REQUEST FOR PROJECT

FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat

1818 H Street NW

MSN P4-400

Washington, D.C., 20433

U.S.A

Fax: +1 (202) 522-3240/5

Email: afbsec@adaptation-fund.org

PROJECT PROPOSAL TO THE ADAPTATION FUND

Table of content

PART I: PROJECT/PROGRAMME INFORMATION 7

1. PROJECT / PROGRAMME BACKGROUND AND CONTEXT 7

1.1. Natural resources and climate 7

1.2. Economy, Population and Agriculture 7

a. Natural Resource Management (NRM) 10

a. Climate change 10

a. Lessons learnt from the IFAD past projects on climate resilience in the agricultural sector 18

2. PROJECT / PROGRAMME OBJECTIVES 19

3. PROJECT / PROGRAMME COMPONENTS AND FINANCING 21

4. PROJECTED CALENDAR 23

PART II: PROJECT / PROGRAMME JUSTIFICATION 24

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience 24

B. Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund 27

C. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme 30

D. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist 37

E. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund 37

The National Environment Policy of Liberia, 2002 38

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned 40

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund 41

A. Provide justification for funding requested, focusing on the full cost of adaptation reasoning 41

A. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme 42

PART III: IMPLEMENTATION ARRANGEMENTS 46

A. Describe the arrangements for project / programme implementation 46

B. Describe the measures for financial and project / programme risk management 48

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund 51

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan69

E. Include a results framework for the project proposal, including milestones, targets and indicators 72

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund....75

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs 78

H. Include a disbursement schedule with time-bound milestones....81

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY 87

Annex 1: Environmental and Social Management framework of the project 1

Abbreviations and Acronyms.... 7

Executive Summary 9

1. INTRODUCTION 11

1.1 Background 11

1.2 Rationale and Objectives of the ESMF 18

1.3 Approach and Methodology and Stakeholders Consultation 19

1.4 Disclosure of ESMF 20

1.5 Challenges and Assumptions 20

1.6 Report Structure 20

2. DESCRIPTION OF THE PROPOSED PROJECT 21

2.1 Project Area and Target Groups 21

2.2 Goal, Objectives and Impact indicators 21

2.3 Project implementation structure 22
2.4 Adaptation Fund 23
2.5 Other potential partnerships 24
2.6 Key issues identified on social and environmental management 24
2.7 Key potential impacts 25
2.8 Environmental and Social category 25
3. LEGAL, INSTITUTIONAL AND REGULATORY FRAMEWORK FOR ESIA AND AGRI-BUSINESS IN Liberia 26
3.1 Legal Framework 26
3.1.1 The Constitution of Liberia 1986: provides that, the Republic shall, consistent with the principles of individual freedom and social justice enshrined in the Constitution, manage the national economy and the natural resources of Liberia; 26
3.1.2 Environmental Protection Agency (EPA) Act, 2003: creates EPA as the principal authority in Liberia for the management of the environment and shall co-ordinate, monitor, supervise all activities in the protection of the environment and sustainable use of natural resources; 26
3.1.3 Environmental Protection and Management Law, 2003: forms the legal framework for the sustainable development, management and protection of the environment and natural resources by EPA in partnership with its stakeholders in Liberia; 26
3.1.4 EPA Regulations and Procedures: these Regulations combine both the assessment and environmental management systems and prohibit commencing an undertaking/activity without prior registration and Environmental Permit (EP) by the EPA. 26
3.2 Institutional and Policy Framework 26
The National Environment Policy of Liberia, 2002 26
The Land Administration Policy, 2015 27
3.2.7 Liberia's Intended Nationally Determined Contribution (INDC) 27
3.2.8 Global Alliance for Resilience (AGIR), 2012 28
3.3 IFAD Guidelines 29
3.3.1 IFAD Safeguard Policies 29
3.3.2 IFAD SECAP Procedure 30
3.3.3 The IFAD Climate Change Strategy (2010) 31
3.3.4 The IFAD Environment and Natural Resource Management (ENRM, 2011) Policy 31
3.3.5 Country strategic opportunities programme for Liberia 2020-2024 32
4. DESCRIPTION OF THE ENVIRONMENTAL, CLIMATE AND SOCIAL CONTEXT 33
4.1 Environmental Context 33

4.2 Climate Change Context 33
4.3 Social-economic and cultural context 36
5. REVIEW OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS 40
5.1 Potential Environmental Benefits 40
5.2 Potential negative environmental impacts 40
5.2.1 Deforestation and land degradation issues 40
5.2.2 Road construction and rehabilitation impacts: 40
5.2.3 Pollution from Agrochemical use 40
5.2.4 Dam construction 41
5.2.5 Climate change issues 41
5.3 Potential social benefits 41
5.4 Potential negative social impacts 41
5.4.1 Land Access issues 41
5.4.2 Social Exclusion and Gender inequality 42
5.4.3 Unsafe and Non-Healthy Working Conditions 42
5.4.4 Managing expectations and Conflicts resurgence 42
5.4.5 Elite Capture 42
6. ENVIRONMENTAL, CLIMATE AND SOCIAL MANAGEMENT PLAN FOR THE PROJECT 43
6.1 Introduction 43
6.2 Responsibilities 43
6.3 Outline of the Management Plans 43
6.4 Stakeholder Engagement, Community Sensitization and Expectation Management 53
6.5 Grievance Management 53
7. Review of Environmental, Climate, Social Impacts of Sub-Projects 55
7.1 Potential Impacts and Recommended Mitigation for Agri-Enterprise Projects 55
7.1.1 Cocoa Farming 55
7.1.2 Rice/Legume Farming 55
7.2 Potential Impacts and Recommended Adaptation Measures for (Market) Infrastructure Projects 56
7.2.1 Land Access 56
7.2.2 Dust, Vibration, Mudslide and Noise 57
7.2.3 Deforestation 57
7.2.4 Ground Water Contamination 57
7.2.5 Flooding/ Erosion 57

7.3 Environmental and Socio-Economic Management Framework (ESMF) 57
7.4 Analysis of Alternatives 62
8. ENVIRONMENTAL AND SOCIAL SCREENING OF SUB-PROJECTS 63
8.1 Introduction: Screening and Review 63
8.2 Screening for Eligibility 63
8.3 Screening for Environmental and Social Impacts and Climate Impacts 63
8.4 Impact Significance Rating 64
9. MONITORING OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS 65
9.1 Introduction 65
9.2 Key Performance Indicators 65
9.3 Summary of Environmental and Social Monitoring Costs 67
10. CAPACITY BUILDING AND TRAINING FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS 68
10.1 Strengthening Capacity and Improving Resilience 68
10.2 Training Topics 68
10.3 Target Audience and Approach 68
Annex 2: Screening for eligibility 72
Annex 3: Screening for Agric Enterprises 74
Annex 4: Screening for Market Infrastructure 78
Annex 5: Climate Screening Form 80
Annex 6 - Environmental and Social Guidelines for contractors 83
Annex 7: Detailed Costing of Environmental and Social Monitoring costs ... **Error! Bookmark not defined.**
Annex 8: List of Stakeholders Consulted 87

PART I: PROJECT/PROGRAMME INFORMATION

PROJECT CATEGORY:	**REGULAR**
COUNTRY:	**LIBERIA**
TITLE OF PROJECT:	**BUILDING CLIMATE RESILIENCE IN LIBERIA'S COCOA AND RICE SECTORS**
TYPE OF IMPLEMENTING ENTITY:	**MULTILATERAL IMPLEMENTING ENTITY**
IMPLEMENTING ENTITY:	**INTERNATIONAL FUND FOR AGRICULTRUAL DEVELOPMENT**
EXECUTING ENTITY:	**MINISTRY OF AGRICULTURE**
AMOUNT OF FINANCING REQUESTED:	**US$ 9,909,678.68**
MAIN PARTNER:	**ENVIRONMENTAL PROTECTION AGENCY (EPA), MINISTRY OF YOUTH AND SPORTS**

1. PROJECT / PROGRAMME BACKGROUND AND CONTEXT

1.1. Natural resources and climate

1. Liberia is a country in West Africa, bordering Sierra Leone, Guinea and Cote d'Ivoire. It has a land mass of about 110,000 km2. Liberia has a tropical climate and according to the Koppen climate classification (a system used to represent the different climate regions of the world based on local vegetation found within the environment), the climate is classified as AW (Tropical wet and dry or savanna climate; with the driest month having precipitation less than 60 mm (2.4 in) and less than with an average temperature of 25.8°C and an annual precipitation rate of 1744mm. The driest month is February, with 1 mm of rainfall. Most precipitation falls in September, with an average of 375 mm. The warmest month of the year is April, with an average temperature of 27.4 °C. In December, the average temperature is 24.7 °C. It is the lowest average temperature of the whole year

   The Mano and Morro rivers in the northwest and the Cavalla in the east and southeast are major rivers and form sections of Liberia's boundaries. Other major rivers are the Lofa in the north and, moving southward, the St. Paul, St. John, and Cestos, all of which parallel each other and flow perpendicular to the coast. The integrity of all these natural ecosystems and the various agro-ecosystems are vital to ensure the ecosystem services upon which the population of Liberia depend.

2. The country is characterised predominantly by a hot and humid climate with distinct wet and dry seasons. The wet season is experienced from May to October, while the dry season, characterised by dusty, hot harmattan winds and dry conditions, with temperatures ranging between 25-27° is experienced between November and April. Seasonal rainfall in West Africa varies considerably on inter-annual and inter-decadal timescales, due in part to variations in the movements and intensity of the Inter Tropical Climatic Zone (ITCZ). Current mean annual rainfall however has decreased to its lowest levels since the 1960s.

1.2. Economy, Population and Agriculture

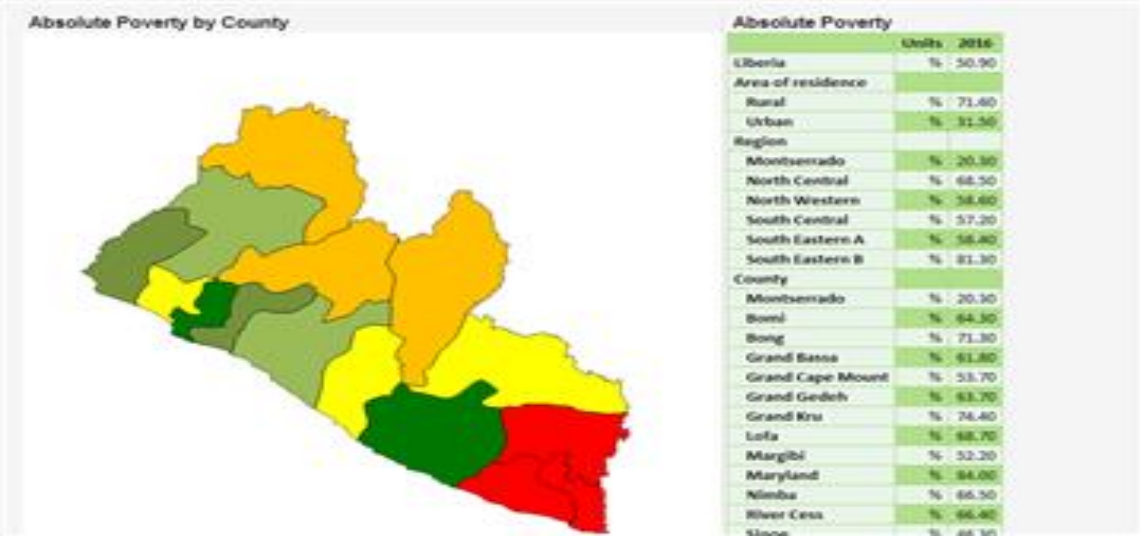
3. The Liberian economy depends heavily on exports of minerals. Agriculture provides the main livelihood for 48.9 per cent of the workforce, mainly in smallholder and subsistence farming. Plantations produce rubber, cocoa, coffee, palm oil, rice and sugar cane . Liberia imports up to 60 per cent of its staple food.

[1] https://en.wikipedia.org/wiki/K%C3%B6ppen_climate_classification

The country has been an export-oriented economy for decades. Iron ore, rubber, and palm oil were produced on large plantations and mines, and timber exports were also a significant source of revenue.

4. The estimated population of Liberia is about 4.8 million.[2] In the 1990s and early 2000s, civil war and government mismanagement destroyed much of Liberia's economy, especially infrastructure in and around the capital. Much of the conflict was fuelled by control over Liberia's natural resources. With the conclusion of fighting and the installation of a democratically elected government in 2006, businesses that had moved out of the country began to return despite all development challenges. The country economy achieved high growth during the period 2010-13 due to favourable world prices for its commodities.[3]
5. The impact of the twin shocks eroded the important gains Liberia had made over the preceding post-conflict decade in reducing poverty and vulnerability. Diminished economic activity across all sectors led to reduced employment; slow economic growth, the lingering impact of the Ebola Virus crisis and the secondary effects of rising cost of food imports, especially rice which is the nation's staple food.
6. The poverty rate rose from 54.1 per cent in the first half of 2014 to an estimated 61.2 per cent in the first half of 2016. Poverty rates were already highest in rural areas, and the incidence of rural poverty rose from 70 per cent in 2014 to 82.4 per cent in 2016, widening the rural urban economic divide.
7. The prolong period of conflict compounded by the effects of the Ebola crisis resulted in chronic food insecurity and severe nutritional deficits. Many Liberians continue to suffer from food insecurity and inadequate nutrition, especially in rural areas. About 49 per cent of the Liberian population are considered food insecure and malnutrition of children persist, with 35 per cent of children under 5 years of age stunt and 15 per cent of them remain underweight. Food insecurity is prevailing in rural areas, and agricultural production remains the most important livelihood for the average Liberian, involving 67 per cent of the population. Liberia heavily depends on food imports, and rice, the staple grain for most of the population, is imported on a large scale. 81 per cent of food for a household is sourced from markets and food related expenditures for an average household constitute 60 per cent of household budget. Liberia's dependence on food imports intensifies its vulnerability to external price shocks. The impacts of climate change is expected to aggravate the food insecurity situation and increase the risk for low-income population to fall deeper into poverty.

Figure 1 Poverty headcount by county (2016)[4]



[2] World Bank Data (2018).
[3] Africa Development Bank (AfDB), *Africa's 2019 Economic Outlook*
[4] http://liberia.opendataforafrica.org/qoefwaf/poverty-headcount

8. Access to land and secured titles is a challenge, although the 2018 Land Rights Act was passed with the purpose of defining different categories of land and increasing access to, and the security of, land rights; unresolved disputes over natural resources and land continue to contribute to ongoing social and economic tensions. However, productive ventures that require technology or financial investments are needed to adequately address the constraints to future growth and development (PAPD, 2018). Citizen engagement is vital to these efforts, as are the institutions and procedures through which the Government, investors and local communities advance their respective interests and negotiate a joint approach to resource management.

9. Entrenched inequalities between regions, genders and social groups exacerbate the country's fragility. Liberia ranks 181 of 188countries on the United Nations Development Programme (UNDP) Human Development Index. Women in Liberia have lower access to education and employment opportunities but play a fundamental role in agriculture and in caring for their children. The Gender Development Index for Liberia, measuring the degree of inequality in human development, is 0.846[5]. Women's unequal participation in decision-making in household and community affairs is commonplace as well as unequal access to lands, knowledge, assets and credit in agriculture.

10. There are an estimated 938,383 households in Liberia, with an average household size of 4.26 persons per household; households are larger in urban areas (4.37) than rural areas (4.16). Out of a population of approximately 4 million persons, 48.5 per cent are male and 51.5 per cent female. Liberia has a young population with almost one in three Liberians being less than ten years of age. 52.7 per cent of the population are of working age (between 15-65), and only 2.6 per cent are 65 years or older. 49.0 per cent of households reported suffering from food shortages in the 12 months prior to being interviewed. Food insecurity was higher in rural areas with 60.3 per cent of households reporting such shortages, than in urban areas where 41.6 per cent of households reporting the same[6].

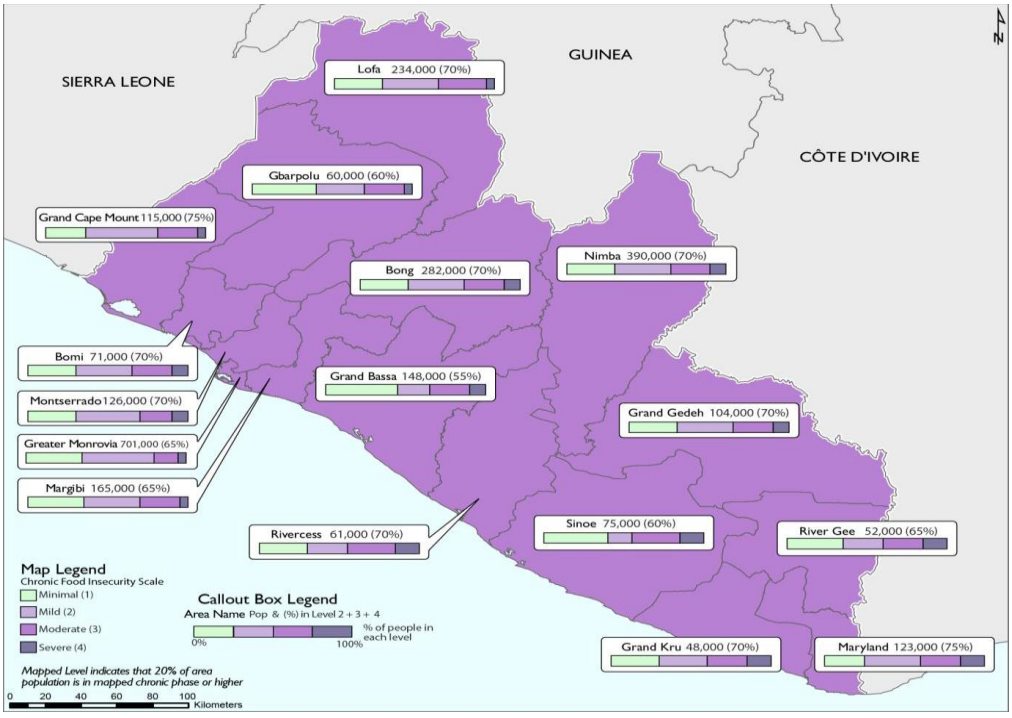


Figure 2: Chronic food insecurity classification for Liberia/ (Source: USAID Assessment of chronic food insecurity in Liberia, 2017)

5 UNDP, 2018. Human Development Indices and Indicators: 2018 Statistical Update. Briefing note for countries on the 2018 Statistical Update, Liberia

6 https://www.lisgis.net/pg_img/Liberia per cent 20Statistical per cent 20Abstract per cent 20FINAL.pdf

11. Agriculture is central to Liberia's vision of economic transformation. 73 per cent of the poor live in rural areas and 56 per cent of the rural population fall below the extreme poverty line. Liberian agriculture comprises food and tree crops, and livestock. Rice and cassava are the main staple food crops while rubber, oil palm, cocoa and coffee are the dominant export-oriented tree crops. Low production and productivity are attributable to the lack of quality farming inputs , extension services and impact of climate change. The damaged infrastructure (roads, and storage and processing facilities) caused by heavy rains hampers access to markets and thus the buying and selling of inputs and outputs; it also results in high post-harvest losses and generates little added value. As a consequence, income-earning opportunities are undermined and food security is low. At the local level, farmers' organizations (FOs) and community-based organizations (CBOs) have limited organizational capacities particularly to deal with the impact of climate change. Farm size averages 1.1 ha. Farmers rely on labour-intensive and slash-and-burn shifting cultivation. Unstainable agricultural practices are the main causes of deforestation, land degradation and low productivity. Smallholder farmers are also held back by lack of fertilizer and irrigation, poor seeds and breeding stock; and inadequate credit, machinery and infrastructure for transport, storage, food processing and marketing. This situation is exacerbated by climate change and Liberia also needs to adapt to the impact of climate change.

a. Natural Resource Management (NRM)

12. Liberia has a rich and diverse ecosystem; it is well endowed in natural resources (vast forests, minerals deposits, fisheries, etc.). An adequate management of these resources will help alleviate poverty in a sustainable manner. Liberia has the largest existing Upper Guinea forest of West Africa. Liberia's forest represents about 42 per cent of the forest area, which is an important hotspot of global biodiversity[7]. According to a 2018 World Bank report, out of the total forest area of approximately 6.6 million hectares (with canopy cover over 30 per cent percent), almost 28 per cent is designated for commercial timber production (under Forest Management Contracts [FMCs] and Timber Sale Contracts [TSCs]), 18 per cent is under existing and proposed Protected Areas (PAs), 5 per cent is under palm oil concessions, and 1 per cent is under rubber plantations. The non-designated category is about 45 per cent of the forest area which is used in a variety of ways by communities, smallholder cultivators, and transitory populations. The threat to Liberia preserving the forest is the dependence of rural households for their livelihood such as food production, firewood and charcoal for cooking, hunting and timber for building and furniture. Liberia forests provide immense ecological benefits (medicinal plants, food source, non-timber products, energy, etc.).

13. The 2015 FAO Global Forest Resources Assessment estimate Liberia biodiversity to consist of 590 bird species, 125 mammal species (hawks, eagles, rats, monkeys, leopards, elephants, etc.), 74 reptiles and amphibian species, 1,000 insect species, 2,000 flowering plants (59 endemic to the country), and 240 timber species. Despite the known importance of the Liberian forest and its biodiversity, currently there are only two actively protected forest areas (Sapo National Park and the East Nimba Nature Reserve) and eight forest reserves.[8]

a. Climate change

1.4.1. Current climate hazards and variability and their impacts

14. Liberia's climate consists of two separate climate regimes: the equatorial climate regime restricted to the southernmost part of Liberia, where rainfall occurs throughout the year, and the tropical regime dominated by the interaction of the Intertropical convergence zone (ITCZ) and the West African Monsoon. Annual rainfall amounts are 4000-5000 mm along the coastal belt, declining to 1300 mm at the forest-savannah boundary in the north. The seasonal variation in rainfall has a critical influence on the vegetation. Liberia exhibits a high average relative humidity throughout most of the year.[9]

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[7] USAID, *Liberia Environmental Threats and Opportunities*, 2014<http://www.usaidgems.org/Documents/FAA&Regs/FAA118119/Liberia2014.pdf>

[8] Food and Agricultural Organization (FAO), *Global Forests Assessments,* 2015 <http://www.fao.org/3/a-i4808e.pdf>

[9] N Appleton & E Broderick, 'A Case Study for Liberian Agroforestry: Science and the Implementation of a Management Prospectus for Agriculture and Forestry (2018) 2 *Forestry Research and Engineering*

15. Generally, Liberia is considered a tropical country with the average annual rainfalls ranging from 1,700 mm in the north and 4,500 mm in the south, the average temperatures vary between 24°C and 28°C, and the relative humidity ranges from 65–80 per cent . The climate is characterized by two (2) wet seasons in the southeast and one (1) wet season (May – October) for the rest of the country. Based on its agro-ecological characteristics, the country can be divided in 3 regions: coastal plains, forests and northern. [10]

16. Farmers' high dependence on rain-fed agriculture and natural resource-based livelihoods are key influencing factors of their vulnerability. However, while unaware of the meaning of climate change, farmers have already consciously started to adapt their farming practices to changing climate patterns. Farmers have reported experiencing changes in rainfall patterns characterized by rainfall in the dry season and dry periods in the rainy season. Climatic changes have manifested in more intense rainfall patterns with more frequent severe floods and seasonal droughts, late onset of rains, rising temperatures, particularly in the dry season, stronger winds including reports of local tornadoes, more intense thunderstorms and more frequent landslides. The IPCC predicts that without adaptation, tropical regions will experience negative impacts in the production of wheat, rice and maize due to temperature increases. Agriculture is Liberia's second largest economic sector after services contributing 34 per cent to the GDP and therefore faces long-term, high-risk exposure to climate change[11].

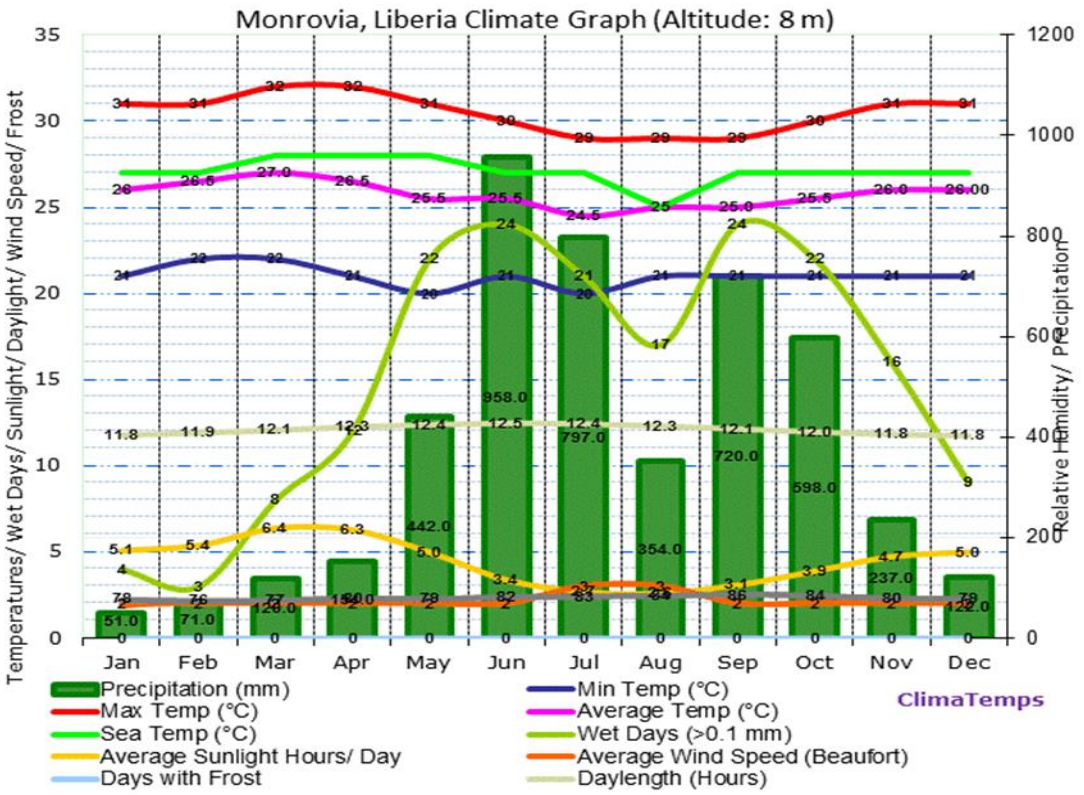


Figure 4: Climate Graph for Monrovia (Source: Liberia.climatemps)

1.4.2. Anticipated climate change and its impacts

[10] Climatemps, 'Rainfall in Monrovia/Liberia' <http://www.liberia.climatemps.com/precipitation.php>

[11] https://theodora.com/wfbcurrent/liberia/liberia_economy.html

17. Climate trends since the 1960s indicate a 0.8°C increase in average temperatures, a reduction in mean annual precipitation, and more flooding events. Furthermore, climate models project an increase in temperatures ranging from 0.9 to 2.6°C by 2060 and 1.4 to 4.7°C by 2090 (compared to 1970-1999 temperatures), a reduction average annual rainfall, an increase number of heavy rainfall along the coast and in flooding events, a 0.4 to 0.7m rise sea level by 2100, and soil erosion. There are 2 main factors affecting the agricultural sector and that are exacerbated by climate change in Liberia. First is increasing population has led to an increase of demand for food and land resources, and second is the bad agricultural practices (deforestation, wetland reclamation, slash and burn to clear the land). Like most Least Developed Countries (LDCs), while Liberia's carbon footprint is low (0.06 metric ton per capita), it remains one of the most vulnerable countries to the adverse impacts of climate change and variability[12].

