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**The World Bank**

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Report No: PAD5256

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED ADDITIONAL GRANT

IN THE AMOUNT OF SDR 39.0 MILLION  
(US\$50.0 MILLION EQUIVALENT)

FROM THE  
CRISIS RESPONSE WINDOW EARLY RESPONSE FINANCING (CRW-ERF)

TO THE

REPUBLIC OF SIERRA LEONE

FOR THE

WEST AFRICA FOOD SYSTEMS RESILIENCE PROGRAM PHASE 2 (P178132)

December 1, 2022

Agriculture And Food Global Practice  
Western And Central Africa Region

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective {Oct 31, 2022})

Currency Unit =

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1 US\$ = 0.77924709 SDR 1

FISCAL YEAR

January 1 - December 31

Regional Vice President: Ousmane Diagana

Country Director: Boutheina Guerhazi

Regional Director: Simeon Kacou Ehui

Practice Manager: Chakib Jenane

Task Team Leader(s): Katie Kennedy Freeman , Kadir Osman Gyasi

## ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
AfDB	African Development Bank
AM	Accountability Mechanism
CBA	Cost-benefit analysis
CERC	Contingency Emergency Response Component
CGIAR	Consultative Group for International Agricultural Research
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
CPF	Country Portfolio Framework
CRW-ERF	Crisis Response Window Early Response Fund
CSA	Climate-Smart Agriculture
CORAF	West and Central African Council for Agricultural Research
ECOWAS	Economic Community of West African States
ESCP	Environmental and Social Commitment Plan
EIRR	Economic internal rate of return
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESRC	Environmental and Social Risk Classification
ESS	Environmental and Social Standards
FAO	United Nations Food and Agriculture Organization
FBO	Farmer-based organization
FCV	Fragility, Conflict and Violence
FM	Financial Management
FSRP	Food System Resilience Program
FSRP-SL	Food Systems Resilience Program – Sierra Leone
FY	Fiscal Year
GAFSP	Global Agriculture and Food Security Program
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GHG	Green House Gas
GM	Grievance Mechanism
GoSL	Government of Sierra Leone
GRiF	Global Risk Financing Facility
GRS	Grievance Redress Service
Ha	Hectare
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
ILM	Integrated Landscape Management
IPC	Integrated Food Security Phase Classification
IPF	Investment Project Financing
IPMP	Integrated Pest Management Plan
IRR	Internal Rate of Return
LMP	Labor Management Procedures
M&E	Monitoring and evaluation
MAF	Ministry of Agriculture and Forestry
MoGCA	Ministry of Gender and Children's Affairs

MOU	Memorandum of Understanding
MPA	Multiphase Programmatic Approach
MT	Metric tons
NaCSA	National Commission for Social Action
NDPPCO	National Development Partner Programs Coordinating Office
NGOs	Non-Governmental Organizations
NSmartAg	Nutrition Smart Agriculture
PAD	Program Appraisal Document
PDO	Project Development Objective
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PMP	Pest Management Plan
PrDO	Program Development Objective
QA-FSRP	Quick Action Food Security Response Plan
RPCA	Food Crisis Prevention Network ( <i>Réseau de prévention des crises alimentaires</i> )
SEA	Sexual Exploitation and Abuse
SEP	Stakeholders Engagement Plan
SH	Sexual Harassment
SLARI	Sierra Leone Agricultural Research Institute
SLeSCA	Sierra Leone Seed Certification Agency
SRI	System of Rice Intensification
TA	Technical Assistance
TEGFS	Technical Expert Group on Food Security
ToR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Program
WEAI	Women's Empowerment in Agriculture Index
WFP	United Nations World Food Programme

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**BASIC INFORMATION – PARENT (West Africa Food System Resilience Program (FSRP) Phase 2 - P178132)**

Country	Product Line	Team Leader(s)		
Western and Central Africa	IBRD/IDA	Katie Kennedy Freeman		
Project ID	Financing Instrument	Resp CC	Req CC	Practice Area (Lead)
P178132	Investment Project Financing	SAWA4 (10130)	AFWRI (7960)	Agriculture and Food

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

Is this a regionally tagged project?	Country (ies)			
Yes	Ghana, Sierra Leone, Chad			
Bank/IFC Collaboration	Joint Level			
Yes	Complementary or Interdependent project requiring active coordination			
Approval Date	Closing Date	Expected Guarantee Expiration Date	Environmental and Social Risk Classification	
29-Jul-2022	30-Sep-2028		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 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 checked="" 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



[ ] Alternate Procurement Arrangements (APA)

[ ] Hands-on Expanded Implementation Support (HEIS)

**Development Objective(s)**

**MPA Program Development Objective (PrDO)**

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

**Project Development Objectives (Phase 002)**

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

**Ratings (from Parent ISR)**

	Implementation
	21-Oct-2022
Progress towards achievement of PDO	S
Overall Implementation Progress (IP)	S
Overall ESS Performance	S
Overall Risk	S
Financial Management	S
Project Management	S
Procurement	S
Monitoring and Evaluation	S

**BASIC INFORMATION – ADDITIONAL FINANCING (Additional Financing to Sierra Leone Food Systems Resilience Program, Phase 2 - P180211)**

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P180211	Additional Financing to Sierra Leone Food Systems Resilience Program, Phase 2	Restructuring, Scale Up	Yes



Financing instrument Investment Project Financing	Product line IBRD/IDA	Approval Date 15-Dec-2022	
Projected Date of Full Disbursement 29-Sep-2028	Bank/IFC Collaboration No		
Is this a regionally tagged project? Yes	Country (ies) Sierra Leone		

**Financing & Implementation Modalities**

<input checked="" type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Series of Projects (SOP)
<input 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 checked="" 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)
<input checked="" type="checkbox"/> Contingent Emergency Response Component (CERC)	

**Disbursement Summary (from Parent ISR)**

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed	
IBRD					%
IDA	315.00		310.35		0 %
Grants					%

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

MPA Program Financing Envelope	716.00
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**MPA FINANCING DETAILS (US\$, Millions)**

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

**PROJECT FINANCING DATA – ADDITIONAL FINANCING (Additional Financing to Sierra Leone Food Systems Resilience Program, Phase 2 - P180211)**

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

**SUMMARY (Total Financing)**

	Current Financing	Proposed Additional Financing	Total Proposed Financing
<b>Total Project Cost</b>	315.00	50.00	365.00
<b>Total Financing</b>	315.00	50.00	365.00
<b>of which IBRD/IDA</b>	315.00	50.00	365.00
<b>Financing Gap</b>	0.00	0.00	0.00

**DETAILS - Additional Financing**

**World Bank Group Financing**

International Development Association (IDA)	50.00
IDA Grant	50.00

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

	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
<b>Sierra Leone</b>	0.00	50.00	0.00	0.00	50.00
Crisis Response Window (CRW)	0.00	50.00	0.00	0.00	50.00
<b>Total</b>	<b>0.00</b>	<b>50.00</b>	<b>0.00</b>	<b>0.00</b>	<b>50.00</b>



**COMPLIANCE**

**Policy**

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

Yes  No

Does the project require any other Policy waiver(s)?

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).

**INSTITUTIONAL DATA**

**Practice Area (Lead)**

Agriculture and Food

**Contributing Practice Areas****Climate Change and Disaster Screening**

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

**PROJECT TEAM****Bank Staff**

<b>Name</b>	<b>Role</b>	<b>Specialization</b>	<b>Unit</b>
Katie Kennedy Freeman	Team Leader (ADM Responsible)	Economist	SAWA4
Kadir Osman Gyasi	Team Leader	Economist	SAWA4
Innocent Kamugisha	Procurement Specialist (ADM Responsible)	Procurement	EAWRU
Josue Akre	Financial Management Specialist (ADM Responsible)	Financial Management	EAWG1
John David Sydney Hodge	Financial Management Specialist	Financial Management	EAWG2
Gina Cosentino	Social Specialist (ADM Responsible)	Social Specialist	SAWS4
Taoufiq Bennouna	Environmental Specialist (ADM Responsible)	Environmental Specialist	SAWE1
Ashwini Rekha Sebastian	Team Member	Economist	SAWA4
Ernest Ruzindaza	Team Member	Economist	SAWA4
Gloria Malia Mahama	Social Specialist	Social Development	SAWS1
Kaja Waldmann	Team Member	Economist	SAWA4
Makoto Suwa	Team Member	Disaster Risk Management	SAEU2
Nikolai Alexei Sviedrys Wittich	Procurement Team	STEP	EAWRU
Sebastian Raphael Heinz	Team Member	Economist	SAWA4
Shafick Hoossein	Team Member	Environmental Specialist	SAWE4

**Extended Team**

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Location</b>
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## I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

### Introduction

1. **This Project Paper seeks the approval of the Executive Directors to provide Additional Financing (AF) in the amount of US\$50.0 million to the Multi-phase Programmatic Approach (MPA) of the West Africa Food System Resilience Program (FSRP, Phase II, P178132) for the Republic of Sierra Leone from the Crisis Response Window Early Response Financing (CRW-ERF).** FSRP Sierra Leone (FSRP-SL) is financed by International Development Association (IDA) in the total amount of US\$60 million. This AF aims to: (i) replenish the financing gap created by the activation of the Contingency Emergency Response Component (CERC) that was requested by the Government of Sierra Leone (GoSL) on October 27 2022 and activated on November 11, 2022 to support the Quick Action Food Security Response Plan (QA-FSRP) of the GoSL; and (ii) scale up the investment in food security and resilience interventions in response to severe food and nutrition insecurity in Sierra Leone. The proposed AF would be accompanied by a restructuring of FSRP-SL to reallocate resources between components to fill the financing gap in the parent project, that has resulted from the activation of the CERC in the amount of US\$ 25 million and adjust the results framework.

2. **There is an urgent need to address immediate and short-term calorie and nutritional needs of vulnerable groups and simultaneously tackle underlying drivers of food insecurity.** It is especially vital to support food production of Sierra Leone's smallholder farmers in the upcoming cropping seasons, aiming to avoid the addition of a food availability crisis to the unfolding food access crisis. This AF will build on the FSRP MPA interventions and address the immediate and short-term calorie and nutritional needs of vulnerable groups, while simultaneously building resilience to tackle underlying drivers of national vulnerability to food insecurity.

### Background and Rationale for Additional Financing

#### Country Context

3. **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 Gross Domestic Product (GDP) per capita of only US\$509 in 2020. 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. The national poverty rate declined by 5.6 percentage points over the past decade but remains high at 56.8 percent.<sup>1</sup> Poverty is mostly rural (with a rural poverty incidence of 78.7 percent) and agricultural (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. Economic growth resumed in 2021 from -2 percent in 2020 to an estimated rate of 3.1 percent in 2021 at an estimated rate of 3.1 percent.<sup>2</sup> The economy is 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.

<sup>1</sup> World Bank. 2019. Poverty and Shared Prosperity in Sierra Leone, 2011-2018C

<sup>2</sup> World Bank. 2022. Data. <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?ep=0&locations=SL>



### *Agriculture and Food Security*

4. **Agriculture is the engine of economic growth and poverty alleviation in Sierra Leone, but agricultural productivity remains low.** 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>3</sup>. The sector employed 55 percent of the population in 2019<sup>4</sup> but is characterized by low and stagnating productivity in key crops, limited market-oriented diversification, major aggregation and coordination bottlenecks, a weak private sector, and a low-capacity public sector. Sierra Leone has tremendous diversity and growing potential for agriculture in its upland and lowland ecologies but has been unable to exploit it. Yields of rice, the main staple, in major producing areas average less than 1 metric tons (MT)/ha. Per capita rice consumption stands at 185 kg/year, the 5th highest in the world. Domestic demand for rice exceeds domestic supply by over 400,000 MT/year, requiring imports valued at over US\$200 million/year.<sup>5</sup>

5. **Climate change risks are significant and growing.** Over the past 40 years, the average annual temperature in Sierra Leone has risen by around 0.5°C.<sup>6</sup> It is expected to further increase by 1°C to more than 2.6°C by 2060.<sup>7</sup> By 2060, the annual number of hot days (with a max. temperature > 35°C) is expected to increase by approximately 26 days in the countries' Northern and Eastern parts and by 7 days in the Southern parts of the country.<sup>8</sup> Being already highly prone to inundations today<sup>9</sup>, Sierra Leone is projected to experience increases in extreme rainfall events that may induce even more severe flooding and lead to increased streamflow rates.<sup>10</sup> Climatic change is expected to make cropping calendars more unpredictable and to negatively affect crop production for key staple crops such as rice and cassava. Rice is highly sensitive to increased humidity and rainfall intensity and is vulnerable to pest that thrive in higher temperatures. In the absence of appropriate adaptation measures, possible increases in the incidence of flooding may put farmers' agricultural assets at heightened risk of destruction, especially in areas marked by high levels of deforestation and land degradation. The social impacts of climate change, especially on vulnerable, resource dependent households, exacerbates social-economic vulnerabilities given dependence on subsistence agriculture. As such, climate impacts contribute to widening inequalities, social fragility, and conflicts over scarce resources.

6. **Food insecurity and malnutrition are worsening.** The *Cadre Harmonisé* results from March 2022 indicate that countrywide 1.23 million individuals (15 percent of Sierra Leone's population) are currently facing Integrated Food Security Phase Classification (IPC) 3+ crisis or emergency level food insecurity.<sup>11</sup>

<sup>3</sup> World Bank. National Accounts Data

<sup>4</sup> World Bank. based on data from the International Labor Organization

<sup>5</sup> Graham, E. G., Tchale, H., & Ndiane, M. (2020). An Optimal Rice Policy for Sierra Leone: Balancing Consumer and Producer Welfare. Washington DC: World Bank Policy Research Working Paper; No. 9369.

