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INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT
ON A
PROPOSED CREDIT

IN THE AMOUNT OF US\$55 MILLION
FROM THE IDA SCALE-UP FACILITY

TO THE

REPUBLIC OF LIBERIA

FOR A

RURAL ECONOMIC TRANSFORMATION PROJECT

May 12, 2021

Agriculture and Food Global Practice
Western and Central Africa Region

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CURRENCY EQUIVALENTS

Exchange Rate Effective April 30, 2021

Currency Unit = Liberian Dollar (LRD)

US\$1= LRD 172.03

FISCAL YEAR
January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
AGDU	Agribusiness Growth Delivery Unit
AWPB	Annual Work Plan and Budget
CAADP	Comprehensive African Agricultural Development Program
CARI	Central Agricultural Research Institute - Soil and Crop Laboratory
CDA	Cooperative Development Agency
CLFs	Climate Smart Agriculture
COVID-19	Coronavirus Disease
CPF	Country Partnership Framework
CLFs	Country Level Facilitators
DBT	Design, Build and Transfer
DRDRE	Department of Regional Development, Research and Extension
EIRR	Economic Internal Rate of Return
ESIA	Environmental and Social Impact Assessment
ESF	Environmental and Social Framework
ESS	Environmental and Social Standards
ESMF	Environmental and Social Management Framework
EU	European Union
EVD	Ebola Virus Disease
EX-ACT	Ex-Ante Carbon-Balance Tool
FAO	Food and Agriculture Organisation
FBO	Farmer-Based Organization
FCV	Fragility, Conflict and Violence
FM	Financial Management
FY	Fiscal Year
GAC	General Auditing Commission
GBV	Gender-based Violence
GDP	Gross Domestic Product
GHG	Greenhouse gas
GNI	Gross National Income
GRM	Grievance Redress Mechanism
GoL	Government of Liberia
HDM	Highway Development and Management Model
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technology
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFR	Interim Financial Report
ILRI	International Livestock Research Institute
IITA	International Institute for Tropical Agriculture
IPMP	Integrated Pest Management Plan
LACC	Liberia Anti-Corruption Commission
LACF	Liberia Agriculture Commercialization Fund
LASIP	Liberia Agriculture Sector Investment Plan
M&E	Monitoring and Evaluation
MIS	Management Information System

MFD	Maximizing Finance for Development
MoA	Ministry of Agriculture
MOCI	Ministry of Commerce and Industry
MPW	Ministry of Public Works
NDP	National Development Plan
NGO	Non-governmental Organization
NPV	Net Present Value
NSL	National Standards Laboratory of Liberia
OPRCs	Output- and Performance-Based Road Contracts
PAD	Project Appraisal Document
PAPD	Pro-Poor Agenda for Prosperity and Development
PDO	Project Development Objectives
PIU	Project Implementation Unit
PMU	Project Management Unit
PIM	Project Implementation Manual
PPD	Private Public Dialogue
PPSD	Project Procurement Strategy for Development
PPP	Public Private Partnership
RAS	Rural Advisory Services
RETRAP	Rural Economic Transformation Project
SAPEC	Smallholder Agricultural Productivity Enhancement and Commercialization
SEP	Stakeholder Engagement Plan
SDR	Special Drawing Rights
SEA	Sexual Exploitation Abuse
SH	Sexual Harassment
Sida	Swedish International Development Cooperation Agency
SME	Small and Medium-sized Enterprises
SORT	Systematic Operations Risk-Rating Tool
SSA	Sub-Saharan Africa Region
STAR-P	Smallholder Agriculture Transformation and Agribusiness Revitalization Project
STEP	Systematic Tracking of Exchanges in Procurement
SUF	Scale Up Facility
USAID	United States Agency for International Development
WAAPP	West Africa Agriculture Productivity Project
WB	World Bank
WBG	World Bank Group
WDI	World Development Indictors
WP	With Project
WOP	Without Project



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Liberia: Rural Economic Transformation Project (P175263)



DATASHEET

BASIC INFORMATION				
Country(ies)	Project Name			
Liberia	Liberia: Rural Economic Transformation Project			
Project ID	Financing Instrument	Environmental and Social Risk Classification		
P175263	Investment Project Financing	Substantial		
Financing & Implementation Modalities				
<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)			
<input type="checkbox"/> Series of Projects (SOP)	<input checked="" type="checkbox"/> Fragile State(s)			
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)			
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country			
<input type="checkbox"/> Project-Based Guarantee	<input checked="" type="checkbox"/> Conflict			
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster			
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS)			
Expected Approval Date	Expected Closing Date			
04-Jun-2021	30-Jun-2026			
Bank/IFC Collaboration	Joint Level			
Yes	Complementary or Interdependent project requiring active coordination			
Proposed Development Objective(s)				
To improve productivity and market access for small holder farmers and agri-enterprises for selected value chains in project participating counties.				
Components				
Component Name		Cost (US\$, millions)		



Improving the Enabling Environment for Agribusiness Development	6.00
Enhancing Competitiveness and Market Access through Productive Alliances	16.50
Agri-Marketing and Road Infrastructure Investments	31.50
Project Coordination and Management and Contingency Emergency Response	5.00

Organizations

Borrower: Republic of Liberia

Implementing Agency: Ministry of Agriculture

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	59.00
Total Financing	59.00
of which IBRD/IDA	55.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	55.00
IDA Credit	55.00

Non-World Bank Group Financing

Counterpart Funding	4.00
Local Beneficiaries	4.00

IDA Resources (in US\$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Liberia	55.00	0.00	0.00	55.00



Scale-up Facility (SUF)	55.00	0.00	0.00	55.00
Total	55.00	0.00	0.00	55.00

Expected Disbursements (in US\$, Millions)

WB Fiscal Year	2021	2022	2023	2024	2025	2026
Annual	0.00	3.00	8.00	12.00	15.00	17.00
Cumulative	0.00	3.00	11.00	23.00	38.00	55.00

INSTITUTIONAL DATA**Practice Area (Lead)**

Agriculture and Food

Contributing Practice Areas

Climate Change, Fragile, Conflict & Violence, Transport

Climate Change and Disaster Screening

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

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	● Moderate
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Substantial
8. Stakeholders	● Moderate
9. Other	● Substantial
10. Overall	● Substantial



COMPLIANCE

Policy

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

[] Yes [√] No

Does the project require any waivers of Bank policies?

[] Yes [√] No

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

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

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



Legal Covenants

Sections and Description

The Recipient shall not later than sixty (60) days after the Effective Date recruit to the PIU and, thereafter maintain, at all times during the Project implementation the following staff: (i) a procurement specialist; (ii) a monitoring and evaluation specialist; (iii) an infrastructure specialist; and (iv) an administrative support specialist, all with experience, qualifications, and terms of reference, satisfactory to the Association. (Section I.A.2(b) of Schedule 2 to the Financing Agreement)

Sections and Description

Not later than October 30 in each calendar year, the Recipient shall prepare and furnish to the Association a draft annual work plan and budget for the Project for the subsequent calendar year of Project implementation, of such scope and detail as the Association shall have reasonably requested.(Section I.D.1 of Schedule 2 to the Financing Agreement)

Sections and Description

The PIU should: (i) update the accounting manual; (ii) customize the accounting software to include the accounts of the Project to generate the interim financial reports (IFRs) and financial statements; and (iii) retain the General Auditing Commission (GAC) for external auditing within six months of project effectiveness.

Sections and Description

As agreed in the ESCP, the Integrated Pest Management Plan (IPMP) shall be finalized and disclosed within one month after project effectiveness date.

Sections and Description

The baseline information for the result indicators would be established not later than 3 months after project effectiveness and on completion of the on-going baseline survey.

Sections and Description

. The selection of auditors other than GAC will be done on a competitive basis, in accordance with World Bank procurement guidelines, and occur within six months of project effectiveness

Conditions

Type	Financing source	Description
Disbursement	IBRD/IDA	no withdrawal shall be made: for payments made prior to the Signature Date; or Under Category (2) unless the Recipient has: (i) prepared and adopted the Matching Grants Manual, in form and substance satisfactory to the association; (ii) prepared and submitted a list of the Beneficiaries, in form and substance satisfactory to the Association, and consistent with the provision of the Matching Grants Manual; and (iii) hired a



		Fund Manager in accordance with the provisions of the Procurement Guidelines (Section III.B.1(a) of Schedule 2 to the Financing Agreement).
Type Disbursement	Financing source IBRD/IDA	Description No withdrawal shall be made under Category 3 unless the Recipient has: (i) carried out biodiversity field surveys, and prepared, adopted and disclosed the Biodiversity Management Plan; and (b) has updated the ESIA with additional studies, all in form and substance acceptable to the Association.
Type Effectiveness	Financing source IBRD/IDA	Description The Recipient has prepared and adopted the Project Operations Manual, in form and substance satisfactory to the Association (Section 4.01 (a) of the Financing Agreement)
Type Effectiveness	Financing source IBRD/IDA	Description The Recipient has recruited to the Project Implementation Unit the following key staff: (i) a national program coordinator; (ii) an operations manager; (iii) an environmental specialist; (iv) a social and gender specialist; (v) an agribusiness specialist; (vi) a livestock development specialist; (vii) a crop development specialist; and (viii) an accountant, all in accordance with the provisions of the Procurement Regulations(Section 4.01 (b) of the Financing Agreement) .



I. STRATEGIC CONTEXT

A. Country Context

1. Liberia is a fragile and conflict-affected country with high vulnerability to external shocks. Two civil wars between 1989 and 2003 destroyed the country's economy, basic infrastructure, and institutional framework, leaving most of the population to struggle with poor living conditions. In 2004, after more than 25 years of economic contraction, Liberia's economy began to recover. Gross domestic product (GDP) grew at an average annual rate of 7.4 percent from 2004 to 2013. The Ebola Virus Disease (EVD) outbreak in 2014, and a sharp decline in global prices for two of the country's main export commodities (iron ore and rubber), disrupted that economic recovery, however. Real GDP growth was stagnant in 2015. The incipient recovery starting in 2017/18 was short-lived, and during 2019 GDP contracted by 2.3 percent (see key socio-economic data in Box 1).

2. Liberia's economic performance was weak well before the Coronavirus disease (COVID-19) pandemic. Between 2014 and 2019, successive exogenous shocks—EVD, the collapse of iron ore and rubber prices, and the economic impact of the drawdown of United Nations peacekeeping forces—produced economic stagnation. Further weakened by the COVID-19 pandemic, the economy contracted by 2.9 percent in 2020 owing to supply disruption during the general lockdown, tight macroeconomic policies, and falling global demand for Liberia's main exports. (See Annex 8 for an overview of adjustments to the World Bank Group (WBG) program in Liberia in response to COVID-19.) The lockdown measures halted domestic activities for months, causing the urban services economy to contract by an estimated 8.6 percent in 2020. Industrial growth stagnated, as a decline in manufacturing and other industries was compensated by modest growth in mining resulting from rising iron ore and gold prices. Agriculture remained resilient, growing by 2.4 percent through increased production of food and non-food crops (mainly cassava, rice, rubber, and palm oil). This modest agricultural growth is merely keeping pace with demographic growth, however, given that productivity remains virtually unchanged. On the demand side, the Liberia's economic contraction was driven by declines in non-mining exports, including services (tourism), public spending (both consumption, -11.4 percent, and investment, -11.6 percent), and foreign direct investment (-8.7 percent). Private consumption, at 99 percent of GDP, stagnated in real terms and fell by 2.5 percent in per capita terms.

3. Liberia is among the ten poorest countries in the world—gross national income (GNI) per capita was just US\$600 in 2018. Income inequality is high, with an estimated Gini coefficient of 35.5 in 2016. From 2007 to 2014, growth in GDP per capita averaged 3.3 percent per year, helping to reduce the poverty rate¹ from 68.6 percent in 2007 to 38.6 percent in 2014. As per capita GDP contracted over 2014–19, poverty rose, reaching 43.4 percent in 2019. Poverty and inequality are compounded by acute rural-urban and gender disparities (the rural population constitutes around 46 percent of the total), driven by unequal access to land and productive assets, infrastructure and public services, and markets for both goods and labor. Liberia ranks 176th of 189 countries in the 2019 United Nations Development Programme (UNDP) Human Development Index. In the 2020 *Doing Business* report, Liberia ranked 175th of 190 economies on overall ease of doing

Box 1. Liberia key socio-economic data (2019)

Population, total (millions)	5.0
GDP (current US\$, billions)	3.07
GNI per capita US\$	580
GDP growth (annual %)	-2.3
Inequality - Gini Coefficient	35.3
Merchandise imports (% of GDP) ^a	33.9
External debt, total (% of GDP) ^b	38.5

Source: WDI, Macro Poverty Outlook & Official Data

^a Most Recent WDI Value (2016)

^bMost Recent WDI Value (2018)

¹ Liberia's poverty rate is measured as percentage of population below the international poverty line of US\$1.9/day in 2011 purchasing-power-parity (PPP) terms.



business.² In terms of gender equality, Liberia ranks 97th of 153 countries in the World Economic Forum's gender equality index and 17th of 34 countries in Sub-Saharan Africa (SSA).

B. Sectoral and Institutional Context

4. Agriculture is the foundation of Liberia's economy and the key to food security. Agricultural production constitutes the most important livelihood for the average Liberian, involving more than 70 percent of the population. The sector accounted for 27.3 percent of real GDP in 2019 (a decline from 38.8 percent in 2010) and 43.3 percent of total employment (down from 57.4 percent in 1995). Most farmers grow cereals/staples, including rice (64 percent) and cassava (60 percent), followed by a variety of vegetables, such as peppers (50 percent), bitter balls (44 percent), okra, and green leaves (30 percent). Farmers cultivate an average of 0.7 hectares (ha) under rainfed conditions, generating small marketable surpluses. Tree crops, especially rubber, oil palm, cocoa, and coffee, are an important source of cash for smallholders and contribute significantly to the economy. Rubber is the most important cash crop in Liberia, producing almost 65 percent of all export earnings.³ Because Liberia imports 50–60 percent of its staple food requirement, the country is highly vulnerable to market disruptions and global food-price volatility.

5. The Government of Liberia (GoL) considers agricultural growth to be critical for reducing poverty. The Government has developed a five-year National Development Plan (NDP), the Pro-Poor Agenda for Prosperity and Development (PAPD), 2018–23. In the PAPD, the Government recognizes the need for inclusive and sustainable economic diversification to achieve structural transformation and growth, the urgency of facilitating private sector participation in the economy, and the importance of the agri-food sector as an engine of growth. The Government's commitment to diversify the economy under the PAPD gives priority to agriculture, particularly to supporting eight value chains: rice, oil palm, horticulture, cocoa, rubber, cassava, poultry, and pig husbandry.

6. Liberia's agriculture is characterized by a diversified structure of production. The largest share of agricultural land is dedicated to forest-based and tree-crop farming systems. They include tree crop-based systems in which vegetables and other food crops are produced on a minor scale, mostly in the central belt of the country; root crop-based systems (with cereals) concentrated in the northern region; and fishing and land-based mixed-cropping enterprises along the coastal belt. The three main structures of production are: (i) large plantations that produce major export crops such as rubber, oil palm, and to a lesser degree coffee and cocoa; (ii) domestically owned, medium-sized commercial farms that cultivate industrial crops for export; and (iii) small household farms that use traditional production techniques and limited amounts of improved inputs, have relatively low productivity, and have limited access to markets.

7. Liberia's agricultural productivity has been lagging. The long-lasting conflicts in Liberia have destroyed agricultural capital and disrupted food production, compounding the effects of structural impediments and past policy failures. Although food production increased after hostilities ended, smallholders' yields remain low. In lowland rice systems, for instance, the estimated average farm paddy yield is 1.7 metric tons (t) per hectare, while on-farm research has reported yields of 5 t/ha with an improved variety and production practices.⁴ Amid Liberia's abundance of arable land, at least 15 percent of the overall population is severely food insecure, and most rural people remain impoverished, trapped by low agricultural productivity. The 2016 Liberian household survey finds that close to 80 percent of households headed by a self-employed person in agriculture are poor. The agricultural sector is poorly integrated with the rest of the economy,

² World Bank (2020), "Doing Business 2020." Washington, DC. DOI:10.1596/978-1-4648-1440-2. Available at: www.doingbusiness.org.

³ Rubber production increased from 46,819 mt in 2018 to 65,743 mt in 2019 (40.4 percent). Annual Report, CBL, 2019.

⁴ Africa Rice 2018 field research in Liberia.



agricultural advisory services and food value chains are weak, and basic agricultural infrastructure and inputs are lacking, including machinery, farming equipment/tools, farm-to-market roads, food storage capacity, and more importantly quality inputs such as certified seed.

8. The national strategy for agriculture, encapsulated in the Liberia Agricultural Sector Investment Plan (LASIP II, 2018–22), must contend with a highly challenging context. LASIP II envisions that sustainable agricultural transformation will be promoted through catalytic investments in agricultural value chains, industrialization, and resilience, leading to food and nutrition security, environmental health, job and wealth creation, and inclusive growth. However, significant challenges affect agricultural productivity and value-chain development: (i) a weak policy and business environment, where access to financial services is limited; (ii) a weak private sector, where entrepreneurial skills are limited; (iii) limited access to improved inputs and modern practices; (iv) limited agricultural research and extension services;⁵ (v) constrained market access as a result of poor roads and the inability to meet evolving market demands; (vi) poorly integrated value chains, with limited capacity to aggregate, store, and process agricultural production and limited marketing channels; (vii) a lack of sanitary and quality controls for agricultural products; and (viii) high post-harvest losses. Sustainable agricultural transformation will require support for private sector players in agricultural value chains to improve quality management through certification in good agricultural and agro-industrial practices. Facilities to manage sanitary and phytosanitary (SPS) requirements are another prerequisite. Data collected for the World Bank *Enabling the Business of Agriculture* report (2019)⁶ point to significant weaknesses in all areas that are important for Liberia to catalyze agricultural investment and transformation. Liberia performs below the regional average in the use of quality seeds, application of fertilizers, secure use of water, using adequate machinery, application of plant-protection measures, sustainable crop management, and access to finance.

9. Liberia's development and poverty reduction programs are severely constrained by a lack of basic infrastructure, especially roads. Road access is essential for national integration, improved logistics, and economic growth, yet Liberia ranks 143rd of 160 countries in the World Bank Logistics Performance Index 2018,⁷ and it remains below the SSA average for road density, with only 750 kilometers (km) of paved road. Regional trade accounts for only 1 percent of all merchandise traded by Liberia, partly because Liberia's segment of Trans-African Highway Seven, a key regional corridor, is in poor condition. With climate change, prospects for the road network appear even worse, as climate-related damage to the road network is projected to equal as much as 40 percent of GDP by 2030.

10. Agricultural growth also suffers because of underdeveloped roads and agro-logistics. Liberia faces chronic food insecurity in part because of lack of road access and agro-logistics services badly constrain the capacity to improve agricultural productivity and farm incomes. In fact, nearly 60 percent of rural Liberians cannot access an all-weather road, they have less scope to participate in economic activities, market their produce, obtain improved inputs to increase production, and access vital services such as health and education. From May to September, heavy rains significantly reduce movement from rural areas, especially in lowland swamp areas. As a result, smallholders tend to sell produce in local markets where prices are relatively lower. Despite the Government's current initiative to rehabilitate the main roadways and some key feeder roads in productive areas, more work is needed to improve roads and bridges in remote rural areas. The GoL has promoted a comprehensive road network to increase the country's competitiveness, including a road in southeastern Liberia and a coastal road link joining the capital, Monrovia, with Harper, the capital city of Maryland

⁵ The Ministry of Agriculture has a plan to post one extension officer per district. In many cases these posts are vacant due to lack of funding, and even where extension officers are present, they often have no transport to make field visits.

⁶ See <http://eba.worldbank.org>.

⁷ See <https://lpi.worldbank.org/>.



County. Investment in strategic selected road segments would reduce the post-harvest losses associated with very bad road conditions, especially during the rainy seasons.

11. Small and medium-sized (SME) farmers trying to establish linkages with buyers have limited ability to meet their requirements. International experience shows that even among the group of emerging commercially oriented farmers, small-scale farmers find it challenging to provide a consistent supply of products meeting buyers' specifications with regard to quantity, quality, compliance with Sanitary and Phyto-Sanitary (SPS) standards, and delivery schedules. Unlike larger individual commercial farmers or agribusiness firms and corporations, SME farmers are less capitalized. They also have less access to the information, equipment, infrastructure, and farm-management skills that would enable them to diversify into new products and become reliable suppliers of buyers and industry in modern markets with an increasing array of specific demands and stringent standards. Producer organizations tend to be small and ineffective. Because they have little capacity to reduce uncertainties for prospective buyers and improve the flow of information, they cannot easily expand access to remunerative markets.

12. Financial services, which are essential to support investments that will increase farm productivity and agribusiness competitiveness, are quite limited. A small number of financial institutions provides a narrow set of products and services to the agri-food sector (credit extended to agricultural sector is estimated at 5.4 percent of total lending in the economy). Agricultural financing goes mainly to export crops such as rubber and cocoa, in the form of foreign investment to develop plantations or small loans provided through donor-supported projects. The main barriers to financial services for SME farmers are: (i) insecure land tenure and the lack of other acceptable forms of collateral; (ii) limited financial literacy and credit history; (iii) the common perception in financial institutions that agricultural lending is too risky and returns uncertain, in addition to their limited experience with agricultural lending; (iv) small farms and the low level of organization among smallholders cannot ensure an adequate supply and consistent quality of produce; (v) financial intermediaries normally finance short-term investments and are reluctant to lend for the longer periods that some agricultural investments require.

13. Women are major players in agriculture, where gender inequality is substantial. Women are approximately 80 percent of the agricultural labor force and are responsible for 93 percent of food crop production. Although they play a dominant role in agricultural production, few women are able to own land, access loans, or control the income they earn from their labor. In the areas targeted for implementing the proposed project, 85 percent of the farmers who currently access finance are men and 15 percent are women.⁸ Women also have less access to productive inputs compared to men, including skills training, basic tools, and technology. Women's workloads increase in the agricultural off-season, when many men leave to seek work in mines, plantations, and urban areas, while women remain behind to care for their families and farms. Annex 5 provides a detailed gender gap analysis and action plan to reduce this gap under this project.

14. Climate change and shifting cultivation are highly significant environmental threats. Low agricultural productivity, increasing population pressure, and unsustainable natural resource management are making Liberian agriculture more vulnerable to the negative effects of climate change. Data from the Climate Change Vulnerability Index show that Liberia is among the top 20 most vulnerable countries in Africa. Major climate-related changes predicted in the coming decades include an increase in average temperature of 1–2 degrees Celsius, modified rainfall patterns, and more frequent extreme weather events such as floods and droughts. Such changes will exacerbate risks that already affect agriculture. For instance, each crop has an upper-heat threshold beyond which productivity is reduced or the crop is wiped out entirely. Extreme rainfall can damage crops by flooding fields, and excessive flows of water can strip soil nutrients or wash away

⁸ Gender Analysis Study for RETRAP (World Bank, February 2021).



soil mass entirely. Increased heat stress can reduce the quality and volume of food and fodder crops and heighten susceptibility to plant pests and diseases. The likelihood that climate change will seriously affect multiple engines of economic growth in Liberia—agriculture, natural capital, and infrastructure, among others—heightens the urgency for Liberia to ramp up climate-smart development across the growth spectrum. Farmers unwittingly contribute to climate change and its damaging effects by shifting cultivation to new land each year. This strategy makes sense in a context where land and forests are abundant and other options to increase productivity are scarce, but it contributes to deforestation and land degradation. Low-income people, including poor rural producers, struggle more than others to cope with and adapt to climate change and natural hazards, which increases their risk of falling deeper into poverty.

15. GoL is determined to transform the food and agriculture sector in ways that will maximize its contribution to economic growth and poverty reduction. Within the framework of the PAPD, the Government is focusing on three fundamental issues. The first is to strengthen national food and nutrition security by increasing the production and availability of food, which will spur local economic development and food security. The second is to enhance agricultural productivity, competitiveness, and linkages to markets by strengthening efficiency, promoting innovation, fostering sustainability, and leveraging opportunities in national and external markets; broadening and strengthen private sector participation; increasing public investments (mainly in rural infrastructure); and creating an enabling macroeconomic environment. The third is to strengthen human and institutional capacity by establishing effective and efficient public sector frameworks for agricultural planning and coordination; reducing agricultural risks and improving coping mechanisms; mainstreaming gender and youth in agriculture and rural development; and ensuring sustainable use of natural resources. The proposed Rural Economic Transformation Project (RETRAP) will support GoL to accelerate the implementation of its strategy within the PAPD framework.

C. Relevance to Higher-Level Objectives

16. The proposed project is in consonance with the three pillars of the CPF (FY19-FY24)⁹ for Liberia, including (i) strengthening institutions and creating an enabling environment for inclusive and sustainable growth; (ii) building human capital to seize new economic opportunities; and (iii) narrowing the infrastructure gap to foster more equitable nationwide development. It is also contributing to achieving the country's UN Sustainable Development Goals, in particular Goal 1 (*End poverty in all its forms everywhere*), Goal 2 (*End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*); Goal 9 (*Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all*); and Goal 13 (*Take urgent action to combat climate change and its impact: by enhancing productivity that implies the efficient use of inputs, including water and land; enhancing awareness and promoting climate smart agriculture (CSA) measures*).

17. The proposed project supports IDA19 policy priorities (Gender, Climate, Governance, Jobs, fragility, conflict and violence (FCV)). The project will support the following key agendas: (i) *Economic transformation and job creation*: by supporting sustained increases in agricultural productivity and a shift to commercial enterprises, the strengthening of efficient value chains and the development of a thriving rural economy which will in turn create quality employment in upstream and downstream activities servicing agriculture; (ii) *Resilience building and food security*: by enhancing resilience of domestic agricultural production systems through the promotion of climate-smart technologies¹⁰; and (iii) *Gender*

⁹ World Bank Group (2018). "Country Partnership Framework for the Republic of Liberia, FY19-FY24." Report No. 130753-LR. This CPF was presented to the Board of Executive Directors on November 27, 2018.

¹⁰The project will also contribute to the WBG's Africa Climate Change Business Plan and to reaching CIV's climate change mitigation and adaptation targets articulated in the Intended National Determined Contribution (INDC).



inclusion: by ensuring more women have access to investment finance (matching grants and commercial credit), the project will help remove barriers to women's ownership and control of assets in line with the World Bank Gender Strategy.

18. **The proposed operation supports the GoL's PAPD** and the Ministry of Agriculture (MoA) three-year strategy plan for the agriculture sector with a focus on: (i) institutional development and (ii) the promotion of inclusive and competitive value chains (cassava, rubber, poultry, and piggery). It also supports the GoL achieve its commitments under the Comprehensive African Agricultural Development Program (CAADP), which commits the country's government to investing more in the agriculture sector.

19. Liberia is an IDA-eligible country with a moderate risk of debt distress, and the proposed project is anticipated to deliver a high return on investment while contributing to poverty reduction, job creation, and private sector-led growth. Following the Maximizing Finance for Development (MFD) approach, the project will build on a partnership between the public and private sector to remove market failures, provide the public goods needed to crowd-in private investment in selected value chains, and create economic opportunities and jobs, especially for women and youth. The project will also widen access to the climate-smart technologies and practices that help agri-food value chains to withstand climate change. Considering these characteristics, the project will be financed by IDA19's Scale Up Facility (SUF).

II. PROJECT DESCRIPTION

A. Project Development Objective

20. **The Project Development Objective** is to improve productivity and market access for smallholder farmers and agri-enterprises for selected value chains in project-participating counties.

21. **PDO-Level Indicators.** Five key performance indicators are proposed to measure project outcomes: (i) Farmers reached with agricultural assets or services (CRI)¹¹ (number), disaggregated by gender and access climate-smart agricultural assets; (ii) Increased yield of targeted agricultural produce by project-supported farmers, disaggregated by targeted commodity (percentage); (iii) Increase in marketed volume of locally produced agricultural commodities by project-supported farmer-based organizations (FBOs), disaggregated by targeted commodity (percentage); (iv) Reduction in transportation time between Tappita and ToeTown, disaggregated by passengers and agricultural freight (percentage of time saved); and (v) Direct project beneficiaries (CRI), disaggregated by gender (number).

22. **Project Beneficiaries.** The main beneficiaries of the proposed project will be smallholder farmers and agri-entrepreneurs (private agribusiness investors, cooperatives, and SME processing or providing other services to agri-food systems) who are engaged in the selected value chains. Within this group, the project will give priority to women who are heavily engaged in food crop production, processing, and marketing, as well as young people who are active in various segments of the value chain. The project is expected to reach 60,000 beneficiaries of which at least 50 percent are women. Other project beneficiaries will include: (i) key public institutions and their staff involved in agricultural support services, such as MoA, the Central Agricultural Research Institute - Soil and Crop Laboratory (CARI), and National Standards Laboratory of Liberia (NSL); and (ii) non-governmental organizations (NGOs) and service providers engaged to implement the project.

¹¹ Corporate Results Indicator.



B. Project Approach

23. The project addresses important challenges for developing agri-food value chains, paving the way for rural economic transformation. The specific challenges include: (i) weak institutional capacity to deliver agribusiness support services and the organizational capacity of smallholders; (ii) low agricultural productivity resulting from limited access to improved technology, modern inputs, and advisory services; (iii) weak access to markets resulting from inadequate post-harvest, road, transport, and marketing infrastructure; and (iv) limited private sector investment in production, processing capacity, and value-added activities. The project will use a multi-level approach to address those challenges and create lasting economic opportunities for actors in the selected value chains. First, it will strengthen the critical institutions that are responsible for overseeing the development of the sector and providing key services for producers and processors. Second, at various stages of the supply chain, the project will build capacity and provide support (including technical assistance) for investment subprojects geared toward the adoption of new technologies and practices that will increase the productivity of the food system and its resilience to climate change, thereby improving its capacity to meet market demands and compete in new markets. Third, the proposed project will improve rural access and agricultural marketing by upgrading roads and modernizing selected rural markets.

24. Target value chains. The project will focus its support on the cassava, rubber, poultry, pig, and vegetable value chains, which complement the value chains that are targeted by the World Bank–funded Smallholder Agriculture Transformation and Agribusiness Revitalization Project (STAR-P, P160945): rice, oil palm, and horticulture. The value chains targeted under the proposed project were selected through two sector- scanning studies^{12,13} that assessed them against a range of development impact criteria, including: (i) evidence-based market demand for the commodities; (ii) high growth potential, demonstrated by positive growth trends in the value chains, the scope for expanding production and increasing sales, and the scope for adding value through processing; (iii) the potential for poverty reduction,¹⁴ and (iv) the existence of infrastructure and complementarities with other projects in the country. Home gardens (vegetable production and backyard poultry) will be supported because they are important for generating incomes for women and for diversifying nutrition at the household level. See Annex 4 for further details on the selected value chains.

25. Geographical focus and phased approach. The project plans to operate in 11 of the 15 counties in Liberia, organized into three groups focusing on particular value chains (see Annex 1). *Group 1* covers Bomi, Bong, Grand Bassa, Grand Cape Mount, Grand Kuru, Margibi, Montserrado, Nimba, Grand Gedeh and Sinoe Counties, which have a comparative advantage in cassava production. *Group 2* covers Bong, Grand Bassa, Grand Cape Mount, Margibi, Maryland, and Nimba Counties, which have a comparative advantage in rubber production. *Group 3* covers Bomi, Bong, Grand Bassa, Grand Cape Mount, Margibi, Montserrado, and Nimba Counties, which have potential for poultry and pig production. The project will give priority to counties where FBOs already exist and market opportunities are present (processing factories, proximity to urban areas, border-outlets) before moving on to work in counties that lack FBOs. The final set of locations for project interventions in the selected value chains will be identified in consultation with key value-chain stakeholders.