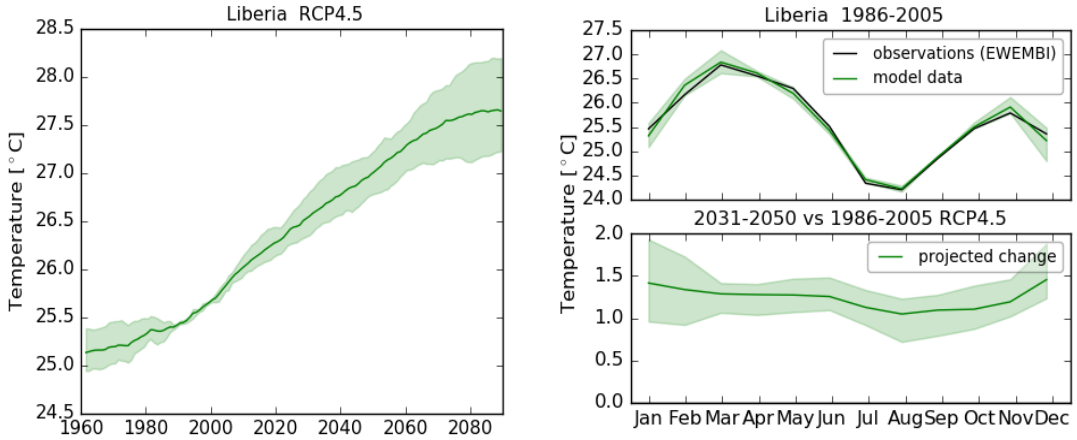


Figure 5: Regional climate model projections for temperature displayed as 20 year running mean. The line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5. (Climate Analytics, 2020)

Figure 6: Top right: Annual cycle of temperature for the period 1986-2005. Bottom right: Changes in annual cycle projected for 2031-2050 compared to the reference period 1986-2005. EWEMBI data is shown in black, regional climate model simulations in green. The green line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5. (climate Analytics , 2020)

18. The sectors most likely to be affected by climate change are agriculture, forestry, fisheries, energy and mining. The population in the coastal areas and those who depend mostly on rain fed farming (close to 90 per cent of crop areas fall under this category) and fishing are the most vulnerable groups.

19. The Fisheries sector is also likely to be impacted by climate change (rising temperatures, frequency of extreme climate hazards, and the acidification of seawaters). For instance, increases in sea-surface temperatures make the coastal upwelling unpredictable and reduce fish productivity. The impact will vary between ecosystems and fishery regimes. Also, changes in precipitation and evapotranspiration could also affect inland waters impacting fish reproduction.[13]

20. Although Liberia's tropical forests are likely to be impacted by climate change (change in aridity), human activities (slash and burn practices, urbanisation, logging, firewood, and charcoal production, etc.) are likely to have a more severe impact.

[12] Ibid.
[13] Ibid

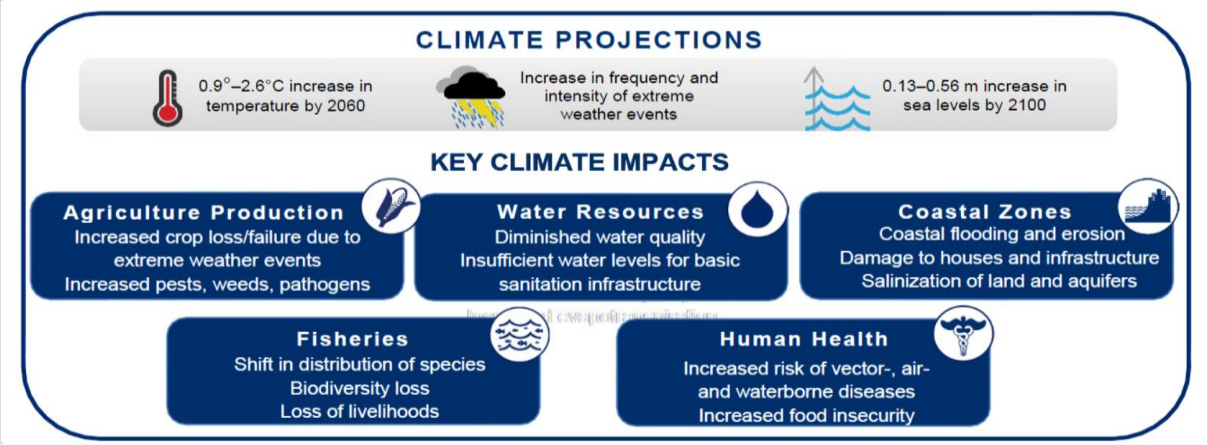


Figure 7: USAID, Country Profile: Liberia (2017)

21. While Liberia has a low-carbon footprint, the impact and effects of climate change may have severe consequences across multiple sectors, including agriculture, fisheries, forests, energy production related to the availability of water resources, coastal degradation and health. Around 70 per cent of the population depends on agriculture for their livelihoods, and improved plans for climate change will support Liberia in mainstreaming and accelerating policy support to achieve the Sustainable Development Goals for Climate Action, No Hunger and No Poverty. Strengthened capacity to plan for climate change, support policy and budgeting frameworks, and prepare vulnerable sectors for the impacts of climate change will also be essential in reaching the country's Nationally Determined Contributions to the Paris Agreement.[14]

22.

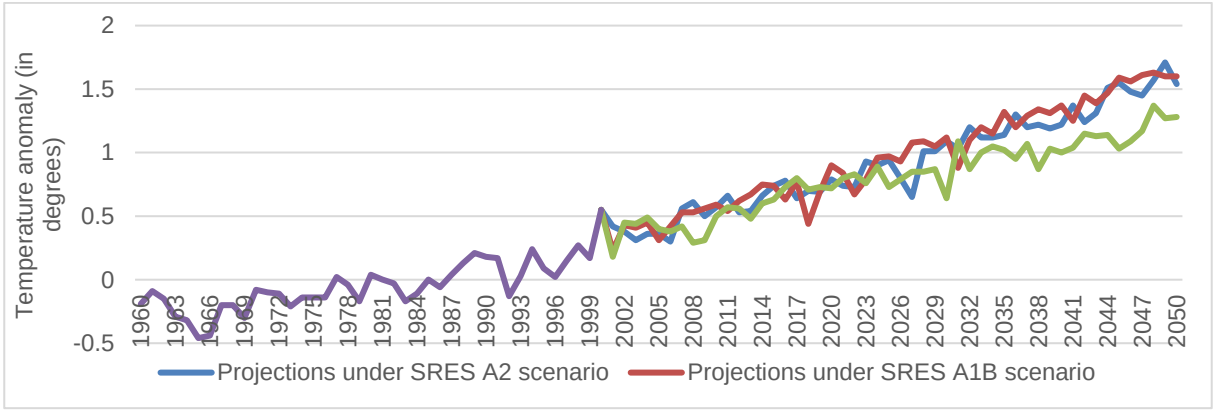


Figure 8: Temperature anomaly to the mean temperature in the period 1970-1999 expressed in degrees for the historical (yellow), A2 scenario (dark blue), B1 scenario (grey) and A1B scenario (orange). Source: McSweeney et al., (2010)

23. As a consequence of the changing precipitation and temperature patterns, the main climates of Liberia are projected to progressively shift throughout the 21st century. As of the current period, Liberia has two dominating climate, following the Koppen classification: a tropical climate at the exception of the northern part of the territory characterized by a tropical wet climate. Figure 9 below shows this progressive shift in climates in Liberia compared to current days in the RCP4.5 and RCP8.5 scenarios.

[14] U. Goll, 'Towards a New Climate Change Treaty: Liberia's Contributions and Challenges' (2015); Kwaune, 'Integrate Climate Change Into Economic Planning' *Daily Observer,* 5th December, 2018

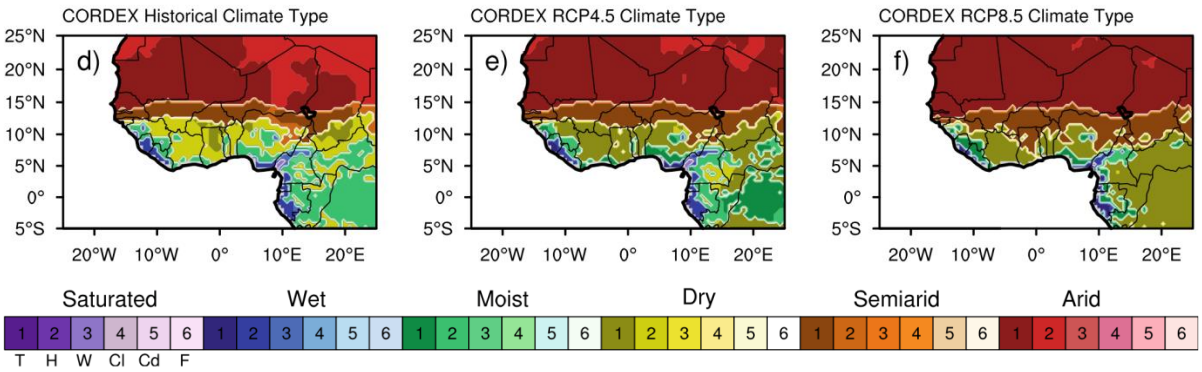


Figure 9: Distribution of climate types for reference period (1985–2004; left panel), future RCP4.5 (2080–2099; middle panel) and RCP8.5 (2080–2099; right panel) for CORDEX (d, e and f) ensemble using all models. Abbreviations definition: T Torrid, H Hot, W Warm, Cl Cool, Cd cold, F Frigid. Source: Sylla et al., 2016)

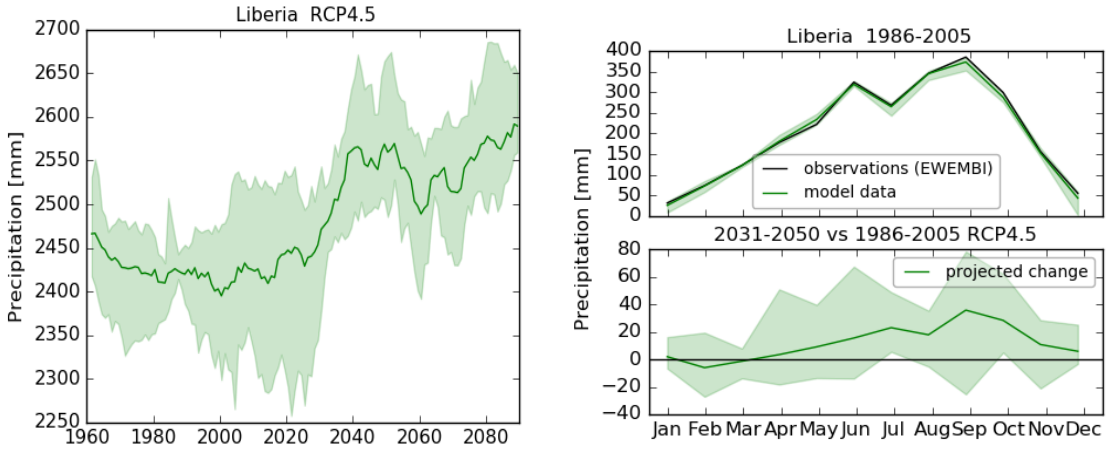


Figure 10: Left**:** Regional climate model projections for precipitation displayed as 20 year running mean. The line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5.

Figure 11: Top Right: Annual cycle of precipitation for the period 1986-2005. Bottom Right: Changes in annual cycle projected for 2031-2050 compared to the reference period 1986-2005. EWEMBI data is shown in black, regional climate model simulations in green. The green line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5.

24. Out of the total land area (9.5 million ha), half is covered by tropical forest and arable lands (uplands and lowlands) covers around 47 per cent of the total land area. There are three types of farming systems in Liberia: traditional, commercial and concession. The traditional farming systems for the production of food (rice and cassava) and export crops (coffee, cocoa, rubber), and oil palm for consumption and resell. The commercial farms are used for the production of fruits, coffee, cocoa, and oil palm. The

concessions plantations, owned and operated by foreign firms, produce mostly rubber and palm oil. Food crops (rice and cassava) productions are predominant.[15]

25. Rubber, oil palm, cocoa, and coffee are the main export crops contributing to approximately one third of the agricultural GDP. However, the production of coffee and cocoa is still lower than that of the 1989 pre-war levels, given that 61 per cent of the cocoa farms and 71 per cent of the coffee farms affected during the war still need to be rehabilitated.[16]

26. The future consequences of the changing precipitation and temperature patterns could significantly affect the production of the subsector. The International Center for Tropical Agriculture (CIAT) projects a reduction in climate suitability for cocoa production by up to 20 per cent in the southern districts and up to 40 per cent in the north-eastern upland districts by the 2050s (**Error! Reference source not found.**). As a consequence of this risk on cocoa production to changing temperature and precipitation patterns, investments in the subsector could face productivity challenges, particularly in the context of IFAD baseline investment.

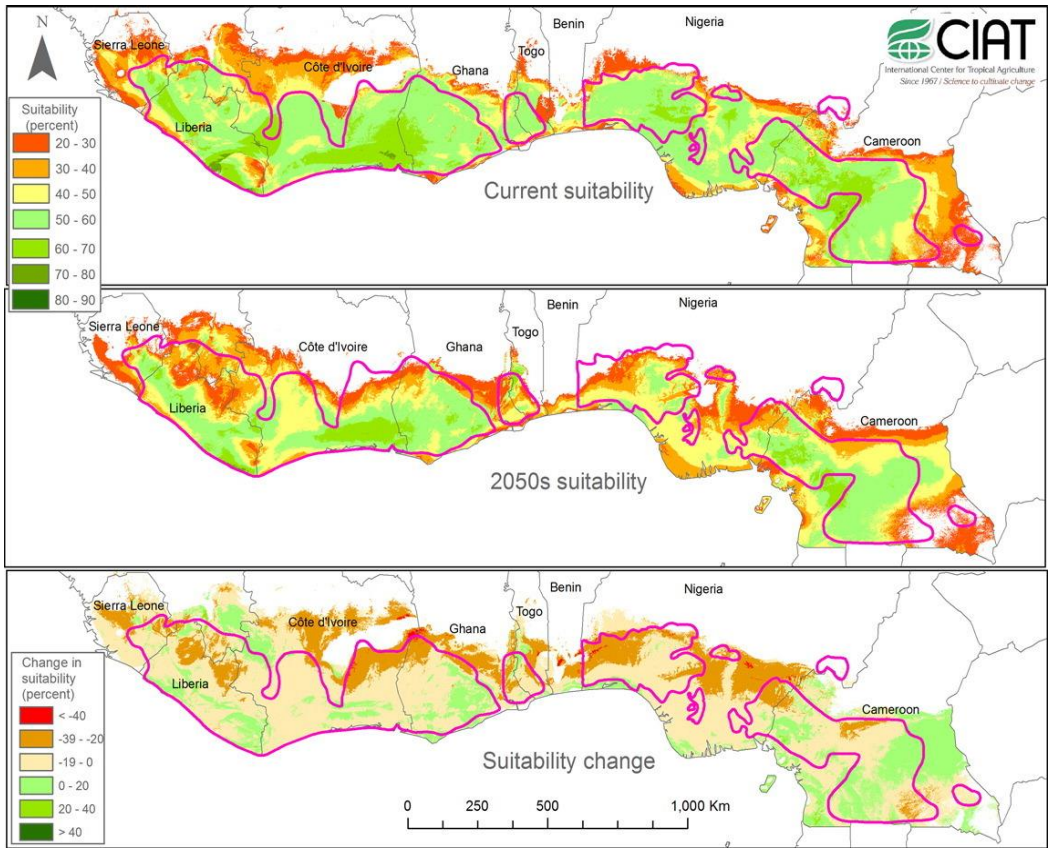


Figure 12 Relative climatic suitability (in percent) for cocoa of the West Africa cocoa belt under current and projected 2050s climate conditions, as well as suitability change, according to the Maxent model based on 24 climate variables.

27. Detailed projections on the effects of climate change on rice and cocoa production in Liberia are lacking. It is however possible to draw some possible implications for rice production on the basis of studies investigating the effects of climate change on other crops in Liberia and rice production in the other countries of the region, which present similar climatic characteristics. A study on millet, sorghum and maize projects that by the 2050s, the yield of these crops could severely decrease as a consequence of climate change. While maize currently yields about 700kg per hectare (in the period 1980-1998), it

[15] Republic of Liberia, *Liberia Agriculture Sector Investment Programme (LASI)) Report*, 2010

[16] Ministry of Agriculture/Government of Liberia, *2015 Annual Report*.

could decrease between 300 and 600kg per hectare in the 2050s in the high warming scenario (RCP 8.5). Sorghum is projected to follow a similar downward trend from about 1000kg per hectare to yield ranging from 500 to 900kg per hectare in the same scenario and time period. Finally, Millet is even more vulnerable to future climate change with a potential decrease from 900kg per hectare to as little as 400kg (Ahmed et al., 2015).

28. Using IFAD Climate Adaptation in Rural Development Assessment tool (CARD), main crops (Barley, bean, Cassava, Cotton, Maize, Millet, Sorghum, Soy, Sunflower) will experience yield decreases if adequate actions are not taken to address climate change in the coming years.

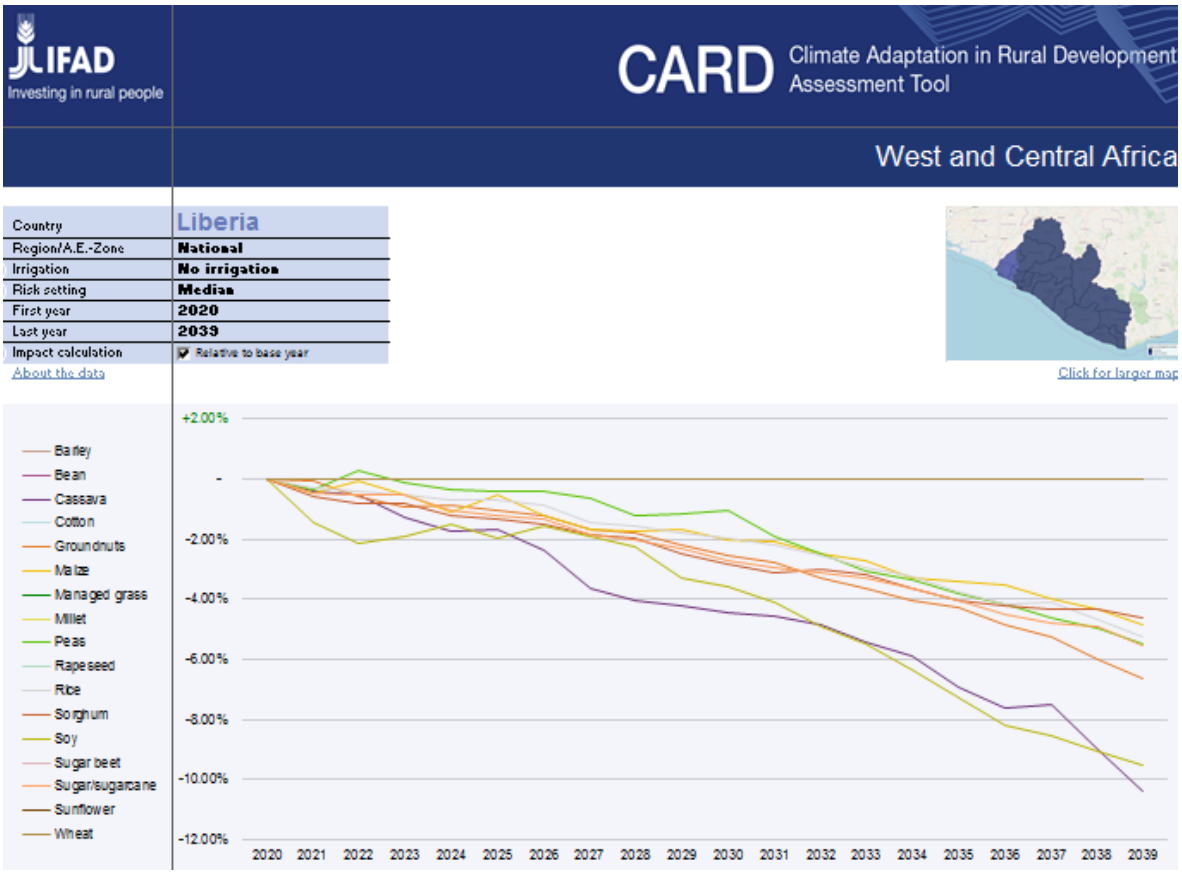


Figure 13: Crop yield under various climatic scenarios- Liberia, IFAD CARD, 2020

29. Only limited evidence for rice is available, primarily investigating the region as whole. In Western Africa, irrigated rice yield could decrease between 21 and 45 per cent in the 2050s in the high warming scenario (RCP8.5) compared to the 2000s; for rain-fed rice, with already lower yields than irrigated rice, the decrease could range from -22 to -18 per cent – both in the absence of adaptation. With the implementation of adaptation options, such as rice varieties able to withstand heat, the region could see both irrigated and rain-fed rice increase their productivity from 4 per cent (rain-fed, upland rice) to 7 per cent (irrigated) (Oort & Zwart, 2017).

30. Hitherto, Cassava production and the impacts of climate change have benefited from a limited amount of studies, despite its importance in the food system in Liberia and African countries. In Sub-Saharan Africa, cassava yield could decrease from -5 to -15 per cent by the 2050s compared to yields in the 1961-2000 period in a high-warming scenario (SRES A1B)(Schlenker & Lobell, 2010).

31. In the absence of adequate climate change adaptation options, both Liberia's staples could be severely affected by future climate change, limiting population's self-sufficiency, which would therefore need to rely on other crops and exported commodities. Furthermore, cocoa production, the main source of

income in rural areas, could also be reduced as a consequence of decrease climatic suitability. Decreasing food supply and possibly reduced income from cocoa production could limit the ability of rural and urban households to attain food and nutrition security.

32. Food security is composed of four distinct components: availability, access, utilization and stability. In the Bong county of Liberia where this project is planned, all four dimensions of food security are threatened. Availability, through production, could be decreased because of increased temperature and more frequent precipitation extremes. The projected increase in dry spells could also lead to reduced availability of water for irrigation during the dry months of the year. Access could also be limited as smallholders could see their incomes from cocoa production decreasing as a consequence of the decreased cocoa suitability. Access could also be threatened by the projected higher frequency of heavy precipitation events, which could further disrupt road connection. Finally, as a consequence of changing patterns and more frequent extreme events, the overall stability of production and external supply, as well as incomes from agricultural activities could be reduced by future climate change. Key issues identified and addressed by the project, root causes, barriers and preferred solutions

    The project seeks to address the vulnerability of the cocoa and rice sector to climate change and climate variability in order to sustain continued and increased agricultural productivity and growth for poverty reduction in the Bong county of Liberia. It addresses the multiple and combined impacts of climate change especially the anticipated modification of rainfall patterns and decreased water availability and increases in temperatures.

33. The project intends to address six key issues identified which are already impacting the productivity of both cocoa and rice sector in the context of climate change:

- The decreasing climatic suitability for cocoa production, which could lead to reduced incomes and in some cases the reduced ability of smallholder farmers to access food on the local market.
- The increased frequency of heat waves as well as the extension of dry spells could also lead to a reduction in the production of subsistence crops, particularly rice and to some extent cassava.
- The increased frequency of extreme precipitation events could lead an increased disruption of market services and infrastructures such as roads and water services.
- Combined, these key issues could lead to an increase in poverty, particularly for transient poor and therefore an increased vulnerability to future climate change impacts in smallholder farmers' households.
- Women make up more than 40 per cent per cent of agricultural business in Liberia but realize little or no benefit.
- Degradation of natural resources as a result of unsustainable agricultural practices (slash and burn, firewood collection, logging) and recent conflict and Ebola crisis.

34. The project intends to address the underlying constraints that further exacerbate the projected climate change impacts and that represent major barriers to adaptation and resilience in the cocoa and rice sector in Liberia. Amongst the key constraints: Unsustainable or inadequate agricultural practices (e.g traditional slash and burn land preparation, land preparation for rice cultivation, inefficient use of water, erosion, diseases of cocoa trees due to increased temperatures. In addition, absence or inadequate of infrastructures to withstand to climate change impacts. Deforestation and land clearing in the cocoa plantations is also a key problem and is a result of growing energy needs, with fuelwood (and charcoal). The direct consequence is that the country continues to loose top soil from hectares of lands due to deforestation and old cocoa trees affected by diseases.

35. These barriers are preventing the country from achieving optimal yield in the cocoa and rice sector (cash and staple crops), to generate surpluses to respond to food security and nutrition while improving household incomes. As a post conflict country, it needs to upgrade its infrastructure including earth dams, adapted storages and warehouses; climate resilient roads along the agricultural value chain, improve capacity of small holder farmers to access to climate knowledge at technical information in order to shift from in-adapted and in many ways unsustainable cultivation methods (e.g slash and burn)

that provide short term gains but deplete soil fertility and degrade the natural capital and environment. Low yields prevent farmers to generate surpluses and income to be able to acquire inputs such as drought resilient seeds or improved fertilizers. As climate risks and climate risks management is new, it was proven by previous IFAD projects that well targeted support to smallholder farmers leads to increased yields in the rice and cocoa sector (see below). For instance, smallholder farmers supported by an IFAD climate-focused project have doubled and tripled cropping of rice using NERICA rice over the paddy varieties because of the earth dams. However, more effort needs to be done to help farmers have access to timely and relevant agrometeorological information to better decide on cultivation practices and cropping calendars. Early warning systems are not well in place yet. Accelerated erosion and siltation of drainage, irrigation systems could lead to a very dire situation in rice producing areas where flooding is an issue. Over 90 per cent of the rural road network remains unpaved, mostly gravelled, and keeping these roads in a condition that provides all-weather access is becoming increasingly difficult as good gravel resources become depleted whilst traffic and heavy rains increase. This prevents farmers access to markets and reduces their incomes.

a. Lessons learnt from the IFAD past projects on climate resilience in the agricultural sector

i. Lessons learnt from previous activities supporting cocoa farmers

36. IFAD's Liberian Cocoa farmers have shown resilience to climate shocks, low prices paid by middle buyers and price fluctuation by continuing to rehabilitate their farms. More farmers are making efforts to either establish new cocoa farms or expand production or rehabilitate existing farms. Recent projects in the region have experienced the replacement of cocoa and oil palm with rubber due to unstable market prices of these commodities. Amidst huge investments in the cocoa sector by development partners such as the United States Department of Agriculture (USDA)/ACDI-VOCA, the International Fund for Agricultural Development (IFAD), the World Bank and European Union (EU)/Solidaridad over the last decade, there are two major gaps for intervention. Firstly, many farmers have been left untouched by development assistance due to limited geographic coverage by previous and ongoing projects. Secondly, there are gaps for technical assistance to cocoa farmers and farming groups that have benefitted from previous and ongoing assistance. Moreover, technical assistance has primarily focused on the production phase while the quality of Liberia cocoa beans is continuously degraded on the world market. The resilience demonstrated by cocoa farmers is therefore a just reason for the assistance they need to increase their productivity and income so their lives can be improved particularly in the context of changing climate.

i. Lessons learnt from supporting lowland producers

37. The Rice production in rural areas is traditionally by "*koo*" system and subsistence means. Hundreds of thousands of rural farmers shift from one production site to another each year in search of virgin land and destroy the fallows and rainforest. From the beginning of the civil crisis 1990 to present, development partners (including USAID, USDA, World Bank, IFAD and AfDB) have supported lowland rice production activities in an attempt to divert farmers' attention from slash and burn rice production in upland areas. However, the group approach to development assistance to rice farmers has not produced the desired results in terms of sustainability of the activities by the beneficiaries after the life of the project. Numerous lowland areas, developed for rice production under group farming mechanisms, are abandoned shortly after development interventions phase out. This is due to lack of individual ownership and clear tenure rights. One of the underpinning factors for the abandonment of developed lowlands is the get-free syndrome nurtured by the huge humanitarian assistance throughout the fourteen years of the civil conflict. Year after year, group members are under the impression that other donor projects will continue to come their way and this has often been the real situation. Meanwhile, there are exceptional successful cases like the prewar Gbodo Cooperative in Gbendin, Nimba County. If rural Liberians are to graduate from poverty and food insecurity, there has to be a change of mindset from the "get-free" mentality to investment of rural resources in interventions intended to improve rural livelihoods and the environment in longevity.

i. Lessons learnt from working with Liberia's private sector

38. The private sector is generally weak in Liberia and depends largely on foreign businesses and a handful of ambitious thriving Liberian businesses. Many small and medium Liberian businesses collapsed

rather shortly after their establishment for various reasons, ranging from poor planning to inadequate investment capital to lack of business knowledge. The thriving private sector is the large tree crop plantations and concessions mainly rubber and oil palm. Investment initiative by development partners to strengthen the Liberian private sector has been challenged by lack of capacity to co-invest particularly on sustainable and climate resilient agriculture.

39. Regarding climate change, the environmental Protection Agency (EPA) has over the last few years made significant efforts in raising awareness about the impacts of climate change in an effort to encourage both public and private sectors to find innovative means for adaptation practices. Nevertheless, large hectares of forestland continue to be destroyed by smallholders, concessions, and loggers. Smallholders and medium and large Liberian plantations and businesses therefore need to buttress EPA's effort to minimize the effects of climate change in agricultural activities. The challenge is the lack of knowledge and skills as well as resources to effectively carryout climate adaptation activities in farming.

2. PROJECT / PROGRAMME OBJECTIVES

40. Climate change and climate variability is expected to affect rainfall patterns, temperatures and to decrease water availability. Adaptation measures must address key challenges posed by climate change. **The overall objective of the project is to address key climate vulnerabilities in agriculture and water resources management in the rice and cocoa value chain, and hence contribute to immediate and longer-term development and resilience needs of poor vulnerable smallholder farmers in Liberia.** The resilience of the cocoa and rice sector can only be achieved by identifying and implementing a comprehensive set of agricultural practices and agricultural diversification strategy through integrated farming systems designed to increase yields for cash crop (cacao) and staple crop (rice) , minimize environmental degradation while maintaining the ecological functions and the rice and cocoa production value chains.