<sup>6</sup> <https://climateknowledgeportal.worldbank.org/country/sierra-leone/climate-data-projections>

<sup>7</sup> Wadsworth, Richard, Amie Jalloh, and Aiah Lebbie. 2019. "Changes in Rainfall in Sierra Leone: 1981–2018" *Climate* 7, no. 12: 144. <https://doi.org/10.3390/cli7120144>

<sup>8</sup> <https://climateknowledgeportal.worldbank.org/country/sierra-leone/climate-data-projections> (Assuming the SSP 1-2.6 Scenario where global emissions are cut severely but fail to reach net zero before 2050)

<sup>9</sup> From 1980-2010, heavy precipitation-induced floods accounted for 90 percent of people affected by disaster in Sierra Leone (GoSL 2018. Third National Communication of Sierra Leone to the United Nations Framework Convention on Climate Change)

<sup>10</sup> <https://climateknowledgeportal.worldbank.org/country/sierra-leone/vulnerability>

<sup>11</sup> <https://fews.net/sectors-topics/approach/integrated-phase-classification>. The use of the Integrated Phase Classification (IPC) is a landmark in the fight against food insecurity. Widely accepted by the international community, IPC describes the severity of



This number is up from approximately 600,000 people estimated to be in IPC3+ in June-August 2020.<sup>12</sup> Sierra Leone's IPC3+ population increased to 1.61 million (20 percent of the population) in September 2022 (a 30 percent increase from March 2022), with 26,400 people projected to be in IPC4+ (a 57 percent increase).<sup>13</sup> The 2021 Sierra Leone Health and Nutrition Survey revealed deteriorating nutrition for vulnerable groups. Some 5.4 percent of children under five years of age are wasted due to acute undernutrition, and 29.5 percent are stunted due to chronic undernutrition. Consumption of fruits, vegetables, whole grains, nuts, and seeds are below recommended levels, with starchy staples continuing to loom large in diets. Micronutrient deficiencies are widespread. Anemia affects more than 50 percent of children, and 70 to 80 percent of women. Vitamin A deficiency affects one-third of all children.<sup>14</sup> The pervasiveness of micronutrient deficiencies reflects the lack of affordability of a healthy diet to the vast majority of Sierra Leoneans. As of 2020, a healthy diet<sup>15</sup> in Sierra Leone was unaffordable to 89 percent of the population which corresponds to 7.1 million people.<sup>16</sup> With the recent increases in food prices caused in large measure by the war in Ukraine, access to food is even further constrained.

**7. The food and nutrition security crisis in Sierra Leone is driven by several interacting disruptions.** Sharp economic deterioration is being generated by global price inflation for food, energy, and fertilizer linked to the overall global negative supply shock created by the war in Ukraine. Food price inflation in Sierra Leone almost tripled to over 23 percent between January and March 2022<sup>17</sup>, with prices of basic food staples rising by between 20 and 40 percent.<sup>18</sup> The price of fuel increased by 50 percent in March 2022 alone.<sup>19</sup> Increasingly common climate shocks, including flooding and erratic precipitation patterns during seasonal rains, have increased short-term hunger and compromised the resilience of vulnerable households. Inflationary pressures are expected to persist through 2022 and extend into 2023<sup>20</sup>, further deepening the crisis. Household purchasing power has been significantly eroded, impeding food access and sharpening food insecurity among vulnerable households disproportionately affecting women and persons with disabilities.

**8. The food insecurity crisis requires urgent action.** The September 2022 HungerMap analysis by the United Nations (UN) World Food Programme (WFP)<sup>21</sup> finds that in 12 of Sierra Leone's 16 districts (Bo, Bombali, Falaba, Kailahun, Kenema, Kambia, Karene, Koinadugu, Kono, Moyamba, Port Loko, Western Urban), 3.51 million people (42.8 percent of the population) have insufficient food consumption (707,000

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food emergencies. Based on common standards and language, this five-phase scale is intended to help governments and other humanitarian actors quickly understand a crisis (or potential crisis) and take action.

<sup>12</sup> Sahel and West Africa: Food and Nutrition Food Security Situation. [https://www.food-security.net/wp-content/uploads/2019/12/SNAPSHOT2019\\_WEST-AFRICA\\_EN.pdf](https://www.food-security.net/wp-content/uploads/2019/12/SNAPSHOT2019_WEST-AFRICA_EN.pdf). RPCA. 2020.

<sup>13</sup> Food and Nutrition Situation Sierra Leone. RPCA. <https://www.food-security.net/en/datas/sierra-leone-2/>

<sup>14</sup> Diet and Nutrition Profile Sierra Leone. 2021 Sierra Leone Health and Nutrition Survey. WFP/UNICEF/FAO/Ministries.

<sup>15</sup> The cost of a healthy diet is based on global average quantities of food groups recommended in national food-based dietary guidelines (FBDGs). See also *The State of Food Security and Nutrition in the World 2022* Report (FAO et al. 2022).

<sup>16</sup> Food Prices for Nutrition DataHub: global statistics on the cost and affordability of healthy diets (worldbank.org)

<sup>17</sup> Statistics Sierra Leone: [https://www.statistics.sl/images/StatisticsSL/Documents/cpi/2022/april\\_2022\\_CPI\\_Press\\_Release.pdf](https://www.statistics.sl/images/StatisticsSL/Documents/cpi/2022/april_2022_CPI_Press_Release.pdf)

<sup>18</sup> World Food Programme, Sierra Leone Market Outlook Bulletin, Vol 1/2022, Jan 1 – 30 March 2022.

<sup>19</sup> World Food Programme, Sierra Leone Market Outlook Bulletin, Vol 1/2022, Jan 1 – 30 March 2022.

<sup>20</sup> World Bank June 2022 Global Economic Prospects Report.

<https://openknowledge.worldbank.org/bitstream/handle/10986/37224/9781464818431.pdf>

<sup>21</sup> Note that the difference between food insecurity data stemming from the Cadre harmonisé (Ch) and WFP data is due to differences in the employed definition of food security and the corresponding data collection methodology. The WFP monitors food and nutrition insecurity trends in real time whereas the Cadre harmonisé relies on field surveys conducted twice a year.



more than in May 2022), 3.44 million people (41.9 percent of the population) have crisis or above crisis level food-based coping strategies, and 3.67 million people (46.1 percent of the population) face challenges accessing markets.<sup>22</sup>

### *Parent Project Implementation*

9. **The FSRP Multiphase Programmatic Approach (MPA) was approved by the World Bank Board of Directors on November 18, 2021, for US\$570 million equivalent of IDA** (a total of US\$641 million equivalent, including financing from the Global Risk Financing Facility (GRiF), the Global Agriculture and Food Security Program (GAFSP) and co-financing from the Kingdom of the Netherlands channeled through the Food Systems 2030 trust fund). Phase I includes Burkina Faso, Mali, Niger, and Togo, along with three regional organizations - the Economic Community of West African States (ECOWAS), the West and Central African Council for Agricultural Research (CORAF) and the Permanent Interstate Committee for drought control in the Sahel (CILSS). The Program Development Objective (PrDO) is to increase preparedness against food insecurity and improve the resilience of food systems in participating countries. All Phase I countries and organizations are effective and are making progress against their targets, and towards the overall achievement of the PrDO.

10. **On July 29, 2022, US\$315 million of IDA was approved by the World Bank Board of Directors for a second phase of the FSRP MPA.** The total approved amount includes national and regional IDA to Sierra Leone (US\$60 million), Chad (US\$105 million) and Ghana (US\$150 million), bringing the total MPA envelope to US\$716 million. The Project Development Objective (PDO) of FSRP-SL is to increase preparedness against food insecurity and improve the resilience of food systems in Sierra Leone. The financing agreement was signed on August 22, 2022, and it was declared effective on November 4, 2022. The Project Implementation Unit (PIU) has been established with terms of reference, qualifications, and experience satisfactory to the World Bank. The Project Coordinator was hired on an interim basis and the recruitment of a permanent candidate was added as a dated covenant. In addition, the GoSL has mandated a team from the Projects Fiduciary Management Unit, established within the Ministry of Finance to provide fiduciary management to donor financed projects in Sierra Leone, to temporarily accompany the implementation of the project. The preparation of a Grievance Mechanism (GM) manual is underway. A procurement plan has been approved for the first 18 months of the project. There are no results to-date, but a first Implementation Status and Results Report was approved on October 21, 2022, and the project is on track with start-up activities.

11. **The FSRP is designed to address challenges to food system resilience and food security.** The Program has the following three technical components: i) **Component 1**, “Digital Advisory Services for Agriculture and Food Crisis Prevention and Management”, focused on upgrading regional food crisis prevention and management systems and enhancing food system stakeholder’s access and use of agro-hydrometeorological information services; ii) **Component 2**, “Sustainability and Adaptive Capacity of the

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<sup>22</sup> WFP HungerMap: Sierra Leone Insight and Key trends. 15 September 2022. <https://hungermap.wfp.org>. The HungerMap primarily tracks trends in household food consumption, consumption-based coping and livelihood changes to understand multiple aspects of food insecurity. These are outcome level 1 indicators in the IPC Framework and therefore provide early indications of potential shifts in acute food insecurity. Specifically, three measures are assessed: the prevalence of insufficient food consumption; the prevalence of crisis or above crisis level food-based coping strategies; and the prevalence of challenges in accessing markets.



Food System’s Productive Base”, to strengthen national and regional agricultural research systems and the implementation of Integrated Landscape Management (ILM) in selected communities; and (iii) **Component 3**, “Regional Food Market Integration and Trade”, to elevate intra-regional food trade and increase value creation in selected value chains. In addition to the three technical components, the program includes (iv) a CERC as **Component 4**; and (v) **Component 5** for Project Management.

12. **FSRP-SL addresses significant challenges to food system resilience and food security**, including: (i) low growth of food system productivity compared to population growth; (ii) falling per capita food availability; (iii) limited access to improved technologies, modern inputs, and advisory services; (iii) weak access to markets due to inadequate post-harvest, and market infrastructure; and (iv) limited processing capacity and value-added activities. FSRP-SL provides a strong foundation on which to address several production and marketing related aspects of the unfolding food and nutrition security crisis facing Sierra Leone while also contributing to longer-term resilience of crisis-affected households and communities.

13. **Learning is an integral part of the FSRP MPA.** FSRP Phase I developed a Learning Agenda with mechanisms to generate and disseminate knowledge and learning. Four learning mechanisms have been promoted by the accompanying regional programmatic Advisory Services and Analytics the Food Systems Resilience Facility (P172941). Within this framework, knowledge has been generated related to risk management, conflict and crisis, trade and markets and impact evaluation methodologies, all of which is being systematically streamlined into all MPA Phases.

*Justification for the Additional Financing and Consistency with the Country Partnership Framework*

14. **The AF in the amount of US\$50.0 million will (i) fill the financing gap in the parent project, that has resulted from the activation of the CERC in the amount of US\$ 25 million; and (ii) scale up the investment in food security and resilience interventions in response to the prevailing severe food and nutrition insecurity. The AF responds to the Government’s request to address emergency food security needs.** Given the rapid onset of the food security crisis and the unprecedented surge in acute needs in these regions, neither the parent project nor other World Bank projects include funding and activities with the required scale, targeting, and content to aptly respond to the scale of the crisis. In a letter dated October 27, 2022, the GoSL requested the World Bank to activate the CERC of FSRP to provide emergency support to its emergency food security response plan, QA-FSRP. The CERC interventions will i) relieve acute food and nutrition insecurity through direct food and nutrition aid and school feeding over the next 3-6 months and ii) enable crisis-affected households (particularly those who have lost their crops to recent floods) to restore their productive capacity for increased shock resilience in the next planting season.

15. **The AF is fully aligned with requirements for accessing CRW-ERF funding.** A Technical Assessment of the food security crisis was undertaken to demonstrate eligibility for the CRW-ERF. The CRW-ERF Technical Expert Group on Food Security (TEGFS) confirmed that the food security trends, conditions, and projections qualify Sierra Leone for activation for CRW ERF resources.<sup>23</sup> The TEGFS

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<sup>23</sup> The CRW ERF trigger is activated if a country faces a significant level of severity (defined as approximately 20 percent of the country’s population or 5 million people living in districts categorized as crisis or worse, IPC3+, conditions) and that these conditions are worsening (defined as approximately a 5 percent arithmetic increase in the country’s population living in or expected to be in districts categorized as IPC3+). Under local activation, the unfolding crisis approximates, or is expected to approximate, the magnitude of ERF thresholds.





endorsed the following points: (i) the evidence provided in the Eligibility Note sufficiently supported the view that the country is or could be facing an acute food security crisis which may be worsening; (ii) the Eligibility Note sufficiently provided information about the readiness of the World Bank's operations to respond to the crisis and fits very well with the World Bank Group's Country Partnership Framework 2021 – 2026 for Sierra Leone ; (iii) conflict-related risks are considered minimal for the ERF support in the areas affected by food insecurity; and (iv) the information included in the Eligibility Note corroborates views provided by external experts, including *Cadre Harmonisé*, Statistics of Sierra Leone, WFP, and Food Crisis Prevention Network, among others.

16. **The proposed CRW-ERF financing will make a critical contribution towards the SL QA-FSRP which was designed by GoSL to mitigate the socio-economic implications of the current food crisis.** The plan provides a framework for interventions to meet the food security needs of up to 1.61 million crisis-affected people. The CRW-ERF is aligned with the QA-FSRP that focusses on short-term measures while also seeking to lay the foundation for medium to long-term investment to boost agriculture productivity. QA-FSRP main interventions are: (i) addressing emergency issues (through meeting the immediate food security needs of the most vulnerable and protecting against a deterioration of nutrition status of children); (ii) strengthening resilience (by boosting local production of a diversified basket of food, and building a strategic reserve stock of food items to last multiple lean seasons); and (iii) boosting productivity in the agriculture sector (that will have an impact in the short to long-term time horizon). The QA-FSRP, and thus the AF, are in line with lessons learned linked to past World Bank interventions which confirm that interventions aiming to reduce food insecurity must combine immediate crisis relief with investments in strengthening agricultural production and restoring households' productive assets.

