific procedures for GBV including confidential reporting with safe and ethical documenting of GBV cases.

**V. RISKS**

48. **The overall project risk for Ghana is rated - Substantial.** On the one hand, the project draws considerably from the experience gained from the implementation of regional projects (West Africa Agricultural Productivity Program (P094084), West African Regional Fisheries Program (P106063), and Regional Sahel Pastoralism Support Project (P147674)). On the other hand, the prevailing COVID-19 circumstances, and the pandemic’s potentially negative impacts on Ghana’s economic prospects in the medium term, the implications of the war in Ukraine, plus the risks inherent to the project’s activities weigh heavily on the project’s risk profile, raising the risk to Substantial.

49. **Macroeconomic – Substantial.** The Government of Ghana’s income flows are based on cocoa and other agricultural commodities with unstable prices on the international market. The burden of the current COVID-19 situation has compelled Government to divert resources to the health sector. This burden on the government has made the country less resilient to external macroeconomic shocks.

50. **Environment and Social – Substantial.** The project activities are anticipated to have site specific environmental and social risks. The environmental and social benefits are expected to outweigh adverse effects.

**Table A2.4: Risks Identified for the Ghana FSRP program**

Assessment by risk category	Assessment
1. Politics and governance	Moderate
2. Macroeconomic	Substantial
3. Sector strategies and policies	Low
4. Technical design of the project	Low



5. Fiduciary	Moderate
6. Environmental and social aspects	Substantial
7. Institutional Capacity for Implementation and Sustainability	Moderate
8. Stakeholders	Moderate
9. Other	Moderate
Overall	Substantial



## ANNEX 3: FOOD SYSTEM RESILIENCE PROGRAM FOR SIERRA LEONE

### I. STRATEGIC CONTEXT

#### A. Country Context

1. **Prior to the Ebola Virus Disease epidemic and the collapse of iron ore prices in 2015, Sierra Leone's economy was growing by an average of 7.8 percent annually during the period 2003-2014.** This growth was primarily driven by agriculture, mining, and services. After suffering a 20.6 percent contraction in 2015, the economy resumed growth, but at a slower pace, averaging 4.7 percent per annum during the period 2016–2019, supported by recovery in the agriculture and services sectors. Following the COVID-19 outbreak in 2020, and the subsequent restrictions and disruption to the global supply chains, the economy contracted by 2 percent in 2020. Economic growth resumed in 2021 at an estimated rate of 3.1 percent.<sup>95</sup> However, the country's economy remains highly vulnerable to domestic and external shocks due to its dependence on mining which is sensitive to shifts in global demand and prices, and on agriculture which is rain-fed and subject to erratic weather changes. Moreover, new virulent COVID-19 strains and/or new Ebola Virus Disease outbreaks could stifle medium term growth and cripple poverty reduction efforts.

2. **Sierra Leone is one of the poorest countries in the world, with a Human Development Index of 0.452 and ranked 182 out of 189 countries in 2019, and with GDP per capita of only US\$509 in 2020.** The country's high population growth rate (2.1 percent in 2020) has slowed down per capita GDP growth to an average of only 2.2 percent annually. Besides this challenge, the national poverty rate declined by 5.6 percentage points over the past decade, from 62.4 percent in 2011 to 56.8 percent in 2018, largely on the back of a sizeable drop in urban poverty<sup>96</sup>. Indeed, poverty remains mostly a rural phenomenon (with a rural poverty incidence of 78.7 percent), as well as an agricultural phenomenon (the poorest households are those headed by people engaged in agriculture). More than 70 percent of the rural poor are women, most of whom are engaged in agriculture.

#### B. Sectoral and Institutional Context

3. **Agriculture is the engine of economic growth and poverty alleviation in Sierra Leone.** The sector contributed about 60 percent to the country's GDP in 2020, and 28 percent (9 percent without wood products) to total exports in 2018.<sup>97</sup> The sector employed 55 percent of the population in 2019<sup>98</sup> and remains essential for pro-poor economic growth in Sierra Leone, as rural areas support around 70 percent of the total population. The country is endowed with abundant rainfall (2,500 – 5,000 mm per annum), and the land is suitable for the cultivation of a wide range of crops including rice, cassava, maize, millet, fruits, and vegetables. It is also suitable for rubber, cocoa, coffee, oil palm, and livestock rearing.

4. **However, agricultural productivity remains low.** Yields of main crops are estimated to be about a third of their potential productivity levels. This is, in part, due to weak research and extension systems which are unable to develop and disseminate suitably adapted improved technologies and innovative

<sup>95</sup> World Bank. 2022. Data. <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?ep=0&locations=SL>

<sup>96</sup> World Bank. 2019. Poverty and Shared Prosperity in Sierra Leone, 2011-2018C

<sup>97</sup> World Bank. National Accounts Data

<sup>98</sup> World Bank. based on data from the International Labor Organization



practices (such as high yielding, drought tolerant, and disease resistant seeds, soil and water conservation and other climate-smart practices), low use of fertilizers, limited access to financial services, and poor value chain integration, among others. Due to low productivity and production, the country has been unable to meet the local demand for rice, its principal staple food. In recent years, close to 40 percent of national rice consumption is imported annually (worth ca. US\$200 million in 2021), and the gap is growing.

5. **Climate change risks are increasing in Sierra Leone which might jeopardize food security.** These risks include rising temperatures, extreme weather events (such as intense single rainfall episodes, floods, and droughts), and unpredictable cropping calendars. These climatic changes will negatively affect crop production, such as rice which is highly sensitive to increased humidity and rainfall intensity and is vulnerable to pests that thrive in higher temperatures. These adverse impacts have heightened the need for timely, reliable, tailored, and impact-based information for undertaking adaptation and mitigation measures by the various stakeholders, including smallholder farmers. However, according to the 2021 Country Hydromet Diagnostic<sup>99</sup>, SLMA has a limited number of functional observation infrastructure, limited forecasting capability, and an inadequate coordinating framework for addressing and communicating climate and weather-related emergencies, among its many other weaknesses. Out of a possible score of 10 points, SLMA obtained an average score of 1.7 points on the said diagnosis.

6. **In addition, poor farming practices are contributing to climate change.** This is particularly the case for shifting cultivation and “slash and burn” of forest lands to plant upland rice. These, and other non-CSA practices are contributing to GHG emissions and to the degradation of the natural resource base. Overcoming these challenges requires integrated landscape planning and management approaches. Sierra Leone has developed a framework and guidance note for mainstreaming CSA and Nutrition-Smart Agriculture in the strategic programs of the MAF. This includes strengthening the weak research and extension systems to generate suitably adapted technologies and innovations necessary for mitigating the impact of climate change and enhancing resilience and food security, including nutrition. However, implementation of the elements of the framework has remained very limited due to very low public expenditure in agriculture (2.4 percent of total government expenditure).

7. **Food insecurity remains a challenge for Sierra Leone and appears to be worsening.** The population suffering from food insecurity increased from 45 percent in 2010, to 57.3 percent by 2020.<sup>100</sup> About 4.7 million people (3.3 million in rural areas and 1.4 million in urban areas) are projected to experience food insecurity for the period June – August 2022, of whom 1 million are projected to be at crisis level, needing food assistance.<sup>101</sup> Food insecurity is being exacerbated by the COVID-19 pandemic which is putting pressure on consumption, and on the already poor nutritional outcomes. Indeed, severe acute malnutrition increased from 0.6 percent in 2017 to 3.7 percent in 2020, whereas global acute malnutrition increased from 2.6 percent to 6.7 percent over the same period. However, the FNSEWS multi-agency taskforce is still a nascent framework that is heavily lacking in data collection capability, analytical skills, and operating systems necessary to provide timely and reliable information to facilitate appropriate response.

<sup>99</sup> Alliance for Hydromet Development and African Development Bank Group. 2021. Country Hydromet Diagnostics, Sierra.

<sup>100</sup> WFP. 2021. The State of Food Security in Sierra Leone 2020, Comprehensive Food Security and Vulnerability Analysis Sierra Leone.

<sup>101</sup> RPCA. 2022. <https://www.food-security.net/en/datas/sierra-leone-2/>





8. **Trade flows in efficient and reliable markets connect food surplus and deficit areas and stabilize food prices, thus enhancing food security.** They are essential for agricultural growth and transformation, food and nutrition security, resilience to shocks, and broader regional integration. There is some level of agricultural trade (mostly gari, local rice, and palm oil) between Sierra Leone and its neighbors (mostly Guinea), both formal and informal, and the latter largely undocumented. More generally, trade challenges in Sierra Leone are attributable to: poor access to trade information, high levels of physical inspections, multiple fees, licenses, permits and certificates, manual processes, and the lack of coordination among agencies.<sup>102</sup> These impediments limit robust trade and encourage recourse to informal channels.<sup>103</sup> Yet, agricultural commodities traded informally escape sanitary and phytosanitary controls meant to ensure adequate food safety and avoid proliferation of diseases across borders.<sup>104</sup> Informal channels also create unfair competition to formal ones. It is important to streamline and digitize trade processes to expedite formalities and promote formal trade in agricultural commodities, and to strengthen the responsible institutions and policy framework, including aligning grades and standards with those of ECOWAS.

9. **Gender disparity in Sierra Leonean agriculture is large, which hinders women from participating in agricultural development to their fullest potential.** Constraining factors in Sierra Leone include limitations to women's access to land (women are often relegated to marginal lands that are most vulnerable to climate effects), low utilization of modern inputs, limited access to agricultural advisory services, limited crop choice (e.g., some women may not grow tree crops due to uncertain land tenure regimes), low skills, low access to labor saving tools (including machinery), and low access to financial services, among other things. In response to these challenges, the Government of Sierra Leone has developed the Gender in Agriculture Policy to serve as a blueprint for mainstreaming women empowerment in agriculture.<sup>105</sup> This policy is meant to serve as a guide to all programs implemented in the sector. In addition, the sector remains unattractive to the youth (another vulnerable group) as labor productivity in the sector remains about one-third lower than the average national labor productivity.

10. **The Government of Sierra Leone recognizes the regional character of many of the measures needed to tackle the above issues.** The implementation of a comprehensive regional strategy to meet the core challenges of climate change, low agricultural productivity, accelerated land degradation, and limited food trade flows between surplus and deficit areas, would improve food security and the food system's resilience in the region. Sierra Leone will seek to intensify production of the crops of regional food security importance, such as rice and cassava, to effectively participate in interregional trade and contribute to the flow of food to improve food security in the region. Sierra Leone will also benefit from positive spillovers from regional R&D capacity and other cross border collaboration (such as regional pests and disease monitoring, meteorological forecasts, etc.) to provide hydrometeorological services and early warning information to producers. Hence its decision to participate in FSRP.

### C. Relevance to Higher Level Objectives

<sup>102</sup> World Bank. 2019. Trade Facilitation Support Program. Sierra Leone: Trade facilitation improvements are starting to bear fruit. <https://www.worldbank.org/en/news/feature/2019/07/18/sierra-leone-trade-facilitation-improvements-are-starting-to-bear-fruit>

<sup>103</sup> International Growth Center. 2018. The realities of cross-border trade between Sierra Leone and its neighbors, Policy brief 39403,

<sup>104</sup> Lesser, C. and E. Moisé-Leeman. 2009-02-18. Informal Cross-Border Trade and Trade Facilitation Reform in Sub-Saharan Africa. OECD Trade Policy Papers, No. 86. <http://dx.doi.org/10.1787/225770164564>

<sup>105</sup> Ministry of Agriculture and Forestry. 2020. Gender in Agriculture Policy (GIAP).



11. **At the national level, the FSRP is closely aligned with Sierra Leone’s Medium Term National Development Plan (2019-2023).** The plan provides a roadmap for Sierra Leone’s economic transformation, with actions in seven policy clusters: (i) human capital development; (ii) diversifying the economy and promoting growth; (iii) infrastructure and economic competitiveness; (iv) governance and accountability for results; (v) empowering women, children, adolescents, and persons with disability; (vi) youth employment, sports, and migration; and (vii) addressing vulnerabilities and building resilience. FSRP directly contributes to clusters (iii), (v), and (vi), and indirectly contributes to clusters (i), (ii) and (vii). The agriculture-specific interventions of the plan are contained in the National Agricultural Transformation Plan (2023) to which this project is similarly aligned. FSRP will support the Government of Sierra Leone to implement the actions and roll out plan for sustainable food systems contained in the synthesis report of the Country Food Systems Dialogue prepared as part of the 2021 World Food Systems Summit. It will also contribute to the Sierra Leone’s national mitigation objectives as articulated in its Nationally Determined Contributions by supporting the restoration of degraded landscapes and modifying the production techniques to reduce GHG emissions in agriculture to contribute to the achievement of the country’s adaptation objectives.

12. **The proposed project is also fully aligned with the latest WBG Country Partnership Framework for Sierra Leone, FY21-FY26 (Report No. 148025-SL).** FSRP will directly contribute to the achievement of the objectives of Focus Area 3: Economic Diversification and Competitiveness with Resilience, and indirectly contribute to Focus Area 1: Sustainable Growth and Accountable Governance, by scaling up adoption of CSA techniques to promote low carbon agriculture and increase the resilience of the country’s food system to shocks.

**II. PROJECT DESCRIPTION**

**A. Project Development Objectives**

13. **The PDO is to increase preparedness against food insecurity and improve the resilience of food systems in Sierra Leone.**

**B. Project Results Indicators**

**Table A3.1: Result Indicators of Sierra Leone**

Indicator	Baseline	End target
<b>PDO-level (outcome) indicator</b>		
Program beneficiaries (number and percentage of female beneficiaries)	0	365,200 (40% women)
Percentage of reduction of food insecure people in program targeted areas	0	25
Food system actors accessing hydro and agrometeorological advisory services (number and percentage of female beneficiaries)	0	120,000 (40% women)
Producers adopting CSA technologies and services (number and percentage of female beneficiaries)	0	160,000 (40% women)
Land area under integrated landscape management practices (Hectare (Ha))	0	3,000
Intra-regionally traded production in selected value chains (Percentage)	0	30
<b>Component 1: Digital Advisory Services for regional agriculture and food crisis prevention and management</b>		
Satisfaction of farmers who have access to usable weather, climate and advisory services (by gender) (percentage)	0	80



Indicator	Baseline	End target
Improved access to local climate information services through digital information platforms (yes/no)	No	Yes
Agreements involving co-production of services between the public and private sectors (number)	0	2
<b>Component 2: Sustainability and adaptability of the productive base of the food system</b>		
Technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes (number)	0	9
Nutrition-sensitive technologies made available to farmers by the consortium of NCoS, CGIAR and other international research institutes (percentage)	0	30
Sub-project selected from the integrated landscape management plans with climate-resilient measures implemented (percentage)	0	70
Spatial information system established and operational to design and plan climate resilient land management practices (yes/no)	No	Yes
<b>Component 3: Regional Market Integration and Trade</b>		
Private sector beneficiaries involved in regional agricultural trade that are supported by the project (number)	0	180
Women farmers reached with assets or services to improve marketing in certain value chains (number)	0	90,000
<b>Component 5: Program Management</b>		
Beneficiaries satisfied with project interventions (percentage)	0	80
Grievances registered and resolved by the program (percentage)	0	90

### C. Beneficiaries and Project Intervention Areas

14. The project will directly benefit 182,000 farming households, with impact on 365,200 direct beneficiaries, of which at least 45 percent (164,340) will be women, 40 percent (146,080) youth, and 5 percent (18,260) vulnerable groups, including people with disabilities. They will benefit from timely agro-meteorological alerts, improved inputs (such as high yielding, drought resistant seeds), climate-smart farming methods, and market linkages, among other factors. The MAF has developed a national farmer database with unique biometric identifiers and precise farm locations with GPS coordinates. This system will facilitate farmer identification and monitoring.

15. Direct beneficiaries will also include processors, transporters, traders, and other agricultural (M)SMEs/agribusinesses engaged in the targeted value chains (rice, cassava, and livestock) who will benefit from capacity building (including training, business advisory services, and matching grants where applicable). Other direct beneficiaries will include various agencies and organizations (such as MAF’s Extension Service as well as Crop Protection Services Unit, the SLMA, NWRMA, Ministry of Trade and Industry, National Federation of Farmers in Sierra Leone, the Sierra Leone Women Farmers Forum, the Sierra Leone Agricultural Research Institute, and other institutions) whose capacity will be strengthened through training, equipment and other forms of capacity building.

16. Indirect beneficiaries will include individuals and entities outside Sierra Leone which will benefit from the technologies generated in Sierra Leone and made available through the information sharing arrangements under this project.

17. The FSRP will be implemented in all districts of Sierra Leone and focused on the three priority value chains: rice, cassava, and livestock. These value chains were selected because of their potential for



regional food and nutrition security, and the natural comparative advantage that Sierra Leone has in developing and promoting them. For the respective value chains, the following ten districts will be targeted: (i) Rice – Bonthe, Port Loko, Tonkolili, Bo, Kenema and Kambia; (ii) Cassava – Bonthe, Bo, Moyamba, Tonkolili and Pujehun; and (iii) Livestock – Bo, Moyamba, Koinadugu, Falaba. The selection criteria for the areas of intervention were based on (i) food insecurity; (ii) the agro-sylvo-pastoral potential; (iii) national and regional impact; and (iv) complementarity with past/ongoing projects.