2.1. Project Goal

41. *The goal of the project is to reduce the direct effects of climate change on 25,000 and indirectly 150,000 beneficiaries .*

2.2. Project Specific Objectives

42. There are four specific objectives of the project, each of which consisting of a set of interrelated activities aimed at reducing the effects of climate change on agricultural activities. These specific objectives are:

    i. **Productivity**. The low productivity and income of Liberia smallholder farmers is due to several reasons. These are the low technologies and knowledge gaps in the application of improve planting materials and production inputs particularly in the context of climate change. In addition, the continuous destruction of new fallows and forestland for agricultural production is a precursor of climate change in Liberia.Therefore, the first objective of the proposed project is to enhance the productive capacity, technical skills and knowledge base of 10,000 smallholder cocoa and 10,000 rice farmers in climate smart agriculture production and 5000 for other enterprises (, processing and marketing activities.

    ii. **Institutional capacity**. The 2016 revised research strategy of Central Agricultural Research Institute (CARI) aimed at strengthening the nation's only research center capacity to lead research activities in Liberia and contribute to climate change by developing climate smart planting materials. It is acknowledged, however, that CARI's position to provide the anticipated leadership, especially in climate resilient research and agricultural development (R&D) would benefit from additional funding, strengthened governance and an increase of staffed trained

scientists . The second objective of the project is to increase production of climate resilient cocoa and rice seeds for smallholders and other commercial farmers.

iii. **Alternative livelihoods for youth and women**. An estimated 18 per cent of Liberians are food insecure and 2 per cent are severely food insecure (Liberia Food Security Assessment, 2015). This means that households end up consuming foods that are inadequate in quantity and quality. Furthermore, youth defined as people between 15 and 35 years of age comprise almost half of the population (47 per cent), who generally have a high illiteracy rate resulting from low school enrolment and low educational level. Vocational training and apprenticeship opportunities are rare, and, as a result, the youth and women are vulnerable. They are disproportionally affected by unemployment or informal employment especially in rural areas with limited access to lands, credit and knowledge. A third objective is therefore to provide alternative livelihoods such as agricultural production, fish and poultry farming for youth and women.

iv. **Regulatory environment and institutional capacity**. It is acknowledged that the regulatory environment of Liberia would benefit from additional human and financial resources. Specifically, the following entities would be targeted by the Project as potential receivers of support: 1. The Liberia Agricultural Commodity Regulatory Authority (LACRA), enacted by national law to improve the regulatory environment for trade. 2. The Cooperative Development Agency (CDA) established with the mandate of training and certifying cooperatives. 3. The Environmental Protection Agency (EPA), with the mandate of guiding Liberia towards compliance with national and international environmental laws requires. 4. The Ministry of Agriculture (MOA), for it to provide climate smart extension and advisory services to farmers. The fourth objective of the project is to strengthen the institutional capacities of these agencies to effectively carry out their respective mandates in coordination with other sector ministries particularly the ministry of agriculture .

43. Targeted people are smallholder farmers and communities that are the most vulnerable to climate change. The direct beneficiaries of the project are 25,000 smallholder farmers including 10,000 rice producers and 10,000 cocoa sproducers, 5000 from other enterprises of which at least 40 per cent will be women and 40 per cent young people. The project will benefit indirectly to 150,000 beneficiaries along the targeted cocoa and rice value chain through improved regulatory systems, increase and access in climate resilient planting materials, more access to market and other downstream effects of improved agricultural systems. Key criteria to benefit from the project services are: farmers must be active, resident smallholder farmers in the project locality, already engaged in producing one of the target crops, and must be a member of a Farmers Business Organisation (FBOs) (or willing to join one).

44. The project will also promote policy dialogue on potential maladaptation and policy gap in rice and cocoa sectors, in the view of achieving strong policy on both sectors and to be replicated in the whole country and the West Africa region.

45. The project will reduce vulnerability and increase adaptive capacity to respond to the impacts of climate change, including variability at local and national levels as well as on natural resources critical for sustaining agricultural production and increasing food security and nutrition of vulnerable poor communities.

46. The project focuses on three value chains, i.e: (i) Cocoa, (ii) Nerica Rice, and (iii) Paddy rice. Additionally, the project aims at improving the organisation and performance of the selected value chains, which include the resilience of rural infrastructure to climate change impacts such as feeder road rehabilitation to connect producers to markets. Climate change could reduce crop yields especially for rice and cocoa and disrupt connexions to markets.

47. Liberia's contributions to global greenhouse gas (GHG) emissions stand at 1.89 Mt CO2 eq, representing 0% of the global total. It is equally important to note that Liberia is categorized as a GHG sink if the LULUCF sector is considered. Liberia's Initial National Communication (2013) reinforces the National Energy Policy with additional long-term targets and related activities, which includes; reducing GHGs by at least 10% by 2030, Improving energy efficiency by at least 20% by 2030, raising share of renewable energy to at least 30% of electricity production and 10% of overall energy consumption by 2030, and replacing cooking stoves with low thermal efficiency (5-10%) with the higher

efficiency (40%) stoves. The long-term strategy of Liberia is to achieve carbon neutrality by 2050[17]. The project will contribute to reducing the emission of GHG through better adaptation practices.

48. Reflecting the key development challenges and adaptation needs while being fully aligned with the three components, the project will deliver the stated objective through three components:

- **Component 1:** Climate-proofed agricultural production and post-harvest combined with livelihood diversification
- **Component 2:** Climate-resilient rural transportation and water infrastructure
- **Component 3:** Institutional capacity building and policy engagement

3. PROJECT COMPONENTS AND FINANCING

Table 1: Project Components and Financing

CRDP Components	Expected concrete outputs	Expected outcome	Amount
Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification	Output 1.1. Best available technologies and integrated resilient rice and cocoa varieties are implemented to foster the resilience of cocoa and rice production and post-harvest practices: - Cropping calendar and climate early warning systems; - Vulnerability and crop modelling; - Climate resilient varieties, multiplication and dissemination, - Integrated pest management, soil management, - Energy for production and post-harvest processing and water pumping; - Reforestation and agro-forestry	1.1. Established proven best practices on climate resilient rice and cocoa value chains, drawing from local and international research leading to a sustainable increase in rice and cocoa production	**US$ 4,240,121**

[17] https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Liberia%20First/INDC%20Final%20Submission%20Sept%2030%202015%20Liberia.pdf

	Output 1.2. Income-generating activities (fish farming, business model on integrated community garden with solar water pumps, compost systems, processing units, transport system tricycles) are promoted as livelihood diversification measures	1.2. Adaptation strategy of smallholder farmers improved because of diversified livelihood strategy	**US$ 590,915**
Component 2: Climate resilient rural transportation and water infrastructure	Output 2.1. Rural transportation and storage infrastructures have been rehabilitated and upgraded to withstand weather extremes (climate resilient feeder roads, drainages systems, culverts; climate proofed storage and warehouses, equipment and processing units, post-harvest storage facilities with phytosanitary control and serving as integrated trading and markets points)	2. Enhanced and secure access to potable water supply, post-harvest losses reduced and improved access to market by beneficiary communities through climate-proofed rural road network	**US$ 1,983,867**
	Output 2.2: Water supply increased and sanitation infrastructure built, accounting for current and future climate risks (water efficiency and management, training and extension, water quality assessment, toilets, sanitation and drainage systems)		**US$ 970,000**
Component 3: Institutional capacity building and policy engagement	Output 3.1. Capacity of the government (esp. EPA, MAO and CARI) in managing climate risk is strengthened	3. Environment for resilient rice and cocoa value chain improved, policy and regulatory frameworks strengthened as EPA and the government capacities enhancement on adaptation to climate change in these sectors.	**US$ 483,132**
	Output 3.2: Activities are adequately coordinated, monitored and evaluated.		**US$ 700,000**

Project Execution Cost (2%)	**US$ 179,360.7**
Total Project/Programme Cost	**US$ 8,968,035**
Project Cycle Management Fees (8.5%)	**US$ 762,282.98**
Amount of Financing Requested	**US$ 9,909,678.68**

Table 2. Project Cycle management fee charged by the Implementing Entity (8.5 per cent).

Project Cycle Management Fee over 6 years	**Percentage**	**Amount**
1. Development and Preparation	20 per cent	$ 152,456.596
2. Overall Coordination and Management	30 per cent	$ 228,684.894
3. Financial Management and Legal Support	20 per cent	$ 152,456.596
4. Evaluation and Knowledge Management Support including Reporting, Mid-term Evaluation and Terminal Evaluation costs	20 per cent	$ 152,456.596
5. Overall Administration and Support Costs, including audit	10 per cent	$ 76,228.298
Total	**100 per cent**	**$ 762,282.98**

4. PROJECTED CALENDAR

Milestones	**Expected Dates**
Start of Project Implementation	2020
Mid-term Review	2023
Project Closing	2026
Terminal Evaluation	2026

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience

49. The project proposes the implementation of a set of concrete adaptation options in two targeted and profitable agricultural sector (rice and cocoa). A set of enabling actions designed to strengthen national capacities and institutions is interlinked to the concrete adaptation measures which will lead to building the resilience of the cocoa and rice value chains in the most vulnerable areas to climate change in Liberia. Concrete adaptation measures are direct application of integrated climate resilient production, post-harvest and marketing systems. New technologies and best knowledge aim at promoting the paradigm shift and behavioural change in the rice and cocoa production and linkages to markets.

50. To project is structured around three components:

- Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification;
- Component 2: Climate resilient rural transport and water infrastructures; and
- Component 3: Institutional capacity building and policy engagement

Each component is described in more details below.

Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification.

51. This component focuses on household/village-level interventions in climate resilient and sustainable agriculture in order to reduce the negative impacts from climate change and climate variability, as well as to contribute to agricultural and rural livelihood development through income diversification. Along the agricultural value chain, key vulnerability issues which call for adaptation practices are the low productivity and high vulnerability of the agricultural sector, mainly cocoa and rice that are highly dependent on rainwater, which is the sole water source for a large majority of small farms; the increased recurrence of extreme weather events such as floods, droughts and climate-induced vegetable diseases, which reduce productivity levels; and changes and variations in climate conditions from one year to another. With regards to post harvesting in the cocoa sector, the lack of adequate equipment's for drying and processing to maintain a high-quality product is still a challenge to stabilize and increase farmers' income in the face of climate change. To support the shift towards climate-resilient production and post-harvest systems combined with livelihood diversification in the targeted areas, the project will focus on the following outputs and activities

Output 1.1: Best available technologies and integrated resilient rice and cocoa varieties are implemented to foster the resilience of cocoa and rice production and post-harvest practices

Cocoa value chain activities:

- Best reforestation and agro forestry techniques
- Development of cocoa farms, which include resilient practices such as vulnerability-informed land use, tree shading and agroforestry.
- Disbursement of local climate information to local cocoa producers specifically for droughts, floods and humidity. The project will leverage climate information for cropping calendars from an existing IFAD project that supported the installation of rain gauges and automatic weather stations in this AF project target region.
- Improvement on crop modelling and assessment of climate vulnerability
- Use of modern technologies with a particular focus on solar based pumping systems, solar based post-harvest processing equipment to attract more youth in agriculture

52. Under this output, the project will engage with national and Western African expertise on cocoa production, the national expertise of the Ghana Cocoa Board (Cocobod), the Cocoa Research Institute of Ghana (CRIG) and any other relevant institution with proven record of accomplishment in cocoa production will be consulted.

Rice value Chain:

- Selection of pest resistant varieties and cultural practices (distance between plants, irrigation management, and weeding) will be implemented
- Support to MOA to run Farmer Field Schools and provide other technical support. The FFS will showcase specific approaches to facilitate the introduction and uptake of resilient practices for farmers.
- Capacity building in modern composting techniques to reduce/prevent movement of farms to fallow land in secondary cropping years
- Bore holes irrigation schemes, to cope with the consequences of drought and heat extreme events, bore holes will be rehabilitated and irrigation schemes will be deployed. The increasing needs for irrigation induced by future climate change will be integrated in the design of the schemes.
- Development of new Inland Valley Swamps for rice production to increase the production of smallholder farmers and diversify and expand their revenue sources.
- Watershed rehabilitation, water efficiency and management,
- Training and extension and infrastructure rehabilitation and construction including drainage systems
- Water quality assessment, toilets, sanitation

Output 1.2. Income-generating activities (fish farming, poultry and gardening) are promoted as livelihood diversification measures

53. The contribution of fish farming to food and nutrition security in Liberia has been underplayed due to its low priority in the food production systems; however, FAO reports that it contributes significantly to national protein intake[18]. As a source of irrigation water, pond water is also richer in nutrients than well water as it contains nitrogen-fixing algae, which improve soil fertility[19].

54. With regard to this output, the actions to be taken include:

- Construction of 30 earth dams less than 15m high for fish farming activities.
- Establishment of fish farms, including the creation of value-chain services (fingerling, etc.).

55. The output will also focus on strengthening poultry production, as this is a priority for the government. The targets for these activities are Farmer-Based Organizations and priority will be given to the smallholder farmers already engaged in these enterprises.

56. In addition, the project will support the establishment of integrated resilient kitchen and community gardens powered by solar applied on integrated resilient farming systems adopting climate resilient crops, with high nutritional values.

- Establishment of 100 Community model of integrated vegetable garden of at least 4-5 ha (solar pumps, compost systems, day care facility for women, agro forestry and rotation of crops; transport systems). This will also target school gardens as well increase the teaching of skills to rural youth.

Component 2: Climate resilient rural transport and water infrastructure

[18] http://www.fao.org/fishery/countrysector/naso_sierraleone/en
[19] http://www.fao.org/docrep/003/x7156e/x7156e03.htm

Output 2.1 – Rural transportation and storage infrastructure have been rehabilitated and upgraded to withstand weather extremes

57. Fostering productivity and production is not sufficient to ensure that smallholder farmers sustain and increase their revenues. Poor road and transportation infrastructure leads to a depreciation of the quality of the production and hence its value on the market therefore smallholders' revenues. The already observed and projected intensification of extreme weather events could lead to more value chain disruptions, affecting the capacity of smallholders to gain sufficient incomes from their production. As a consequence, two key actions will be undertaken under this output: (1) improving the usability of road infrastructure all-year round and for all-weather conditions; (2) in the same areas rehabilitating existing warehouses to withstand wetter climatic conditions will also support the development of the cocoa and rice value chains.

58. Concerning infrastructure, based on the lessons learned exercise from other projects, road construction had previously overlooked the construction of culverts that include drainages, resulting in water-logged fields during the rainy season. Nevertheless, and due to the challenges in the targeted country, this project will help finance culverts that will allow for natural drainage, and support the EPA in its supervision functions. This will include reinforcing selected bridges against increased peak fluvial discharges resulting from increased deforestation, increased surface water runoff and increased rainfall intensity.

59. Activities under this output are:

- Warehouse rehabilitation to withstand wetter climatic conditions. With an increasing recurrence of extreme wet events, it is essential to ensure that existing warehouses (1) preserve low humidity level to preserve the produce and (2) are rehabilitated outside floodable areas and are not exposed to extreme flood events that could adversely affect the stored produce.
- Climate-proofing 120km feeder roads and farm tracks to ensure the year-round and all-weather usability. This includes the studies and surveys, the works, the construction of bridges and culverts where necessary, routine and periodic maintenance.
- To sustain the climate-proofed investment over a longer period of time, activities aiming at their maintenance by local public authorities and FBOs will also include: (1) Support to districts for development of Feeder Roads Maintenance Plans and (2) Support to FBOs (Road gangs formation, distribution of maintenance tools, development of Farm Tracks Maintenance Plans)
- As Liberia is a post-conflict state faced with several structural issues, the project will support the EPA to construct a building, which will serve as the secretariat of the Meteorological Agency and house the equipment to be procured. In addition, support will be given for the dissemination and utilization of information to farmers via various channels.

Output 2.2 – Water supply increased and sanitation infrastructure built, accounting for current and future climate risks

60. Agricultural and domestic water management in Liberia is becoming more complex due to climate change. Key barriers to agriculture production involve drought (acute and seasonal) and flooding of villages and swamp rice and cocoa fields due to intense periods of rain. In the targeted areas, availability of water, in both quantity and quality, is being severely affected by climate variability and climate change. Constraints identified at the local level include lack of water infrastructure both for agriculture and human consumption. The low productivity in agriculture and livestock is linked to water availability. Addressing the risks of current and future climate change to water supply and agricultural productivity is therefore critical in enhancing resilience. Frequent drought or erratic rainfall results in crop damage, loss of livestock and pastures, water shortage (for humans and livestock), malnutrition (due to lack of food), and migration of households and livestock. The unsustainable management of water resources is a major factor aggravating the impacts of climate change in the targeted areas. Crop pests and water-borne diseases are common, often caused by poor farm management and the absence of water and sanitation infrastructures.

61. The project will also tender a contract for a capable NGO or institution to carryout water quality testing as part of the site selection process to ensure the water is suitable for agriculture. As poor **sanitation**

leads to water borne diseases, which are responsible for all deaths of the labour force, the project will also build latrines in the villages. Activities include:

- Climate-proofed construction and rehabilitation of drinking water supply and sanitation to withstand the consequences of extreme dry and wet events that could disrupt the quantity and quality of water available to the population and its economic activities.
- Capacity building for potable water management to complement the construction and rehabilitation.

Component 3: Institutional capacity development and policy engagement.

Output 3.1: Capacity of the government (esp. EPA, MAO and CARI) in managing climate risk is strengthened

62. Enabling the implementation of the project will necessitate further capacity development of the relevant government agencies in charge of climate change adaptation from the policy to implementation levels. Component 3 therefore focuses on strengthening the capacity of key government institutions (3.1) and ensuring the adequate M&E of the project combined with the recruitment and training of the relevant staff to facilitate the implementation of adaptation to climate change activities.

63. The activities will consist in:

- Strengthening of capacities of EPA, MOA and CARI staff on climate change adaptation. This could include: Capacity building through technological enhancement, Training to enhance institutional capacity, Exchange visits for EPA staff. The detailed trainings will be decided in collaboration with the staff of the Meteorological Department at project start-up.
- Strengthening of the Meteorological Department, including capacity building through technology enhancement and training to enhance institutional capacity. The detailed trainings will be decided in collaboration with the staff of the Meteorological Department at project start-up.
- Technical Assistance for improved policy frameworks to mainstream climate risks in into sectoral strategies and policies.

Output 3.2 – Monitoring and Evaluation and Coordination of the Adaptation Activities

64. This final output intends to facilitate the monitoring and evaluation of the project as well as support the project team in accessing the necessary resources to plan and implement adaptation measures. This output supports the critically underfunded Meteorological Department and Environmental Protection Agency, both institutions in charge of climate change adaptation. Under this output, activities to be undertaken are:

- Support to the development of Measurement Reporting and Verification system of climate response programmes.
- Support to the improved monitoring & evaluation and knowledge management activities, which will include; Additional baseline survey costs (related to climate change adaptation) and additional terminal survey costs (related to climate change adaptation).
- Project management and coordination, including the recruitment of Climate change adaptation specialist for the duration of the project and Staff training on adaptation-related issues.

B. Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the

project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund

65. The focus of this project is to build climate resilience and address the vulnerability of the cocoa and rice sector to climate change and climate variability in order to sustain continued and increased agricultural productivity and growth for poverty reduction in Liberia. As stated above, it addresses the multiple and combined impacts of climate change especially the anticipated modification of rainfall patterns and decreased water availability and increases in temperatures.

66. The project will contribute to the Nationally Determined Contributions (NDCs) of Liberia and for the country to fulfil its international commitment with the Paris Climate Agreement and the Sustainable Development Goals (SDGs) mainly the SDG1 (no poverty); SDG 2(zero hunger); SDG 13 (climate action). This project will contribute to IFAD's objectives on environment and climate as described in its Environment and Climate Strategy 2019-2025

67. The most vulnerable populations as determined by the IFAD targeting strategy have been targeted to receive significant economic and social benefits from this project. They will receive capacity building on the implementation of best climate resilience business models in rice and coca value chains and, climatic goods and services. Goods and services include: climate resilient infrastructures as described above (technologies, equipment's, climate proofed roads, storage and warehouses…).

68. Other socio-economic benefits will come from the activities related to resilient post-harvest with a potential side benefit of increasing both rice and cocoa yields. It is expected to have beneficial impacts on local food security and nutrition including through the creation of reserves in case of climate shocks. Sustainable land and water management techniques and sanitation facilities, along with water quality monitoring, are also expected to have benefits for local health, while the diversification and sustainable management of non-rice and cocoa crops, such as fish farming and gardening will also have benefits on overall nutrition and improved income.

Environmental and social considerations.

69. The Government of Liberia established the EPA in 2003 under the EPA Act. The Agency became a fully functioning entity in 2006 with a board of directors and Policy Council. The EPA's mandate is to provide stewardship for environment issues and to ensure Liberia's compliance with international environmental and climate change treaties. This project aims to enhance the capacity of the EPA on initiating EIA policy formulation and the monitoring of compliance of environment and climate change policies and regulations in the country.

70. Projects that carefully planned and design in consultation with EPA will tend to protect the project environment from degradation and protect people and natural habitats for flora and fauna. The PIU-MOA will hire a consultant to conduct the initial environmental assessment and follow assessment to ensure that the AF project is compliant with EPA policies and regulations.

71. Farmers seek virgin and fallow land each year for food protection because of depleted soils after one cropping calendar. The project will encourage composting to enrich the structural and nutritional qualities of soil for optimum yield.

72. Liberia is a data-poor environment; as such, project lack of data is a challenge to planning and management decision making. This project will collect data on climate change and rainfall patterns in the targeted areas to inform future project planning and management decision-making processes.

73. Beyond the increase of yields and income, the project will help increase knowledge on rice and cocoa resilience and best practice through the definition of an integrated climate resilient rice and cocoa business model. Through this project, it is expected an increased data on crop vulnerability and water-related future stresses, water and sanitation infrastructures, improved roads to access to markets, post-harvest and processing facilities to add value on raw materials, better health for local populations through enhanced nutrition, reduced erosion and pollution. Participatory and collaborative processes for both rice and cocoa event and policy-making will increase the awareness and understanding of

climate risks and potential policy gaps. The trained EPA staff will support climate change awareness raising activities for all actors of the value chain platforms.

Economic benefits

74. Sixty per cent of Liberians live in rural poor communities and rely on agriculture for sustenance. The PIU-MOA aims to support smallholders to an extent that their lives are transformed from poverty to economic prosperity. This project will timely reach farmers with planting materials with high yield potential guided by practical technologies that will make positive differences in farm productivity.

75. Family health and education depend on what they earn from farms which is barely enough for decent meals. Agriculture advisory and service delivery have never been timely and adequate to move farmers from subsistence farming to a commercial level where farming household lives will be transformed and improved. This project intends to advertise this situation by getting inputs to farmers timely.

76. Most of the farmers continue to plant low yield varieties of rice and cassava because of lack of access to improved varieties and those with access lack knowledge and skills in good agricultural practices (GAP). With about 40 per cent contribution to GDP in Liberia, smallholders who are the drivers of the agriculture sector are yet to experience tangible social benefits at the household level. This project will distribute high yielding cocoa and rice seeds to farmers. This project will increase family plot size through the community leadership to increase productivity and income while increasing the resilience to climate change.

77. Revitalizing the economy in the future depends on strengthening the agriculture through private sector involvement. This project will engage private sector actors to increasing their investment in agro-business such as inputs importation and sale and improving marketing and trade so that farmers income will increase their production.

78. The focus of the project is the disadvantaged segment of the population mainly rural smallholder farmers.

Targeting (social/gender).

79. This project will comply with IFAD social and gender policies in the AF, designed to address social and gender equality issues and child protection. The Government of Liberia and development partners have long recognized gender equality as an important development strategy. The 1986 Constitution of the Republic of Liberia clearly states under Chapter III, Article 11 to 26 the fundamental rights of all Liberians regardless of race, place of origin, political opinion, color, religion, creed or gender. This project will be therefore be inclusive of men, women and youth.

    i. The project development phase consists of a thorough gender and social assessment to inform the activities about inclusiveness believing that the project communities will be stronger if the individual families and empowered to contribute to development.
    ii. This project aims to holistically increase family income and to achieve this goal through climate resilient agricultural activities. Improving irrigation systems in low land plots will promote all year round rice production, meet house food needs and generate family income from sales of surpluses to address family expenditure needs.
    iii. Women participation in community decision making processes will be promoted in project activities mainly at the project management committee level. The establishment of criteria for organizing community project committees will include proportionate representation of both male and female. This will be detailed in the Project Implementation Manual (PIM) to be completed during project start up.
    iv. Youth sensitivity will be encouraged in targeting project beneficiaries and the project will ensure that implementing partners are knowledgeable about inclusiveness.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme

80. The project design is cost effective as it builds on works done and on-going activities in the cocoa and rice sectors by various donors and governments. It intends to improve the efficiencies of donors' investments in these sectors over the last decade.

81. The project activities are based on experience from past interventions in the agriculture sector. The staff from field levels to administration have worked with and managed complex project.

82. Project communities will be clustered to be able to share resources, knowledge and lessons learned from the interventions and for project staff to be able to monitor and manage community activities without extensive stress and resource requirements.

83. The activities of the project are designed to obtain optimum results that are of benefit to the communities and direct and indirect project beneficiaries in tangible ways.

84. Adaptation Fund funding for Liberia is designed to also be a catalytic for scaling-up adaptation to climate change using sustainable land and natural resources management including reducing use of bush fallow systems; improved water management; improving access to weather and climate information - through targeted technical and institutional capacity development and on the ground activities (including demonstrations). The project will also work with existing community structures such as the FBOs and FFS to promote community-based activities.

85. Approaches to make the rice and cocoa sector more productive have so far been focused on either the production chain - technical production standards (inputs) and management cycle, or the marketing issues that regulate prices (outputs). To date few efforts have tackled all rice and cocoa production issues in an integrated manner, which could have led to the perpetuation incentives in these sub-sectors. However, it is increasingly recognized that a single adaptive action on a select element of the rice or cocoa cultivation cycle (for example, seed enhancement alone) will be less effective than if accompanied by adaptive actions in all other elements of the cultivation cycle. Therefore, maximum resilience impact can only be achieved through the implementation of adaptations in each of the aspects of the rice and cocoa cycle (input management, cultivation practices, and harvest management).

86. Concerning water management, the proposed interventions are also cost effective because the proposed interventions are expected to have side benefits in terms of health, environmental integrity and biodiversity conservation, and poverty reduction. The approach taken is also to rehabilitate existing water infrastructure, to ensure appropriate flows and conservation, while at the same time halting the erosion that is leading to the infrastructure's degradation.

87. In the absence of available economic alternative, seeking the adaptation of the rice and cocoa sub-sectors is more cost efficient than other options in the agriculture sector, for example to re-orient agricultural production towards other crops as this would have a high opportunity costs as farmers would lose a few years in the transition (absence of systems, markets, technical inputs, etc…), and yields would remain low unless technical constraints are also addressed.

88. As proven in previous IFAD pilot projects, in terms of cost-effectiveness, interventions designed to target the rice and cocoa combined with sustainable use of natural resources and climate resilience measures have a significant chance of generating impact on rural poverty, environmental degradation and ecosystem services, thereby potentially multiplying benefits in the long term.