17. **The AF-ERF financing will make a critical contribution towards filling the observed financing gaps of the QA-FSRP.** The GoSL has been engaging development partners to support the US\$140 million QA-FSRP. The US\$50 million CRW-ERF financing complements US\$22.8 million in existing funding provided by Productive Social Safety Nets and Youth Employment Project (PSNYE, P176789) funded with US\$15 million by the World Bank, US\$5.7 million by WFP and US\$2.1 million by the African Development Bank (AfDB). Discussion with the donor community is on-going to fill the remaining gap (US\$67.2 million), including with the AfDB regarding support for Sierra Leone under the AfDB's US\$1.5 billion African Emergency Food Production Plan.

18. **The proposed AF is well aligned with the World Bank's Country Partnership Framework (CPF) fiscal year (FY) 2021 – FY2026 for Sierra Leone (report # 148025).** It specifically supports Focus Area 3, *Economic Diversification and Competitiveness with Resilience, and the emphasis on increasing productivity*. By addressing risk and vulnerability in Sierra Leone, the CPF provides a strong foundation for the WB's response to the unfolding food crisis in the country. The AF is also aligned with the WB's Strategy for Fragility, Conflict and Violence (FCV).<sup>24</sup> Specifically, it supports the fourth pillar on "*mitigating the spillovers of FCV to support countries and the most vulnerable and marginalized communities that are impacted by cross-border crises, such as forced displacement or shocks resulting from famines, pandemics, and climate and environmental challenges.*" The AF focuses on two of the six priority issues of the WB's FCV Strategy, including: (i) creating jobs and economic opportunities; and (ii) building the resilience and

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<sup>24</sup> World Bank Group Strategy for Fragility, Conflict, and Violence 2020–2025 (Vol. 2).  
<https://www.worldbank.org/en/topic/fragilityconflictviolence/publication/world-bank-group-strategy-for-fragility-conflict-and-violence-2020-2025>



preparedness of communities, including the ability to manage climate change and environmental degradation. This is aligned with the World Bank's Crisis Response Framework, under pillar 1, "responding to food insecurity," and specifically related to a) support production and producers, b) scale-up social protection to protect the vulnerable, and c) sustainable food and nutrition security.

19. **The AF supports the GoSL's Medium-Term National Development Plan (2019-2023) and National Agriculture Transformation Plan 2023.** It also supports the GoSL's aim 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.

### *Restructuring*

20. **According to the World Bank's CERC Guidance Note of October 2017, a project restructuring is to be carried out to reflect the reallocation of funds and the changes needed to the results framework.** This would be the first restructuring of FSRP-SL and would include: (i) reallocation of the proceeds of the IDA grant to the activated CERC; (ii) changes to components and costs; and (iii) changes to the results framework following the activation of the CERC and revision of results indicators and targets to account for the AF.

21. **The parent project's PIU will be tasked with coordination and management of the proposed AF resources.** Given the activation of the parent project's CERC, a CERC Manual has been developed by GoSL and reviewed by the World Bank. All new activities build directly on relevant methods and structures put in place under the parent project and other relevant interventions and partnerships. Implementation arrangements, responsible agencies, partner institutions from the parent project to be retained, and new partners to be engaged are outlined in the CERC Manual, including relevant arrangements in the parent project's PIU housed within the Ministry of Agriculture and Forestry (MAF).



**Table 1: MPA Program Framework**

Phase #	Project ID	Sequential or Simultaneous	Phase's Proposed DO*	IPF or PforR	Estimated IBRD Amount (\$ million)	Estimated IDA Amount (\$ million)	Estimated Other Amount (\$ million)	Estimated Approval Date	Estimated Environmental & Social Risk Rating
1	P172769	Simultaneous		IPF	0.00	330,000,000	71,000,000.00	Nov. 2021	Substantial
2	P178132	Simultaneous		IPF	0.00	315,000,000	0.00	June 2022	Substantial
AF	P180211	Simultaneous		IPF	0.00	50,000,000	0.00	Dec. 2022	Substantial
Total					0.00	695,000,000	71,000,000.00		
<b>Revised Financing Envelope</b>							\$ 766,000,000.00		
Board Approved Financing Envelope							\$ 716,000,000.00		



## II. DESCRIPTION OF ADDITIONAL FINANCING

### Summary of Proposed Changes

22. **The proposed AF will (i) replenish the US\$25 million that was reallocated from Component 2 to emergency response activities when activating the CERC; and (ii) scale-up investments under Components 2 and 3 in infrastructure and technologies to support improved production for the next cropping season.** It will build on the design of on-going FSRP Phase II MPA. Targeting under the AF will focus on scaling-up immediate and medium-term activities falling within the FSRP-SL objectives, components, and geographical areas leveraging FSRP-SL's implementation modalities. New targets will be added at PDO level, and new indicators will be added for activities under Component 4.

### Parent Project's Development Objectives (PDO)

23. The Project Development Objective (PDO) of FSRP-SL will remain the same as that of the parent project which is to increase preparedness against food insecurity and improve the resilience of food systems in Sierra Leone.

### Changes in Beneficiaries and Target Areas

24. **FSRP-SL is implemented in all districts of Sierra Leone** (see FSRP Phase II (P178132) Program Appraisal Document (PAD 4940<sup>25</sup>) for details). With the AF, the project will reach 881,900 beneficiaries (40 percent women) instead of 365,200 beneficiaries. Its activities will mainly be implemented in areas and villages classified as extremely vulnerable through a government-led process within the Food Security Cluster which includes UN agencies such as the Food and Agriculture Organization (FAO), the WFP, and key Non-Governmental Organizations (NGOs). Prioritization follows several steps, namely: (i) conducting a needs assessment; (ii) choosing and validating a targeting approach; (iii) selecting beneficiaries including vulnerable groups; and (iv) monitoring targeting processes and outcomes. Households are targeted using a mixed approach that analyzes data on household vulnerability (e.g., the Household Economy Approach, the results of which are validated at community level. The findings of these analyses are largely captured in the recent Food Security Monitoring System (August 2022) report conducted by FAO, WFP and GoSL.

### Changes in Results Framework

25. **The AF introduces one new PDO-level indicator.** The targets of selected indicators have also been amended to reflect the scaled-up activities (see the updated Results Framework). The proposed AF will also include additional intermediate results indicators. The following changes apply to the outcome indicators:

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<sup>25</sup><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>



**Table 2: Changes to key PDO Level Targets**

Indicator	Original Target	Revised target
PDO-level (outcome) indicator		
Project beneficiaries (number and percentage of female beneficiaries)	365,200 (40% women)	881,900 (40% women)
People receiving emergency support (number and percentage of female-headed households)	NEW	516,700 (40% women)
Percentage of reduction of food insecure people in program targeted areas	25	NO CHANGE
Food system actors accessing hydro and agrometeorological advisory services (number and percentage of female beneficiaries)	120,000 (40% women)	NO CHANGE
Producers adopting Climate Smart Agriculture (CSA) technologies and services (number and percentage of female beneficiaries)	160,000 (40% women)	260,000 (40% women)
Land area under integrated landscape management practices (Hectare (ha))	3,000	6,000
Intra-regionally traded production in selected value chains (Percentage)	30	NO CHANGE

### Summary of Component Changes and Costs

26. **The purpose of the AF is twofold: (i) filling resource gaps in the emergency response by reallocating US\$25 million from Component 2 (US\$5 million from sub-component 2.1 and US\$20 million from sub-component 2.2) of the original grant to Component 4 (CERC); and (ii) scaling-up investments to support improved production for the next cropping season.**

27. **The AF covers Component 2 to 5 of the parent project.** No additional resources are provided to Component 1. Changes to Components 2 and 3 include scale-up of activities and the inclusion of additional value chains. Under FSRP Phase II, the GoSL chose to invest in the three priority value chains rice, cassava, and livestock (for rational and specific intervention areas see FSRP Phase II Project Appraisal Document (PAD)). In addition to these three value chains, the AF and the CERC financed intervention will support the value chains of vegetables, biofortified crops, poultry, and small ruminant, given their potential for (i) agro-pastoral purposes, (ii) food insecurity reduction, (iii) improved nutrition and (iv) income-generation for targeted households and communities. New activities proposed under Component 4, the CERC, are described below and included in the approved CERC Manual. They will be further detailed in the Project Implementation Manual (PIM). The CERC interventions will i) relieve acute food and nutrition insecurity through direct food and nutrition aid as well as school feeding over the next 3-6 months and ii) enable crisis-affected households (particularly those who have lost their crops to recent floods) to restore their productive capacity for increased shock resilience in the next planting season. Component 5 will be scaled up to ensure proper implementation of new activities. Specific changes to components are described in the following section.

### Detailed Component Descriptions

**Component 2: Sustainability and Adaptability of the Productive Base of the Food System - US\$50.1 million equivalent (original project US\$30.1 million out of which US\$25 million reallocated from this**



**component to CERC; AF US\$45 million (US\$25 million to replenish financing gap due to CERC and US\$20 million for additional activities)).**

28. This component seeks to enhance the resilience of the productive base of Sierra Leone's food system through: (i) strengthened national agricultural research systems; (ii) 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). Activities under this component include the promotion of landscape governance and landscape management that will lead to climate adaptation (e.g., increased soil water retention capacity) and mitigation benefits (e.g., increased soil carbon). To achieve greater self-sufficiency in terms of seed and food production in the following planting seasons for increased food security over the following 12-18 months, the AF will scale-up investments in productive inputs (high-yield seeds), productive technologies (irrigation). In addition, accompanying extension services and technical assistance (TA) will be provided to ensure efficient use of both. The AF will fill the financing gap under all Component 2 sub-components and activities created by CERC activation.

***Subcomponent 2.1: Consolidate Regional Agricultural Innovation System - US\$11.6 million (original project US\$9.6 million of which US\$5 million reallocated to CERC; AF US\$7.0 million (US\$5 million to replenish financing gap from CERC activation and US\$2 million for additional activities)***

29. Under this sub-component, the AF will finance the scale-up of: (i) activities to promote technology access and exchange related to the upgrading of the national seed system; and (ii) modernizing extension services. Interventions to support the domestic production of seeds and expand agriculture extension will ensure efficient and proper use of agricultural inputs. Activities in these areas will invest in:

- a) **Upgrading of the national seed system.** This activity will finance capacity building of the key actors in the seed value chain, including both the public and private sector stakeholders in the production and supply of climate-smart breeder, foundation, and certified seeds. It will specifically finance: (i) strengthening capacities of public sector institutions such as Sierra Leone Seed Certification Agency (SLeSCA) for seed certification, inspection and quality monitoring; (ii) equipping of seed laboratory for SLeSCA and construction and equipping of fertilizer testing laboratory and quality testing equipment for National Fertilizer Regulation Agency; (iii) capacity enhancement of the technical staff of the Sierra Leone Agricultural Research Institute (SLARI) in production of quality breeder and foundation seeds of climate-smart seed varieties of priority crops, including training in hybrid seed production; (iv) training of private seed enterprises to produce climate-smart foundation, certified, and hybrid seeds; (v) promotion of partnerships and associations between domestic seed enterprises and international seed companies to broaden access to germplasm and know-how; (vi) strengthening of the partnership between SLARI and regional and international institutions (including the Consultative Group on Agriculture (CGIAR) centers) for production of improved climate-smart seed varieties of priority crops and germplasm exchange; and (vii) procurement and multiplication of breeder seeds and production of foundation seeds by SLARI.
- b) **Modernizing national extension services:** This will be done through scaling-up investments in modern approaches to extension services, specifically enhanced access to agricultural advisory services,



including climate and agro-advisory information, management practices of targeted value chains through demonstrations, dissemination training, and capacity building of producers and providers of advisory services to accelerate the adoption of CSA technologies for improved productivity. Activities to be financed include scaled-up advisory services in management practices of targeted value-chains through demonstrations, training, and capacity building of producers and providers of advisory services, aiming to accelerate the adoption of CSA technologies for improved productivity. Special attention will be paid to using gender appropriate communication channels to address women's constraints to accessing agriculture advisory services and support.

***Subcomponent 2.2: Strengthening Regional Food Security through ILM - US\$38.5 million (original project US\$20.5 million of which US\$20 million reallocated to CERC; AF US\$ US\$38 million (US\$20 million to replenish financing gap from CERC and US\$18 million for additional activities)***

30. Activities financed by the AF under this subcomponent will enhance the resilience of ecosystems and food systems in priority landscapes by financing sub-projects, matching grants, and associated TA as well as capacity building. Specifically, the AF will finance (i) scaled up access to climate resilient crop varieties and livestock breeds as well as productivity-enhancing inputs, including fertilizer using the GoSL's e-voucher system; (ii) scaled up delivery of CSA technologies such as re-forestation and conservation agriculture; (iii) scaled up application of soil amendments to address the high acidity of soils to improve soil nutrients utilization efficiency; and (iv) rehabilitation of 2,500 ha of inland valley swamps and small-scale irrigation systems to support the cultivation of rice and vegetables, covering 1,000 ha of irrigable land, and deploying methods for improved climate resilient flood water management and water harvesting (e.g., bunds, dikes, and weirs). As in the parent project, MAF will coordinate activities under the subcomponent with no change in the implementing partners.

**Component 3: Regional Food Market Integration and Trade - US\$13.7 million equivalent (original project US\$11.2 million; AF US\$2.5 million)**

31. This component seeks to facilitate trade of agricultural goods and inputs within and across national borders. The expected outcomes are: (i) increased intra-regional food trade between surplus and deficit areas making the region more resilient to shocks; and (ii) increased value creation in regional priority value chains. The AF will only scale-up activities under Sub-component 3.1.