#### D. Project Components

##### Component 1: Digital Advisory Services for Agriculture and Food Crisis Prevention & Management (IDA US\$ 13.7 million equivalent)

18. **Sub-component 1.1: Upgrading Regional Food Crisis Prevention and Monitoring Systems (US\$5.3 million equivalent).** This subcomponent will provide support to transform the regional food and agriculture risk management architecture (food security-relevant data collection, analysis, forecasting, and management) to provide relevant information and advisory services to underpin risk management decisions. Specifically, the project will:

- (a) **Improve national capacity to deliver reliable information services on vulnerability, nutrition, and food security.** FSRP will improve the capacity of the FNSEWS Task Force to collect, analyze, and avail information on food security including through the *Cadre Harmonisé* and the ECOWAS Agriculture Regional Information System to support decision-making and advisory services. Specific project activities will include: (i) strengthening capacity at the national level through training and operational support to the task force; (ii) improve user-targeted agro-advisory services, and early warning and response services for food security through TA to develop a regulatory and policy framework for enhanced collaboration between the public and private sectors in the production and dissemination of early warning data and information on climate change vulnerability for the agricultural sector; including strengthening ICT infrastructure and digital systems, including TA, at Policy Evaluation, Monitoring and Statistics Division and FNSEWS for data collection, processing, and analysis, developing decision support tools and methods for improved and user-targeted advisory services as well as food security early warning and response services, and dissemination of food security early warning information; and (iii) the introduction of innovative technologies will be considered to develop cost effective systems, which is partially informed by the TA mentioned in (ii).
- (b) **Reorganize and improve national pest and disease monitoring and management mechanisms.** FSRP will finance training, systems development, and operational support for MAF to improve phytosanitary data collection and dissemination of pest and disease early warning information (which becomes increasingly important in the region, among others due to climate change), and for the Office of National Security and the National Disaster Management Agency for disaster risks evaluation and undertaking appropriate responses as per their respective mandates.
- (c) **Strengthen regional collaboration for food crisis prevention.** FSRP will support the harmonization of approaches and promotion of regional collaboration and collaborative public and private sector partnerships. This will include: (i) establishing thematic working groups to promote collaboration between regional and national entities and laying the foundation for sustaining the development and



improvement of services; and (ii) reviewing and implementing data policies for MAF, SLMA, and NWRMA based on open access principles to build value for data related to agriculture, food security, climate change vulnerability, and hydromet services.

19. **Sub-component 1.2: Strengthening Digital Hydromet and Agro-Advisory Services for Farmers (US\$8.4 million equivalent).** This sub-component aims to develop new services that increase the quality, accessibility, and use of impact-based and location-specific weather, climate, and hydromet and agromet information to provide tailored services of various kinds. Special attention will be paid to the needs of the most vulnerable groups, such as female and young farmers. Investments under this sub-component will seek to:

(a) **Improve the production, dissemination and use of hydromet, climate, agromet and impact-based information for the use of decision-makers, farmers, pastoralists and other actors in the food system.**

This will be accomplished through: (i) augmenting the national hydromet infrastructure and technical capacity to observe and analyze hydrometeorological phenomena; (ii) establishing dialogue platforms for enhancing cooperation between public and private hydromet and agromet service providers; and (iii) training SLMA and NWRMA staff on hydromet and climate monitoring, data management, forecasts and the development and delivery of services.

(b) **Support the timely delivery and use of essential agro-hydrometeorological information to key users.**

Timely hydromet information will be provided to users through multi-modal communication channels, including digital/ICT platforms, in partnership with the private sector (telephone companies, traders in agricultural commodities, ICT service providers, institutions of higher learning, civil society organizations, etc.), civil society actors and NGOs where relevant. Institutional support (equipment, TA, operational support) will be provided to public agencies (including extension agents) to build capacity for developing and deploying impact-based warning and advisory systems to meet the requirements of agriculture and food security.

(c) **Strengthen the financial and institutional sustainability of national and regional institutions providing climate, hydromet, and agromet information:**

(i) TA to develop and implement a national strategy for public-private partnerships in the collection and dissemination of agromet and hydromet information that includes recommendations to foster collaboration and data utilization; (ii) update policies and data access technologies to facilitating open access to relevant hydrological and meteorological data and basic services; and (iii) developing and implementing a strategy for long-term financial and institutional sustainability leveraging state-of-the-art technologies and new business models, including leveraging partnerships with the private and academic sectors.

20. **Gender:** In order to maximize women benefits under Component 1, assessments will first be done to appropriately calibrate the needed support, including developing information tools to address women's information requirements, and a toolkit for e-learning opportunities focusing on women, among others.

**Component 2: Sustainability and Adaptive Capacity of the Food System's Productive Base (IDA US\$30.1 million equivalent)**



21. **Sub-component 2.1: Consolidate Regional Agriculture Innovation System (US\$9.6 million equivalent).** The objective of this sub-component is to consolidate the national research and extension systems to deliver, in a sustainable manner, adaptive, climate-smart, nutrition-sensitive, gender- and youth friendly technological innovations for the country's food system. The sub-component will:

- (a) **Strengthen national and regional Research Centers.** Planned activities include rehabilitation of infrastructure, acquisition of equipment and materials/goods, consultancy services, and training activities, among others on climate change vulnerability and CSA, for: (i) consolidation of NCoS and RCoE, including enhancing institutional capacity for adaptive research (including completing the process of upgrading Rokupr to a RCoE on mangrove rice, and developing action plans for Njala and Rokupr Agricultural Research Centers), supporting adaptive research activities at Njala, Rokupr, and Teko research centers for rice, cassava, and livestock; and supporting the production of breeder and foundation seeds of priority crops and partnering with private sector agro-dealers for seed multiplication; and (ii) capacity building for young scientists (PhDs, MPhil/MScs, undergraduate training, specialized trainings, and non-academic trainings), and for lab technicians, the Sierra Leone Seed Certification Agency, agro-dealers, and seed producers (including short-term trainings on CSA techniques, among others for mangrove rice.) This should be done in collaboration with national and regional partners, including the CGIAR centers (Africa Rice, International Institute of Tropical Agriculture and others).
- (b) **Deepen and expand R&D networking.** The project will finance Sierra Leone's participation in international scientific fora, in regional technology exchange events, in strategic studies of regional significance, as well as support exchange of researchers, communication, and knowledge sharing, with the assistance of CORAF.
- (c) **Modernize national extension services.** FSRP will finance digital agriculture and e-extension for more effective advisory service delivery. Specifically, the project will: (i) facilitate the review and adoption of the national agricultural extension policy and action plan; (ii) support the establishment of an e-extension platform and an e-learning and resource center at MAF; (iii) support training of MAF staff (extension officers) on innovative approaches to agricultural extension service delivery, including the use of digital technologies and leveraging mobile telephony for promoting efficient food systems; and (iv) finance competitively selected young IT start-ups and ag-tech innovators addressing key food system challenges, particularly those that most affect women farmers and women agripreneurs.
- (d) **Promote technology access and exchange.** The project will finance: (i) the rehabilitation of two technology transfer centers, the establishment of adaptive trials and demonstration fields, and the development of dissemination materials; (ii) capacity development (including training, business advisory services, and access to matching grants under Component 3) for technology suppliers – including climate-smart seed and other input suppliers, manufacturers of mechanized and processing equipment – to scale up the availability of innovations; (iii) the exchange of innovations developed in Sierra Leone for the benefit of the regional R&D system; (iv) the strengthening of the country's soil fertility management capability (soil map preparation, soil testing, updating fertilizer recommendations, and innovative mechanization services); and (v) training extension officers to promote the adoption of climate-smart and carbon-neutral techniques such as conservation tillage and



low-emission and carbon sequestration technologies to support adaptation to climate change and reduce GHG emissions.

22. The sub-component will finance the rehabilitation of infrastructure, acquisition of equipment, materials, and goods, consultancy services, and training activities.

23. **Sub-component 2.2: Strengthening Regional Food Security through ILM (US\$20.5 million equivalent).** This sub-component seeks to contribute to improved food security for rural households and build their resilience to climate variability by supporting ILM as a long-term collaborative process. The intended outcome is a food system that makes more-efficient use of already limited land and natural resources, is more resilient, and has a significantly smaller environmental footprint. More specifically, this sub-component will:

(a) **Establish participatory ILM system.** In each target area, this sub-component will finance stakeholder mobilization and awareness raising for participatory integrated landscape planning and management. The expected results are the elaboration of a shared development vision taking into account climate change vulnerabilities, the development of an ILM plan, and the establishment or strengthening of the functioning of local committees to lead program implementation.

(b) **Enhance the resilience of eco- and food systems in priority landscapes.** The sub-component will finance various climate-smart technology sub-projects relating to: (i) land and watershed restoration, including construction of terracing, check dams, trenches for water harvesting, reseeding, re-vegetating, conservation agriculture, small irrigation infrastructure, system of rice intensification, etc.; (ii) soil fertility management, especially application of soil lime for restoration of saline lands, and application of organic fertilizer; and (iii) improved crop (rice and cassava) and livestock (large and small ruminant) materials with desired characteristics, including high nutrient density, high yielding, heat and drought tolerance, pest and disease resistance.

(c) **Secure resilient eco- and food systems beyond priority landscapes.** This activity is very complementary to sub-component 3.2 as it focuses on small local producers and helps them connect to markets which they cannot access on their own. FSRP will finance a specific matching grant program to support the formation of PAs, or groups of small producers of certain products in the targeted landscapes and will help them develop their business plans and conclude contractual agreements with national and international buyers.

24. **Crosscutting services through Public-Private Partnerships (PPP).** The FSRP will support: (i) PPPs with Farmer Organizations through National Federation of Farmers in Sierra Leone and Sierra Leone Women Farmers Forum for strengthening these apex organizations and improving their coordination role of farmer organizations across the country; and (ii) a PPP with private sector entities providing extension services and ICT infrastructure to deepen farmer outreach.



**Table A3.2: Proposed Landscapes for FSRP interventions**

<b>Gbondapi River Watershed Area (Bonthe District)</b>	
Intervention Menu	Floodplain restoration and erosion control, soil and water conservation including construction of appropriate water management structures (bunds, dikes, weirs, etc.) for flood water management, water harvesting, rehabilitation/construction of small-scale irrigation systems; land and watershed restoration activities including agroforestry, integrated soil fertility management, conservation agriculture, minimum tillage, crop residue management; and support producer groups with CSA packages
Targets	Rehabilitation of 600 ha of small-scale irrigation, development of 1500 lowland, establishment of 120 ha of re-woodlots
<b>Moa and Mano watershed Areas (Pujehun District)</b>	
Intervention Menu	Erosion control; flood plain restoration soil and water conservation including construction of appropriate small-scale water management structures (bunds, dikes, weirs, etc.) for flood water management, water harvesting/retention, rehabilitation/construction of small-scale irrigation systems; land and watershed restoration activities including agroforestry, integrated soil fertility management, conservation agriculture, minimum tillage, crop residue management and support producer groups with CSA packages
Targets	Rehabilitation of 300 ha of small-scale irrigation, development of 1500 ha lowland and 200 ha of woodlots
<b>Great Scares and Little Scares - Kobia, Samu, Mambolo and Baneke community watershed Areas (Kambia District)</b>	
Intervention Menu	Flood plain restoration soil and water conservation including construction of appropriate small-scale water management structures (bunds, dikes, weirs, etc.) for flood water management, water harvesting/retention, rehabilitation/construction of small-scale irrigation systems; land and watershed restoration activities including agroforestry, integrated soil fertility management, conservation agriculture, minimum tillage, crop residue management and support producer groups with CSA packages
Targets	Development of 1500ha developed lowland, establishment of 200 ha woodlots
<b>Rokel River watershed Areas (Port Loko, Tonkolili and Moyamba Districts)</b>	
Intervention Menu	Flood plain restoration soil and water conservation including construction of appropriate water management structures (bunds, dikes, weirs, etc.) for flood water management, water harvesting/retention, rehabilitation/construction of small-scale irrigation systems; land and watershed restoration activities including agroforestry, integrated soil fertility management, conservation agriculture, minimum tillage, crop residue management. Support producer groups with CSA packages
Targets	Rehabilitation of 700 ha of small-scale irrigation, development of 1,500 ha lowland and establishment of 150 ha of woodlots

25. **Gender.** The project will support MAF’s Gender in Agriculture policy by mainstreaming gender in all activities listed above, working in collaboration with Sierra Leone Women Farmers Forum , including: (i) ensuring equal gender representation in capacity building activities for researchers; (ii) prioritizing tools, equipment, and farming practices that reduce the drudgery of women farmers; and (iii) ensuring equal gender representation in all farmer groups (and ensuring that at least 30 percent of beneficiary groups are women groups, i.e., groups with at least 90 percent female membership).





### Component 3: Regional Market Integration & Trade (IDA US\$11.2 million equivalent)

26. **Sub-component 3.1: Facilitate Trade Across Key Corridors and Consolidate Food Reserve System (US\$2.7 million).** The project will:

- (a) **Develop and implement an EATM-S Mechanism.** The project will finance Sierra Leone to account for its implementation of the policy commitments on agricultural trade and market access set out in the ECOWAS Trade Liberalization Scheme and Economic Community of West Africa Agricultural Policy. Project activities will include training and facilitating data collection and analysis regarding implementation progress of the ECOWAS trade protocol using the EATM-S.
- (b) **Encourage agricultural regional trade policy harmonization on critical food system resilience issues.** The program will finance Sierra Leone to harmonize its domestic trade policies and instruments (including phytosanitary standards, food safety norms, etc.) with regional policies and protocols. The sub-component will: (i) finance policy alignment (including through national multi-stakeholder consultative workshops) and implementation (through awareness campaigns and dissemination of these standards and training national institutions with relevant capacity); and (ii) support the training of public and private sector players on skills for negotiating agricultural trade tariff regimes.
- (c) **Improve Regional Food Reserve System Performance.** The FSRP will finance: (i) the adoption and ratification of the ECOWAS protocols on regional food reserves; (ii) the establishment of the National Food Reserve Authority and construction of a storage facility; and (iii) the design of sustainable mechanisms for financing storage and crisis management systems.

27. **Sub-component 3.2: Support to Development of Strategic and Regional Value Chains (US\$8.5 million equivalent).** The sub-component will support the development of priority value chains that can have a high impact on regional food security. Sierra Leone has high potential to increase production and value addition in mangrove rice and cassava and any other commodity of economic value to the sub-region. Livestock is also an important value chain. As women play very important traditional roles in the production, processing, and marketing of rice and cassava, and in the rearing of small ruminants in particular, improvements made in these value chains could significantly contribute to Government's efforts of closing the gender gap in agriculture. This sub-component will finance TA, training, infrastructure, and goods to enhance performance along these priority value chains. Project interventions will include:

- (a) **Strengthening value chain organization and financing.** FSRP will finance: (i) the development of national action plans to promote the rice and cassava value chains taking into account their vulnerability to climate change; (ii) the establishment of innovation platforms for the selected value chains' integrated development; (iii) strengthening the capacity of national producer and private sector organizations to participate in the development and implementation of policies and programs related to regional trade in agricultural commodities<sup>106</sup>; (iv) TA and financial support to civil society organizations to conduct citizen engagement campaigns to promote regional trade of agricultural commodities; (v) the development and deployment of digital solutions in the provision of market

<sup>106</sup> National Federation of Farmers in Sierra Leone, Sierra Leone Women Farmers Forum and other producer organizations, and SleCAD and other private sector organizations



information (by upgrading Policy Evaluation, Monitoring and Statistics Division market information platform and operational support) and digital payment platforms; (vi) matching grants for value chain actors to invest in activities such as aggregation centers, improved cold-chain infrastructure aiming to reduce food loss and waste, storage facilities, agro-processing, agricultural trade services, and quality seed production systems; and (vii) business advisory services for value chain actors, including developing bankable business plans and linking beneficiaries to financial institutions.

(b) **Support agricultural competitiveness and market access infrastructure.** FSRP will finance: (i) an assessment of the quality control infrastructure of the Sierra Leone Standards Bureau and its capacity to fulfil its statutory responsibilities regarding SPS services, certifications, traceability protocols, and quality control; (ii) the upgrading of equipment and materials at the Standards Bureau laboratories to enhance SPS and quality controls; (iii) the review of quality, sanitary and phytosanitary standards related to rice and cassava value chains; (iv) TA to the Phytosanitary unit at MAF to improve processes and procedures to enable agribusinesses export to external markets; (v) capacity building producers and processors of local products (through training, information bulletins) to meet the quality standards to boost trade in the selected value chains; and (vi) business advisory services for agribusinesses to go digital (establish online presence to facilitate trade).

(c) **Strengthen multi-stakeholder coordination and promote a private sector enabling environment.** FSRP will finance multi-stakeholder mechanisms for coordinating the selected value chains. It will also support a results-based public-private dialogue mechanism to catalyze policy reforms and build a healthy business climate. It will do this through providing support to the Private Sector Unit in the MAF, among other things. The project will finance dialogue and consultation meetings, analytical studies to strengthen advocacy, and follow-up on the implementation of public-private dialogue recommendations.

28. The implementation of this Component will be led by the Ministry of Trade and Industry in collaboration with MAF.

29. **Gender:** Specific considerations will include: (i) a lower contribution for women and youth while accessing the matching grant; and (ii) facilitating ecosystem building events (pitch nights, bootcamps, exhibitions, trainings, seminars, etc.) for raising awareness to increase the pool of women and youth owned and led agribusiness SMEs and to provide tailored capacity building support to get them ready to participate in the regional market.

30. **Climate co-benefits.** Activities to be financed under this project include measures to improve carbon sequestration, control land and soil degradation, increase soil carbon and restore land, and conserve biodiversity. Technologies that improve drought tolerance and practices that conserve water (such as zero tillage) and other soil management techniques, the introduction of drought tolerant varieties and CSA techniques, among other climate-sensitive techniques, will increase adaptation co-benefits and contribute to the achievement of Government of Sierra Leone's Nationally Determined Contributions. Beyond carbon mitigation, investments in ecosystem restoration, such as water conservation systems/small scale irrigation and tree planting, will enhance resilience to extreme weather by increasing water availability, supporting food security, and building natural resilience against droughts, floods, wildfires, and other climatic factors and natural disasters. The provision and regulation of ecosystem



services also improves public health by providing vulnerable communities with clean air and water and fertile soil. Thus, in addition to the contributions to adaptation, the project also promotes innovations with strong mitigation potential to foster sustainable production systems. These carbon co-benefits can be measured through the implementation of a simple and effective geo-referenced M&E system designed and implemented to assess the impacts of decisions made and actions taken at the landscape level.