26. In implementing its activities, the proposed project will leverage support from strategic partners based on their comparative advantages, including leading international organizations and local research institutions. The array of international partners includes the African Development Bank (AfDB), International Fund for Agricultural Development

¹² Netherlands Enterprise Agency (2017), “Sector Scan—Liberia Agriculture Sector.”

¹³ World Bank, International Finance Corporation, and GoL (2017), “Agricultural Commercialization and Agribusiness Development Project: Sector Scan Report.”

¹⁴ Potential for poverty reduction is based on locally available raw materials and skills, new job opportunities created, low entry barriers for small-scale entrepreneurs, and prospects for women and youth.



(IFAD), International Livestock Research Institute (ILRI), and International Institute for Tropical Agriculture (IITA). The project complements ongoing projects under MoA, such as the World Bank–funded Liberia Forest Sector Project (LFSP, P154114); Smallholder Agricultural Productivity Enhancement and Commercialization (SAPEC) Project (P147170) under the GAFSP/World Bank Grant; and the IFAD-financed Rural Community Finance Project and Tree Crop Extension Project. The proposed project builds on the design features of the Southeastern Corridor Road Asset Management Project (SECRAMP, P149279) and draws on the design and experience of STAR-P, mainly by expanding the Productive Alliance approach to new value chains.

27. Productive Alliances support FBOs by bringing together: (i) a group of organized farmers producing a particular product, or a group of producers acting as a commercial entity, to ensure a reliable supply of goods in accordance with market demands; (ii) other partners involved in the value chain by providing services or undertaking processing required by the final buyer/s (aggregation, handling, storage, processing); and (iii) one or more buyers for a product/s that are willing to reach an agreement with the suppliers. These entities—the participating members of the “alliance”—are connected through a business proposition (“business plan”) that assesses the capital and service needs of the FBO and proposes improvements that would allow producers to upgrade their production capacities and skills to strengthen their linkage with the market. The public sector is normally engaged in providing an enabling environment, often supports the participating member responsible for preparing the investment proposal (the “subproject”) and provides adequate financing for implementing the proposal (based on the business plan). Global experience has shown that the Productive Alliance approach addresses multiple constraints and increases revenues by providing integrated solutions adapted to local conditions, exploring and building on opportunities perceived by the partners in the alliance, significantly increasing product quality, producing a consistent volume of product, and stabilizing product sales prices.¹⁵

28. The project will give close attention to cross-cutting priorities. Specifically, it will: (i) target women farmers to receive matching grants as members of alliances, to address the *gender gap* in financing productive investments; (ii) promote adherence to environmentally sound practices and prioritize climate-smart, resilience-enhancing technologies in all aspects of the project (training, institution building, and infrastructure investments), to promote *climate change mitigation and adaptation* (see Annex 7 – Table 7.2 Assessment of Climate Co-Benefits and Net Carbon Balance); (iii) promote the production and inclusion of products that diversify household nutrition; and (iv) give priority to the adoption of technologies reducing *greenhouse gas (GHG) emissions* (mainly in Components 2 and 3). The project will set targets for participation by women and youth and will prioritize subprojects with potential to generate full-time rural employment. When selecting subprojects for investment, the project will mainstream climate-resilient, low-carbon activities to address agricultural vulnerability, reduce agricultural emissions of GHGs, and improve climate resilience—for instance, best practices and technologies for CSA and water resource management. Household nutrition, particularly for women and children, will be improved and diversified through home gardening and the dissemination of information on sound nutritional practices to beneficiaries.

29. Expanding access to financial services and MFD. In coordination with the International Finance Corporation (IFC), the project will support a spectrum of activities within the project components to alleviate some of the constraints on farmers’ access to financial services. The main activities will be: (i) enhancing private sector participation by promoting public-private sector dialogue to agree on key actions to support for leveraging private sector engagement in rural finance; (ii) supporting studies to alleviate constraints on expanding financial services for SME farmers and their organizations; (iii) promoting the establishment of partnerships between operators within the selected value chains, and improving

¹⁵ World Bank Group (2016), “Linking Farmers to Markets through Productive Alliances: An Assessment of the World Bank Experience in Latin America.” Washington, DC. Available at: <https://openknowledge.worldbank.org/handle/10986/25752>.



contractual arrangements between farmers and buyers; (iv) facilitating access to finance by supporting the development of “bankable” and viable business plans for investment subprojects; (v) supporting essential public goods and services by strengthening human capital, agricultural research and extension services, and public infrastructure (roads and market information); and (vi) providing technical assistance to improve the financial literacy of beneficiaries and to strengthen the capacity of financial institutions to diversify their products and expand their outreach to the sector.

C. Project Components

30. The project design is based on a holistic and integrated approach to developing the selected value chains at the institutional level (Component 1, focusing on the enabling environment); through all stages of the value chains, including the post-harvest, storage, processing, and marketing stages (Component 2, focusing on competitiveness and market access through Productive Alliances); and with the development of key infrastructure (Component 3, focusing on roads and logistics centers). Component 4 will support project management, coordination, and a contingency emergency response. Annex 1 provides a detailed description of the project, including implementation responsibilities.

COMPONENT 1: IMPROVING THE ENABLING ENVIRONMENT FOR AGRIBUSINESS DEVELOPMENT (IDA US\$6 MILLION EQUIVALENT)

31. The objective of Component 1 is to improve the enabling environment for agribusiness development in Liberia. This objective will be achieved through the following interventions: (i) building the capacity of public agribusiness services to deliver quality services to private investors, including smallholder farmers; (ii) enhancing value chain coordination and public-private dialogue; and (iii) supporting agricultural research and development (R&D) and extension. This component will finance specialized technical assistance, training, works, goods, consulting and non-consulting services, and operational expenses, as detailed below.

32. This intervention aims at enhancing the capacity of selected public services that are critical for enabling agribusiness, principally within MoA and the Cooperative Development Agency (CDA). The project will undertake a functional review of these entities and recommend/implement appropriate solutions for improving the quality of their agribusiness services. The focus will be on strategies and solutions for: (i) enhancing entrepreneurship development in agribusiness and promoting private investments in the sector (with a focus on women and youth entrepreneurship); in particular the project will support key activities towards the functioning of an Agribusiness Growth Delivery Unit (AGDU) that is being established as an agribusiness strategy incubator and strategic advisory arm of MoA; (ii) improving governance and partnerships across the selected value chains, and collaboration among agribusiness development programs/projects in the country; and (iii) enhancing the resilience and promoting climate change mitigation actions of the food system through the dissemination of climate-smart practices. In addition, MoA will receive support—technical assistance, training, and equipment—to operationalize approved national acts, regulations, and strategies related to seed, food safety, pesticides, fertilizer, and national rice development, and to update and enforce agri-food standards, with climate change adaptation and mitigation being a key focus area. In implementing these activities, the project will work closely with STAR-P to develop an agriculture database to support monitoring, research, policy making, and the allocation of resources by counties. The system will ensure that farmers, allied institutions of MoA—for instance, the CARI and National Standards Laboratory (NSL)—and private sector partners have a shared platform on which to access data, share knowledge, and to obtain advisory and financial services. This activity will include the financing of a training program for MoA (and agencies associated in project implementation) on impacts of climate change, knowledge, and advisory support for adoption of CSA smart agriculture practices and technologies.



33. ***Enhancing value-chain coordination and public-private dialogue.*** For targeted value-chains, the Project will: (i) conduct a stakeholder mapping exercise as the basis to put in place a representative and inclusive Private Public Dialogue (PPD) mechanism; this mapping will also consider climate change actors/agencies which would benefit from a focused training on impacts of climate change on value chains and mitigation/adaptation measures; (ii) support the establishment and operation of this mechanism, including training of main stakeholders on its effective use to improve the performance of the value-chains, including focus on climate change adaptation and mitigation; and (iii) support increased consultations among the value-chain stakeholders, through *inter alia* regular forums to discuss the various constraints of their sub-sectors, including climate risks, review and update the government strategies, develop a shared vision and harmonized approach to minimize potential conflict, devise mechanisms for coordinating donor assistance and creating an enabling environment for private and public investments. Under this intervention, the Project will also finance capacity-building for FBOs involved in targeted value chains. These organizations will receive general support regarding *inter alia* training in group dynamics to promote good governance (including women's representation in FBOs management positions), assistance for strategic planning, business management and enterprise development, monitoring and evaluation (M&E) and marketing intelligence. This will be achieved through provision of technical assistance (long-term as well as short-term specialized expertise), training support and organization of forums and exchange visits. Finally, for both the PPD and FBOs activities, training will be provided to mainstream climate change in FBOs development strategies; including on options to promote climate-smart value chains through the assessment of major climate risks and their impacts on the selected value chains and the development of associated climate-smart adaptation strategies.

34. ***Support to agricultural R&D and extension.*** The Project will strengthen the capacities of the Department of Regional Development, Research and Extension (DRDRE) of the MoA to carry out its mandates. Support will be provided to: (i) facilitate linkages between extension and research systems through information sharing and production of joint periodic bulletins; a main focus would be on climate-smart practices and technologies; (ii) promote the use of e-extension services, including climate services; (iii) integrate the delivery of nutritional information into the extension advice package; (iv) train County-Level Facilitators (CLF) on extension guidelines; these guidelines will incorporate climate change-related risks and impacts on agriculture and ways to address them; (v) develop or introduce and adapt climate-smart technologies and practices to enhance resilience at the county level; and (vi) strengthen seed-multiplication capacity (improved and drought-resistant seeds). In addition, the project will support the CARI, and NSL to identify and implement specific demand-driven knowledge and innovative research and testing equipment. CARI and other tertiary agriculture universities will be supported to develop and maintain linkages with regional agricultural innovation and R&D systems to benefit from technologies developed in countries with similar agro-ecological systems (i.e., Ghana and Nigeria) under regional and country programs. For the implementation of these activities, the Project will finance: (a) contracting with third parties in providing specialized services; (b) minor civil works for CARI and NSL office renovations; (c) vehicles, goods, and equipment for the CARI, NSL and DRDRE to perform their project-related functions including external training; (d) logistics support to private advisory service providers and CLF; and (e) limited operating costs for the CARI, NSL and DRDRE.

COMPONENT 2: ENHANCING COMPETITIVENESS AND MARKET ACCESS THROUGH PRODUCTIVE ALLIANCES (US\$16.5 MILLION: IDA US\$12.5 MILLION EQUIVALENT AND BENEFICIARIES US\$4.0 MILLION)

35. The objective of Component 2 is to support smallholders and commercially oriented farmers to improve their capacity, operate competitively in the selected value chains, and establish more reliable linkages with buyers. In doing so, the project will adopt the Productive Alliance approach described previously (see also Annex 1 for further details). Climate change considerations both on adaptation and mitigation will be a key priority area in all interventions. It will also emphasize the inclusion of women and the enhancement of their role throughout the targeted value-chains from



production to processing and marketing (see Annex 5: Gender Action Plan). Emphasis will be placed on facilitating their access to appropriate training and finance.

36. Considering the capacity constraints of financial institutions and experience with credit lines in Liberia (for example, under STAR-P), the proposed project will use matching grants as the main financing instrument for productive investment subprojects. Best practices will be applied in managing the matching grant fund, including a staged selection process adhering to strict conditions and criteria, an independent investment committee, and use of a professional fund manager to manage operations.

37. Subcomponent 2.1: Pre-Investment Activities (IDA US\$2 million). The subcomponent will support the engagement of 22 CLFs (11 males and 11 females) to be posted to each of the participating counties. This subcomponent will support pre-investment activities that are designed to pave the way for the development of proposals for investment subprojects that will be considered for financing under Subcomponent 2.2. Pre-investment activities will: (i) promote the project concept and increase outreach to prospective beneficiaries (FBOs and their members, commercial partners, and private financing entities); (ii) identify opportunities for Productive Alliances among FBOs, agri-enterprises, processors, and commercial partners; (iii) identify potential business opportunities for the Productive Alliances; (iv) prepare business plans and proposals for investment subprojects reflecting the identified opportunities; (v) build capacity among technical service providers to enhance the quality of the services provided to the Productive Alliances; and (vi) support studies to evaluate the potential for investments in the selected value chains that will promote climate change mitigation, climate resilience, and the economic inclusion of marginalized groups. All pre-investment activities will put an emphasis on better understanding of climate change risks and available adaptation and mitigation options and will prioritize the inclusion of those. Examples of key climate change adaptation/mitigation measures that would be considered for inclusion in business plans include: (a) climate-resilient varieties; (b) investments in infrastructure and the adoption of practices that will prevent soil erosion and retain soil nutrients; (c) improved water management in the context of warming weather patterns; and (d) efficient methods and technologies to manage pests and diseases.

38. Subcomponent 2.2: Investment Subprojects Supporting Productive Alliances (US\$14.5 million: IDA US\$10.5 million and Beneficiaries US\$4.0 million). This subcomponent aims to enable smallholders to become more competitive producers, capable of meeting market demands, establishing sustainable linkages with buyers, and effectively integrating into the selected value chains, while adapting to climate change and reducing GHG emissions. Under this component, the project will finance matching grants for FBOs, agribusinesses, processors, aggregators, and other participating partners to implement investment sub-projects.¹⁶ The RETRAP matching grant resources will be handled through the Liberian Agriculture Commercialization Fund (LACF). The LACF, managed by an independent fund manager, is a special designated account under the Project. The Fund Advisory Committee will provide appropriate governance and oversight of the use of the LACF.

39. The investment subprojects supported through matching grants from the LACF will be based on subproject proposals prepared by eligible beneficiaries and approved based on independent screening and evaluation of their technical, socioeconomic, financial, and environmental viability. All proposals selected for funding will focus on climate-smart agriculture, modernizing individual farm operations, enhancing productivity, and reducing losses (production and post-harvest losses) to meet market demands, with the goal of solidifying partnerships within a value chain. Proposals that empower women (women's groups and agri-entrepreneurs) and incorporate climate mitigation and adaptation features

¹⁶ A sub-project in the context of this project is defined a small project belonging to organizations of smallholders or other vulnerable group of about farmers / individual commercially oriented farmers or other partners in an alliance.



such as intercropping and conservation agriculture (which will increase crop diversification); use of climate-resilient seeds and varieties; methods to retain soil nutrients and prevent soil erosion; improved water management; efficient pest and disease management; the use of alternative energy sources; recycling water and waste; and energy saving technologies) will receive priority. The aim is that at least 75 percent of the sub-projects are climate smart.

40. Matching grants will be provided through three dedicated windows designed to support the different types of beneficiaries participating in a single investment subproject. The matching grant will cover only part of the overall cost of implementing approved subprojects. Each beneficiary group will be required to provide counterpart funding—in cash/kind (either their own funds or a commercial loan) or (for certain beneficiaries) in kind—to complement the matching grant. The level of counterpart financing required will depend on the type of beneficiary and the amount of the investment to be undertaken; the ranges will be defined in detail and included in the Project Implementation Manual (PIM). The matching grant windows are:

- (a) ***Window A, for organizations of smallholder farmers and other productive groups.*** This window provides matching grants to organizations of smallholders or other productive populations to co-finance their activities in an investment subproject. Women entrepreneurs, women-led producer organizations, and other productive groups, who will be encouraged to participate through a targeted information campaign. In areas where smallholders and other productive populations are not organized into groups, the project will work with MoA, other government agencies, and NGOs active in the area to support the formation of producer and agro-based organizations.
- (b) ***Window B, for commercially oriented farmers who are also service providers and are acting as an anchor company in an alliance.*** This window will directly boost agricultural production to ensure a reliable supply of produce for a value chain. Priority will be given to commercially oriented farmers who: (i) work with smallholder farmers by transferring new technologies and providing technical assistance; (ii) adapt technologies that address binding constraints and risks in agriculture, such as climate change; (iii) create formal partnerships with a selected value chain to ensure access to markets and with research organizations to ensure the transfer of new technology; (iv) create jobs; and (v) contribute to food security.
- (c) ***Window C, for all other partners in an alliance that are participating in an individual investment subproject.*** Such partners include private businesses that provide aggregation, processing, or other services essential to the subproject's success (for instance, services facilitating compliance with a particular requirement of the final buyer, generating new investment needed for partners to perform their role in the subproject efficiently, and introducing and integrating climate-smart initiatives and technologies). This window will also support selected financial institutions to provide financing to beneficiaries, with a view to improving the outreach of financial institutions, their product innovation (by developing suitable financing products, including savings products), and their services, and rolling out new products and services in the project counties. This activity is designed to address the major challenge of access to finance from both the demand and supply side. The matching grant will finance 60 percent of the total costs of the proposal developed by the financial institution, which will use its own resources to cover the remaining 40 percent of costs.¹⁷.

41. Under all three matching grant windows, eligible investment subproject expenditures will include: (i) civil works (for example, development of lowlands; clearing bushland; building post-harvest, storage, and processing facilities and small-scale, efficient irrigation systems); (ii) goods, such as productive equipment (for example, farm machinery, processing

¹⁷ Financial institutions will not be permitted to use the grant funds to expand their lines of credit.



equipment, storage units, and transport vehicles); (iii) incremental working capital (for example, to purchase improved inputs); and (iv) technical assistance and business advisory services supporting the implementation of the subprojects and enhancing the administrative and managerial capacities of the participating producers. Investment proposals by FBOs and agribusinesses that integrate climate-smart approaches throughout the value chain will receive priority and may qualify for additional bonus financing. Climate-smart approaches may include, among others: intercropping systems and conservation agriculture (which will increase crop diversification); seed and other planting material of climate-resilient varieties; approaches and structures for preventing erosion and retaining soil nutrients; improved water management to cope with extreme warm temperatures; efficient pest and disease management; the use of alternative energy sources; recycling water and waste; and saving energy by implementing approaches and digital technologies to reduce GHG emissions in agriculture. Table 1 below summarizes the main characteristics, estimated flow of funds, and number of beneficiaries for each window. The Liberia Agriculture Commercialization Fund (LACF) Grant Manual will set out the detailed eligibility criteria, matching grant amounts, and counterpart contributions for each window.

Table1: Main characteristics of each matching grant window

Window	Number of Sub-projects	Average matching grant per subproject US\$	IDA contribution		Beneficiary contribution (in cash/kind ¹⁸)		Total US\$ million
			%	US\$ million	%	US\$ million	
Window A: Organizations of smallholder farmers and other productive groups	50	145,000	80	5.80	20	1.45	7.25
Window B: Commercially oriented farmers	25	150,000	70	2.625	30	1.125	3.75
Window C: Other partners in an alliance	50	70,000	60	2.10	40	1.4	3.5
Total	125			10.50		3.975	14.50

COMPONENT 3: AGRI-MARKETING AND ROAD INFRASTRUCTURE INVESTMENTS (IDA US\$31.5 MILLION)

42. The objective of this component is to improve access to markets through the rehabilitation of existing roads, construction of short-span critical cross-drainage structures, and modernization of selected agri-markets. The component is designed to improve infrastructure along a major corridor (Tappita–Zwedru road)¹⁹ to unlock productivity in the agricultural sector and provide logistics support to the private sector, while adapting to increased climate change risks. Component 3 is integrated with the government's larger national road and transportation agenda, which is intended to reduce transportation costs, improve communications, and increase the commercial viability of agriculture. The expected outcomes of investments under Component 3 are reductions in post-harvest losses and marketing costs, closer links between producers and buyers, and increased competitiveness of domestic producers supplying food products to major consumption centers.

43. **Subcomponent 3.1: Road construction (IDA US\$30 million).** Complementing the planned road works financed as part of the Southeastern Corridor Road Asset Management Project (SECRAMP, P149279), under which 100 km of road between Ganta and Tappita is to be rehabilitated, the proposed project will support rehabilitation of a 40-km segment of

¹⁸ In Kind contribution for Window A only.

¹⁹ The Ganta–Tappita road, extending almost halfway to Zwedru, is being financed under SECRAMP as follows: GoL is financing the 39-km Ganta–Saglepie stretch, and the World Bank and LRTF are financing the 61-km Saglepie–Tappita stretch. AfDB is financing the paving of the stretch from Zwedru to the southern border with Côte d'Ivoire. A gap of about 85 km is still under discussion for financing by donors in the next round of allocations.



the 112-km Tappita–Zwedru road, and undertake spot improvements of critical sections of the feeder roads that link the targeted production zones to the corridor road. The spot improvements will include the construction of river-crossing structures, with specific focus on rural roads that link high-volume production areas to markets. This segment was selected for rehabilitation based on several considerations. Despite its relatively short length, it will provide a critical connection between the agricultural food basket corridor running from Ganta to Zwedru and the all-weather southeastern corridor transport network. It will facilitate the movement of agricultural goods and delivery of services (including the development of transport services), significantly improve access to the main market centers of the southeastern corridor, and foster greater interaction between farmers, businesses, traders, and agro-processors. It also complements on-going improvements elsewhere in the feeder-road network, which will unlock the agricultural potential of the entire southeastern region, provide a link to the Sub-region of West Africa and support movement of produce between Liberia and other West African countries.

44. For this road work, the proposed project will use Output- and Performance-Based Road Contracts (OPRCs) under a Design and Build (DB) arrangement and will finance the associated consultant services. The conceptual design that has been developed includes full construction of a two-lane carriageway with bituminous surfacing along the existing right-of-way, with a 20-year design life. The design reflects the fact that ordinary road rehabilitation parameters will be ineffective, given Liberia's topography and the risks related to climatic change. The design study anticipates reduced travel time, lower vehicle-operating costs, and reliable year-round access, resulting in significant additional traffic. The design will incorporate modern, climate-smart infrastructure standards that increase resilience. Contractors will be incentivized to select materials and implement processes that generate less emissions, and the project will enforce the use of bioengineering, which involves the use of vegetation either alone or in conjunction with other civil engineering structures.

45. **Subcomponent 3.2: Modernization of selected agri-markets (IDA US\$1.5 million).** Subcomponent 2 will finance the modernization of selected existing agri-markets in rural areas, including the construction of: (i) a number of open market sheds and small storage and processing facilities; and (ii) basic market infrastructure such as internal market pathways, drainage infrastructure, and water and sanitation facilities, as well as selected facilities for specialized handling of agricultural produce. All construction work will be based on a business plan submitted by FBOs or other stakeholders in the market and would be supported by a clear management and maintenance plan, identifying the functions and responsibilities of all parties involved (private or public). The upgrading of these markets will also incorporate design standards that will ensure resilience to the main local risk factors (geophysical conditions and climate change) and reduce GHGs emissions by making adopting energy-efficient materials for the storage facilities and renewable energy systems. The precise locations of these markets will be identified during project implementation.

COMPONENT 4: PROJECT COORDINATION AND MANAGEMENT AND CONTINGENCY EMERGENCY RESPONSE (IDA US\$5 MILLION EQUIVALENT)

46. The aim of this component is twofold: (i) establishing appropriate coordination, M&E, and communication regarding project implementation; and (ii) ensuring that GoL is better equipped to respond to crises and emergencies.

47. **Subcomponent 4.1: Project Coordination and Management (IDA US\$5 million).** This subcomponent will facilitate: (i) administrative, technical, and financial management (FM) of the project; (ii) coordination among all institutional partners to ensure the efficient flow of information and support to all value-chain actors; (iii) effective contractual arrangements with FBOs, public and private sector operators; (iv) M&E of project performance in procurement, FM, and environmental and social impacts management; and (v) development of communication activities to publicize and



disseminate project results, best practices, and success stories. For effective and coordinated management of IDA-funded projects under the MoA, the current PIU for STAR-P will be bolstered under a National Program Coordinator and strengthened with the appropriate staffing and operating resources to support the implementation of RETRAP and STAR-P. The Infrastructure Implementation Unit of Ministry of Public Works (MPW), which is implementing the IDA-financed transport projects, will be responsible for implementing Subcomponent 3.1 under RETRAP (see details in Annex 2).

48. Subcomponent 4.2: Contingent Emergency Response Component – CERC (zero allocation). The purpose of this subcomponent is to enable an immediate response if an eligible crisis or emergency arises. As its name implies, the CERC is a World Bank contingent financing mechanism that provides Borrowers rapid access to resources to respond swiftly in the event of an eligible crisis or emergency (defined as “an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters”). The mechanism for triggering the CERC will be included in the Credit Agreement, which will require (*inter alia*) preparation of a CERC Manual detailing the applicable fiduciary, environmental and social, monitoring, reporting, and any other implementation arrangements necessary. Provided the WBG agrees with the emergency assessment, the CERC will allow GoL to request the World Bank to reallocate uncommitted resources from other project components to this subcomponent to cover emergency response and recovery costs or, eventually, to channel additional financing that may become available because of the emergency.

49. Project Cost and Financing. The project will be structured as an Investment Project Financing (IPF) over a period of five years from 2021 to 2026. Total project costs are set at US\$59 million. The World Bank will fund the project through a loan from the IDA19 SUF of US\$55 million.²⁰ These resources will be complemented by co-financing from beneficiaries, who will mobilize resources consisting mainly of: (i) in-kind contributions (unskilled labor); and (ii) cash contributions through the MGs under Component 3. Table 2 provides a summary breakdown of project costs by component.

Table 2: Project costs by component and source of financing (US\$ million)

Project component	Total	IDA	Beneficiaries
Component 1: Improving the Enabling Environment for Agribusiness Development	6.00	6.00	0.00
Component 2: Enhancing Competitiveness and Market Access through Productive Alliances	16.50	12.50	4.00
Component 3: Agri-marketing and Road Infrastructure Investments	31.50	31.50	0.00
Component 4: Project coordination and management and contingency emergency response	5.00	5.00	0.00
Total costs	59.00	55.00	4.00

D. Theory of Change

50. The main outcomes that RETRAP seeks to achieve are an increase in productivity and improved, sustainable access to markets by agricultural producers and agribusinesses. By making the selected value chains more efficient, increasing climate resilience, and enhancing agricultural competitiveness and profits, the proposed project will contribute to the higher-level objectives of longer-term improvement in household and national food security and nutrition, economic growth, and shared prosperity. The key critical assumptions to achieve the project outcomes are: (i) effective coordination and collaboration among public agencies, as well as their continued commitment to the project; (ii) FBOs and other

²⁰ The SUF makes available up to US\$5.7 billion to Blend and IDA-only countries at low or moderate risk of debt distress, in addition to the regular concessional resources that countries will receive during the IDA19 period (July 1, 2020 to June 30, 2023). The SUF provides financing on International Bank for Reconstruction and Development (IBRD) lending terms.



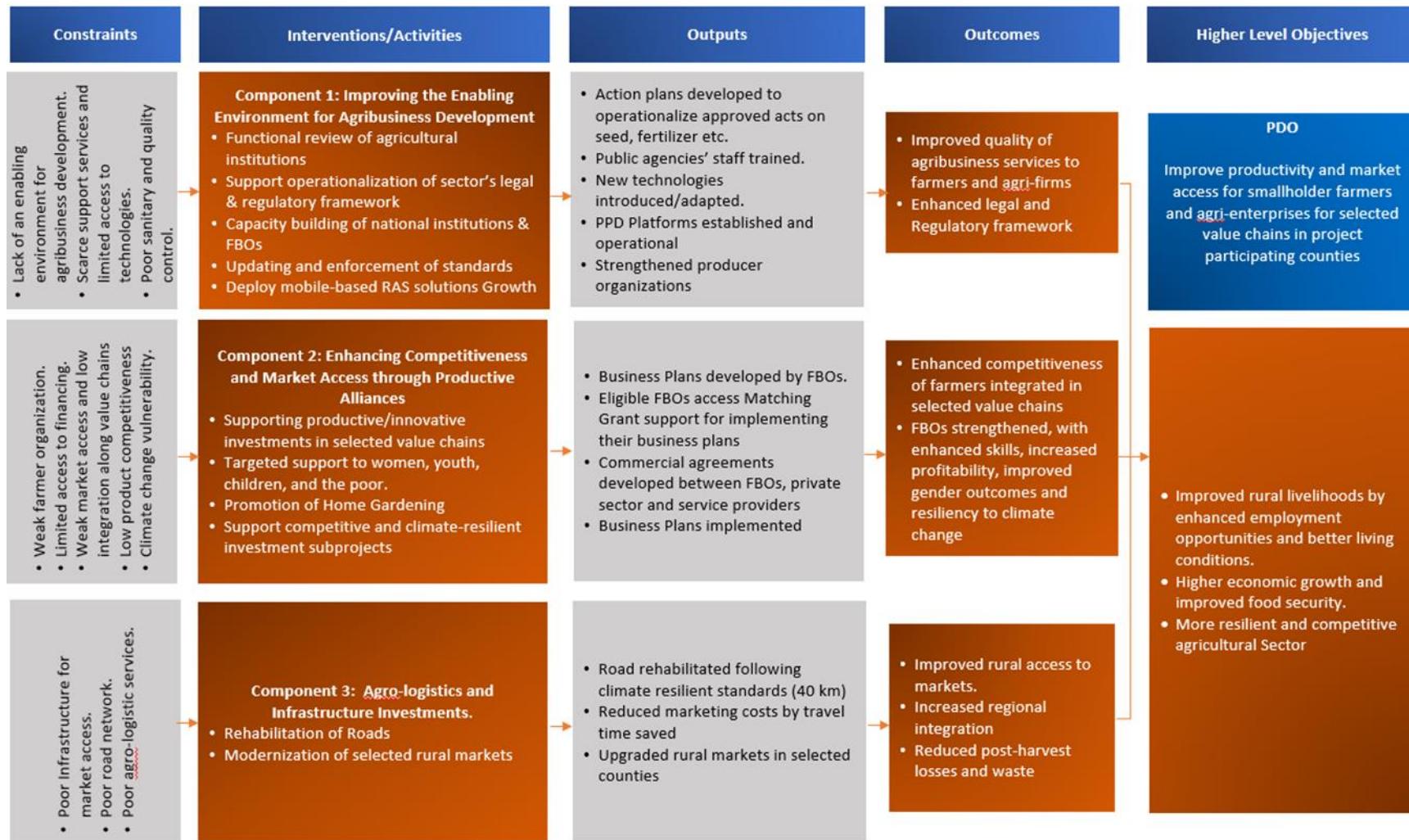
beneficiaries are committed to gaining access to dynamic and evolving markets and meet counterpart funding requirements; (iii) concrete market demand for agricultural products exists, based on buyers' real interest in reaching agreements with producer groups; and (iv) the legal/regulatory framework continues to improve, providing support to capital investment and agribusiness development. Figure 1 depicts the Theory of Change.

E. Rationale for World Bank Involvement and Role of Partners

51. The rationale for the public sector interventions envisioned under the proposed project emanates from the “public goods” nature of those interventions. Public support to smallholder farmers and to aggregation entities is largely justified based on market- failure arguments related to inadequate access to services, risk aversion, information asymmetries, and scale economies. Worldwide evidence has shown that linking farmers to markets initially requires public support to offset part of the startup costs, overcome market failures, and reduce risks for private financiers. Evidence also indicates that investments in agriculture tend to have high multiplier effects, especially if targeted at smallholder farmers. Because Liberia is still recovering from the civil war and the setback resulting from the 2014 Ebola crisis, markets for agricultural inputs are incipient, value chains are poorly integrated, and access to knowledge and support services (extension and finance) by farmers and other value-chain actors is very limited. The project will address these numerous market failures through the activities included in each component, as described previously.