***Sub-component 3.1: Facilitate Trade Across Key Corridors and Consolidate Food Reserve System - US\$4.2 million (original project US\$2.7 million; AF US\$2.5 million).***

32. Under this sub-component, the AF will scale-up activities to provide direct support to food security by reviewing and upgrading of storage facilities. The AF will finance the construction of one additional standard grain storage facility (close to major production areas) that comply with ECOWAS standards and provide associated trainings. This investment will strengthen the development of food banks, improve prices farmers receive and build resilience to shocks and other disruptions to the food system. As in the parent project, MAF will coordinate this activity with no change in the implementing partners.



**Component 4: Contingent Emergency Response Component (original project US\$25.0 million equivalent).**

33. This component is intended to finance eligible expenditures in case of natural or man-made crises, disasters, severe economic shocks, or other eligible crises and emergencies in Sierra Leone. It responds to the GoSL's QA-FSRP and the request for the activation of the CERC to address the short and medium-term implications of the global food, fertilizer, and fuel price crisis. This subcomponent proposes to meet the immediate food and nutrition needs of acutely food insecure agricultural households and communities identified for support through the government-led targeting process. Targeting involved identifying vulnerable groups, such as women headed households, the elderly, and persons with disabilities, among others. CERC activities will reach a total of 516,700 individuals, comprised of 66,200 households corresponding to a total of approximately 396,700 individuals and an additional 120,000 school children across short- and midterm activities.

34. To meet the immediate food security needs of vulnerable groups, over a period of 3-6 months, the CERC will:

- a) **Provide food and nutrition assistance to vulnerable households:** Some 20,000 crisis-affected vulnerable farm households (approximately 100,000 people) will receive three (3) months of cash transfers. Some 75 percent of the targeted households will be female headed. The cash transfer activity will be implemented by the Social Safety Net Project (P143588) coordinated through the National Commission for Social Action (NaCSA), which is coordinating the Productive Social Safety Net and Youth Employment Project, using existing cash transfer systems (targeting, value provision, and administrative infrastructure). To ensure a coordinated response to the high fuel and food price crisis, NaCSA will implement this program in coordination with WFP and other partners of national food security and early warning and response system. Through this scheme, the project will help households meet their immediate food and nutrition needs and minimize crisis impacts on their livelihoods.
- b) **Provide cash for work to support local food production:** Some 8,700 smallholder farming households (approximately 43,500 people) within 158 Farmer-based Organizations (FBOs) will be provided with 60 days of employment in public works, focusing on rehabilitation of critical agricultural infrastructure, particularly in areas that were affected by recent floods, including 1,300 hectares of inland valley swamps.<sup>26</sup> The program will have two layers of targeting: (a) geographic according to the level of food insecurity in districts; and (b) at the household level, self-targeting of the poor within food insecure communities (while ensuring inclusion of vulnerable groups such as women, women-headed households, the elderly, persons with disabilities, and others). The daily rate paid will be no higher than the market wage for unskilled labor (agricultural daily wage) by location. Under this activity, the project with technical support from WFP will also support: (i) deploying 40 power tillers to high performing groups to mechanize land preparation; (ii) fencing 50 hectares of inland valley swamps in Falaba district to mitigate conflicts between crop farmers and cattle herders; (iii) upgrading of 15 FBO stores and rehabilitation/construction of 15 drying floors to improve post-harvest management; and (iv) restoring degraded water catchment areas through the planting of 25,000 economic trees.

<sup>26</sup> Each household will receive 60 days FFA, paid in local currency equivalent of US\$2.9/HH/day.





c) **Support school feeding to prevent the deterioration of nutrition status of children:** The AF will support school feeding in crisis affected districts to enhance nutritional levels of the children from deprived homes, also targeting vulnerable children (e.g., learners with disabilities). WFP will be the main implementing partner, working in close partnership with the School Feeding Secretariat which is responsible for coordination, quality assurance, monitoring, and reporting. WFP will procure and deliver in-kind food assistance to 120,000 children attending public primary schools in 34 chiefdoms in Karene, Kenema and Bonthe districts, shown to be among the most food insecure by the 2020 Comprehensive Food Security and Vulnerability Analysis. With this support, targeted schools will prepare and serve daily hot meals, ensuring that they meet 30 percent of their daily nutritional needs, increasing attendance and retention. The program will finance WFP to procure 320 MT of rice locally for the first term, and 1,400 MT internationally for the second and third term. Some 420 MT of pulses, 140 MT of vitamin-A fortified vegetable oil, and 70 MT of iodized salt will be procured internationally. The project will also finance 10 experimental gardens at schools (1Ha per school) to serve as community-led teaching tools that also produce essential vegetables for school meals. Support will include land preparation, provision of assorted vegetable seeds, and supply of fertilizer. The Ministry of Agriculture will work closely with the Ministry of Education and School Feeding Secretariat to ensure that beneficiaries are fully involved in the process for acceptance and ownership and that learnings from these gardens are streamlined through other programs. The schools selected for the school feeding intervention are being coordinated with education colleagues and the same schools that are financed under the Sierra Leone Free Education Project (P167897).

35. To boost local production of a diversified basket of food, over a period of 12-18 months, the project will:

a) **Finance procurement of agricultural planting materials and inputs, organize advisory services and technical training to restore the productive capacities of crisis-affected farming households:** Some 30,000 farming households (approx. 150,000 people) will be supported, focusing on improved tolerance to climate-related stress and short duration crops to maximize the 2022/2023 cropping season. The beneficiaries will include about 3,000 recent flood affected households, with a focus on women-headed households. The intervention will support the delivery of 5,000 tons of fertilizers and soil amendments and 3,000 tons of improved short-duration seeds to cultivate 30,000 ha of priority staple crops (mainly high nutrient fortified rice and maize) through the e-voucher scheme. Crisis affected farmers will be supported to cultivate 10,000 ha of bio-fortified cassava and orange flesh sweet potato varieties. The AF will also finance expanded access to mechanization services for land preparation and harvesting. The delivery of high-yielding short-duration varieties of target crops would help farmers to take advantage of rains and residual moisture in the floodplains in raising a successful second crop. This will help restore productive capacity, boost crop yields, and improve food security in the following planting seasons.

b) **Promote the cultivation of high nutrient crops such as legumes (groundnut, cowpeas, and soybeans) and vegetables in crisis-affected communities, particularly those severely affected by recent floods:** Approximately 10,500 beneficiary farming households and FBOs (52,500 individuals) will be supported with simple tools for land preparation, early maturing seeds, and organic and inorganic fertilizers and pesticide, aiming to cultivate 850 ha of groundnuts, 155 ha of soybeans, 400 ha of cowpeas, and 2,000 ha of vegetables. 2 tons of assorted onion and vegetable seeds will be procured, in addition to some



2,000 tons of dung through local service providers. 5 solar irrigation systems will be installed to produce onions and other assorted vegetables through female farmer groups. With Technical Assistance (TA) provided through FAO, the project will finance: (i) training in climate-smart practices including organic production system and integrated pest management systems and strategies; (ii) capacity strengthening of farmers, marketing cooperatives, and aggregators to foster linkages among value chain actors and smoothen markets, through establishing two regional agricultural business platforms to bring together smallholders and the private sector, which would be link to the school feeding program as suppliers of food stuff; and (iii) nutrition education to improve production and consumption diversification. Deliberately efforts will be made to link vegetables production support with the school feeding interventions to serve as sources of supplies and markets.

36. To create and rehabilitate resilience-enhancing productive assets, over a period of 12-18 months, the project will:

- a) **Provide grants to acquire assets such as labor-saving small farm implements and tools to enhance productivity, and in-kind support to own and rear livestock as sources of alternative livelihoods.** Some 7,500 vulnerable farm households (approx. 35,000 people) in food insecure districts will be supported. The CERC will emphasize the integration of climate-smart practices across the supported interventions to ensure sustainability and build climate resilience. With TA from FAO, the project will support vulnerable farm households in short cycle livestock production, particularly in backyard poultry, small ruminants (sheep and goats), and pig production, specially targeting persons with disability, women and elderly-headed farming households. These will internalize previous lessons learned and be provided as in-kind support to broaden income sources of the farm household, improve capacity to manage shocks and improve household nutrition. More specifically, this activity will include producing 16,500 six-weeks-old chicks of improved breeds of cockerels to benefit 5,000 farm households for backyard poultry that would also improve local breeds. About 7,000 small ruminants (sheep and goats) with improved climate-resilient breeds will be procured and distributed to 2,500 vulnerable farm households, who, in turn, will be required to pass on the progeny as gifts to subsequent sets of beneficiary households. Beneficiaries will also receive TA to construct appropriate housing for the livestock and support initial feed needs (20 tons) and veterinary products aimed at improving livestock health and husbandry.

***Component 5: Project Management IDA - US\$7.5 million equivalent (original project US\$5.0 million; AF US\$2.5 million)***

37. To ensure proper implementation of project activities including new activities, the AF will cover the costs of managing the project as well as Monitoring & Evaluation (M&E) arrangements and knowledge management and communications activities. It will also cover the additional costs of financing a Food Crisis Preparedness and Response Plan, including disaster preparedness at community level and cover all of the costs associated with increased data collection and processing. In conjunction with investments under Component 1 of the parent project, this will strengthen risk detection mechanisms to ensure effective preparedness and timely response while strengthening the country's resilience to climate shocks.

38. This Component will also cover costs for Environmental and Social (E&S) risk management and



monitoring. Given the scaled-up and new activities, this sub-component will require enhanced capacity to manage sexual exploitation and abuse/sexual harassment (SEA/SH) risks, including the possible exploitation of children and persons with disabilities. In addition to the SEA/SH risk mitigation under paragraph 60 the project will support ongoing work with the Ministry of Gender and Children’s Affairs (MoGCA) to systematically strengthen government capacity, streamline and standardize key risk mitigation measures in the World Bank portfolio. To this end, the project will support MoGCA to develop agriculture sector specific Gender Based Violence (GBV) Action plan, develop standardized tools and Terms of Reference (TORs) for service provider mapping, recruit a service provider to conduct service provider mapping, develop guidelines for GBV-sensitive GMs, develop guidelines and conduct community awareness campaigns and capacity building for District GBV Steering Committees. A Memorandum of Understanding (MoU) shall be signed with MoGCA outlining the procedure for implementation.

**Summary of component changes and costs**

39. The proposed allocation of the AF and reallocations across components, following the restructuring accompanying the AF are shown in Table 3 below:

**Table 3: Project Cost by Component**

<b>Component and Subcomponent</b>	<b>Parent Project (US\$ m)</b>	<b>Restructuring (US\$ m)</b>	<b>AF (US\$ m)</b>	<b>Total with AF (US\$ m)</b>
<b>Component 1: Digital Advisory Services for regional agriculture and food crisis prevention and management</b>	<b>13.7</b>	<b>13.7</b>	<b>0.0</b>	<b>13.7</b>
Subcomponent 1.1: Upgrading Food Crisis Prevention and Monitoring Systems	5.3	5.3	0.0	5.3
Subcomponent 1.2: Strengthening Digital Hydromet and Agro-Advisory Services for Farmers	8.4	8.4	0.0	8.4
<b>Component 2: Sustainability and adaptability of the productive base of the food system</b>	<b>30.1</b>	<b>5.1</b>	<b>45</b>	<b>50.1</b>
Subcomponent 2.1: Consolidate Regional Agricultural Innovation System	9.6	4.6	7.0	11.6
Subcomponent 2.2: Strengthen Regional Food Security through Integrated Landscape Management	20.5	.5	38	38.5
<b>Component 3 Regional market integration and trade</b>	<b>11.2</b>	<b>11.2</b>	<b>2.5</b>	<b>13.7</b>
Subcomponent 3.1: Facilitate Trade Across Key Corridors and Consolidate Food Reserve System	2.7	2.7	2.5	5.2
Subcomponent 3.2: Support the Development of Strategic and Regional Value Chains	8.5	8.5	0.0	8.5
<b>Component 4: Contingency emergency response component</b>	<b>0.0</b>	<b>25.0</b>	<b>0.0</b>	<b>25.0</b>



Component and Subcomponent	Parent Project (US\$ m)	Restructuring (US\$ m)	AF (US\$ m)	Total with AF (US\$ m)
Support to Implement Government’s Emergency Food Security Response Plan	0.0	25.0	0.0	25.0
<b>Component 5: Program Management</b>	<b>5.0</b>	<b>5.0</b>	<b>2.5</b>	<b>7.5</b>
<b>TOTAL</b>	<b>60.0</b>	<b>60.0</b>	<b>50.0</b>	<b>110.0</b>

### Institutional Arrangements

40. The institutional arrangements for the parent project are organized around the following functions: (i) oversight and orientation by a National Project Steering Committee ; (ii) overall coordination of project activities and partners, and management of the Designated Account and fiduciary responsibilities, by the MAF National Development Partner Programs Coordinating Office (NDPPCO); a PIU established within NDPPCO coordinates the day-to-day implementation of the project activities; and (iv) technical execution of project activities is vested with strategic government entities. The PIM details all coordination, management, implementation, M&E, and reporting functions.

41. To ensure proper implementation of CERC activities, a manual (“CERC Manual”) was prepared and adopted in form and substance acceptable to the World Bank, and sets forth detailed implementation arrangements for the CERC Part, including: (i) any structures or institutional arrangements for coordinating and implementing the CERC Part; (ii) specific activities which may be included in the CERC Part, Eligible Expenditures required therefor (“Emergency Expenditures”), and any procedures for such inclusion; (iii) financial management arrangements for the CERC; (iv) procurement methods and procedures for the CERC; (v) documentation required for withdrawals of Financing amounts to finance Emergency Expenditures; (vi) a description of the environmental and social assessment and management arrangements for the CERC; and (vii) a template Emergency Action Plan. A dedicated consultant will be hired to closely accompany all of the activities implemented under the CERC. The environmental and social instruments required for the CERC will be prepared, disclosed and adopted in accordance with the CERC Manual and the Environmental and Social Commitment Plan (ESCP).