**Component 4: Contingent Emergency Response Component (US\$0.0 million equivalent)**

31. The CERC will finance eligible expenditures in case of natural or man-made crises, disasters, severe economic shocks, or other eligible crises and emergencies in Sierra Leone. Implementation of this component will follow a detailed Emergency Response Manual satisfactory to the WB that will be prepared for each eligible crisis. The component, when deployed, will finance program activities, works, goods, consultancy services, training and capacity building, TA and studies.

**Component 5: Project Management Component (US\$5.0 million equivalent).**

32. **This component will provide support to MAF in facilitating efficient implementation of project activities and tracking results.** This component will finance: (i) the project’s administrative, technical, and fiduciary management; (ii) coordination among all institutional partners; (iii) monitoring and evaluation of the project’s performance and the project’s financial, environmental, and social impact management; and (v) communication activities to publicize and disseminate the project’s results, best practices and success stories. Project financing will cover costs related to: (i) staffing, equipment and operating costs of the NDPPCO; (ii) project planning, M&E activities, consultancies and studies, equipment and operating costs, workshops with relevant stakeholders (e.g., for preparation of AWPB and periodic implementation status reports, technical and financial audits, as well as surveys and analyses for project impact assessments; (iii) the monitoring and supervision of environmental and social safeguards implementation, GBV, GM; (iv) grant management; and (v) preparation and implementation of the project communication action plan.

**E. Project Costs**

**Table A3.3: Total Project Costs by Component**

Component	IDA Financing	
	US\$ million	Percent of Total
<b>C1: Digital Advisory Services for Agriculture and Food Crisis Prevention and Management</b>	<b>13.7</b>	<b>22.8</b>
C1.1: Upgrading Food Crisis Prevention and Monitoring Systems	5.3	8.8
C1.2: Strengthening Digital Hydromet and Agro-Advisory Services for Farmers	8.4	14.0
<b>C2: Sustainability &amp; Adaptive Capacity of the Food System’s Productive Base</b>	<b>30.1</b>	<b>50.2</b>
C2.1: Consolidating Regional Agriculture Innovation Systems	9.6	16.0
C2.2: Strengthen Regional Food Security through Integrated Landscape Management (ILM)	20.5	34.2
<b>C3: Regional Market Integration &amp; Trade</b>	<b>11.2</b>	<b>18.7</b>
C3.1: Facilitate Trade Across Key Corridors and Consolidate Food Reserve System	2.7	4.5
C3.2: Support to Development of Strategic and Regional Value Chains	8.5	14.2
<b>C4: Contingent Emergency Response Component</b>	<b>0.0</b>	<b>0.0</b>
<b>C5: Project Management</b>	<b>5.0</b>	<b>8.3</b>
<b>Total</b>	<b>60.0</b>	<b>100.0</b>



### III. IMPLEMENTATION ARRANGEMENTS

#### A. Institutional and Implementation Arrangements

33. **The institutional arrangements for the project are organized around the following functions:** (i) oversight and orientation by a NPSC; (ii) overall coordination of project activities and partners, and management of the Designated Account and fiduciary responsibilities, by the MAF NDPPCO<sup>107</sup>; a PIU established within NDPPCO with coordinate the day-to-day implementation of the project activities and be established by effectiveness; and (iv) technical execution of project activities, vested with strategic government entities. The PIM, to be prepared by MAF and finalized by project effectiveness, will detail all coordination, management, implementation, M&E, and reporting functions.

34. **NPSC.** The main functions and responsibilities of the NPSC are to: (i) advise the project on strategic directions and supporting activities; (ii) approve the AWPB; (iii) ensure effective collaboration and cooperation between all stakeholders; and (iv) review the NDPPCO's Implementation Progress Reports, advise on the effectiveness of ongoing activities, and advise on any adjustments needed in the AWPB. The NPSC will be chaired by the Minister of Agriculture and Forestry, or the Minister's representative, and comprise the Ministers (or Representatives) of Finance, Trade and Industry, Environment and Science, National Federation of Farmers in Sierra Leone, the Sierra Leone Women Farmers Forum as well as other public and private entities deemed relevant. The NPSC will meet twice a year.

35. **NDPPCO.** The NDPPCO, with the support of dedicated personnel, will oversee planning and budgeting of project activities and execute the approved AWPB through the PIU. It will also oversee subproject agreements, technical supervision and quality control, gender inclusion, environmental and social safeguards, and M&E. The PIU will have overall responsibility for managing and coordinating project activities, including procurement and FM and the daily management of the Designated Account. It will be headed by a Project Manager, who will be assisted in day-to-day project operations by a Project Team comprised of relevant technical specialist, FM specialist and accounting staff, internal auditor, procurement specialist, social development specialist, environmental management specialist, a GBV specialist, and a M&E specialist. The PIU through NDPPCO will also contract private service providers as needed for cross-cutting activities such as gender and youth mainstreaming, training, institutional development of government agencies, grant management, producer group organizations, etc.

36. **Project Implementing Agencies.** Some of the project's activities will be executed in partnership with public sector implementing agencies. The NDPPCO will sign Memoranda of Understanding and output agreements with those entities as Project Implementation Agencies. Component 1 will be led by the SLMA, Component 2 by MAF, Component 3 by the Directorates and agencies under Ministry of Trade and Industry, in partnership with MAF. Implementation arrangements will be detailed in the PIM.

37. **PIM.** The implementation of the project will be carried out in accordance with the provisions of the PIM which will be developed by Government of Sierra Leone and will include: (i) institutional coordination and day-to-day execution of the Project; (ii) fiduciary arrangements including procurement, disbursement, and FM; (iii) environmental and social safeguard guidelines and procedures; (iv) M&E,

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<sup>107</sup> NDPPCO will have a unit under it that will be responsible for day-to-day implementation of specific activities under the sub-component since their mandate has a broader objective.



reporting, and communications; (v) implementation modalities for each component and activity; (vi) eligibility criteria, detailed rules and procedures for identification, and selection of beneficiaries; (vii) matching grants procedures and eligibility; (viii) such other administrative, financial, technical, and organizational arrangements as required for project implementation; (ix) details of what will be constituted in the Memoranda of Understanding between the MAF and other implementing agencies and partners; (x) policies and procedures related to GBV; and (xi) a manual that specifies the operation of the CERC.

## **B. Monitoring and Evaluation**

38. In line with the broad framework of ECOWAS results-based M&E system, the proposed project will implement a robust M&E system to monitor and evaluate the project's performance indicators as defined in the results framework. The system will collect and process high-quality data and allow the Bank and government to assess progress and react immediately should any issues arise. To collect data, the M&E system will use a mix of conventional approaches and participatory methods involving beneficiaries and other external stakeholders. It will serve both as a day-to-day management tool and as a mechanism to assess project impacts. The system will support supervision by ensuring that baseline and follow-up surveys and data for key performance indicators are available and regularly updated. By linking technical and financial data on the project's progress, the system will pave the way for developing a comprehensive Management Information System.

39. The PIU will oversee M&E and compliance with the agreed reporting requirements. It will provide support to the internal M&E systems of participating institutions by assisting them with data collection, management, and analysis, including development of computerized data management and mapping system. The PIU will prepare aggregate M&E reports every six months covering project physical implementation and results monitoring. These reports will serve as the basis for semi-annual progress reports to be circulated to the sector ministry and other partners. The progress reports will also inform the semi-annual joint supervision missions fielded by the Bank and government to ensure compliance with legal covenants and assess the status of project implementation and results. They will also be important inputs for the Mid-Term Review, to be conducted no later than three years after the first disbursement, as well as the final independent evaluation, to be conducted in the last semester of implementation to assess overall achievement of expected project results.

40. The M&E manual will provide details regarding the definition of the results framework, the methodology and instruments to be used for data collection, the institutional arrangements for M&E functions, the GM, and the mechanism to be used for disseminating information. M&E results will inform a communication strategy that will be developed and implemented by the PIU. A baseline survey will be conducted during the first year of implementation to verify and complete the baseline data and targets presented in the results framework. The project will use specialized M&E software for data collection and processing. An M&E specialist located at the PIU will be responsible for all project M&E activities. S/he will be assisted by three M&E assistants located in the three project regional areas.

## **IV. PROJECT APPRAISAL SUMMARY**



## A. Technical, Economic, and Financial Analysis

41. **An assessment was carried out to determine the technical, financial, and economic viability of the proposed Project.** The project design incorporated lessons learned from the implementation of several regional projects, including West Africa Agricultural Productivity Program, West African Regional Fisheries Program, and Regional Sahel Pastoralism Support Project. The project also benefitted from experiences of other countries mainly in PAs' key features and ILM.

42. **Direct economic benefits from interventions across the selected value chains and the priority landscapes** are projected to derive from: (i) informed decisions by farmers regarding the most appropriate farm operations thanks to reliable weather forecasts; (ii) enhanced productivity through the dissemination and use of improved and suitably adapted technologies and capacity building; (iii) increased operating efficiency at farm level through improvements in production and marketing processes, logistics, and market institutions; (iv) greater value addition at farm and/or post-farm levels with more linkages among key players along the value chains; (v) improved market access through business alliances and provision of last mile infrastructure connections to link farmers to markets; (vi) reduction in post-harvest losses; and (vii) income generated from jobs, created by new agro-processing enterprises.

43. **The project agricultural interventions to enhance food security and resilience of the food system in Sierra Leone are economically justified, generating a NPV of the net additional benefits (NPV, using a social discount rate of 6 percent) of US\$20 million and an EIRR of 17.1 percent (over a 15-year period and on a budget of US\$50 million).** These economic results are robust, given that several other project benefits (such as strengthened national capacity to manage future pest events, improved food and nutrition security, etc.) could not be quantified at this stage, due to limited data availability. When incorporating the social value of carbon mitigation generated by the project, the economic indicators improve, depending on the social carbon pricing scenario: assuming the low estimate range of social carbon price, the EIRR is 23.3 percent and the NPV is US\$70.4 million higher; assuming the high estimate range, the EIRR becomes 28.3 percent and the NPV is US\$140.6 million higher. These economic results have been tested against several risk scenarios, including reduced delays in implementation, cost overruns, etc. The sensitivity analysis indicates that results are robust for small to moderate delays, cost overruns, and reduction in benefits.

44. **Rationale for Public Sector Intervention.** Activities envisaged under this project, which are aimed at creating resilience against climate change and enhancing food safety, are largely public goods. These include improving meteorological services, research in and promotion of CSA, and fostering regional cooperation to promote regional trade thus enhancing food security.

45. **The EX-ACT was applied to assess the project's net carbon-balance.** The calculations were based on agro-ecological characteristics of the project area in Sierra Leone (tropical wet climatic conditions with low-activity clay soils) and on the parameters of land use and crop management practices aligned to the economic and financial analysis. The changes brought about by the project have been included in the tool's different modules and include: (i) improved crop and livestock productivity and production with less GHG emissions on a total of 11,650 ha<sup>108</sup> under different crops (rice, cassava, and sweet potato) and with

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<sup>108</sup> As for the EFA, the cropped area and livestock size have been estimated using the proposed quantities of inputs to be procured and distributed under sub-component 2.2.



4,000 goats; and (ii) increased use of synthetic fertilizers (402.5 tonnes of N-fertilizer<sup>109</sup>) and organic fertilizers (2,200 tonnes). The carbon balance results indicate that the project activities will lead to a total of 481,018 tons of CO<sub>2</sub>e to be mitigated over a period of 15 years starting from project implementation. Per year, the mitigation potential is roughly 32,068 tons of CO<sub>2</sub>e, or 7 tons of CO<sub>2</sub>e per hectare. Overall, the additional emissions generated by the increase in livestock and in input use are off-set and surpassed by the reductions in emissions due to crop production, ensuring the project's carbon neutrality.

## **B. Fiduciary**

### **Financial Management**

46. The proposed financial management arrangements for the part of the project implemented in Sierra Leone are acceptable to the World Bank, and they will be further strengthened through the finalization of the financial management section of the PIM. The World Bank conducted an FM assessment to determine the adequacy of the proposed financial management arrangements of the NDPPCO housed within the MAF. The FM assessment concluded that the proposed FM arrangements of the NDPPCO will meet the World Bank's minimum requirements for the administration of projects funds under the World Bank Policy and Procedure for IPF upon completion of outstanding agreed actions.

47. The core financial management team, who will be responsible for undertaking all day-to-day financial management functions of the project, will include a dedicated Financial Management Specialist and a Financial Management Assistant who will be contracted to the PIU within the NDPPCO and paid for using project funds. The Financial Management Specialist will need to be competitively hired by project effectiveness (Effectiveness Condition) on TORs and with qualifications and experience acceptable to the Bank. The FMA will need to be competitively hired within 90 days of project effectiveness (Dated Covenant) on TORs and with qualifications and experience acceptable to the Bank. This core team will be supervised by the Finance Director (or equivalent) at MAF. Any related costs pertaining specifically to the core financial management team (e.g., hardware, accounting software licensing fees and training costs) will be included in the annual AWPB and paid for with project funds.

48. The project will also hire an internal auditor to help mitigate fiduciary risks. The internal auditor will need to be competitively hired within 90 days of project effectiveness (Dated Covenant) on TORs and with qualifications and experience acceptable to the Bank. The internal auditor will functionally report to the audit committee of MAF and the Internal Audit Directorate (IAD) of the Ministry of Finance. An internal audit plan for each year will be prepared by November 30 each year and will be risk-based and subject to approval by the IAD, the audit committee of MAF and the World Bank's no-objection. In preparing the internal audit plan, the internal auditor should seek the input of the Project Coordinator. The costs pertaining specifically to internal auditor (e.g., hardware, operating costs and training costs) will be included in the annual AWPB and paid for with project funds.

49. FM requirements for sub-grants and sub-projects will be detailed in the PIM. This will include (i) the FM requirements of grantees (bank account, accounting system, access to financial records, financial reporting, etc.) to be included in the sub-grant agreement; (ii) the criteria for grant award; (iii) an agreed simplified results framework sufficient to clearly understand the objective, outputs, activities and

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<sup>109</sup> It has been assumed a 20 percent of N for kg of synthetic fertilizer.



indicators of the sub-project; (iv) the requirement for a sub-project budget sufficient to capture the activities financed by the sub-grant necessary to achieve agreed objectives; (v) the financial and accountability monitoring that will be conducted by the project; and (vi) the financial reporting policy related to sub-projects expenditure.

50. NDPPCO will open a segregated USD denominated DA at a commercial Bank approved by the World Bank into which withdrawals will be paid. For day-to-day payments in local currency, a separate SLL denominated project account may be opened at a commercial Bank. The project will use report-based disbursements through the submission of quarterly IFRs on the sources and uses of project funds. A forecast of the first six months expenditures will form the basis for the initial withdrawal of funds, and subsequent withdrawals will be based on the net cash requirements.

51. The annual audited financial statements of the project shall be submitted to the World Bank within six months of the end of the GoSL's fiscal year (i.e., by June 30 each year). The external auditors will conduct the audits on the project financial statements on ToR as agreed with the World Bank. Based on the assessment conducted, the overall FM risks for Sierra Leone were rated as 'High' before mitigation. If the planned risk mitigation measures are properly implemented, the residual FM risk is anticipated to be rated as 'Substantial.' An FM Action plan arising from the FM assessment is included in Annex 9.

52. **Retroactive financing.** The Government of Sierra Leone requested retroactive financing (RF) up to US\$5 million to fund activities under the project, including preparation of Environmental and Social instruments and the PIM. In accordance with the World Bank policies and the Financing Agreement, retroactive financing is permitted for eligible expenditures under the following conditions: (i) the activities financed are included in the project description and are procured in accordance with the applicable World Bank procurement regulations and follow the requirements of the environmental and social commitment plan; (ii) the contractor/supplier/consultant has explicitly agreed to comply with the relevant provisions of the WBG's Anti-Corruption Guidelines, including the WBG's right to inspect and audit all accounts, records, and other documents relating to the project that are required to be maintained pursuant to the Financing Agreement; (iii) such payments do not exceed SDR 3,708,000 (US\$2,747,277 equivalent); and (iv) the payments were made by the Government of Sierra Leone not earlier than September 1, 2021. In this context, the Government of Sierra Leone may make withdrawals up to the approved RF amount for payments made prior to the date of the Financing Agreement but on or after the retroactive financing date to be specified in the financing agreement, for Eligible Expenditures under agreed categories.

## Procurement

53. **Procurement under the proposed project** will be carried out in accordance with the World Bank "Procurement Regulations for IPF Borrowers" (Procurement Regulations) dated November 2020, the "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006 and revised in January 2011 and as of July 1, 2016, the National Public Procurement Act 2016 for tenders approaching National Market, and other provisions stipulated in the Financing Agreements.

54. **Implementation arrangements:** Procurement under this project shall be carried out by the NDPPCO that was recently set up in the MAF. The unit is staffed with a procurement staff who will be





dedicated to this project, the assessment of his capacity to perform the function showed that capacity building will be required during project implementation.

55. **Preparation of PPSD:** As part of the preparation of the project, the Recipient has prepared a PPSD which describes how procurement activities will support project operations for the achievement of project development objectives and deliver Value for Money. The procurement strategy is linked to the project implementation strategy ensuring proper sequencing of the activities. The PPSD considered institutional arrangements for procurement, roles and responsibilities, thresholds, procurement methods, prior review, and the requirements for carrying out procurement. It also includes a detailed assessment and description of NDPPCO capacity for carrying out procurement and managing contract implementation, within an acceptable governance structure and accountability framework. Other issues that were considered include the behaviors, trends and capabilities of the market (i.e., market analysis) to respond to the PP.