52. The WBG is well positioned to support such a comprehensive operation. The WBG is a major investor in the agricultural sector, especially in the development of smallholder agriculture. First, the World Bank has wide knowledge and experience designing and financing projects to support market access for smallholders, and it is rapidly extending its knowledge about climate-smart agriculture, which is highly relevant to the climate vulnerability projected in the sector. Second, the World Bank has successfully financed comparable, holistic value-chain approaches in the region and internationally. Third, the WBG has significant experience in leveraging private sector participation and investment in the agri-food sector and in the agricultural processing sector. Taking advantage of the World Bank's unique mix of cross-sectoral expertise, the task team for the proposed project will draw upon the technical and strategic knowledge of specialists in the Agriculture and Food Global Practice, the Finance, Competitiveness and Innovation Global Practice, as well as IFC. In general, it is expected that the World Bank, through its array of IFC, IDA, and IBRD operations, will continue supporting the sector through a range of proven, successful approaches.

53. Role of partners. Scientific and technical partners, in conjunction with field support agencies, will be important and essential collaborators of the proposed project, including IFC, AfDB, IFAD, the European Union (EU), United States Agency for International Development (USAID), and others. The project will partner with national universities and community colleges as well as regional and international research institutions for the specialized research envisioned under the project. NGOs operating in the field will be competitively recruited to conduct baseline surveys, support community awareness and social mobilization for the project, assist in group formation, and provide support for participatory planning and livelihood development activities.

**Figure 1: Theory of Change, Rural Economic Transformation Project**



F. Lessons Learned and Reflected in the Project Design

54. The project design builds on lessons from projects implemented in the agricultural sector of countries in Africa and around the world. Some of the lessons reflected in the project design include:

- a. **A prerequisite for successfully implementing grant mechanisms to support smallholders is to offer differentiated lines of grant support to farmer organizations and other participating agents.** Experience has shown that not all smallholders receiving support (matching grants, technical assistance) for their productive activities are able to reach markets for their products or increase their sales, and therefore it is imperative to provide differentiated support tailored to groups of beneficiaries who have distinct types of skill gaps. For instance, some of the more vulnerable beneficiary groups cannot immediately produce marketable products. Support for these beneficiaries often needs to focus initially on improving their productivity, strengthening their resilience to climate impacts, and reducing their losses, before they can supply demanding agricultural markets.
- b. **The preparation and selection of quality subprojects requires support throughout the subproject cycle.** Because FBOs are contending with ample constraints and capacity gaps, they require support to prepare subproject proposals and business plans. Public institutions operating in the agricultural sector, as well as alternative sources of technical assistance, should be considered to provide such support. For example, external qualified civil society or private entities could be hired to assist in preparing and reviewing proposals and business plans before they are considered for financing, to ensure the preparation and implementation of quality investment subprojects.
- c. **Capacity-building activities for beneficiary organizations need to adapt to specific business needs.** In some projects, capacity building for beneficiary organizations has focused on the general requirements for managing a business, such as accounting and procurement procedures, but one clear lesson emerging from those efforts is that capacity building should be tailored to the specific functions of each producer organization. Some organizations may need to reduce production costs (for example, input purchases), whereas others may need to undertake more work downstream in the food system (for example, storage, processing, and packaging), and operate collective infrastructure to manage those activities. These needs will require FBOs to acquire distinct types of capacity.
- d. **Careful and continuous assessment of potential buyers and markets.** Modern markets evolve quickly. To remain competitive and meet buyers' demands, FBOs have learned that they must pay careful, continuous attention to changing markets and adapt their production processes and capacity accordingly. Measures to assist FBOs in this regard include improved procedures to assess their market competitiveness and viability and identify buyers, brokerage services for FBOs that outgrow their current marketing alliances, and increased outreach to potential buyers outside the local sphere, if needed.
- e. **Successful management that leads to increased profits will facilitate sustainability.** Experience indicates that the long-term sustainability of outcomes and market linkages cannot be ensured unless the partners in an alliance achieve a reasonable level of profits. The initial matching grant and implementation of the investment subproject will create a foundation for sustainability, but to build on that foundation, FBOs must use their own resources to acquire additional assets (for example, marketing and logistics facilities) to enhance their business in the longer term. Similarly, it is essential to ensure successful operation and maintenance (O&M) of those new assets. Innovative institutional arrangements for O&M should be considered, including public-private partnerships in which the public sector supports the initial investment and O&M responsibilities are delegated by formal contract to a specialized private sector agent or enterprise.
- f. **Projects must be designed to accommodate emergencies.** The experience with Ebola and COVID-19 points to the



need for projects to have the capacity to accommodate adverse events. The World Bank's extensive experience with operations in fragile areas provides a number of approaches for building flexibility into project design to adapt to changing circumstances—for example, the use of third-party monitoring to ensure adequate fiduciary oversight and offset the difficulties of access by project staff.

- g. ***Gender targeting: Addressing gender gaps is an important dimension of the project and critical to achieving poverty reduction and sustainable economic growth.*** Based on lessons from STAR-P and a recent gender study (Annex 5), the Project addresses gender and the empowerment of vulnerable groups (women and youth) in the context of broad social safeguard measures that respond to gender-specific constraints as follows: (i) ensuring access to and control of productive assets, encouraging women and youth entrepreneurship throughout the selected value chains, and training in agricultural technologies and practices; (ii) increasing consultations with women throughout the value chains; (iii) applying a gender lens to policy analysis and to the recommendations in project policy briefs; (iv) conducting targeted awareness campaigns to encourage the participation of small producers and other organized vulnerable groups (women entrepreneurs, women-led producer organizations, and youth); and (v) collecting gender-disaggregated data and using them to target project interventions.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

55. **Overall responsibility for implementing the Project will rest with MoA.** The ministry will collaborate closely with other relevant ministries and their respective departments and agencies. Other entities involved in project implementation are: (i) the Ministry of Commerce and Industry (MoCI) for activities focused on connecting producers to traders and agri-processors and supporting the rehabilitation and standardization of quality certification laboratories; (ii) the MPW to carry out activities related to road infrastructure. The IIU of MPW, which is implementing the IDA-financed transport projects, will be responsible for implementing the RETRAP civil works; (iii) the Ministry of Finance and Development Planning to carry out project activities related to policy coordination among ministries; (iv) CDA for project activities designed to strengthen capacity (leadership, management, governance) in producer organizations, including cooperatives; and (v) Liberia Agriculture Commodity Regulatory Agency on project activities to strengthen regulatory functions and set product standards.

56. **An inter-ministerial national Project Steering Committee headed by MoA will provide strategic oversight for the Project.** The Steering Committee will include representatives of all relevant ministries and agencies, the private sector, non-governmental entities (such as the National Chamber of Commerce), and representatives of youth and women's organizations. The Steering Committee will meet at least twice per year and will be chaired by the MoA or its designated representative.

57. **As noted, MoA will execute the Project through its Project Management Unit (PMU), which is charged with the preparation and management of externally funded programs.** The PMU will ensure compliance with all the legal and mandatory procedures stipulated in the financing agreement for RETRAP, including regular reports, audits, and safeguard compliance. The PMU will delegate the functions and responsibilities of day-to-day project coordination and management, including M&E and the engagement of international expertise, to a strengthened Project Implementation Unit (PIU) under a National Program Coordinator to support the implementation of RETRAP and STAR-P. Administratively, the PIU will report to the supervising ministry through the PMU. Towards this, the PIU will be strengthened with



additional staff; including by an Operations Manager, Procurement Specialist, Project Accountant, Environmental Specialist, Social Development and Gender Specialist, M&E Specialist/Management Information System (MIS) Specialist, Agribusiness Specialist, Infrastructure Specialist, a livestock development specialist, ; a crop development specialist, and support staff. See Annex 2 for details.

B. Results Monitoring and Evaluation (M&E) Arrangements

58. A robust M&E system will be built within the PIU to effectively monitor and evaluate the Project. The PIU will have the overall responsibility for the project M&E system and work closely with CLFs to monitor project results, including output and outcome indicators. The PMU will liaise and coordinate with the relevant ministries, departments, agencies, and other government institutions (including research institutes), the private sector, and other projects to support monitoring and reporting. The PIU will be staffed with a qualified M&E Specialist with appropriate technical knowledge and experience, who will manage the day-to-day activities of the project M&E system. Data will be collected primarily by CLFs in each participating county, under the supervision of the M&E Specialist. CLFs will also work with relevant stakeholders and appropriately trained project actors to facilitate additional data collection.

59. The M&E system will employ an MIS to manage data and provide real-time information to project managers, which will increase overall efficiency and performance by facilitating the identification of problems and analysis of trends. The MIS will incorporate outcome and output indicators for each project component and subcomponent, performance indicators for all key project activities, a gender tracker, and safeguard indicators. For all indicators, the MIS will provide clear guidance on units of measure, frequency of data collection, data-collection responsibilities, data source and methodology, definitions, and formulae. Reporting templates will also be available through the MIS where appropriate.

60. The Project will collect both qualitative and quantitative data. Data will be collected at the beginning of the project to establish a baseline against which subsequent data will be measured. Farmer field books, surveys, project completion reports, training logbooks, grant proposals, and other data sources will be employed to regularly inform key performance indicators, gauge dynamics of the agri-business linkages, and monitor implementation progress. At mid-term, a rapid survey will be conducted to assess whether the project is on course to achieve its objectives. An end-of-project survey will be conducted to assess the achievement of project targets and inform government project completion reports.

C. Sustainability

61. Sub-projects will be designed to ensure several dimensions of sustainability. The keys to the sustainability of project investments are enhanced, climate-resilient productivity, leading to higher profitability; rigorous design and screening of prospective investments based on sustainability criteria; and human capital formation to maintain the productivity and profitability of beneficiaries' investments. By fostering alliances within the selected value chains, providing financing for alliance partners to make productivity-increasing investments, and opening access to markets, the Project expects beneficiaries to obtain substantially higher profits from sales of more abundant and competitive products. Investment subprojects will be rigorously designed and independently assessed for technical, financial, social, and environmental viability to increase the likelihood that they will be sustainable. Based on lessons from previous projects, under RETRAP investment subprojects will be designed with greater emphasis on improving climate resilience, market access, profitability, and O&M. Investment subprojects will incorporate CSA climate-smart agricultural technologies and practices to address the agroclimatic vulnerabilities identified at the farm level during the pre-investment stage. During the selection of subproject proposals, special attention will be paid to ensure that market demand is clearly identified



and that subprojects are financially viable. Over the longer term, subproject investments will be sustained through the human capital formation (adequate capacity building and technical assistance) and tailored O&M procedures (working capital, capital cost, maintenance of infrastructure and equipment, administration, and so on) developed with support from RETRAP.

62. Institutional strengthening is key to sustainability. On the institutional side, the project will strengthen the strategic and operational capacities of public agricultural institutions, with an emphasis on rural technical assistance and extension systems, marketing, and risk management. Component 1 focuses specifically on strengthening beneficiary organizations and building the capacity of public institutions to provide the practices, technologies, and advice that will support sustainable rural enterprises in the selected value chains. These efforts will increase the likelihood that the Project's impacts will be sustained after the project ends.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

63. Technical Analysis. The rationale for the public sector interventions envisioned in the Project is strong. Worldwide evidence has shown that investments in agriculture tend to have high multiplier effects, especially if targeted at smallholder farmers and their organizations. The keys to broad-based agricultural growth are increased productivity and competitiveness across agricultural value chains and better integration and organization of the actors in those chains. The Project is trying to address these main market failures in various ways by: (i) by strengthening FBOs to overcome diseconomies of scale, fostering market integration and service provision while increasing smallholders' bargaining position; (ii) by promoting farm-agribusiness links that support value chain integration and allow constraints at different levels of the chain to be tackled in a coordinated way; (iii) by strengthening the capacity of key public and private institutions to fulfill their mandates more effectively, thus enhancing the provision of public goods to the selected value chains; and (iv) by using matching grants for key productivity-enhancing investments. The use of grants is justified in the short term in the Liberian context, where rural financial markets are largely dysfunctional. Over the medium term, the technical support provided to financial institutions under the project will help to narrow the rural finance gap.

64. The RETRAP design reflects experience with approaches adopted by other projects in Liberia and the region, in addition to extensive consultations with the government at the national and county level, other key stakeholders, and development partners to improve the technical integrity of the proposed design. Considering the widespread capacity constraints of the actors and institutions involved, the project makes substantial provisions to strengthen human, institutional, and technical capacities at all levels, including organizational strengthening and business training for FBOs, other key value-chain actors (such as business development service providers) and selected public and private institutions with important functions for improving the business enabling environment. In addition to training in preparing business plans, matching-grant recipients will receive technical assistance and extension services during implementation of their productive subprojects (usually two years). The Project will build on and disseminate the agricultural technologies introduced by West Africa Agriculture Productivity Project (WAAPP) and CARI to increase yields and climate resilience, especially in the rice and horticulture value chains. Best practices will be applied in managing the matching-grant fund, including a staged selection process, an independent investment committee, and operational management through a professional fund manager. To help matching-grant recipients transition to sustainable sources of finance, the Project will assist producers to improve their financial literacy and assist financial institutions to improve their agricultural lending capabilities.



65. The World Bank has significant global experience with strategies to overcome constraints on smallholder productivity and competitiveness. In this regard, projects that have established productive business alliances between agribusinesses and smallholder producer organizations have shown that such alliances hold promise, especially where access to finance, technical know-how, and agribusiness skills are provided as a package. In fragile and conflict-affected countries, where the financial markets are either thin or risk-averse toward farmers and agri-based enterprises, access to finance has been addressed through specifically tailored funding mechanisms. The World Bank has integrated these lessons into the design of the proposed project, in which implementation will focus on improving the technical, financial, organizational, and management capacities of beneficiaries, which are the prerequisites for success.

Economic and Financial Analysis

66. The economic benefits estimated in the analysis are derived from: (i) economic benefit streams from the implementation of Productive Alliances and SMEs and (ii) improved poultry health services, particularly improved vaccination coverage, which will translate into increased poultry numbers and net sales, depending on offtake and production cost assumptions. The rehabilitation of roads and modernization of rural markets under Component 3 will benefit a much larger population than the direct beneficiaries of the Project, so the benefits arising from these activities are not included in the analysis. Also, beyond the scope of this analysis are the substantial multiplier effects of the additional income generated in farming communities as a result of the Project, which will strengthen the local rural economy and contribute to overall GDP and rural poverty reduction. For details, see Annex 8.

67. **Financial analysis.** The financial analysis was based on crop budgets and on enterprise models for service provision and processing and returns on roads constructed. The Highway Development and Management Model (HDM) was used for carrying out the analysis of the roads component. Benefits considered in the analysis include: the road user cost savings, vehicle operation costs, and travel time costs for passengers and cargo. The environmental externalities of the project were estimated using the EX-ACT tool developed by Food and Agriculture Organization (FAO). EX-ACT estimates the impact on the carbon balance of projects and policies related to agriculture, forestry, and other land uses.

68. **Economic analysis.** A cost-benefit analysis was conducted to assess the economic viability of the proposed Project from a national economic standpoint. The analysis was conducted over a 20-year period in constant 2020 prices. Financial prices and cost and benefit streams were transformed into economic values applying conversion factors for each category of costs and eliminating taxes and transfers. Detailed calculations of economic benefits, investment costs, and economic cash flows generated by components are on file.

69. **Results.** After all project costs are taken into consideration, including the costs of Components 3 and 4 (related to roads and project management), the proposed Project yields an economic internal rate of return (EIRR) of 19.72 percent and net present value (NPV) of 43.1 billion Liberian dollars (LRD) (at a 12 percent discount rate) or US\$248.34 million (at an exchange rate of LRD173.65/US\$1.0), under an assumed failure rate of 25 percent for financed Productive Alliances. The Project is therefore considered profitable from an overall economic standpoint.

70. **Sensitivity analysis.** The Project remained viable under various assumptions considered in the sensitivity analysis. A 5-percent increase in either investment or operating costs resulted in an economic rate of return (ERR) of 17.8 percent, whereas a 10-percent increase in costs resulted in an ERR of 16.3 percent, indicating very strong resilience to cost increases.



71. **Economic analysis with GHG accounting.** An additional cost-benefit analysis was conducted to examine how the GHG emissions expected to arise from the Project might affect its economic viability. Calculations of the carbon balance indicate that the project constitutes a net carbon sink, generating a savings in GHG emissions of 671,353 tons of carbon dioxide equivalent (tCO₂e) over a period of 20 years (a yearly savings of 33,568 tCO₂e). In light of these results, and after considering all project costs (including the project management, M&E, and other costs under Component 4), the Project yields an EIRR of 20.09 percent and at a high price of carbon is 20.45 percent. This amount to a NPV (NPV) of LRD 45.2 billion (at 12 percent discount rate) or US\$260.18 million (at an exchange rate of LRD173.65/ US\$1.0) under the assumption of a low price of carbon.

B. Fiduciary

72. **Financial Management.** The World Bank team conducted a remote (virtual) assessment of the FM arrangements for the Project. The arrangements will be based on those in place under MoA, which is currently implementing another World Bank-financed project. The assessment sought to determine whether the FM and disbursement arrangements in place were adequate to control, manage, account for, and report on the uses of project funds. The PMU under MoA already has an established PIU with an FM Specialist who is a Chartered Accountant, supported by an Assistant Accountant. These staff are qualified, experienced, and familiar with World Bank procedures. Given the large number of financial transactions envisioned under the proposed project, an additional accountant is expected to be hired to reinforce the current staff.

73. With regard to specific fiduciary risks, the FM assessment of the PIU finds that the control risk is *High*. The overall FM risk for the project is also *High*, but the residual risk is expected to decline to *Substantial* through the adoption of coordinated risk-mitigation measures at the PIU. The detailed overview of assessment findings and proposed risk-mitigation measures (including, among others, external auditing by the Auditor General) finds that current FM arrangements are adequate with respect to: (i) timely reporting on project activities; (ii) safeguarding of project assets; and (iii) the strength of internal controls, if the recommended mitigation measures are put into place. See Annexes 2 for details.

74. The Project will be accommodated within the existing FM system (TOMPRO Accounting System) at the PIU/PMU. To that end, the PIU/PMU should: (i) update the accounting manual; (ii) customize the accounting software to include the accounts of the Project to generate the interim financial reports (IFRs) and financial statements; and (iii) retain the General Auditing Commission (GAC) for external auditing. These actions must be completed within six months of project effectiveness.

75. **Procurement.** Procurement arrangements for the Project will closely follow the model adopted for STAR-P. The Borrower will carry out procurement in accordance with the World Bank “Procurement Regulations for IPF Borrowers” (Procurement Regulations) dated July 1, 2016 and revised in November 2017, August 2018, and November 2020 under the New Procurement Framework, and the “Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants,” dated October 15, 2006 and revised in January 2011 and as of July 1, 2016, and other provisions stipulated in the Financing Agreements.

76. **Preparation of Project Procurement Strategy for Development (PPSD).** MoA, with the assistance of the STAR-P and the Infrastructure Implementation Unit (IIU) of MPW, collaborated on the preparation of the PPSD. The World Bank procurement team provided the required support to the government team to ensure that the PPSD meets the required standard. The PPSD described how procurement activities will support the achievement of the PDO and deliver value for



money, and how the procurement strategy will be linked to the project implementation plan to ensure proper sequencing of activities. For each contract, the applicable procurement methods, market approaches, cost estimate, envisaged procurement risks and mitigations measures, World Bank review requirements, and other details have been clearly described in the PPSD. The procurement activities and timeframe for their implementation have been agreed between the GoL and IDA and these have been duly reflected in the first 18-month procurement plan. The procurement plan will be updated annually, as GoL and IDA agree on the Annual Work Plan (AWP). Both the PPSD and procurement plan was reviewed and cleared by the World Bank, and their implementation will commence upon approval of the Project.

77. **Procurement assessment results.** MoA has experience with World Bank procurement procedures through its implementation of STAR-P and the Liberia Forestry Sector Project (P154114). A virtual assessment of procurement capacity of MoA concludes that overall procurement risk for the project is *Substantial*, based on the risks identified during the assessment and adoption of the following mitigation measures by the PIU: (i) World Bank prior and post reviews; (ii) recruiting another National Procurement Specialist to collaborate with the STAR-P International Procurement Specialist and National Procurement Specialist; (iii) recruiting a Procurement Consultant for the IIU and MPW to provide procurement support on all infrastructure procurement packages; and (iv) continuous capacity building by the World Bank team for the MoA procurement team. With these measures in place, the procurement arrangements for the proposed project are deemed adequate to ensure: (i) timely procurement implementation of approved procurement plans; (ii) compliance of all procurement activities with the core principles of the World Bank Procurement Regulations; and (iii) effective use of STEP and efficient upload of procurement documentation in the system (see Annex 3 for details).

78. A competitively recruited National Procurement Specialist provides support to STAR-P, and the contract of an International Procurement Specialist has been cleared by the World Bank. The Procurement Consultant joined STAR-P in March 2021. In view of the magnitude of work envisioned under RETRAP, MoA will competitively recruit another National Procurement Specialist, within 60 days after project effectiveness. Both national procurement specialists will work closely with the international procurement specialist to build their procurement capacity.

C. Legal Operational Policies

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

D. Environmental and Social

79. **Environmental Risk Rating.** The environmental risk rating for the proposed project is estimated as *Substantial*. This rating is based on the potential environmental risks and impacts, sensitivity of the recipient environment, and capacity of the implementing agencies to manage the environmental risks. Adverse environmental risks and impacts related to the project will mainly emanate from interventions under Components 2 and 3. Activities supported through matching grants under Component 2 might trigger agricultural commercialization, expansion of farmland, and expansion and/or renovation of agricultural infrastructure such as warehouses, processing facilities, electricity connectivity, and so on. Land clearing associated with farming and provision of infrastructure could contribute to deforestation, forest degradation, destruction of natural habitats, soil erosion, and the depletion of biodiversity. Agricultural intensification could trigger extensive use of pesticides with adverse repercussions on human health and biodiversity. The proposed support for



poultry and pig enterprises will produce animal waste (manure) that may contaminate ground and surface water as well as contribute to GHG emissions if poorly managed. Similarly, effluents from processing facilities (for example, cassava processors) could contribute to water contamination, eutrophication, and unsightly community landscapes. If they are not properly managed, the risks associated with surface water contamination from pesticides and effluents from processing facilities could have consequences reaching far beyond the project communities. These potential risks have been assessed, along with appropriate mitigation measures, in the Environmental and Social Management Framework (ESMF) prepared for the project and disclosed in-country on April 28, 2021, and on the World Bank external website on April 30, 2021. The risks and potential adverse impacts will be subsequently assessed in site specific E&S instruments (e.g., ESIA, ESMP, Biodiversity Management Plan – BMP) that will be developed for subproject activities during project implementation but before commencement of the subproject activities.

80. The proposed 40-km road improvement under Component 3 might result in environmental, occupational, and community health and safety risks and impacts. Given that the location of the road is known, the Borrower has prepared an Environmental and Social Impact Assessment (ESIA) and an Environmental and Social Management Plan (ESMP) covering the proposed 40-km stretch. The ESIA has been cleared by the World Bank and disclosed in-country on May 02, 2021, and on the World Bank external website on May 03, 2021. The ESIA found that although there are no large mammals resident in the road corridor, the road seems to be located between two mammal hotspots. A few large mammals such as duikers, antelopes and monkeys could therefore be spotted wandering in the forest areas adjacent to the road. A particular concentration of chimpanzees has been identified in the forests less than 10 km to the south of the road, and it is projected that a few chimpanzees might roam extensively through the secondary forest lying on both sides of the road. Given this insight, the Borrower will conduct biodiversity field surveys including studies on potential critically endangered chimpanzees in the project area and incorporate findings in the ESIA. The ESIA will be updated with additional studies on the population of chimpanzees and biodiversity in general within the project boundaries and to develop appropriate mitigation measures for the protection and conservation of the species during the construction and operational phases of the Project as a condition for disbursement on Component 3. This will also incorporate an assessment of risks and impacts associated with the operational, maintenance and decommissioning phases of the road which are currently missing in the ESIA report. The Borrower has drafted an Integrated Pest Management Plan (IPMP) to guide pest-management activities and safer use and management of pesticides to prevent adverse impacts on biodiversity, communities, and the environment. The IPMP shall be finalized and disclosed within one month after project effectiveness date. MoA will implement the project in collaboration with other ministries. Their capacity to implement environmental safeguards varies, and they are unfamiliar with implementation of the current World Bank Environmental and Social Standards (ESS). For that reason, the project will recruit and maintain a qualified Environmental Safeguard Specialist, who will benefit from World Bank capacity-building support throughout the life of the project.

81. **Social Risk Rating.** The social risk rating for the proposed project is **Substantial**, based on the project's potential social risks and impacts, the country context (including socially sensitive issues), and the capacity of the implementing agencies to manage the risks. The anticipated social risks include agitations within communities, agribusiness service providers, and the project implementing agencies if the selection of beneficiaries is not transparent. There is a substantial risk of elite capture through the exclusion of poor households and vulnerable groups from project activities and project benefits—for example, from matching grants, input provision, and access to information on crop management and market intelligence. Similar risks and adverse impacts could accompany the temporary or permanent acquisition of land to develop rural agribusiness infrastructure, including warehouses, markets, cold storage and processing facilities, and especially the 40-km stretch of the Tappita–Zwedru Road, which is likely to entail economic or physical displacement. Other social risks include potential legacy issues related to the impacts of previously proposed road construction works under SECRAAMP



along the proposed road corridor to be rehabilitated for which structures were marked and payment to the affected people could not proceed because of funding gaps. Since the location of the 40-km stretch is known at project preparation, a Resettlement Action Plan (RAP) has been prepared by the Borrower and reviewed by the World Bank. The RAP includes a contingency budget to address legacy issues that may arise when road designs are finalized during implementation. The mitigation measures will be implemented before civil works begin. As the specific locations of investment under the agriculture subcomponents cannot be known during preparation, the Project has developed a Resettlement Policy Framework (RPF) as required by ESS-5 to guide preparation of site-specific instruments when subproject locations are identified. The RPF has been disclosed in-country on April 28, 2021, and on the World Bank external website on April 28, 2021. The requirements of the RPF and RAP have been included in the Environmental and Social Commitment Plan (ESCP). The ESCP has been prepared and disclosed on May 02, 2021 in country and on May 02, 2021 in the World Bank external website.

82. While local labor is anticipated to be used for civil works, the possibility that migrant, child, or forced labor might be used cannot be ignored. Considering the country context, social sensitivities, and the concentration of project activities in rural areas with men and women working in unsupervised conditions, the risk of Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) is possible. The risk that project activities could contribute to the spread of communicable diseases, including COVID-19, must be considered as well throughout project implementation. The Labor Management Procedures prepared for the project provides the framework in which different categories of project workers will be managed, in accordance with the requirements of Liberia Labor laws and the World Bank ESS 2-Labour and Working Conditions. The LMP was prepared for the project and disclosed in-country on May 02, 2021 and on the World Bank website on May 02, 2021. MoA and MPW will implement the project in collaboration with other ministries; the social risk management capacity of these ministries varies, and they have no experience in implementing the World Bank ESS. To provide leadership in social risk management and reporting consistent with the reporting requirements in the ESCP, the MoA and IIU of MPW will each recruit and maintain a qualified Social Development Specialist as part of their PIU staff throughout the life of the project.

83. **Stakeholder Engagement and Grievance Redress Mechanism (GRM).** A Stakeholder Engagement Plan (SEP) has been prepared for the project and disclosed in-country on April 29, 2021 and on the World Bank website on May 02, 2021. The SEP establishes an effective platform for productive interaction with potential project-affected persons and communities and other interested parties. Preparation of the project has been based on a participatory, inclusive, and iterative approach involving all relevant public institutions, private sector associations, the main stakeholders of the selected value chains, and civil society. Stakeholder engagement will continue throughout project implementation. The SEP includes a GRM that provides avenues for project-affected persons and stakeholders to raise concerns and complaints and to seek their resolution. The project GRM will have multiple uptake channels and locations, from the community level to the PIU at the national level. The SEA/SH risk for the project is rated *Low* based on the World Bank Sexual Exploitation and Abuse/Sexual Harassment Risk Screening Tool. Considering the substantial risk and prevalence of gender-based violence (GBV) in this context, however, a gender-sensitive GRM will be specifically designed and established for the proposed project to respond to any SEA/SH complaints arising during implementation. The GRMs will direct complaints to appropriate implementing agency with which the complainant is associated to ensure that appropriate feedback can be provided to the complainant if the grievance cannot be resolved immediately and requires further action. The Project will maintain a complaint register as required by the SEP to document all complaints and how they were resolved.

84. Citizen engagement in the Project will be tracked through two indicators: beneficiaries satisfied with the delivery (timely and quality) of project benefits and percent of grievances raised in the GRM that are addressed. The PIM will



include detailed project-specific protocols for stakeholder engagement in view of COVID-19 restrictions and GRMs; these protocols will be updated from time to time throughout implementation.

V. GRIEVANCE REDRESS SERVICES

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

VI. KEY RISKS

86. **Overall project risk is *Substantial*.** Based on an assessment using the Systematic Operations Risk-Rating Tool (SORT), the overall risk rating for achieving the development objective of RETRAP is ***Substantial*** (see the Data Sheet for a summary of the risks for each category). The key risks associated with project implementation are related to macroeconomic policy, sector strategy and policies, institutional capacity, environmental and social safeguards, and fiduciary management. The pervasive security challenges in Liberia add another dimension of risk to the proposed project. Violence and crime remain genuine threats in the daily life of many Liberians, and sexual violence remains widespread. The risks that are perceived to be ***Substantial*** include:

- (a) ***Institutional capacity for implementation and sustainability.*** Liberia's weak institutional capacity limits the quality of public service delivery, and Liberia continues to struggle with a limited presence of qualified and competent private service providers, civil society organizations, and NGOs. At the same time, most counties outside the Capital remain difficult to access due to very bad roads, limiting the project's ability to provide close implementation support and monitoring. The Project will invest in institutional strengthening of MoA and related agencies, and it will rely on consulting services to respond to limitations in capacity in the early stages of implementation.
- (b) ***Fiduciary risks.*** The Government has undertaken significant measures to build institutional capacity to fight corruption and poor governance, but these efforts have been slow to improve service delivery or public-sector efficiency. The Liberia Anti-Corruption Commission (LACC), which was set up to curb abuses by government entities, has struggled to be effective. It has faced challenges in obtaining information from senior officials, be it asset disclosures or cooperation in building cases against government officials.
- (c) ***Environmental and social risks.*** MoA and MPW have some experience in managing safeguards for World Bank–funded projects, but they lack experience in working with the World Bank's new Environmental and Social Framework (ESF). The ministries must build their capacity to work with this instrument to manage environmental and social risks associated with the proposed project.
- (d) ***Other risk.*** The category of other risk is rated substantial. The risk associated with the COVID-19 pandemic is rated *substantial* because of its multiple potential consequences on health, the economy, the social climate, the



workforce, and many other facets of life in Liberia, which could tremendously affect project implementation. However, the road and market infrastructure that would be built under the project will enhance the flow of good and storage, which will in turn help to mitigate the impact of the pandemic. Risks of GBV are considered *substantial* nationally, even though the risk of SEA/SI is considered low based on the World Bank SEA/SI risk-assessment tool. Even so, the Project recognizes that bringing people and funds into project areas may change community dynamics in unexpected ways. Prevention and mitigation strategies are integrated into the ESMF to address potential risks of GBV or SEA/SI (for example, by developing instruments such as Labor Influx Management Plans, Workers' Code of Conduct, and Workers' Camp Site Management Plans). The Social Development Specialist will undertake robust monitoring of these risks in collaboration with the M&E Specialist, who will develop and use safe reporting guidelines in conjunction with international best practice.