### Summary of changes

42. The table below summarizes the key changes to the project.

Change in Implementing Agency	Yes [ ] No [X]
Change in Project's Development Objectives	Yes [ ] No [X]
Change in Results Framework	Yes [X] No [ ]
Change in applicable Environmental and Social Standards (ESSs)	Yes [ ] No [X]
Change Environmental and Social Risk Rating (ESRC)	Yes [ ] No [X]
Change in Gender Based Violence Risk Rating	Yes [ ] No [X]



Changes to Legal Operational Policies	Yes [ ] No [X]
Change in Legal Covenants	Yes [ ] No [X]
Change in Loan Closing Date(s)	Yes [ ] No [X]
Cancellations Proposed	Yes [ ] No [X]
Change in Disbursement Arrangements	Yes [X] No [ ]
Reallocation between Disbursement Categories	Yes [ ] No [X]
Change in Disbursement Estimates	Yes [X] No [ ]
Change to Components and Cost	Yes [X] No [ ]
Change in Institutional Arrangements	Yes [ ] No [X]
Change in Financial Management	Yes [ ] No [X]
Change in Procurement	Yes [ ] No [X]
Change in Implementation Schedule	Yes [ ] No [X]
Other Change(s)	Yes [X] No [ ]

### III. KEY RISKS

43. **The overall risk rating of the proposed AF is commensurate with the risk rating of the parent project and is assessed as “Substantial”,** owing to the substantial risk ratings assessment for six of the nine constituent risk elements: political and governance risk, macroeconomic risk, institutional capacity for implementation and sustainability, fiduciary, environmental and social as well as climate-related risks. The risk descriptions and mitigation measures are described as follows:

44. **Political and governance is rated Substantial.** The current political tensions and polarization might be exacerbated by the general elections scheduled for June 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. 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, and suspending direct cash transfers to be managed by NaCSA by the first quarter of 2023, and working closely with WFP and FAO to gain greater control over the delivery of the cash for work and grants for assets interventions.

45. **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. The trade and economic impacts of the ongoing conflict



in Ukraine, with rising food and fuel prices and fast depreciation of the local currency are likely to linger over the medium term. 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. Moreover, food markets should stabilize, and the risk should minimize as the interventions begin to show impact.

46. **Institutional capacity for implementation and sustainability risk is rated Substantial.** The already weak and fragile public agencies may be further stretched with additional implementation challenges under the AF. In order to mitigate this, the PIU will be strengthened in ways that will boost capacities MOA. The coordination unit of the NaCSA will receive comprehensive capacity development support as well as implementation from FAO and WFP in the implementation of the conditional and non-conditional cash transfers interventions under CERC.

47. **Fiduciary risk is rated Substantial.** The fiduciary team for the parent project remains weak, and largely new to World Bank fiduciary systems. This issue will be addressed by recruiting qualified experts for the PIU and the provision of training in WB fiduciary and procurement procedures.

48. **Environmental and social risks are rated Substantial.** These include risks associated with civil works such as dust pollution, use of chemicals and fertilizers, occupational safety, labor influx, exclusion risks, as well as risks GBV and violence/exploitation of children and persons with disabilities, specifically related to food distribution under the AF. The project's Environmental and Social Management Framework (ESMF) provides clear measures to avoid or limit these impacts.

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

#### IV. APPRAISAL SUMMARY

##### A. Technical

50. **A technical assessment confirmed that the extreme food and nutrition insecurity situation facing Sierra Leone requires urgent and scaled responses, and that the AF is an appropriate vehicle for such a response.** The parent project has yet to commence implementation, but all preparations have been completed successfully and the first withdrawal request is expected before December 15. The parent project thus provides a firm foundation for the scale-up and new activities envisioned under the AF. All proposed new activities are wholly aligned with the parent project's PDO, which has not changed but accommodates the urgency of needs in the food security crisis affecting Sierra Leone. Given the prominent role of climate shocks in the food security crisis, climate-related vulnerabilities are appropriately prioritized in sub-components with a range of resilience and adaptation enhancing interventions embedded within planned activities. A summary of climate co-benefits is included in Annex 3.

51. **Prospects to expand and deepen the PIUs' implementation support structures as needed are**



**therefore positive.** The AF's target areas are already covered by the parent project. The AF will address both immediate needs to mitigate the impact of the ongoing food security crisis, as well as invest in productive capacities and critical infrastructure to strengthen the longer-term resilience of vulnerable populations to more frequent and severe economic and climatic shocks. The existing activities in the parent project for income-generating activities in crisis-affected areas will promote rapid and well-targeted scaling-up of sub-components. The targeted scale-up will be based on strengthened existing partnerships within the parent project, new partnerships under the AF, and enhanced engagement with related projects in the targeted areas. The new activities will leverage a partnership with WFP and World Bank-supported schools. To ensure effective implementation, the significant expansion in coordination, fiduciary, safeguards and M&E requirements will be met with appropriate investments within the PIU and among project partners.

52. **Support to Urgency of Situation:** Due to the urgent situation of food insecurity, several approvals were sought during preparation. A request was approved on October 24, 2022, from the Director of Regional Integration to prepare the project applying Paragraph 12 of Section III of the Bank Policy, "Investment Project Financing" (IPF Policy), Situations of Urgent Need of Assistance or Capacity Constraints. In addition, the parent project became effective on November 4, 2022 and as such, has not been effective for 12 months. An exception was received from the Regional Vice President on November 4, 2022, to proceed with preparation of AF even though the project has not yet been under implementation for 12 months. Finally, the activities under the activated CERC will procure food. On November 9, 2022, an approval was received from the Regional Vice President to finance food expenditures in the amount of US\$3 million for school feeding and US\$2 million for direct food expenditure, under the CERC component.

## B. Economic and Financial Analysis

53. **An Economic and Financial Analysis was conducted for the AF. This analysis shows a satisfactory economic internal rate of return of 20.1 percent and an economic net present value of US\$49.1 million at the opportunity cost of capital of 6 percent.** The financial and economic analysis is based on comparison of "with project" and "without project" scenarios (Annex 1). The financial analysis finds that all project activities are economically viable. The results are deemed satisfactory given the nature of the activities retained by the project. Sensitivity analysis shows that the Economic Internal Rate of Return (EIRR) is sufficiently robust. The EIRR levels confirm the robustness of the positive economic effects and impacts of the AF on the area of intervention in the face of the risk of increased costs, reduced income from the activities carried out or/and delay in the generation of benefits.

## C. Green House Gas Analysis

54. **A Greenhouse Gas (GHG) Analysis demonstrated significant mitigation of GHG emissions.** To calculate the carbon balance of the project, the FAO Ex-Ante Carbon balance Tool (EX-ACT) tool was used to appraise the AF. The carbon balance results indicate that the additional project activities from the AF will lead to a total of 1,087,369 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 72,491 tons of CO<sub>2</sub>e, or 7.6 tons of CO<sub>2</sub>e per hectare. Overall, the additional emissions generated by the increase in livestock and input use are off-set and surpassed by the reductions in emissions due to crop production, ensuring the project's carbon



neutrality. See details in Annex 2.

#### D. Gender

55. **FSRP Phases I and II are gender-tagged and as such, the AF will deepen the implementation of the gender strategy of the program.** The CERC interventions will focus support to the population's most vulnerable, particularly women and children. The original project acknowledged that there is profound inequality between women and men in Sierra Leone, which ranks 156th out of 162 countries on the inequality index between the sexes (United Nations Development Program, UNDP, 2019). Women rely heavily on agriculture for employment and income, and they have been greatly affected by the current food insecurity crisis. The AF will continue to promote activities that close gender gaps in women's participation in the agriculture sector and will dedicate specific access to productive resources for women. The AF will ensure that women have better access to economic recovery support to increase their incomes and improve their food security and income-earning opportunities. Consistent with the original project, the M&E will collect sex-disaggregated data, and the indicators to measure increased participation of women over community resources and improved access to income generation remain. In addition to the Results Framework, and consistent with the proposal under the original project, the AF will also measure economic empowerment using the Women's Empowerment in Agriculture Index (WEAI<sup>27</sup>). Like the original project, the AF prioritizes reducing the gender gap and the AF will scale-up activities focused on women, including targeted capacity building, training and inclusion under the school feeding, cash for work and cash transfer activities.

#### E. Citizen Engagement

56. **The AF will systematically apply the citizen engagement mechanisms that were developed under FSRP-SL,** and which are now under implementation. These mechanisms ensure an inclusive and participatory decision-making approach throughout processes, from selecting specific sites and ensuring the adequate targeting of vulnerable people and communities, to establishing solid management mechanisms that contribute to sustainability of investments and prevent future possible conflicts. The specific CE interventions that will be implemented include: (i) support for the inclusive engagement of local rural communities in landscape through participatory planning and monitoring; (ii) support for community engagement in determining local investments through consultations, including targeting and enhancing the voice of the vulnerable; and (iii) project-level feedback and Grievance Mechanism (GM), designed to process complaints, concerns and questions from beneficiaries and other stakeholders at various levels (regional to local), with the aim to resolving issues within the GRM specified timeframe.

#### F. Maximizing Finance for Development (MFD)

57. **The AF will leverage the activities designed under the original program and will scale up selected MFD-enabling compliant activities** under Components 2 and 3. Key activities include: (i) modernizing national extension services to facilitate private sector participation, (ii) investments in national seed infrastructures; (iii) supporting the integration of value chains into regional markets through matching grant mechanisms; and (iv) supporting the construction of standard grains and community storages and

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<sup>27</sup> <https://www.ifpri.org/project/weai>





processing facilities that are aimed to improve the competitiveness of target value chains at local and regional markets. The Government of Sierra Leone has credible plans and institutional setup for stimulating private sector investments while the project support to enabling environment will facilitate further reforms as needed. The private sector investments will be generated from a series of value chain actors, including producers' organizations and SMEs, and are expected to be realized during the project implementation and will continue beyond the project's timeframe.

## G. Environmental and Social

58. **The overall Environmental and Social Risk Classification (ESRC) for the AF remains Substantial, as the parent project.** The ESSs relevant to the parent project remain relevant for the AF, they are: 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). However, the project background has been updated to cater for new activities related to food security emergency responses. All AF activities are consistent with the parent project interventions except, (i) provision of cash transfer, (ii) school feeding and (iii) support to alternative income generation activities like poultry. To this end, the prepared FSRP II Environmental and Social Framework (ESF) instruments, SEP, Labor Management Plan (LMP), Environmental and Social Management Framework (ESMF) and Resettlement Plan Framework (RPF), and Integrated Pest Management Plan (IPMP) will be updated to consider the risks and impacts associated with the new activities, along with monitoring requirements and implementing arrangements. Moreover, for the CERC, a CERC-ESMF will be prepared and publicly disclosed. The revised instruments will be disclosed and discussed with all interested parties before effectiveness of the AF. The ESCP prepared for the parent project as part of the legal agreement will also be revised to include additional requirements resulting from the AF. Both the Stakeholder Engagement Plan (SEP) and ESCP have been updated and disclosed on the website of the Ministry of Agriculture and Forestry on November 21 2022<sup>28</sup> and the Bank prior to Appraisal. All other ESF instruments shall be revised and disclosed in accordance with the ESCP.

59. **Environmental and social risks associated with scaled-up or new activities** include the use of chemicals and fertilizers; rehabilitation of a large area of inland valley swamps; rehabilitation of small-scale irrigation systems to support the cultivation of rice and vegetables, occupational health and safety risks associated with civil works such as dust pollution; labor influx, including those related to provision of cash for works and school feeding; exclusion risks to vulnerable groups such as women, including women farmers and women-headed households, and learners with disabilities; as well as risks related to SEA/SH (including exploitation of children/youth), especially related to the AF's new activities, namely cash transfers, cash for work, and support to school feeding. The AF will also support tree planting, which poses the risk of failure due to species choice, irrigation water demand resulting in conflict with the community over competition for water and inadvertent introduction of invasive alien species.

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<sup>28</sup> <https://maf.gov.sl/environmental-and-social-commitment-plan-escp/>



60. **The project's ESF instruments will be updated to reflect these new activities and ensure the required risk mitigation measures are reflected, and a CERC-ESMF will be prepared.** A GBV risk assessment will also be re-evaluated during implementation to consider these new activities, and if required, the SEA/SH Mitigation and Response Action Plan will be amended, and SEA/SH risk measures will be reflected in the ESMF and in the ESMPs to be developed, including measures related to mitigating SEA/SH risks to children/youth including learners with disabilities under the school feeding activity. The Bank's ESF team will work with the client to reinforce monitoring/supervision and reporting capacity throughout the Project lifecycle.

61. **The overall SEA/SH risk rating for the proposed AF is maintained as Substantial.** All AF activities are consistent with the parent project interventions except, (i) provision of cash transfer, (ii) support to alternative income generation activities like poultry, and (iii) school feeding. These and other SEA/SH risks will be managed by ensuring implementation of the or at SEA/SH Prevention and Response Action Plan, with specific attention to reduce vulnerabilities to children and youth girls, boys and those with disabilities. The GBV expert who will be recruited within three months of the original project's effective date (November 4, 2022) will monitor and implement SEA/SH activities such as: the development of codes of conduct, including prohibited behaviors and sanctions for violations of standards that explicitly address sexual and gender-based violence and child abuse; consultations with women's groups in accessible and safe places separately from men; sensitization of contractors, workers and neighboring communities on the code of conduct, implementation of a sensitive GM to SEA/SH which includes multiple entry points; mapping of a referral pathway of GBV services providers (at least legal, medical and psychosocial services); and quality evaluation in the project implementation areas. This work will be done in close collaboration with the MoGCA. Additionally, the project will systematically strengthen government capacity and standardize key risk mitigation measures as outlined in component 5.