89. The cost-effectiveness of the project components is further elaborated below.

Table 3: Cost effectiveness of the project interventions

	Cost US$	Number of Beneficiaries	Benefits generated	Alternatives to project
Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification.				
Output 1.1. Best available technologies and integrated resilient rice and cocoa varieties are implemented to foster the resilience of cocoa and rice production and post-harvest practices: - Cropping calendar and climate early warning systems; - Vulnerability and crop modelling; - Climate resilient varieties, multiplication and dissemination, - Integrated pest management, soil management, - Energy for production and post-harvest	**4,240,121**	2 CARI staff will be trained in Ghana and develop a climate change best practices guide for cocoa farmers. This will be used in the training of 12,000 farmers through the FFS.	Up to date knowledge on climate change adaptation for cocoa production. A best practices guide developed for cocoa production to adapt to the adverse impact of climate change. This will be distributed and form part of the training programmes through the FFS of 12,000 farmers.	A best practices guide is an important vehicle through which farmers are able to learn about climate change and how to adapt to it, but also about environmental best practices. Without it environmental management and climate change adaptation will not be mainstreamed into the FFS training programme.
		The project will support the training of 9000 FBO members of on agrochemical best practices. Community focal points for each of the 300 FBOs will also be trained to monitor post-training.	As part of the training, the Adaptation Fund will train 9000 beneficiaries (300FBOs), through the FFS and the training of community leaders of each of the FBOs on correct agrochemical usage.	Unless trained, there is a risk that farmers will continue to over-apply fertilisers and apply them at the wrong time. For example, on already green rice instead of growing shoots in the mistaken belief that this will further improve rice productivity, instead of damaging it.
		The project will work with the MOA, EPA and other stakeholders to raise environmental and climate change awareness through the value chain platforms targeting	The Value Chain (VC) platforms which will be held twice a year will be a prime opportunity to raise awareness of all the VC players on environmental best practices and the impact of climate change. The project will partner with the	Without the involvement of these stakeholders, they will miss an opportunity to increase their visibility across a nationwide platform. Equally, farmers will not benefit from their added value in environmental management and climate change adaptation. Farmers will not learn about the

	Cost US$	Number of Beneficiaries	Benefits generated	Alternatives to project
processing and water pumping; - Reforestation and agro-forestry		input suppliers, producers, transporters, buyers, processors, ABCs and cooperatives.	MOA/EPA to deliver the awareness raising workshops.	importance of sustainable NRM, the impact that climate change will likely have on their businesses and livelihoods, but also how they are best able to best adapt.
		Extension workers will be trained who in turn will train around 6,140 in climate-resilient agriculture.	The project will work with research institutes, ministries and other relevant stakeholders to develop a training curriculum. The curriculum will build on the GEF pilot carried out under the IACCAPFS, and will form the foundation of the FFS training programme to train around 6,140 farmers.	Without the upscaling of the climate smart agriculture approach, farmers will continue with inefficient and destructive rotational slash and burn agriculture. Continued slash and burn agriculture lead to unsustainable biodiversity management through deforestation, erosion, soil leaching, general soil impoverishment, reduced livelihoods, ability to adapt to climate change and reduced food security.
		6MT of Nerica rice will be procured and multiplied to 144MT and applied to 240 ha.	Supporting the procurement of climate resilient rice, the Adaptation Fund will support the project in improving food security and climate resilience. Nerica rice yields 59 per cent more per ha and farmers can double their profits over traditional rice. Nerica rice also has a consistent 98 per cent germination rate compared to a highly variable germination rate for local rice between 20 and 90 per cent .	Without continued support in providing climate resilient rice varieties, farmers will continue to be dependent on reduced yields, reduced capacity to adapt to the vagaries of climate change and ultimately reduced food security.

	Cost US$	Number of Beneficiaries	Benefits generated	Alternatives to project
Output 1.2. Income-generating activities (fish farming, business model on integrated community garden with solar water pumps, compost systems, processing units, transport system tricycles) are promoted as livelihood diversification measures	**590,915**	The 5,000 beneficiaries benefitting from the earth dams will also receive training for fish farming and post production support.	Establishment of 100 community business model vegetable gardens with solar systems to produce with water solar pumping, processing unit, transport, MIS systems) during the dry season To add extra value to the earth dam investment and provide further climate resilient capacity, the project will train the same earth dam beneficiaries with fish farming and post-production and marketing support. The activity will also develop a best-practice training manual.	Without this activity the nutrition and food security is not guaranteed at household level especially during the dry season Without this activity farmers will miss out on additional food security but also economic empowerment. More fertilisers would be needed as there would be no nitrogen fixing from the earth dam aquaculture leading to reduced economic and environmental benefits.
		Around 5,000 earth dam farmers will be supported with additional fish farming capacity.	The 40 earth dams will be stocked with high yielding fingerlings for additional income and food security. Fish farming is also a source of irrigation water; pond water is usually richer in nutrients than well water and also contains nitrogen-fixing blue-green algae, which can improve soil fertility, reducing the amounts of fertilisers required.	With the infrastructure already in place in the form of the earth dams, it would be a waste not to make use of the fish preceding possibilities. Without which farmers will have reduced protein, reduced incomes, and will need greater support in the form of fertilisers for their fields.
Sub-total	**4,831,036**			
Component 2: Climate resilient rural infrastructure				

	Cost US$	Number of Beneficiaries	Benefits generated	Alternatives to project
Output 2.1. Rural transportation and storage infrastructures have been rehabilitated and upgraded to withstand weather extremes (climate resilient feeder roads, drainages systems, culverts; climate proofed storage and warehouses, equipment and processing units, post-harvest storage facilities with phytosanitary control and serving as integrated trading and markets points)	**1,983,867**	120 km of rural feeder roads and farm tracks are climate proofed	Lessons have been learned from the RCPRP project to focus more on the environmental impact to avoid obstructing IVS drainage areas, which cause water logging of otherwise arable land. The project will support the carrying out of Environmental Social Impact Assessments that will be conducted in accordance with EPA procedures to ensure planned activities such as culverts are included in the design and implementation of the feeder roads. Depending on funding bridges will also be strengthened against storm water. The EPA will also be invited and supported to conduct supervision of construction to ensure ESIA compliance.	If environmental and climate change adaptive requirements are not identified and implemented, the project will be in violation of national environmental procedures. The overall investment will also be at risk from increased vulnerabilities to the adverse effects of climate change, but it also risks to inflict negative impacts on the livelihoods of the farmers.
		100 warehouses will be rehabilitated to withstand extreme weather conditions and increasing air humidity content. 10,000 farmers will benefits from the improved storage conditions.	The quality and the storage will be improved, leading to higher farmers' incomes encouraging them to further invest in the development of their production and economic activities	Storage quality and capacity is a recurring issue in the development of the cocoa value chain. The improvement of the usability of roads also planned in this project will contribute to ensure the quality of the produce.

	Cost US$	Number of Beneficiaries	Benefits generated	Alternatives to project
Output 2.2: Water supply increased and sanitation infrastructure built, accounting for current and future climate risks (water efficiency and management, training and extension, water quality assessment, toilets, sanitation and drainage systems)	**970,000**	10000 households will have access to potable water, latrines and sanitations facilities	Rehabilitation and extension of 50 drinking water supply facilities and protection of catchment areas Construction of 50 simplified networks, HOP boreholes and standalone water points in surrounding rural villages Construction of 10 public and 150 individual sanitation facilities in the project area.	Water access is a big challenge in the rural areas and climate change has contributed to reduce the water availably. Additionally, Safe drinking water, sanitation, and **hygiene** (WASH) were essential for **Ebola** treatment and preventing the transmission of **Ebola as well as other type of diseases**
Sub-total	**2,953,867**			
Component 3: Institutional capacity development and policy engagement				
Output 3.1. Capacity of the government (esp. EPA, MAO and CARI) in managing climate risk is strengthened	**483,132**	The EPA and the Meteorological Department's staff and equipment will be strengthened	The activities of EPA and the MD are more efficient and the services rendered by them are more adequately designed to support farmers face climate change consequences.	Without institutional. Staff and equipment support the Meteorological Department and EPA will continue to struggle to provide adequate services to farmers.
		The project will train 2 staff from EPA or MOA at postgraduate level. 2 technicians from CARI to repair the AWS, and 24 extension agents.	To ensure operational sustainability of the EPA or MOA, advanced post-graduate training will be supported for two staff members. Technicians form the CARI will be trained by the AWS supplier in repairing weather stations. Meteorological and MOA staff will receive online training from an accredited university	The Meteorological Department and EPA are chronically underfunded and under capacitated. It is currently receiving some assistance from UNDP however this is not focused on agriculture. A functional Meteorological Department providing forecasting and early warning services for pest and disaster management is essential for agriculture planning but also

	Cost US$	Number of Beneficiaries	Benefits generated	Alternatives to project
			on the importance of weather forecasting on farmer agricultural productivity in planting, disease and pest management as well as developing low-cost mobile phone text message based early warning systems.	Disaster Risk Reduction (DRR). Without further support the Meteorological Department will not be able to operationalize the previous GEF AWS investments and make sustainable impacts towards climate change adaptation.
Output 3.2: Activities are adequately coordinated, monitored and evaluated.	**700,000**	EPA staff member and newly recruited adaptation expert at EPA are trained for CC adaptation	The information and services provided by EPA are improved and the resilience of the population is progressively strengthened.	EPA as focal point of environment and climate-related activities in the country has to be supported to ensure its mandate.
Sub-total	**1,183,132**			
Total	**8,968,035**			
Recruitment of local staff (2%)	**179,360.7**			
Implementing agency Fee 8.5 per cent	**762,282.98**			
Overall total	**9,909,678.68**			

D. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist

90. This project is aligned with national priorities including the Pro-poor Agenda for Prosperity and Development (PAPD) ushered in by the 2017 general and presidential elections. The PADP is focused on poverty reduction and job creation and the development of critical infrastructure for agricultural development to increase food production.

91. Prior to the elections, every major policy document developed by GoL over the last ten years including the Liberia Agriculture Sector Investment Project (LASIP) and Agenda for Transformation (AFT) have given priority to economic growth, job creation and youth empowerment. Agriculture offers one of the greatest potentials for achieving this objective and the way forward is climate resilient agriculture.

92. Increased productivity of the sector will enhance income generation for rural communities especially in the wake of low prices of major export commodities in the extractive industries. Given the country's endowment in forest and biodiversity, climate resilient agriculture is necessary to sustain the protection of these invaluable natural resources.

93. Out of the 2008 National Adaptation Plan of Action (NAPA), Liberia received support from the Global Environment Facility through the UNDP Liberia country office that led to the development of an agricultural adaptation project titled “Climate Change Adaptation Agriculture Project (CCAAP)”. The project was implemented by the Ministry of Agriculture through the Program Management Unit (PIU).

94. The project exposed farmers, including women, to adaptation innovations through FFSs, use of water management/water control practices for the lowlands, use of climate resistant crop varieties, integrated soil fertility management and integrated pest management. This proposed project builds on these experiences and lessons learned from the CCAAP project implementation.

95. In 2013, Liberia submitted its Initial National Communication (INC) on climate change to the United Nations Framework Convention on Climate Change (UNFCCC). The INC contains a national inventory of anthropogenic emissions by sources and removals by sinks of GHG, as well as a description of steps to be taken by the country to contribute in achieving the objective of the Convention. Liberia’s INDC includes one component on mitigation and one on adaptation. The INDC presents a platform to integrate its Low Carbon Development Strategy into the country’s long-term sustainable development Vision by 2030 (Agenda for Transformation)[20].

E. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund

96. The project will ensure potential adverse environmental impacts are identified and avoided, and where impacts cannot be avoided, a suitable plan is prepared for those impacts to be mitigated and managed. Applicable and relevant national technical standards including best environmental practice will be used to deliver the planned activities.

97. Under this project, an Environment and Climate Specialist as well as a Gender Specialist will be engaged to ensure compliance with the environmental and social policy of the Adaptation Fund as well as meet the requirement of the Liberia National technical standards. These include The National Environmental Policy of Liberia (2002), The National Policy and Response Strategy on Climate Change,

[20] https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Liberia%20First/INDC%20Final%20Submission%20Sept%2030%202015%20Liberia.pdf

(2008)[21], The National Forestry Reform Law (2006)[22], The Regulation on Environmental Impact Assessment (2009)[23] and The National Rice Development Strategy of Liberia (2012). The project will work to ensure compliance to the AF policy and the requirement of the Environment Act will commence at the inception phase where planning for the activities of the programme will commence. The process will identify, prevent and minimise any damage that the proposed activities could cause to people and the environment. Annually, during the annual work planning, the project will identify and propose mitigations measures on activities that could impact negatively the beneficiaries.

The National Environment Policy of Liberia, 2002

98. The policy's goal is to ensure long-term economic prosperity of Liberia through sustainable social and economic development which enhances sustainable environmental quality and resource productivity

The National Policy and Response Strategy on Climate Change, 2008

99. National Adaptation Policy Framework recognizes that there are four major principles that provide a basis from which integrated actions to adapt to climate change can be developed. These are: Adaptation to short-term climate variability and extreme events to serve as a starting point for reducing vulnerability to longer-term climate change; Adaptation at different levels in society, including the local level; Adaptation policy and measures assessed in a development context; and The adaptation strategy and the stakeholder process by which it is implemented given equal importance. Based on this framework and elements of adaptation strategy, key sectors are identified and their corresponding adaptation policy and strategies formulated. The Policy and Response Strategy recognizes forestry and wildlife, agriculture, coastal areas, water resources, fishery, energy, mining, industry, transport, tourism, Infrastructure, urbanization and settlement, and health as priority sectors for adaptation[24].

The National Forestry Reform Law, 2006

100. The law aims at assuring the sustainable management, conservation, protection and sustainable development of Liberia forestland. It provides for rules on the ownership and use of forest resources, policy and planning in relation to forests, the commercial and other use of forest resources, contractual aspects of forest resources licenses, relations between neighbouring forest areas, environmental protection, protected areas network and wildlife conservation, community rights and forests management; rights of land owners and occupants, public use of holder infrastructure, trade in forest resources, fiscal provisions, measures for the promotion of forestry and wildlife activities, dispute resolution, miscellaneous, offenses and penalties, regional and international forestry initiatives and conventions.

The Regulation on Environmental Impact Assessment, 2009

101. The 2009 Regulation on EIAs implements Chapter 19, Section 19.1 (g), (h), (j) and (k) of the 2006 Forestry Reform Law. It deals with the submission of Environmental Management Plans, the consultation and decision-making processes as well as the EIA process. It also singles out provisions on monitoring.

The National Rice Development Strategy of Liberia, 2012

102. Aims to improve food security and achieve self-sufficiency through the doubling domestic rice production by 2018. The strategies proposed were aimed at achieving the doubling of domestic rice production by increasing the rice productivity in both upland and lowland ecosystems and by expanding the land area under rice cultivation in the lowlands.

The Land Administration Policy, 2015

[21] http://www.epa.gov.lr/sites/default/files/National per cent 20Policy per cent 20and per cent 20Response per cent 20Strategy per cent 20on per cent 20Climate per cent 20Change per cent 20Final per cent 20Document-min_0.pdf
[22] https://www.documents.clientearth.org/library/download-info/act-2006-act-adopting-the-national-forestry-reform-law/
[23] https://www.documents.clientearth.org/library/download-info/regulation-2009-regulation-on-environmental-impact-assessment-liberia/
[24] http://www.epa.gov.lr/sites/default/files/National per cent 20Policy per cent 20and per cent 20Response per cent 20Strategy per cent 20on per cent 20Climate per cent 20Change per cent 20Final per cent 20Document-min_0.pdf

103. This document resents a framework for land administration in Liberia with a focus on the main features of good land administration and those pertaining to the identification, ownership, use, and valuation of land, as well as the identification of land and the determination of rights to the land

The Land Rights Policy, 2013

104. The Policy provides a framework for the management of land in Liberia. Covering public lands, government, customary lands

The Water Supply and Sanitation Policy, 2009[25]

105. The policy articulates principles for both urban and rural water supply and sanitation service provision. In doing so it provides a means for the future integration and development of the sector; giving it more visibility; putting an end to the fragmentation that has held the sector back in the past; creating a framework for investment and enabling effective service delivery that will facilitate progress towards the priority interventions articulated in Liberia's Poverty Reduction Strategy; and a the first step towards a Sector Wide Approach[26].

F. Describe if there is duplication of project / programme with other funding sources, if any

106. The United States Department of Agriculture (USDA) has invested over US$20 million in the cocoa sector in 2012-2017 developing the capacities of existing cocoa coops and organizing new one for training and certification in Bong, Lofa, Gbarpolu, River Gee and Grand Gedeh Counties. The newly established farming cooperatives remained fragile in institutional capacities and governance when the project phased out and need to be further strengthened.

107. World Bank-funded West African Agricultural Productivity Project (WAAPP) investment of US$14 million

108. IFAD has already invested US$ 24.9 million in cocoa sector in Lofa County; and it has recently commenced the Tree Crops Extension Project (TCEP) with the total project cost of US$13 million and US$4.5 million from the Adaptation for Smallholder Agriculture Programme (ASAP) grant. The project is aiming at strengthening smallholder inclusion in the cocoa value chain in Nimba County; The Tree Crop Extension Project phase II (TCEP-II) with a total project cost of US$23.8 million. TCEP-II has a similar approach as TCEP but in Lofa County; and

109. The World Bank has also invested US$ 15 million Nimba and Grand Gedeh Counties.

110. The EU is currently investing over US$10 million in the cocoa sector. Solidaridad Liberia is implementing this project in Bong, Lofa and Nimba Counties and plans to extend to Gbarpolu, Grand Gedeh and River Gee Counties.

Table 4: Project Synergies with other Completed and On-going Cocoa and Rice Projects

COCOA			
Project and donor	**Main interventions**	**Synergies**	**Duplication**
EU/Solidaridad Cocoa Improvement Project (CORIP)	Cocoa improvement, production and rehabilitation support, export support	Same as AF interventions	Geographic and activities gaps
USAID Food and Enterprise Development (FED)	Rice value chain development, enterprise improvement	Same as AF intervention	More focus on lowland area but the same farmers with developed lowland

[25] https://wash-liberia.org/wp-content/uploads/sites/54/2013/08/Water-Supply-and-Sanitation-Policy.pdf
[26] https://wash-liberia.org/wp-content/uploads/sites/54/2013/08/Water-Supply-and-Sanitation-Policy.pdf

USDA/ACDI-VOCA	Strengthening cocoa coops and farming groups to increase the production of high grade cocoa beans	AF activities are very similar	Activities include improving climate resilience
IFAD - Smallholder Tree Crops Rehabilitation Support Project (STCRSP)	The project is aiming at strengthening smallholder inclusion in the cocoa value chain; feeder roads		
World Bank - Smallholder Tree Crops Rehabilitation Support Project (STCRSP)	The project is aiming at strengthening smallholder inclusion in the cocoa value chain		
RICE			
AfDB - Agricultural Sector Rehabilitation Project (ASRP)	Strengthening rice research and multiplication, production and productivity; irrigation and feeder roads		
IFAD - Agricultural Sector Rehabilitation Project (ASRP)	Strengthening rice research and multiplication, production and productivity;		
West African Agricultural Productivity Project (WAAPP)	Strengthening rice research and multiplication, production and productivity;		

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned

111. Learning and knowledge management are integrated throughout the project starting from integrating the lessons learned from the TCEP and TCEP-II projects into the Adaptation Fund project, but also applying and building upon knowledge generated from other donor funded projects and agencies. The project will generate knowledge through conducting vulnerability mapping and climate research, this research will focus on assessing the future geographical suitability for cocoa and rice production in Liberia by looking at maximum dry temperatures that are projected to be limiting for the crops. From this activity, there will be an understanding of what the differentiation of climate vulnerability is within the project area. In addition, it will project the implications for future shifts in cocoa and rice production and hence, recommend adaptation measures. The project will work with relevant partners and stakeholders to contribute to the development of maps for protected forests in the country. These maps will be made available to the implementing partners and used to map cocoa farms. The vulnerability mapping of areas most susceptible to slash and burn will also be mapped adding to knowledge of the scale of the problem at a national scale.

112. In addition to the maps, this activity will also include researching crop failure, weather index insurance and exploring the viability of green rural finance to support energy efficient technologies. The project will also design tools for knowledge dissemination to the farmer level. This will be in the form of best practices manuals and guides for tree crop production, fish farming, a curriculum developed for climate smart agriculture that will be implemented through the FFS, an early warning system tool to disseminate agriculturally related meteorological data, pest management warnings and short demonstration videos

in their indigenous languages. Furthermore, the project will develop case studies that will help disseminate lessons learned and foster replication or scaling up of successful climate smart crop production enhancement. Whenever possible, the project will facilitate baseline studies and surveys for future interventions.

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund

113. In response to the request from the Government of Liberia's Ministry of Agriculture (MOA), IFAD is extending its financing of rural development projects to Bong county. A draft project concept note was developed by IFAD for the Adaptation Fund project in the agricultural sector in Liberia based on upscaling key previous GEF/IFAD project activities. A joint IFAD/AF formulation mission has been carried out and this draft concept note was shared and discussed with the main government institutions. The proposed project proposal is the result of this process.

114. Individual meetings were held with MOA, the Meteorological Department, the Environmental Protection Agency (EPA), Central Agricultural Research Institute (CARI), NGOs cooperatives, FBOs, service providers and other relevant stakeholders. As the executing entity for the proposed project, MOA is a primary stakeholder, the EPA has been consulted in this process. UNDP and UNWOMEN have also been consulted.

115. Consultations at the local level have been conducted in the county where the project will be operating. The consultations focused on farmer groups, including women groups, and implementing partners to identify challenges, their needs and type of technical support to be provided by the project partners to support their capacity in adapting to climate change. Lessons learned from the previous IFAD/RCPRP+ and GEF/IACCAPFS projects have been integrated into the project design. The findings and recommendations have been verified through the joint formulation mission and successful activities identified for upscaling, activities that have remained incomplete due to the EVD and budgetary constraints have also been included to ensure continued and committed developmental support.

The list of persons met is presented in Annex 7 and reports of relevant meetings with communities

A. Provide justification for funding requested, focusing on the full cost of adaptation reasoning

116. This project is considered as an additional climate financing to climate-proof and mainstream climate considerations in IFAD-Liberia baseline investment on cocoa and rice value chain. The project aims at providing direct support to 25,000 smallholder farmers most vulnerable smallholder cocoa and rice farmers in their transition to more sustainable agricultural production practices and adaption to climate change while facilitating their access to markets. The project will target 10,000 rice producers and 10,000 cocoa, and 5,000 for other enterprises of which at least, 40 per cent will be women and 40 per cent young people involved in the rice and cocoa value chains.

117. To further raise the technical capacity of the main governmental organizations involved, a training needs assessment will be carried out to identify required capacity developments for effective and efficient implementation of the project and adaptation planning capacity, with a focus on climate resilience in the cocoa and rice agricultural and water sectors.

118. The AF IFAD-Liberia **INTEGRATED INTIATIVES TO PROMOTE CLIMATE RESILIENCE IN COCOA AND RICE VALUE CHAINS IN LIBERIA** identifies three main components:

- Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification measures;
- Component 2: Climate-resilient rural transport and water infrastructure; and
- Component 3: Institutional capacity development and policy engagement.

119. Planned activities under the Adaptation Fund on climate adaptation and sustainable management of natural resources will contribute to adaption to climate risks on the cocoa and rice value chain development while building resilience and complement the IFAD baseline investment in Bong County. Best practices from this AF will be replicated at national and regional level.

A. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme

120. The sustainability of beneficiaries' climate smart production activities is embedded in the tremendous benefits that they will accrue from demonstrating climate smart production of cocoa and rice and the livelihood aspects of cocoa and lowland rice production that will provide alternative food and income.

121. Smallholder rice producers are cognizant of the drudgery of labor associated with shifting cultivation such as preparing new site each cropping year, weeding and protection of crops from rodents and birds. The project will move beneficiaries from shifting cultivation on the upland where they have experienced hard labor and low yield year after year to the lowland where rice production will be intensified and yield increase greater than upland systems the same size of farm.

122. The project will provide alternatives for intercropping practiced by farmers on the upland with utilization of swamp margins to produce crops that farmers plant in upland rice-okra, beans, pepper, cucumber and corn. Farmers eat and market these crops during and after rice harvest. This bring additional income and improves food security in the households

123. The project will also support the construction of solid irrigation infrastructures for farmers to have all year round irrigation water to grow rice in the lowland, something they cannot do on the upland. This will enhance multiple rice harvest on the same site using climate resilient high-yielding rice varieties as Nerica 19.

124. Knowledge and skills acquired by rural farmer is something that can never be taken away from them. The benefits they accrue from applying climate smart skill and knowledge will serve as motivating factor for sustaining rice production in the lowland.

125. During rehabilitation, cocoa farmers will intercrop cocoa with plantain, banana and other crops as other sources of income and food for households.

126. Youth entrepreneurs poultry production activities will result in improvement of livelihoods thus serve as motivating factor for continuation of their business activities. They will earn additional incomes from sale of manure to rice farmers for the vegetable production.

127. CARI's commercial production of foundation seeds will generate revenue for continuity of supplying the cocoa partners to continue to produce and sell climate resilient seedlings to farmers.

a. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme

128. As part of the project design, a preliminary screening and scoping risk assessment was developed against AF principles to assess environmental and social impact risks as well as a risk assessment dictated by the countries policies. These assessments are documented in the Environmental and Social Management Plan (ESMP) in section C Part 3 of this document and the Environmental and Social Management Framework (ESMF) of the project provided as **Annex 1**. The ESMP is focused on process-oriented risk management where mechanisms are built into programme implementation to ensure that rigorous risk assessment and management measures will be applied to all component activities including unidentified sub-projects in each of the component. For some activities, the proposed interventions and investments have not been fully defined at the project approval stage. Further risk assessments will be undertaken at this stage, which include the AF principles checklist and

completing the Environmental Significance Declaration Permit (ESD) checklist. This work will be supported by the EC and Gender specialists with oversight from the M&E specialist.

129. Sub-activities at the various steps of project implementation will be screened against the 15 principles of AF. The checklist attempts to apply the 15 Principles to a national context in a way that will be easily understood by project partners and beneficiaries alike.

130. Table below provides an overview of the assessment against AF principles and the principles that require further assessment and management are discussed in more detail.

Table 5: ESP Screening Checklist for compliance with the Environmental and Social Principles

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	✓	
Access and Equity		There is a high risk of land tenure issues, with a key role of paramount chiefs in the distribution of land.
Marginalized and Vulnerable Groups	✓	
Human Rights	✓	
Gender Equity and Women's Empowerment		There is a risk of social exclusion of women and youth due to limited access to land. There is also a risk of low mobilization of women hence a gender inequality in targeting beneficiaries
Core Labour Rights	✓	
Indigenous Peoples	✓	
Involuntary Resettlement		Initial screening and compliance assessment required, during implementation even though no roads for more that 10 km which may lead to involuntary resettlements planned, The programme activities will be designed and implemented in a way that avoids or minimises the need for involuntary resettlement. When limited involuntary resettlement is unavoidable, due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation. This is anticipated in areas where irrigation infrastructures and roads rehabilitation are

		planned. Potential situations can be identified at Inception Phase and necessary measures taken.
Protection of Natural Habitats		There is a risk of wetland (especially mangrove) degradation and removal for rice paddies and vegetable farming
Conservation of Biological Diversity		There is a risk of biodiversity loss caused by bush fires and slash and burn agriculture
Climate Change		There is a moderate risk of GHG emissions from rice paddies
Pollution Prevention and Resource Efficiency		There is a moderate risk of water pollution and waste proliferation due to the use of inorganic fertilizer and agrochemicals.
Public Health		There is a moderate risk of unsafe and non-healthy working conditions, waterborne diseases and dust from road construction
Physical and Cultural Heritage		There is a low risk of loss and disturbance of cultural resources such as sacred forest and archeological site
Lands and Soil Conservation		Deforestation and upland crop production might affect soil quality and conservation, as well as flooding, water logging, soil salinization and alkalization

131. Based on the environmental and social risks screening against the 15 principles of the AF ESP, the project is categorized as a **Category B** project, with a few, small potential adverse impacts that are localized, reversible or easily mitigated. Accordingly, an Environmental and Social Management Plan has been prepared (see Part 3, section C).

A. Describe the arrangements for project / programme implementation

Project Management

132. The implementation arrangements for the project will follow the implementation model for the on-going AfDB, IFAD, and World Bank projects in the agriculture sector. The Ministry of Agriculture Project Implementation Unit (MOA-PIU) has been established as a cost-effective way to implement all investment projects in the sector and it gained a considerable experience in investment project implementation over the years of its functioning. The project will further strengthen the capacity of the PIU through the competitive recruitment, adoption of the monitoring and evaluation (M&E) system, provision of communication infrastructure, audit and strengthening the financial management and accounting systems.

133. The national staff will receive in-service training including skills transfer from international experts. Furthermore, and in keeping with standard procedures, the PIU will ensure the active participation of the appropriate national and field staff of the Ministry of Public Works and EPA in the execution of civil works. The National Climate Change Steering Committee (NCCSC), an inter-ministerial Steering Committee will oversee the project implementation. The NCCSC is a clearinghouse on all Climate Change matters in Liberia

134. At the field level, agriculture advisory and extension agents will be recruited competitively and retrained on climate smart agricultural activities. The recruitment will focus on youth however on those that have graduated from agriculture colleges of universities and TVET institutions.

National Climate Change Steering Committee (NCCSC) roles and responsibilities

135. The project will have a steering committee. The National Climate Change Steering Committee, headed by the Minister of Finance & Development Planning, Co-Chair by EPA will serve as the Project Steering Committee. The members will include the Ministries of Agriculture, Youth and Sports, Gender Children &Social Protection, CARI, LACRA, CDA, and representatives of Civil Service Organizations and IFAD as observer.

136. The committee will serve as advisory committee and provide management guidance; review and approve Annual Work Plan and Budget review reports, monitor sites periodically and provide feedback to the project management.