85. Climate and disaster risks (including Climate Co-Benefits, GHG emission analysis and disaster-risk screening). Climate and disaster-risk screening examined the potential impacts of climate and geophysical hazards on the Project's physical components. As indicated in the Climate and Disaster-Risk Screening report, the Project is moderately exposed to drought, extreme precipitation, flooding, and extreme temperatures. These climate hazards are likely to have a moderate impact on the Project's crop and land management and livestock interventions, and vulnerable groups such as women, migrants, and displaced populations are liable to be more seriously affected. To minimize current and future climate and disaster risks in project areas and in agriculture more generally, the Project is designed to facilitate more diversified and resilient agricultural production systems and value chains. The Project will also mitigate these risks by: (i) building the capacity of implementing agencies at the county and district level to identify and proactively address climate vulnerabilities; (ii) building capacity at the community level to address climate vulnerabilities; and (iii) identifying and investing in climate-resilience activities (productive investments and infrastructure) at the community level. For example, the Project will: (i) promote the adoption and use of climate-resilient agricultural and land-use practices like zero tillage and reduced use of chemical fertilizer; (ii) promote the use of multi-cropping systems by small and marginal farmers to spread risk across more than just one crop (usually paddy, and the shift away from paddy will also help to reduce GHG emissions); (iii) promote technologies that increase water-use efficiency, such as drip irrigation, which will reduce the risk of massive crop failure associated with drought; (iv) train FBOs and other stakeholders in the selected agricultural value chains in climate adaptation and mitigation initiatives; (v) provide financial and technical support to strengthen micro-enterprises promoting green technologies, such as solar lamps for household lighting and solar pumps for micro-irrigation facilities; (vi) provide training and support for agri-entrepreneurs to use energy-efficient and climate-smart practices in their businesses; and (vii) promote refrigeration and cold-storage facilities across agricultural value chains to enable producers to store their products and sell them at higher prices later.



VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Liberia

Liberia: Rural Economic Transformation Project

Project Development Objectives(s)

To improve productivity and market access for small holder farmers and agri-enterprises for selected value chains in project participating counties.

Project Development Objective Indicators

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Improve Productivity and Market access for SHFs & Agri-enterprises for selected VCs in project PCs							
Farmers reached with agricultural assets or services (CRI, Number)		0.00	0.00	4,000.00	8,000.00	10,000.00	12,000.00
Farmers reached with agricultural assets or services - Female (CRI, Number)		0.00	0.00	2,000.00	4,000.00	5,000.00	6,000.00
Farmers reached with agricultural assets of which access climate-smart agricultural assets " (Number)		0.00	0.00	1,000.00	2,000.00	2,200.00	2,400.00
Increased yield of targeted agricultural produce by project- supported farmers, disaggregated by targeted		0.00			20.00		30.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
commodity (Percentage) (Percentage)							
Increased yield of cassava by project-supported farmers (Percentage)	0.00				20.00		30.00
Increased yield of rubber by project-supported farmers (Percentage)	0.00				20.00		30.00
Increased yield of pork by project-supported farmers (Percentage)	0.00				20.00		30.00
Increased yield of poultry by project-supported farmers (Percentage)	0.00				15.00		20.00
Increase in marketed volume of locally produced agricultural commodities by project supported FBOs, disaggregated by targeted commodity (Percentage)	0.00				15.00		20.00
Increase in volume of sales of cassava produced by project-supported FBOs (Percentage)	0.00				20.00		30.00
Increase in volume of sales of rubber produced by project-supported FBOs (Percentage)	0.00						20.00
Increase in volume of sales	0.00				15.00		20.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
of pork produced by project-supported FBOs (Percentage)							
Increase in volume of sales of poultry produced by project-supported FBOs (Percentage)	0.00				20.00		30.00
Reduction in transportation time between Tappita and ToeTown, disaggregated by passengers and agricultural freight; (Percentage) (Percentage)	0.00	0.00	20.00	30.00	40.00	50.00	
Public passenger bus (%) (Percentage)	0.00	0.00	20.00	30.00	40.00	50.00	
Heavy commercial truck for freight (%) (Percentage)	0.00	0.00	20.00	40.00	60.00	75.00	
increase in traffic (passenger and freight) volumes (Percentage)	0.00	0.00	5.00	10.00	15.00	20.00	
Direct project beneficiaries (Number)	0.00	5,000.00	30,000.00	45,000.00	55,000.00	60,000.00	
Nubmer of females (Number)	0.00	2,500.00	15,000.00	22,500.00	27,500.00	30,000.00	



Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Improving the Enabling Environment for Agribusiness Development							
Policies/ laws/ regulations supported (Number)		0.00			2.00		3.00
PPD organizations and FBOs receiving technical assistance or training (Number)		0.00	25.00	75.00	100.00	120.00	125.00
Project beneficiaries reached with new climate smart technologies (Number)		0.00	1,000.00	3,000.00	6,000.00	7,000.00	8,000.00
Enhancing Competitiveness and Market Access Through Productive Alliances							
Sub-projects prepared (Number)		0.00	25.00	75.00	100.00	120.00	125.00
Farmers adopting improved agricultural technology, disaggregated by gender (Number)		0.00	0.00	4,000.00	8,000.00	10,000.00	12,000.00
of which female (Number)		0.00	0.00	2,000.00	4,000.00	5,000.00	6,000.00
Farmers linked to off-takers (Number)		0.00	0.00	4,000.00	8,000.00	10,000.00	12,000.00
Women farmers accessing agricultural matching grants for the first time (Number)		0.00	0.00	1,000.00	2,000.00	2,200.00	2,400.00
Women in target areas accessing investment financing for agriculture (all sources of finance) (Percentage)		15.00			25.00		30.00
Agri-Marketing and Road Infrastructure Investments							
Roads constructed (CRI,		0.00			20.00		40.00



Indicator Name	PBC	Baseline	Intermediate Targets				End Target
			1	2	3	4	
Kilometers) (Kilometers)							
Roads constructed - rural (CRI, Kilometers) (Kilometers)	0.00				20.00		40.00
Roads constructed - non-rural (CRI, Kilometers) (Kilometers)	0.00	0.00					0.00
Commercial facilities/markets constructed/rehabilitated (Number)	0.00				15.00		20.00
Project Coordination and Management and Contingency Emergency Response							
Grievances registered related to delivery of project benefits that are actually addressed (Number)	0.00	10.00	30.00	40.00	55.00	60.00	
Farmers using market information (Percentage)	0.00			30.00			50.00
Reports produced through MIS system (Number)	0.00	15.00	30.00	45.00	60.00	75.00	
Beneficiaries satisfied with delivery (timeliness and quality) of project benefits (percentage) disaggregated by gender (Percentage)	0.00			50.00			75.00
Female Beneficiaries satisfied with delivery (timeliness and quality) of project benefits (percentage). (Percentage)	0.00			50.00			75.00



Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
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 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),	Quarterly	Administrative record	Farmers record	CLF and Consultants



	production-related services (e.g., soil testing, animal health/veterinary services), phytosanitary 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.				
Farmers reached with agricultural assets or services - Female					
Farmers reached with agricultural assets of which access climate-smart agricultural assets "	This indicator measures the number of farmers who were provided with climate smart agricultural assets	Bi-monthly	Survey	Survey among project beneficiaries	CLF and Consultants
Increased yield of targeted agricultural produce by project-supported farmers, disaggregated by targeted commodity (Percentage)	Increase in yield per hectare recorded on participating farmers' farm. Baseline information to be established 3 months after project effectiveness and on completion of the on-going	Annual	Farmer Productivity Recording Template	Farmer Productivity Recording Template	CLF/Service provider



	baseline survey.				
Increased yield of cassava by project-supported farmers	The indicator measures increase in yield/hectare recorded on the of participating farmer's farm. Baseline information to be established 3 months after project effectiveness and on completion of the on-going baseline survey.	Annual	Farmer Productivity Recording Template	Farmer Productivity Recording Template	Farmer Supported by CLF
Increased yield of rubber by project-supported farmers	The indicator measures the percentage increase in yield/hectare recorded on participating farmers' farm. Baseline information to be established 3 months after project effectiveness and on completion of the on-going baseline survey.	Annual	Farmer Productivity Recording Template	Farmer Productivity Recording Template	Farmers supported by CLF
Increased yield of pork by project-supported farmers	This indicator measures average daily gain (ADG) and feed conversion ratio (FCR) during the nursery and fattening phase. Baseline information to be established 3 months after project effectiveness and on completion of the on-going baseline survey.	Quarterly	Farmers productivity recording template	Farmers productivity recording template	Community level Facilitator
Increased yield of poultry by project-supported farmers	This indicator measures the growth rate and feed	Quarterly	Farmer's Productivity	Farmer's productivity recording template	Community Level



	conversion of poultry. Baseline information to be established 3 months after project effectiveness and on completion of the on-going baseline survey.		recording template		Facilitator
Increase in marketed volume of locally produced agricultural commodities by project supported FBOs, disaggregated by targeted commodity					
Increase in volume of sales of cassava produced by project-supported FBOs	Volume of sales refers to the number of units that are sold in a given time period	Annual	FBOs sales recording template	FBOs sales recording template	FBOs supported by CLF
Increase in volume of sales of rubber produced by project-supported FBOs	Volume of sales refers to the number of units that are sold in a given time period	Annual	FBOs sales recording template	FBOs sales recording template	FBOs supported by CLF
Increase in volume of sales of pork produced by project-supported FBOs	Volume of sales refers to the number of units that are sold in a given time period	Annual	FBO sales recording template	FBO sales recording template	FBO supported by CLF
Increase in volume of sales of poultry produced by project-supported FBOs	Volume of sales refers to the number of units that are sold in a given time period	Annual	FBO sales recording template	FBO sales recording template	FBOs supported by CLF
Reduction in transportation time between Tappita and ToeTown, disaggregated by passengers and agricultural freight; (Percentage)	Average travel time (by mode or cross modes) for a given origin-destination. Baseline information to be established 3 months after project effectiveness and on	Annual	Survey	Survey	CLF/Service Providers



	completion of the on-going baseline survey.				
Public passenger bus (%)	Average travel time (by mode or cross modes) for a given origin-destination	Annual	Survey	Survey	CLF/Service Providers
Heavy commercial truck for freight (%)	Average travel time (by mode or cross modes) for a given origin-destination. Baseline information to be established 3 months after project effectiveness and on completion of the on-going baseline survey.	Annual	Survey	Survey	CLF/Service Providers
increase in traffic (passenger and freight) volumes	This indicator measures the increase in volume of track as a result of improved road. Baseline information to be established 3 months after project effectiveness and on completion of the on-going baseline survey.	Quarterly traffic count	Project Data Base and Survey report	Traffic count on periodic basis	Consultants and CLF
Direct project beneficiaries	"Beneficiaries: grant and knowledge recipients (trainings, workshops) World Bank core indicator - SEE definition in the WB core indicator guidelines"	Boi-annual	For grants - receipt of inputs received For knowledge sharing activities: training/activity log book	For grants - receipt of inputs received For knowledge sharing activities: training/activity log book	For grants - independent funds manager supported by PIU For knowledge sharing activities: trainer/facilitator



Nubmer of females	"Beneficiaries: grant and knowledge recipients (trainings, workshops) World Bank core indicator - SEE definition in the WB core indicator guidelines"	Bi-annual	For grants: receipt of input received For knowledge sharing activities: training/activity log book	For grants: receipt of input received For knowledge sharing activities: training/activity log book	For grants: Independent fund manager supported by PIU For knowledge sharing activities: trainer/facilitator

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Policies/ laws/ regulations supported	Supported refers to any technical assistance, training, or writing that contributes to the policy, law, or regulation	Annual	Policies/Law/Regulations	Policies/Law/Regulations	PIU
PPD organizations and FBOs receiving technical assistance or training	Public-Private Dialogue (PPD) organizations include all relevant value-chain stakeholders (e.g. agro-producers, agro-processors, input suppliers, and service providers).	Bi-annual	Training and technical assistance logs	Training and technical assistance logs	Service providers or external trainers (if training sessions are outsourced) or by project staff (if training is provided by them)



Project beneficiaries reached with new climate smart technologies	""Reached"" refers to activities including farmers field days, exchange visits, farmers field school, study tours, mass media and ICT-based outreach channels, information and knowledge sharing events, such exhibitions, workshops, conferences, and seminars Climate smart technologies: agricultural practices that sustainably increase productivity and system resilience while reducing greenhouse gas emissions"	Annual	Project/Activity Completion Report	Project/Activity Completion Report	CLF
Sub-projects prepared	Only Sub-project prepared for grant applications will be counted.	Bi-annual	Business Plans	Business Plans Service Provider	Service provider supported by CLF
Farmers adopting improved agricultural technology, disaggregated by gender	Adoption"" refers to on-farm use of new technology e.g. improved seeds, seedlings, livestock, poultry, fertilizer, agro-chemicals, agricultural equipment and farm machinery. WB CORE INDICATOR. See definition in the WB core	Annual	CLF service provider	Farmers received for inputs/equipment received	CLF - service provider



	indicator guidelines				
of which female		Annual	CLF service provider	Farmers receipt of inputs/equipment received	CLF service provider
Farmers linked to off-takers	Value chain actors refers to agro-producers, agro-processors, input suppliers, and service providers.	Annual	CLF service provider	Contracts and written agreements	CLF service provider
Women farmers accessing agricultural matching grants for the first time	The Indicator measures the number of women accessing matching grant under the project.	Annual	Administrative records	Administrative records and project reports	CLF/M&E
Women in target areas accessing investment financing for agriculture (all sources of finance)	This indicator measures the percentage increase in the number of women in target areas accessing formal financing for agriculture	Annual	Project reports	Administrative records	CLF/M&E
Roads constructed (CRI, Kilometers)	Total length of road completely constructed	Bi-Annual	Road Works Progress Reports	Desk Review of Progress Report, Site Inspection	CLF/IIU/Contractors
Roads constructed - rural (CRI, Kilometers)	Total length of road completely constructed	Annual	Road Works Progress Reports	Desk review of progress reports, site inspection	CLF/IIU/Contractors
Roads constructed - non-rural (CRI, Kilometers)	Length of road completely constructed in the non-rural area	Annual	Road Works Progress Reports	Desk Review of Progress Reports and Site Inspection	CLF/IIU/Contractors



Commercial facilities/markets constructed/rehabilitated	Infrastructure works include: (i) construction of a number of open market sheds and small storage facilities; (ii) construction of selected infrastructure that require specialized handling for agricultural produce; and (iii) Construction of market internal path-ways, drainage infrastructure, and water and sanitation facilities	Bi-annual	Contract Completion Report	CLF, contractor	CLF, contractor
Grievances registered related to delivery of project benefits that are actually addressed	Targeted groups include mallholders and agribusiness owners receiving support to increase their farming productivity and the degree of commercialization of agriculture and livestock produce as well as extension service and government officials making more informed decisions about resource allocations, training, and technology needs of farmers and agribusiness owners.	Annual	GRM	GRM	CLF, contractor



Farmers using market information		Annualy	Reports	Reports, site visits	PIU, CLF
Reports produced through MIS system	MIS reports include all reports generated by the system	Bi-annual	MIS Report	MIS Report	PIU
Beneficiaries satisfied with delivery (timeliness and quality) of project benefits (percentage) disaggregated by gender	The indicator measures the percentage of project participants who expressed satisfaction with delivery (timeliness and quality) of project benefits.	Annual	Survey reports	Sample survey of project beneficiaries	Consultants and Community level facilitator
Female Beneficiaries satisfied with delivery (timeliness and quality) of project benefits (percentage).	The indicator measure the percentage of female beneficiaries satisfied with delivery (timeliness and quality) of project benefits (percentage).	Annual	Report of survey	Survey of female beneficiaries	Consultants, Third Party Monitor and Community level facilitator



ANNEX 1: Detailed Project Description

Conceptual Framework for RETRAP

- 1. The proposed Project addresses important challenges to developing agri-food value chains in Liberia.** These include: (i) weak capacity of institutions that support the delivery of agribusiness services; (ii) poor organization of smallholder farmers; (iii) low agricultural productivity due to limited access to improved technologies, modern inputs, and advisory services; and (iv) weak access to markets due to inadequate post-harvest, transport, and marketing infrastructure; and (iv) limited private sector investment in production, processing capacity, and value-added activities. To address these challenges, the project will contribute to creating long-term economic opportunities for actors in selected value chains through a threefold approach by: (i) strengthening critical institutions overseeing the development of the sector; (ii) intervening at various level of the supply chain to build capacity and support investment subprojects to improve the agricultural productivity and climate resilience of the agri-food system; and (iii) improving rural access and agricultural marketing by upgrading selected roads and rural markets.
- 2. Cassava, rubber, poultry, and pig value chains were selected for support under the proposed project.** These value chains complement the rice, oil palm, and horticulture value chains supported under the World Bank–funded STAR-P agricultural transformation project. They were selected based on two sector scans^{21,22} that relied on a range of development impact criteria, including: (i) evidence-based market demand for selected commodities; (ii) high growth potential, demonstrated by positive growth trends of the value chains, scope for expanding production and increasing sales, and scope for value addition through processing; (iii) potential for poverty reduction;²³ and (iv) project-related aspects, including existing infrastructure and complementarities with other projects in the country. Vegetable production (home gardens) will also be supported because of their importance in generating income for women and in diversifying nutrition at the household level.
- 3. Geographical focus and phased approach.** The project is expected to operate in 11 of the 15 counties of Liberia, including Bong, Sinoe, Grand Kuru, Grand Bassa, Bomi, Grand Cape Mount, Grand Gedeh, Margibi, Maryland, Montserrado and Nimba. The project will give priority to counties where FBOs already exist and where there are market opportunities (processing units, proximity urban areas, border outlets), before moving to counties without existing FBOs. The final selection of the intervention locations for the selected value chains will be determined during project preparation in consultation with key value-chain stakeholders.
- 4. The Project builds on the design of STAR-P and of SECRAMP (which focuses on the southeastern corridor road network).** The Project also complements ongoing projects under MoA, including the World Bank–funded LFSP, the SAPEC Project under the GAFSP/World Bank Grant, the IFAD-financed Rural Community Finance Project, and the two phases of the Tree Crop Extension Project. The project builds on experience with the Productive Alliance approach under STAR-P by expanding the approach to a different set of value chains. Productive Alliances support FBOs by bringing together (see Box 2): (i) a group of organized farmers producing a particular product, or a group of producers acting as a commercial entity, to ensure a reliable supply of goods in accordance with market demands; (ii) other partners involved in the value chain by providing services or undertaking processing required by the final buyer/s (aggregation, handling, storage, processing); and (iii) one or more buyers for a product/s that are willing to reach an agreement with the suppliers. These entities—the participating members of the “alliance”—are connected through a

²¹ Netherlands Enterprise Agency (2017), “Sector Scan—Liberia Agriculture Sector.”

²² World Bank, IFC, and GoL (2017), “Agricultural Commercialization and Agribusiness Development Project: Sector Scan Report.”

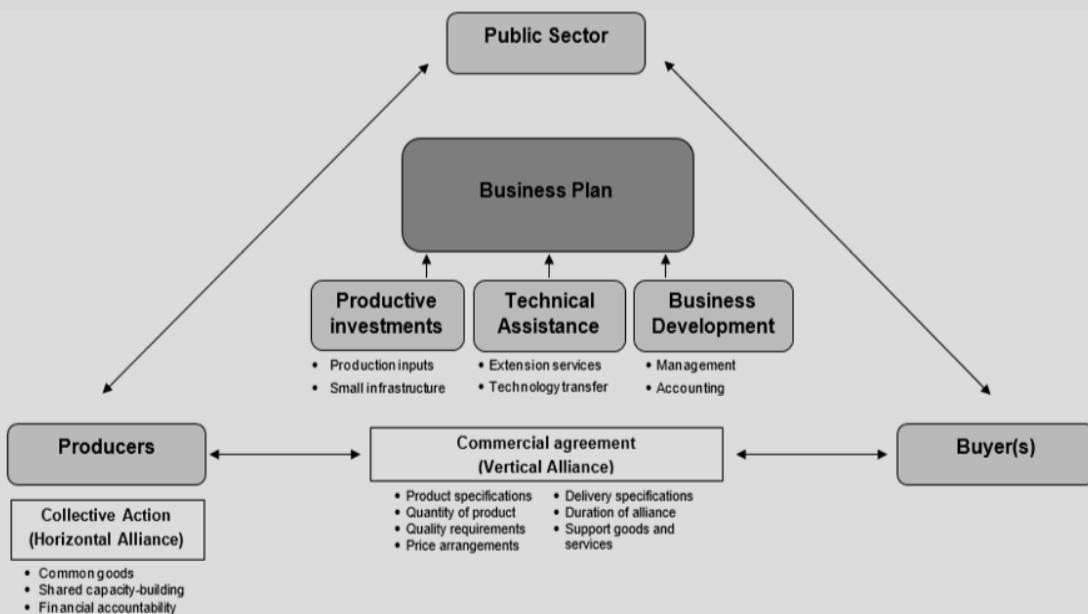
²³ Potential for poverty reduction is based on locally available raw materials and skills, new job opportunities created, low entry barriers for small-scale entrepreneurs, and prospects for women and youth.



business proposition (“business plan”) that assesses the capital and service needs of the FBO and proposes improvements that would allow producers to upgrade their production capacities and skills to strengthen their linkage with the market. The public sector is normally engaged in providing an enabling environment, often supports the participating member responsible for preparing the investment proposal (the “subproject”), and provides adequate financing for implementing the proposal (based on the business plan)²⁴.

Box A1.1. The Productive Alliance Approach

The Productive Alliance approach is a globally recognized means of enhancing market access for farmers by bringing together three core agents: a group of smallholder producers, one or more buyers, and the public sector. As described in para. 4, each alliance involves three core agents—a group of smallholder producers, one or more buyers, and the public sector—who connect to implement a business plan designed to support the productive investments, inputs, business development services, technical advice, and skills required to strengthen producers’ linkages with the market—the buyer(s). The Productive Alliance approach promotes the horizontal alliance of smallholders to coordinate production and sell collectively. At the same time, it incentivizes the vertical alliance of producers and at least one buyer through a commercial agreement to provide a product. The public sector plays the role of the convener in these arrangements. The figure below depicts the relationships between Productive Alliance members.



The combination of grant financing and technical support will facilitate the evolution of productive partnerships between FBOs and anchor enterprises. More integrated relationships between producers and off-takers will be mutually beneficial. FBOs will receive technical assistance to improve the production and management of their organizations, grant funding to invest in technical and infrastructure enhancements, and support to access commercial loans. Off-takers will benefit from improved and consistent volumes and quality of supplies received. The Productive Alliances will assist in improving the economic benefits derived from higher crop yields, better rural accessibility, post-harvest gains, processing facilities, better organized value chains, and access to new markets.

5. Global experience has shown that the Productive Alliance approach addresses multiple constraints and increases revenues by providing integrated solutions adapted to local conditions, exploring and building on opportunities perceived by the partners in the alliance, significantly increasing product quality, producing a consistent volume of

²⁴ World Bank Group (2016), “Linking Farmers to Markets through Productive Alliances: An Assessment of the World Bank Experience in Latin America.” Washington, DC. Available at: <https://openknowledge.worldbank.org/handle/10986/25752>.



product, and stabilizing product sales prices. The road component of the project will complement efforts to develop the entire southeastern corridor. The rehabilitation of a 40-km segment of the 112-km Tappita–Zwedru road will facilitate all-weather transport along 140 km of the 212-km Ganta–Zwedru corridor. Discussions continue among the World Bank and other donors to finance the remaining length of the corridor in the next two to three years.

6. In addressing identified value-chain constraints and in partnership with IFC, the Project will include a spectrum of actions for MFD. These actions will include: (i) increasing the space for private sector activity; (ii) improving the policy and regulatory environment—for instance, by establishing partnerships between operators within value chains and improving contractual arrangements between farmers and buyers; (iii) facilitating access to finance for agribusiness development (provision of matching grants) and supporting agri-entrepreneurs to develop “bankable” and viable business plans; (iv) supporting essential public goods and services such as strengthening human capital, agricultural research/extension services, and public infrastructure (roads and market information) to enhance market access; and (v) technical assistance to financial institutions to strengthen their capacity for diversifying their financial products and expanding their outreach, as well as to address the lack of financial literacy in the group of potential beneficiaries.

7. Innovative agricultural technologies will be scaled up and disseminated. Farmers' access to localized, relevant, and timely information on crop management and market intelligence is critical to achieve the project objective. In this context, rural advisory services that rely on mobile phones have the potential to drive greater productivity gains than traditional methods of extension and to reduce information asymmetries (in market price information, for instance). The project will identify and assess innovative solutions²⁵ to providing relevant agricultural and marketing advice in Liberia and provide financial support to customize such products for FBOs supported under the project.

8. The proposed project will also focus on several cross-cutting priorities. It will: (i) take gender issues and empowerment of vulnerable groups (women and youth) into account in the context of broad social safeguard measures; (ii) promote climate mitigation and adaptation and adherence to environmentally sound actions, as well as give priority to climate-smart technologies to enhance resilience; (iii) promote the inclusion of products to improve household nutrition; and (iv) give priority to the adoption of technologies that reduce GHG emissions. The project will set targets for participation by women and youth and will prioritize investment subprojects that have the potential to generate full-time rural employment. When selecting investment subprojects, the project will also mainstream resilient and low-carbon activities to address agricultural vulnerability and reduce agricultural emissions of GHGs. Concurrently, the project will promote climate resilience through CSA approaches and best practices and technologies for water resource management, and it will promote better nutrition through home gardening and the dissemination of information on sound nutritional practices to beneficiaries, particularly women and children.

B. PROJECT COMPONENTS

COMPONENT 1: IMPROVING THE ENABLING ENVIRONMENT FOR AGRIBUSINESS DEVELOPMENT (IDA US\$6 MILLION EQUIVALENT)

9. The objective of Component 1 is to improve the enabling environment for agribusiness development in Liberia. This objective will be achieved through the following interventions: (i) building the capacity of public agribusiness services to deliver quality services to private investors, including smallholder farmers; (ii) enhancing value chain

²⁵ One example of these solutions is the partnership between The Cookshop (a Liberian online food delivery startup) and GROW Liberia Program (agribusiness and investment advisory program). These organizations have come together to operate a Market Information System for agricultural commodity prices that enables farmers to post and review products and prices. The partnership leverages the partnerships between GROW and the Monrovia Vegetable Sellers Association and Farmers Union Network (FUN), as well as Cookshop's relationships with over 40 food retailers, including restaurants, hotels, and supermarkets. A second example is Power Gari, a nutritionally fortified cassava-based porridge, produced with research support from a Silicon Valley-based food-technology company that develops plant-based food products (<https://nextbillion.net/low-tech-high-impact-food-production-africa/>).



coordination and public-private dialogue; and (iii) supporting agricultural research and development (R&D) and extension. This component will finance specialized technical assistance, training, works, goods, consulting and non-consulting services, and operational expenses, as detailed below.

10. Improving Public Agribusiness Services. This intervention aims at enhancing the capacity of selected public services that are critical for enabling agribusiness, principally within MoA and CDA. The project will undertake a functional review of these entities and recommend/implement appropriate solutions for improving the quality of their agribusiness services. The focus will be on strategies and solutions for: (i) enhancing entrepreneurship development in agribusiness and promoting private investments in the sector (with a focus on women and youth entrepreneurship); in particular the project will support key activities towards the functioning of an AGDU that is being established as an agribusiness strategy incubator and strategic advisory arm of MoA; (ii) improving governance and partnerships across the selected value chains, and collaboration among agribusiness development programs/projects in the country; and (iii) enhancing the resilience of the food system through the dissemination of climate-smart practices. In addition, MoA will receive support—technical assistance, training, and equipment—to operationalize approved national acts, regulations, and strategies related to seed, food safety, pesticides, fertilizer, and the national rice development strategy, and to update and enforce agri-food standards. In implementing these activities, the project will work closely with STAR-P to develop an agriculture database to support monitoring, research, policy making, and the allocation of resources by counties. The system will ensure that farmers, allied institutions of MoA—for instance, CARI and NSL—and private sector partners have a shared platform for to access data, share knowledge, and to obtain advisory and financial services. Finally, under this intervention, the Project will finance special trainings to increase public agribusiness services awareness on: (a) the potential impacts of climate change risks and the mechanisms available for enhancing resilience to climate change trends; and (b) approach to addressing gender gap in agriculture/agribusiness.

11. Enhancing value chain coordination and public-private dialogue. Towards this objective, the Project will: (i) conduct stakeholder mapping to ensure that a representative and inclusive PPD mechanism is put in place for the targeted value-chains (see Box A1.2); (ii) support the establishment and operation of an effective PPD, including training of main stakeholders on effective use of PPD to continue improving the performance of the value-chains; and (iii) support increased consultations among the value chain stakeholders; for instance, through regular forums to discuss the various constraints of their sectors; review and update the sector strategy; develop a shared vision and a harmonized approach to minimize potential conflict and devise mechanisms for coordinating donor support and private and public investments. In addition, the project will support capacity-building activities to strengthen FBOs actives in targeted value-chains. These will be trained in group dynamics promoting good governance of their FBOs, group management, business development, M&E and functional literacy. FBOs will also benefit from advocacy and

Box A1.2. PPD mechanism

Through the PPD, the project will scope and validate which reforms that will improve the competitiveness of specific commodities (for example, rubber and poultry). Successful examples of PPD mechanism from the region will be reviewed and adapted based on the needs of Liberia. The PPD will support reforms adoption that address agricultural sector-level binding constraints by increasing agribusiness competitiveness by:

- (a) Link agro-producers, agro-processors, input suppliers, and service providers to markets, stimulating the sector (increasing revenues and creating new private sector investment).
- (b) Help to develop the value chain by supporting the public goods component of the rubber sector (productivity, research and extension and infrastructure).
- (c) Identify anchor firms in key crop sectors with the greatest potential.
- (d) Ensure women have a role in the production of key crops supplying anchor companies.
- (e) Build capacity of out-grower farmers and the regulatory agency (LACRA), encouraging best practices.

The PPD platforms will prepare annual implementation plans with budget and identify key constraints for the sector, review and propose in updating the necessary government sector strategy and develop a shared vision and harmonized approach for the sector.



dissemination events on food quality norms and standards; support for their formal registration in line existing laws and regulations, in order to facilitate their access to rural finance and the establishment of contracts with suppliers or traders, and a development of an outreach communication strategy for their products. Finally, for both the PPD and FBOs activities, training will be provided to mainstream climate change in FBOs development strategies; including on options to promote climate smart value chains through the assessment of major climate risks and their impacts on the selected value chains and the development of associated climate smart adaptation strategies.