56. The major findings from the PPSD were that the works contracts will comprise three procurement packages for the first 18 months of implementation. The risks associated with the works contracts are moderate and the preferred market approach is National Competitive Procurement using Request For Bids. This stemmed from the country strong presence of works contractors who have been performing works of similar nature and value, but at the same time majority of civil works contracts in the country are not completed with the contractual completion period. To mitigate this risk, the project will the services of an engineering firm as a thirty party to supervise the civil works component. Also, the risks associated with the goods and non-consultancy services contracts are low, since the goods to be procured under the project are not new to the country, as they have been supplied by local vendors to the satisfaction of their respective clients.

57. **Procurement Planning:** A PP which is the output of the PPSD that outline the procurement procedures to be used to plan and monitor implementation of investment activities has been prepared and agreed upon by the World Bank and the Government. The PP for the project has been prepared detailing the activities to be carried out during the first 18 months reflecting the actual project implementation needs.

58. **Use of Country Systems:** For procurements involving National Procurement Procedures below the defined thresholds, national procurement systems may be used in accordance with Clauses 5.3, 5.4, 5.5 and 5.6 of the Procurement Regulations for IPF Borrowers and as defined by the PPSD. The project activities will require strong technical capability to prepare proper technical specifications to avert lack of, or inadequate, market response, this capability or a plan to enhance it has been described in the procurement strategy. Open competitive approach to the market will be the Bank preferred approach as it provides all eligible bidders with timely and equal opportunity to provide the required goods or services.

59. **Procurement Management Risk Assessment:** Given that the country's post conflict and fragility context, the procurement management risk assessment found that (i) the capacity of the existing staff does not meet the requirement for the assignment; (ii) limited knowledge in the World Bank's Procurement Regulations and use of the World Bank's STEP; (iii) need for establishment of the record keeping system; (iv) inefficiencies and delays in procurement process; (v) insufficient competition in procurement; and (vi) weak complaint redress system.



60. The procurement management risk for this project is rated **Substantial**, which after mitigation is expected to reduce to Moderate. To address the risks and weaknesses identified, mitigation measures have been discussed and agreed with the PIUs respectively as shown in Annex 7 and the recommendation of the PPSD that has been submitted by the Government and approved by the World Bank.

C. Legal Operational Policies

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

65. The Policy OP 7.50 is applicable to this project because the activities will involve the potential use and risk pollution of the Mono, Great and Little Scaries, Moa, Sewa and Rokel rivers, which is an International Water way by Sierra Leone, Guinea and Liberia. On May 10, 2022, the World Bank Western and Central Africa Region Vice President approved an exception to the riparian notification requirement under OP 7.50.

D. Environmental and Social Risks

66. The Environmental and Social Risk Classification conducted under the Bank's new ESF assessed the overall risk of the project as **Substantial**, based on the ESS relevant to the program including: Environmental and Social Risk and Impact Assessment and Management (ESS 1), Employment and Working Conditions (ESS 2), Resource Efficiency and Pollution Prevention and Management (ESS 3), Community Health and Safety (ESS 4), Land Acquisition, Land Use Restrictions and Involuntary Resettlement (ESS 5), Biodiversity Conservation And Sustainable Management Of Living Natural Resources (ESS 6), Cultural Heritage (ESS 8), and Stakeholder Engagement and Information (ESS 10).

67. Environmental risks—encompassing risks that are already present and risks that may be induced by FSRP investments—are rated **Substantial**, because the program will intervene in sensitive areas characterized by severe climate events, land and biodiversity degradation, loss and damage of ecosystem services, overconsumption of water resources, and the presence of invasive species, including pests. Activities have the potential for cumulative impacts, although they can be readily avoided or mitigated with adequate mitigatory and/or compensatory measures.

68. Social risks related to FSRP Phase 2 are also rated **Substantial**, reflecting: (i) the fact that FSRP Phase 2 will be implemented in a social context in a community recovering from conflict-induced fragility; (ii) insecure land rights of vulnerable groups (including women); (iii) community health and safety risks, especially those related to security and labor influx; (iv) risks related to labor (including child labor); (v) physical and/or economic displacement risks; (vi) risks related to SEA and violence against children; (vii) exclusion of women, migrants, persons with disabilities, the landless, elders, and youth from participating in and benefiting from the program if it is not properly monitored or designed; and (viii) risks related to weak stakeholder engagement and weak operationalization of project-level GM, including the SEA and SH grievance channel.



69. **Environmental and social mitigation measures will stem from the ILM approaches** advocated by the program, which conserve and improve the natural resource base restore soil fertility, increase organic matter and carbon storage in soils, optimally manage water resources and encourage climate-smart and nutrition-sensitive agriculture to reduce the vulnerability of farmers to the effects of climate change.

70. **Moreover, the project will produce social benefits** for participating farmers, local communities, and vulnerable groups (including women, and youth), such as increased technical capacity, increased tenure security with respect to individually held and communally held land, opportunities to access financial services and support for SMEs, enhanced food security and agricultural risk management at the national levels through the use of digital technology, improved access to communications and early warning systems, community development, increased resilience of the food system (especially of critical commodities and value chains), and greater resilience to climate shocks and food security crises. In addition, the project has outlined a Gender Action Plan (Annex 4) to support the closing of gender gaps and ensure that women fully benefit from program activities.

71. **The overall GBV/SEA/SH risk** for this program is rated **Substantial**. The anticipated civil works, largely the construction and/or rehabilitation of additional core research facilities are expected to require less workforce because of their site-specific nature and limited risks and adverse impacts levels. However, with the anticipation of increased crop productivity, which is expected to increase the number of transformational activities in program areas, it is expected that the activities along the target value chain process (harvest, carriage of harvested commodities/products to processing centers, and their transformation into final product for market services, etc.) could mobilize, at some locations, many young rural labor migrants/seasonal workers, as well as urban jobseekers. Such a gathering of seasonal workers, although ephemeral, could lead to some GBV/SEA activities that if left uncontrolled could result in terribly hindering project development objectives, and conflict between community members and migrant workers. As preventive measures, the project will establish guidelines and rules to ensure that: (i) hiring companies/farmers/contractors will prepare Codes of Conduct, including acceptable behaviors and consequences for breaching the standards that explicitly address SEA/GBV and child abuse are developed; (ii) they are understood by contractors and workers as well as by neighboring communities; and (iii) local/outside laborers are sufficiently sensitized on GBV/SEA issues and related potential risks and impacts on the local communities. Specific GBV/SEA preventive activities will be prepared and included in the PIM.

72. With the support of the World Bank, the Recipient has the overall responsibility for assessing, managing, and monitoring environmental and social risks and impacts throughout the project life cycle to meet the requirements of the ESSs in a manner and within a timeframe acceptable to the World Bank. To make the program fully compliant with the Environmental and Social Standards, the Recipient have prepared, with the support of the World Bank, an ESCP, setting out the necessary actions to ensure that the project complies with the ESSs. The ESCP identifies the material measures and actions that are required as well as their timeframe and dates of completion and defines the responsibilities of different institutional partners.



73. Specifically, measures aimed at mitigating the environmental and social risks are set out in ESF instruments, such as the ESMF (including SEA/SH response and mitigation action plan), RPF, SEP, LMP, IPMP, and ESCP. These instruments have been prepared and disclosed.<sup>110</sup>

74. The Recipient's institutional capacity to implement the program under the ESF is considered weak, given the expanded scope of the ESF and the general lack of experience and familiarity with this instrument in the NDPPCO. Therefore, NDPPCO capacity will be strengthened.

75. **Gender:** Most of the gender gaps relate to: (i) access to land and farming equipment; (ii) access to extension services delivery; (iii) access to certified seeds supply, fertilizer, and crop protection materials; (iv) access to agricultural technologies; and (v) access to credit and financial services, among others. The project will rigorously implement the Gender in Agriculture Policy. Project mitigation activities include: (i) ensuring adequate representation and active women participation in decisions made in selecting project beneficiaries; (ii) sensitizing extension agents engaged in project activities about Gender issues and ensuring adhering to fair and equal access to services; and (iii) funds have been set aside for grants to women (and youth) groups.

## V. KEY RISKS

76. The overall risk for Sierra Leone to achieving the PDO is assessed as **Substantial**, as six of the nine constituent risk elements assessed below are rated substantial.

77. **Political and governance** is rated **Substantial**. The current political tensions and polarization might be exacerbated by the general elections scheduled for early 2023, leading to possible post-election disputes and an uncertain political climate. This project's activities (unlike policy reforms) are not highly sensitive to moderate perturbations in the political dispensation, although pronounced degeneration in political stability could still undermine their implementation. However, the heightening political polarization could skew beneficiary selection. Risks arising from the potential political capture and poor governance will be mitigated by strict adherence to a clear criterion for beneficiary selection (including involvement of international NGOs with presence in project areas in the selection of beneficiary), and fiduciary oversight.

78. **Macroeconomic risk** is rated **Substantial**. The authorities have struggled to restore macroeconomic stability and fiscal balances since the Ebola Virus Disease shock in 2014 and exacerbated by the COVID-19. The country's budget deficit has exceeded 5.5 percent of GDP, due to low domestic revenue mobilization and expenditure overruns. Sierra Leone is at high risk of (public) debt distress, which could impact budgetary allocations to the agricultural sector. The project's support will contribute to filling part of the gap to provide critical public goods and maintain the delivery of essential services in the agricultural sector.

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<sup>110</sup> Sierra Leone disclosed all six instruments (ESCP, ESMF, RPF, LMP, SEP, IPMP) on May 9, 2022 at <https://maf.gov.sl/food-system-resilience-program/>

The World Bank disclosed the instruments of Sierra Leone on the following dates: ESCP on June 27, 2022 and the SEPs on May 16, 2022, ESMF on March 23, 2022, IPMP on April 23, 2022, RPF on February 28, 2022, and LMP on February 28, 2022. [https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword\\_select=allwords&sort=score&order=desc&qterm=P178132&lang\\_exact=](https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword_select=allwords&sort=score&order=desc&qterm=P178132&lang_exact=)



79. **Institutional capacity for implementation and sustainability risk** is rated **Substantial**. Sierra Leone is still reeling from the devastation of the civil war that weakened its already fragile institutions, both public and private, and Government agencies are severely underfunded. A significant portion of this project is capacity building, both public and private, which will facilitate this project’s implementation. However, residual institutional risk remains substantial.

80. **Fiduciary risk** is rated **Substantial**. This will be mitigated by implementing an action plan to strengthen the accountability framework to improve overall fiduciary performance.

81. **Environmental and social risks** are rated **Substantial**. These include risks associated with civil works such as occupational safety, labor influx, as well as risks from possible spreading of COVID-19 among workers and the communities. The project’s ESMPs provide clear measures to avoid or limit these impacts. A safeguards specific sub-component has been introduced to strengthen safeguards oversight.

82. In addition to the above risks, there are **climate-related risks** (rated **Substantial**) due to the frequency of floods, drought, and erratic rainfall. The mitigation measures will primarily promote CSA. Improving weather forecasting capability and alert systems will improve coping mechanisms leading to a reduction in the damage from climate change induced adverse events.

**Table A3.4: Summary of Risks for Sierra Leone**

<b>Risk category rating</b>	<b>Rating (after mitigation)</b>
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other (climate)	Substantial
<b>OVERALL</b>	<b>Substantial</b>



#### ANNEX 4: GENDER GAP ANALYSIS AND GENDER ACTION PLAN

1. Women make up about half of agricultural labor force in West Africa for agro-businesses and agro-industries and contribute extensively to food production, processing and marketing and household nutrition. The persisting gender inequalities constrain women's productivity and harm the food security and nutrition of women, their families, and communities.

2. Therefore, it is necessary for the program to consider how planned interventions under FSRP Phase 2 will narrow gender gaps, improve equal economic opportunities, agency, and asset ownership of women, and thereby enhance development outcomes and placing people first. Within this section a set of existing gender gaps are presented that the project could directly or indirectly tackle.

#### Gaps

3. **Productive resources:** Women can mobilize fewer and less efficient productive resources. For example, plot quality (soil quality, location) and size contribute up to 30 percent of productivity gap between male and female farmers, in addition to security of tenure (see below). For inorganic fertilizers, the gender gap in their usage is even wider in Western African countries than elsewhere in Sub-Saharan Africa. Women have less access to land, farming equipment, among others. In Ghana, approximately 33 percent of males as opposed to 12 percent of females have access to new technologies.

4. **Quantity of inputs:** Women's access to quantity and quality inputs (seeds, fertilizer, crop protection products) is low in the region, compared to men's access. For instance, in Sierra Leone, women have less access to quality or improved seeds, fertilizers and pesticides, farm tools and equipment as well as training (e.g., on improved agricultural techniques, optimal use of pesticides and fertilizers, etc.) which decreases average output and increases crop yield variability.

5. **Access to extension services:** Women benefit less from extension services than men as they are focused on male farmers and not adjusted to women need. Access is limited due to e.g., through unfavorable means of communication used for the delivery of extension services for women, who have low literacy levels and limited time due to domestic activities. For example, in Chad, the extension services available are limited in terms of geographical coverage and highly uneven in terms of quality.

6. **Land ownership** is particularly rare for women in Western Africa with women representing only 0–10 percent of landholders in half the countries surveyed in the region by FAO and 10–19 percent in the other half.<sup>111</sup> Land ownership is to be interpreted in light of the national legal context, but it plays a role in access to finance and to foreign aid, since eligibility criteria for winning a loan or receiving aid is usually linked to property rights or collateral assets. Even when land is co-owned, men and women traditionally manage their own, separate plot, even if they belong to a single household, with strikingly different conditions and inputs. In Sierra Leone, fewer women than men have right to land, thus affecting their opportunities to participate and benefit from agriculture. Rights to these lands are multi-faceted. Some being limited access, management, exclusion, right to transfer, and legal authority documented by a governing body. Despite existing Government of Sierra Leone policies, like the Devolution of Estates Act, No. 21 of 2007 and National Land Policy (2015) which aligns with the Voluntary Guidelines on Responsible

<sup>111</sup> FAO.2018. The Gender Gap in land rights. <http://www.fao.org/3/i8796EN/i8796en.pdf>



Governance of Tenure, that support women’s right to inherit land with the right to transfer land, women’s “right to ownership” is low.

7. **Labor availability:** African agriculture relies heavily on manual labor from a farmer’s household, family or community. However, labor dedicated to women-controlled plots and men-controlled plots vary greatly, even in a same household or family. In addition, women spend more time on domestic chores. Everywhere in Africa, more than 1.5 hours of household time is dedicated per day to firewood collection, which is predominantly performed by women. Yet, women are also required to perform time consuming tasks in farms. For example, in Sierra Leone, these tasks are typically performed with manual tools at different points during production and value addition. Some of these tasks including tilling, weeding, collecting water, irrigating crops, harvesting, transporting, and processing, many of which women are exclusively or jointly responsible for with men. Adult male labor is more often dedicated to men-controlled fields, even from other households, while women and young labor are for women-controlled plots, which can explain up to a 23 percent of the gender productivity gap.<sup>112</sup> Therefore, it is more appropriate to measure farmer’s productivity (and access to factors) at the plot level, so that the productivity gap can be measured as the difference between equivalent plots controlled by men and women. Likewise, women typically own between 15 percent and 25 percent of cattle. The gap is particularly wide for large ruminants: women own about 50 percent less of them.<sup>113</sup>

8. **Non-physical production factors:** gaps in these covers all aspect of agricultural production such as access to finance, labor, access to extension services, knowledge of improved farming practices, property and ownership rights and access to training (see above and below). The lower access to labor, services, ownership rights and capital in turn impedes the productive use of inputs.

9. **Level and quality of education:** In Ghana, illiteracy is higher among women, limiting their potential to utilize improved technologies. For instance, proper application of fertilizer and other chemicals to support plant growth and protection is limited among the illiterate and most women farmers. Also access to improved irrigation practices due to low knowledge and skills in irrigation farming among women farmers is limited. Men generally benefit more from higher relative returns on education (additional income or productivity per year of additional training). This is explained by the fact that training and productive equipment are complements: with harder access to productive capital, women get less reward from additional training.

10. **Assets and services for commercialization:** Women face constraints accessing markets, transportation, higher value markets, role in producing commercial crops, etc. Participation in trade associations is generally poor among surveyed traders with 16 percent of women and 24 percent of men belonging to trade associations. In addition, access to post-harvest processing and storage plays an important role in commercialization and it can easily impede marketability of women produced crops. In Sierra Leone, men and women tend to access loans from different types of providers, often at high interest rates. Yet men have greater access to credit and loans from formal banks because men have greater rates of property ownership registered with local councils than women<sup>114</sup>. As a result, women are less likely to

<sup>112</sup> World Bank. 2014. Levelling the Field: Improving Opportunities for Women Farmers in Africa. Working Paper <https://openknowledge.worldbank.org/handle/10986/17790>

<sup>113</sup> FAO. 2018. Rural Livelihoods Information System, Statistics Division

<sup>114</sup> World Bank Group. Women, Business and the Law. 2022.



benefit from existing market opportunities.

11. **Access to aid programs:** women's difficult access to property rights also impedes the efficiency of international aid programs when eligibility criteria are not gender sensitive. Underrepresented female applications to grants, training programs or subsidies occur when participants are selected based on formal ownership of land, capital, and collateral for which women are underrepresented for sociological reasons or even excluded for regulatory reasons. Lack of female participation can also arise when women's attendance to trainings dispensed by men is not socially acceptable, or when practical modalities of participation prevent women from finding housing for the duration of the program, or when its duration conflict with child-care responsibilities.

12. **Entrepreneurship and financial inclusion:** the World Bank Enterprise Survey collects data from the manufacture and service industries around the world. In Western Africa, women encompass only 26.1 percent of senior and middle management of positions in these industries, only 13.9 percent of firms have women in top manager positions, and only 22.4 percent of firms have participation of women in ownership.

13. **Connectivity:** the gender gap in access to mobile internet is pronounced all across Sub-Saharan Africa at 37 percent<sup>115</sup>, with women access at 18 percent. The gender gap in mobile ownership is lower, at 13 percent<sup>116</sup>, but persistent (unchanged since 2017). It is particularly an issue as mobile ownership is critical to have access to production and commercialization services such as extension services, market prices, meteorological data and financial services, etc.