Project Implementation Unit (PIU) roles and responsibilities

137. The PIU is the project implementation arm of the Ministry of Agriculture. It is autonomous of the mainstream public activities of the MOA but works in close collaboration with the MOA.

138. The PIU will be responsible for the day to day management of the project providing directions and guidance to project partners and coordinating the project implementation with the MOA. MYS and the EPA.

139. The PIU Financial Unit will document all financial transactions and prepare the financial aspect of the project quarterly and annual reports.

140. The PIU will have Monitoring Unit for monitoring and documenting and analysing project data to generate reports about the project performance.

Project implementation and financial risk management

141. The PIU will consistently ensure proper financial management practices. Costing took into consideration all elements of the project activities including project management and local partners' activities and administrative cost.

142. The PIU will release project funds on the basis of benchmarks throughout the life of the project. A financial system will be established to monitor and control disbursement and expenditure of the project.

143. Past experience is that procurement is the riskiest of financial management that often affects project performance. An example of procurement problem is quality of inputs and value for money. Very often, specifications are either not provided or clear to the vendor. As such, there is no yardstick for checking the quality of inputs.

144. The PIU will remain cautious of this and monitor the quantity and quality of procurements. The PIU will encourage the preparation of quarterly cash flows showing benchmarks for amount stipulated in the project.

145. The PIU will establish the project account in a reputable local bank in Monrovia with three signatories necessary for payment, the Coordinator of the PIU, Deputy Minister of Administration and the Project Controller. The Comptroller will develop a petty cash control and management system and set ceiling on petty cash.

146. Where and when necessary for the interest of beneficiaries, PIU will seek approval for budget realignment within the percentage provided for in the project financial policy. PIU will submit quarterly project performance reports to IFAD and each will be complete with standard financial component according to the donor's standards. MOUs will be established with implementing partners such as EPAs and outline the activities that IPs will be directly responsible for. The PIU will consult implementing partners in drafting of technical specifications and ToRs while the final responsibility for the procurement process lie with the PIU.

147. PIU will facilitate annual audits of the project financial management including procurements and other transactions.

Pre-Implementation Phase

148. The project development will be informed by baseline data and social, economic and environmental analysis. The Project Implementation Unit (PIU) within the Ministry of Agriculture (MOA) will hire a consultant to collect baseline data for monitoring and evaluation of the project performance throughout the implementation of the project.

149. The baseline data will be used as a yardstick for measuring the performance of the project and to inform project management decisions. The baseline data will also inform target setting and development of indicators and Log frame for the project.

150. The PIU-MOA will ensure that the project is social friend and gender sensitive. As such, a consultant will be hired to conduct social and gender analysis of the project communities and make recommendations for the inclusion of men, women and youth regardless of economic status, social background, and religion. This will make the project inclusive and help to maintain the fragile peace.

151. The PIU-MOA will hire a consultant to conduct an economic analysis of the project to ensure that economic issues of smallholders are identified and address in the project design. While activities are proposed in this concept note, the full proposal will integrate findings from these analysis and recommendations to modify the proposed interventions.

In this AF project development process, the environmental, social and economic impact assessment mentioned above will identify various potential impacts and recommend risk management and mitigation process as well as the responsible executing agencies and expert personnel.

Coordination and stakeholders consultative meeting

152. The PIU-MOA will be the lead implementation agency in close collaboration with the EPA and other line ministries. There will be monthly coordination meetings for information sharing on progress made and challenges that will emerge during the project implementation to provide forum for formulating joint solutions to problems.

153. The PIU will organize quarterly stakeholder consultative dialogue about the direction of the project relative to achievement of desired results and to share feedbacks from key stakeholders in the agriculture sector. Key stakeholders include both public and private sector actors.

Targeting communities and beneficiaries

154. Over the last two decades, the GoL and development partners have continued to work with smallholder cocoa and rice producers. If this project will address smallholder real farming issues and take them to the next level of the social ladder, targeting has to be done selectively to make sure that those in real needs and potential to graduate from abject poverty are reached in a significant way.

155. The PIU will collaborate with local partners to identify cocoa, rice and cassava farmers and poultry producers. Criteria for selecting project specific communities will be informed by results of the social and economic analysis and be used to target deserving beneficiaries.

156. Targeting will entail assessing random samples of farmers' farms conditions to determine the status of agronomic practices, clones and varieties of existing and specific technical assistance that they need to increase production.

Local partners mapping and capacity assessment and training

157. The key partners to the project include vulnerable communities and their leaderships to promote ownership and sustainability of the adaptation interventions, EPA, MYS, LACRA and CDA and local implementing partners (to be selected on competitive basis on their experience working in the cocoa and rice sectors).

158. For this project, PIU will reassess the capacities to determine their level of knowledge and skill implementing climate smart agriculture activities.

159. These partners have experience in conducting farmers' field school activities which will be core to the strategy for transferring climate smart skills and knowledge to farmers.

B. Describe the measures for financial and project / programme risk management

Table 6: Project risk table

Risk	Initial risk assessment (H = high, M = moderate, L = low)	Proposed mitigation measure	Final risk assessment
Insufficient capacities to appropriately manage the day-to-day implementation of the project	M	- A National Country Programme Unit (NPCU) with administrative and financial management autonomy that assumes the fiduciary management functions of the project. - Recruitment of experts with specific experiences in development project management and financial management procedures of the lessors and mastery of an accounting software. - IFAD country office will participate as an observer in all stages of the recruitment process. - The staff of the NPCU will be linked to the project by renewable annual contracts based on a performance evaluation, - Start-up support takes into account training in financial management.	L

The project budgeting process doesn't respect procedures and doesn't allow for a good implementation of project activities	M	- The budget preparation process will be carried out by the NPCU staff and the AWPB will then be submitted to the steering committee for approval. The AWPB will provide details of activities, their unit and overall costs, expected results and monitoring indicators, and their implementation modalities including procurement procedures. - The budgeting process will be defined in the project procedures manual, and should be harmonized with the budgeting process of other IFAD projects. - The approved AWPB must be entered into the accounting and financial management software to monitor its implementation. - Quarterly financial reports including information on budget monitoring should be submitted to the ministries of guardianship, steering committee and IFAD.	L
Project financial flows and disbursement processes are not timely and jeopardize the implementation of activities on the ground	M	- Availability of funds will be made through the standard circuit planned and already tested by other IFAD projects including replenishment of the designated account, direct payment and reimbursement. - The use of Certified Statement of Expenditures in support of expenses incurred by the Project is also planned. - As regards the implementing partners and public services, the resources will be transferred in accordance with the signed agreements and service contracts, which will have to provide mechanisms for the provision of funds based on the work plan and budget of the convention/contract, and disbursements based on a quarterly / semi-annual report of the activities carried out by the beneficiary/provider/partner.	M
Project implementation and financial management procedures do not guarantee sufficient transparency and accountability	H	- Three (3) levels of security ensure transparency and control of operations and also mitigate the risk of distortion and dysfunction related to management: (i) The fact that only one person cannot conduct an operation in its entirety (from beginning to end, from execution to final control); (ii) the implementation of accounting self-audits; (iii) Implementation of the IFAD Representation's proximity monitoring in Liberia and joint Government/IFAD support and supervision missions and an annual audit of the accounts.	L

The project accounting system and financial procedures are not sufficiently formalized	H	- The Project will be equipped with management software covering all financial aspects: accounting, commitment, financial statements, budget monitoring, contracts, etc. The staff will have to master the software in order to be able to correctly parameterize it to meet the needs of management. - The monitoring of financial commitments and financial achievements will be based on the use of accounting and financial management software as well as the production of financial dashboards for use by the NPCU, SC and IFAD. -The financial statements of the Project will be drafted according to the principles in force and by respecting the minimum information required by the lessor. -The annual financial statements of the Project for the year N will be established no later than the end of February of the year N + 1. The unaudited annual financial statements will be submitted to the SC and IFAD for review. -The Procedures Manual will provide a detailed phasing of all the stages leading to the closing of the accounts (monthly / quarterly / annual) and the preparation of the financial statements - The accounting system used in the framework of the Project should allow the registration of tax exemptions obtained from the government	L
The project financial procedures do not allow for proper and regular monitoring	M	Financial monitoring based on: a) regular preparation of withdrawal requests, based on rolling quarterly cash plans, and bank monitoring of the designated account and the account of operations; (b) budget monitoring; c) accounting monitoring; d) technical and economic monitoring provided by the administrative and financial officer b) The administrative and financial officer will prepare quarterly financial and accounting reports (interim financial reports) which he will submit to the Coordinator for signature and send for review to the Steering Committee and IFAD.	L
Current climate and seasonal variability and/or hazard events result in poor restoration results or agricultural yields.	H	Current climatic variability will be taken into account in the planning of activities along the value chains (rice and cocoa). Drought- and flood-resilient species will be used. Techniques to assist plant growth particularly in the seedling/sapling phases and to reduce risk of damage from climate change hazard impacts will be used. Species will be planted in appropriate seasons to reduce risk of hazard impact. Diversity in planted crops will reduce this risk, Diversification with farm fish and gardening	M to L

Loss of government support may result in lack of prioritisation of AF project activities	L	Regular stakeholder consultation and involvement will be undertaken to ensure that government maintains its commitment and considers the AF project as a support to its forestry and agriculture programmes.	L
Communities may not adopt activities during or after the AF project	M	The interventions will be institutionalised within The ministry to ensure sustainable delivery post project implementation. Capacity building and training of the communities will be undertaken to improve their awareness and understanding of the benefits of the activities.	L
Priority interventions implemented are not found to be cost-effective.	L	Cost-effectiveness is a core principle in the implementation of adaptation measures. Detailed information will be recorded regarding cost-effectiveness. This will be widely disseminated and will be of use to future adaptation initiative	L

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund

160. A preliminary environmental and social assessment was performed as part of the project design to ensure existing environment and social standards applicable to targeted community beneficiaries are taken into account in the context of the AF Principles. The assessment against the 15 principles and the identified mitigation measures are summarized below:

1. *Compliance with the Law*: Security of tenure by women and youth remains a challenge in Liberia. Without secure ownership or at least guaranteed access to land for women and youth, the development of sustainable agri-enterprises will be extremely difficult, if not impossible and this could negatively affect the project. Women and youth are often not sufficiently represented even in making decision that affects them. Thus, women and youth not only risk being marginalized in land access, but also when opportunities or slots are allocated for economic activities in the community. In order to avoid risks of negative impact on target beneficiaries, the Project will aim at strengthening existing national policy shapers and governance structures. Conflicts resurgence in a context of a post conflict country could also undermine the potential benefit of the project. The project at Inception phase will demonstrate compliance to AF E&S Policy by describing the process of allocating and distributing programme benefits but also mitigating. It will also state clearly that there will be neither discrimination nor favouritism in accessing project benefits.
2. *Access and Equity* – Beneficiaries have all information's about the project and information and transfer knowledge are being used through community radio, communication specialist, community groups such as, youth and women organizations, family groups, management committees, farmers associations, value chain actors. The foundation for fair and equitable access to benefits, without

impeding access will be promoted. The communication specialist will raise the awareness of communities and information.

3. *Marginalised and vulnerable groups* – The project target groups are poor smallholder farmers women and rural youth (18 – 35 years) that are the most vulnerable to climate change. Female-headed households with recognised land access entitlement will comprise 40 per cent of the targeted beneficiaries and youth consisting of 20 per cent with granted inheritance rights. The project will include female led tree crop farms and will emphasise the integration of vegetable growing during the end of the IVS rice-cropping season, as these are typically women managed. At Inception Phase, the project will define the characteristics of marginalised and vulnerable groups in the targeted areas using categories that define them appropriately. The process will also include identification, and description of impacts that each marginalised and vulnerable group are likely to experience from the programme and how the adverse impacts are to be mitigated

4. *Core Labor Rights* –. The project will ensure that national working standards are respected on production sites. The project will also ensure that appropriate wages will be paid per assigned task, and that no child labour will be employed.

5. *Public Health* – Working conditions across sectors are generally poor in the rural areas of the Districts in Liberia because of general poverty, poor production methods, and limited awareness of and non-compliance with health & safety standards. In the agricultural sector, most farmers do back-breaking work and are regularly exposed to agro-chemical toxins from the use of fertilizer and pesticides. In addition, due to the high level of poverty, children often help in the production and/or processing of agricultural commodities. Cases of water-borne diseases among rice farmers in the IVS have been reported due to non-usage of protective/safety shoes. The project will partner with the Ministry of Health to raise awareness of local communities

6. *Human Rights* – Liberia recognises fundamental human rights and freedom in its constitution that exist without discrimination by reason of race, national origin, colour, religion, opinion, belief, or sex. The project activities will not engage in any activity that may result in the infringement on the human rights of any person during implementation.

7. *Gender Equality and Women Empowerment* – The project activities will be designed and implemented in such a way that both men and women have equal opportunities to participate in consultation, training and awareness activities; receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process. The Gender Specialist and the regional social inclusion team will ensure equal participation of men and women during inception phase, and throughout the implementation of programme. Approved and developed gender policies identified in Section D will guide this process.

8. *Indigenous People* – according to the AF and IFAD definition of indigenous people no indigenous people have been listed in Liberia but the project will work to include minority groups in the project. At Inception Phase where various ethnic groups can be identified at project activity sites and their roles in the activity clearly identified.

9. *Involuntary Resettlement* – Involuntary resettlement due to project activities is not planned as the project will not construct feeder roads longer that 10 km each but rehabilitate existing projects. While the project activities will be designed and implemented in a way that avoids or minimises the need for involuntary resettlement. it may be unavoidable in certain circumstances. In this case due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation. This is anticipated in areas where irrigation infrastructures and roads rehabilitation are planned. Potential situations can be identified at Inception Phase and necessary measures taken.

10. *Protection of Natural Habitats* – The project will not involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognised by the national government for their high conservation value, including as critical habitat; or (d) recognised as protected by traditional leaders and communities. Current

procedures for identifying these critical habitats in the project area include consulting the appropriate EPA and MOA.

11. -*Conservation of biodiversity* – Clearing of lands and infrastructure rehabilitation that lead to loss of biodiversity and deforestation through physically removing species will be avoided by this project. Intervention will happen at early in the planning process by prioritizing rehabilitation and use of abandoned lands, which will lead to the biodiversity restoration.
12. -C*limate Change* - The project will not generate significant and / or unjustified increase in greenhouse gas emissions or any other cause of climate change. Climate resilient rice and cocoa value chain will contribute in avoiding and sequestrating CO2. The climate and environment specialist engaged at inception and during the design and implementation of the programme, will monitor and manage clearing and burning (greenhouse gases) as an alternative and if required will be addressed early in the project.
13. *Pollution Prevention and Resource Efficiency* – The project will work to reduce waste generation and ensuring slash and burn, or release of pollutants into the environment is minimal. Farmers will also receive FFS training in agrochemical use to control the over-application of fertilisers and untimely application.
14. *Physical and Cultural Heritage* – The project will avoid the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural value, recognized. During site assessments, traditional leaders will be consulted to make sure any cultural sites and sites with unique natural values are identified. Prior to any modification of any site, a letter of verification will need to be received from the highest authority with the endorsement of the traditional leaders that a proposed activity will not interfere with any cultural site or site of unique natural value.
15. *Lands and soil conservation* – Where land is to be modified for example farmlands that may cause soil erosion or deforestation, standards will be followed to maintain the land in its natural state or as close to its natural state as is possible; and, if land is to be converted, it must promote and protect its current function

161. The environmental and social management plan (ESMP) developed as part of the project design includes more detailed information on identified potential environmental and social impacts, their significance, mitigation measures and responsible parties for ensuring the risks are monitored and mitigated as and if they materialize. These are:

Table 7: Environmental (incl. Climate Change) Management Plan and related Adaptation Fund's 15 Principles, including mitigation measures and responsible stakeholders

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
ENVIRONMENTAL MITIGATION PLAN And RELATED 15 Principles (ESS)						
Deforestation and upland crop production Expanding tree crop plantations as a result of project activities could result in direct or indirect deforestation. Related AF 15 principles: Lands and Soil Conservation Physical and Cultural Heritage; Climate Change; Conservation of Biological Diversity; Marginalized and Vulnerable Groups, Core labour rights	High	Bong County	▪ Strongly discourage new and cocoa plantation in and around virgin forest and forest regrowth areas ▪ Strong emphasis to be placed on rehabilitation of existing and abandoned cocoa plantations ▪ Limit approval cocoa plantations to already degraded land/degraded secondary bush areas or deforested areas ▪ Strengthen participation in the processing and marketing value chains to create more jobs especially for women ▪ Strengthen partnership with the forestry department to train farmers in sustainable agroforestry ▪ Carry out regular mapping of plot sites and monitoring of land use and forest cover by third party contractors.	NPCU and District MOA service providers	▪ Per cent decline in forest cover ▪ Number of people engaged in the processing and marketing value chains ▪ MOU with the forestry department ▪ Number of Training conducted with farmers on agroforestry techniques	Reference/baseline, Mid-term, End-Term Mid-Term, End-Term Mid-Term, End-Term Annual
Biodiversity loss (in IVS), Bush Fires/slash and burn agriculture	Medium	Bong County	▪ Limit cultivation of rice in the mangrove ecosystem to reduce mangrove forest loss	NPCU and District MOA Service providers	▪ Per cent decline in mangrove forest ▪ Number of farmers that	Mid-Term, End-Term Quarterly

Related AF 15 principles: Lands and Soil Conservation Physical and Cultural Heritage; Climate Change; Conservation of Biological Diversity; Marginalized and Vulnerable Groups			▪ Discourage slash and burn and train farmers on sustainable land preparation and development options ▪ Avoidance of areas that infringe on known migration patterns of protected, endangered or rare species and maintain known wildlife migration corridor		received training on sustainable land preparation and management ▪ Biodiversity surveys	Annual
Land and soil degradation Related AF 15 principles: Lands and Soil Conservation Related AF 15 principles: Lands and Soil Conservation Physical and Cultural Heritage; Conservation of Biological Diversity Core labour rights;	Medium	Bong County	▪ Production of project-specific ESIA by contractors should be required for all feeder roads construction ▪ Train farmers and service providers on sustainable land development and preparation methods including zero or minimum tillage. ▪ Encourage crop intensification and discourage opening of virgin forest for cropping. ▪ As much as practicable, encourage mixed cropping of target crops with cover crops and anchor crops (especially for cocoa at nursery stage) ▪ Involve partners from the Ministry and research institutes in training farmers on soil conservation techniques	NPCU and District MOA Service providers	▪ Production of project-specific ESIA for feeder road construction ▪ Number of farmers that received training on sustainable land preparation and management ▪ Consummated MOUs with Research Institutes and agencies dealing with soil conservation techniques	Annual Quarterly Mid-Term, End-Term
Water pollution Related AF 15 principles: Pollution Prevention and Resource Efficiency, Public health	Medium	Bong County	▪ Minimize use of inorganic fertilizers and encourage use of biodegradable organic manures (especially in rice, maize and vegetable fields) and agrochemicals in cocoa plantations ▪ Consider training youth in sustainable agrochemical	NPCU and District MOA Service providers	▪ Number of farmers that use organic manure instead of inorganic fertilizer ▪ Number of youth engaged in integrated agrochemicals and pesticides	Annual Annual

			application as an enterprise to promote environmental-smart agricultural value chain		application enterprise	
Wetland (especially mangrove) degradation and removal Related AF 15 principles: Protection of Natural Habitats, Lands and Soil Conservation Physical and Cultural Heritage; Conservation of Biological Diversity, Core labour rights	Medium	Bong County	▪ Discourage removal and draining of mangroves for rice paddies and vegetable farming	NPCU and District MOA Service providers	▪ Per cent decline in wetland	Reference/baseline, Mid-term, End-Term Mid-term, End-Term
Erosion and landslide/mudslide	Medium	Bong County	▪ Encourage agronomic practices such as contour ploughing, terraces and bunds in erosion and landslide/mudslide prone hill-slope areas ▪ Encourage the planting of cover crops and anchor crops with the main crop ▪ Encourage buffers along river bank to prevent erosion ▪ Design and construction of roads, bridges and culverts to be properly monitored to prevent inappropriate termination that can lead to erosion	NPCU and District MOA Service providers	▪ No of farmers in erosion/landslide/mudslide prone areas adopting sound and sustainable agronomic practices	Mid-term, End-Term
Flooding (from rivers and possible over flow/collapse of the earthen dam), Water			▪ Improve on the design of earthen dams in IVS using hydrological long-term (50-100 years) flood return periods to improve dam resilience	NPCU and District MOA Service providers	▪ Number of rainy season with no dam overflow ▪ Improved capacity o the Met Office to	Annual Quarterly

logging, soil salinization and alkalization Related AF 15 principles: Lands and Soil Conservation Physical and Cultural Heritage; Conservation of Biological Diversity			▪ Sustaining and improving on the partnership with the Meteorologica Agency to improve their capacity to generate forecast of extreme rainfall events and disseminate climate information ▪ Consider introducing no regret option including crop insurance as part of the farmers and Agri-entrepreneurs' package ▪ Production of project-specific ESIA by contractors should be required for all feeder roads construction to prevent obstructing IVS drainage areas and causing waterlogging of rice fields ▪ Analyze soils and monitor changes that potential problems can be managed. Allow for access to channels from maintenance in design ▪ Provide water for leaching as a specific operation ▪ Usage of improved materials and improved site selection and design processes. Previously constructed dams that require corrective adjustments will be prioritised.		generate forecast or extreme events ▪ Number of agro-entrepreneurs receiving climate information ▪ Number of farmers that signed off unto agric insurance ▪ Result from soil analysis	Quarterly Annually Biennial
Agrochemical Waste proliferation Water pollution. IVS rice farmers are still over-applying fertilisers and applying them at the wrong time hereby increasing waste	Low	Bong County	▪ Consider creating a value chain/service provider in soil testing for fertilizer applications to improve place and context-based fertilizer and agrochemical application ▪ Encourage development and use of improved and resilient local crop varieties to reduce	NPCU and District MOA Service providers	▪ Number of soil testing service providers ▪ Number of farmers using improved and resilient local crop varieties ▪ Number of youth trained and engaged	Annual Annual Annual

and negative environmental impacts. Related AF 15 principles: Pollution Prevention and Resource Efficiency, Public health, Climate Change			pest resistance and use of agro-chemical ▪ Training youth in sustainable application of agrochemicals enterprise as part of the value chain ▪ Encourage use of organic manures ▪ Service providers and agro-chemical input suppliers to follow high standard of security and safety precautions in storage and transport of agrochemicals ▪ Train a lead farmer per community to educate and monitor his or her community members on how to correctly apply fertilisers to reduce crop damage and fertiliser waste, reduce indirect emissions and improve productivity.		in integrated pesticide and agrochemicals management as par of value chain ▪ Number of trained and certified agrochemical suppliers	
Dry spell and Increase storm and wind activity Related AF 15 principles: Lands and Soil Conservation, Climate Change;	Moderate	Bong County	▪ Sustaining and improve on partnership with the Meteorologica Agency to improve their capacity to generate and disseminate agriculture-specific forecasts to farmers in good time through additional weather stations (to the 4 acquired through the GAFSP) and other appropriate weather data collection tools especially in the rural interiors ▪ Improve the capacity of the Meteorological Agency to collate and process climate data through appropriate Hardware, Software and mobility support ▪ In addition to agric extension officers, engage other means	NPCU and District MOA Service providers	▪ Number of additiona weather station supported/establishe d by the project ▪ Central data processing server and mobility support for the Met Office ▪ Regular issuance of agro-climatic forecasts issued by the Meteorological Agency ▪ Number of farmers receiving and using climate information ▪ Number of entrepreneurs that	Annual Once Quarterly Quarterly Annual Quarterly

			including farmers organization forum, community radios, text messages, transmitter broadcast (in remote areas) to disseminate weather and climate information to farmers (possibly in local languages) ▪ Integrate use of traditional forecasting knowledge through regular feedback from farmers ▪ Consider introducing no regret option including crop insurance as part of the farmers and Agri-entrepreneurs' package ▪ deliver training and agricultural inputs in good time to assist farmers to adjust and adapt their planting and harvesting methods and timing		signed on to agricultural insurance ▪ Number of feedbacks from farmers/farmers organization on climate information	
GHG emissions from rice paddies Related AF 15 principles: Lands and Soil Conservation Climate Change;	Moderate	Bong County	• Discourage opening of new virgin forests and coastal mangrove wetlands • Train farmers on how to drain rice paddies in mid-season to reduce CH4 emission and improvement in nutrient management including the retention of rice residues • Encourage use of clean energy in processing activities	NPCU and District MOA Service providers	▪ Per cent decline in forest and wetland areas ▪ Number of farmers trained in sustainable rice paddies management ▪ Number of processing units using sustainable energy	Reference/baseline, Mid-term, End-Term Annual Reference/baseline, Mid-term, End-Term
Waterlogging of rice fields The rehabilitation of feeder roads could if not well done cause obstruction of drainage systems.	Moderate	Bong County	• Integration of Environment and Social Safeguard's into all rehabilitation works, climate proofing infrastructures, integration in the DOA • ESIAs will be conducted in accordance with EPA procedures to ensure planned	Ministry of works and Transport, EPA and NPCU	▪ Reports and work plans, Impact assessments report	Quarterly

Related AF 15 principles: Access and equity Human rights Physical and Cultural Heritage, Core labour rights, involuntary resettlement, Public Health, land and soil conservation			activities such as culverts are included in the design and implementation of the feeder roads. The EPA will also be invited and supported to conduct supervision of construction			
SOCIAL MITIGATION PLAN						
Land tenure issues – role of paramount chiefs Related AF 15 principles: Lands and Soil Conservation Climate Change; Access and equity Gender Equality and Women Empowerment, Human rights	High	Bong County	▪ Advocate for the implementation of the new land policy to guarantee land tenure security for beneficiary farmers ▪ Massive sensitization across the districts and chiefdoms on land tenure and access to land for THE PROJECT intended beneficiaries ▪ Engage with Paramount Chiefs to secure land for intending beneficiaries with no access to land ▪ Make access to land by women and youth one of the preconditions for a community to participate in the project ▪ The project (through the NPCU and District MOA) to sign land guarantee and documented lease agreements with land owners for 10-25yeras for intending beneficiaries without access to land	NPCU and District MOA Service providers	Number of women and youth participating in THE PROJECT (from the project register Number of people without access to land participating in THE PROJECT Secure land access and number of land lease agreement signed with land owners Attendance register of sensitization meetings with Paramount chiefs and other stakeholders	Quarterly Quarterly Every six months At every project activity
Gender inequality and targeting Related AF 15 principles: Lands and Soil Conservation	High	Bong County	▪ Spend enough time (at least 2-3months) for mobilization on targeting to reach everybody at community meetings (Do not leave selection of beneficiaries to	NPCU and District MOA Service providers	Minutes and Attendance register at community meetings	At targeting mobilization meetings

Climate Change; Access and equity Gender Equality and Women Empowerment, Human rights			the paramount Chiefs). Use the local media as well as local trusted NGOs ▪ Encourage active participation of women in the project up to 40 pe cent as indicated in the PDR ▪ Engage women organizations and advocacy and right groups to mobilize women to participate ▪ Give some concessions/incentives to women farmers to enable them participate ▪ Encourage men through advocacy to support women participation through guarantee o land and other resources require		Number of women and youth participating in THE PROJECT (from the project register Number of women advocacy groups working with AVPD	Quarterly Annually
Social exclusion of women and youth due to limited access to land. Gender inequality in Liberia is one of the worst globally. Women have no land rights, and men typically manage tree crops. Related AF 15 principles: Lands and Soil Conservation Climate Change; Access and equity Gender Equality and Women Empowerment, Human rights	High	Bong County	▪ Actively involve women and youth in all components and levels of decision-making within the project; ▪ Strive to maintain Project beneficiaries ratio of 40 per cent women and 20 per cent youth (men and women under 35 years old) ▪ Encourage the submission of business proposals from women-only groups (incl. cooperatives); ▪ Female-headed households with recognised access entitlement to farm tree crops as primary farmers should comprise 30 per cent of the selected beneficiaries. ▪ 10 per cent of the female quota should be for vulnerable women without recourse to necessary	NPCU and District MOA Service providers	Attendance lists Lists of approved projects and their beneficiaries Membership and staff lists Attendance lists at sensitization workshops and beneficiary / community feedback during site visits Community agreemen on land access fo women and youth	At every project activity At business plan approval and every six months thereafter Every six months At every project activity Annual

			land security needed for tree crop farming ▪ Youth inclusion should be 20 per cent of the selected community beneficiaries and they should be granted inheritance rights to be recognised as primary tree crops farmers. Their roles should be as primary farmers, not as assistants or as paid casual labour, and the youth farmers should be designated by their families as the farm owners. ▪ Ensure women hold at least 30-40 per cent of leadership posts in the farmer apex organizations and project management team; ▪ When organizing meetings or events, ensure they are appropriate to women's time and venue constraints; ▪ Access to land for women and youth should be a precondition for community selection/participation ▪ To avoid obstructionism ('blocking behaviour'), ensure men are included ('carried along') in sensitization activities. Work with locally-trusted CSOs in community sensitization (working towards 'attitudinal change') ▪ Make road and dam construction contractors to hire labour form the local communities to increase sense of belonging and		Number of communit youth engaged a labour in road and dan construction and farn tracks rehabilitation	

			participation ▪ Consider using local labour for farm tracks construction and rehabilitation instead of machines to increase number of indirect project beneficiaries			
Managing expectations Related AF 15 principles: Lands and Soil Conservation Climate Change; Access and equity Gender Equality and Women Empowerment, , Human rights Marginalised and vulnerable groups	High	Bong County	▪ The project targeting and up scaling mechanism should be explicitly and transparently explained in the project implement manual (PIM) ▪ Selection criteria, what the project offers and expectations from intended beneficiaries should be explicit and unambiguous (and translated into the local languages so that everybody will be carried along) ▪ Carry the community and agro-entrepreneurs representatives along in the project implementation (and possibly the Paramount Chiefs or their representatives) in every stage of project implementation ▪ Maintain robust knowledge management and information dissemination to keep everybody abreast of happenings	NPCU and District MOA Service providers	Project implementation manual Project selection criteria in local languages Knowledge management and communication material	Before project commencement 6months into project Quarterly
Increased labour demand could result in the inappropriate use of child labour. Related AF 15 Principle: Core Labor Rights	Low	Bong County	▪ The youth target group is 18-34 years. Children younger than 18 will be excluded from taking part in project activities.	NPCU and District MOA Service providers	Contractor Guidelines Agreement document	