62. **PIU staffing to manage environmental and social risks:** The recruiting arrangements that were agreed for the parent project will remain the same for this AF. The project will hire an environmental specialist, a social specialist and, a GBV specialist within three months of the Effectiveness Date of the Original financing.

#### H. Financial Management

63. **The parent project's PIU will remain responsible for the financial management (FM) aspects of the proposed AF.** The FM arrangements of the AF will follow the same approach as the implementation arrangements in place for the ongoing parent project, in line with the FM framework described in the PIM. The existing Designated Account under the parent project shall also be used for the Additional Financing as well as for CERC activities under the parent project.

64. **The CERC Operational Manual reflects financial management arrangements and procedures related to the UN Agencies (WFP and FAO) and NACSA** who will implement activities as described in this Project Paper under the CERC Component. In respect to the activities to be undertaken by WFP and FAO, the Indirect Financing approach will apply whereby the PIU will contract with WFP and FAO using the appropriate Standard Form of Agreement (SFAs). Disbursement to WFP in relation to the school feeding and cash for work related activities will be directly to WFP on behalf of the Recipient under a UN Commitment. Given the higher risks involved in cash for work payments by WFP to beneficiaries, the SFA



will outline the targeting and verification approach, method of payment, use of payment agent, fraud prevention measures and due diligence, and audit or evaluation requirements as well as other fiduciary oversight arrangements. The PIU will provide the draft SFA to the Bank in order to provide input to such financial management provisions prior to signing. The CERC Operational manual outlines the financial management arrangements and procedures relating to advances made from the Designated Account to NaCSA for implementing cash transfers. In particular, the procedures required to submit the required reconciliations of verified beneficiaries paid for using advances from the project are detailed and are similar to those used under the Social Safety Nets Project (P143588).

**I. Procurement**

65. Procurement under the proposed AF and the parent project will be carried out in accordance with the World Bank 'Procurement Regulations for Investment Project Financing Borrowers' (dated November 2020), the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by International Bank for Reconstruction and Development (IBRD) Loans and IDA Credits and Grants' (dated July 1, 2016) and beneficiary disclosure requirements, as well as other provisions stipulated in the project Legal Agreements. Furthermore, the Sierra Leone 'National Public Procurement Act of 2016' will apply for tenders approaching national market taking into considerations the requirements of Clauses 5.3, 5.4, 5.5 and 5.6 of the Procurement Regulations for Investment Project Financing (IPF) Borrowers. The Project Procurement Strategy for Development (PPSD) for the parent project has been updated to include the activities of this AF.

**Legal Operational Policies**

66. The Bank policy on Projects on International Waterways (OP 7.50) was triggered by the original project (P178132). It was determined that the Phase 2 project falls within the exception of paragraphs 7(a) and 7(b) of OP 7.50. Exception to the notification requirement was approved by the Regional Vice-President, in accordance with the Bank policy, on May 10, 2022. However, the proposed AF will not change any activities related to international waterways.

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

**V. WORLD BANK GRIEVANCE REDRESS**

**Grievance Redress.** Communities and individuals who believe that they are adversely affected by a project supported by the WB may submit complaints to existing project-level GM or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies



and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's RS, please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the Bank's Accountability Mechanism, please visit <https://accountability.worldbank.org>



**VI SUMMARY TABLE OF CHANGES**

	Changed	Not Changed
Results Framework	✓	
Components and Cost	✓	
Legal Covenants	✓	
Implementing Agency		✓
Project's Development Objectives		✓
Loan Closing Date(s)		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓

**VII DETAILED CHANGE(S)**

**MPA PROGRAM DEVELOPMENT OBJECTIVE**

Current MPA Program Development Objective

Proposed New MPA Program Development Objective



**EXPECTED MPA PROGRAM RESULTS**

**Current Expected MPA Results and their Indicators for the MPA Program**

**Proposed Expected MPA Results and their Indicators for the MPA Program**

**COMPONENTS**

<b>Current Component Name</b>	<b>Current Cost (US\$, millions)</b>	<b>Action</b>	<b>Proposed Component Name</b>	<b>Proposed Cost (US\$, millions)</b>
Digital Advisory Services for Agriculture and Food Crisis Prevention and Management	45.20	No Change	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	Revised	Sustainability and Adaptive Capacity of the Food System's Productive Base	200.41
Regional Food Market Integration and Trade	64.19	Revised	Regional Food Market Integration and Trade	66.69
Contingent Emergency Response (CERC)	0.00	Revised	Contingent Emergency Response (CERC)	25.00
Project Management	25.20	Revised	Project Management	27.70
<b>TOTAL</b>	<b>315.00</b>			<b>365.00</b>

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

<b>Fiscal Year</b>	<b>Annual</b>	<b>Cumulative</b>
2023	55,000,000.00	55,000,000.00
2024	70,000,000.00	125,000,000.00
2025	60,000,000.00	185,000,000.00
2026	50,000,000.00	235,000,000.00
2027	50,000,000.00	285,000,000.00
2028	50,000,000.00	335,000,000.00
2029	30,000,000.00	365,000,000.00



**SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)**

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	● Substantial	● Substantial
Macroeconomic	● Substantial	● Substantial
Sector Strategies and Policies	● Moderate	● Moderate
Technical Design of Project or Program	● Moderate	● Moderate
Institutional Capacity for Implementation and Sustainability	● Substantial	● Substantial
Fiduciary	● Substantial	● Substantial
Environment and Social	● Substantial	● Substantial
Stakeholders	● Substantial	● Substantial
Other	● High	● High
Overall	● Substantial	● Substantial

**LEGAL COVENANTS – West Africa Food System Resilience Program (FSRP) Phase 2 (P178132)**

Loan/Credit/TF	Description	Status	Action
IDA-E1150	(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	Not yet due	No Change
IDA-E1150	(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	Not yet due	No Change
IDA-E1150	(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	Not yet due	No Change



	annual) in accordance with modalities and specifications satisfactory to the Association, no later than three (3) months after the Effective Date		
IDA-E1150	(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	Not yet due	No Change
IDA-E1150	(Chad) ESCP, 10.2: The Recipient shall establish the grievance mechanism no later than 60 days after the Effective Date	Not yet due	No Change
IDA-71950	(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	Not yet due	No Change
IDA-71950	(Ghana) ESCP, 10.2: The Recipient shall establish the grievance mechanism no later than 3 months after the Effective Date	Not yet due	No Change
IDA-E1160	(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	Not yet due	Revised
Proposed	(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 of the Original Project, 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	Not yet due	
IDA-E1160	(Sierra Leone) Financing Agreement, Schedule 2, Section I.A.1.(b).(iii)(B): The Recipient shall not later than six (6)	Not yet due	Revised





	months after the Effective Date, install and customize an accounting software, under specifications and configuration acceptable to the Association		
Proposed	(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 of the Original Project, install and customize an accounting software, under specifications and configuration acceptable to the Association	Not yet due	
IDA-E1160	(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	Not yet due	Revised
Proposed	(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 of the Original Project	Not yet due	
IDA-E1160	(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	Not yet due	Revised
Proposed	(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 of the Original Project	Not yet due	
IDA-E1150	(Chad) ESCP, 10.2: Adopt the communications plan six (6) months after the recruitment of the social specialist.	Not yet due	No Change
IDA-E1160	(Sierra Leone Additional Financing) a Project coordinator that shall have been recruited not later than December 31, 2022	Not yet due	New
IDA-E1160	(Sierra Leone Additional Financing) The updated ESMF shall be adopted and disclosed one month after the Effective Date of the Additional Financing	Not yet due	New



Agreement.			
IDA-E1160	(Sierra Leone Additional Financing) Update the current LMP to reflect the risks and impacts associated with the new and scaled up project activities, not later than two months after the Additional Financing Agreement Effective Date	Not yet due	New
IDA-E1160	(Sierra Leone Additional Financing) Update the Integrated Pest Management Plan to reflect the new project activities one month after the Effective date of the Additional Financing.	Not yet due	New
IDA-E1160	(Sierra Leone Additional Financing) Update the SEA/SH Prevention and Response Action Plan to reflect the risks and impacts associated with the new and scaled up project activities, one month after the Effective Date of the Additional Financing Agreement, as part of the ESMF (within the same timeline as updating the ESMF)	Not yet due	New
IDA-E1160	(Sierra Leone Additional Financing) Update the RPF to reflect the risks and impacts associated with the new and scaled up project activities, one month after the Effective date of the Additional Financing Agreement, and thereafter implement throughout Project implementation.	Not yet due	New
IDA-E1160	(Sierra Leone Additional Financing) Revise the SEP to incorporate recent consultations to be undertaken to reflect the new and scaled up activities under the Additional Financing by two months of Effective Date of Additional Financing.	Not yet due	New
IDA-E1160	(Sierra Leone Additional Financing) The Recipient shall ensure that not later than twelve (12) months after the Effective Date, a Preparedness Plan is prepared and adopted in form and substance acceptable to the Association	Not yet due	New



**LEGAL COVENANTS – Additional Financing to Sierra Leone Food Systems Resilience Program, Phase 2 (P180211)**

**Sections and Description**

No information available

**Conditions**



**VIII. RESULTS FRAMEWORK AND MONITORING**

**Results Framework**

COUNTRY: Western and Central Africa

Additional Financing to Sierra Leone Food Systems Resilience Program, 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 by Objectives/ Outcomes**

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



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
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
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		589,740.00	600,000.00	689,740.00	789,740.00	881,900.00
<b>Action: This indicator has been Revised</b>							
People receiving emergency support from the project (Number)	0.00		130,000.00	260,000.00	390,000.00	450,000.00	516,700.00
<b>Action: This indicator is New</b>							
<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	50,000.00	100,000.00	150,000.00	200,000.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<b>Action: This indicator has been Revised</b>							
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	2,000.00	4,000.00	5,000.00	6,000.00
<b>Action: This indicator has been Revised</b>							
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
Sierra Leone (Number)		0.00	32,000.00	144,000.00	180,000.00	210,000.00	260,000.00
<b>Action: This indicator has been Revised</b>							
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 between the public and private		0.00	2.00	3.00	4.00	5.00	6.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
sectors (Number)							
Ghana (Number)		0.00	1.00	1.00	1.00	2.00	2.00
Chad (Number)		0.00	1.00	1.00	1.00	2.00	2.00
Sierra Leone (Number)		0.00	0.00	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





Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
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 climate-resilient land management practices (Yes/No)		No	No	No	Yes	Yes	Yes
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



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
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	20,000.00	40,000.00	60,000.00	80,000.00	100,000.00
<b>Action: This indicator has been Revised</b>							
<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
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



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
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
<b>Contingency Emergency Response Component (CERC), Sierra Leone (Action: This Component is New)</b>							
People benefiting from unconditional cash transfer (Number)		0.00	50,000.00	100,000.00	100,000.00	100,000.00	100,000.00
<i>Action: This indicator is New</i>							
People benefiting from unconditional cash transfer - Female (Number)		0.00	25,000.00	50,000.00	50,000.00	50,000.00	50,000.00
<i>Action: This indicator is New</i>							
People benefiting from unconditional cash transfer - individuals with disabilities (Number)		0.00	5,000.00	15,000.00	15,000.00	15,000.00	15,000.00
<i>Action: This indicator is New</i>							
People benefiting from food/cash for public works program (Number)		0.00	4,000.00	8,700.00	8,700.00	8,700.00	8,700.00
<i>Action: This indicator is New</i>							
People benefiting from food/cash for public works		0.00	2,000.00	4,000.00	4,000.00	4,000.00	4,000.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
program - Female (Number)							
<b>Action: This indicator is New</b>							
School pupils receiving project-supported meals (Number)	0.00	60,000.00	120,000.00	120,000.00	120,000.00	120,000.00	120,000.00
<b>Action: This indicator is New</b>							
School pupils receiving project-supported meals - Female (Number)	0.00	30,000.00	60,000.00	60,000.00	60,000.00	60,000.00	60,000.00
<b>Action: This indicator is New</b>							
Farmers reached with agricultural assets or services (CRI, Number)	0.00	100,000.00	258,000.00	258,000.00	258,000.00	258,000.00	258,000.00
<b>Action: This indicator is New</b>							
Farmers reached with agricultural assets or services - Female (CRI, Number)	0.00	50,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00
<b>Action: This indicator is New</b>							
Number of producers supported in crop and livestock production (Number)	0.00	5,000.00	10,500.00	10,500.00	10,500.00	10,500.00	10,500.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<b>Action: This indicator is New</b>							
Quantity of inputs distributed to beneficiary farmers (Metric ton)		0.00	5,000.00	7,500.00	7,500.00	7,500.00	7,500.00
<b>Action: This indicator is New</b>							
Rice seed (Metric ton)		0.00	1,000.00	2,000.00	2,000.00	2,000.00	2,000.00
<b>Action: This indicator is New</b>							
Fertilizer (Metric ton)		0.00	2,500.00	5,000.00	5,000.00	5,000.00	5,000.00
<b>Action: This indicator is New</b>							
Vegetable and legume seed (Metric ton)		0.00	250.00	500.00	500.00	500.00	500.00
<b>Action: This indicator is New</b>							
Households using better cropping and farm management practices (Number)		0.00	15,000.00	30,000.00	30,000.00	30,000.00	30,000.00
<b>Action: This indicator is New</b>							
Beneficiary households with increased minimum dietary diversity scores (Percentage)		0.00	60.00	70.00	70.00	70.00	70.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
<i>Action: This indicator is New</i>							