14. As a result of all the above gender gaps, the productivity of women farmers is far below that of men. The gender gap in productivity is estimated at above 20 percent Sub-Saharan Africa (meaning the difference in productivity between male farmers and female farmers). The productivity gap derives from a double challenge faced by women mentioned in the section above; they are disadvantaged in access to production factors (smaller plots, lower quality land, limited access to irrigation, limited access to extension services, less labor, inputs, finance, and technology), and their return on those factors are also significantly lower. It is estimated that closing the productivity gap could increase production and consumption by 1.5 to 10 percent and reduce poverty by 1.2 to 13 percent.<sup>117</sup>

15. **Gender gaps in agriculture have strong socio-economic impacts for families and communities.** Women and female-headed households are also at greater risk of living in poverty, with a female-earned income representing between 30 percent and 65 percent of male income.<sup>118</sup> Food losses before consumption are also linked to gender gaps in control and responsibilities along the value chain: 40 percent of the loss occurs at post-harvest and processing stages, where women are predominant and where women's lack of access to technology and equipment is compounded with high schedule constraints.<sup>119</sup> Women are also more prone to being food insecure (25.2 percent) than men (23.7 percent).

<sup>115</sup> Mobile connectivity in Sub-Saharan Africa. 2020. <https://www.gsma.com/mobilefordevelopment/blog/mobile-connectivity-in-sub-saharan-africa-4g-and-3g-connections-overtake-2g-for-the-first-time/>

<sup>116</sup> The Mobile Gender Gap Report 2020. <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf>

<sup>117</sup> African Development Bank, 2016

<sup>118</sup> United Nations Development Programme. 2015. Development indicators series

<sup>119</sup> Aidoo, Danfoku & Osei-Mensah. 2014





16. In addressing gender gaps, the project has identified concrete gender actions that are embedded in all project components and sub-components. A detailed gender action plan has been developed (Table A.4.1), which identifies concrete gender actions that will be implemented and budgeted for in each country and institutions activity plans. The project will focus on reducing two gender gaps: (i) access to assets and services in commercialization and (ii) access to new and improved irrigation. The lack of access to irrigation among women farmers significantly undermines women productivity, production (opportunity for multiple cropping seasons), cropping diversity, and nutrition. The limited access to assets and services for commercialization significantly undermines women farmers volume and value of agricultural products commercialized.

17. To address women farmers lack of access to irrigation, the project will support the following activities: (i) provide subvention for accessing equipment for women (85 percent; not limited to irrigation); (ii) use geographical targeting of women for land and water catchment restoration; (iii) conduct settlement of women farmers in newly rehabilitated degraded land equipped with irrigation; (iv) set a quota of 60 percent of area under improved and new irrigation for female farmers; (v) develop a partnership with the International Water Management Institute to develop gender sensitive technologies; (vi) set a quota of 100 percent women farmers benefiting from small scale communal irrigation investments; (vii) promote solar pumps for irrigation (labor reducing for women farmers); (viii) set a quota of 40 percent of women and youth beneficiaries for small scale private land irrigation investments and 100 percent women farmers benefiting from small scale communal irrigation investments; and (ix) allocation of 1,200 hectares of restored lowland for rice production for women, etc. The quality of access to irrigation and usage of irrigation technologies will also be strengthened by activities supporting better extension services for women, improved access to inputs and technologies as well as better participation in water management committee (see activities in Gender Action Plan). The investments in irrigation will also be an opportunity when feasible to promote irrigation as a multi-use system) entry-point, under which irrigation systems are redesigned and developed in such a way that non-irrigation uses – both productive and domestic.

18. The access to assets and services for commercialization of women farmers will be enhanced by the fact that the selected value chains have a traditional high presence of women farmers and by: (i) supporting women's cooperatives or women owned SME's/self-employed for commercialization and processing/presentation (packaging); (ii) strengthening cooperatives' gender capacity and women parboiled rice cooperatives; (iii) providing women's access to equipment within cooperatives at reduced cost for selected value-chains; (iv) supporting access to processing and conservation equipment by setting a quota of 40 percent women beneficiaries and by adapting the training curriculum to their needs; (v) setting a quota of 40 percent women beneficiaries for self-employment activities promoting income-generating activities and the establishment of small and medium-sized enterprises in the selected value chains; (vi) conducting skills need assessment for women and youth to provide them with tailored technical trainings (including coaching) for income generating activities in selected value chains; (vii) conducting targeted trainings for women on local products, good hygiene practices, commercialization, Hazard Analysis and Critical Control Points (HACCPs) or the certification process for products in the context of trade; and (viii) upgrading/ constructing physical storage facilities or other related infrastructures in selected value chains.

19. The reduction of the gender gaps will be measured through two indicators from the results



framework: (i) women adopting climate-smart agricultural technologies and services; and (ii) women farmers reached with assets or services to improve commercialization in selected value chains.

20. Table A4.1 below presents the main gender actions of the project per sub-components. regional-level gender actions can be found in Annex 15 of the FSRP Phase 1 PAD.

21. The success of the Gender Action Plan is dependent on Component 5 of the project, as it will require: (i) integrating the gender actions within implementation manuals (defining when these actions take place, how and who is responsible); (ii) including the gender actions within the program detailed activity plans with a clear budget allocation for the gender actions and targets; (iii) developing some gender indicators in the overall results chain to be able to track progress (fully integrated and defined in the M&E manual to guide M&E staff); (iv) including gender capacity building activities in the project overall capacity building plan (including for PIU members and for trainings conducted by national and regional organization gender experts); (v) hiring of a gender expert at PIU level dedicated to the project; (vi) integrating gender in overall project evaluation and specific dedicated qualitative evaluation; and (vii) developing a communication strategy for the project that include women specificities as well as their needs in the COVID-19 context.



22. **Chad, Ghana and Sierra Leone have identified gender actions for each component of the project aiming to reduce gender gaps.** Below actions are derived from identified gaps and are structurally integrated into the conception of the project activities (while separately listed here). Table A4.1 provides an overview of the gender actions selected. Detailed Gender Action Plans for each country will be included in the PIMs. Moreover, the M&E indicators of the project (see results framework, VII) are disaggregated by gender.

**Table A4.1: Gender Actions per Component**

Category	Gender Actions Type	Gender Gap Addressed	Chad	Ghana	Sierra Leone
<b>C1 DIGITAL ADVISORY SERVICES FOR REGIONAL AGRICULTURE AND FOOD CRISIS PREVENTION AND MANAGEMENT</b>					
<b>C1.1 Upgrading Regional Food Crisis Prevention and Monitoring Systems</b>					
Monitoring and delivering information services on food security	Financing/Supporting women and youth groups to access reliable data for planning purpose	Access to non-physical production factor, access to extension services		x	x
	Training relevant institutions, especially women staff, to collect basic food security data, to facilitate forecasting/ advisory services on food insecurity challenges e.g., real-time bush fires	Education	x	x	x
	Financing of targeted capacity building and/or usage of quota for women to participate in dedicated trainings	Access to aid program Access to quality of education	x	x	x
Pest and disease monitoring and management mechanisms	Setting a quote of at least 30 percent women participating in trainings on the use of pest and disease Early Warning System i.e., occurrence or potential outbreak of pest and disease to provide early warning services to farmer	Access to aid program Level and quality of education	x	x	
	Supporting the involvement of women in the development of a pest and disease surveillance advisory model and integrate into the national e-extension program, e.g., by a pest and disease surveillance advisory model integrated into e-Agric platform	Access to extension services		x	
	Setting target for reaching 40 percent women beneficiaries adopting integrated - and pest management packages and technologies	Access to inputs		x	x
	Training of women extension agents (at least 30 percent of all trainees) in the districts and regional agriculture directorates on the use of e-extension system to monitor and report pest and disease at the field level	Access to extension services		x	



Category	Gender Actions Type	Gender Gap Addressed	Chad	Ghana	Sierra Leone
	Enhancing support for women in alerting agencies/animal health professionals	Education			x
	Strengthening gender-friendly channels for providing early and disseminating information disaster risk and pest and disease outbreak, e.g., installing last-mile radio alert devices for dead zone reception farming/rural areas benefitting also other vulnerable and socially excluded beneficiaries	Access to non-physical production factor Access to extension services		x	x
<b>C1.2: Strengthening Digital Hydromet and Agro-Advisory Services for Farmers</b>					
Research and training	Establishing and mentoring gender-sensitive research teams, i.e., gender diversity team (young men, women, youth, disabled)	Education		x	
	Supporting/ Financing of the participation of female experts in technical training.	Education	x	x	x
	Setting a quote of at least 30 percent women receiving for their participation in e-Agriculture, geo-spatial mapping in geospatial targeting of released technologies adoption	Education Access to aid program	x	x	
Extension and ICT uptake	Engaging vulnerable and socially excluded (SE) beneficiaries/women/ youth farmers in designing and the development of the Early Warning System communication system to ensure their specific needs are duly considered, including the supply and installation of last-mile radio alert devices for dead zone reception farming/rural areas.	Access to non-physical production factor (information) Access to extension services	x	x	x
	Engaging women, youth and vulnerable groups in workshops, trainings, meetings and sensitization activities relating to early warning systems, e.g., 30 percent each of women and youth supported to access geospatially targeted technologies for adoption	Access to non-physical production factor	x	x	
	Developing information tools specifically designed to address women's ICT uptake needs and/or toolkit for e-learning opportunities, e.g., information campaign, enrollment, and training on good practices to overcome potential participation issues, including gender of trainers, etc.	Access to non-physical production factor	x		x
	Financing the development of decision support tools and methods for improved gender-targeted advisory services	Access to non-physical production factor Access to extension services			x
<b>C2: SUSTAINABILITY AND ADAPTIVE CAPACITY OF THE FOOD SYSTEM'S PRODUCTIVE BASE</b>					
<b>C2.1 Consolidate Regional Agriculture Innovation Systems</b>					



Category	Gender Actions Type	Gender Gap Addressed	Chad	Ghana	Sierra Leone
Human Resources and Capacity in the Research System	Financing of scholarship program for PhDs, Master degrees and Bachelor Degrees targeting female researchers to improve their skills.	Education	x	x	x
	Supporting/training women, young scientists and physically challenged people in relevant capacity building activities	Education		x	
	Implementing mentorship and leadership program for women researchers to access leadership positions in research institutions. Promote mentoring programs to build leadership skills of female researchers	Education	x		x
	Setting a quota of 40-50 percent female researcher participants for specific trainings and study tours.	Education Access to aid program		x	x
	Identifying and training of Gender Focal Points for NCoS and RCoE	Education		x	x
Extension	Organizing TV and radio programs on the utilization of the food commodities at the regional, national and district levels	Access to non-physical production factor (information)		x	
	Training 80 percent Women Agricultural Extension Staff, and 50 percent male AEAs on gender issues in agriculture	Access to extension services		x	
Innovation Platforms	Scaling up women's participation in Innovation Platforms	Access to non-physical production factor (information), Education	x	x	x
	Promoting forums serving as spaces for the informal exchange, learning, sharing, and adoption of agricultural technologies, innovations, and best practices for women	Access to non-physical production factor Education	x	x	x
	Encouraging women led Innovation Platforms and build their capacity	Access to non-physical production factor		x	
Other	Mainstreaming gender in plans and activities of MoFA	Policy	x		
	Building the capacities of women's groups (for Sierra Leone: Gender in Agriculture and Nutrition (GIAN) and Sierra Leone Women Farmers Forum) to serve as advocates for mainstreaming gender across all interventions in the project.	Policy			x
<b>C2.2 Strengthen Regional Food Security through Integrated Landscape Management (ILM)</b>					
Input support	Using agri-vouchers for subvention of inputs targeting 50 percent of women farmers.	Access to inputs			x
	Financing of subsidies for women farmers to access fertilizers and seeds	Access to inputs	x		x
	Providing free access to seeds for women farmers.	Access to inputs	x		



Category	Gender Actions Type	Gender Gap Addressed	Chad	Ghana	Sierra Leone
	Financing of input credit or subsidies over 50% for women farmers in seed production.	Access to inputs Access to finance		x	
	Identifying vulnerable women and youth groups in communities and support them with inputs (seed, fertilizers) for rice	Access to inputs		x	
	Financing of subsidies for fertilizers and seeds up to 50 percent for women and youth farmers.	Access to inputs Access to finance		x	
ILM	Considering/prioritizing the appointment of women 40 percent as trained community liaisons/ focal persons in community mobilization and ILM processes/ techniques	Education Access to non-physical production factor		x	
	Training women and women leaders (40 percent) in setting up participatory landscapes	Access to non-physical production factor		x	
	Supporting women, youth, physically challenged and vulnerable men have access to irrigable lands for production purposes.	Access to land		x	
	Supporting women and youth with soil testing services and information/recommendations	Education		x	
	Organizing and build capacity of women and youth in agroforestry/ woodlots, and crop livestock integration	Education		x	
	Collaborating with relevant authorities to facilitate women access to farmland/ land reforms	Access to land		x	
	Building capacity of women and youth in agroforestry/ woodlots, and crop livestock integration	Education Access to non-physical production factor		x	
	Supporting women farmers access to newly rehabilitated irrigation schemes/fields	Access to land/ productive resources		x	x
	Setting a quota of at least 60 percent women benefiting from high intensity work for rehabilitation of degraded land	Access to land / productive resources	x		
	Setting a quota of 15 percent of restored floodplains allocated to women farmers and youth (121 hectares) and 30 percent of communal agricultural farms to women farmers, youth and disabled (22 hectares).	Access to land/ productive resources			x
Setting a quota of 40 percent of women and youth beneficiaries for small scale private land irrigation investments	Access to productive resources			x	



Category	Gender Actions Type	Gender Gap Addressed	Chad	Ghana	Sierra Leone
	Promoting of solar pumps for irrigation, which is labor reducing for women farmers.	Access to productive resources			x
Other	Supporting women and youth in the efficient management of cattle grazing reserve	Access to non-physical production factor		x	
	Protecting the livelihoods of actors in the landscape by supporting actors: women, youth and vulnerable men in alternative livelihoods in the landscape incl. honey, beads, seashells, basketry, hat, weaving.	Access to (non-physical) production factor		x	
	Organizing and introducing women (40 percent) and youth (40 percent) and socially excluded to improve technologies through community demonstrations	Education		x	
<b>C3 REGIONAL MARKET INTEGRATION AND TRADE</b>					
<b>C3.1: Facilitate Trade across Key Corridors and Consolidate Food Reserve System</b>					
Trade enabling environment	Upgrading/ construction of physical storage facilities or other related infrastructures, i.e., promoting conducive working environment (improved processing sites, smoke free sites) and ensuring women’s access	Access to productive resources		x	
	Organizing roadshows and workshops with strong women participation (at least 40 percent) and enabling environment to attract additional trade participants	Education		x	
	Supporting/Training women and youth to access national, regional and international markets, quality standards including policies, reforms and infrastructure	Access to non-physical production factor		x	
	Supporting women/youth involvement in the organization and formalization of regional inter-professional bodies to improve regional trade in the sub-region	Education		x	
<b>C3.2: Support to Development of Strategic Regional Value Chains</b>					
Value chain development	Facilitating the utilization of a market driven approach –"productive alliances approach" that connects more women farmers, buyers, and the public sector e.g., funding of smallholder farmer organizations and linkages to buyers’	Assets and Services for Commercialization		x	
	Supporting women groups to increase productivity, product quality and sales to ensure better income levels and to a strengthened capacity to reinvest	Access to non-physical production factor		x	
	Encouraging women to move into higher added value sectors	Assets and Services for Commercialization	x		
	Providing matching grants at value chain actors to invest in enterprises that support women’s economic activities like aggregation centers, improved cold-chain infrastructure that reduce food loss and waste, storage facilities etc.	Access to finance Assets and Services for Commercialization			x



Category	Gender Actions Type	Gender Gap Addressed	Chad	Ghana	Sierra Leone
	Supporting women’s access to equipment within producer organizations with matching grants (at a lower matching contribution from women and youth)	Access to finance Access to productive resources			x
	Leveraging or support value chain-based financing for gender-based businesses for commercial buyers or processor	Access to finance Assets and Services for Commercialization		x	
	Supporting women to access processing and conservation equipment by setting a quota of at least 45 percent women beneficiaries.	Access to productive resources			x
Cooperatives	Supporting women’s cooperatives or women owned SME’s/self-employed women within selected value-chains for commercialization and processing/presentation (packaging), business development etc.	Assets and Services for Commercialization	x		
	Supporting the formation and development of farmer organizations, women, and youth group, for establishing or strengthening networks, and improving connections between markets and participants. Supporting women and youth groups access financial services and capital by facilitating the reduction of bottlenecks with regard to access to working capital	Assets and Services for Commercialization Access to finance		x	
	Strengthening cooperatives’ gender capacity and strengthening of women parboiled rice cooperatives	Assets and Services for Commercialization			x
Trainings	Provision of tailored training for women on local products, good hygiene practices, marketing	Access to non-physical production factor			x
	Training women, youth, and disabled traders/exporters to promote standards/certification/branding for value added products to enhance marketing	Access to non-physical production factor		x	
	Training women in the area of value addition to crops and livestock access to technology	Access to non-physical production factor		x	
	Organizing trainings for women/youth processors on local products, HACCPs and general hygiene practices, commercialization, or the certification process for products in the context of trade	Access to non-physical production factor		x	
	Promoting the consumption of high nutrient dense produce (e.g., local rice, soya bean, yellow maize, yellow fleshed cassava, OFSP, local produced poultry) through fairs among communities for good health and strong labor force in the sector	Education		x	
	Supporting women/youth with TA to structure alliances and develop bankable business proposals, business plans, grants to finance sub-projects, and mentorship for start-up or existing women and youth led businesses	Assets and Services for Commercialization Access to finance		x	





## ANNEX 5: ECONOMIC AND FINANCIAL ANALYSIS

1. This Annex presents the preliminary EFA for the proposed FSRP Phase 2. The present analysis focuses on the three beneficiary countries- Chad, Ghana, and Sierra Leone- and applies the cost-benefit analysis methodology to evaluate the Project's economic justification. At this stage, the EFA focuses on estimating the benefits generated by two main project interventions: (i) the support to strengthen digital hydromet and agro-advisory services for farmers and (ii) the support to strengthen regional food security through integrated landscape management.