Unsafe and non-healthy working conditions Related AF 15 principles: Pollution Prevention and Resource Efficiency, Public health	Medium	Bong County	▪ Incorporate environmental and social guidelines in contracts with service providers and ensure compliance; ▪ Sensitize project beneficiaries and their wider communities on health & safety standards, incl. safe use of production, processing and transport machinery, agro-chemicals (pesticides and fertilizer), electrical installations and wiring (in particular in wet areas / during rains; ▪ Sensitization of selected communities on child rights and ensure that there is no child labour on selected agri-enterprise projects.	NPCU and District MOA Service providers	Contractor Guidelines Health & Safety flyer or poster Community meeting Community meeting	Within 6 months of project start and half-yearly review thereafter Within 6 months of project start, half-yearly thereafter Within 6 months of project start and half-yearly review thereafter Within 6 months of project start, half-yearly thereafter
Elite capture Related AF 15 principles: Social consideration, compliance with law, Access and equity Gender Equality and Women Empowerment, Human rights	Medium	Bong County	▪ Detailed screening of business plan proposals on commercial viability, conflicts of interest and corruption. Exclude (use of) service providers owned by/tied to politicians or political parties; ▪ Ensure compliance with pre-approved, objective selection criteria and transparent information-sharing and decision-making ▪ Sensitize communities on project objectives, target groups, beneficiary selection criteria, and ▪ risk of elite capture ('hijack'); ▪ Agreement with traditional rulers and council of elders on community and beneficiary selection, and	NPCU and District MOA Service providers	Completed proposal screening forms Review missions Item on steering committee agenda Community meeting Agreement documen	▪ During half-yearly review missions ▪ During half yearly committee meetings ▪ Monthly during first months, quarterly thereafter ▪ Within 6 months of start of project

			adherence to representative and transparent decision-making related to the project (via letter of understanding, MoU or another appropriate format). Involve locally-trusted CSOs.			
Loss and Disturbance of Cultural Resources such as sacred forest and archeological site Related AF 15 principles: Lands and Soil Conservation Physical and Cultural Heritage; Conservation of Biological Diversity	Low	Bong County	▪ Do not approve projects to located in or around sacred forests and community groves and archaeological sites	NPCU and District MOA Service providers	Inventory of cultural resources	▪ Annual
Conflict resurgence Related AF 15 principles: Social consideration, compliance with law, Access and equity Gender Equality and Women empowerment, Human rights	Medium	Bong County	▪ Maintain robust knowledge management, information dissemination and community engagements to keep everybody informed ▪ Develop a clear complaints, grievances redress and dispute resolution framework and make this known to all stakeholders ▪ Develop a clear and simple stakeholder engagement plan (SEP) (incl. communication/outreach strategy), particularly on project objectives and staffing (incl. who's responsible for what), criteria for community and beneficiary selection, community–project communication structure / methods, and	NPCU and District MOA Service providers	Stakeholder engagement plan (SEP) Stakeholder meeting reports, project flyers Complaints register Meeting records, observation Service provision contract and employment lists	Within 2 months of start of project Quarterly Quarterly At every project activity Upon award of contracts and after payments Within 6 months of project start

			grievance/conflict management; ▪ Keep relevant stakeholders informed about project progress on a regular basis; ▪ Involve youth and women leaders as well as respected elders in key project decisions and sensitization activities; ▪ Publicly disclose relevant information on contracts and payments; ▪ Encourage contractors / service providers to give employment preference to local community members ▪ Develop a code of conduct for all stakeholders ▪ Sensitize women and particularly youth on what it's like to be an agri-entrepreneur (give a realistic picture of economic, social and environmental benefits but also challenges and responsibilities). ▪ Involve locally-trusted CSOs in community sensitization ▪		Code of conduct Community meeting Knowledge management materials Number of local CSOs in partner with THE PROJECT	At every project activity during first 6 months, quarterly thereafter Quarterly Annually
Health						
Water borne diseases Related AF 15 principles: Pollution Prevention and Resource Efficiency, Public health	Medium	Bong County	▪ Efforts to focus on inland valley swamp to protect farmers from schistosomiasis, a water-borne disease in flooded rice fields, with rice boots and medication	NPCU and District MOA Service providers	Sensitization materials Number of farmers using rice boots	▪ Annual
Dust from road construction	Medium	Bong County	▪ Road contactors to present an Environments and Social Impact	NPCU and District MOA	Number of ESIA for road rural feeder	Quarterly

Related AF 15 principles: Pollution Prevention and Resource Efficiency, Public health			Assessment with Management Plan for managing externalities as part of the bidding processing ▪ Consider using the Autoseal technology (a polymer-based technology which hardens and can last for 5 years or more) to help tackle the dust inhalation problem	Service providers, Infrastructure Engineer, Contractors / Service Providers	road projects	

162. The EPA checklist will also be used to ensure that planning permissions and decisions comply with Government environmental and social approval processes. Updating of ESMP and a decision as to whether an EIA is required will be the final step. The initial actions during pre-inception will involve coordination of the roles and responsibilities of those involved in managing these risks with the ESS specialist taking the lead role with supporting role from the Gender and M&E specialists.

163. The potential environmental and social risks posed by the project are limited and constrained to feeder road rehabilitation, rice production, small-scale irrigation and drainage, fertiliser usage and agricultural rehabilitation of cocoa. The project will not have any negative impacts such as the involuntary taking or restriction on the use of land resulting in physical or economic displacement or negatively affect indigenous peoples or sites of historic, religious or cultural significance. The project is rated as a 'category B' project according to IFAD's Social, Environmental and Climate Assessment Procedures (SECAP), which means that no formal Environmental and Social Impact Assessment (ESIA) will be required. Further analysis and an environmental management plan will however be mainstreamed throughout project design and implementation and be largely covered by the Adaptation Fund funded activities.

Grievance Mechanism

164. In order to reduce conflicts, a robust grievance/complaints mechanism that meets at least the following 'effectiveness' criteria should be instituted[27]:

a. *Legitimate*: enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes;
b. *Accessible*: being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access;
c. *Predictable*: providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation;
d. *Equitable*: seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms;
e. *Transparent*: keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake;
f. *Rights-compatible*: ensuring that outcomes and remedies accord with internationally recognized human rights;
g. A source of *continuous learning*: drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms;
h. Based on *engagement and dialogue*: consulting the stakeholder groups for whose use they are intended on their design and performance, and focusing on dialogue as the means to address and resolve grievances.

165. IFAD has established a Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects. The procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an independent process. Although IFAD normally addresses potential risks primarily throughout the design process and project , it remains committed to: (i) working proactively with countries and the affected parties to resolve complaints; (ii) ensuring

[27] Office of the High Commissioner on Human Rights (OHCHR) (2011), *UN Guiding Principles on Business and Human Rights* (OHCHR: Geneva), pp.33-34

that the complaints procedure is responsive and operates effectively; and (iii) maintaining records of all complaints and their resolutions[28].

166. The AF Project will as much as possible utilize every available grievance redress mechanisms including: associations (including farmers' associations/organizations) traditional council (Paramount Chiefs and elders), village square engagement (consisting of representatives of men, women and social groups), village general assembly, the project NCPU, etc.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan

167. Project Monitoring and Evaluation (M&E) and Knowledge management will be under the oversight of the National Project Coordinating Unit, and led by the M&E officer who will work closely with the implementing partners. The M&E system should: (i) produce, organize and disseminate the information needed for the strategic management of the Project, (ii) document the results and lessons learned for internal use and for public dissemination on the achievements and (iii) respond to the information needs of Adaptation Fund, IFAD and the Government on the activities, immediate outcomes and impact of the Project. A monitoring and evaluation manual that will describe a simple and effective system for collecting, processing, analysing and disseminating data will be prepared in the first year of the Project.

168. A computerized database will be developed that will enable the generation of dashboards used in IFAD projects. The system will be regularly fed from data collected in the field by the implementing partners and the various studies carried out as part of the projects' implementation. The monitoring and evaluation system will be coupled with a geo-localized information system (GIS) that will allow mapping and spatial-temporal analyses. Trainings will be organized to strengthen the capacities of the various stakeholders involved in the monitoring and evaluation system.

169. Project M&E activities will be guided by the following key considerations:

a) Data will be disaggregated by poverty, livelihood group and gender;
b) Each implementing or partner agency will have clear M&E responsibilities with specific reporting deadlines and a forum for presenting and discussing the findings of the monitoring exercise; and
c) M&E will be linked to the project rationale, log frame, and annual work plans and budgets. M&E findings will be used to take corrective or enhancing measures at the level of project management.

170. The project key M&E activities will include the following:

171. **Project Inception Workshop.** A Project Inception Workshop will be conducted within one month after the inception workshop has taken place with the full project team, relevant government counterparts and IFAD. The Inception Workshop, i.e. the start of the Project implementation, shall be held within 6 months from the date of the 1st disbursement from AF to IFAD

172. The Inception Workshop is crucial to building ownership for the project results and to plan the first-year annual work plan. A fundamental objective of the Inception Workshop will be to present the modalities of project implementation and execution, and assist the project team to understand and take ownership of the project's goals and objectives. An Inception Workshop Report will be prepared and shared with participants.

173. **Reporting.** In the first and sixth year of the Project, a MPAT/SYGRI+ survey that also incorporates the information needs of the project logical framework will be conducted. MPAT, a multidimensional poverty assessment tool, is a recently developed IFAD tool that assesses poverty in ten dimensions that are at the heart of rural livelihoods. The due date of the 1st annual Project Progress Report is 1 year after the

[28] IFAD (2016) *Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP)* (IFAD: Rome), p.12

Inception Workshop, with 2 months tolerance window. The same timeline will apply for subsequent PPRs

174. Semi-annual and Annual Project Reports will be prepared by the NPCU and verified by the PSC to monitor progress made since project start and in particular for the previous reporting period.

175. These reports include, but are not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative);
- Project outputs delivered per project outcome (annual);
- Lessons learned/good practices;
- Annual expenditure reports; and
- Reporting on project risk management.

176. Quarterly Progress Reports will also be prepared by project implementing partners in the field, and submitted to the NPCU to ensure continuous monitoring of project activities and identify challenges to adopt necessary corrective measures in due time.

177. Technical reports – such as a best practices and lessons learned report - will also be completed, as determined during the project inception report.

178. A Terminal project report will also be completed at least two months before project closure.

Financial Reporting. In terms of financial reporting (article 77 of the AF standard agreement), the project team will provide IFAD with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of funds according to the established procedures.

179. **External Evaluations.** The project will undergo an independent external Mid-Term Evaluation at the mid-point of project implementation, which will determine progress being made toward the achievement of outcomes and identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project term.

180. A Final Evaluation will be conducted 3 months before project closure.

181. **Field visits.** Government authorities, members of PSC and IFAD staff will conduct regular field visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress.

Knowledge management and KM culture: and lack of country level M&E framework for measuring the results and contributions towards the Agenda 2030 will be promoted. Over the past year IFAD has moved towards a country programme approach in Liberia with dedicated M&E resources and has provided capacity building support in the areas of monitoring, analysing results and documenting lessons learned for greater knowledge management. The project will strengthen the existing structure of the M&E Unit in the National Project Coordination Unit (NPCU) to monitor outcomes in concert with the Project Monitoring and Evaluation and prepare a clear KM and implement it throughout the entire project cycle and beyond.

182. The proposed M&E budget is as follows:

Table 8: Breakdown of how IE fees that will be utilised for supervision and M&E function

IE Fees Breakdown of M&E Supervision	Responsibility	Budget (USD)	Timeframe
Supervision visits	IFAD, NPCU, Government	23,000	bi-annually
Training workshops on M&E	IFAD, NPCU	21,000	2020

Baseline survey/ MPAT/SYGRI+ survey	NPCU	30,000	First Year (2020) Sixth Year (2026)
Mid-Term Evaluation	IFAD, External consultants	36,000	2023
Final Evaluation	IFAD, External consultants	36,000	2026
Knowledge Management Activities and Publications	IFAD, NPCU	27,793	bi-annually
Total		**173,793**	**6 years**

E. Include a results framework for the project proposal, including milestones, targets and indicators

Table 9: Project Results Framework

Project Objective(s)[29]	Project Objective Indicator(s)	Baseline	Target	Means of Verification	Risks and Assumptions
Overall objective: Enhancing smallholder farmers and rural population's resilience to climate change					
Enhancing smallholder farmers and rural population's resilience to climate change	**AF Core indicator: Number of beneficiaries (direct and indirect)**	**0**	**25,000 direct beneficiaries, including 40 per cent women and 40 per cent youth 150, 000 indirect beneficiaries**	- Project M & E reports - Progress reports - Mid-term and final project evaluations	Political and economic stability in Liberia.
	- Number of smallholder farmers living below poverty line.	**25,000**	**<u>0</u>**	- Project M & E reports - Progress reports - Mid-term and final project evaluations	Political and economic stability in Liberia.
	- Number of smallholder farmers reporting improvements in their living conditions.	0	25,000	- Project M & E reports - Progress reports Mid-term and final project evaluations	Political and economic stability in Liberia.
Project Outcome(s)	**Project Outcome Indicator(s)**	**Baseline**	**Target**	**Means of Verification**	**Risks and Assumptions**
<u>Component 1: Climate-proofed agricultural value-chain and climate-resilient livelihood diversification</u>					
The cocoa and rice value-chains are resilient to	- Number of farmers reporting more diverse	0	60 per cent of farming households (in project area)	- Project M & E reports - Progress reports	Political and economic stability in Liberia.

[29] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

future climate change impacts and smallholders' incomes are diversified	income sources.			- Mid-term and final project evaluations	
	- Number of farmers reporting an increase in cocoa productivity.	**0**	85 per cent of farming households (in project area)		
	- Number of farmers reporting an increase in rice productivity.	**0**	85 per cent of farming households (in project area)		
	- Number of farmers adopting climate-resilient farming practices	**0**	60 per cent of farming households (in project area)		
	- Number of cocoa and improved rice nurseries established	0	**100**		
	- Number of cocoa and improved rice seeds distributed	0	**100**		
	- Number of earth dams constructed	0	40		
Component 2: Climate resilient rural transportation and water infrastructure					
Climate-proofed rural transportation, water and storage infrastructure	- Number of farming households having access to a potable water supply	**To be determined**	**4,000**	- Project M & E reports - Progress reports - Mid-term and final project evaluations	Political and economic stability in Liberia.
	- Number of kilometers or rural roads and feed roads climate proofed	**0**	**120**		
	- Number of hectares of land irrigated	**0**	1000ha		

	from earth dams				
	- Number of warehouses rehabilitated	0	100		
	- Number of water user groups adopting sustainable irrigation practices	**0**	60 per cent of farming households (in project area)		
Component 3: Institutional capacity development and policy engagement					
Supported meteorological institutions provide improved climate services to smallholder farmers and rural populations	- Number of staff of the EPA/MOA and meteorological department trained.	0	Two technicians trained by PY1. Two meteorologists trained by PY3. 24 staff completed the training (12 by PY 1 and 12 by PY3).	- Project M & E reports - Progress reports - Mid-term and final project evaluations	Political and economic stability in Liberia.
	- Number of sectoral policies integrating climate change risks (thanks to the training provided by the project)	0	**At least 1**		

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

183. The table below demonstrates how the project aligns with the Results Framework of the Adaptation Fund.

Table 10: Project alignment with the result framework of the Adaptation Fund

Project Objective(s)[30]	**Project Objective Indicator(s)**	**Fund Outcome**	**Fund Outcome Indicator**	**Grant Amount (USD)**
Overall objective: Enhancing smallholder farmers and rural population's resilience to climate change				
Enhancing smallholder farmers and rural population's resilience to climate change	- Number of smallholder farmers living below poverty line. - Number of smallholder farmers reporting improvements in their living conditions.	Reduced exposure to climate-related hazards and threats	Percentage of target population covered by adequate risk-reduction systems	**9,909,678.68**
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification				
1.1. Established proven best practices on climate resilient rice and cocoa value chains, drawing from local and international research leading to a sustainable increase in rice and cocoa production	- Number of farmers reporting an increase in cocoa productivity. - Number of farmers reporting an increase in rice productivity. - Crop yield change in target areas No of target farmers adopting climate resilient farming practices - Number of cocoa and improved rice nurseries established - Number of cocoa and improved rice seeds distributed Number of Fish farms and Community gardens	**Output 1.1**. Best available technologies and integrated resilient rice and cocoa varieties are implemented to foster the resilience of cocoa and rice production and post-harvest practices: - Cropping calendar and climate early warning systems; - Vulnerability and crop modelling;	Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress Nutrition and food security ensured during the dry season	**4,831,036**

[30] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

1.2. Adaptation strategy of smallholder farmers improved because of diversified livelihood strategy	established as alternatives source of financing	- Climate resilient varieties, multiplication and dissemination , - Integrated pest management, soil management, - Energy for production and post-harvest processing and water pumping; Reforestation and agro-forestry		
	- Number of farmers reporting more diverse income sources. - Number of earth dams constructed -	**Output 1.2**. Income-generating activities (fish farming, business model on integrated community garden with solar water pumps, compost systems, processing units, transport system tricycles) are promoted as livelihood diversification measures	Percentage of targeted population with sustained climate-resilient alternative livelihoods	
<u>Component 2: Water control, security and management measures</u>				
2. Enhanced and secure access to potable water supply, post-harvest losses reduced and improved access to market by beneficiary communities through climate-	- Number of farming households having access to a potable water supply - Number of elevated reservoirs constructed - Number of hectares of land irrigated from earth dams - Number of water user groups	**Output 2.1**. Rural transportation and storage infrastructures have been rehabilitated and upgraded to withstand weather extremes (climate resilient feeder roads, drainages systems, culverts;	Physical infrastructure improved to withstand climate change and variability-induced stress No. of physical assets strengthened or constructed to withstand	**<u>2,953,867</u>**

proofed rural road network	adopting sustainable irrigation practices. - Number of latrines constructed - Number of warehouses rehabilitated	climate proofed storage and warehouses, equipment and processing units, post-harvest storage facilities with phytosanitary control and serving as integrated trading and markets points) **Output 2.2**: Water supply increased and sanitation infrastructure built, accounting for current and future climate risks (water efficiency and management, training and extension, water quality assessment, toilets, sanitation and drainage systems)	conditions resulting from climate variability and change (by sector and scale)	
Component 3: Institutional capacity development and policy engagement				
3. Environment for resilient rice and cocoa value chain improved, policy and regulatory frameworks strengthened as EPA and the government capacities enhancement on adaptation to climate change in these sectors.	- Number of meteorological stations installed. - Number of staff of the EPA and meteorological institute trained. - Number of sectoral policies integrating climate change risks (thanks to the training provided by the project) – Under EPA management	**Output 3.1**. Capacity of the government (esp. EPA, MAO and CARI) in managing climate risk is strengthened **Output 3.2**: Activities are adequately coordinated, monitored and evaluated	No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	**1,183,132**

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs

184. The table below presents the detailed budget of the project per activity.

Table 11: Detailed budget per project activity

Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification	
Output 1.1: Climate-proofing agricultural production and post-harvest	
Activity 1.1.1. Support to MAF to run Farmer Field School (FFS)	**1,530,901.0**
Activity 1.1.2. Development of Cocoa farms	898,546.0
Activity 1.1.3. Bore holes irrigation scheme	315,674.0
Activity 1.1.4. Development of rice VC	1,495,000.0
Sub-total (1.1)	**4,240,121.0**
Output 1.2: Promotion of income-generating activities as livelihood diversification measures	
Activity 1.2.1. Construction of the Earth Dams and community integrated vegetable gardens with solar systems	259,847.0
Activity1.2.2. Establishment of fish farms	173,299.0
Activity 1.2.3 Establishment of poultry farms	157,769.0
Sub-total (1.2)	**590,915.0**
Cost for Component 1	**4,831,036.0**
Component 2: Climate resilient rural transportation, storage and water infrastructure	
Output 2.1: Climate resilient rural transportation and storage infrastructure	
Activity 2.1.1. Establishment of fish farms	203,657.0
Activity 2.1.2. Establishment of poultry farms	228,290.0
Activity 2.1.3 Climate proofing of 120 feeder roads	**314,057.0**
Sub Activity - Studies and surveys for rehabilitation	54,087.0
Sub Activity - Rehabilitation works	90,284.0
Sub Activity - Construction of bridges (for rehabilitation)	110,194.0
Sub Activity - Routine maintenance	28,024.0

Sub Activity - Periodic maintenance	31,468.0
Activity 2.1.4. Climate proofing of farm tracks: Studies and surveys for construction	**28,000.0**
Activity 2.1.5. Support to districts for development of Feeder Road Maintenance Plans	**27,263.0**
Activity 2.1.6. Support to FBOs	**32,600.0**
Sub Activity - Road gangs formation (distribution of maintenance tools)	16,700.0
Sub Activity - Development of Farm Tracks Maintenance Plans	15,900.0
Activity 2.1.7. support to EPA for the construction of the Green Building	1,000,000.0
Activity 2.1.8. support for smart weather readers and information dissemination	150,000.0
Sub-total (2.1)	**1,983,867.0**
Output 2.2: Climate-resilient water supply & sanitation infrastructure	
Activity 2.2.1. Climate proofing of water supply and sanitation infrastructure	881,251.0
Activity 2.2.2. Capacity building for potable water management	88,749.0
Sub-total (2.2)	**970,000.0**
Cost for Component 2	**2,953,867.0**
Component 3: Institutional capacity development and policy engagement	
Output 3.1: Strengthening of governmental capacities for climate change adaptation	
Activity 3.1.1. Strengthening of EPACARI/MOA	**241,956.0**
Sub activity - Capacity building through technology enhancement	110,542.0
Sub activity - Training to enhance institutional capacity	57,414.0
Sub activity - Exchange visits for EPA staff	74,000.0
Activity 3.1.2. Development MRV system of climate response programs	**55,000.0**
Activity 3.1.3 Strengthening of Meteorological Department	**149,666.0**

Sub activity - Capacity building through technology enhancement	75,839.0
Sub activity - Training to enhance institutional capacity	73,827.0
Activity 3.1.4. Technical Assistance for improved policy frameworks	**36,510.0**
Sub activity - TA to mainstream climate risk into sectorial strategies	36,510.0
Sub-total (3.1)	**483,132.0**
Output 3.2: Monitoring and evaluation and coordination of the adaptation activities	
Activity 3.2.1. Monitoring and Evaluation and Knowledge management	**53,000.0**
Sub activity - Baseline survey costs (related to CC adaptation)	7,000.0
Sub activity - Terminal survey costs (related to CC adaptation)	11,000.0
Sub activity - Case studies and Knowledge management	35,000.0
Activity 3.2.2. ESMF Monitoring Costs	**522,000.0**
Activity 3.2.3. personnel	**125,000.0**
Sub activity - Adaptation Specialist (transversal) / Gender Specialist	50,000.0
Sub activity - Staff training - adaptation issues	75,000.0
Sub-total (3.2)	**700,000.0**
Cost for Component 3	**1,183,132.0**
Project execution costs (2 per cent)	
Recruitment of local staff	**179,360.7**
Total project cost	**8,968,035.0**
Project cycle management fee (8,5 per cent)	
Total project cycle management fee	**762,283.0**
Amount of Financing requested	**9,909,678.7**

Project disbursement matrix

Outputs	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
	Component 1: Climate-proofed agricultural production and post-harvest combined with livelihood diversification.							
Output 1.1: Adaptation measures to foster the resilience of cocoa and rice production and post-harvest are implemented)	Output 1.1:	**575,645.00**	**626,688.00**	**1,284,195.00**	**767,814.00**	**593,754.00**	**392,025.00**	**4,240,121.00**
	Activity 1.1.1. Support to MAF to run Farmer Field School (FFS)	**278,122.00**	**273,120.00**	**205,299.00**	**268,120.00**	**298,120.00**	**208,120.00**	**1,530,901.00**
	Activity 1.1.2. Development of Cocoa farms	**179,523.00**	**101,568.00**	**245,896.00**	**132,694.00**	**120,634.00**	**118,231.00**	**898,546.00**
	Activity 1.1.3. Bore holes irrigation scheme	**48,000.00**	**52,000.00**	**83,000.00**	**67,000.00**	**40,000.00**	**25,674.00**	**315,674.00**
	Activity 1.1.4. Development of rice VC	**70,000.00**	**200,000.00**	**750,000.00**	**300,000.00**	**135,000.00**	**40,000.00**	**1,495,000.00**
Output 1.2. Income-generating activities (fish farming) are promoted as alternative adaptation measures	Output 1.2.	**48,836.00**	**80,733.00**	**199,758.00**	**106,489.00**	**91,424.00**	**63,675.00**	**590,915.00**
	Activity 1.2.1. Construction of the Earth Dams and community integrated vegetable gardens with solar systems	**17,986.00**	**32,567.00**	**91,756.00**	**48,621.00**	**39,461.00**	**29,456.00**	**259,847.00**
	Activity1.2.2. Establishment of fish farms	**10,200.00**	**25,698.00**	**48,635.00**	**36,412.00**	**33,598.00**	**18,756.00**	**173,299.00**
	Activity 1.2.3 Establishment of poultry farms	**20,650.00**	**22,468.00**	**59,367.00**	**21,456.00**	**18,365.00**	**15,463.00**	**157,769.00**
	Component 2: Climate resilient rural infrastructure							

Output 2.1. Rural transportation and storage infrastructures have been rehabilitated and upgraded to withstand weather extremes	Output 2.1.	**1,267,351.00**	**150,669.00**	**191,667.00**	**166,969.00**	**149,085.00**	**58,126.00**	**1,983,867.00**
	Activity 2.1.1. Establishment of fish farms	**25,800.00**	**41,658.00**	**48,632.00**	**45,789.00**	**35,478.00**	**6,300.00**	**203,657.00**
	Activity 2.1.2. Establishment of poultry farms	**28,463.00**	**42,796.00**	**51,723.00**	**46,731.00**	**48,121.00**	**10,456.00**	**228,290.00**
	Activity 2.1.3 Climate proofing of 120 feeder roads	**43,299.00**	**52,629.00**	**73,734.00**	**60,246.00**	**54,467.00**	**29,682.00**	**314,057.00**
	Sub Activity - Studies and surveys for rehabilitation	**12,497.00**	**6,489.00**	**13,914.00**	**5,000.00**	**9,745.00**	**6,442.00**	**54,087.00**
	Sub Activity - Rehabilitation works	**20,568.00**	**16,354.00**	**10,456.00**	**15,789.00**	**15,369.00**	**11,748.00**	**90,284.00**
	Sub Activity - Construction of bridges (for rehabilitation)	**10,234.00**	**19,786.00**	**29,364.00**	**29,463.00**	**16,789.00**	**4,558.00**	**110,194.00**
	Sub Activity - Routine maintenance	**-**	**5,000.00**	**10,000.00**	**4,568.00**	**5,000.00**	**3,456.00**	**28,024.00**
	Sub Activity - Periodic maintenance	**-**	**5,000.00**	**10,000.00**	**5,426.00**	**7,564.00**	**3,478.00**	**31,468.00**
	Activity 2.1.4. Climate proofing of farm tracks: Studies and surveys for construction	**5,000.00**	**5,000.00**	**5,000.00**	**5,000.00**	**3,000.00**	**5,000.00**	**28,000.00**
	Activity 2.1.5. Support to districts for development of Feeder Road	**4,789.00**	**4,321.00**	**6,789.00**	**4,568.00**	**3,654.00**	**3,142.00**	**27,263.00**