12. Support to agricultural R&D and extension. The project will strengthen the capacities of the DRDRE of the MoA to carry out its mandates. Support will be provided to: (i) facilitate linkages between extension and research system through information sharing and production of joint periodic bulletin; a main focus would be on climate-smart practices and technologies (soil fertility management, tillage methods, sound use of agro-chemicals, soil and water conservation, etc.; (ii) promote the use of e-extension services; (iii) integrate the delivery of nutritional information into the extension advice package; (iv) train County Level Facilitators (CLF) on extension guidelines and support to FBOs²⁶; (v) develop or introduce and adapt climate-smart technologies and practices to enhance resilience at county level; and (vi) strengthen seed multiplication capacity. In addition, the project will support the CARI, and NSL to identify and implement specific demand-driven knowledge and innovative research and testing equipment. CARI will be supported to develop and maintain linkages with regional agricultural innovation and R&D systems to benefit from technologies developed in countries with similar agro-ecological systems (i.e., Ghana and Nigeria) under regional and country programs. For the implementation of these activities, the project will finance: (a) contracting with third parties in providing specialized services; (b) minor civil works for CARI and NSL office renovations; (c) vehicles, goods, and equipment for the CARI, NSL and DRDRE to perform their project-related functions including external training; (d) logistics support to private advisory service providers and CLF; and (e) limited operating costs for the CARI, NSL and DRDRE.

COMPONENT 2: ENHANCING COMPETITIVENESS AND MARKET ACCESS THROUGH PRODUCTIVE ALLIANCES (US\$16.5 MILLION: IDA US\$12.5 MILLION EQUIVALENT AND BENEFICIARIES US\$4.0 MILLION)

13. The objective of this component is to support smallholders and commercially oriented farmers to improve their capacity to operate competitively in selected value chains and have strengthened and more reliable linkages with buyers. To attain this objective, the project will adopt the Productive Alliance approach described earlier.

14. Subcomponent 2.1: Pre-Investment Activities (IDA: US\$2.0 million). The subcomponent will support the engagement of County-level 22 facilitators (11 males and 11 females) to be posted to each of the participating county. This subcomponent will support pre-investment activities that are designed to pave the way for the development of proposals for investment subprojects that will be considered for financing under Subcomponent 2.2. Pre-investment activities will: (i) promote the project concept and increase outreach to prospective beneficiaries (FBOs and their members, commercial partners, and private financing entities); (ii) identify Productive Alliances among FBOs, agri-enterprises, processors, and commercial partners; (iii) identify potential business opportunities for the Productive Alliances; (iv) prepare business plans and proposals for investment subprojects reflecting the identified opportunities; (iv) build capacity among technical service providers to enhance the quality of the services provided to the Productive Alliances; and (v) support studies to evaluate the potential for investments in the selected value chains that will promote climate change mitigation, climate resilience, and the economic inclusion of marginalized groups (women and youth).

²⁶The project will provide periodic support to CLFs to review and support FBOs implement their business plans.



15. The subproject proposals will be demand driven and their preparation will be supported by facilitators engaged at the county level (CLFs) to work with FBOs and the partners participating in the alliance. These CLFs (and other service providers) be working directly with FBOs and other potential beneficiaries, helping them overcome barriers deriving from lack of knowledge or insufficient cooperation among groups and identifying/preparing their business plans and subproject proposals. They will receive adequate training before they are deployed in the communities. The training program for CLFs (and other service providers) will be designed to increase their sector-specific technical skills and train them to perform technical supervision and feasibility analysis with the participation of FBOs.

16. Subcomponent 2.2: Investment Subprojects Supporting Productive Alliances (US\$14.5 million: IDA US\$10.5 million and Beneficiaries US\$4.0 million). This subcomponent aims at improving smallholders' integration in the selected value chains. It will finance matching grants covering part of the costs for smallholder farmers, agribusinesses, business development service providers, and financial institutions to implement investment subprojects. The matching grant resources will be handled through LACF, a special designated account under the PIU, which is managed by an independent fund manager. The Fund Advisory Committee will provide appropriate governance and oversight of the use of the LACF. The investment subprojects supported through matching grants from the LACF will be based on subproject proposals prepared by eligible beneficiaries and approved based on independent screening and evaluation of their technical, socioeconomic, financial, and environmental viability. Eligible expenditures under investment subprojects include: (i) civil works (for example, rehabilitating lowlands; clearing bushland; building post-harvest, storage, and processing facilities and small-scale, efficient irrigation systems); (ii) goods, such as productive equipment (for example, farm machinery, processing equipment, storage units, and transport vehicles); (iii) incremental working capital (for example, to purchase improved inputs); and (iv) technical assistance and business advisory services supporting the implementation of the subprojects and enhancing the administrative and managerial capacities of the participating producers.

17. Investment proposals by farmers' organizations and agribusinesses that integrate climate-smart approaches throughout the value chain will receive priority and may qualify for additional bonus financing. Examples include intercropping and conservation agriculture (which will increase crop diversification); use of climate-resilient seeds and varieties; methods to retain soil nutrients and prevent soil erosion; improved water management; flood-resilient design of production; and efficient pest and disease management; the use of alternative energy sources; recycling water and waste; and saving energy by implementing approaches and digital technologies to reduce GHG emissions in agriculture.

18. All investment subproject proposals selected for funding will focus on modernizing individual farm operations, enhancing productivity, and reducing losses (production and post-harvest losses) to meet market demands, with the goal of solidifying partnerships within a value chain. The matching grants will cover only part of the overall cost of implementing approved subprojects. Each beneficiary group will be required to provide counterpart funding—in cash /kind (either their own funds or a commercial loan) or (for certain beneficiaries) in kind—to complement the matching grants.

19. Investment subprojects will qualify for matching grant funds through three dedicated windows designed to support the different types of beneficiaries participating in a single investment subproject: (i) investment support for productive links between smallholder FBOs and agribusinesses in an off-taker arrangement; (ii) investment support for large, commercially oriented farmers who may also be service providers to small farmers; and (iii) support to other partners or participating members of an alliance providing key services. Beneficiaries will be responsible for the implementation of investment subprojects using commercial procurement practices acceptable to the World Bank. This requirement implies that beneficiaries (FBOs, commercial farmers, and other participating agents) have the managerial capacity to handle implementation (including procurement) in a transparent and effective manner.



Specialized training and technical assistance will be supported by the project, when needed, to ensure that beneficiaries' skills are consistent with these responsibilities. The matching grant amounts, beneficiary contributions, and ceilings will vary depending on the window, as summarized in Table A1.1 below.

- (a) ***Window A, for organizations of smallholder farmers and other productive groups.*** This window provides matching grants to organizations of smallholders or other productive populations to co-finance their activities in an investment subproject. Women entrepreneurs, women-led producer organizations, and other productive groups, who will be encouraged to participate through a targeted information campaign. In areas where smallholders and other productive populations are not organized into groups, the project will work with MoA, other government agencies, and NGOs active in the area to support the formation of producer and agro-based organizations.
- (b) ***Window B, for commercially oriented farmers who are also service providers and are acting as an anchor company in an alliance.*** This window will directly boost agricultural production to ensure a reliable supply of produce for a value chain. Priority will be given to commercially oriented farmers who: (i) work with smallholder farmers by transferring new technologies and providing technical assistance; (ii) adapt technologies that address binding constraints and risks in agriculture, such as climate change; (iii) create formal partnerships with a selected value chain to ensure access to markets and with research organizations to ensure the transfer of new technology; (iv) create jobs; and (v) contribute to food security.
- (c) ***Window C, for all other partners in an alliance that are participating in an individual investment subproject.*** Such partners include private businesses that provide aggregation, processing, or other services essential to the subproject's success (for instance, services facilitating compliance with a particular requirement of the final buyer, generating new investment needed for partners to perform their role in the subproject efficiently, and introducing and integrating climate-smart initiatives and technologies). This window will also support selected financial institutions to provide financing to beneficiaries, with a view to improving the outreach of financial institutions, their product innovation (by developing suitable financing products, including savings products), and their services, and rolling out new products and services in the project counties. This activity is designed to address the major challenge of access to finance from both the demand and supply side.²⁷ The matching grant will finance 60 percent of the total costs of the proposal developed by the financial institution, which will use its own resources to cover the remaining 40 percent of costs. The window will support only investments that are linked to the small farmers production and avoid funding investment proposals that are import based with respect to inputs supply which may add no value to empowering the smallholder farmers.

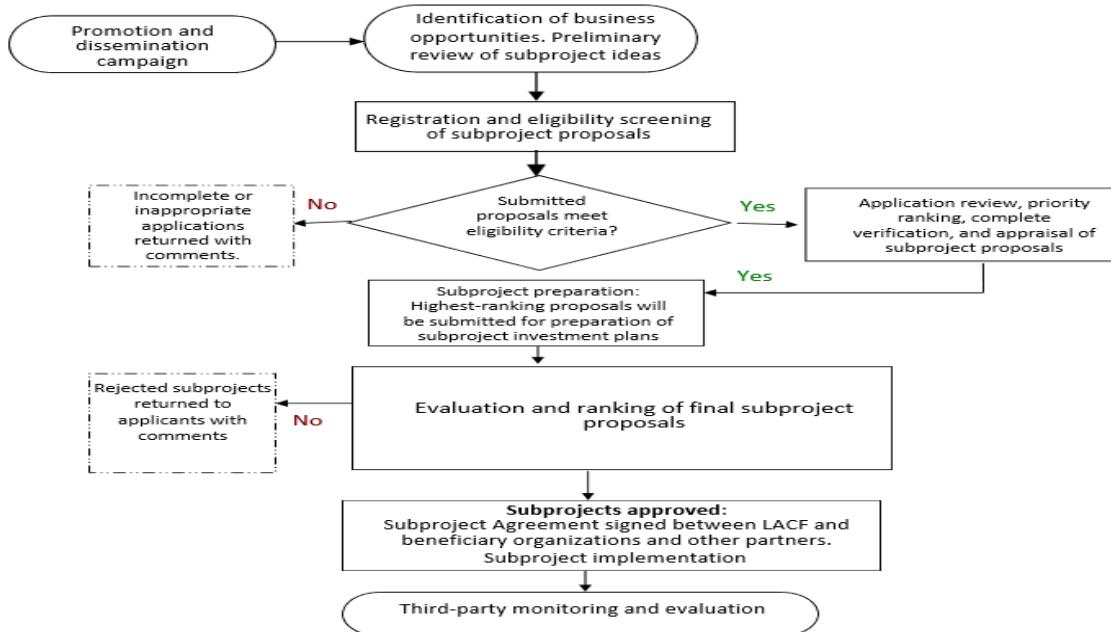
20. Matching grant arrangements. Table A.1.1 provides summary data on the matching grant windows, including indicative ceilings and financing parameters. The detailed arrangements include key categories of support, eligibility criteria, selection criteria, the positive and negative list of specific activities eligible for support under the project, matching grant ceiling limits for each category of support, indicative financing parameters, checks and balances to avoid elite capture, and post-grant requirements with which beneficiary groups must comply. This information will be presented in the PIM and updated LACF Operation Manual, which is a disbursement condition for this component.

²⁷ Financial institutions will not be permitted to use the grant funds to expand their lines of credit.

**Table A1.1: Estimated number of beneficiaries and finance required**

Window	Number of Sub-projects	Average matching grant per subproject US\$	IDA contribution		Beneficiary contribution (in cash/Kind ²⁸)		Total US\$ million	Average Household per Sub-project	Total Household Benefitted	People Benefitted
			%	US\$ million	%	US\$ million				
Window A: Organizations of smallholder farmers & other productive groups	50	145,000	80	5.80	20	1.45	7.25	160	8,000	40,000
Window B: Commercially oriented farmers	25	150,000	70	2.625	30	1.125	3.75	40	1,000	5,000
Window C: Other partners in an alliance	50	70,000	60	2.10	40	1.4	3.5	60	3,000	15,000
Total	125			10.50		3.975	14.50		12,000	60,000

21. Investment subproject implementation. Consulting services (provided either by firms or individual consultants) will be contracted under performance-based contracts to support implementation of Productive Alliance investment subprojects. In addition to the CLFs, these service providers will raise awareness of the program, encourage producers to enter a Productive Alliance, and facilitate links between FBOs and off-takers. Figure A.1.1 presents the subproject development, approval, and implementation cycle. Full details will be presented in the PIM.

Figure A.1.1: Subproject development, approval, and implementation cycle**COMPONENT 3: AGRI-MARKETING AND ROAD INFRASTRUCTURE INVESTMENTS (IDA US\$31.5 MILLION EQUIVALENT)**

22. The objective of this component is to improve access to markets through the rehabilitation of existing roads, including spot improvement of critical sections of link/feeder/collector roads to target production areas, construction of short-span critical cross-drainage structures, and modernization of selected agri-markets. The component is designed to improve infrastructure along a major corridor (Tappita-Zwedru road) to unlock productivity in the

²⁸ In Kind contribution for Window A only.



agricultural sector and provide logistics support to the private sector. Component 3 is integrated with the government's larger national road and transportation agenda, which is intended to reduce transportation costs, improve communications, and increase the commercial viability of agriculture. The expected outcomes of investments under Component 3 are reductions in post-harvest losses and marketing costs, closer links between producers and buyers, and increased competitiveness of domestic producers supplying food products to major consumption centers.

23. Subcomponent 3.1: Roads construction (IDA US\$30 million). The proposed road upgrade will support a critical link in the transportation network of Liberia and will facilitate inter-regional connectivity with neighboring countries. It will complement ongoing roads improvement by the Swedish International Development Cooperation Agency (Sida) and other development partners to expand accessibility in the country. The selection of this segment of road (which is part of the primary road network) for improvement under the project was based on several factors:

- (a) Rehabilitation of the selected road segment supports the ongoing program by GoL to improve the southeastern corridor to an all-weather standard. This road is critical for effective transportation of agricultural goods. It is in poor condition and is often impassable during the rainy season. Over the years, repeated grading has caused critical sections of this road to sink below ground level and unleashed an entrenched cycle of "ponding" on the carriageway, resulting in significant rutting and further deterioration under heavy truck traffic. In the absence of improved backbone infrastructure such as this, the main bottlenecks to improved transportation will persist, and inordinately longer travel times will increase post-harvest losses.
 - (b) Government programs supported by donors are investing in the improvement of feeder roads. At present, Sida is supporting 499 km of feeder roads in the project area to link small-scale farmers to a functioning road network. The selection of this segment for rehabilitation under the proposed project will enhance government efforts to improve the feeder road network to meet service delivery requirements, and the project will benefit from close collaboration with the donor (Sida) to exchange knowledge for sustainable road O&M.
 - (c) The road, despite its relatively short length, will contribute significantly to market accessibility. Poor condition of roads in Liberia have increased the cost of logistics and discourages actors in the value chain from reaching out to the rural areas to supply inputs or collect outputs. The World Bank has financed the rehabilitation of the 253-km Monrovia–Guinea border road, which is one of the important transport links leading to the port of Monrovia. The improvements planned for the Ganta–Zwedru corridor will increase the reach of this key infrastructure that is the backbone for effective transportation.
24. The project will support the rehabilitation of 40 km of the 112-km Tappita–Zwedru road²⁹. The sub-component will also support sport improvements (including the constructions of river-crossing structures) along sections of strategic collector/link routes to the corridor roads. The rehabilitation of the link/feeder roads will be prioritized to ensure that farmers, FBOs and cooperatives participating in the production alliances have easy access to deliver or be easily accessed by buyers/agribusinesses with whom they would have supplier contracts. The project will use OPRC contracts under a design, build and transfer (DBT) model and will also finance the associated consultant services. The conceptual design that has been developed includes full construction of a two-lane carriageway with bituminous surfacing along the existing right-of-way, with a 20-year design life (Table A1.2). The designs, construction and maintenance processes would incorporate road safety enhancement measures through pre-investment, design, and post construction safety audits. Specific

²⁹ The Ganta–Tappita road, extending almost halfway to Zwedru, is being financed under SECRAMP as follows: GoL is financing the 39-km Ganta–Saglepie stretch, and the World Bank and LRTF are financing the 61-km Saglepie–Tappita stretch. AfDB is financing the paving of the stretch from Zwedru to the southern border with Côte d'Ivoire. A gap of about 85 km is still under discussion for financing by donors in the next round of allocations.



road safety measures will include defining the Built Environment including the road design and vehicle design, enforcement of strict application of the law, teaching good road behavior through awareness campaigns and promotion of road-side medical care and access to paramedics in the “Golden Hour”, or the hour immediately following a road accident during which the provision of first aid can greatly enhance the prospects of the accident victim’s survival. The design study anticipates that the road will reduce vehicle operating costs and provide reliable year-round access, significantly increasing traffic in the short term. Average annual daily traffic (AADT) would increase from 8,400 to 13,300 in the busiest section, near Ganta, and from about 300 to 1450 in the least utilized section between Zwedru and Toe Town.

Table A1.2: Proposed road pavement structure

Layer	Thickness
Asphalt, medium grade, wearing course	60
Crushed stone base	150
Stabilized gravel subbase	150
Natural gravel subgrade	150
Natural gravel fill	150

25. As part of the road design, the Project will incentivize contractors to choose materials and implement processes that generate less emissions, and to adopt engineering and structural measures and bioengineering involving the use of vegetation, either alone or in conjunction with other civil engineering structures. Once rehabilitated, the road will play a key role in improving market access for farmers, businesses, traders, agro-processors, and transport service companies and unlocking the agricultural potential of the entire southeastern region, provide a link to the Sub-region of West Africa and support movement of produce between Liberia and other West African Countries.

26. **Subcomponent 3.2: Modernization of selected agri-markets (IDA US\$1.5 million).** Subcomponent 2 will finance the modernization of selected existing agri-markets in rural areas; including the construction of: (i) a number of open market sheds and small storage and processing facilities; and (ii) basic market infrastructure such as internal market pathways, drainage infrastructure, and water and sanitation facilities, as well as selected facilities for specialized handling of agricultural produce. All construction work will be based on a business plan submitted by FBOs or other stakeholders in the market and would be supported by a clear management and maintenance plan, identifying the functions and responsibilities of all parties involved (private or public). The upgradation of these markets will also incorporate design standards that will ensure resilience to the main local risk factors (geophysical conditions and climate change) and reduce green gas emissions by making adopting energy-efficient material for the storage facilities and renewable energy systems. The precise locations of these markets will be identified during project implementation.

27. **Construction of open market sheds and small storage and processing facilities.** Following a participatory approach, the project will finance the rehabilitation or construction of community-managed infrastructure to increase value-chain activity by improving value addition (through food processing and preservation) and market access. This effort will entail the construction of open markets sheds, storage facilities, including drying and processing facilities. These markets will also serve as designated information centers, displaying price and other information on blackboards or by other means. As women play a major role in small-scale processing and marketing of food, women will be the main beneficiaries of these investments and will be trained to properly operate and maintain these assets.

28. **Construction of internal market pathways, drainage infrastructure, and water and sanitation facilities.** This activity will support government interventions that seek to improve the internal pathways, drainage systems, and sanitation facilities in markets. It will give particular attention to reducing the transmission of COVID-19 (and by



extension, other contagious diseases) in marketplaces by supporting clean water and sanitation services for markets. Support will include establishing boreholes and overhead tanks, connecting the water supply to various points in the markets (including toilets and entrances), upgrading the drainage system, providing fumigation and water treatment services, upgrading slaughter slabs and commodity preservation facilities to enhance water and energy efficiency, and improving waste-management facilities to reduce GHG emissions. These activities will complement GoL guidelines on reducing the spread of COVID-19 in marketplaces. Given that most of the sellers in wet markets are women, the installation and upgrading of water and sanitation services will ensure that more facilities (for example, toilets) are provided for women. Through these measures, the proposed project will enable women to continue to participate in their economic activities with fewer risks to human health and food safety.

COMPONENT 4: PROJECT COORDINATION AND MANAGEMENT AND CONTINGENCY EMERGENCY RESPONSE (IDA US\$5 MILLION EQUIVALENT)

29. The aim of this component is twofold: (i) establishing appropriate coordination, M&E, and communication regarding project implementation; and (ii) ensuring that GoL is better equipped to respond to crises and emergencies.

30. **Subcomponent 4.1: Project Coordination and Management (IDA US\$5 million).** For effective and coordinated management of IDA funded projects under the MoA, the current PIU for STAR-P will be bolstered under a National Program Coordinator to implement the RETRAP and STAR-P projects. Towards this, the PIU will be strengthened with additional staff; including (i) an Operations Manager; (ii) a Procurement Specialist; (iii) a Project Accountant; (iv) an Environmental Specialist; (v) a Social Development and Gender Specialist; (vi) an M&E /MIS Specialist; (vii) an Agribusiness Specialist; (viii) an Infrastructure Specialist; (ix) a livestock development specialist; (x) a crop development specialist; and (xi) additional support staff. The IIU of MPW, which is implementing the IDA financed transport projects, will be responsible for implementing Subcomponent 3.1 under RETRAP. This subcomponent will finance the additional staff and operating resources to ensure that the PIU effectively: (i) plans, implements, and monitors project activities (including strengthening the capacity of MoA extension officers to collect data in participating counties); (ii) ensures fiduciary management and compliance with environmental and social safeguards; (iii) coordinates with participating stakeholders and partners; (iii) evaluates the project's final results, outcomes, and impacts on value chain actors in a timely way; and (iv) manages knowledge and communicates information on project activities, outcomes, best practices, and lessons to public and private stakeholders. The PIM will include details on the composition and roles of the PIU.

31. **Subcomponent 4.2: Contingency Emergency Response Component (CERC) (zero allocation).** The support provided through this subcomponent is triggered only when the government has officially declared an emergency or provided a statement of facts justifying a request to activate emergency funding. The CERC is invoked, established, and managed in accordance with the provisions of World Bank Investment Project Financing Policy (paragraphs 11, 12, and 13) to provide immediate, rapidly disbursing support for crisis response, mitigation, recovery, and reconstruction. The CERC will draw upon resources from the unallocated expenditure category and/or allow the government to request the World Bank to recategorize and reallocate financing from other project components to partially cover emergency response and recovery costs. This subcomponent may also be used to channel additional funds that become available in the event of an eligible emergency.



ANNEX 2: Implementation Arrangements

Implementation Arrangements

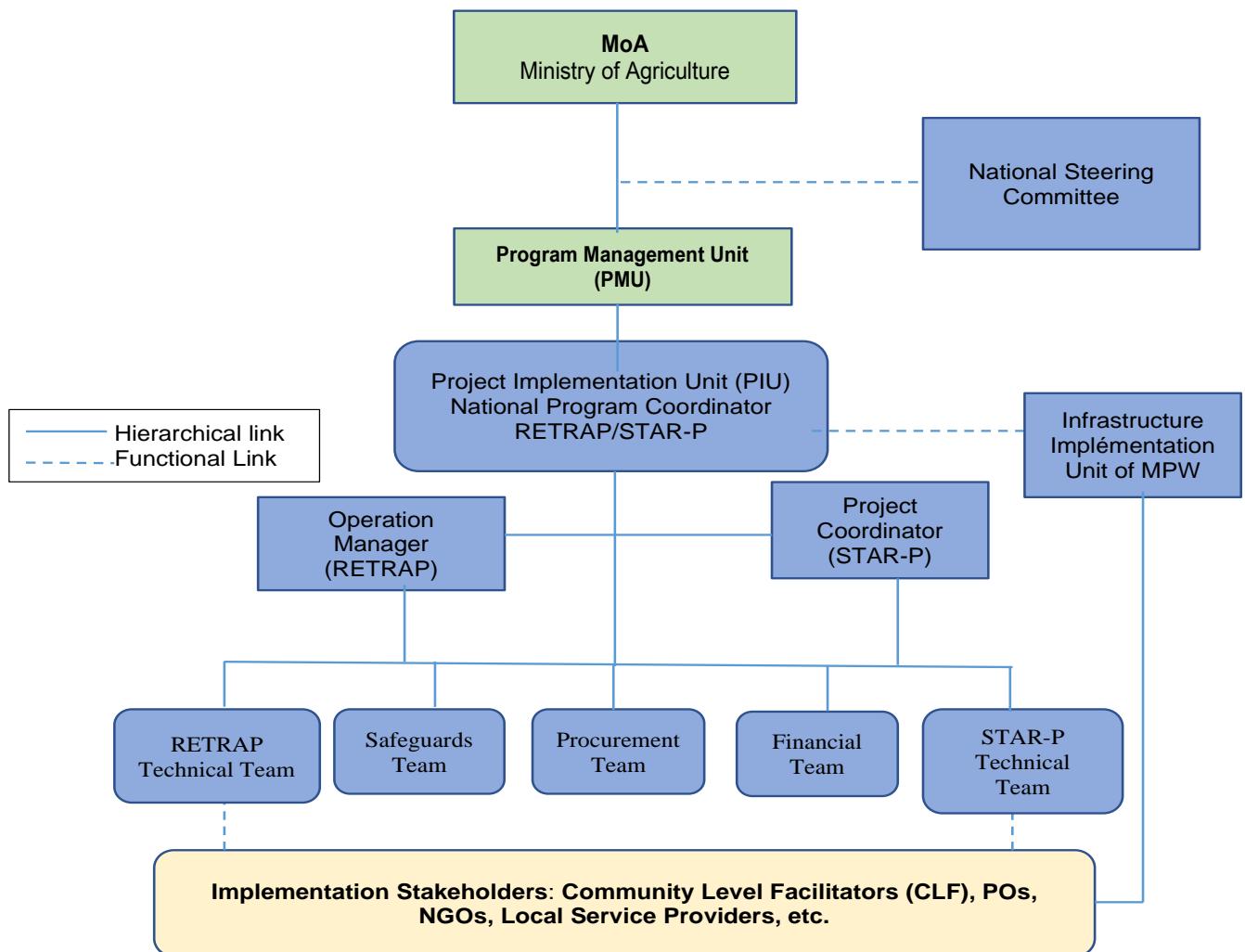
1. **Overview.** Project implementation is designed around the existing institutional framework within the public and the private sector for the agriculture sector development in Liberia. In this respect, at Government level, MoA has the overall responsibility for the project implementation. Other entities involved in project implementation are: (i) the Ministry of Commerce and Industry (MoCI) for activities focused on connecting producers to traders and agri-processors and supporting the rehabilitation and standardization of quality certification laboratories; (ii) the MPW to carry out activities related to road infrastructure. The IIU of MPW, which is implementing the IDA-financed transport projects, will be responsible for implementing the RETRAP civil works; (iii) the Ministry of Finance and Development Planning to carry out project activities related to policy coordination among ministries; (iv) CDA for project activities designed to strengthen capacity (leadership, management, governance) in producer organizations, including cooperatives; and (v) Liberia Agriculture Commodity Regulatory Agency on project activities to strengthen regulatory functions and set product standards.
2. **Project oversight and orientation.** Given the nature and complexity of such a program in managing activities that involve a number of different actors in the value chain (government agencies, producers, processors, traders/exporters and others) and the need to expand collaboration and cooperation amongst them – an inter-ministerial national Project Steering Committee will be established. It will be chaired by the Minister of Agriculture or her/his representative. Its main functions and responsibilities will be to: (i) advise the project on strategic directions and support activities to be provided; (ii) approve the project annual work plan and budget (AWPB); (iii) ensure the effective collaboration and cooperation between all key stakeholders; and (iv) advise on the effectiveness of the ongoing activities, including any adjustments that need to be made to the annual work plan. It will be composed of- but not limited to- representatives of all relevant public ministries and agencies, private sector organizations, other non-state actors (such as the National Chamber of Commerce), FBOs, and women's and youth organizations. The Steering Committee is expected to meet twice each year to review the semi-annual reports that will be prepared by the PIU.
3. **PMU and PIU.** MoA will have overall responsibility for executing the project through the PMU, which was established under MoA to prepare and manage externally funded projects and programs³⁰. For the implementation of RETRAP, the PMU will rely on the strengthened PIU to ensure planning and budgeting of project activities, management of project agreements, coordination of project implementing agencies, FM and procurement, technical supervision and quality control, gender and social inclusion, environmental and social safeguards, and M&E. The PIU under a National Program Coordinator will be strengthened to support the implementation of RETRAP and STAR-P. Additional staff to support the implementation of RETRAP include: (i) an Operations Manager – Head of the RETRAP team; (ii) Procurement Specialist; (iii) Project Accountant; (iv) Environmental Specialist; (v) Social Development and Gender Specialist (vi) M&E Specialist;(vii) MIS Specialist; (viii) Agribusiness Specialist; (ix) Infrastructure Specialist; (x) livestock development specialist; (xi) a crop development specialist; and (xii) administrative support staff. All staff of the PIU will be recruited on a competitive basis taking into consideration their qualification and experience. The Infrastructure Implementation Unit of MPW, which is implementing the IDA-financed transport projects.
4. The PMU will ensure that the PIU complies with all legal and mandatory procedures stipulated in the RETRAP Financing Agreement, including regular reports, audits, and safeguard compliance.
5. Additional implementation support (including M&E) at the county level will be provided by the CLFs working with county focal officers and district officers. The county focal officers will coordinate project activities, ensure that project

³⁰ The PIUs of all externally funded projects operate under the coordination of the PMU.



funds are used in compliance with RETRAP eligibility and targeting guidelines, and ensure that work plans are prepared, budgeted, and implemented in a timely manner. In each county, the Project will engage the services of at least two to work alongside technical service providers to provide outreach, organizational development, and technical advisory services to beneficiary producer organizations. Figure A2.1 below describes the organizational structure of the Project.

Figure A2.1: RETRAP Simplified Institutional and Implementation Arrangements



6. MoA is preparing a comprehensive PIM, which will detail the organizational and technical procedures that will govern the implementation of RETRAP, including FM, procurement, environmental and social safeguard management, M&E, and the GRM. The GRM will allow the PIU to address grievances in a timely manner. Separate Administrative, FM, and M&E manuals have been prepared. More specifically, the PIM includes: (i) detailed fiduciary and technical procedures regarding co-financing of business plans (investment subprojects), including control mechanisms and remediation steps for their implementation; (ii) the process for establishing private partnerships (including Productive Alliances) and the development, analysis, review, and implementation of business plans (for investment subprojects supported by matching grants); (iii) clear eligibility criteria for grants and beneficiaries (including environmental and social safeguard



considerations) and the processing cycle, timing, and complaint-handling mechanisms for grant proposals; (iv) remedies for non-compliance and abuse of funds provided through matching grants; (v) training of FBOs and other stakeholders prior to implementing business plans supported by matching grants; and (vi) templates for matching grant agreements, incorporating good governance and transparency clauses, as well as complaint-handling mechanisms for matching-grant candidates.

7. Complementarity with Other Interventions and Institutional Alignment. RETRAP will pursue maximum complementarity and adapt proven approaches developed in similar projects financed by the WBG and other development partners that are actively engaged in the agricultural sector in Liberia, including: (i) the STAR-P (P160945). STAR-P focuses on addressing critical market failures limiting the development of the rice, oil palm, and horticulture value chains with the objective of increasing smallholders' agricultural productivity and commercialization of production for those value chains in selected counties of Liberia. The project envisions increasing agricultural productivity and promoting smallholder commercialization by facilitating private sector investment in the selected value chains and fostering productive links between smallholder farmers and selected agribusiness firms. The project is closing on November 30, 2024. (ii) *the Liberia Forest Sector Project* (P154114). The LFSP is supported through a US\$4.5-million grant for eight years (2016–23). Its objective is to improve the management of and increase benefit-sharing in targeted forest landscapes of Liberia; (iii) *the SAPEC Project*. The World Bank co-finances SAPEC with AfDB³¹ under a GAFSP/World Bank grant of US\$46.5 million to finance irrigation works, marketing infrastructure, and capacity building for relevant agricultural institutions. The project aims to reduce rural poverty and household food insecurity through sustainable increases in the incomes of smallholder farmers and rural entrepreneurs, particularly women, youth, and the physically challenged. The project will be closing on June 30, 2021; and (iv) IFAD *Rural Community Finance Project* and two phases of the *Tree Crop Extension Project*. The Rural Community Finance Project (financed through a loan and grant totaling US\$10.86 million) seeks to improve access to rural financial services on a sustainable basis to mobilize development of the rural sector. The development objective of both phases of the Tree Crop Extension Project is to improve incomes and climate change resilience of smallholder cocoa producers, particularly women-headed households, youths, and FBOs.