**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		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		Twice per year	Cadre harmonise, Early warning systems report	Cadre Harmonisé methodology	Early Warning System Office, PIUs
Ghana					
Chad					
Sierra Leone					
Program beneficiaries		Twice a year	Project reports	Baseline study and subsequent studies twice a year	PIUs



Of which women					
Ghana					
Chad					
Sierra Leone					
People receiving emergency support from the project					
Food system actors 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					
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		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
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		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		Yearly	Progress	Yearly information	PIUs



information services with digital information platforms			report/FSRP M&E system, Hydromet services reports	collection	
Ghana					
Chad					
Sierra Leone					
Agreements 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		Every six months	Progress report, FSRP M&E system, NCoS and CGIAR institutions reports	Data collection, surveys	PIUs
Ghana					
Chad					



Sierra Leone					
Percentage of nutrition sensitive technologies					
Sub-projects selected from the integrated landscape management plans with climate-resilient measures implemented		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		Yearly	Progress report		PIUs
Ghana					
Chad					
Sierra Leone					
Private-sector actors involved in regional agriculture trade that are supported by the Project		Twice a year	Progress report	Review of progress reports	National PIUs
Ghana					
Chad					
Sierra Leone					
Women farmers reached with assets or		Twice a	Progress	Review of activity	PIUs



services to improve commercialization in selected value chains		year	reports, M&E system	reports and field visits	
Ghana					
Chad					
Sierra Leone					
Beneficiaries satisfied with the Project's interventions		Mid term, and end of project	Progress reports	Surveys	PIUs
Ghana					
Chad					
Sierra Leone					
Grievances registered and addressed by the Program		Every six months	GM activity reports	Review of GM activity reports	PIUs, LGA
Ghana					
Chad					
Sierra Leone					
People benefiting from unconditional cash transfer					
People benefiting from unconditional cash transfer - Female					
People benefiting from unconditional cash transfer - individuals with					



disabilities					
People benefiting from food/cash for public works program					
People benefiting from food/cash for public works program - Female					
School pupils receiving project-supported meals	Number of school pupils receiving at least one school meals daily that is paid for by the Project.				
School pupils receiving project-supported meals - Female					
Farmers reached with agricultural assets or services	This indicator measures the number of farmers who were provided with agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and				



	<p>genetic material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research, extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an agriculture-related business (disaggregated by men and women) targeted by the project.</p>				
Farmers reached with agricultural assets or services - Female					



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Number of producers supported in crop and livestock production					
Quantity of inputs distributed to beneficiary farmers					
Rice seed					
Fertilizer					
Vegetable and legume seed					
Households using better cropping and farm management practices					
Beneficiary households with increased minimum dietary diversity scores					



## Annex 1. Economic and Financial Analysis

- 1. This annex presents the economic and financial analysis (EFA) for the proposed West Africa Food System Resilience Program (FSRP) -Phase 2 and Additional Financing (AF) in Sierra Leone.** The evaluation is built on the cost-benefit analysis (CBA) approach applied to the main project interventions to scale: the support to strengthen regional food security through integrated landscape management. The activities associated with the activation of the CERC were not quantified in the model (cash transfers, cash for work, and school meals) but yield positive economic benefits, given that they prevent the long-term economic costs associated with sudden food crises. All CERC activities prevent affected people from using other destructive coping mechanisms to afford food, such as selling their productive assets. Thereby, the activities can cushion the impact of the food crisis that might otherwise affect long-term development. Part I of this annex introduces the identification of benefit streams, followed by Part II, which describes the methodology and assumptions used for the CBA analysis. Part III describes the EFA for the implementation of the integrated landscape management approach. Finally, Part IV summarizes the economic results of the program for Sierra Leone, including a sensitivity analysis under different scenarios.
- 2. The project's scale and complexity had to be simplified in the present analysis due to limited data availability.** As further explained below, the analysis made some strong assumptions about different parameters. Hence, it can only provide indicative results and it will be updated as the project appraisal advances.
- 3. The project agricultural interventions to enhance food security and resilience of the food system in Sierra Leone are economically justified, generating a net present value (NPV) of the net additional benefits (NPV, using a social discount rate of 6%) of US\$ 49.1 million and an economic internal rate of return (EIRR) of 20.1 % (over a 15-year period).** These economic results are very satisfying, 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 (see Annex 2 GHG Accounting), the economic indicators improve, depending on the social carbon pricing scenario: assuming the low estimate range of social carbon price, the EIRR is 24.3 percent and the NPV is US\$ 85.4 million higher; assuming the high estimate range, the EIRR becomes 29.6 percent and the NPV is US\$ 170.6 million higher.

### Identification of benefits

- 4. The project's development objective of increasing preparedness against food insecurity, improving resilience of food systems and providing immediate response to an eligible crisis or emergency is expected to lead to four main quantifiable, mutually-reinforcing benefits.** First, FSRP-Phase 2 and AF 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 participation 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).





5. **The second benefit stream resulting from the FSRP-Phase 2 and AF 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 the food production and livelihoods of the affected population. In addition, farmers' resilience and adaptive capacity will be strengthened through the increased availability of climate-smart agriculture technologies and practices (i.e., integrated landscape management approach). Consequently, higher climate resilience and adaptation will not only secure the stability of agricultural incomes and rural livelihoods but also ensure their improvement.

6. **Third, the program will stimulate agricultural growth and transformation through *broader and more effective regional agricultural integration between ECOWAS member countries*.** 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 also realized through enhanced value creation in regional priority value chains resulting from different program interventions aimed at strengthening regional agricultural research and development, 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.

7. **Fourth, the program will generate *regional positive environmental externalities*.** As many natural resources are regionally shared and/or their national use will be based on a regional, integrated approach, addressing their degradation through the FSRP ILM approach (e.g. measures to reduce carbon sequestration, soil erosion, water pollution) in each program country will have positive spill-over effects on other participating countries. These effects will be reinforced by the cross-border coordinated strategy implemented by the program and will lead to sustainable restored natural ecosystem ensuring climate resilience and sustainable production systems.<sup>29</sup>

8. **The FSRP-Phase 2 and AF 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.

### Methodology and assumptions

9. **At this stage, the FSRP-Phase 2 AF budget for Sierra Leone proposes some of the investments and their quantification, but these activities are expected to be refined as the program's design evolves.** This

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<sup>29</sup> An evaluation of the environmental benefits brought about by the FSRP-Phase 2 and AF is conducted through a greenhouse gas emission (GHG) accounting analysis and included in the EFA. The details of the GHG accounting analysis are provided in a separate annex.



CBA 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 EFA. The financial analysis was conducted to assess the profitability of the proposed project activities (*with-project (WP) situation*), modelled from the perspective of the target beneficiaries, and compared with the *without-project (WOP) situation*. The choice of indicative crops has been driven by the proposed budgets and by the experience of previous investment operations in Sierra Leone. The opportunity cost of capital used is in line with the World Bank guidelines and the practice of recent projects, i.e. 12%.

10. **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 the modelled interventions based on discussion with the program 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 EFA, that is 6 percent, is in line with the World Bank 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 program years.

#### EFA for the support to enhance the food system's productive base

11. **The choice of models included in the analysis has been based on the proposal of the project activities to support the strengthening of regional food security through the integrated landscape management to be financed in Sub-component 2.2, as per the discussions between the World Bank and the implementation partners.** It will finance 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, climate-smart agriculture, organization and capacity building for the operation and maintenance of the financed investments. This includes the provision of improved agricultural inputs and training and technical assistance 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, sub-component 2.1 is expected to deliver improved technological innovations including climate- and nutrition- smart technologies tailored to the needs of Sierra Leone farmers (i.e., techniques in mangrove rice). 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.

12. **The impact of the interventions under Sub-component 2.2 has been assumed to be reflected in the modeling of crop and livestock production.** These activities will support farmers' productive capacity as they will enhance climate smart agriculture technologies and tools, including input supply support, irrigation, reduction in post-harvest loss, and market connectivity. Thus, the following activities have been identified and modeled based on the current budget proposal for the abovementioned sub-component.

13. **Rice production.** Based on the discussions with the implementation partners, a total of 11,550 ha is expected to benefit from a mix of improved agricultural technologies for rice cultivation, including improved climate-smart agricultural technologies, capacity development on specific agronomical practices such as the



System of Rice Intensification (SRI) and the development of small-scale irrigated perimeters. The present analysis develops ten rice growing models reflecting the different ecosystems and water source systems characterizing the production sector: three Boliland (seasonal swamp) models (rainfed, newly arranged irrigation, and rehabilitated irrigation), four Inland Valley Swamp (IVS) models (rainfed, newly arranged irrigation, rehabilitated irrigation and rehabilitated irrigation with SRI methodology), and three Mangrove rice growing models (rainfed, newly arranged irrigation and rehabilitated irrigation).<sup>30</sup> Consequently, the yield projections differ between models (2 t/ha for Boliland rainfed rice; 2.5 t/ha for Boliland newly arranged and rehabilitated irrigation, and IVS rainfed rice; 2.85 t/ha for Mangrove rainfed rice; 3.2 t/ha for IVS newly arranged and rehabilitated irrigation; 3.5 t/ha for Mangrove newly arranged and rehabilitated irrigation; and 4 t/ha for IVS rehabilitated irrigation with SRI methodology) as do their levels in absence of the project (WOP: 1.2 t/ha for Boliland rainfed and newly irrigated perimeters; 1.5 t/ha for IVS rainfed and newly irrigated parameters; 1.7 t/ha for Mangrove rainfed and newly irrigated perimeters; 1.8 t/ha for Boliland rehabilitated perimeters; 2.3 t/ha for IVS rehabilitated perimeters; 2.6 t/ha for Mangrove rehabilitated perimeters), assuming conservative returns and one production cycle per year.<sup>31</sup>

14. **Cassava production.** Based on the FSRP-Phase 2 and AF budget for Sierra Leone, the program will support the cassava cultivation of 5,500 ha. The program will provide climate- and- nutrition smart technologies to cassava farmers, such as improved seedlings and fertilizers. To estimate the financial returns from such investments, the present analysis develops a cassava farming model by using the data on average cassava yields as indicated by the country team and past projects in Sierra Leone. Hence, the project will allow its beneficiaries to obtain a yield rate of about 12 t/ha at full realization of benefits against a yield rate of 18 t/ha in absence of the project, assuming conservative returns.

15. **Livestock - vegetable integrated activities.** The FSRP-Phase 2 and AF will promote livestock-vegetable integration techniques that restore soil organic matter in Sierra Leone and enhance food security and nutrition. As for livestock, the program plans to distribute improved breeds of about 5,000 goat calves and 3,000 sheep calves. The program plans to provide two calves (one male and one female) per farmer, including vaccines, feed, and other needed tools. In this respect, the present analysis develops a goat rearing model for a total of 8,000 distributed animals.<sup>32</sup> Given the specificity of this activity, it has been assumed that the *without-project* situation is null, i.e., without the project intervention livestock breeding would not occur because of the difficulties of financing the inputs. Based on information provided by the country team, the yield projections show a considerable reduction in mortality rates (from 20% to 10%) and a higher probability to have more calves per parturition compared to local breeds.

16. **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. As such, the full realization of benefits is expected from the third of fourth year of the project depending on the activity. In addition, given the nature of the investments, it has been assumed that the additional benefits generated by the program will last fifteen years.<sup>33</sup> This methodological choice is justified by the availability of good quality

<sup>30</sup> This division and the amount of hectares dedicated to each ecosystem is based on information provided by the country team and on the characteristics of rice production in Sierra Leone, where most rice is cultivated in the uplands (55% of total area), followed by 26% for inland valley swamps, 11% for mangrove swamps, 8% for Bolilands and 1% for riverain grasslands. See Styger E, Traoré G. (2018).

<sup>31</sup> Please see the excel model for more details on the yields and returns used by the present analysis. These have been chosen based on discussions with the project team, FAOSTAT database, scientific journals, and past projects in Sierra Leone.

<sup>32</sup> In interest of time, given the absence of relevant information at hand, the rearing model for goats includes the quantities considered for sheep because of their similarities.

<sup>33</sup> Given that livestock breeding represents a new activity, in this case, the analysis assumes that the related benefits generated by the program will last for 10 years.



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 program. In addition, family labor has been included and valued in the present analysis, in line with the EFA guidelines.

17. **Based on the methodology and parameters described above, all models included in the analysis demonstrate financial profitability.** As presented in Tables A1.1 and A1.2, alongside the main parameters, all agricultural activities supported by the project will generate positive additional benefits, in the range of US\$ 296-1,124 per hectare for rice production, about US\$ 346 per hectare for cassava production, and about US\$ 336 per hectare (sweet potato)/2 goats per farmer/ livestock-vegetable integrated activities.

Table A1.1. Summary of rice growing models and financial returns

	Boliland Rice Production			IVS Rice Production				Mangrove Rice Production		
	Rain fed	Newly developed irrigation	Rehabilitated irrigation	Rain fed	Newly developed irrigation	Rehabilitated irrigation	Rehabilitated and SRI methodology	Rain fed	Newly developed irrigation	Rehabilitated irrigation
Net additional revenue* (US\$/ha/year)	329	727	296	488	1,046	455	837	606	1,124	454
Net present value (@12%, 15-year, US\$)	1,437	3,613	1,634	2,322	5,194	2,606	4,573	2,960	5,966	2,688

\*At full realization of benefits

Table A1.2. Summary of crop and livestock models and financial returns

	Cassava	Sweet Potato	Goats**
Net additional revenue* (US\$/ha/year)	364	266	70
Net present value (@12%, 15-year, US\$)	1,757	1,269	112

\*At full realization of benefits \*\* Average over three years at full realization

### Overall economic results

18. **Overall, the economic results of the proposed project are positive, generating a net present value (NPV, at 6 percent social discount rate) of the net additional benefits of US\$ 49.1 million and an economic internal rate of return (EIRR) of 20.1 percent (over a 15-year period).** 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.