	Maintenance Plans							
	Activity 2.1.6. Support to FBOs	**10,000.00**	**4,265.00**	**5,789.00**	**4,635.00**	**4,365.00**	**3,546.00**	**32,600.00**
	Sub Activity - Road gangs formation (distribution of maintenance tools)	**5,000.00**	**2,000.00**	**3,789.00**	**2,000.00**	**2,365.00**	**1,546.00**	**16,700.00**
	Sub Activity - Development of Farm Tracks Maintenance Plans	**5,000.00**	**2,265.00**	**2,000.00**	**2,635.00**	**2,000.00**	**2,000.00**	**15,900.00**
	Activity 2.1.7. support to EPA for the construction of the Green Building	**1,000,000.00**						**1,000,000.00**
	Activity 2.1.8. support for smart weather readers and information dissemination	**150,000.00**						**150,000.00**
Output 2.2 – Water supply increased and sanitation infrastructure built accounting for current and future climate risks	Output 2.2 – Climate-resilient water supply & sanitation infrastructure	**347,718.00**	**119,243.00**	**222,214.00**	**182,804.00**	**74,200.00**	**23,821.00**	**970,000.00**
	Activity 2.2.1. Climate proofing of water supply and sanitation infrastructure	**332,250.00**	**100,268.00**	**196,478.00**	**170,341.00**	**62,458.00**	**19,456.00**	**881,251.00**

	Activity 2.2.2. Capacity building for potable water management	**15,468.00**	**18,975.00**	**25,736.00**	**12,463.00**	**11,742.00**	**4,365.00**	**88,749.00**
	Component 3: Institutional capacity development and policy engagement							
Output 3.1: Governmental capacities are strengthened for climate change adaptation	Output 3.1:	**69,039.00**	**89,013.00**	**120,819.00**	**120,671.00**	**49,466.00**	**34,124.00**	**483,132.00**
	Activity 3.1.1. Strengthening of EPACARI/MOA	**22,631.00**	**44,128.00**	**44,252.00**	**69,241.00**	**27,580.00**	**34,124.00**	**241,956.00**
	Sub activity - Capacity building through technology enhancement	**10,000.00**	**12,456.00**	**21,789.00**	**23,789.00**	**13,796.00**	**28,712.00**	**110,542.00**
	Sub activity - Training to enhance institutional capacity	**7,631.00**	**11,672.00**	**10,463.00**	**12,452.00**	**9,784.00**	**5,412.00**	**57,414.00**
	Sub activity - Exchange visits for EPA staff	**5,000.00**	**20,000.00**	**12,000.00**	**33,000.00**	**4,000.00**	**-**	**74,000.00**
	Activity 3.1.2. Development MRV system of climate response programs	**10,000.00**	**10,000.00**	**20,000.00**	**10,000.00**	**5,000.00**	**-**	**55,000.00**
	Activity 3.1.3 Strengthening of Meteorological Department	**28,508.00**	**28,428.00**	**47,926.00**	**33,918.00**	**10,886.00**	**-**	**149,666.00**
	Sub activity - Capacity building through technology enhancement	**12,746.00**	**14,786.00**	**25,463.00**	**17,421.00**	**5,423.00**	**-**	**75,839.00**

	Sub activity - Training to enhance institutional capacity	15,762.00	13,642.00	22,463.00	16,497.00	5,463.00	-	73,827.00
	Activity 3.1.4. Technical Assistance for improved policy frameworks	7,900.00	6,457.00	8,641.00	7,512.00	6,000.00	-	36,510.00
	Sub activity - TA to mainstream climate risk into sectorial strategies	7,900.00	6,457.00	8,641.00	7,512.00	6,000.00	-	36,510.00
Output 3.2: Monitoring & Evaluation and Coordination of the Adaptation Activities	Output 3.2:	104,000.00	207,000.00	102,000.00	105,000.00	102,000.00	80,000.00	700,000.00
	Activity 3.2.1. Monitoring and Evaluation and Knowledge management	9,000.00	10,000.00	7,000.00	10,000.00	7,000.00	10,000.00	53,000.00
	Sub activity - Baseline survey costs (related to CC adaptation)	2,000.00	-	-	5,000.00	-	-	7,000.00
	Sub activity - Terminal survey costs (related to CC adaptation)	-	5,000.00	-	-	-	6,000.00	11,000.00
	Sub activity - Case studies and Knowledge management	7,000.00	5,000.00	7,000.00	5,000.00	7,000.00	4,000.00	35,000.00
	Activity 3.2.2. ESMF Monitoring Costs	70,000.00	172,000.00	70,000.00	70,000.00	70,000.00	70,000.00	522,000.00

	Activity 3.2.3. personnel	**25,000.00**	**25,000.00**	**25,000.00**	**25,000.00**	**25,000.00**	**-**	**125,000.00**
	Sub activity - Staff training - adaptation issues	**15,000.00**	**15,000.00**	**15,000.00**	**15,000.00**	**15,000.00**	**-**	**75,000.00**
	Sub activity - Adaptation Specialist (transversal) / Gender Specialist	**10,000.00**	**10,000.00**	**10,000.00**	**10,000.00**	**10,000.00**	**-**	**50,000.00**
Total project cost	**Project activity cost**	**2,412,589.00**	**1,273,346.00**	**2,120,653.00**	**1,449,747.00**	**1,059,929.00**	**651,771.00**	**8,968,035.00**
	Executing Cost (2%)		**-**	**-**	**-**	**-**	**-**	**179,360.70**
Fees	**Project cycle management fee (<8.5%)**							**762,282.98**
Total Financing requested								**9,909,678.68**

H. Include a disbursement schedule with time-bound milestones

Table 14: Project disbursement schedule

	Upon Agreement signature	One Year after Project Start	Year 2	Year 3	Year 4	Year 5	**Total**
Scheduled Date	May-20	Dec-20	Dec-20	Dec-20	Dec-20	Dec-20	
Project Funds (US$)	1,273,639.263	2,163,839.303	2,363,639.303	1,852,731.973	864,439.303	629,106.5633	9,147,395.71
Implementing Entity Fee (US$)	87,314.28333	160,100.3583	244,833.3333	194,510.3333	37,651.3333	37,873.33333	**762,282.975**
Total (US$)	**1,360,953.547**	**2,323,939.662**	**2,608,472.637**	**2,047,242.306**	**902,090.637**	**666,979.8967**	**9,909,678.685**

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

Republic of Liberia
Environmental Protection Agency
National Climate Change Secretariat
4th Street, Tubman Boulevard
1000 Monrovia, 10 Liberia
P.O. Box 4024
Office of the National Coordinator

Date: November 19, 2019

Mikko Ollikainen
Manager
Adaptation Fund Board Secretariat
c/o Global Environment Facility
Mail stop: N 7-700
1818 H Street NW
Washington DC 20433
USA

Subject: **Expression of nomination for Accredited Entity to Develop Funding Proposal for Liberia**

Dear Madam Manager:

We present our compliments and in our capacity as Designated Authority of the Adaptation Fund for Liberia, hereby nominate the entity below to assist Liberia in developing a funding proposal for Liberia:

International Fund for Agricultural Development (IFAD)
Contact person: Jakob Tuborgh
Country Program Manager
Contact details: ttuborgh@ifad.org

IFAD is actively engaged with the agricultural sector in Liberia specifically in sustainable agricultural and livelihoods of farmers. Additionally, IFAD as an accredited entity by AF, with good appreciation of AF's investment criteria and also understanding Liberia's development priorities, is ideally positioned assist Liberia in this regard.

Sincerely,

Jeremiah G. Sokan, Sr.
National Coordinator/DA-AF
National Climate Change Secretariat
Environmental Protection Agency
Liberia

ANNEXES

Annex 1: Environmental and Social Management framework of the project

Investing in rural people

Republic of Liberia

Integrated Initiatives to Promote Climate Resilience in Cocoa and Rice Value Chains in Liberia

Environmental and Social Management Framework

December 2019

Contents

PART I: PROJECT/PROGRAMME INFORMATION 7

1. PROJECT / PROGRAMME BACKGROUND AND CONTEXT 7

1.1. Natural resources and climate 7

1.2. Economy, Population and Agriculture 7

a. Natural Resource Management (NRM) 10

a. Climate change 10

a. Lessons learnt from the IFAD past projects on climate resilience in the agricultural sector 18

2. PROJECT / PROGRAMME OBJECTIVES 19

3. PROJECT / PROGRAMME COMPONENTS AND FINANCING 21

4. PROJECTED CALENDAR 23

PART II: PROJECT / PROGRAMME JUSTIFICATION 24

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience 24

B. Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund 27

C. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme 30

D. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist 37

E. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund 37

The National Environment Policy of Liberia, 2002 38

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned 40

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund 41

A. Provide justification for funding requested, focusing on the full cost of adaptation reasoning 41

A. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme 42

PART III: IMPLEMENTATION ARRANGEMENTS 46

A. Describe the arrangements for project / programme implementation 46

B. Describe the measures for financial and project / programme risk management 48

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund 51

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan69

E. Include a results framework for the project proposal, including milestones, targets and indicators 72

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund....75

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs 78

H. Include a disbursement schedule with time-bound milestones....81

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY 87

Annex 1: Environmental and Social Management framework of the project 1

Abbreviations and Acronyms.... 7

Executive Summary 9

1. INTRODUCTION 11

1.1 Background 11

1.2 Rationale and Objectives of the ESMF 18

1.3 Approach and Methodology and Stakeholders Consultation 19

1.4 Disclosure of ESMF 20

1.5 Challenges and Assumptions 20

1.6 Report Structure 20

2. DESCRIPTION OF THE PROPOSED PROJECT 21

2.1 Project Area and Target Groups 21

2.2 Goal, Objectives and Impact indicators 21

2.3 Project implementation structure 22
2.4 Adaptation Fund 23
2.5 Other potential partnerships 24
2.6 Key issues identified on social and environmental management 24
2.7 Key potential impacts 25
2.8 Environmental and Social category 25
3. LEGAL, INSTITUTIONAL AND REGULATORY FRAMEWORK FOR ESIA AND AGRI-BUSINESS IN Liberia 26
3.1 Legal Framework 26
3.1.1 The Constitution of Liberia 1986: provides that, the Republic shall, consistent with the principles of individual freedom and social justice enshrined in the Constitution, manage the national economy and the natural resources of Liberia; 26
3.1.2 Environmental Protection Agency (EPA) Act, 2003: creates EPA as the principal authority in Liberia for the management of the environment and shall co-ordinate, monitor, supervise all activities in the protection of the environment and sustainable use of natural resources; 26
3.1.3 Environmental Protection and Management Law, 2003: forms the legal framework for the sustainable development, management and protection of the environment and natural resources by EPA in partnership with its stakeholders in Liberia; 26
3.1.4 EPA Regulations and Procedures: these Regulations combine both the assessment and environmental management systems and prohibit commencing an undertaking/activity without prior registration and Environmental Permit (EP) by the EPA. 26
3.2 Institutional and Policy Framework 26
The National Environment Policy of Liberia, 2002 26
The Land Administration Policy, 2015 27
3.2.7 Liberia's Intended Nationally Determined Contribution (INDC) 27
3.2.8 Global Alliance for Resilience (AGIR), 2012 28
3.3 IFAD Guidelines 29
3.3.1 IFAD Safeguard Policies 29
3.3.2 IFAD SECAP Procedure 30
3.3.3 The IFAD Climate Change Strategy (2010) 31
3.3.4 The IFAD Environment and Natural Resource Management (ENRM, 2011) Policy 31
3.3.5 Country strategic opportunities programme for Liberia 2020-2024 32
4. DESCRIPTION OF THE ENVIRONMENTAL, CLIMATE AND SOCIAL CONTEXT 33
4.1 Environmental Context 33

4.2 Climate Change Context 33
4.3 Social-economic and cultural context 36
5. REVIEW OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS 40
5.1 Potential Environmental Benefits 40
5.2 Potential negative environmental impacts 40
5.2.1 Deforestation and land degradation issues 40
5.2.2 Road construction and rehabilitation impacts: 40
5.2.3 Pollution from Agrochemical use 40
5.2.4 Dam construction 41
5.2.5 Climate change issues 41
5.3 Potential social benefits 41
5.4 Potential negative social impacts 41
5.4.1 Land Access issues 41
5.4.2 Social Exclusion and Gender inequality 42
5.4.3 Unsafe and Non-Healthy Working Conditions 42
5.4.4 Managing expectations and Conflicts resurgence 42
5.4.5 Elite Capture 42
6. ENVIRONMENTAL, CLIMATE AND SOCIAL MANAGEMENT PLAN FOR THE PROJECT 43
6.1 Introduction 43
6.2 Responsibilities 43
6.3 Outline of the Management Plans 43
6.4 Stakeholder Engagement, Community Sensitization and Expectation Management 53
6.5 Grievance Management 53
7. Review of Environmental, Climate, Social Impacts of Sub-Projects 55
7.1 Potential Impacts and Recommended Mitigation for Agri-Enterprise Projects 55
7.1.1 Cocoa Farming 55
7.1.2 Rice/Legume Farming 55
7.2 Potential Impacts and Recommended Adaptation Measures for (Market) Infrastructure Projects 56
7.2.1 Land Access 56
7.2.2 Dust, Vibration, Mudslide and Noise 57
7.2.3 Deforestation 57
7.2.4 Ground Water Contamination 57
7.2.5 Flooding/ Erosion 57

7.3 Environmental and Socio-Economic Management Framework (ESMF) 57
7.4 Analysis of Alternatives 62
8. ENVIRONMENTAL AND SOCIAL SCREENING OF SUB-PROJECTS 63
8.1 Introduction: Screening and Review 63
8.2 Screening for Eligibility 63
8.3 Screening for Environmental and Social Impacts and Climate Impacts 63
8.4 Impact Significance Rating 64
9. MONITORING OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS 65
9.1 Introduction 65
9.2 Key Performance Indicators 65
9.3 Summary of Environmental and Social Monitoring Costs 67
10. CAPACITY BUILDING AND TRAINING FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS 68
10.1 Strengthening Capacity and Improving Resilience 68
10.2 Training Topics 68
10.3 Target Audience and Approach 68
Annex 2: Screening for eligibility 72
Annex 3: Screening for Agric Enterprises 74
Annex 4: Screening for Market Infrastructure 78
Annex 5: Climate Screening Form 80
Annex 6 - Environmental and Social Guidelines for contractors 83
Annex 7: Detailed Costing of Environmental and Social Monitoring costs ... **Error! Bookmark not defined.**
Annex 8: List of Stakeholders Consulted 87

Abbreviations and Acronyms

ABC	Agribusiness Centre
AF	Adaptation Fund
AWPB	Annual Work Plan and Budget
C/KM	Communication and Knowledge Management
COSOP	Country Strategic Opportunities Program
DAO	District Agricultural Officer
DSF	Debt Sustainability Frame work
EIA	Environmental Impact Assessment
ENRM	Environmental and Natural Resource Management
EPA-L	Environmental Protection Agency of Liberia
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FBO	Farmer Based Organization
FFS	Farmer Field School
FO	Farmer Organization
GALS	Gender Action Learning System
GEF	Global Environmental Facility
GDP	Gross Domestic Product
GHG	Greenhouse Gas
IFAD	International Fund for Agricultural Development
IVS	Inland Valley Swamp
KM	Knowledge Management
Km	Kilometre
MDA	Ministries, Departments and Agencies
MEA	Multilateral Environmental Agreements
M&E	Monitoring and Evaluation
MOA	Ministry of Agriculture, Forestry and Food Security
MTR	Mid-term Review
NAP	National Action Plan
NPCU	National Programme Coordination Unit
NSC	National Steering Committee
NRM	Natural Resource Management
PEAR	Preliminary Environmental Assessment Report
PDO	Project Development Objective
PDR	Project Design Report
QE/QA	Quality Evaluation/Quality Assurance
RCPRP	Rehabilitation and Community-based Poverty Reduction Project
SCADeP	Smallholder Commercialization and Agribusiness Development Project
SCP-GAFSP	Smallholder Commercialization Programme - Global Agriculture and Food Security Programme
SECAP	Social Environmental and Climate Change Procedures
LRA	LRoad Authority

The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

IFAD *Map compiled by IFAD* | 24-10-2018

Liberia – Project Area (Bong County, between Nimba and Lofa

Executive Summary

Introduction

The Republic of Liberia is located at latitudes 4°21' N and 8°33' N of the equator and longitudes 11°28'W and 7°32'W. Liberia covers a surface area of 111,369 km2, and is located entirely within the humid Upper Guinean Forest Ecosystem in West Africa on the Atlantic Coast. Liberia is divided into a hierarchical arrangement of political jurisdictions consisting of 15 counties, 136 districts arrayed within counties, and numerous clans arrayed within districts (Figure 1). Individual counties comprise from 4-18 districts and varying numbers of clans. The six largest counties (7,770 km2) are: Nimba County-11,551 km2; Lofa County, 9,982 km2; Gbarpolu County-9,953 km2; Sinoe County 9,764 km2; Bong County8,754.0 km2; and Grand Bassa County-7,813.7 km2. Other counties range in surface area from 1,880 km2 (Montserrado County) to 5,663 km2 (Rivercess County).

The estimated population of Liberia is about 4.8 million. In the 1990s and early 2000s, civil war and government mismanagement destroyed much of Liberia's economy, especially infrastructure in and around the capital. Much of the conflict was fueled by control over Liberia's natural resources. With the conclusion of fighting and the installation of a democratically elected government in 2006, businesses that had moved out of the country began to return. The country achieved high growth during the period 2010-13 due to favourable world prices for its commodities.

Project targeting and implementation

The Integrated Initiatives to Promote Climate Resilience in Cocoa and Rice Value Chains in Liberia will be implemented in Bong County of Liberia. The project targets about 25,000 direct beneficiaries drawn from smallholder farmers, Farmer-based organizations (FBOs) including cooperatives, partnering financial institutions, small scale rural entrepreneurs, women and rural youth (18 – 35 years). Geographic targeting will be applied specially in the selection of the communities to be supported for cocoa and rice production, taking into account the climate change impact, potential for further deforestation, and the legacy factor from previous IFAD-assisted interventions. The project will mainstream gender sensitive approaches and farmer-led innovations using the GALS methodology and promote gender equity as well as the participation of women and youth in all the value chain activities.

The Ministry of Agriculture, Environmental Protection Agency and Ministry of Youth and Sport provide oversight, direction and advice for project implementation. The implementation arrangements for the project will follow the implementation model for the on-going AfDB, IFAD, and World Bank projects in the agriculture sector. The MOA-PIU has been established as a cost-effective way to implement all investment projects in the sector and it gained a considerable experience in investment project implementation over the years of its functioning. The project will further strengthen the capacity of the PIU through the competitive recruitment, adoption of the monitoring and evaluation (M&E) system, provision of communication infrastructure, audit and strengthening the financial management and accounting systems.

Risk categorization and Key environmental issues

The project is rated as **Category B** in **Environmental and Social** risk and **High** in terms of **Climate** risk. The key climate issue for Climate projections includes that of higher temperatures, decrease soil quality, and altered precipitations patterns; which could negatively impact agricultural production. However, Climate change could have a positive impact on cocoa production in Liberia. Liberia, together with Sierra Leone, Ivory Coast, Ghana, Togo, Nigeria, and Cameroon (the West African cocoa belt) produces almost 70 per cent of the world's cocoa. A study by Schroth et al. (2016)[31] projects that changes in climate (temperature and rainfall) will vary within the West African cocoa belt in the long run (2050s). Changes in the climate could have a negative impact on the production for Bong County. In the absence of adequate measures and conversion policies, the resulting intensification of cocoa production in these counties could cause greater deforestation.

[31] http://dx.doi.org/10.1016/j.scitotenv.2016.03.024

Sustainable development in a largely agrarian economy is heavily reliant on the sustainable use of biodiversity and natural resource management. Farmers have been reported to have continued to apply too much fertilizer and at the wrong time which increase waste, indirect GHG emissions risk of pollution and reduce productivity. The construction of feeder roads under past projects overlooked their environmental impacts by obstructing drainage areas thus causing waterlogging of rice fields. A strengthened land tenure rights would significantly contribute to the improvement of the livelihood of benefit the rural poor . Farmers are frequently pushed-off by landowners after land improvement interventions have taken place. Gender inequality in Liberia rates among the worst globally[32]. Women have little land rights and are underrepresented in land decision-making institutions.

Environmental and Social Management and Monitoring Plans

Several legal and regulatory frameworks were reviewed to set in context the ESMF and they include: Constitution of the Republic of Liberia, as well as the Environmental Protection Agency (EPA) guidelines for agriculture development, among others, were also reviewed. IFAD safeguard policies including SECAP, climate change strategy, environment and natural resource management policy and the COSOP for Liberia 2020-2024 were also reviewed.

It also raised environmental issues about the construction and rehabilitation of market-connected farm roads. In addition, other environmental impacts identified include; land degradation and pollution from agrochemical use, earthen dam construction, and climate change issues (including dry spell and increasing rainstorm and windstorm, and GHG emission from rice paddies). The major social impacts identified include; land tenure and access issues, social exclusion and gender inequality, unsafe and non-healthy working conditions, managing expectations and conflicts resurgence, and elite capture. The health concerns include waterborne diseases from poor drainages as a result, the project requires the development of an environment and social management framework (ESMF), detailing the environmental management and monitoring plans to guide subprojects' implementation. The environmental and social management plan for the identified impacts was developed with input from a broad range of government ministries, department and agencies consulted during the ESMF field mission and project staff from the TCEP-II. The plan indicates a significance rating and geographical extent/prevalence of each impact, and recommended mitigation measures. It also identifies who is responsible for implementation of the mitigation measures, how implementation can be verified, and the frequency for each of the potential overall impacts.

Adaptation measures were also recommended for the rice, cocoa, fishery and poultry value chain enterprises. Some of these measures include; construction and rehabilitation of feeder roads, farm tracks, culverts and bridges, rehabilitation of Agro Business Centres (ABC), land development activities and small scale (earthen) dams and irrigation schemes to enable rice production were also recommended. Apart from the strategy for a robust and effective grievance/ complaints management mechanism to reduce conflicts set out in the ESMF, the project will also rely on IFAD complaints procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects.

Funding the Environmental and Social Monitoring Plans

A total of USD 522,000 (5.27 per cent of the total estimated project cost) has been estimated for the environmental and social monitoring plans for the project. A successful mainstreaming of climate change and the ESMF into implementation of the project requires adequate sensitization and the strengthening of institutional capacities, in particular those Farmers Organizations, CARI, MOA and Women Organizations. It also requires context-specific, in-situ training sessions for farmers and other actors in the value chain to mainstream climate-smart agricultural value chain and improve their resilience. The total training cost to achieve this is estimated at USD 75,839, which represents about 0.77 per cent of the project cost. The Adaptation Fund (AF) will support the cost for implementing the Environmental and Social Monitoring Plans and the associated capacity building to mainstream climate resilience into the project.

[32] http://hdr.undp.org/en/content/table-5-gender-inequality-index-gii

1. INTRODUCTION

1.1 Background

The Republic of Liberia is located at latitudes 4°21' N and 8°33' N of the equator and longitudes 11°28'W and 7°32'W. Liberia covers a surface area of 111,369 km2, and is located entirely within the humid Upper Guinean Forest Ecosystem in West Africa on the Atlantic Coast. Liberia is divided into a hierarchical arrangement of political jurisdictions consisting of 15 counties, 136 districts arrayed within counties, and numerous clans arrayed within districts (Figure 1). Individual counties comprise from 4-18 districts and varying numbers of clans. The six largest counties (7,770 km2) are: Nimba County-11,551 km2; Lofa County, 9,982 km2; Gbarpolu County-9,953 km2; Sinoe County 9,764 km2; Bong County8,754.0 km2; and Grand Bassa County-7,813.7 km2. Other counties range in surface area from 1,880 km2 (Montserrado County) to 5,663 km2 (Rivercess County).

The estimated population of Liberia is about 4.8 million. In the 1990s and early 2000s, civil war and government mismanagement destroyed much of Liberia's economy, especially infrastructure in and around the capital. Much of the conflict was fueled by control over Liberia's natural resources. With the conclusion of fighting and the installation of a democratically elected government in 2006, businesses that had moved out of the country began to return. The country achieved high growth during the period 2010-13 due to favourable world prices for its commodities.

However, during the 2014-2015 Ebola crisis, the economy declined and many foreign-owned businesses moved with their capital and expertise. The epidemic forced the government to divert scarce resources to combat the spread of the virus, reducing funds available for needed public investment. The cost of addressing the Ebola epidemic coincided with decreased economic activity reducing government revenue, although higher donor support significantly offset this loss. During the same period, global commodities prices for key exports fell and have yet to recover to pre-Ebola levels.[33]

Demography

According to the Liberia Institute for Statistics and Geo Information Services (LISGIS),[34] approximately 48.9 per cent of Liberia's population are males while 51.1 per cent are females. Overall, nearly half (49.1 per cent) of population is made up of young people under the age of 18 years, of which approximately 47 per cent live in rural areas. Over 51 per cent of the population are women. Life expectancy has increased to 63 years of age.

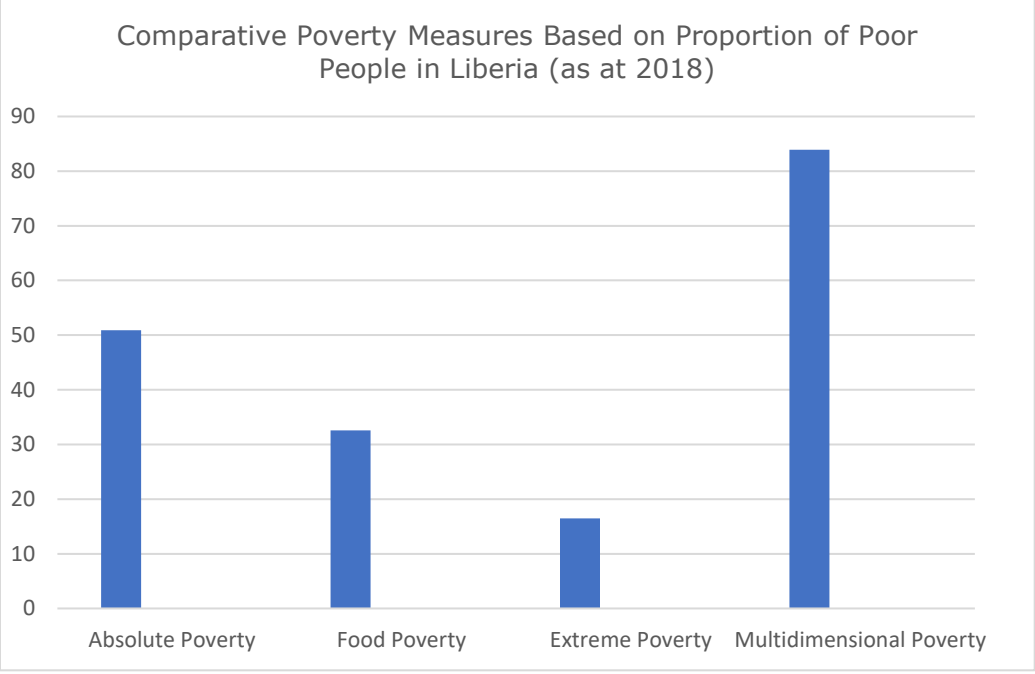
Household size also varies by county, with a national average of 4.3 people per household. Fifty-nine (59 per cent) of households are headed by people aged 30-49. The dependency ratio is particularly high in rural areas (105.7 per cent). Seventy-five per cent (75 per cent) of households are headed by men.

[33] Central Intelligence Agency (2019) *World Factbook* < https://www.cia.gov/library/publications/the-world-factbook/geos/li.html>
[34] LISGIS, 2017. HIES.

Table 1: Population by Region and County			
Region	**County**	**Population**	**per cent**
Montserrado	Montserrado	1,364,902	32.2
North Western	Bomi	102,674	2.4
	Grand Cape Mount	155,106	3.7
	Gbarpolu	101,782	2.4
South Central	Margibi	256,228	6.0
	Grand Bassa	270,594	6.4
South Eastern A	River Cess	87,282	2.1
	Sinoe	124,976	2.9
	Grand Gedeh	152,887	3.6
South Eastern B	River Gee	81,522	1.9
	Grand Kru	70,687	1.7
	Maryland	165,923	3.9
North Central	Bong	407,041	9.6
	Nimba	563,939	13.3
	Lofa	337,934	8.0
Source: LISGIS, 2017. HIES.			