A. Project Monitoring and Evaluation

8. M&E responsibilities, staff, and systems. The PIU will have overall responsibility for the project's M&E system and work closely with CLFs to monitor project results, including output and outcome indicators. The PIU will also work with relevant ministries, departments, agencies, and other government institutions, research institutes, private sector actors, and other projects to support monitoring and reporting tasks.

9. The project will be staffed with a qualified M&E Specialist with appropriate technical knowledge and experience to manage the daily activities of the project M&E system. Data will be collected primarily by CLFs, under the supervision of the M&E Specialist, in each participating county.

10. The M&E system will make use of an MIS to manage data and provide real-time information to assist the project in identifying problems, analyzing trends, and increasing overall efficiency and performance. The MIS will incorporate outcome and output indicators for each component and subcomponent, performance indicators for all key project activities, a gender tracker, and safeguard indicators. For all indicators, the MIS will provide clear guidance on units of measure, frequency of data collection, data collection responsibilities, data source/methodology, definitions, and formulae. Reporting templates will also be available through the MIS where appropriate.

(a) AfDB provides US\$6.4 (11.74 percent) of the financing for **SAPEC** for civil works relating to feeder roads.



11. The project will collect both qualitative and quantitative data relevant to the Project. Data will be collected at the beginning of the Project to establish a baseline, against which subsequent data will be measured. Farmer field books, surveys, project completion reports, training logbooks, grant proposals, and other data sources will be used to regularly inform key performance indicators, gauge the dynamics of the agri-business linkages, and monitor implementation progress. The baseline information would be established not later than 3 months after project effectiveness and on completion of the on-going baseline survey. A final survey will be conducted to assess the achievement of project targets and inform government project completion reports.

12. The Project is required to prepare a quarterly report of progress or achievement against project targets for submission to the World Bank. The progress report will contain data on progress by component, a populated results framework, data on disbursement and use of funds, and a list of the implementation challenges faced. The progress report will be used for decision-making by the project.

13. The M&E system will encompass three distinct and complementary M&E elements. These are: (i) *Performance monitoring*. The main objectives of performance monitoring are to: (i) assess and facilitate implementation processes of the project at all levels, including performance on output and process indicators; (ii) assist in managerial decision-making by providing real-time factual and verifiable data; and (iii) identify, analyze, and share lessons learned at each level of project operations; (ii) *Outcome assessment*. The objective of the outcome evaluation will be to establish the net contribution of the project to the intended target population as highlighted in the development objective. The evaluation will measure the socio-economic outcomes of interventions by comparing final indicator values with baseline data collected for "project" and "control" areas/group. It will include beneficiary assessments; and (iii) *Knowledge management and learning exchange*. The M&E system will enable the PIU to capture, report, and share lessons on the strengths and weaknesses of the project in real time to facilitate adaptive-management strategies and promote successful outcomes. Process monitoring will feed into adaptive-management techniques and provide other projects with valuable information and guidance.

14. **Semi-annual and mid-term evaluation.** The World Bank will conduct semi-annual supervision missions to evaluate implementation progress and identify and address issues affecting progress. The World Bank will also carry out a mid-term evaluation focusing on: (i) progress in achieving the development objectives; (ii) the functioning of institutional arrangements; (iii) the efficacy and usage of the M&E system itself; and (iv) reviewing and adapting plans and strategies for the remainder of the project. The mid-term review will be conducted after two and one-half years of project implementation.

15. **End-of-project evaluation.** A final evaluation will be conducted toward the end of the project to assess the achievement of expected project results and draw lessons that can be applied to an expanded or similar project. An Implementation Completion and Results Report will be prepared following the project's end-of-project evaluation.

16. **Impact evaluation.** An impact evaluation will be conducted to analyze the relative cost-effectiveness of project interventions. It will complement the information gathered through the M&E system and will address several specific questions as follows: (i) the successful Project interventions in helping beneficiaries to start and grow successful and sustainable agribusinesses; (ii) the specific activities have been most helpful to beneficiaries; (iii) the impact of project-supported businesses on outcomes such as household income and overall household livelihoods and welfare, productivity, adoption of adaptive practices and systems and service delivery capacity; (iv) the difference in impact of the program for women, youth, and men, and what are the main variables affecting those differences; and (v) the variance and causality of impact of the program across various demographics, stratified by socio-economic status. The impact evaluation will be designed in collaboration with key project stakeholders based in various counties.



B. Financial Management

17. **Planning and budgeting.** The FM assessment reveals that a budgeting system is in place at the MoA PIU STAR-P to ensure smooth implementation of the project and achieve the development objectives. The PIU will be required to collaborate with the MPW IIU to prepare and submit an AWPB to the World Bank for no objection no later than two months before the beginning of each fiscal year of the GoL (which runs from July to June). The project management team will monitor implementation progress against the AWPB for the planned project expenditures under each disbursement category and project component. A budget committee will be established to coordinate budget preparation and tracking of financial performance.

18. **Accounting and maintenance of accounting records.** For accounting and financial reporting, the Project will use the TOMPRO accounting system currently in use at the PIU. The TOMPRO accounting software is expected to be adequate for the accounting purposes of the project. Even so, progress in using this system will be closely tracked by the FM Specialist on the World Bank team, who will identify and develop measures for mitigating any challenges that may arise with the TOMPRO system.

19. **Fund flow and disbursement.** Adequate fund flow arrangements will be put into place and were agreed upon during negotiations. Funds will flow into a Designated Account in a commercial bank in Liberia acceptable to the World Bank. The Statement of Expenditure or IFR projection method of disbursement will apply to the Project. Other methods of disbursement will include advances, direct payments, special commitments, and reimbursements. Payments made against advances would be secured against bank guarantees by a commercial bank and or bonds acceptable to the World Bank.

20. Within the PIU, the FM Specialist will be responsible for preparing the quarterly unaudited IFRs, which will be submitted to the World Bank 45 days after end of each fiscal calendar quarter. The IFR format currently used by other World Bank–financed projects in Liberia has been customized for RETRAP. The Project will also prepare annual financial statements at the end of the Project in accordance with International Public Sector Accounting Standards (IPSAS)—cash basis. The financial statements will comprise, at a minimum: (i) sources and uses of funds (summary of expenditures shown under the main program headings and by main categories of expenditure for the period) and (ii) notes to the financial statements, including background information on the Project, the accounting policies, detailed analysis and relevant explanation of the main accounts/major balances, and so on. In addition, the Project will provide, as an annex to the financial statements, an inventory of fixed assets acquired, organized according to asset class, date of purchase, location, and cost.

21. **External audit arrangements.** Annual audits of the Project will be conducted at the end of each GoL fiscal year. The GAC will conduct the external audit as required by law. Alternatively, other independent and qualified audit firms, acceptable to the World Bank, could be selected to carry out the audit of the project. The selection of auditors other than GAC will be done on a competitive basis, in accordance with World Bank procurement guidelines, and occur within six months of project effectiveness. Terms of Reference for the auditors will be cleared by the World Bank. The Project financial statements, including movements in the designated accounts, will be audited in accordance with International Standards of Supreme Audit Institutions when conducted by GAC or in accordance with the International Standards on Auditing when conducted by other firms. The external auditor will issue a single opinion to cover the project financial statements in accordance with World Bank audit policy. The auditors' report and opinion with respect to the financial statements, including the management letter, will be furnished to the World Bank within six months after the end of each fiscal year. The annual audited financial statements of the project will be submitted to the World Bank six months after the end of the government's fiscal year (by December 31 each year).



22. **Disbursements.** The Project will use report-based disbursements at effectiveness. A flexible ceiling will be applicable to the project Designated Account. The ceiling will be derived from the approved AWPB and will be equivalent to six month's expenditure forecasts. Details of the disbursement arrangements will be in the Disbursement Letter.

23. **Staffing.** The Finance Department of the established STAR-P PIU is headed by a FM Specialist who is a Chartered Accountant. He is supported by an Accountant (to be hired) and an Assistant Accountant. With the coming of RETRAP, an additional qualified Accountant and Assistant Accountant will be hired to enable the Finance Department to deal with the increased workload and portfolio. Salaries and operational costs of the Finance Department will be shared between projects on a pro-rata basis. The Terms of Reference for these additional staff will be shared with the World Bank for no objection.

24. **Internal Controls and Audit.** The Internal Audit department in MoA will establish internal control procedures and processes that ensure that appropriate personnel approve transactions. Adequate segregation of duties between approval, execution, accounting, and reporting functions should be in place. The Internal Audit Unit that is currently in use will continue to be used for the internal audit of the project. Internal auditors are supposed to submit internal audit reports to the World Bank 45 days after the end of every six months (that is, in September and March). Internal Audit. The internal audit function to includes (i) random and risk-based spot checks; (ii) ad-hoc technical audits; and (iii) a report which identifies the internal controls weaknesses and recommendation.

25. **Verification and oversight procedures** exist to assure satisfactory implementation of all project components, including: (i) the accuracy of the beneficiary selection mechanism; (ii) monitoring of milestones achievement and other requirements; and (iii) verification of payments. The verification and oversight processes in place is designed to address potential implementation errors, fraud, and other irregularities and to continuously improve implementation and oversight procedures.

26. **Risk.** The overall FM risk is assessed as *High*, but if the recommended risk-mitigation measures are put into place, the residual risk rating is reduced to *Substantial*. These measures include use of the STAR-P FM system in the PIU/MoA, management of FM services by the existing project FM Specialist (STAR-P), who has experience with World Bank-financed projects, and strengthening of on-the-job training for Internal Auditors at the PIU and for staff of the PIU Finance Department. The PIU will maintain financial records for the Project and, as noted, will submit to quarterly unaudited IFRs to IDA 45 days after the end of each quarter. In addition, project management will submit the audited annual financial statements of the Project six months after the end of each fiscal year, in accordance with the legal covenants to be agreed upon for the Project.

27. **FM implementation support plan.** Supervision of FM will be consistent with a risk-based approach and involve collaboration with the World Bank project team, Loans, and Procurement. The intensity of supervision will be based initially on the FM risk rating in this PAD and subsequently on the updated FM risk rating assigned during implementation. On-site review will cover all aspects of FM, including internal control systems, the overall fiduciary control environment, and the tracing of transactions from the bidding process to disbursements, as well as a review of Statements of Expenditure. Additional supervision activities will include desk review of IFRs, internal audit reports, audited annual financial statements, and management letters; timely follow-up of issues that arise; and updating the FM rating in the Implementation Status and Results Report and the Portfolio and Risk Management (PRIMA) system. The World Bank project team will monitor the timely implementation of this FM implementation support action plan.

C. Procurement

28. **Procurement parameters and assessment.** Procurement for the project will be carried out in accordance with the procedures specified in the "World Bank Procurement Regulations for IPF Borrowers" (Procurement Regulations), dated July 2016, and revised in November 2017, August 2018, and November 2020; the World Bank "Guidelines on Preventing



and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants," dated October 2006, and revised in January 2011 and July 2016); and provisions stipulated in the Financing Agreement.

29. Procurement implementation arrangements. Procurement under this Project will be carried out by the STAR-P PIU within the PIU of MoA. Owing to the considerable additional procurement activity envisioned under the proposed project, the staffing arrangements for procurement will include a competitively recruited National Procurement Specialist and a Procurement Assistant, who will collaborate with staff in place for STAR-P (a National Procurement Specialist and International Procurement Specialist, competitively recruited and cleared by the World Bank).

30. Procurement capacity assessment and mitigation measures. The procurement capacity of MoA was assessed by the World Bank team during project preparation. Through STAR-P and LSFP, MoA is already familiar World Bank procurement procedures. The proposed Project will be headed by an experienced Operation Manager, reporting directly to the National Project Coordinator for STAR-P, who also reports to the Deputy Minister, Planning and Policy. The assessment reveals the following weaknesses that could adversely influence project implementation if not mitigated: (i) procurement staff, despite their experience with World Bank-funded projects, still have gaps in knowledge and experience of carrying out procurement in accordance with the World Bank Procurement Regulations, rules, and procedures, particularly in respect of the New Procurement Framework; (ii) the PIU have limited procurement capacity in view of the addition of RETRAP to STAR-P; (iii) the PIU have limited knowledge of contract management in a context of increasing numbers of contracts in projects managed by MoA; (iv) inadequate experience in procuring high-value, high-risk infrastructure/works contracts and supervision consulting services; small market in-country which has created a limited number of service providers to compete for bidding opportunities; and (v) the large number of post-review contracts in view of current prior-review thresholds.

31. The proposed mitigation measures include: (i) providing procurement training for PIU staff during project preparation and immediately after effectiveness, with constant support during implementation phase to ensure compliance with the World Bank Procurement Regulations (training will be continuous and conducted by World Bank Procurement Specialists); (ii) recruiting an additional qualified National Procurement Specialist and a Procurement Assistant to support the increased administrative responsibilities; (iii) updating the PIM to reflect the needs of the project and current operational/procurement environment; (iv) providing a high-volume scanner with internet connectivity to the PIU to enable migration from manual to electronic documentation and record keeping; (v) providing appropriate training on contract management to PIU staff during the initial 18 months of project implementation; (vi) requiring the IIU Procurement Specialist and MPW engineers to provide procurement and engineering support on all works procurement, and providing training for PIU staff on the procurement of works and selection of consultancy services; and (vii) the procurement team will be conducting effective market sounding and analysis to ensure adequate competitive bidding during implementation; and (viii) carrying out regular implementation support missions and conducting annual procurement post review by the World Bank. In view of the identified procurement risks and associated mitigation measures, the assessment rated the overall procurement risk as **Substantial**; these risks will be monitored by the World Bank as project implementation progresses.

32. Filing and record keeping. The Procurement Procedures Manual will set out detailed procedures for maintaining records, using an electronic document management system that will provide ready access to project procurement records for audit and post review.

33. Project Procurement Strategy for Development (PPSD). Collaboratively, PPSD has been prepared by MoA and IIU. The strategy was prepared with support from the World Bank. Information have been provided on market survey and analysis of potential contractors and suppliers available for the proposed procurement scopes, an assessment of the operational context and institutional capacity, and findings of the procurement risk analysis. Based on the assessment, the PPSD has recommended procurement arrangements for the proposed project and associated Procurement Plan; detail



the procurement scope for IDA financing; and describe how procurement activities will support achievement of the PDO and deliver the best value for money under a risk-managed approach. Since a large amount of project funding will be used for road construction, the IIU has provided support in sounding the construction market in Liberia. The availability of international and national construction firms was covered in the PPSD. The Borrower has sound knowledge of markets in the agricultural sector, since it has been working in the sector for many years.

34. World Bank review. The World Bank has reviewed the outputs of the procurement strategy developed by the Borrower and agreed on the proposed procurement arrangements for the project. The procurement methods and review thresholds are subject to World Bank review and modification throughout the project period based on the procurement performance and risk rating of the project. The World Bank will provide official notice of such changes in a timely manner to ensure smooth implementation.

35. Procurement thresholds. The World Bank's "Guidance on Thresholds for Procurement Approaches and Methods by Country," dated August 25, 2016, will be used. These thresholds apply to all procurement activities regardless of their procurement or selection method. There is no automatic requirement to undertake prior review for direct selection for value less than these thresholds. These thresholds are for the purposes of the initial Procurement Plan for the first 18 months. The thresholds will be revised periodically.

36. Procurement Plan. The PIU has prepared a Procurement Plan for the first 18 months based on the findings and recommendations of the PPSD. The Procurement Plan will be subject to public disclosure and will be updated regularly or as needed. The updates or modifications of the Procurement Plan will be subject to World Bank prior review and no objection. For activities that require competitive procurement on the open international market, the World Bank will arrange for online publication of the such packages, the Procurement Plan, and updates on the World Bank's external website and UNDB (United Nations Development Business) directly from the Systematic Tracking of Exchanges in Procurement (STEP) system of the World Bank, while the PIU will publish on the e-mansion and in local newspapers.

37. Monitoring by STEP. Through STEP, World Bank will consolidate procurement and contract data to monitor and track all procurement transactions. STEP allows comprehensive information to be maintained on all prior and post review contracts for goods, works, technical services, and consultants' services awarded under the whole project, and it makes this information available automatically and systematically on a real-time basis whenever required. For example, STEP makes it possible to obtain: (i) the reference number indicated in the Procurement Plan and a brief description of the contract; (ii) the estimated cost; (iii) the procurement method; (iv) timelines of the bidding process; (v) the number of participating bidders; (vi) the names of rejected bidders and reasons for rejection; (vii) the date of contract award; (viii) the name of the awarded supplier, contractor, or consultant; (ix) the final contract value; and (x) the contractual implementation period.

38. Publication of procurement information. The Project will follow World Bank policies on publication of procurement information as set forth in the World Bank Procurement Regulations.

39. Procurement post review. Contracts below the prior review thresholds will be subject to annual post review by the World Bank team according to procedures set forth in the Procurement Regulations. The rate of post review is initially set at 20 percent. This rate may be adjusted periodically based on the performance of the PIU.

40. Training, workshops, study tours, and conferences. Training activities comprise workshops and training based on individual needs and group requirements, on-the-job training, and hiring of consultants for developing training materials and conducting training sessions. Selection of consultants for training services follows the requirements for selection of consultants. All training and workshop activities (other than consulting services) will be carried out on the basis of approved annual work plans or training plans that identify the general framework of training activities for the year, including: (i) the type of training or workshop; (ii) the personnel to be trained; (iii) the institutions that would conduct the



training and reason for their selection; (iv) the justification for the training, focusing on how it will lead to effective performance and implementation of the project; (v) the duration of the proposed training; and (vi) the estimated cost of the training.

41. A detailed plan of the training or workshop describing the nature of the training or workshop, number of trainees or participants, duration, staff months, timing, and estimated cost will be submitted to IDA for review and approval before initiating the process. The selection methods will derive from the activity requirement, schedule, and circumstance. After the training, trainees will be required to submit a brief report, including a completion certificate or diploma on completion of training, indicating the skills acquired and how these skills will contribute to enhancing their performance and attaining the project objective. These reports will be provided to the project coordinator to be retained as part of the project records and will be shared with the World Bank, if required.

42. **Operational costs.** Operational costs financed by the Project will include incremental expenses, including office supplies, O&M of vehicles, maintenance of equipment, communication, rental expenses, utilities, consumables, transport, and accommodation, per diem, supervision, and salaries of locally contracted support staff. The required services will be procured using the procurement procedures specified in the PIM accepted and approved by the World Bank.

43. **Procurement Manual.** Procurement arrangements, roles, responsibilities, methods, and requirements for carrying out procurement will be elaborated in detail in the Procurement Procedures Manual, which will be a section of the PIM. The PIM will be prepared by the Borrower and agreed with the World Bank no later than 60 days after project effectiveness.

Fraud and Corruption Prevention Protocol

44. **Report on allegations of fraud and corruption.** The PIU of RETRAP, in consultation with the implementing entities, will provide the Borrower and the World Bank, at the end of each calendar semester, with a report on allegations of fraud and corruption under the project received and registered during such period, as well as the progress of and outcomes from any related investigations and any actions taken.

45. The World Bank will retain the right to conduct administrative review of fraud and corruption allegations in connection with the project. In these cases, the Borrower will cooperate fully and ensure full cooperation of relevant persons and entities including (but not limited to) the PIU/MoA, IIU of MPW/MoCI, and their officers and employees and agents, in each case, allowing the World Bank to meet with such relevant persons/entities and to inspect all of their relevant accounts, records and other documents and have them audited by, or on behalf of, the World Bank.

46. In cases where the World Bank finds some evidence of fraud and corruption, the case will be referred to the LACC through the Liberia Civil Service Agency secretariat for investigation under the relevant criminal and civil laws.

47. **Outcome of the investigation.** The Borrower shall ensure that any person or entity debarred or suspended by the World Bank is not awarded a contract under, or otherwise allowed to participate in, the project during such period of debarment or suspension by the World Bank. A record of these cases will be kept, and at a minimum will contain the data shown in Table A2.1.

Table A2.1: Data required for cases of fraud or corruption

Location	Date allegation received	Complainant	Alleged perpetrator or subject of the allegation(s)	Description of allegation	Stage of handling of allegation*	Description of progress in investigation	Outcome of investigation	Remedial actions taken

* Initial Review, Investigation, Referral, Prosecution, etc.



ANNEX 3: Implementation Support Plan

1. The implementation strategy for RETRAP is based on the assessed risks delineated in the Systemic Operations Risk-Rating Tool (SORT), as well as the assessed capacity of the national agencies responsible for implementing the project components. The implementation strategy will adopt a flexible, demand-driven approach to address challenges that might arise during implementation. This approach will be complemented by consistent, proactive outreach and frequent communication with implementing partners, particularly at the county level. This effort will be intensive in the early stages of implementation to ensure smooth rollout of interventions in participating counties. The project team will also work to facilitate the exchange of information and sharing of lessons that may be relevant to the specific circumstances of the proposed project.
2. The team will adopt an enhanced implementation support strategy that is congruent with the complex design and scale of the Project. The strategy calls for the team to continuously monitor the institutional capacity of the key implementing partners and emerging implementation risks and remain alert to the need for an early response to emerging implementation challenges. The multipronged implementation support strategy includes: (i) Joint Review Missions (on a quarterly basis and perhaps more frequently during the first year); (ii) monthly technical meetings/workshops for key PIU staff, CLFs and focal officers at the county level, and collaborating staff of MoA and its departments as required; (iii) external technical expertise on demand; and (iv) audit and fiduciary reporting (including safeguards, procurement, and FM).

A. Implementation Support Arrangements

3. Semiannual implementation support missions will set the priorities and direction for project implementation. These missions will focus specifically on reviewing the quality of implementation, the capacity of implementing agencies, and disbursement projections, and will find solutions to implementation challenges. They will also review the fiduciary aspects of the project (for example, FM arrangements and procurement undertaken) and compliance with environmental and social safeguards. The World Bank FM, procurement, and social and environment safeguard specialists will also join the regular implementation support missions to build the Borrower's capacity and ensure compliance. At the end of each mission, an Implementation Status and Results Report will summarize the achievements of results against the targets and goals in the Results Framework.
4. The supervision plan will have two phases: (i) project launch; and (ii) the supervision strategy during implementation:

- (a) **Project launch.** The PIU will convene a two-day project launch workshop designed to gauge the readiness of stakeholders at startup. The workshop will give the main stakeholders an opportunity to review and validate the underlying principles, approach, and expectations of the project; to revisit and reconfirm the project's development objectives; and clarify project requirements in areas such as procurement, disbursement, FM, M&E, and environmental and social safeguards. The agenda for the workshop will be: (i) Review the project design by component; (ii) Review the PIM; and (iii) Review implementation readiness, focusing on disbursement arrangements (opening designated accounts, authorized signatories); the Procurement Plan for the first 18 months; and M&E, including benchmarks, methodologies, and responsibilities.
- (b) **Supervision strategy during implementation.** Joint World Bank/Borrower supervision will be carried out twice every year, preceded by the Borrower's supervision mission in collaboration with the PIU, consultants supporting the project, and recruited private sector operators. The PIU will carry out continuous project supervision to monitor the progress of the project and the rate of achievement of the PDO. The World Bank



supervision team will examine implementation of the project components and provide recommendations on issues to be addressed.

5. Particular emphasis would be put on the following aspects during project implementation supervision missions:

- (a) Institutional capacity of the PIU to ensure that adequate capacity is in place at any time to carry out project activities efficiently.
- (b) Targeting of beneficiaries and M&E: regular update of the project results framework and issuance of implementation progress reports and IFRs. This entails support to the PIU in upgrading their M&E systems.
- (c) Environmental and social safeguards instruments: the World Bank team will supervise the implementation of all safeguard instruments and provide guidance to the PIU on how to address any issues that may come up. In addition, capacity building activities in the areas of environmental and social management will be provided to implementing partners at all levels.
- (d) Fiduciary management: the supervision plan for FM aspects of the project and will focus on safeguarding project resources while providing technical support to PIU.
- (e) Procurement: the focus will be on providing training to PIU staff, reviewing procurement documents and providing timely feedback; providing detailed advice on the World Bank's Procurement Guidelines; monitoring procurement progress against the detailed Procurement Plan; and monitoring that implementation of contracts is compliant with the World Bank's fiduciary guidelines as well as with contract obligations. Both the FM and PR specialists will be core members of the periodic implementation support missions; and
- (f) Coordination with development partners: the mission support will include promoting close coordination with other development partners, research institutions, NGOs and the private sector involved in the targeted value chains.

7. A project mid-term review will be conducted after two and one-half years of project implementation. The review will provide a comprehensive assessment of the progress achieved in implementation at midpoint and offer an opportunity to reflect on the project design and make any appropriate adjustments.

8. Table A3.1 summarizes implementation support at various stages of implementation. Table A3.2 presents the mix of skills required for supervision teams over the duration of the project.

**Table A3.1: Focus of implementation support at various stages of the project**

Stage	Focus	Skills needed
Before effectiveness	Technical support for <ul style="list-style-type: none"> Institutional strengthening and development and adoption of manuals and guidelines Training on guidelines, safeguards, and data gathering Timely effectiveness of the project Communications and creation of awareness 	Technical, M&E, and institutional relations; roles and responsibility management
First three months	Technical support for <ul style="list-style-type: none"> Governance, management, and accountability mechanisms Procurement training and supervision FM training and supervision E&S monitoring and reporting Institutional arrangement and project supervision Project components 	Technical, audit, M&E, procurement, FM, institutional, E&S
Up to 48 months	Technical support for <ul style="list-style-type: none"> Project components Procurement management FM and disbursement E&S monitoring and reporting Program supervision, monitoring, and reporting Peer learning 	Technical, M&E, procurement, FM, institutional, E&S team management

Table A3.2: Task team skill mix required for implementation support (over project duration)

Skills needed	Number of staff weeks	Number of trips	Comments
Task team leader	40	As required	Country office based
Co-task team leader	30	As required	HQ or country office based
Economist	30	As required	HQ or country office based
Technical specialist	30	As required	HQ or country office based
FM specialist	20	As required	Country office based
Rural Development Specialist	20	As required	Country office based
Agricultural Economist	20	As required	HQ and country office based
Public sector specialist(s)	20	As required	HQ and country office based
Operations specialist	20	As required	HQ and country office based
Social specialist	4	As required	Country office based
Environment specialist	4	As required	Country office based



ANNEX 4: Characteristics of Targeted Value Chains and Opportunities for Development

A. Selection of Value Chains

1. The value chains to be supported under RETRAP—the cassava, rubber, poultry, and pig value chains—were selected through sector scans that prioritized criteria related to development and agribusiness impacts (including job and income opportunities), potential to attract private investment, and relative ease of implementation. These value chains also have strategic (and sometimes overlapping) roles in household food security, national food supply, and their comparative advantage in regional markets. Home gardens were also selected for support under RETRAP owing to their potential to improve household nutrition and importance for women and youth.
2. The sector scans involved a detailed diagnostic conducted in collaboration with key actors in each value chain, including public institutions, research and extension institutions, and financial institutions; a wide set of market participants (producers, consumers, concessionaires, traders, processors, logistics providers, input suppliers, exporters, importers); and other stakeholders that influence these value chains (donor agencies, NGOs) and make key decisions that affect them (government departments, regulatory agencies). The diagnostic analyzed the characteristics and needs of the key value chain actors, determined the current organization of the value chain and the main actions required to improve its management and performance; reviewed the policy and institutional context and needs for reforms; and determined where the main marketing infrastructure (including, processing platforms, assembly platforms, cold storage) should be established, depending on product-specific characteristics and requirements.

B. Characteristics of the Selected Value Chains

3. The outstanding features of the four selected value chains (cassava, rubber, poultry, and pigs) are their high potential for growth (including value addition) and for creating employment.
4. **Cassava.** According to FAO, cassava is the third most important source of calories in the tropics after rice and corn. Cassava is Liberia's second most important food crop, vital for food security as well as income generation. It is grown throughout the country (the area varies by county) and is the basis for many products, such as gari, cassava flour, high-quality cassava starch, and adhesives. Cassava contributes to Liberia's food supply as a primary, secondary, or supplementary human food; as livestock feed; and as cassava starch or flour incorporated by the food industry into products for human consumption. Cassava's natural properties give cassava starch products greater clarity and viscosity than comparable starch products, which is ideal for animal feed as well as non-food products such as pharmaceuticals. The Liberia Agricultural Transformation Agenda, which seeks to create conditions for the country to achieve a higher level of economic resilience and inclusive growth, identifies cassava as a key commodity. The Government has identified agro-processing zones across the country to promote access to farm products with links to a national highway. The cassava subsector could contribute to economic growth through links to the agro-food industry, the non-food industry, and the livestock subsector. Industrial options vary widely, as cassava can be processed into more than 150 products in the categories of animal feed, starch, noodles, flour, sweeteners, organic acids, and ethanol. Most cassava farmers are women and young people, which means that development in the cassava subsector could significantly empower these vulnerable social groups.
5. **Rubber.** It is estimated that only about 188,000 of 600,000 acres occupied by rubber plantations in Liberia are currently productive. Liberia's decline as a rubber producer, despite its unique natural advantages, is a key concern,



given that rubber contributes the lion's share of national foreign exchange earnings. Rubber is grown by around 50,000 independent entities; of these, 7 are concession plantations, 1,000 are large plantations over 50 ha, and around 49,000 are smallholder plantations of less than 50 ha. The performance of the rubber subsector in Liberia lags its peers in production and value addition. A suboptimal production structure exposes the industry to severe risks. Aggressive horizontal and vertical growth is needed in the subsector to reduce the industry's exposure to risk. It is important to accelerate replanting to capture the improved global prices forecast in the next few years as new plantings reach maturity. The impact on Liberian producers of volatility in international prices of raw and semi-processed rubber can be reduced through the development of domestically produced intermediate rubber products (ribbed smoked sheets, concentrated latex) that are relatively less resource-intensive to manufacture and less subject to price volatility. In addition, the rubber industry presents a sizeable opportunity to organize the numerous smallholder producers to play an increased role in the value chain.

6. Poultry. The generic term "poultry" includes all domestic birds kept for human food production (meat and eggs), such as the chickens, ducks, guinea fowl, and pigeons commonly reared in Liberia. Poultry, and particularly chicken, is strategically important for food security, foreign exchange savings, commercial production, and employment in Liberia. Demand is growing rapidly for fresh poultry products, which are the primary source of domestically produced protein for poor households. The main impediments to increasing commercial poultry production are the lack of quality feed and technical support, poor control of poultry diseases, and deficiencies in trade logistics and marketing infrastructure. Modern poultry value chains generally include grain producers (principally maize and soybeans), feed processors, hatcheries (to produce day-old chicks), poultry producers (broilers, eggs), abattoirs (poultry meat processors), distributors (marketing feed, chicks, chicken meat, and eggs), and service providers (veterinary, credit, and extension services). Commercial poultry production requires a relatively high initial investment but offers more rapid returns compared to investments in commercial production of large livestock. Levels of production and productivity depend considerably on technical parameters, including feed analysis, balanced nutrition, and adherence to good agricultural practice (general biosecurity and biosafety procedures, in addition to disease prevention and control systems specific to the poultry value chain).