### Methodology and assumptions

2. **At this stage, the FSRP-Phase 2 budget for the three participating countries proposes some of the investments and their quantification, but these activities are expected to be refined as the program's design evolves.** As such, the present analysis is preliminary and based on the program budget at design stage. Nevertheless, based on the available information, the modeled activities account for at least 50 percent of the total budget depending on the country. This cost-based analysis follows the standard methodology recommended by the World Bank, as described in Gittinger (1982), Belli et al. (2001) and is aligned to the recent guidelines for economic and financial analysis. The financial analysis was conducted to assess the profitability of the proposed project activities (*with-project situation*), modelled from the perspective of the target beneficiaries, and compared with the *without-project* situation. The choice of indicative crops has been driven by the proposed budgets and by the experience of previous investment operations in Chad, Ghana, and Sierra Leone. Hence, where data availability allowed, models related to the targeted value chains in each country have been prepared with computed costs and benefits experienced by the beneficiaries, using market prices (full description below and models in project files). The opportunity cost of capital used is in line with the World Bank guidelines and the practice of recent projects, i.e., 12 percent.

3. **The economic analysis followed a similar approach, aggregating the results at the level of the project and from the society viewpoint.** The economic analysis uses the incremental benefits, assumes at least 85 percent outreach for crop and livestock production and 90 percent outreach for digital hydromet and agro-advisory services and based on discussion with the project country team, experience of past projects, and articles from scientific journals. As some of the program costs, such as the inputs, are integrated in the individual models, the total project economic costs have been adjusted to avoid double-counting and are subsequently subtracted from the additional benefits to determine the overall economic viability of the project. The discount rate used for the economic and financial analysis, that is 6 percent, is in line with the WB guidelines and the practice of recent projects. Given the nature of the investments included in the project, the duration of the analysis has been considered 15 years. Activities will be implemented over the five project years.

### Economic analysis for the strengthening of digital hydromet and agro-advisory services for farmers

4. **In terms of costs, the budget to enhance the technical and institutional capacities and the coordination between the regional institutions (i.e., CILSS/AGRHYMET) and relevant national agencies to increase the quality, accessibility, and use of impact-based and location-specific weather, climate and hydromet information, as well its application to agriculture to provide tailored to the sector's needs has been estimated to total US\$28.2 million, provided under sub-component 1.2.** It includes



US\$8.3 million for Chad, US\$11.5 million for Ghana, and US\$8.4 million for Sierra Leone. It will finance the provision of quality infrastructure, cutting-edge technology, and training to allow the timely development and deployment of the needed impact-based warning and advisory systems to decision-makers, farmers, pastoralists, and other key actors, focusing particularly on vulnerable groups (e.g., women and youth). Moreover, such interventions aim to complement and/or catalyze private sector investments in the provision of such services to ensure their sustainability.

5. **Given that many sectors and activities greatly benefit from the provision of hydromet services, an estimation of its economic consequences is a complex exercise.** Besides, there is a limited literature on economic values of improved weather forecasting in developing countries. While the level of data required to perform a full-fledged analysis is not available at present, it is nonetheless possible to provide an estimation of the main potential benefits for which quantitative information can be obtained and conservative assumptions can be made. Following the standard ‘value of information’ approach, the present analysis assumes that the value of timely, relevant hydromet information, forecasts, and warnings is realized only if such information flows through as needed from product creation and dissemination to end-users and decision makers, that is, in this case, food system actors.<sup>120</sup> Consequently, the analysis focuses on the impact of hydromet and agro-advisory services on the targeted priority crops in the three countries. For this purpose, the study of the potential benefits associated to improved decisions thanks to better information requires the estimation of the averted losses due to the negative effects of climate change on agricultural yields.<sup>121</sup> In this respect, the analysis only considers the avoided losses with respect to the current yield levels, and it does not include those losses associated to potential productivity gains related to the optimization of climate risk management and/or its interaction with the climate-smart innovations introduced under Component 2.

6. **The estimation of the impact of climate change on agricultural yields has been conducted with the Climate Adaptation in Rural Development- Assessment Tool developed by IFAD.** This tool is a platform to explore the effects of climate change on the yield of major crops. It is intended to support the quantitative integration of climate-related risks in agricultural and rural development investments and strategies, including EFA. The present analysis considers a period of 15 years taking 2022 as the base year, a median climate risk level and national coverage. All FSRP-Phase 2 priority crops have been included for each targeted country. Figure A5.1 below provides an example by showing the expected climate change yield variability for rice in the three participating countries. In the next 15 years, climate change will lower the expected rice yields by about 5 percent on average. Similar trends are expected for the other crops considered in this analysis.

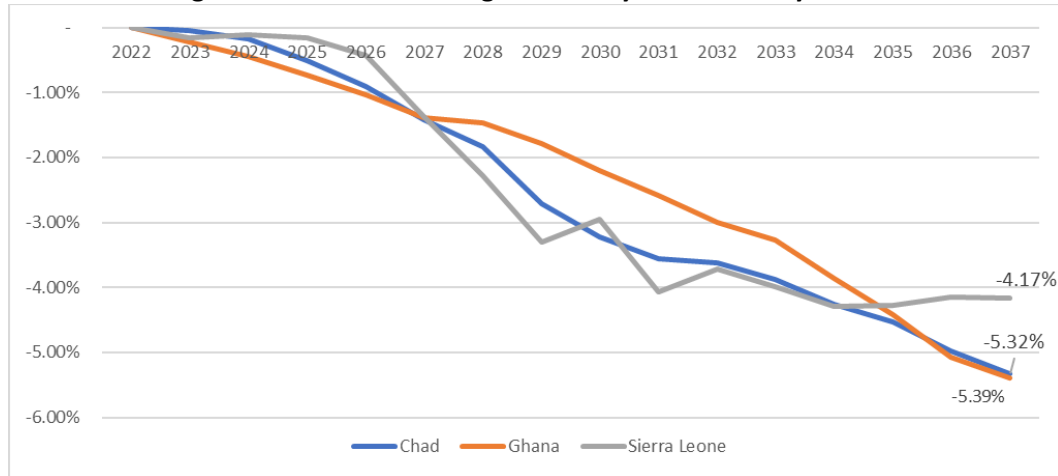
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<sup>120</sup> World Bank. 2020. Socioeconomic analysis of the potential benefits of modernizing hydrometeorological services in the ECOWAS region.

<sup>121</sup> The present analysis only considers the impact of climate change on crop production as livestock production is not considered by CARD.



Figure A5.1: Climate change induced yield variability for rice



7. To compute the economic value of these potential losses, the average yearly value of agricultural production for each priority crop, obtained from FAOSTAT for the three most recent years available, has been compounded with the yield percentage losses by year as a conservative, constant estimate of the impact of climate change. However, to estimate the number of losses that could be averted thanks to the provision of timely, accurate hydromet and agro-advisory services, a Loss Reduction Rate (LRR) needs to be applied to the estimated potential value of losses. In 2020, a World Bank report<sup>122</sup> assessing the benefits of modernizing hydromet services in the ECOWAS region chose a LRR of 0.32 based on the review of several studies discussing the range of this parameter in socioeconomic benefit analysis. In line with this report, the present analysis applies the same LRR. However, given that the value of hydromet information is realized only if the entire information value chain process works to facilitate end-users' decision making, an assessment of this value requires to estimate how many farmers will be able to use such services. Hence, for each country, the present analysis calculates the number of hectares supported by the project interventions as a percentage share of the national cropland. Finally, this percentage is applied to the averted losses thanks to the hydromet services to obtain an estimation of the annual project-related averted losses. Other assumptions for the cost-benefit analysis of the investments under sub-component 1.2 include the inclusion of needed annual operation and maintenance costs of the system after the end of the project. Additionally, it has been assumed that the impact generated by the project will last for fifteen years given the nature of the investment.

8. **Based on the above approach and assumptions, the investments under sub-component 1.2 are overall economically justified.** Indeed, the project will generate, on average, positive additional benefits of US\$2 million per year in Sierra Leone, US\$9.15 million per year in Ghana, and US\$0.7 million per year in Chad at full realization of benefits. This estimate could well be significantly higher given that, due to the lack of needed parameters, it does not consider the value of other crops, livestock assets, and the impact on other correlated sectors (e.g., energy sector), or the increase in benefits due to the optimization of the risk management.

### Financial and economic analysis for the support to enhance the food system's productive base

<sup>122</sup> ECOWAS hydromet initiative: Strengthening Weather, Climate and Water Services in West Africa, Analytical Report, World Bank and GFDRR (2022, under preparation)



9. **The choice of models included in the analysis has been based on the preliminary proposal of the project activities to support the strengthening of regional food security through the integrated landscape management to be financed in subcomponent 2.2, as per the discussions between the World Bank and the implementation partners.** As such, the models reflect the implementation of the highly participatory ILM approach combining natural resource management with environmental and livelihoods activities. The ILM approach encompasses a range of interventions such as soil fertility management, water conservation and irrigation infrastructure, pastoralism and rangeland management reforestation, integrated crop and livestock management, CSA, organization and capacity building for the operation and maintenance of the financed investments. This includes the provision of improved agricultural inputs and training and TA to improve food security, to strengthen farmers' resilience and adaptive capacity to climate change and variability, and to improve household nutrition through increased access to healthy and diversified food and through the promotion of good practices. Moreover, these activities will also benefit from the interventions foreseen under the other components. For instance, subcomponent 2.1 is expected to deliver improved technological innovations including climate- and nutrition- smart technologies tailored to the needs of farmers (i.e., techniques in mangrove rice in Sierra Leone). Besides, Component 3 is expected to expand sustainably food trade in the region and so, to ensure a greater and more stable commercialization of agricultural products, inputs, and technologies increasing farmers' income.

10. **Learning curves and duration of benefits.** Most models have assumed a gradual realization of benefits, to reflect the effects of the improved varieties, more inputs, and improved practices. In addition, given the nature of the investments, it has been assumed that the additional benefits generated by the program will last fifteen years. This methodological choice is justified by the availability of good quality inputs and the type and level of advisory services provided thanks to the program support. Based on the experience of past projects and discussions with the country team, it is also assumed that most beneficiary households will succeed in building the sustainability of improved production, as promoted by the project. In addition, family labor has been included and valued in the present analysis, in line with the EFA guidelines.

11. **Table A5.1 below summarizes the parameters considered in the modelling of sub-component 2.2, as well as the indicative additional yearly returns per unit.** All agricultural activities supported by the project will generate positive additional benefits.



**Table A5.1: Parameters used in modelling investments of Subcomponent 2.2**

		Chad		Ghana		Sierra Leone	
Irrigated production	(ha)	3,140		9,375		5,000	
		Crops considered in the analysis*		Crops considered in the analysis		Crops considered in the analysis	
		<i>(indicative add. yearly returns per ha.)</i>		<i>(indicative add. yearly returns per ha.)</i>		<i>(indicative add. yearly returns per ha.)</i>	
	(US\$/year/ha)	Wheat	269	Rice	106	Rice**	706
	(US\$/year/ha)	Horticulture	3,092	Horticulture	1,536		
Rain fed production	(ha)	36,000		10,680		7,150	
		Crops considered in the analysis*		Crops considered in the analysis		Crops considered in the analysis	
		<i>(indicative add. yearly returns per ha.)</i>		<i>(indicative add. yearly returns per ha.)</i>		<i>(indicative add. yearly returns per ha.)</i>	
	(US\$/year/ha)	Maize	119	Rice	106	Rice**	475
	(US\$/year/ha)	Sesame	127	Maize	161	Cassava	364
	(US\$/year/ha)	Sorghum	147	Soya	619	Sweet Potato	266

\*Only some of the crops included in the analysis are reported here. See country EFA for more details.

\*\*Average yield based on yields from different ecosystems. See country EFA for more details

### Overall economic results

12. **Overall, the economic results of the proposed project are positive, generating an NPV, at 6 percent social discount rate of the net additional benefits of US\$151.5 million and an EIRR of 18.1 percent (over a 15-year period and on a budget of US\$315 million).** These economic results are satisfying, given that several other project benefits (such as improved nutrition, employment growth, etc.) could not be quantified at this stage, due to limited data availability. In addition, the analysis period could be extended to increase the benefit streams, if the project design and implementation would include more measures to build resilience and ensure longer developmental impact.

13. **As described in Annex 6 (GHG Accounting), the project will also generate some positive environmental externalities (a total mitigation of 2,847,123 tCO<sub>2</sub>eq over a period of 15 years - that is 5 years of implementation and 10 years of capitalization).** Using the World Bank’s *Guidance note on shadow price of carbon in economic analysis* (September 2017), the social value of these environmental benefits has been also included in the overall economic results, using the low and high estimate range for the social price of carbon. As a result, the economic indicators improve, depending on carbon pricing scenario: assuming the low estimate range of carbon social price, the EIRR is 23.3 percent and the NPV is US\$70.4 million higher; assuming the high estimate range, the EIRR becomes 28.3 percent and the NPV is US\$140.6 million higher.

14. **These economic results have been tested against several risk scenarios, including reduced delays in implementation, cost overruns, etc., as presented in Table A5.2.** The sensitivity analysis indicates that results are robust for small to moderate delays, cost overruns, and reduction in benefits. Yet, larger changes in these parameters can significantly affect the project’s economic justification.



**Table A5.2: Sensitivity Analysis**

	NPV @ 6%, 15-y	EIRR
	(US\$ million)	(%)
Baseline Scenario	151.5	18.1%
Increased project costs +5%	139.6	16.7%
Increased project costs +10%	127.8	15.4%
Increased project costs +20%	104.1	13.0%
Delayed benefits +1 year	106.7	13.5%
Delayed benefits +2 year	65.2	10.2%
Delayed benefits +3 year	26.9	7.7%
Decreased add. benefits -10%	112.7	15.1%
Decreased add. benefits -20%	73.8	12.0%
Decreased add. benefits -30%	35.0	8.9%



**ANNEX 6: GREENHOUSE GAS ANALYSIS**

1. **This Annex presents the preliminary GHG accounting for the proposed FSRP Phase 2.** The present analysis focuses on the three beneficiary countries – Chad, Ghana, and Sierra Leone- and estimates the environmental externalities of the main proposed interventions under Subcomponent 2.2 *Strengthen Regional Food Security through Integrated Landscape Management (ILM)* – as the main intervention block and largest budget allocation. Directly aligned to the assumptions used in the economic and financial analyses, this GHG analysis is based on the latest changes in project design, including changes in proposed interventions and their quantification, phasing, and budgets. Based on these GHG estimates, a valuation of the estimated environmental benefits has been included in the EFAs at this stage.

2. **In line with the World Bank’s corporate guidelines, the present analysis is using the EX-ACT developed and updated by FAO since 2010,<sup>123</sup> to assess a project’s net carbon-balance.** The carbon-balance is defined as the net balance from all GHGs expressed in CO<sub>2</sub> equivalents (CO<sub>2</sub>e) that are to be emitted or sequestered due to project implementation (with-project as compared to a business-as-usual scenario (without-project)). EX-ACT is a land-based accounting system, estimating CO<sub>2</sub>e stock changes (i.e., emissions or sinks of CO<sub>2</sub>) expressed in equivalent tons of CO<sub>2</sub> per hectare and year. The tool is built mostly using mostly data from the IPCC Guidelines for National Greenhouse Gas Inventories (2006) that furnishes EX-ACT with recognized default values for emission factors and carbon values in soils and biomass (the so-called “Tier 1 level” of precision).

3. **For the present program, the calculations have been based on agro-ecological characteristics (climate, moisture regime, and soil type) of the program area in each participating countries and on the parameters of land use and crop management practices aligned to the economic and financial analyses.** As summarised in Table A6.11 below, the changes brought about by the project have been included in the tool’s different modules and include changes in land use, improvement cropland management options and increased inputs. A period of 15 years, as for the EFAs, was considered, with 5 years of implementation and 10 years of capitalization.

**Table A6.1 Key parameters used in the EX-ACT Tool**

rep	Climate	Moisture	Soil type	Land Use Change	Cropland Management	Inputs
<b>Chad</b>	Tropical	dry	high activity clay	n/a	34,500 ha with improved management options	Increased fertilizer use
<b>Ghana</b>	Tropical	moist	Low activity clay	500 ha from tropical forest to flooded rice, 700 ha from grassland to flooded rice, 200 ha from grassland to soybean	20,055 ha with improved management options including irrigation	Increased fertilizer use
<b>Sierra Leone</b>	Tropical	wet	Low activity clay	1,600 ha from annual fallow to vegetable production	11,650 ha with improved management options including irrigation	Increased fertilizer use

<sup>123</sup> <http://www.fao.org/tc/exact/ex-act-home/en/>. The recently launched version 9.2 of EX-ACT was used for the present analysis.



4. The carbon balance results indicate that the project activities will lead to a total of **2,847,123 tons of CO<sub>2</sub>e to be mitigated over a period of 15 years<sup>124</sup>** starting from project implementation. The results of the EX-ACT analysis are summarized in Table A6.2 below: in each participating country, the resulting net emissions are negative, because of higher reductions (due to improved cropland management and land use changes) than increases (due to flooded rice production and increased fertilizer use).