19. **As described in Annex 2 (GHG Accounting), the project will also generate some positive environmental externalities (a total mitigation of 1087369 tCO<sub>2</sub>eq over 5 years, or about 72491 tCO<sub>2</sub>eq per year).** 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 24.3 percent and the NPV is US\$ 85.4 million higher; assuming the high estimate range, the EIRR becomes 29.6 percent and the NPV is US\$ 170.6 million higher

20. **These economic results have been tested against several risk scenarios, including reduced delays in implementation, cost overruns, etc., as presented in table A1.3.** 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 A1.3 Sensitivity analysis**

	NPV @	EIRR
	6%, 15-y	(%)
	(US\$ mln)	
<b>Baseline Scenario</b>	49.1	20.1%
<b>Increased project costs +5%</b>	47.0	19.1%
<b>Increased project costs +10%</b>	44.9	18.2%
<b>Increased project costs +20%</b>	40.8	16.5%
<b>Delayed benefits +1 year</b>	37.4	16.2%
<b>Delayed benefits +2 year</b>	26.5	13.1%
<b>Delayed benefits +3 year</b>	16.4	10.4%
<b>Decreased add. benefits -10%</b>	40.0	18.0%
<b>Decreased add. benefits -20%</b>	31.0	15.7%
<b>Decreased add. benefits -30%</b>	21.9	13.2%



**ANNEX 2: Green House Gas Accounting**

21. This annex presents the preliminary GHG accounting for the proposed West Africa Food System Resilience Program-Phase 2 Additional Financing in Sierra Leone. In line with the World Bank’s corporate guidelines, the present analysis is using the Ex-Ante Carbon-balance Tool (EX-ACT) developed and updated by FAO since 2010,<sup>34</sup> to assess a project’s net carbon-balance. The carbon-balance is defined as the net balance from all GHGs expressed in CO2 equivalents (CO2e) that are to be emitted or sequestered due to project implementation (WP) as compared to a business-as-usual scenario (WOP). EX-ACT is a land-based accounting system, estimating CO2e stock changes (i.e., emissions or sinks of CO2) expressed in equivalent tons of CO2 per hectare and year. The tool is built mostly using mostly data from the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (NGGI-IPCC, 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).

22. For the present project, the calculations were based on agro-ecological characteristics of the project area in Sierra Leone (tropical wet climatic conditions with low-activity clay (LAC) soils) and on the parameters of land use and crop management practices aligned to the economic and financial analysis (EFA). As summarized in Table 1 below, 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 under different crops (rice, cassava, sweet potato and vegetables) and with 8000 goats; and (ii) increased use of synthetic fertilizers (811.9 tons of N-fertilizer<sup>35</sup>) and organic fertilizers (5033 tons).

**TableA2.1 Assumptions used in the EX-ACT Tool**

Module	System/crop category	Changes
Land Use Change	2,933 ha from annual fallow to sweet potato 1,000 ha from other land to vegetables 1,00 ha re-afforestation from degraded land	Increased organic fertilizers and climate-smart practices
Crop and Livestock Production	Annual Systems Rain fed rice: 5,775 ha Irrigated rice: 5,775 ha Cassava: 5,500 ha Sweet potato: 2,933 ha Vegetables: 1,000 ha Goat breeding: 8,000 heads	Improved agronomical practices (i.e., System of Rice Intensification-SRI) and better nutrient management
Inputs	Increased use of synthetic fertilizers and organic fertilizers	811.9 tons of N synthetic fertilizers and 5033 tons of organic fertilizers

23. The carbon balance results indicate that the project activities will lead to a total of 1087369 tons of CO2e to be mitigated over a period of 15 years<sup>36</sup> starting from project implementation. Per year, the mitigation potential is roughly 72491 tons of CO2e, or 7.6 tons of CO2e per hectare. As shown in Table A2.2

34 <http://www.fao.org/tc/exact/ex-act-home/en/>

35 It has been assumed a 20 percent of N for kg of synthetic fertilizer.

36 Aligned to the EFA analysis period and assuming 5 years of implementation and 10 years of capitalization.



below, overall the additional emissions generated by the increase in livestock and input use are off-set and surpassed by the reductions in emissions due to crop production, ensuring the project's carbon neutrality.

24. At this stage, due to time and information constraints, it was not possible to conduct in detail the GHG accounting for other program interventions. Yet, given the strong climate change resilience and adaptation component of the FSRP-Phase 2 in Sierra Leone, the proposed core interventions are not expected to generate any significant additional GHG emissions.



Table A2. 2 GHG Accounting Results from the EX-ACT Tool

DETAILED RESULTS											
<b>Project name</b>	AF-FSRP-Phase 2: Sierra Leone										
<b>Continent</b>	Western Africa		<b>Project duration (in years)</b>			<b>Total area (ha)</b>	9,533		<b>Global warming potential</b>		
<b>Country</b>	Sierra Leone		Implementation	5		Mineral soil	9,533		CO <sub>2</sub>	1	
<b>Climate</b>	Tropical		Capitalization	10		Organic soil	0		CH <sub>4</sub>	34	
<b>Moisture</b>	Wet		Period analysis	15		Waterbodies	0		N <sub>2</sub> O	298	
<b>GROSS FLUXES</b>			<b>SHARE PER GHG OF THE BALANCE</b>					<b>AVERAGE ANNUAL EMISSIONS</b>			
In tCO <sub>2</sub> -e over the whole period analysis			In tCO <sub>2</sub> -e over the whole period analysis					In tCO <sub>2</sub> -e/yr			
PROJECT COMPONENTS	WITHOUT	WITH	BALANCE	CO <sub>2</sub> BIOMASS	CO <sub>2</sub> SOIL	N <sub>2</sub> O	CH <sub>4</sub>	ALL NON-AFOLU EMISSIONS*	WITHOUT	WITH	BALANCE
Land use changes	0	0	0	0	0	0	0	0	0	0	0
Deforestation	0	0	0	0	0	0	0	0	0	0	0
Afforestation	0	-35,979	-35,979	-27,995	-7,984	0	0	0	0	-2,399	-2,399
Other land-use	0	-32,920	-32,920	-28,233	-4,687	0	0	0	0	-2,195	-2,195
Annual	916,831	-153,411	-1,070,241	0	-1,006,040	-16,616	-47,585	0	61,122	-10,227	-71,349
Cropland	0	-204,237	-204,237	-133,948	-70,289	0	0	0	0	-13,616	-13,616
Perennial	0	-204,237	-204,237	-133,948	-70,289	0	0	0	0	-13,616	-13,616
Flooded rice	-80,366	-108,350	-27,984	0	0	-10,797	-17,187	0	-5,358	-7,223	-1,866
Grasslands & Livestock	0	0	0	0	0	0	0	0	0	0	0
Livestock	0	18,728	18,728	0	0	1,331	17,397	0	0	1,249	1,249
Forest mngt.	0	0	0	0	0	0	0	0	0	0	0
Inland wetlands	0	0	0	0	0	0	0	0	0	0	0
Coastal wetlands	0	0	0	0	0	0	0	0	0	0	0
Inputs & Invest.	0	265,266	265,266	0	0	214,438	0	50,827	0	17,684	17,684
<b>Total emissions, tCO<sub>2</sub>-e</b>	<b>836,465</b>	<b>-250,904</b>	<b>-1,087,369</b>	<b>-190,176</b>	<b>-1,089,001</b>	<b>188,356</b>	<b>-47,376</b>	<b>50,827</b>	<b>55,764</b>	<b>-16,727</b>	<b>-72,491</b>
<b>Total emissions, tCO<sub>2</sub>-e/ha</b>	<b>87.7</b>	<b>-26.3</b>	<b>-114.1</b>	<b>-19.9</b>	<b>-114.2</b>	<b>19.8</b>	<b>-5.0</b>	<b>5.3</b>			
<b>Total emissions, tCO<sub>2</sub>-e/ha/yr</b>	<b>5.8</b>	<b>-1.8</b>	<b>-7.6</b>	<b>-1.3</b>	<b>-7.6</b>	<b>1.3</b>	<b>-0.3</b>	<b>0.4</b>			
+ = Source / - = Sink									<b>Uncertainty level</b>		
Results presented here include GHG fluxes on mineral and organic soils									Without	55,764	45%
See further down for detailed results on organic soils									With	-16,727	42%
* Includes fisheries, aquaculture and inputs & investments that are not included in the AFOLU definition.									Balance	-72,491	42%





**Annex 3. Summary of Adaptation and Mitigation Benefits**

The AF builds on the parent project’s strong foundations of climate adaptation and GHG mitigation and seeks to further strengthen and scale up these initiatives. The table below is a summary of each of the subcomponents and activities and the specific adaptation and mitigation benefits that they would achieve.

Sub-components & activities	Climate Adaptation Benefits	Climate Mitigation Benefits
<b>Component 2: Sustainability and adaptability of the productive base of the food system</b>		
This component seeks to enhance the resilience of Sierra Leone’s food system’s productive base through: (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).		
<b>Subcomponent 2.1: Consolidate Regional Agricultural Innovation System</b>		
This subcomponent aims 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.	Development and dissemination of climate smart and climate resilient technologies and practices will boost Sierra Leone’s resilience and reduce losses due to climate change-induced severe weather events.	
<b>Subcomponent 2.2: Strengthen Regional Food Security through Integrated Landscape Management</b>		
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.	CSA techniques including drought and flooding resistant varieties of rice, and disease-resistant varieties of cassava. These interventions will: reduce climate-related crop losses; reduce depletion of pastures and over-exploitation of fisheries; and reduce pest-, drought-, and flood-related crop losses. Where possible, the project will also work with communities to reduce loss	ILM can halt degradation of natural resources that underpin the food system, especially those already identified as severely degraded or threatened. Improved water promotes soil preservation and increases carbon stocks.



	of biodiversity and local crop varieties and livestock breeds. Training and advisory services for soil and water conservation will boost resilience and adaptation to climate change while also enhancing the productive capacity of the natural capital available to crisis-impacted communities.	
<b>Component 3: Regional Food Market Integration and Trade</b>		
This component seeks to facilitate trade of agricultural goods and inputs within and across national borders. The component expected outcomes are: (i) increased intra-regional food trade between surplus and deficit areas making the region more resilient to shocks; and (ii) increased value creation in regional priority value chains.		
<b>Subcomponent 3.1: Facilitate Trade Across Key Corridors and Consolidate Food Reserve System</b>		
This subcomponent seeks to increase regional flows of agricultural goods and inputs, and to consolidate the Regional Food Reserve System.	Support for improved storage and other trade-related infrastructure will reduce post-harvest losses and promote more efficient use of scarce natural resources	More effective storage and other post-harvest infrastructure will improve the efficiency of processing and transportation, reducing GHG emissions per unit of handled goods
<b>Component 4: Contingent Emergency Response Component (CERC)</b>		
This component is intended to finance eligible expenditures in case of natural or man-made crises, disasters, severe economic shocks, or other eligible crises and emergencies in Sierra Leone.		
<b>Subcomponent 4.1: Short term availability and access to food and nutrition</b>		
This new sub-component will support: <ul style="list-style-type: none"> <li>• <b>Short-term interventions to address the immediate impact of food insecurity</b> through: (i) unconditional cash transfers to vulnerable food insecure agricultural households in IPC3+ crisis-affected areas, including pregnant and lactating women and children under 5 years of age. The support will help these households cope with the cumulative impacts of production shocks</li> </ul>	Households will have greater scope to meet their food, feed, and fuel needs from market sources, thereby reducing environmental degradation through such activities as tree-cutting and over-grazing of communal areas. In addition, cash transfers will contribute to households' adaptive capacity by meeting existing basic needs, thereby reducing short-term vulnerability and	These emergency activities will help avoid negative coping strategies, including environmental degradation through over-grazing of communal areas and tree-cutting for income. <p>Diversifying sources of income will reduce recourse to practices detrimental to the</p>



<p>and enable consumption smoothing for 3 to 9 months (including the lean season) when households are under severe stress; (ii) cash-for-work for women and youth for community public works; and (iii) school feeding for primary schools in crisis-affected areas;</p> <ul style="list-style-type: none"><li>• <b>Medium-term interventions to restore productive capacities</b> of the most vulnerable and affected population including provision of improved inputs and other productivity-enhancing activities, aiming to boost livelihood diversification; and</li><li>• <b>Support for creation and rehabilitation of productive assets</b> to strengthen household resilience to shocks.</li></ul>	<p>livelihood deficits, helping climate crisis-impacted households respond to climate-related shocks, helping vulnerable households to better manage risk and therefore consider investment decisions and innovations to increase their adaptive capacity, transferring money for investment in long-term livelihood and adaptive capacity improvement, and facilitating mobility and livelihood transitions.</p> <p>Activities will: reduce climate-related crop losses; and reduce pest-, drought-, and flood-related crop losses. Where possible, the project will also work with communities to reduce loss of biodiversity and local crop varieties and livestock breeds</p> <p>Activities will boost water availability and water-use efficiency, diversify and expand water sources; improve drainage and thereby reduce flooding and soil erosion and crop losses</p> <p>Procurement and delivery of this will allow the Government to support people most impacted by the crisis to recover more rapidly, allowing them to also reduce their vulnerability to future crisis, including those linked to climate shocks.</p>	<p>environment, including tree cutting to sell wood or charcoal, among others.</p> <p>Solar powered small-scale irrigation will reduce GHG emissions.</p> <p>The project is expected to enhance carbon capture and sequestration resulting in net emissions reduction of 887,628 CO<sub>2</sub>e.</p>
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