7. Pigs. As one of only a few animal species capable of converting agro-industrial by-products and household waste into quality animal protein, pigs are an attractive animal production venture for increasing numbers of smallholders in Liberia. Compared to small ruminants, pigs have a shorter production cycle, are more prolific, survive on a wide range of food and feed and yield more meat. Pig production at the household level contributes to food and nutritional security and income, particularly for women. The development of a successful pork value chain in Liberia will require producer organizations as well as individual producers to become skilled in the technical and managerial aspects of pig production, husbandry, and health. To sustain the pork value chain from producer to consumer, producers will also need to be integrated into multi-stakeholder partnerships promoted at the local, district, county, and national levels. All of these actions require a pro-poor policy focused on assisting pig producers to strengthen their position within the value chain, not only by expanding their skills in pig husbandry but by increasing their awareness of key biosecurity measures to guard against major infectious diseases like African swine fever.

8. Home gardening. Home gardening may be more limited in scale and commercial potential compared to the value-chain commodities selected for support under RETRAP, but home gardening has proven its value for food security in Liberia during food crises and periods of economic distress. This strategy may be even more important in light of the food shortage and economic disruption caused by the current pandemic, which continues to affect rural–urban food supply chains and employment. Through a home gardening initiative, individuals who are not necessarily familiar with



agriculture can gain agronomic and nutritionally focused skills to grow food, especially short-term food crops, while a crisis persists.

C. Opportunities for development for targeted value-chains

9. The value chains selected for RETRAP interventions have more potential strengths and prospects for growth in some parts of Liberia than in others. Table A4.1 lists counties where RETRAP could potentially support interventions in the selected value chains.

Table A4.1: Promising areas for RETRAP interventions, by value chain and county

Value chain products and opportunities	Counties	Strengths
Cassava Products: Fresh cassava, processed cassava, animal feed, High Quality Cassava Flour (HQCF). Opportunities: Develop large cassava producer and production cluster	Bong, Nimba, Grand Bassa, Margibi, Montserrado, Bomi, Grand Cape Mount, Grand Gedeh, Grand Kru, Sinoe, and Maryland	<ul style="list-style-type: none">• Huge market and low utilization of mill capacity• Large producer of cassava, presence of production clusters, and small-scale mills• Proposed Special Ecological Zone with strong processing capability• Highly suitable for multiplication and distribution• Bassa has warehouses available for leasing or buying
Rubber Products: Ribbed smoked sheet rubber, latex production, rubber manufacturing, rubber compounding Opportunities: Replanting programs, active concession agreements	Montserrado Nimba Bong Bomi Sinoe Maryland, Margibi, and Grand Bassa	<ul style="list-style-type: none">• High production potential and large market• Location of cocoa plantation that produces natural rubber, owned by the Liberia Company• Location of Firestone Liberia and Salala Rubber Corporation, which produce natural rubber• Location of Guthrie Rubber Plantation; the concession rights are owned by Sime Darby, a Malaysian company• Location of Sinoe Rubber Corporation, which produces natural rubber and is managed by local residents and their authorities.• Location of Cavalla Rubber Plantation, which produces natural rubber and is owned by Belgian and French interests
Poultry/Piggery	Grand Cape Mount, Bomi, Montserrado Bong, Margibi	-High population of VC actors such as grain producers (principally, maize and soya); feed processors; hatcheries (day-old chicks producer); poultry/piggery producers (broilers and eggs producer); abattoirs (poultry meat processor); distributors (marketers of feed, chicks, chicken meat, and eggs); and service providers including veterinary services, credit and extension service providers.

Source: Sector Scan-Liberia Agriculture Sector 2017, Netherlands Enterprise Agency.



ANNEX 5: Gender Gap Analysis and Action Plan

A. Gender Analysis

1. The gender analysis conducted during preparation of the proposed project concludes that women's contribution fundamentally shapes the totality of agricultural production, processing, distribution, marketing, and consumption in Liberia. Even so, structural bottlenecks restrict women to operating at subsistence levels and limit their upward mobility along agri-food value chains.
2. Women are the majority of the agricultural labor force (80 percent) and are responsible for 93 percent of food crop production. A high share of women engage in agro-processing, and within that group, 85 percent also engage in marketing and trading. Despite this level of activity, women's agricultural productivity and influence in the marketplace are weaker than men. Restrictions in women's mobility make it challenging for them to reach markets that are farther from home, and women also experience limited access to credit, business skills, voice, and agency. Their access to extension services and market information to enhance farm planning and finance is inhibited by limited use of mobile phone technology. Evidence has shown that the productivity gap between male and female farmers disappears when problems in accessing land and productive inputs are addressed for both males and females. Currently, however, women face significant disadvantages in accessing and using land because of unclear land rights, cultural norms, and inability to pay to lease land or to join a cooperative and use its land. Women face more obstacles than men do in accessing improved agricultural production and climate-smart technologies and extension services. The lack of productive capital poses additional and considerable barriers to women who would like to engage in commercial agriculture. Women often are unable to raise the collateral required by the banks to service the loans. There would be demand for financing if terms are made less demanding, hence 50 percent of the Grant Fund has been set aside for women farmers and be equipped to commercialize their production.
3. The gender analysis also provides recommendations for general and specific actions to address these gender gaps. General actions refer to higher-level objectives and those within the project set-up such as the ability to capture accurate sex-disaggregated data and enhance the institutional capacity to mainstream gender concerns.

B. General Actions to Address Gender Gaps

4. Alongside targeted actions within specific project activities to reach women farmers better, the project will adopt a holistic approach to addressing gender gaps. This will be reflected in the following actions that will be done at an institutional and system-wide level:
5. **Gender strategy.** Given that the gender analysis identifies gaps that will need to be addressed throughout the project life cycle, the recommended gender strategy is to implement specific gender mainstreaming and monitoring indicators informed by the gender analysis results.
6. **Capacity strengthening.** A gender-capacity gap is prevalent across all key units of MoA and in the PIU. Gender mainstreaming training will be undertaken. This training will build on the basic gender tools developed under STAR-P to build the capacity of government officials and project stakeholders to systematically include gender concerns and develop a common approach to tackling gender inequality and issues of women's empowerment in RETRAP. In addition, the M&E system will be strengthened to go beyond gender-disaggregated data and capture the qualitative outcomes of gender mainstreaming and indicators of women's empowerment. The project will develop a common reporting template that provides sufficient space for capturing qualitative gender-disaggregated indicators. Personnel will be allocated time and resources and provided with capacity training with to improve and adapt the M&E system.



7. Engaging men and youth. Community-level platforms to engage men and youth in dialogue and awareness campaigns will be established to focus on ensuring that women, men, and young women and men reap the most benefits as a community from RETRAP. This engagement would especially emphasize the roles of asset ownership and control and use of household income, highlighting the advantages of joint decision making in the household and emphasizing farming as a family business to address intergenerational norms. Male engagement would also aim at sensitizing men so that they can speak out against and discourage harmful cultural and religious practices that limit women's access to productive resources and participation in decision making and thus perpetuate gender inequality.

8. Traditional and religious leaders may be helpful entry points. Make greater use of traditional, religious, and community leaders as entry points for gender mainstreaming. Community members take leaders as role models. If leaders are empowered through gender training and awareness programs, the impact will trickle down slowly to the communities. Role models among the traditional leaders will be identified and prepared into gender champions who will speak out against socially constructed norms in agriculture that perpetuate gender inequality in value chains.

C. Specific Actions to Address Gender Gaps

9. Table A5.1 lists gender issues that are more specific to the activities in components in which RETRAP will operate (issues in agricultural value chains, women's participation and decision making, national programs and resource allocation, and the PIU at MoA) and suggests potential areas of intervention to address for each issue.

Table A5.1: Areas of intervention to address gender issues within the context of RETRAP

Constraints	Areas of intervention
1. Gender issues in agricultural value chains	
Production <ul style="list-style-type: none"> Women continue to face a double burden of domestic and production responsibilities. Men make major income and household decisions. Distinct roles of men and women on the farm (women perform 80 percent of weeding, cleaning, bird-scaring, harvesting, storage, and marketing; men clear the land). Customary land ownership is restricted to men and limits registration. Access to agricultural credit is limited for women. Access to agricultural extension, climate-smart technologies, and information services is male dominated. Access to inputs is urban-based and male dominated. Some crops are produced predominantly by men and others by women; for example, women are the dominant producers of horticultural crops, and men are the dominant producers of rice and oil palm. 	<ul style="list-style-type: none"> Sensitization about gender norms and women's high workloads. Training and capacity building for stakeholders about gender norms. Introduce labor-saving technology in women-dominated work, especially in weeding, harvesting, marketing. Involve male community, religious, and traditional leaders as champions of gender equality. Form, strengthen, and formalize women's producer organizations. Form women's producer and agro-based organizations on demand to receive matching grant funds as co-financing. Demonstration of women's involvement in business proposals to be used as an incentive for accessing matching grants under the LACF. Business training and registration for female entrepreneurs along the value chains. Outreach to women and youth entrepreneurship across the value chains and training them to use climate smart agricultural technologies and practices. Increase consultation with women across the value chains to facilitate the access to higher levels. Support agri-input distribution channels to reach rural women. Include women in rural extension training and activities.
Processing <ul style="list-style-type: none"> Women have limited access to mechanized processing equipment. Food processing enterprises are male dominated. Processing has socially constructed roles. More men receive specialized training in vegetable and rice production than women. 	<ul style="list-style-type: none"> Gender training for improved processing technologies. Support gender-friendly value-addition and marketing strategies. Provide targeted, tailored training in technical and business-management subjects (e.g., branding, marketing, FM). Support branding and packaging of vegetables and women-centered production to specifically benefit more women. <ul style="list-style-type: none"> Support women processors with capital, business registration, and other resources to pursue a processing business. Mobilize women out-growers and offer specialized training.
Marketing <ul style="list-style-type: none"> Marketing of horticultural produce is female dominated, and prices are dictated by buyers ("Gobashop women"). Women sell palm oil in the local market. Both men and women engage in selling. 	<ul style="list-style-type: none"> Develop market linkages for women. Encourage women in marketing male-dominated crops. Establish storage and value addition facilities for vegetables produced by women.



• Men make major decisions.			
2. Women's participation and decision making			
<ul style="list-style-type: none"> Farmers and community structures are led by men, except for token positions created for women (chair lady). Men influence final commodity pricing decisions. Patriarchy, social constructs, and religion deny women's participation space. Lack of confidence, assertiveness, and knowledge limits women. 	<ul style="list-style-type: none"> Create a space for women's groups and leadership (for example, include consultation and participation of women groups). Accompany matching grants program with specific business registration assistance to women to enable women and youth-led enterprises to better access funding. Advocate and encourage women to participate in farmer and community leadership. Establish a role models and champions of women's leadership program. Provide exchange and exposure visits to learn and build self-esteem. 		
3. National programs and resource allocation			
<ul style="list-style-type: none"> Gender-blind government projects (except for WAAPP and STAR-P). Limited capacity of ministries, staff in relevant government agencies, and commissions, and a general lack of gender awareness. Limited collaboration and capacity of the gender unit. Limited budget allocation. Minimal targeting of women in agriculture. Low political and donor will. 	<ul style="list-style-type: none"> Include a gender lens in the policy analysis and recommendations in the policy briefs to be generated by the project. Offer gender training and awareness for all agriculture departments. Strengthen and collaborate with the MoA gender unit to mainstream gender. 		
4. MoA /Project Implementation Unit			
<ul style="list-style-type: none"> Project appraisal document is gender sensitive. Outdated MoA gender strategy. Lack of a gender-specific budget. General need for improved gender awareness and capacity of implementing partners. Lack of effective use of gender mainstreaming tools. 	<ul style="list-style-type: none"> Ensure gender mainstreaming through the implementation of the gender action plan. Periodically update the gender action plan to improve implementation. Allocate gender budget to facilitate implementation of actions. Recruit a gender specialist for capacity building, strengthen the capacity of the gender unit at MoA, develop gender training and monitoring toolkits. Conduct gender training for all staff and partners. Conduct joint M&E with the M&E and MoA gender team. Develop gender-sensitive data collection tools to monitor and collect gender-disaggregated data, including data on: (i) farmers reached with agricultural assets or services (number) (CRI), disaggregated by gender; (ii) number of business development plans developed for women; (iii) number of farmers adopting improved agricultural technology, disaggregated by gender; and (iv) number of direct project beneficiaries (number), disaggregated by type and gender. Write gender-sensitive reports and communication materials. 		
Gap	Action	Indicator	Strategy Pillar
Access to agricultural credit is lower for women	Matching grant preferential 50 percent of Grant package	# of Women accessing matching grants for first time	Pillar 3: Removing barriers to women's ownership of and control over assets.
Women have less participation in organizations and in decision-making	Create the Space for women's meetings, start women's leadership program	50 percent of project beneficiaries are female	4: Enhancing women's voice and agency.

10. The Project will measure the outcome of the narrowing of the gender gap in access to finance in the following indicator: Number of women farmers accessing agricultural matching grants for the first time (Number) and women in target areas accessing investment financing for agriculture (all sources of finance) (Percentage).

11. Furthermore, the sex-disaggregated indicators including (i) direct project beneficiaries (Number) Females; (ii) farmers reached with agricultural assets or services - Female (CRI, Number); (iii) number of farmers adopting improved agricultural technology, disaggregated by gender (Number); and (iv) beneficiaries satisfied with delivery (timeliness and quality) of project benefits (percentage) disaggregated by gender (Percentage) contribute to capturing the impacts and outcomes of the comprehensive female targeted activity agenda.



ANNEX 6: Financial and Economic Analysis

A. Financial Analysis

1. Financial analyses were carried out to assess: (i) whether the targeted producers will get sufficient cash income to justify their participation in the project and thus contribute to raising the capital, credit worthiness, and business record of the Productive Alliances or SMEs in which they participate; and (ii) if the proposed financial arrangements for supporting the investment subprojects of Productive Alliances and SMEs (the combination of beneficiaries' own resources and the matching grant) will be worth the risk of other actors within the value chains; and (iii) the attractiveness to producers, processors, and other potential targeted actors of the selected value chains.

Typical enterprise models in the selected value chains (Component 2)

2. Models of typical Productive Alliances and enterprises in the selected value chains were developed for the analysis. The models feature the use of improved production methods, common planning and marketing of produce, joint procurement of inputs and services (i.e., technical and managerial advice), and in some cases joint poultry feed production to benefit from economies of scale. They incorporate reasonable technical assumptions, verified input and output prices, and assumptions related to investment and direct production costs. The models assume a typical membership of about ten persons in each alliance or enterprise. They integrate multi-annual cash flow projections, before and after grant financing. Under Component 2, it is estimated that about 12,000 enterprises will benefit directly upstream and downstream of production.

3. The enterprise models were developed by the national project preparation team between November 2020 and February 2021, with assistance from stakeholders. Their development went through several iterations that tested a range of investment options, at different enterprise scales (Productive Alliance activities like poultry feed production and joint procurement of inputs and services), using various production technologies. The resulting models and estimated number of direct beneficiaries are presented in Table A6.1.

Table A6.1: Enterprise models and estimated number of beneficiaries

S/N	Enterprise model	Number of ha/units	Number of direct beneficiaries
1	Cassava	2 ha	5,480
2	Layer enterprise	500 birds	2,000
3	Pig breeding enterprise	20 sows	400
4	Pig feedlot operation	120 pigs	600
5	Rubber production	1 ha	600
6	Vegetable (tomato) production	0.25 ha	1,200
7	Power tiller	100 units	40
8	Cassava graters/peelers	100 units	400
9	Poultry feed production	100 units	80
Total			12,000

4. As noted, the enterprise models aim to provide insight into whether the use of improved technologies and improved bulking and marketing arrangements (the “with project” scenario) are likely to attract the interest and participation of prospective beneficiaries and generate sufficient additional income for them. Data, technical, and financial results gathered in the field and obtained from official records were used to develop the models. The models for rubber production and pig feedlots relied on technical experience from recent European Union, FAO, and other donor funded projects were considered. Prices of poultry feed, improved breeds, mechanized services, establishment of small poultry and pig housing and storage infrastructure at the field level, hired labor, and outputs were based on farm gate prices. Output prices reflect inter-annual and intra-annual price variation. Household consumption, which



can represent a significant share of total farm production for smallholders, was estimated to compute cash income (net of household consumption).

5. Detailed estimates of investment costs (including broad estimates of building and warehouse size, types of equipment, and other variables) as well as direct production, operating, and overhead costs were prepared, taking into account current unit costs of civil works; poultry houses; processing equipment (including transport and initial training for operating it); office, laboratory, and other small equipment; energy (electricity, gasoil); skilled and unskilled labor (where applicable); raw materials (including purchase and transport to the Productive Alliances or feed mill); maintenance of equipment and buildings; insurance; communication and advertisement costs; and taxes.

6. The financing of investment costs (excluding capacity building and TA costs embedded in each business or alliance) was assumed to include: (i) a cash contribution from the Productive Alliance (or enterprise promoter) of at least 30 percent of investment costs; and (ii) a RETRAP matching grant (financed through IDA resources) ranging from 30 to 70 percent of investment costs. The capacity building and technical assistance costs embedded in each Productive Alliance or enterprise were assumed to be funded by a RETRAP matching grant at 100 percent. Working capital requirements were estimated for each model based on the direct production costs for the first cycle of production (for example six months of production in the case of pig breeding/feedlot fattening) and the general costs for the first year. It was assumed that working capital would consist of the Productive Alliance's own resources (10 percent of total as a minimum) and a RETRAP matching grant (covering 30–70 percent of the working capital requirement, depending on total amount).

7. The analysis was conducted for a 20-year period in constant 2020 prices. For each model, the following data has been elaborated: (i) detailed investment, financing, and estimation of amortization; (ii) presentation of technical assumptions (technical parameters such as parturition rate, prolificacy, mortality at various ages, average daily weight gain), of price assumptions; (iii) calculation of gross margin per "unit of production" detailing income/cash sales of products/by-products and direct operating costs depending on activity level (including labor, energy, and so on); (iv) production pattern (evolution of the number of block production, by block type and per year); (v) calculation of cash flow through multiplying the gross margin of each block per production pattern and deducting investment costs, general expenses (management, administration, insurance, general supply, communication and advertisement costs) as well as replacement of investments; and estimate of FIRR, Net Present Value (NPV) (at 12 percent per year discount rate) and Return on Investment (in number of years at full production); (vi) calculation of Profit and Loss Account and Profitability Ratio; and (vii) estimation of production costs of the main product.

B. Results of the financial analysis

8. The financial results from several enterprise models are presented below. Many of the models show good prospects for profitability, which should attract and motivate small-scale producers and other value chain actors. Financial internal rates of return (FIRRs) range from about 17 to 44 percent, and incremental income appears attractive for each enterprise.

Cassava production enterprise (two hectares)

9. The cassava enterprise is conceived as smallholder farm producing cassava roots for sale from stem cuttings that are procured in the first year. Thereafter, cassava stems produced on the farm will be used for planting. Other inputs to be procured annually include fertilizers and herbicides. The cassava will not be processed into starch or other products, so processing is not factored into the analysis. As the summary of economic indicators in Table A6.2 shows, with economic returns estimated at 20 percent and an NPV of US\$983.85, the investment is expected to be viable.

**Table A6.2: Summary economic indicators, 2-ha cassava enterprise**

Cassava production (2 ha)	
IRR	20%
NPV (US\$)	983.85
Benefit-cost ratio	1.39

Poultry enterprise (500 layers)

10. The 500-bird layer enterprise is conceived as a smallholder business that is nonetheless based on modern poultry production infrastructure consisting of a pen, borehole, and solar panel–inverter electricity supply, among other features. The producer will take in 22-week-old pullets and raise them for egg production. The birds will produce eggs for 12 months before they are disposed of as culled layers. Arrangements will be made for new set of 22-week-old pullets shortly before the layers are culled. In this way, production will continue throughout the year. Table A6.3 summarizes the results of the economic analysis. With estimated economic returns of 21% and NPV of US\$36,126, the investment appears highly viable if the enterprise can be kept in production all year. It should be noted that since the enterprise has been conceived as specialized layer operation, it must have arrangements in place to obtain a supply of good quality pullets at the right time.

Table A6.3: Summary economic indicators, 500-bird layer enterprise

Layer enterprise (500 birds)	
IRR	21%
NPV (US\$)	36,126
Benefit-cost ratio	1.56

Rubber production enterprise (one hectare)

11. Rubber is a perennial plantation crop that requires at least four years to become established, which means that rubber tapping can begin only in the fifth or sixth year. Because investment and operating costs will be incurred during the establishment period, it is assumed that in the first four years the smallholder will intercrop cassava to obtain some revenue from the plantation. Once the trees are established, the smallholder will produce and sell rubber latex. The analysis was carried out for a 15-year period, although data indicate that rubber trees can be tapped until the 25th year. Table A6.4 summarizes the results of the economic analysis. With estimated economic returns of 19 percent and an NPV of US\$1,237, the investment is expected to just be viable.

Table A6.4: Summary economic indicators, 1-ha rubber enterprise

Rubber production (1 ha)	
IRR	19%
NPV (US\$)	1,237
Benefit-cost ratio	1.66

Feedlot enterprise (120 pigs)

12. A 120-pig feedlot is conceived as a smallholder business that nonetheless uses modern infrastructure (a pen, borehole, solar panel–inverter electricity supply) and a high-quality/improved pig breed. The producer will take in 10-week-old piglets and raise them to a mature weight of about 35 kilograms in four months to produce lean pork. Two production cycles per annum are planned. Table A6.5 summarizes the results of the economic analysis. The economic returns to the proposed 120-pig feedlot are estimated at 20 percent, with an NPV of US\$13,559, indicated that the investment is highly viable if the enterprise can manage two production cycles per year as planned. It should be noted that since the enterprise is conceived as specialize feedlot operation, arrangements must be in place to obtain a supply of good quality piglets at the right time from breeding farms.

**Table A6.5: Summary economic indicators, 120-pig feedlot enterprise**

Feedlot enterprise (120 pigs)	
IRR	20%
NPV (US\$)	13,559
Benefit-cost ratio	1.30

Sows Breeding Enterprise (20)

13. A pig-breeding farm of 20 sows and 2 boars was conceived as a smallholder livestock business that will be based on high-quality/improved breed of pigs, modern infrastructure such as land for construction of pen, well, water pump, water tank and some implements. The farm will be operated as a specialized piggery that utilizes pure bred stock to produce piglets for sale to other farmers who will raise them in feedlots to table size (55 kg approximately). The sows are expected to farrow twice a year with each farrow having not less than 10 piglets per litter. Table A6.6 summarizes the results of the economic analysis. With estimated economic returns of 20 percent and an NPV of US\$10,696, the investment is viable. However, the farmers must be properly trained to ensure that the piglets from their farms will be of very high quality that other farmers can, without much veterinary inputs, raise them to table size.

Table 6.6: Summary Economic Indicators, 20 Sow Breeding Enterprise

20 Sows Breeding Enterprise	
Economic Internal Rate of Return (EIRR)	20%
Net Present Value (NPV) (US\$)	10,696
Benefit -Cost Ratio	1.27

Vegetable (Tomato) Production (0.25 ha)

14. A vegetable (tomato) farm of 0.25Ha was conceived as a smallholder farm business that will be based on high-quality/improved tomato seeds/seedlings, modern infrastructure such as land, well, water pump, overhead water tank and some other implements. The farm will be operated using high-quality/improved tomato seeds/seedlings and undertake at least four production cycles per annum. Table A6.7 summarizes findings of the economic analysis. With estimated economic returns of 21 percent and an NPV of US\$3,995, the investment is viable. The farmer must be sure that high-quality/improved tomato seeds/seedlings from reliable sources are cultivated.

Table A6.7: Summary Economic Evaluation Indicators, Vegetable (Tomato) Production (0.25 ha)

Vegetable (Tomato) Production (0.25 ha)	
Economic Internal Rate of Return (EIRR)	21%
Net Present Value (NPV) (US\$)	3,995
Benefit -Cost Ratio	1.35

Farm Service Model (Power Tiller)

15. A power tiller farm service business was conceived such that it will be based on a combination of a power tiller and a tractor trailer. The tractor trailer will be used to move power tiller from one location to the other where it will be used. The power tiller will be hired out to farmers who need it for land preparation, which is expected to be in operation for about 280 workdays per year. Table A6.8 summarizes findings of the economic analysis. With estimated economic returns of 22 percent and an NPV of US\$1,226, the investment is viable. The operator must be properly trained to ensure proper usage and maintenance of the equipment.

**Table A6.8: Summary Economic Evaluation Indicators, Farm Service Model (Power Tiller)**

Farm Service Model (Power Tiller)	
Economic Internal Rate of Return (EIRR)	22%
Net Present Value (NPV) (US\$)	1,266
Benefit -Cost Ratio	1.06

Farm Service Model (Cassava Grater)

16. A cassava grater farm service business was conceived such that it will be based on modern cassava grater and press. The cassava grater will be used to grate (mill) peeled fresh cassava roots while the cassava press will be used to remove water from the grated cassava roots. Cassava grater farm service is expected to provide service for a maximum of 235 days per year. Table A6.9 summarizes findings of the economic analysis. With estimated economic returns of 23 percent and an NPV of US\$705, the investment is viable. The operator must be properly trained to ensure proper usage and maintenance of the equipment.

Table A6.9: Summary Economic Evaluation Indicators, Farm Service Model (Cassava Grater)

Farm Service Model (Cassava Grater)	
Economic Internal Rate of Return (EIRR)	23%
Net Present Value (NPV) (US\$)	705
Benefit -Cost Ratio	1.04

Farm Service Model (Feed-mill)

17. A feed-mill farm service business was conceived such that it will be based on modern infrastructure – land for the construction of feed-mill house, feed-mill, generator, minitruck and some other equipment such as wheelbarrow, weighing scale. The feed-mill will be servicing poultry and other livestock farmers by milling and mixing feed ingredients based on customers' formulation. The feed-mill can also purchase feed ingredients, formulate feed ration, mill and mix the feed ingredients for livestock farmers to purchase from them. Feed-mill is expected to provide service for a maximum of 235 days per year. Table A6.10 summarizes findings of the economic analysis. With estimated economic returns of 25 percent and an NPV of US\$54,099, the investment is viable. The operator must be properly trained to ensure proper usage and maintenance from time to time.

Table A6.10: Summary Economic Evaluation Indicators – Farm Service Model (Feed-mill)

Farm Service Model (Feed mill)	
Economic Internal Rate of Return (EIRR)	25%
NPV (US\$)	54,099
Benefit -Cost Ratio	1.22

C. Economic analysis (road upgrade)

18. An economic analysis of a proposed investment to upgrade the road between Tappita and Toetown Junction was done using the HDM. Benefits considered in the economic analysis include the cost savings for road users, vehicle operation costs, and travel time costs for passengers and cargo. The economic analysis shows high economic returns on the proposed investment ranging from 17 percent (Table A6.11) to 22 percent (analysis not shown). This assessment is confirmed by a sensitivity analysis of the results, which indicates that even if construction costs increase by 20 percent and growth in traffic volume decreases by 20 percent, the road upgrade remains a viable investment.

**Table A6.11: Summary economic indicators, Tappita–Toetown road upgrade**

Upgraded Tappita–Toetown road	
EIRR	17 %
NPV (US\$, millions)	42.4
Ratio of NPV to capital costs	0.4
Net GHG emissions	100,000 tCO ₂ e, approximately 5,000 tCO ₂ e per year

D. Economic Analysis of the Overall Project

19. A cost-benefit analysis was conducted to assess the overall economic viability of the proposed project from the standpoint of the national economy. The analysis was conducted for a 20-year period, using constant 2020 prices. Financial prices and cost and benefit streams were transformed into economic values by applying conversion factors for each category of costs, eliminating taxes and transfers. Detailed calculations of economic benefits, investment costs, and economic cash flows generated by each project component are on file.

Economic benefits considered in the analysis

20. Quantified economic benefits considered in the analysis derive from: (i) economic benefit streams from the implementation of Productive Alliances and enterprises financed by the project; (ii) the marketing infrastructure; and (iii) the road construction.

Results

21. After all project costs are taken into account (including costs of roads under Component 3 and project coordination and management under Component 4), the project yields an EIRR of 19.72 percent and NPV of LRD43.1 billion (at a discount rate of 12 percent), equivalent to US\$248.34 million (at an exchange rate of LRD173.65/US\$1.0). A roughly 25-percent failure rate was assumed for the alliances and enterprises financed by the project. The project is therefore considered profitable from an overall economic standpoint.

Sensitivity analysis and results

22. A sensitivity analysis considered the following scenarios: (i) a change in switching values of the ERR of all of the enterprise models as costs increase and net benefits simultaneously fall; and (ii) the percentage change in the ERR of all enterprise models as investment costs increase by 10 percent and operating costs increase by 10 percent. Results of the sensitivity analysis indicate that the project remains viable under the various assumptions considered. In general, all enterprise models were sensitive to changes in investment costs. A 5-percent increase in either investment or operating costs reduces the project ERR to 17.8 percent. The analysis of the switching value shows that the ERR is sensitive to changes in project costs and benefits. A 10-percent cost increase reduces the ERR to 16.3 percent, indicating very strong resilience to cost increases.

E. Economic Analysis of the Overall Project with GHG Accounting

23. The cost-benefit analysis was computed once again to assess the economic viability of the project, but in these case GHG emissions were taken into consideration. The GHG accounting analysis shows that over 20 years, the project will result in a carbon emission savings of 671,353 tCO₂e (33,568 tCO₂e per year). The savings in GHG emissions further enhance the profitability and desirability of this project, as they contribute to its net revenue and ultimately to the EIRR. After considering all project costs (including project management under Component 4) and GHG accounting the EIRR at low price of carbon is estimated at 20.09 percent and at high price of carbon is 20.45 percent. This amount to a Net Present Value (NPV) of LRD 45.2 billion (at 12 percent discount rate) or US\$260.18 million (at an exchange rate of LRD173.65/ US\$1.0) under the assumption of low price of carbon.