**Table A6.2 Preliminary GHG accounting results**

	<b>Total emissions, tCO<sub>2</sub>-e</b>	<b>Total emissions, tCO<sub>2</sub>-e/ha</b>	<b>Total emissions, tCO<sub>2</sub>-e/ha/year</b>
Chad	-1,610,173	-46.7	-3.1
Ghana	-755,932	-54.9	-3.7
Sierra Leone	-481,018	-104.6	-7.0
<b>Total</b>	<b>-2,847,123</b>		

<sup>124</sup> Aligned to the EFA analysis period and assuming five years of implementation and 10 years of capitalization.





## ANNEX 7: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN

1. The implementation arrangements and the implementation support plan of FSRP Phase 2 essentially mirror the arrangements of FSRP Phase 1, ensuring the consistent implementation of the two phases and the creation of synergies, as possible.

### IMPLEMENTATION ARRANGEMENTS

2. The implementation arrangements of FSRP Phase 2 mirror the arrangements of FSRP Phase 1.

3. **At the regional level**, ECOWAS will monitor and coordinate the overall implementation of the program, including FSRP Phase 1 and Phase 2. Implementation will be structured as follows: (i) CILSS (AGRHYMET) will coordinate overall implementation efforts under Component 1; (ii) CORAF under Component 2; and (iii) ECOWAS under Component 3. The regional institutions utilize the resources they have received under Phase I in order to fulfill this task. Further details on the regional implementation arrangements can be found in the PAD of FSRP Phase 1.

4. An RSC was created on February 4, 2022 as the orientation and decision-making body of the regional components of FSRP. It performs the following duties: (i) define annually the strategic and budgetary orientation of the regional component of the program in accordance with the PADs of Phase 1 and Phase 2; (ii) ensure coherent implementation of all regional components of FSRP and the alignment of national interventions with regional priorities; (iii) ensure the coherence and synergies between the activities carried out within the framework of the PAD; (iv) examine and approve the AWPBs of ECOWAS, CILSS and CORAF; (v) monitor and supervise the technical and financial implementation of the AWPBs of ECOWAS, CILSS and CORAF; (vi) review and approve technical and financial reports of ECOWAS, CILSS, and CORAF; (vii) review and approve the report on the annual audit of FSRP, in particular the parts executed by ECOWAS, CILSS, and CORAF; (viii) make proposals for the adaptation or reorientation of strategies towards the effective and efficient implementation of regional components; (ix) examine the recurrent difficulties in the implementation of the program; (x) review the overall performance of the program (including disbursement rate of funds, progression towards the project development goals, etc. and make recommendations. Members of the RSC who have voting right are listed in the following: one Representative (each) of ECOWAS, CILSS, CORAF, and the West African Economic and Monetary Union, the Chairperson of the NPSCs of Phase 1 and Phase 2 countries (once Phase 2 has become effective), three representatives of farmer's organizations and Producers of West Africa, one representative of the private sector organization, one representative of the Regional Agricultural Trade Organization and one representative of the Regional Women's Organization in West Africa. Additional parties are observers in the RSC, e.g., representatives of NGOs working on resilience in West Africa, and representatives of technical and financial partners.

5. **At the country level**, the institutional and implementation organization of the FSRP share a number of features, including a common overall structure consisting of a National Steering Committee and a PIU. Countries will implement or delegate national-level activities, supported by international, regional and national partners providing guidance and support. Project implementation will be the responsibility of the respective Borrower/Recipients, through the Borrower/Recipients' CCP, with oversight and orientation by respective NPSC and conducted through World Bank funded PIUs/ UCTF



established under the CCPs.

6. Each country will establish an FSRP National Steering Committee to provide policy guidance. The committee will meet at least once each fiscal year to undertake, the following main functions and responsibilities: (i) advise the project on strategic directions and supporting activities; (ii) approve the AWPB; (iii) ensure effective collaboration and cooperation between all key stakeholders; and (iv) review the PIU's Implementation Progress Reports, advise on the effectiveness of ongoing activities, and advise on any adjustments needed in the AWPB. The countries will send representatives to the RSC.

7. FSRP will be implemented by PIUs that are already in place, namely the PIU of the Climate Resilient Agriculture and Productivity Enhancement Project (Projet d'amélioration de la productivité et de l'agriculture résistante au climat, PROPAD, P175614) in Chad, the PIU of the the Ghana Commercial Agriculture Project (P114264) and in Sierra Leone, the project will leverage the strengths of an existing PIU within the current MAF that has been used to implement programs with other partners. The PIU will oversee planning and budgeting of project activities and execute the approved AWPB. It will also oversee subproject agreements, technical supervision and quality control, gender inclusion, environmental and social risks management, and M&E. The PIU will have overall responsibility for managing and coordinating project activities, including procurement and FM and the daily management of the Designated Account. Where needed, country-based implementation structures will be strengthened through the recruitment of additional staff/consultants, as described in Annex 1-3.

8. The implementation of the project will be carried out in accordance with the provisions of the PIM which will be developed by the PIU and will include: (i) institutional coordination and day-to-day execution of the Project; (ii) fiduciary arrangements including procurement, disbursement, and FM; (iii) environmental and social safeguard guidelines and procedures; (iv) M&E, reporting, and communications; (v) implementation modalities for each component and activity; (vi) eligibility criteria, detailed rules and procedures for identification, and selection of beneficiaries; (vii) matching grants procedures and eligibility; (viii) such other administrative, financial, technical, and organizational arrangements as required for project implementation; (ix) details on the collaboration with other agencies and entities as well as Memoranda of Understanding and output agreements to be signed; (x) policies and procedures related to GBV; and (xi) a manual that specifies the operation of the CERC.

9. At the local level, communities will be involved in the identification of priority zones, selection of priority activities, and validation and implementation of the ILMP. To support these efforts, NGOs or facilitators working with local organizations (or both) will be hired, depending on the country context.

10. Under the general guidance of ECOWAS, the regional component lead institutions including CILSS AGRYHMET and CORAF will coordinate with the country PIUs to ensure the establishment and operation of an effective M&E system with a harmonized and consistent approach across participating countries in terms of the collection, processing and aggregation of data related to the results framework indicators of the program. While considering existing M&E structures already in place, the FSRP M&E system will make ample use of the tools that are provided through the World Bank GEMS for maximum M&E accuracy and efficiency. The systematic use of GEMS, most notably the KoBo Toolbox, will facilitate the digital collection of geo-referenced data and remote supervision of program activities. As the program's lead institution, ECOWAS will oversee the creation and maintenance of a centralized M&E platform which will be



customized to FSRP's structure and institutional set-up. Country PIUs will directly upload data on FSRP results framework indicators directly onto the platform that will act as the single source of truth aggregating all FSRP M&E data across all program components. CILSS AGRYHMET and CORAF will be able to access and monitor component-specific M&E data that are stored on the platform and provide technical support to country PIUs as needed and in coordination with ECOWAS.

## **STRATEGY AND APPROACH OF THE IMPLEMENTATION SUPPORT PLAN**

11. The objective of implementation support is to ensure that the relevant regional and government agencies implement the program properly. It is also to ensure that the resources and staff allocated by the World Bank are sufficient to supervise and support program implementation. The strategy basically aims at making the implementation support to the Borrower/Recipients more flexible and efficient, and therefore focuses on the principal risks identified and the agreed risk mitigation measures to be undertaken as described in the in the risk section of this document. It will consist of: (i) semi-annual implementation support missions carried out jointly by the World Bank, the participating countries, ECOWAS, CILSS, and CORAF, as well as technical partners (CGIAR centers, FAO, etc.) when technical needs arise; and (ii) TA in areas of weaknesses and where new approaches/procedures have been introduced.

12. The implementation support strategy will use a number of instruments to review progress and respond to implementation issues, including the following:

(a) Implementation support mission. The World Bank will conduct joint semi-annual review and implementation support missions with country teams, ECOWAS, CILSS and CORAF. The implementation support missions will have the combined aim of reviewing the quality of implementation, providing solutions to implementation problems, and assessing the likelihood of achieving the PrDO and PDOs. More specifically, they will: (i) review implementation progress by component (including the level of implementation of recommendations made by former review missions), including institutional development aspects; (ii) provide solutions to implementation problems as they arise; (iii) review the action plan and disbursement programs with the national and regional PIU for the next six months; (iv) review the project's fiduciary aspects, including disbursement and procurement; (v) verify compliance of project activities with the fiduciary agreement and the World Bank's environmental and social safeguard policies; (vi) review case studies and survey results to ascertain results indicators and determine progress toward the PDO with regard to the targets set within the results framework, and assess the quality of implementation; and (vii) review the quality of capacity-building activities, which are crucial for an effective implementation of the project. The missions will combine some field visits whenever feasible; field-based focus group discussions and interactive workshops with stakeholders for feedback; they will also include regional workshops with participation of countries from FSRP Phase 1 and Phase 2 in order to ensure cross-learning, as well as national workshops to highlight implementation issues, pick up emerging implementation lessons, and share mission recommendations, including agreements on actions moving forward. Reviews of quarterly/annual reports and various studies will also be undertaken.

(b) Mid-term review (MTR). An MTR will be carried out midway in the implementation phase. It will include a comprehensive assessment of the progress in achieving FSRP objectives as laid out in the results framework. The MTR will also serve as a platform for revisiting design issues that may require adjustments to ensure satisfactory achievement of the program's objective.



- (c) Other reviews. Each year, the World Bank and the line ministry in each country will consider the need for additional analytical, advisory, knowledge sharing activities and/or third-party reviews. Such reviews will be planned for over and above the semi-annual implementation support missions.
- (d) Implementation completion. At the close of the program, each government, ECOWAS, CILSS, CORAF, and the World Bank will carry out separate implementation completion reviews to assess the success of the program and draw lessons from its implementation.
- (e) FSRP task team set up. Arrangements made for the preparation phase will be maintained during implementation support, involving a regional task team leader (TTL), as well as country-based co-TTLs in FSRP countries, and co-TTLs from participating Global Practices (DRM, Water and Environment) to the extent possible. The regional TTL will be supported by one operational Analyst. This arrangement will enhance interaction with FSRP countries and improve monitoring of progress.
- (f) TA. Implementation support will include specialized technical support from the World Bank, ECOWAS, CILSS, CORAF and possibly other bilateral/multilateral agencies for critical aspects of the program, including proper FM/procurement and the monitoring of social and environmental safeguards. The objective of the TA will be to help the program teams internalize good practices and resolve implementation bottlenecks, as they are identified during missions. TA will include training workshops to develop core resource skills within implementing units and program teams, helping finalize manuals, and reviewing and advising on ToRs for required studies and technical support missions.

### **Implementation Support Plan**

- 13. Focus of support. The first two years of implementation will need technical support to put in place the specific tools required for activity planning and implementation; the focus will later change to more routine monitoring of progress, troubleshooting, and assessments based on the results framework. Country implementation support missions will be every six months, followed by regional wrap-up workshops to discuss and exchange views on progress, experiences, best practices and challenges for each country. A common rating process will be done at the end of each wrap-up mission.
- 14. Technical support. The implementation support missions will be complemented by regular short visits by individual specialists to follow up on specific thematic issues as needed. The team will also hire consultants to provide technical support to PIUs and implementing agencies. Regional trainings will be provided by the World Bank on key thematic areas such as Safeguards, Procurement, M&E, Gender and MFD. In addition, the FAO Investment Center, ECOWAS, CILSS, CORAF, as well as a number of consultants may be mobilized periodically to provide TA to implementing agencies in the form of hands-on training and mentoring.
- 15. M&E support. The World Bank M&E specialist and relevant consultants will provide technical support and organize regional training for the M&E team composed of the ECOWAS M&E officer and the six countries M&E officers.
- 16. Fiduciary support. Fiduciary teams based in each of the World Bank country offices (procurement



and FM specialists) will closely supervise the program's fiduciary management. They will participate in the country implementation support missions and facilitate capacity building for the program's fiduciary staff. At least once a year, the procurement staff will organize a post review of procurement activities.

17. During implementation support missions, the program FM specialist, based in the country office, will: (i) review the FM systems, including capacity for continued adequacy; (ii) evaluate the quality of the budgets and implementing agencies' adherence thereto; (iii) review the cycle of transaction recording until the end of report generation; (iv) evaluate the internal control environment, including the internal audit function; (v) review IFRs and/or annual financial statements; (vi) follow-up on ageing of the advance to the designated account (DA); (vii) follow-up on both internal and external audit reports; and (viii) periodically assess the program's compliance with the FM manual as well as the Financing Agreement.

18. On procurement, the World Bank will provide implementation support to the Borrower through a combination of prior and post reviews, procurement training to program staff and relevant implementing agencies, and periodic assessment of the program's compliance with the procurement manual. Implementation support missions will be geared toward: (i) reviewing and updating procurement documents; (ii) providing detailed guidance on the World Bank's Procurement Guidelines; and (iii) monitoring procurement progress against the detailed Procurement Plan. Following the recommendations of the fiduciary assessments of the implementing agencies, and in addition to the prior review supervision to be carried out from World Bank offices, the semiannual supervision missions will include field visits, of which at least one mission will involve post review of procurement actions.

19. Safeguards. The World Bank specialists in social and environmental safeguards will have responsibility for supervising safeguard activities. Each year, they will conduct supervision of the program's safeguard activities, participate in regional meetings to discuss findings, and draft action plans to improve implementation.

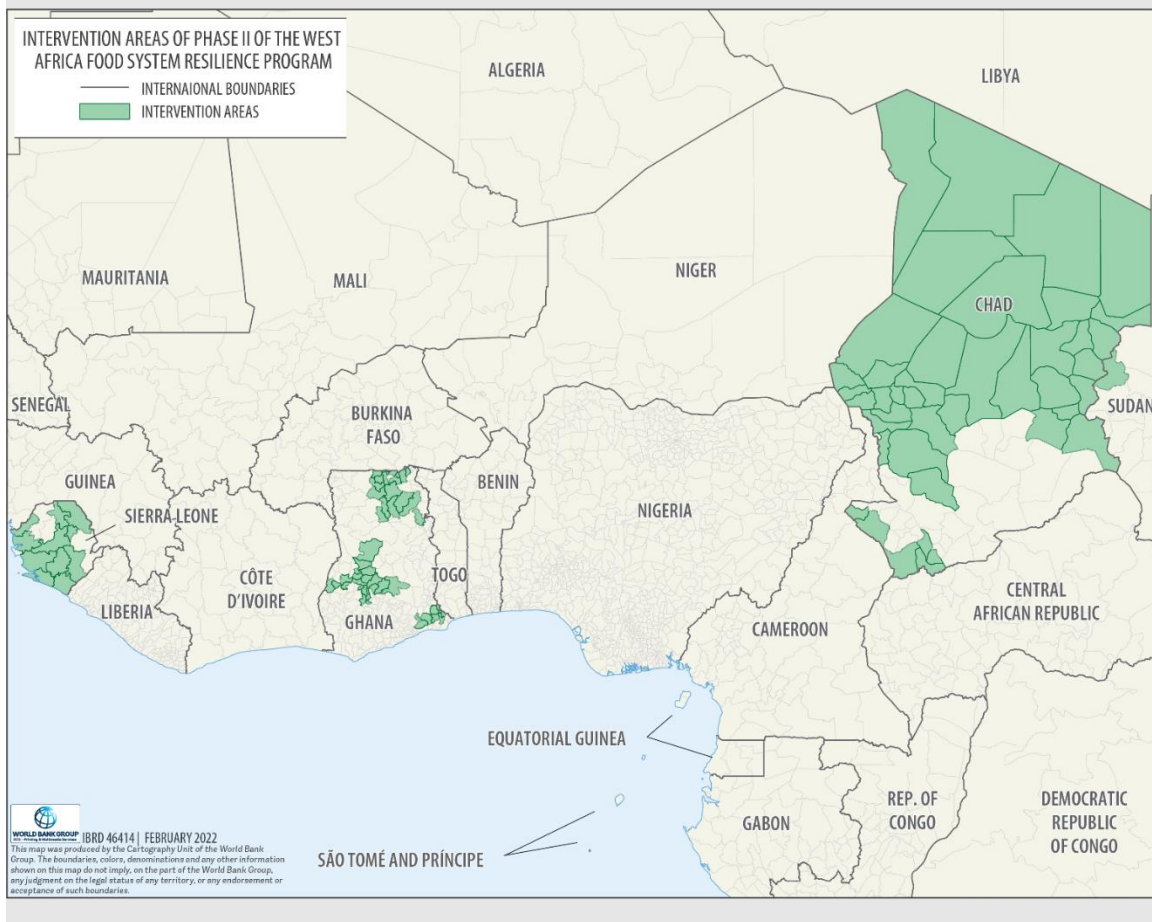
20. Skills mix required. Table A7.1 summarizes the proposed skill mix and number of staff weeks during program implementation. It is anticipated that this will change over time as demand increases.

**Table A.7.1: Proposed Skill Mix**

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
TTL	20	4	Washington DC-based
Agr. Research/extension	6	4	FAO Corporate Partnership
Trade Specialist	4	2	Consultant
ICT specialist	4	2	Consultant
Operations Analyst	10	2	Washington DC-based
Country level Co-TTLs	36	18	Country office-based
DRM, Water and Env. Co-TTLs	18	6	Washington based
Procurement specialists	6	2	Country office-based
FM specialists	6	2	Country office-based
Environmental safeguard specialist	2	2	Country office-based
Social safeguard specialist	2	2	Country office-based
M&E specialist	4	2	Region-based
Communication specialist	2	1	Country office-based
Gender specialist	4	2	Region-based



ANNEX 8: MAP OF PHASE 2 INTERVENTION AREAS





## ANNEX 9: FINANCIAL MANAGEMENT

1. **In line with the guidelines as stated in the FM Practices Manual issued by the FM Sector Board on March 1, 2010, a FM assessment was conducted for the PIUs responsible for the FM in Chad, Ghana and Sierra Leone.** The following existing PIUs will be used: (i) for Chad the PIU of the PROPAD (P175614); (ii) for Ghana the PIU of the GCAP (P114264); and (iii) for Sierra Leone a unit hosted within the NDPPCO. Detailed FM assessments are included for each country in project files.