ANNEX 7: Assessment of Climate Co-Benefits and Net Carbon Balance

A. Climate Change and Liberian Commitments

1. **Current situation.** In 2013, Liberia submitted its Initial National Communication on climate change to the United Nations Framework Convention on Climate Change. The Initial National Communication contained a national inventory of anthropogenic emissions by source and of removals by GHG sink, and it described steps that Liberia would take to achieve the objectives of the Framework Convention. Of the four non-LULUCF³² sectors responsible for national GHG emissions (estimated at 8,022 Gg of carbon dioxide equivalent in 2000), the three most important ones are the energy sector (accounting for 67.5 percent of emissions); agriculture (31.9 percent); and waste (around 6 percent). The GHGs of concern in Liberia are mainly methane (CH_4 , accounting for 51.6 percent of emissions), carbon dioxide (CO_2 , about 44.5 percent), and nitrous oxide (N_2O , 3.9 percent).³³
2. **Mitigation.** Liberia's Initial National Communication reinforces the National Energy Policy with additional long-term targets and related activities that include: (i) reducing GHGs by at least 10 percent by 2030; (ii) improving energy efficiency by at least 20 percent by 2030; (iii) raising the share of renewable energy to at least 30 percent of electricity production and 10 percent of overall energy consumption by 2030; (iv) replacing low thermal-efficiency (5–10 percent) cooking stoves with the higher-efficiency (40 percent) stoves. Liberia's long-term strategy is to achieve carbon neutrality by 2050.
3. **Adaptation.** The three priority areas for adaptation based on Liberia's National Adaptation Program of Action are: (i) enhancing resilience to increasing rainfall variability through the diversification of crop cultivation and small ruminant production; (ii) building of a national hydro-meteorological monitoring system and improved networking for the measurement of climatic parameters; and (iii) building coastal defense walls to reduce the vulnerability of urban coastal areas. Long-term adaptation initiatives will include fisheries, health, and transport, all with an integrated gender-responsive approach to ensure progress toward efficient and effective adaptive capacity and resilience.
4. **Agenda for Transformation.** The Planned Actions inserted in the Agenda for Transformation in relation to the agricultural and forestry sector are: (i) develop and promote drought-resistant, flood-tolerant, and early maturing crop species; (ii) intercropping, irrigation, and the optimization of lowland/swamp farming; (iii) pest control, including fencing farms against rodents, scarecrows to repel birds, regular weeding, and the use of high echoing bells; (iv) develop climate-resilient crop/agroforestry diversification and livestock production systems; (v) create a platform to share knowledge and experience on best adaptation practices; (vi) develop and implement agriculture and hydrological technology models and scenarios for planning; (vii) establish a gene bank of climate-resilient varieties of indigenous food crops; (viii) increase awareness and strengthen participation of local dwellers in forest conservation; (ix) protect forests and biodiversity-rich forest zones; and (x) increase the amount of forested land through reforestation of degraded land.

B. Climate Co-Benefits

5. The proposed project presents several opportunities to generate climate co-benefits, both for adaptation and mitigation, and has a strategy for reducing GHGs. The project expects to generate co-benefits at multiple stages under its various components.
6. Table A7.1 describes the climate vulnerability context; lists the project's intent and statement of purpose for addressing climate vulnerability; and outlines explicit links to WP activities. Table A7.2 presents key activities in each

³² LULUCF is the Land use, land-use change, and forestry sector.

³³ Based on Republic of Liberia (2013), "Intended Nationally Determined Contributions."



project component and subcomponent that are expected to have direct and/or indirect climate co-benefits. The final section of this annex presents a detailed GHG accounting of project interventions.

Table A7.1: Climate vulnerability context for RETRAP and project activities addressing climate vulnerability

Climate vulnerability context	<p>Liberia is situated in <i>West Africa</i>, bordering the North Atlantic Ocean to the country's southwest. It lies between latitudes 4° and 9°N, and longitudes 7° and 12°W. The landscape is characterized by mostly flat to rolling coastal plains that contain <i>mangroves</i> and <i>swamps</i>, which rise to a rolling plateau and low mountains in the northeast. Tropical <i>rainforests</i> cover the hills, while elephant grass and <i>semi-deciduous</i> forests make up the dominant vegetation in the northern sections. The equatorial climate in the south is hot year-round with heavy rainfall from May to October, with a short interlude in mid-July to August. During the winter months of November to March, dry dust-laden <i>harmattan</i> winds blow inland, causing many problems for residents. Liberia's watershed tends to move in a southwestern pattern towards the sea as new rains move down the forested plateau off the inland mountain range of <i>Guinée Forestière</i>, in <i>Guinea</i>. <i>Cape Mount</i> near the border with <i>Sierra Leone</i> receives the most precipitation in the nation. Like many other countries in Africa, Liberia faces existing <i>environmental issues</i> as well as <i>sustainable development challenges</i>.</p> <p>Liberia is particularly <i>vulnerable to climate change</i>. Because of its location in Africa, Liberia is vulnerable to extreme weather, coastal effects of <i>sea level rise</i>, and changing water systems and water availability. Based on stakeholder consultation and a literature review, the priority sectors that have experienced serious climate change impacts over the past few decades include the Economic (Forestry and Wildlife, Agriculture, Coastal Areas, Water, Fishery, Energy, Mining, Industry, Transport and Tourism); Infrastructure; Urbanization; and Social sectors (Health and Settlement).</p> <p>The effects of climate change are exacerbated by the low adaptive capacity of different sectors of the Liberian economy and the limited human, financial, and institutional capacity, technology, and infrastructure to build resilience to the shocks. For instance, climate change induced extreme events are limiting the ability of forest dependent communities to meet basic requirements for food due to a reduction in the amount of productive land and pest infestation of crops, lack of access to clean water, medicinal products, and fuel wood among other things, which they get from the forest. Climate-induced changes in rainfall patterns have disrupted agricultural systems. The temperature has direct consequences for the country, where more than 70 percent (Republic of Liberia 2010) of the population engage in agriculture as their main livelihood activity, with rice (the nation's staple) covering a majority of the area under production (rubber and cassava coming in at second and third place, respectively). Intense precipitation could affect infrastructure, which could also lead to an increase in the amount of runoff into rivers and lakes, washing sediment, nutrients, pollutants, trash, animal waste, and other materials into water supplies. Sea-level rise and flooding in Liberia are an obvious and immediate threat to economic growth by affecting energy supply and disrupting road and transport infrastructure and settlements, as in 2007 and 2009 (USDA 2013). The rising sea level also affects food and agricultural activities, education, health, water and sanitation and social protection. For example, it is projected that about 95 km² of land in the coastal zone of Liberia will be inundated as a result of a 1-m rise in sea level. About 50 percent (48 km²) of this land loss will occur in the sheltered coast, and Inundation will be followed by shoreline retreat (Wiles 2005). Although detail studies have not been done, a few studies indicate that this situation is affecting inland, coastal, and marine fishing in terms of quantity and quality of inland, coastal, and marine aquatic resources and is affecting endangered aquatic species (Giorgio and Mohammed 2006; EPA 2006). Similarly, the adverse effect of climate change has been exerting pressure on energy accessibility and efficiency, industrial activity, transport infrastructure, wildlife, tourism, health, and settlement and urbanization.</p> <p>These climatic impacts are projected to continue during the project lifespan. The average annual temperature is projected to increase on average by 0.6°C in the 2020s and by 1.3°C by 2050. The average annual precipitation is projected to increase by 3 percent in the 2020s and show high variability without a strong increasing or decreasing trend into 2050. In West Africa, it is expected that precipitation will increase during the rainy season and that the season will experience a short delay.</p> <p>Although Liberia has participated in international and local policy efforts related to climate change, the Government has made slow progress in the development of national climate change policies, and implementation of these policies is limited, especially at the sectoral level. However, Liberia ratified the Paris Agreement in 2018 and launched the National Policy and Response Strategy on Climate Change. The strategy aims to reduce the vulnerability of agricultural systems to risks related to climate change through direct and indirect support to farmers.</p>
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Statement of purpose / intent	The project aims to improve the country's agriculture and forest resilience and competitiveness (and rural household income and nutrition) through increased production and productivity, with an enhanced focus on water management, livestock development, farm waste management, post-harvest management, storage, marketability, and enterprise development for the creation of off-farm employment opportunities. Based on current and expected risks and vulnerabilities posed by climate change, the project seeks to improve smallholders' climate resilience, leading to increased and more consistent quantity, quality, and sustainability of their supply of agricultural products to distribution channels. The project will also provide farmers, farmer cooperatives and groups, policy makers, and local and regional financial institutions with technical assistance to promote an adaptive, climate-smart agricultural production system. Finally, the project will make an effort to reduce, limit, or sequester GHG emissions to reduce the risk of climate change.
Link to project activities	Adaptation and mitigation approaches have been an integral part of the project design for increasing resilience against climate risks. The project will address low levels of awareness, capacity, productivity, and access to credit among climate-vulnerable small farmers. In addition, the project will support institutional and policy reforms within key government ministries and departments (Agriculture, Commerce and Industry, Finance and Planning, Public Works) to build institutional capacity for assessing and addressing climate risks and vulnerabilities. A range of training programs relating to climate resilience, including the adoption of climate-resilient technologies and cropping practices, are planned at several levels (farmers, agricultural technicians, rural extension services, financial institutions, and public institutions), with an emphasis on women and youth. By bringing farmer groups together with the private sector to form Productive Alliances, the project will substantially scale up introduction and adoption of CSA practices and technologies; promote safe, nutritious food production; and reduce post-harvest losses in a sustainable manner.

**Table A7.2: RETRAP adaptation and mitigation climate Co-Benefits by project component**

Activities	Adaptation actions	Mitigation actions
Component 1: Improving the Enabling Environment for Agribusiness Development (US\$6 million)		
<i>Improving public agribusiness services (US\$2.5 million)</i>		
<ul style="list-style-type: none"> Enhance governance and partnerships across the value chains, and management of agribusiness development programs/projects. Operationalize the sector's approved acts on seeds, food safety, pesticides, fertilizers, and the national rice development strategy. Update and enforce standards in the agricultural sector. Establish an agriculture database to support monitoring, research, policy making, and resource allocation by counties. Training of professional and inter-professional entities under this component will include sessions focusing on contributions to mitigation of selected crops and poultry, thus supporting national policies. Provide governance structure and support to develop, test, and demonstrate new technologies, such as soil testing, land leveling on farms, and manuring, to develop climate-resilient, improved, and marketable varieties of certain crops and seeds. 	<ul style="list-style-type: none"> Provision of more effective knowledge and advisory support for adoption of climate-smart agriculture (CSA) will improve climate resilience of farmers. Land leveling on farms will improve crop production management and reduce climate vulnerability of crop production. Development of climate-resilient, improved, and marketable varieties of certain crops and seeds will improve climate resilience. 	<ul style="list-style-type: none"> Provision of more effective knowledge and advisory support for adoption of CSA will improve crop and resource management to reduce, in some cases, GHG emissions. Soil testing will improve the precision and amount of fertilizer used. In some cases, it may reduce fertilizer use, reducing GHG emissions.
<i>Enhancing value chain coordination and public-private dialogue (IDA US\$2.0 million)</i>		
<ul style="list-style-type: none"> Conduct stakeholder mapping exercise as the basis to put in place a representative and inclusive public-private dialogue mechanism. Support increased consultations among value chain stakeholders (especially women) through regular forums to discuss the various constraints of the sector, review and update the government sector strategy, develop a shared vision and harmonized approach to minimize potential conflict, and mainstream climate change in the programs. Establish an AGDU as an agribusiness strategy incubator and strategic advisory arm of MoA. 	<ul style="list-style-type: none"> Capacity building and awareness raising of climate -change and knowledge. 	<ul style="list-style-type: none"> Promote climate-smart value chains through the assessment of major climate risks and their impacts on the selected value chains and the development of associated climate-smart adaptation strategies. Promote energy efficiency in markets. Improve waste management and sanitation in farmer markets.
<ul style="list-style-type: none"> Support production and marketing of safe and nutritious food. Provide technical assistance and handholding through crisis response planning and CSA techniques. Social and Behavior Change Communication Program and study tours, designed to increase women's knowledge with regard to adopting CSA-related activities. 	<ul style="list-style-type: none"> Proposed activities will lead to development of farmer markets that are more resilient to extreme weather and will increase awareness of food safety. Increased competitiveness of selected value chains and reduction of imports will improve the resilience of the agricultural sector. 	
<i>Support to agricultural R&D and extension (IDA US\$1.5 million)</i>		
<ul style="list-style-type: none"> Support Research-Extension-Farmer-Input Linkage System and related activities and ensure linkages with the Agricultural Research Centre. Integrate nutritional advice and information in 	<ul style="list-style-type: none"> The system will ensure that farmers, allied institutions of MoA (such as CARI, NSL), and private sector partners have a shared platform for data access, 	<ul style="list-style-type: none"> Will lead to adoption of CSA by farmers. Research, exchange of knowledge, and study



<p>delivery of extension advice.</p> <ul style="list-style-type: none"> • Promote e-extension services in the production cluster. • Conduct adaptive research and on-farm demonstrations. • Support quality control and assurance for extension/advisory service delivery. • Strengthen capacity for delivering extension and advisory services. • Train Facilitators. • Support seed multiplication. 	<p>knowledge sharing, and to access advisory/financial benefits.</p> <ul style="list-style-type: none"> • Training of professional and inter-professional entities under this subcomponent will include sessions focusing on the contribution of selected crops and poultry to climate mitigation. • Governance structure and support to develop, test, and demonstrate new technologies, such as soil testing, land leveling on farms, and manuring, to develop climate-resilient, improved, and marketable varieties of certain crops and seeds. 	<p>tours will lead to reduced GHG emissions, build capacity at the institutional level, pass information on CSA practices to farmers, and lead to replication of those practices in other parts of the country.</p>
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Component 2: Enhancing Competitiveness and Market Access through Productive Alliances (US\$16.5 million: IDA US\$12.5 million and beneficiaries US\$4.0 MILLION)

Subcomponent 2.1: Pre-investment activities (IDA US\$2.0 million)

<ul style="list-style-type: none"> • Review existing/new community- and FBO. • Initiate a participatory village planning process. • Initiate community rapport building and mobilization for RETRAP. • Promote improved governance, organizational management, inclusion, transparency. • Build capacities of women and youth. 	<ul style="list-style-type: none"> • The activities listed will apply a climate resilience lens for all agricultural investment schemes, marketing that will help integrate and address climate and disaster vulnerabilities in planning and development decisions as well as result in the adoption and incorporation of CSA-related activities. 	<ul style="list-style-type: none"> • Capacity building and training of smallholders on climate smart investment in a holistic way.
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Subcomponent 2.2: Investment subprojects supporting Productive Alliances (IDA US\$10.5 million and beneficiaries US\$4.0 million)

<ul style="list-style-type: none"> • Improve smallholder integration in selected value chains by providing matching grants to smallholders, commercially oriented farmers, and other value-chain actors joined in a Productive Alliance, to contribute to the costs of their investment subprojects. • Investments will be designed and deployed to include improved natural resource management, integrated pest management, soil health, and CSA. • Grants to farmers for investment in productive assets and adoption of climate-smart technologies and practices. 	<ul style="list-style-type: none"> • Higher priority and additional bonus financing will be given to investment proposals by FBOs (FBOs) and agribusinesses that integrate climate-smart approaches throughout the value chain, such as intercropping and conservation agriculture (which will increase crop diversification); use of climate-resilient seeds and varieties; methods to retain soil nutrients and prevent soil erosion; improved water management for extreme warm weather; flood-resilient design of production; and efficient pest and disease management; alternative sources of energy; and water and wastage re-use systems, all of which will reduce the need to implement GHG mitigation approaches. 	<ul style="list-style-type: none"> • Improved on-farm management, good agricultural practices, and climate-smart production techniques may reduce GHG emissions. • Reduce fuel use for water pumping from improved irrigation and reduced groundwater use. • Reduce methane emissions as improved practices in production of selected crops (energy-efficient equipment, renewable energy, water conservation) will reduce the carbon footprint.
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Component 3: Marketing and road infrastructure (US\$31.5 million)

Subcomponent 3.1: Roads construction (US\$30 million)

<ul style="list-style-type: none"> • Support the rehabilitation of 40 km of the 112 km Tappita-Zwedru road. This infrastructure investment is critical for rural economic growth. It will pave the way for greater connectivity and access, and enable the creation, scaling up, and sustainability of more Productive Alliances. 	<ul style="list-style-type: none"> • This subcomponent will reinforce climate adaptive infrastructure by ameliorating the impact of climate-induced weather hazards on the safety and economy of local communities and the potential effects on last-mile infrastructure—specifically, the effects of climate-induced heavy rains and 	<ul style="list-style-type: none"> • The proposed activity has the potential for climate mitigation: Bioengineering during road rehabilitation will stabilize slopes and mitigate landslide risks, aiding in carbon sequestration and
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	<p>resulting landslides, surface run-off from slopes, and increased water flows in gullies, drainage channels, and rivers, which damage transport and market infrastructure.</p>	<ul style="list-style-type: none">reducing GHG emissions.Renewable energy and energy-saving infrastructure will be considered wherever possible, which will also reduce GHG emissions.
<i>Subcomponent 3.2: Modernization of rural markets (US\$1.5 million)</i>		
<ul style="list-style-type: none">Finance investments in value-chain and market infrastructure to enhance quality and value addition of selected value chains; specifically, build or upgrade infrastructure and facilities, including cold storage and processing facilities.Build capacity and raise awareness of post-harvest technologies, climate-resilient varieties, cold storage management, and other technologies and knowledge relevant to value addition.	<ul style="list-style-type: none">Improved infrastructure, including cold storage and processing facilities, will increase the climate resilience of the selected value chains.Greater capacity and awareness related to post-harvest technologies, cold storage management, and other technologies will increase the climate resilience of the targeted beneficiaries.	<ul style="list-style-type: none">Developing climate-smart adaptation strategies (e.g., technology to extend product shelf-life) based on an assessment of major climate risks and impacts in the on the selected value chains will enhance their competitiveness and value addition.Improved efficiency in value chain processes (e.g., energy efficient processing facilities and cold storage) may reduce GHG emissions in some cases and increase GHGs in other project activities.
Component 4: Project Coordination and Management and Contingency Emergency Response (US\$5 million)		
<i>Subcomponent 4.1: Project monitoring and management (US\$5 million)</i>		
<ul style="list-style-type: none">Within MoA, strengthened PIU for STAR-P will implement the project. It will develop and manage the M&E system and MIS, ensure compliance with environmental and social safeguards, and arrange for impact evaluations.Project coordination, M&E, and management, including developing AWPB.Develop and implement ex-ante and ex-post interventions, including early-warning systems based on production and market demand forecasts.	<ul style="list-style-type: none">PIU will contract environmental and social safeguard specialists to advise on adoption of adaptation and mitigation measures for all project activities.PIU will ensure that adequate budget is allocated to monitor climate-smart activities.Experts will advise on adoption of adaptation and mitigation measures for all project activities throughout the life of the project.Staff capacity building will include training and exposure visits.Develop adaptation and Crisis Response Plans for these risks.	<ul style="list-style-type: none">Adoption of climate-resilient activities and sharing related knowledge will strengthen the resilience of smallholder farmers to the negative impact of climate change.Climate risks will be better monitored, managed, and mitigate through project efforts to leverage MIS data for monitoring and planning.



C. GHG Accounting

7. GHG accounting assesses the net carbon balance of the proposed project. It provides an understanding of which project activities have the largest mitigation and carbon sequestration potential as well as an understanding of how the project contributes to national GHG mitigation goals.

8. **Methodology.** To estimate the impact of agricultural investment lending on GHG emission reduction and carbon sequestration, the World Bank has adopted the Ex-Ante Carbon-balance Tool (EX-ACT), developed by the FAO in 2010. EX-ACT allows the assessment of a project's net carbon balance, defined as the net balance of CO₂ equivalent (CO₂eq) GHG emitted or sequestered as a result of project implementation (a "WP" scenario) compared to a "without project" (WoP) scenario. EX-ACT estimates changes in carbon stocks (emissions or sinks), expressed in equivalent tons of CO₂ per hectare and year.

9. In cases where the roads investments exceed a threshold cost of US\$15 million, the World Bank recommends that instead of the EX-ACT analysis tool, a specialist transport specific methodology be applied to account for emission emerging from road investments. The Highway Development and Management-4 (HDM-4) tool was applied for estimating the emissions from the road rehabilitation included in the project. The HDM4 model estimates emissions from rehabilitation and construction, computing unit road user costs and emissions for a road section with 1 km length. In order to obtain the estimations, the model considers; road condition (road roughness, carriageway and surface condition), road geometry, speed adjustment factors, rolling resistance factors, road traffic, vehicle fleet accident rates, traffic flow patterns and speed flow types. The GHG accounting analysis was generated to obtain yearly transport related emission estimates per km of road intervened, allowing for future refinement in the accounting process if more detailed information is available.

10. In sum, total GHG emissions for the project were obtained by summing the net emissions obtained for agricultural investments calculated using EX-ACT and road emissions calculated using HDM4.

11. Other features of the methodology include: (i) **Geographical coverage.** The project is being implemented across 11 of the 15 counties of Liberia. The selected regions areas predominantly tropical moist climate. The dominant soil type is high activity clay soil. The project implementation phase is five years of actual implementation, and the capitalization phase is assumed to be 15 years, resulting in a 20-year implementation period, which is common in the use of EX-ACT and aligned with the project period for the Economic and Financial Analysis (Annex 6). The analysis further assumes the dynamics of change to be linear over the duration of the project. The HDM-4 model was used to estimate vehicle emissions under two scenarios over a 20-year analysis period (that is, with and WoP investments). The total length of the road is 40 km. (ii) **Data sources.** The primary data source was MoA. Traffic data and road information were provided by MPW. (iii) **Change in crop and land use systems.** The project results in increased area under trees from degraded land, covering a total area of 1.6 million m². The project also includes the planting of cassava and vegetables, all carried out with improved agricultural management practices (improved water management, nutrient management, and agronomic practices, residue retention, and manure application). In the rubber value chain, the project will focus on replanting and rehabilitation. The livestock value chains will focus on poultry production (along with improved feed) and pig production (including improved animal husbandry and health). Table A7.3 presents the assumptions regarding area expansion and cropping pattern, which are also the basis for the investments. (iv) **Agricultural input use.** It is expected that the project will increase agricultural input use, mainly fertilizer and manure, while the use of herbicides and insecticides will be decreased due to improved agronomic management. Table A7.4 presents the detailed assumption regarding agricultural inputs, based on the budgets prepared for the Economic and Financial Analysis (Annex 6). And (v) **Infrastructure.** The Project will result in increased GHG emissions due to investments in new value chain infrastructure, particularly market infrastructure. It is assumed that new infrastructure will be built on about 200 m².



12. EX-ACT Results. The net carbon balance quantifies GHGs emitted or sequestered with the project (WP) compared to the WOP scenario. The EX-ACT analysis shows that over a 20-year period the project leads to overall climate change mitigation benefits of -771,353 tCO₂eq (equivalent to annual mitigation benefits of -38,568 tCO₂eq), compared to a WOP (business as usual) scenario (Table A7.5). In sum, the project is anticipated to realize significant mitigation benefits, largely arising from expanding the area under annual crops, considerably improving their agronomic management, and planting trees. Emissions largely emanate from wide-scale fertilizer application and through the expansion of poultry and pig production. These emissions are considerably offset by other investments, however.

Table A7.3: Changes in crop and land-use systems

Crop	Area (ha)			Remarks/assumptions
	Start	WOP	WP	
Annual crops				
Cassava	16,000	16,000	32,000	Doubling of the area under cassava as part of expansions
Vegetables	1,000	1,000	2,000	Doubling of the area under vegetables
Perennial/tree crops				
Rubber	3,000	3,000	3,000	Replanting and rehabilitation of 3,000 ha of tree crop
Other trees	0	0	160	Establishment of 160 ha from degraded land
Livestock				
Poultry	10,000	11,000	20,000	Number of birds doubled
Pigs	10,000	11,000	20,000	Number of pigs doubled

Table A7.4: Annual agricultural inputs applied (t)

	Before project	WOP	WP
Urea (N)	0	0	500
Compost (N)	0	0	350
Phosphorous	0	0	485
Potassium	0	0	900
Herbicides ^a	6	6	0

a Tons of active ingredient.

Table A7.5: Detailed EX-ACT analysis results

Component	Over the economic project lifetime (tCO ₂ eq)			Annual average (tCO ₂ eq/year)		
	GHG emissions of WOP scenario	Gross emissions of WP scenario	Net GHG emission	GHG emissions of WOP scenario	Gross emissions of WP scenario	Net GHG emission
	Without	With	Balance	Without	With	Balance
Land use changes						
Deforestation	0	0	0	0	0	0
Afforestation	0	-116,880	-116,880	0	-5,844	-5,844
Other land-use changes	0	0	0	0	0	0
Agriculture						
Annual	-896,316	-1,680,593	-784,277	-44,816	-84,030	-39,214
Perennial	-42,000	-42,000	0	-2,100	-2,100	0
Rice	0	0	0	0	0	0
Grassland and livestock						
Grassland	0	0	0	0	0	0
Livestock (Poultry & Piggery)	28,909	49,844	20,934	1,445	2,492	1,047
Degradation and management	0	0	0	0	0	0
Coastal wetlands	0	0	0	0	0	0



Inputs and investments	2,772	111,642	108,870	139	5,582	5,443
Fishery and aquaculture	0	0	0	0	0	0
Total	-906,635	-1,677,988	-771,353	-45,332	-83,899	-38,568

13. HDM-4 Results. For the proposed rehabilitation of the road between Tappita and Toetown Junction, the HDM-4 analysis estimated positive net GHG emissions. The estimated total net vehicle emissions for the proposed investment are approximately **100,000 tCO₂eq** over the lifetime of the project, which is equivalent to approximately **5,000 tCO₂eq per year**. The economic indicators used in the analysis are shown in Table A7.6.

Table A7.6: Details of HDM-4 analysis

	Ganta-Tappita	Tappita-Zwedru	Ganta-Zwedru
Low shadow price of carbon			
Economic Internal Rate of Return (EIRR)	27.3	16.8	21.9
NPV (US\$, millions)	127.2	42.4	168.8
NPV- to Capital Costs Ratio	1.4	0.4	0.8
High shadow price of carbon			
Economic Internal Rate of Return (EIRR)	27.1	16.7	21.7
NPV (US\$, millions)	125.2	41.2	165.7
NPV- to Capital Costs Ratio	1.4	0.4	0.8

14. Total GHG results. Over the project duration of 20 years, the project leads to overall climate change mitigation benefits of **-671,353 tCO₂eq**, which is equivalent to annual mitigation benefits of **-33,568 tCO₂eq**, compared to the WOP scenario.

**ANNEX 8: WBG Program Adjustment in Response to COVID-19 in Liberia*****Impact of the COVID-19 pandemic on the country and government response***

1. The health and socio-economic impact of the COVID-19 pandemic has been significant, but the Government's response has also been comprehensive. The situation continues to evolve therefore the full health and socio-economic impact remains fluid. Nonetheless, as of May 7, 2021, Liberia had recorded a cumulative number of 2,113 cases, of which 1,959 patients have recovered, with 85 deaths. In terms of socio-economic impact, the main channel of impact has been the disruption of economic activities following the first confirmed case on March 16, 2020, especially when the economy was under a state of emergency and lock-down. As a result, GDP is projected to contract by 2.6 percent in 2020 and the fiscal deficit is expected to widen, while food insecurity and the levels of extremely poor are expected to rise. With support from international development partners, including the World Bank, the Government has adopted a comprehensive approach. Under the health response, it has acquired the capacity to test, trace contacts, isolate, and treat. In addition, the Government has mobilized domestic and external resources to help mitigate the socio-economic impact. For example, it is implementing a nation-wide food distribution program targeting the most vulnerable households; it provided free electricity and water during the lock-down period; it will be providing loan relief to market women and petty traders; and it suspended pre-shipment inspections and import surcharges.

WBG support for responding to the crisis

2. The World Bank's program of assistance to Liberia since the outbreak of the pandemic has been adjusted in line with the WBG COVID-19 Crisis Response Approach Paper, *Saving Lives, Scaling-up Impact and Getting Back on Track*. The FY19-FY24 Country Partnership Framework (CPF)^[1] is being adjusted in two ways: first, to support the country in managing the ongoing health, social and economic crisis; and second, to strengthen the institutional foundations for an inclusive and sustainable longer-term recovery. This includes:

- *Saving lives.* The WBG's package of support to the health response so far amounts to US\$18 million, the largest by a single development partner in Liberia. An existing operation, the Regional Disease Surveillance Systems Enhancement (REDISSE) Project (P159040) has been used to provide US\$9.5 million through an existing component (US\$1.5 million) and through the activation of a Contingency Emergency Response Component (CERC) amounting to US\$8 million. In addition, US\$7.5 million has been provided under the Global MPA Fast Track Facility, through a stand-alone IPF operation, the Liberia COVID-19 Emergency Response Project (P173812). Finally, Liberia has benefited from US\$1 million disbursed from the Pandemic Emergency Facility (PEF). The support to the health response covers the key pillars of the Government's response plan, mainly surveillance, laboratory testing, case management, community engagement, and support to HR and coordination.
- *Protecting the poor and vulnerable.* The Bank is accelerating implementation of the existing cash transfer program under the Liberia Social Safety Nets (LSSN) Project (P173145). This operation originally focused on rural areas but has now been augmented by additional financing (AF) from a trust fund in the amount of US\$8.8 million from the Foreign, Commonwealth, and Development Office (FCDO) of the United Kingdom (formerly DFID). The AF will ensure that cash transfers are extended to beneficiaries in urban areas as well. The proposed REALISE operation will fill an existing gap in reaching out to informal businesses that have also been impacted by COVID-19. In addition, a CERC in the amount of US\$10 million under the Smallholder Agriculture Transformation and Agribusiness Revitalization Project (STAR-P)



(P160945) was activated, US\$5 million of which was allocated to the Government's COVID-19 Household Food Support Program (COHFSP) co-financed with the IMF. Finally, another CERC in the education sector under the Improving Results in Secondary Education (IRISE) Project (P164932) in the amount of US\$1.5 million was activated to support the safe re-opening of schools.

- *Ensuring sustainable business growth and job creation.* Under this pillar, a new operation in the amount of US\$20 million is currently under preparation, the Economic Recovery and Transformation Project (ERTP) (P171997). RTP seeks to support financial inclusion, entrepreneurship and the reforms needed to attract job-creating and sustainable private investment in response to COVID-19. In addition, a US\$55-million funded operation is also under preparation, the Liberia Rural Economic Transformation Project (RETRAP) (P175263) that will seek to boost sustainable rural agri-businesses by improving agriculture productivity and access to markets.
- *Strengthening policies, institutions, and investment for rebuilding better.* To ensure sustained recovery, the World Bank is deepening support to strengthen key institutions in the health sector as well as in other sectors. In health, the recently approved and SUF-funded Liberia Institutional Foundations to Improve Services in Health (IFISH) Project (P169641) in the amount of US\$54 million seeks to support key investments and institutional reforms in the sector to enable the country to respond more effectively to future pandemics. In addition, two DPOs are also supporting policy and institutional reforms in energy, agriculture, social protection, and public FM. These are the West Africa Regional Energy Trade Development Policy Financing Program (P171225) in the amount of US\$25 million, and the Second Inclusive Development Policy Financing Operation (P173633) in the amount of US\$40 million.

Selectivity, Complementarity, Partnerships

3. **The selected program has been identified based on the World Bank's comparative advantage, and significantly utilizes operations that are fit for purpose.** In particular, CERCs have been activated in three existing projects (health, education, and agriculture) to ensure a swift response to the pandemic. In other cases, such as in social protection, implementation of cash transfer interventions is being accelerated while AF from other partners has been mobilized to expand coverage. DPOs are being implemented to complement IPFs by strengthening policies and institutions with the aim of building back better. Finally, to accelerate implementation, strategic partnerships have been forged. For example, the World Bank has facilitated agreements between the Government, UNICEF, and WHO in the health response, as well as an agreement between the Government and the WFP for implementation of the food distribution program.

^[1] The CPF for Liberia was presented to the Board of Executive Directors on November 27, 2018. A Performance and Learning Review (PLR) of the CPF is anticipated in the final quarter of FY23 (June 2022).



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Liberia: Rural Economic Transformation Project (P175263)

ANNEX 9: Project Map