2. **The objective of the assessment was to determine whether the FM arrangements of the respective implementing entities are adequate** to ensure that: (i) project funds will be used for purposes intended in an efficient and economical way; (ii) project financial reports will be prepared in an accurate, reliable, and timely manner; (iii) project assets will be safeguarded; and (iv) the project is subjected to a satisfactory auditing process. The overall residual FM risk for the program, with the expected risk mitigation measures adequately implemented, is Substantial. The preliminary FM assessment finds that the PIUs in Chad, Ghana and Sierra Leone have basic FM arrangements in place, although it is critical to strengthen those arrangements to comply with minimum requirements under World Bank Policy and Procedures for IPF operations. At implementing agency level, with risk mitigation measures adequately implemented the risk is deemed **Substantial** for Chad and Sierra Leone, and **Moderate** for Ghana. The residual FM risk of Chad and Ghana is mainly due to the weak capacity of the administration to supervise the activities in Chad, and inexperience of the PIU in Sierra Leone which could lead to low quality FM support to the project and ineffective implementation. The moderate risk rating of Ghana is due to the strengths of the existing FM capacity of the staff of the GCAP PIU who have complied fully with all FM covenants in previous implementations.<sup>125</sup> The FM risk rating will be assessed periodically during implementation.

3. **The risks of Chad, Ghana and Sierra Leone will be mitigated through the following measures:** (i) provision of training to all FM teams during the first year of the project implementation in the Bank disbursement and FM rules by the country World Bank FM teams and further TA, as needed; (ii) the preparation and adoption of a PIM, including FM provisions for Ghana and Sierra Leone, since there are no FM manuals in place in these two countries) and the update of the FM manual of procedures for Chad; (iii) recruitment or appointment of qualified and experienced staff where needed, recruited with TORs for which the World Bank provided no-objection;; (iv) assurance that appropriate accounting systems are used; (v) conduction of internal and external auditing; (vi) agreement on unaudited IFR formats for the project's quarterly or semi-annual reports; and (vii) increased awareness of the importance of transparency and availability and use of Grievance Handling Mechanism.

### **Budgeting Arrangements**

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<sup>125</sup> Other reasons include, the GCAP PIU has in recent times successfully implemented IDA funded projects and project management are familiar with and understand World Bank FM 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 FM 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 FM reforms which are supported by the World Bank.



4. The named PIUs of Chad, Ghana, and Sierra Leone will each prepare an AWPB in accordance with the PAD, the Costab, the PPs and the PIM to be developed as well as respective policy guidelines<sup>126</sup>. The AWPB will then be approved by respective NPSC, the RSC) and submitted to the WB not later than November 30 of each calendar year throughout the implementation of the program. The entities receiving financial support from the program will submit their budgets to the respective PIUs for consolidation.

5. The PIUs will monitor the project's budget execution with project accounting software in accordance with the budgeting procedures specified in the FM manuals of procedures, and they will report on variances along with submitting the semi-annual unaudited IFRs. The budgeting system will need to forecast for each fiscal year the origin and use of funds under this program. Only budgeted expenditures will be committed and incurred to ensure that the program's resources are used within the agreed-upon allocations and for the intended purposes. The semi-annual IFRs will be used to monitor the execution of the AWPB.

### Accounting Arrangements

6. **Accounting policies and procedures, and information system.** Overall, accounting procedures are adequate for the selected PIUs of Chad, Ghana and Sierra Leone. Accounting policies and procedures will be included in the PIM and will be prepared to also cover any important procedures relevant at each of the implementing agencies (especially in respect of any advances). The PIM should contain accounting procedures that (i) provide for the accurate coding of project expenses and retention of appropriate supporting documentation; (ii) contain foreign exchange relating to presenting financial statements in US\$; (iii) have labelling and recording of project fixed assets; (iv) maintain schedules of contracts; (v) maintain schedules of grants paid, if any; and (vi) have any other important procedures necessary to record project transactions and balances transactions and report them as required. The following country specific arrangement apply:

(a) **Chad:** The project will adopt the revised Organization for the Harmonization of African Affairs (*Organisation pour L'Harmonisation en Afrique du Droit des Affaires*, OHADA) accounting system. The accounting software in use for the current Projects being managed by the PIU will be tailored to fit the needs of the new project. A computerized accounting system will be used.

(b) **Ghana:** The Government of Ghana is in the process of rolling out an automated Ghana Integrated FM system 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 fully implemented using the Ghana Integrated Financial Management System, in compliance with the Public Financial Management Act (921) 2016. Prior to project effectiveness the World Bank FM Specialist in collaboration with the Ghana Integrated Financial Management System Secretariat will arrange for the necessary systems set ups and trainings for all the staff.

(c) **Sierra Leone:** The NDPPCO will set up and maintain books of accounts specifically for this project. Books of accounts will include a main cash book, and ledgers, fixed asset registers, and contracts register. The NDPPCO will use an acceptable accounting software system. It will include a Chart of Accounts that is adequate for recording transactions as a basis for both (i) reporting expenditure in the IFR and Annual Financial Statements for project components and also the disbursement categories outlined in the

<sup>126</sup> Ghana: Budget preparation guidelines as per the Public Financial Management Act (921) 2016 and the annual budget guidelines issued by the Ministry of Finance.

Sierra Leone: Budgeting and Accountability Act 2005





Disbursement and Financial Information Letter (DFIL) and (ii) tracking actual expenditure for budget monitoring.

7. **Accounting staff.** To strengthen the accounting staffing arrangements within the PIUs in Chad, Ghana, and Sierra Leone, all accounting staff will be trained in the World Bank FM and Disbursement procedures as well as in the use of the project accounting software.

### **Internal Control and Internal Audit Arrangements**

8. **Internal controls.** The internal control procedures will be documented in the FM Manuals of procedures for each of the PIU and their PIMs, taking into consideration gaps in their existing FM Manuals/Regulations to ensure that Project FM arrangements are in line with the FAs. These efforts will ensure that the new project has an effective internal control system covering the procedures required to support activities under different components, including those that will be carried out with subnational and local actors. A review of the internal control systems for the existing national and regional PIUs noted no major internal control or accountability issues.

9. **Internal audit.** Robust internal audit arrangements have to be in place for each PIU. Internal Auditors in each of the implementing entities should ensure that the project audit is included in their workplan and that the audit is conducted using a risk-based approach. The following country specific arrangement apply:

(a) **Chad:** For Chad, an independent external auditor (financial audit) will be recruited based on ToR acceptable to the World Bank.

(b) **Ghana:** Ghana's PIU has an Internal Auditor, who is adequately qualified and experienced to help ensure a sound control environment throughout implementation. The assessment indicated that the internal audit and control environment is adequate for project implementation.

(c) **Sierra Leone:** For the PIU of Sierra Leone, a fulltime Internal Auditor will be contracted by the project. The Internal Auditor will functionally report to the IAD of the Ministry of Finance and will carry out periodic internal audit reviews to ensure internal controls are operating effectively.

### **Governance and Anti-Corruption Arrangements**

10. All entities will follow their institutional rules/regulation/ guidelines/policies and procedures. FM arrangements will ensure that there are internal control systems in place and audits conducted to prevent and detect fraud and corruption. Transparency and accountability are highly encouraged by putting the budget and audited financial statements on the implementing entity's websites, where applicable. Complaint-handling mechanisms should also be set up by the PIUs so that beneficiaries who are not receiving services as planned have a mechanism to raise their complaints and ensure that they are followed up and addressed. This will involve putting a system in place to record all complaints received, direct them to the person responsible for addressing them, and record when a response is sent to the complainant.

11. The new project must also comply with the World Bank Anti-Corruption Guidelines (*Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants*, dated October 15, 2006, and revised in January 2011 and as of July 1, 2016). Sections of these



guidelines, especially those relating conflict of interest, procurement and contract administration monitoring procedures, procedures undertaken for replenishing the Designated Account and use of the project's assets shall be provided as an annex to the project's FM procedures in the PIM. Additional mitigation measures will include advocating good governance, close monitoring and spot checks by the internal audit units of the implementing entities, as well as enhanced social responsibility by the implementing entities. The use of Geo-Enabled Initiative for Monitoring and Supervision (GEMS) would be explored for the monitoring of infrastructure contracts, would also provide additional real-time information for internal and external audits.

### **Financial Reporting Arrangements**

12. The PIUs will prepare semi-annual unaudited IFRs in form and content satisfactory to the World Bank, which will be submitted to the World Bank within 45 days after the end of the semester to which they relate. The frequency, formats, and contents of the IFR were agreed between the World Bank and the national implementing entities. The contents of the IFR for all implementing entities will include the following information to account for project funds:

- (a) Statement of Sources and Uses of Funds.
- (b) Statement of Uses of Funds by Project Activity/Component.
- (c) Designated Account Activity Statement.
- (d) Bank statements for both the Designated and Project Account and related bank reconciliation statements.
- (e) Summary statement of Designated Account expenditures for contracts subject to prior review.
- (f) Summary statement of Designated Account expenditures not subject to prior review.

13. The PIUs will also prepare annual financial statements for the project within three months after the end of the accounting year (December 31), and these statements will comply with OHADA and the World Bank requirements. The audited financial statements will be required to be submitted to the World Bank within six months after the end of the fiscal year.

### **External Audit Arrangements**

14. All audits in the context of the program will be carried out in accordance with International Standards on Auditing. Audits will be made by the following entities:

- (a) **Chad:** An external auditor will be recruited based on ToR acceptable to the WB within six months following project effectiveness.
- (b) **Ghana:** In line with its mandate as per the Ghana Audit Service Act (Act 584), the Ghana Audit Service is solely responsible for the auditing all public funds as received by Government ministries, agencies, and departments. The capacity of the Ghana Audit Service is assessed as satisfactory. In this regard, and consistent with the use of country FM systems, the Ghana Audit Service will conduct the audit of the project's financial statements.
- (c) **Sierra Leone:** The Audit Service Sierra Leone is by law responsible for the audit of all government finances and projects. However, in view of the prevailing capacity constraints, it is likely that the Audit Service Sierra Leone could outsource such services to a private firm of auditors.

15. In line with the World Bank access to information policy, the implementing agencies will be required to make the annual audited financial statements publicly available on its official website. Accordingly, the World Bank will also publish the reports upon receipt.



### Disbursement Arrangements

16. **Designated and Project Accounts.** PIUs will open one single US dollar Designated Account in a reputable commercial bank acceptable to the World Bank. In addition, the each PIU may open a local currency (GHS) subsidiary “Project Accounts” to facilitate the implementation. All the Designated Accounts and Project Accounts should be opened within one month from the effectiveness. The signatories to these bank accounts should be in line with the FM Manuals of procedures of the respective implementing entities.

17. **Disbursements.** All project implementing entities will access funding from the World Bank using the disbursement methods described in the World Bank Disbursement Handbook (that is, advance, direct payment, reimbursement, and special commitments). Disbursement will be made in accordance with the Disbursement Guidelines for IPF dated February 2017. Detailed disbursement procedures will be documented in the FM Manuals of procedures. Upon Credit/Grant effectiveness, each entity will be required to submit a withdrawal application for an initial deposit to the DA, drawn from the IDA Credit/Grant, in an amount to be agreed to in the DFIL. Further deposit of funds from the World Bank to the DA will be made upon evidence of satisfactory utilization of the advance, reflected in the unaudited IFRs. Withdrawal applications must be submitted regularly (at least once a month).

18. If ineligible expenditures are found to have been made from the Designated and/or Project Accounts, the Borrower and Recipients will be obligated to refund the same. If the Designated Account remains inactive for more than three months, the World Bank may reduce the amount advanced. The World Bank will have the right, as reflected in the terms of the FA, to suspend disbursement of the funds if significant conditions, including reporting requirements, are not complied with. Additional details regarding disbursement will be provided in the DFILs.

Figure A9.1: Flow of Funds for Chad

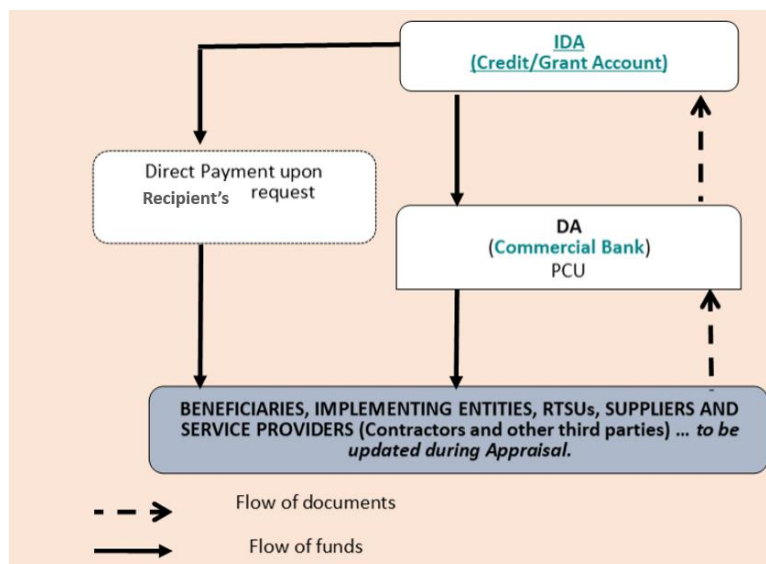




Figure A9.2: Flow of Funds for Ghana

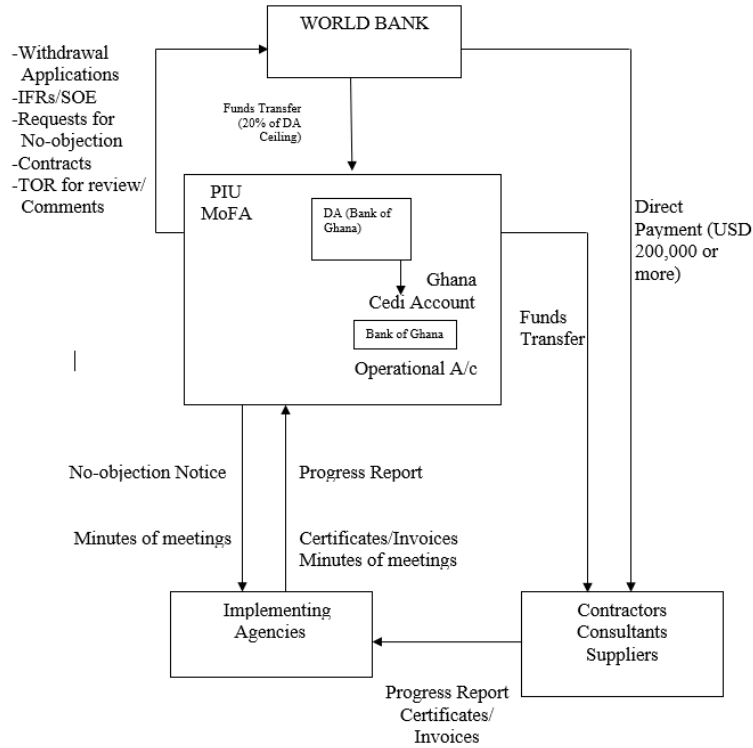
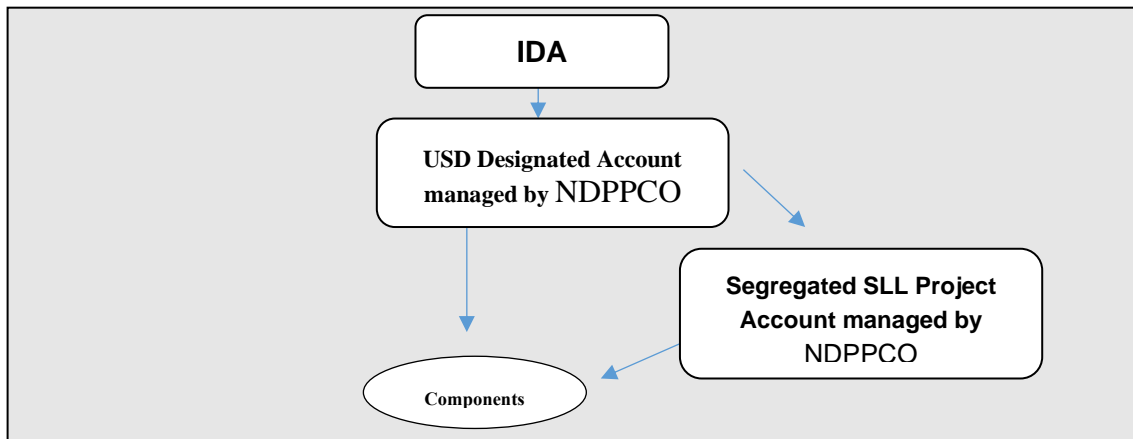


Figure A9.3: Flow of Funds for Sierra Leone



### Implementation Support Plan

19. For FM the Implementation Support Missions will be carried out twice a year for Chad and Sierra Leone based on the substantial FM residual risk rating. For Ghana, given that the FM residual risk is rated



as Moderate, Implementation Support Missions for FM will be carried once every 12 months. Implementation support will also include desk reviews, such as the review of IFRs and audit reports. In-depth reviews and forensic reviews may be done where deemed necessary. The FM implementation support will be an integral part of the project’s implementation reviews.

**Table A9.1: Implementation Support Plan**

<b>FM activity</b>	<b>Frequency</b>
<b>Desk reviews</b>	
IFR review	Quarterly/Bi-annual.
Audit report review of the program	Annual/ Annually.
Review of other relevant information such as interim internal control systems reports	Continuous as they become available.
<b>On-site visits</b>	
Review of overall operation of the FM system	Semi-annual (implementation support mission)
Monitoring of actions taken on issues highlighted in audit reports, auditors’ management letters, internal audit, and other reports	As needed, but at least during each implementation support mission.
Transaction reviews (if needed).	As needed.
<b>Capacity-building support</b>	
FM training sessions by WB FM team.	During implementation and as needed.