Poverty

Liberia faces enormous challenges in addressing poverty due to public and private underinvestment and years of civil war. According to the 2016 Household Income and Expenditure Survey (HIES) published by LISGIS,[35] 50.9 per cent of Liberia's population is classified as poor. Poverty is higher in rural areas (71.6 per cent) than in urban areas (31.5 per cent).



[35] LISGIS (2017) 2016 Household Income and Expenditure Survey (HIES)

The report also indicates that 51.2 per cent of Liberian households show food shortages, with urban areas at 44 per cent and rural ones at 56 per cent. Female-headed households face more food shortage (53.6 per cent) commonly than male-headed households with 46 per cent. [36]

Under education, 64.7 per cent of the country's population are literate with the urban population accumulating 78.1 per cent, while rural areas have a percentage of 21.9 per cent. As for under age ratio, there are more young people who are literate than older ones and unemployment stands at 3.9 per cent, which shows that Liberia has a low unemployment rate. The private sector remains the highest employer through which 64.9 per cent have benefited, while the government employs 19.5 per cent of the country's population, and other employers (not specified) picked 15.6 per cent respectively.

63.2 per cent of the country's 4.8 million people visit government-run health facilities, while 23.6 per cent goes to private hospitals and clinics; the remaining 13.2 per cent use other sources of healthcare such as traditional care.

The average household size is estimated to be 4.3 people per household, with Maryland County having the highest household size, while Gbarpolu County holds the lowest.[37]

Table 2: Regional poverty in Liberia

Region	Percentage of Population	Multidimensional Poverty Index (MPI)	Incidence of Poverty	Percentage of Population in Severe poverty
Monrovia	27.8	0.306	64.0	29.7
North Central	26.9	0.558	91.9	68.8
North Western	7.9	0.539	91.5	64.9
South Central	14.6	0.560	90.7	68.6
South Eastern A	6.7	0.5525	92.9	68.4
South Eastern B	6.9	0.539	91.1	68.8

Food security and Nutrition

An estimated 18 per cent of Liberians are food insecure and 2 per cent are severely food insecure (Liberia Food Security Assessment, 2015). This means that households end up consuming foods that are

[36] The HIES 2017 methodology for calculting poverty in 2016 is based on a 12-month cycle, while the previous poverty measument of 2014 is based on a six-month measument. Therefore, poverty levels bewteen the two periods can only be compared by disagregating data obtained in 2016 and using data for the first six months of 2016. According to HIES 2017 poverty measurements to be used in the near future are expected to follow the same methodology as the one used in 2016 allowing for straight comparisons with overall 2016 data thereafter.

[37] Oxford Poverty and Human Development Initiative, 2017. Multidimensional Poverty Index 2017. Brief Methodological Note and Results. OPHI Country Briefing: Liberia. LISGIS, 2018 Report.

inadequate in quantity and quality. Children are more sensitive to short-term foods shortages and this pushes them into malnutrition. The 2013 Comprehensive Food Security and Nutrition Survey (CFSNS) also found food marketing to be a principal pillar of food security in Liberia. Almost three-quarters of rural households buy food and just one-fifth are able to rely on their own production, while 94 per cent of urban households purchase their food at the market. Liberians produce only one-third of the rice they consume, and thus rely on markets for at least six months in a typical year. The second main staple, cassava, is widely cultivated and used as a food security crop. However, the market network is severely limited particularly in geographically-isolated rural areas. The 2007 Liberia market review noted that 81 per cent of households have access to weekly markets and often have to walk for an average of 2.5 hours to reach them; only 29 per cent of households reported having access to daily markets. Finding markets to purchase food or to sell surplus production is a challenge for more than half (54 percent) of Liberian households. Findings of the Joint Liberia Food Security Assessment of November 2014 showed that in communities without regular market days, such as in Sinoe, Grand Kru and Margibi counties, households find it difficult to access food supplies outside of their community. This situation, mainly due to poor feeder roads and lack of transportation, is more evident during the rainy season (EFSA 2015). The areas with the poorest road networks are the most food insecure and distance is negatively with adequate food consumption scores (CFSNS 2010).

Access to food by most Liberians is constrained by “high poverty rates” (World Bank 2011), “an under-performing labor market” (LISGIS 2010) and poor road conditions particularly in rural communities. In 2015, food expenditures accounted for over 65 per cent of total household spending by a quarter of households in the country, while 41 per cent of households did not have food or money to buy food the week before the Emergency Food Security Assessment (EFSA, 2015). Food marketing is a principal pillar of food security in Liberia. Almost three-quarters of rural households buy food, with just one-fifth relying on their own production, while 94 per cent of urban households purchase their food at the market. Liberians produce only one-third of the rice, the staple they consume. The second staple, cassava, is widely cultivated and used as a “food security” crop (CFSNS 2010).

The proportion of population below minimum level of dietary energy consumption is 19.5 per cent (LISGIS 2015). Poor dietary diversity and quality are also contributing factors. Lofa, Bong, Nimba, and River Cess have the most severe dietary quality deficits, with 40–50 per cent of the households rated as moderate or severe (FEWS NET 2017). Dietary diversity is particularly poor in rural Liberia where food consumed by the poorest comprises low cost starches such as rice and cassava, with little contribution from animal-source foods, vegetables or fruit. Whereas only 2.4 per cent of Monrovians have a diet lacking in diverse food groups such as fruits, vegetables, dairy, pulses, meat or fish, 41 per cent of the national population outside the capital was found to have poor dietary diversity (CFSNS 2013), with the poorest dietary diversity found in River Cess (60 per cent of the diet made up mostly of starch), followed by Bomi, Bong, Grand Kru, River Gee and Maryland Counties. Fish provides an estimated 65 per cent of animal protein intake within the country, mainly because it is significantly cheaper than meat or chicken and readily available.

Malnutrition continues to be a major public health problem in Liberia, exacerbated by poverty, food insecurity, poor dietary practices, low literacy levels and limited access to basic social services. The most vulnerable groups include women and children, the elderly, people living with HIV and tuberculosis patients.

Liberia has made some progress towards reducing stunting in the last two decades. Yet chronic malnutrition continues to affect nearly one-third of all children under five. With a stunting prevalence of 32 per cent[38], Liberia is among the 21 countries with the highest stunting rates worldwide, depriving thousands of children in the country of their full growth and development potential. About two out of every 10 children under five years in Liberia are underweight. At 6 per cent, the overall prevalence of global acute malnutrition (GAM) nationwide appears to be within acceptable thresholds. However, seasonality and abrupt shocks could easily tip the delicate balance.

[38] Liberia Demographic and Health Survey (LDHS) 2013

Vitamin A deficiency is common at 13[39] per cent among children aged 6 to 35 months while the coverage rate of vitamin A supplementation was at 86 per cent. Anaemia among Liberian children 6 to 35 months is high at 59 per cent. Furthermore, among pregnant women, Anaemia is prevalent at 38 per cent with iron supplementation coverage rate at 68 per cent.[40]

Poor care begins during pregnancy. Some 8 per cent of pregnant women are undernourished. Almost all pregnant women have deficiencies in trace elements such as iodine and iron; 38 per cent of pregnant women suffer from anaemia. Among women aged 15-49 with a child born in the past five years, only 21 per cent took iron tablets for the recommended period and only 58 per cent took deworming medication (LDHS 2013). One in four women and fewer than 1 in 10 men are overweight or obese. Trend analysis over the last two decades indicates that the double burden of malnutrition is increasing over time in Liberia hence the need for actions to combat it. Malaria during pregnancy is a major contributor to low birth weight, maternal anaemia, infant mortality, spontaneous abortion and stillbirth. The mother's nutritional status, including anaemia, affects the health of her baby. Proportions of stunting, wasting, and underweight are higher among children reported as very small and small at birth than among children reported as average or larger at birth. The prevalence of stunting, wasting, and underweight is higher among children born to underweight mothers than among those born to normal-weight or overweight mothers.

Malnutrition rates vary little by area of residence; by county, River Gee has the highest prevalence of stunting (43 per cent) and underweight (25 per cent), and Bomi, Grand Bassa and River Cess have the highest prevalence of wasting (9 per cent). The prevalence of stunting, wasting, and underweight is inversely correlated with wealth quintile. Children in the highest wealth quintile are less likely to suffer from malnutrition than those in lower wealth quintiles. The prevalence of overweight children varies little by background characteristics.

The key drivers of malnutrition in Liberia are sub optimal infant and young child feeding practices, infectious diseases and adolescent pregnancies. Despite a significant increase in exclusive breastfeeding from 29 per cent in 2007 to 55 per cent in 2013 (LDHS 2007 and 2013), a significant number of infants are still sub-optimally breastfed. Among children aged 6-23 months, only 11 per cent met least dietary diversity standards, 30 per cent met minimum feeding frequency standards and 4 per cent consumed a minimum acceptable diet. Among children 6 to 8 months, only 47 per cent are introduced to timely complementary food (LDHS, 2013). In addition, 89 per cent of Liberian children are fed mainly rice and lack sufficient nutrients, especially vitamins and minerals.

Inadequate water, sanitation and hygiene situation is another factor associated with under nutrition. Access to drinking water is estimated at around 73 per cent and access to sanitation is estimated at 17 percent. Only 15 per cent of the population has access to sanitation and hygiene. In the rural areas open defecation is still the most widespread method, with as many as 85 per cent still practicing open defecation. Only 6 per cent of the rural population currently have access to improved sanitation. It is estimated that each year, Liberia loses USD17.5 million due to the poor sanitation; the poorest quintile of the population is almost 7 times as likely to practice open defecation as the richest.

Childbearing begins early in Liberia and it is another key driver of malnutrition. By age 19, 60 per cent of adolescent girls had begun childbearing in 2013 which is a slight increase from 59 per cent in 2007. This has serious consequences on the nutritional status of the population because, relative to older mothers, adolescent girls are more likely to be malnourished and have a low birth weight baby who is more likely to become malnourished, and be at increased risk of illness and death than those born to older mothers[41].

[39] National Micronutrient survey 2011 (Preliminary report)
[40] National Micronutrient survey 2011 (Preliminary report)
[41] LISGIS, Ministry of Health and Social Welfare, National AIDS Control Program, and ICF International 2008 and 2014).

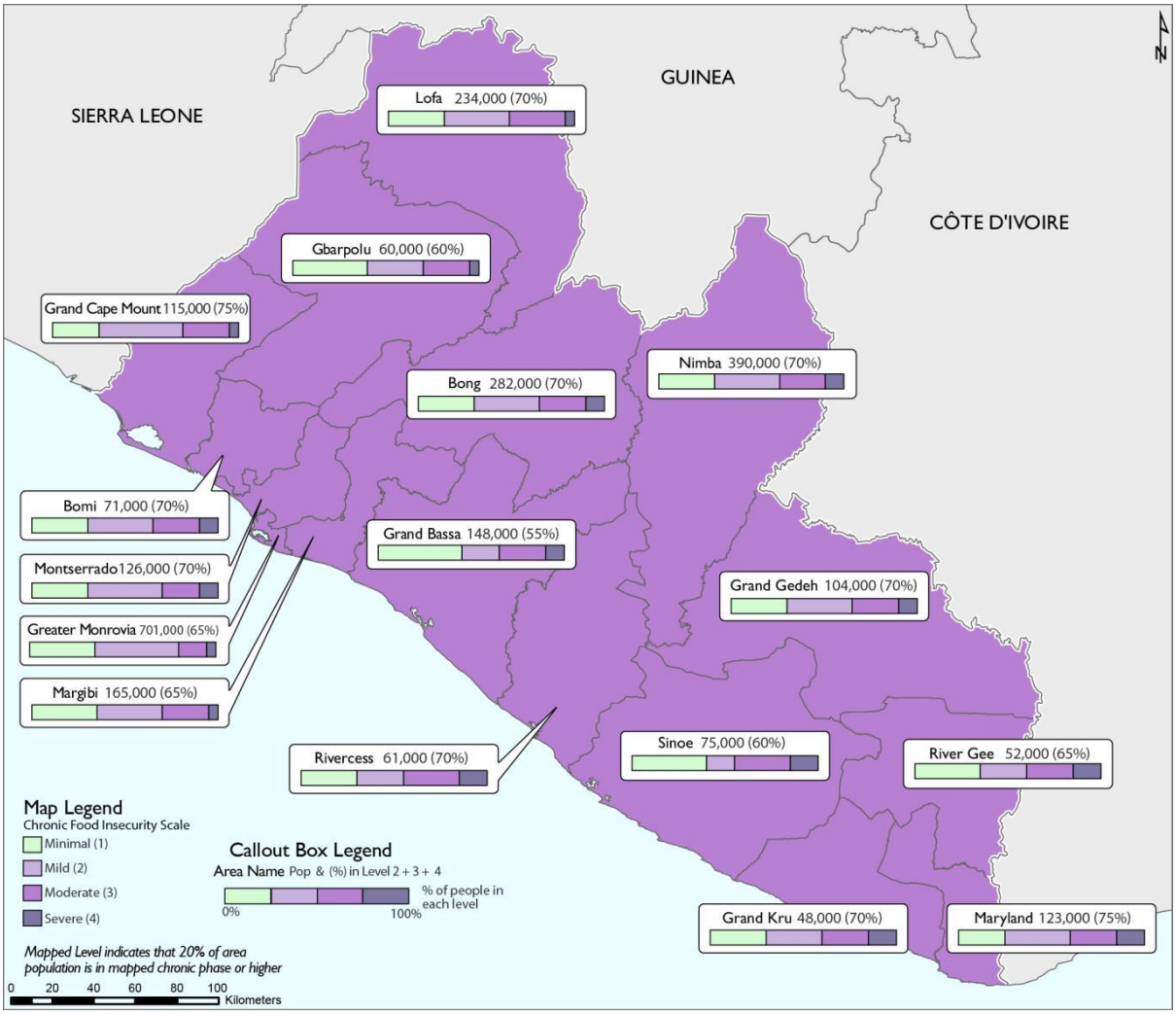


Figure 2: Chronic food insecurity classification for Liberia/ (Source: USAID Assessment of chronic food insecurity in Liberia, 2017)

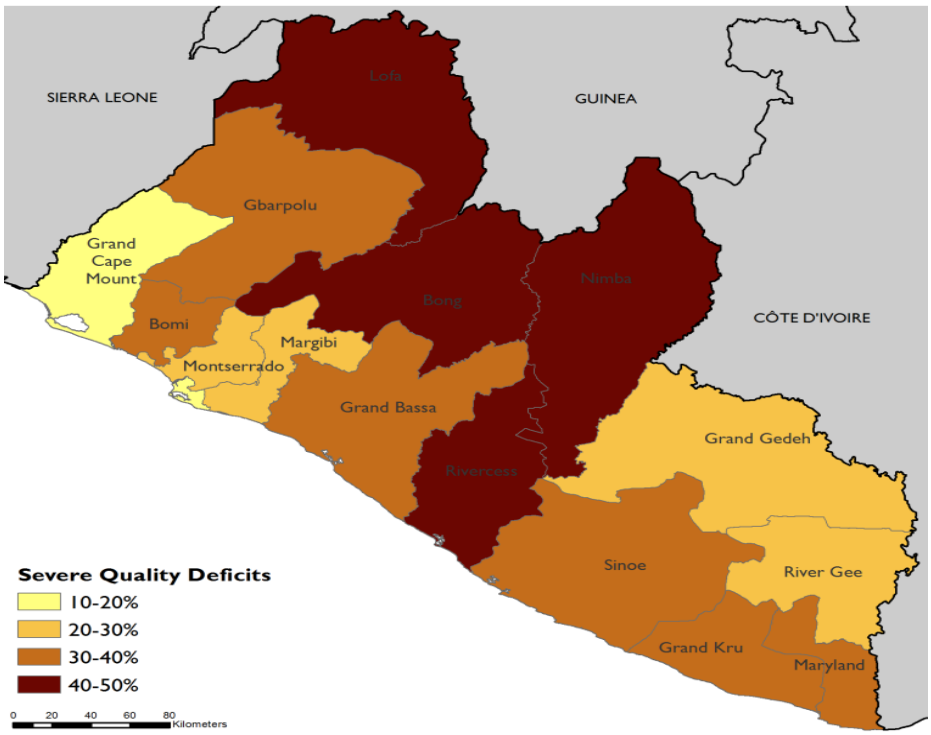


Figure 3: Proportion of households with severe quality deficits (Source: USAID Assessment of chronic food insecurity in Liberia, 2017)

Gender

As in most African countries, men and women in Liberia have clearly defined socio-economic roles based on gender norms. In the local communities, most of the agricultural work is managed by women, while men focus on some tasks like clearing and preparing land, marketing, etc. Indeed, women's contribution to agriculture in Liberia is substantial: they represent the majority of the agricultural labor force (80 percent) and are responsible for 93 per cent of household food crop production.[42]

The lack of productive capital poses considerable barrier especially to women who would like to engage in commercial agriculture. Women-headed households have additional challenges accessing labour, particularly for difficult agricultural tasks like land clearing. This undermines their potential contribution to agricultural growth and rural development, making them more vulnerable to poverty.[43] Within the household, the assumption that the home is a cohesive domestic unit with perfect solidarity and altruism reigning in all relationships is giving way to the need to explore the extent to which male and female members of households do collaborate, pool their resources and earnings, and the specific gender divisions of labour, power and decision making. Women are often organized in their traditional kuu system, where they share work burden, as well as benefit from some level of mutual support. However, women generally do not have stronger organizations which can serve as a vehicle to communicate collective voice at value chains, and informal and formal institutions.[44]

Liberia has very low literacy rate: According to the HIES 2016,[45] overall, the per cent of the population attending formal education is 62.7 per cent (75.7 per cent males and 51.2 per cent females). The root causes of girls' and women's vulnerability starts very early within the family and the values are reinforced in schools, communities and institutions that support children and their families. Due to the low value

[42] OECD, Gender, Institutions and Development Database, 2019. https://oe.cd/ds/GIDDB2019.
[43] Ministry of Agriculture, *Gender Analysis Report*, 2018
[44] Ibid.
[45] LISGIS (2017), HIES 2016

attached to girls' education, their vulnerability extends to harmful practices such as Female Genital Mutilation (FGM), sexual exploitation, and early marriages.

According to the UN Population Fund, sexual and gender-based violence continues to be a major challenge for Liberia's recovery after 14 years of war that ended in 2003. For many Liberians women and girls, the appalling violence they experienced during wartime still occurs. Early marriage, rape, offensive touching (sexual assault), forced prostitution, wife inheritance and forced servitude are the main types of sexual and gender-based violence perpetrated in the communities.

Overall, teenage pregnancy stands at 31 per cent and Female Genital Mutilation (FGM), a harmful rite of passage that deters girls from dignified adolescence and increases the risk of complications during childbirth, is widely practiced and acceptable in 10 out of 15 Counties in Liberia. In rural Liberia, it is estimated that approximately 72 per cent of women and girls has been subjected to FGM.[46]

Youth

Youths in Liberia comprise the population falling between 15 and 35 years, and constitute a significant percentage (47 per cent) of the population. Liberian youths have a high illiteracy rate resulting from low school enrolment and low educational level. Vocational training and apprenticeship opportunities are rare, and, as a result, the youth have become highly vulnerable to so many vices. They are disproportionally affected by unemployment or informal employment especially in rural areas. Youth were often engaged on land clearing/development activities for other households facing shortage of labour.[47]

In those localities, there is high rate of youth unemployment, side by side with high shortage of agricultural labour. From the discussion with the local communities, it was made clear that getting youth labourers for such agricultural activities is difficult. Young people are generally less interested in traditional agricultural related works, which require hard work, and is considered to be low paying, and ''dirty''. Often, the youth tend to be attracted by the quick returns of the gold mining, rubber work, motorbike business, and other daily wage earning opportunities, especially in towns.[48]

The access to land is especially challenging, especially for those from poor parents. For most, even negotiating access to land for rent with local authorities or clan leaders is challenging. Owing to some level of education they might have acquired, the youth are assumed to have better adoption for new technology, and high aspiration for their future. Better use of this ''demographic bonus'' would mean an important input into the advancement of agriculture and the country's economy.[49]

1.2 Rationale and Objectives of the ESMF

In accordance with IFAD guidelines, since the Locations and other details of the subprojects are yet to be defined at the time, the policy requires that project impacts (environmental, climate and social) should be assessed. However, given the nature of certain projects where site-and activity-specific impacts cannot be determined prior to the Decision Meeting, as required, the framework approach has become an acceptable way of meeting EIA requirements for project preparation and approval. The ESMF sets out a mechanism for the assessment of the environmental, climatic and social impacts of all program sub-projects, and identifies in general the adaptation, mitigation, monitoring and institutional measures to be taken during implementation and operation of the program to avoid, minimize or offset adverse environmental and social impacts.
This ESMF identifies the responsibilities of project stakeholders, procedures for environmental and social safeguards screening, review and approval, monitoring and reporting requirements, as well as plans to enhance institutional capacity. It also offers sample terms of reference for carrying out EIAs amongst

[46] UNFPA webpage (https://liberia.unfpa.org/fr/node/28655) , September 2019
[47] USAID, *Liberia Youth Fragility Assessment,* 2009
[48] Ibid.
[49] S Wiakanty, 'Youth Empowerment for Agriculture Essential for Food Security' *Observer, January 14, 2019* < https://www.liberianobserver.com/news/youth-empowerment-in-agriculture-essential-for-food-security/>

others. It also serves as an environmental and social safeguards instrument to provide the framework to both the relevant government agencies and private partners for preparing and implementing infrastructure projects.

The main objectives of the ESMF as per the terms of reference of this study are to:

- Identify potential impacts of the project and to prepare a generic Environmental and Social Management Plan for the direct and indirect impacts, as well as incremental impacts as they relate to land use changes, deforestation and soil degradation, soil erosion and flooding, dust emissions, noise pollution, agrochemical usages resulting from the investment. It also addresses mitigations for issues related access and social relations, benefits sharing and settling of grievances, among others.

- To formulate an Environmental and Social Management Framework (ESMF) including any standards and procedures, specifying how unidentified subprojects whose location are unknown will systematically address environmental and social issues in the screening for environmental and social impacts and categorization, site selection criteria, mitigation measures, design, implementation and operational phases as well as maintenance of the subproject lifecycle;

- For infrastructure related projects, to formulate Environmental and Social guidelines for construction firms to be recruited as contractors. These guidelines shall be recommended for incorporation in contractor's bids and contract documents.

1.3 Approach and Methodology and Stakeholders Consultation

The Integrated Initiatives to Promote Climate Resilience in Cocoa and Rice Value Chains in Liberia is expected to strengthen organizations and support increased production and productivity of rice, and cocoa, by training the farmers on good agronomic practices, supporting their access to inputs, equipment and infrastructure, and linking them to markets. From the logical framework, the goal is to improve the livelihoods and climate change resilience of rural farming households in Liberia. The core indicators related to component 1 include: percentage of persons/households reporting adoption of environmentally sustainable and climate-resilient technologies and practices; percentage of persons/households reporting adoption of new improved inputs technologies or practices; and number of hectares of land brought under climate-resilient management.

The overall objective of this climate finance for adaptation is to reduce vulnerability and increase adaptive capacity to respond to the impacts of climate change, including variability at local and national levels. It will also assist in addressing the resilience of natural resources critical for sustaining agricultural production and increasing food security. Specifically, the additional AF fund is expected to; Climate-proofed agricultural value chain (production, post-harvest and marketing) and climate resilient livelihood diversification (AF component 1); Enhance Water control, security and management measures (AF component 2); and Enhance climate service infrastructure, delivery and early warning in agriculture (AF component 3).

In terms of the technical scope, the ESMF reviewed environmental, climate and social impacts, focusing on unsustainable agricultural practices and climate change. It also reviewed a number of legal and policy frameworks related to agriculture, environment, climate, access to land, gender issues in Liberia.
Consultation was also held with officials in the Ministry of Agriculture, Forestry and Food Security (MOA), Ministry of Lands, Country Planning and the Environment, Ministry of Works, Environmental Protection Agency (EPA), Forestry Department, and the Liberia Meteorological Agency. In addition, valuable time was spent to discuss with project management officials of the ongoing Smallholder Commercialization Programme - Global Agriculture and Food Security Programme (SCP GAFSP) Project with respect to environmental and social concerns.

The IFAD's Social Environment and Climate Assessment Procedures (SECAP) guidelines, IFAD's Environment and Natural Resources Management Policy, the Gender Equality and Women's

Empowerment, and Targeting policies were also consulted in developing this ESMF document.

1.4 Disclosure of ESMF

IFAD's Policy on the Disclosure of Documents (2010) requires full disclosure to the public, and includes information notes on projects being developed for Board presentation, agreements for approved loans and grants, and project/program design documents. This ESMF will therefore be disclosed on IFAD's official website (http://www.ifad.org). In addition, the ESMF will be disclosed to the Ministry of Agriculture, EPA.

1.5 Challenges and Assumptions

The challenges in preparing the ESMF include:

- The specific agri-enterprise projects locations are still unknown, the ESMF has assessed impacts based on likely proposed projects in comparable locations at districts based on the knowledge of the environmental conditions;
- Due to time limitations (only 7days granted for the ESMF Development) and logistical reasons, field consultations were limited to the Ministries, Agencies and Departments (MDAs) which are located in Freetown.
- The scope of the subprojects to be supported include cocoa, rice, fishery and poultry.

1.6 Report Structure

Chapter 1 describes the objectives of the ESMF and the key environmental and climate issues for the project and the AF request, as well as the assumptions for the ESMF. Chapter 2 describes the project area and target groups, project objectives and impact indicators, implementation structure, potential partners, and environmental and social category. Chapter 3 reviews some of the legal, institutional and regulatory framework for ESIA and agri-business in Liberia and how they affect the project. Chapter 4 describes in detail the environmental, climate change and social contexts of the project. Chapter 5 reviews in detail the potential positive and negative environmental, climate and social impacts of the project. Chapter 6 describes the Environmental and social Management Plan for the project and the Stakeholder Engagement, Community Sensitization, Expectation and Grievances management mechanisms. Chapter 7 presents a review of Environmental, Climate, Social Impacts of the project Sub-Projects and the Environmental and Social management Framework (ESMF) for Agricultural Value Chain Stages. Chapter 8 describes the framework for Environmental and Social Screening of Sub-Projects. Chapter 9 presents the Environmental and Social Impacts monitoring plans and cost, and Chapter 10 itemizes the capacity building and training for mainstreaming the Environmental and Social Management and Monitoring Plans.

2. DESCRIPTION OF THE PROPOSED PROJECT

2.1 Project Area and Target Groups

The project will be implemented in the Bounty County of Liberia. It has a population estimated of 333,481 according to the National Population and Housing Census 2008. Male-164,859, Female-168,622, twelve (12) Districts, forty two (42) Clans and one (1) township which has Jorquelleh District as the most populated with a population estimate of over seventy nine thousand inhabitants and with a provincial capital called Gbarnga which is about 56,000. Bong County has a total area of 3,358.81 square miles, population density of 99, total acres of 2,149,645.7 (869,930.53)[50].

The project will target about 25,000 direct beneficiaries drawn from smallholder farmers, FBOs including cooperatives, partner financial institutions, small scale rural entrepreneurs, women and rural youth (18 – 35 years).
Geographic targeting: will be applied specially in the selection of the communities to be supported for cocoa, rice, fishery and poultry production, taking into account the climate change impact and the legacy factor from previous IFAD-assisted interventions.
Gender targeting: criteria have been specified for the selection of beneficiaries for the project. It will mainstream gender sensitive approaches and farmer-led innovations using the GALS methodology. In conjunction with the MOA Gender and Nutrition Unit, and will promote gender equity as well as the participation of women and youth in all the value chain activities.

2.2 Goal, Objectives and Impact indicators

The **overall project goal** is livelihoods and climate change resilience of rural farming households Liberia improved. The project development objective (PDO) is to promote agriculture as a business for enhanced incomes and reduced rural poverty. The objective feeds directly into the two strategic objectives of the Country COSP 2020-2024, of; enhancing the performance and inclusiveness of value chains that offer job opportunities, wealth creation, food and nutrition security for rural people, including poor households, women and youth; and contributing to an enabling environment for pro-poor policy development and enhance the capacity of the public sector in Liberia to deliver services to the rural poor.[51]

The core indicators include:
the project performance indicators (as set out in Section 2.2) are:

- Goal: Total outreach - number of households receiving services promoted or supported by the project (15,000 at MTR and 25,000 at completion)
- Goal: Percentage of households that experience a reduction of hungry season from 4 to 2 months (50 per cent at MTR and 80 per cent at completion)
- PDO: Number of rural producer organisations engaged in formal partnerships/ agreements or contracts with public or private entities (100 at MTR and 250 at completion)
- PDO: Number of existing regulations/policies/strategies proposed to policy makers for approval, ratification or amendment (one at MTR and two at completion)
- Component 1: Percentage of persons/households reporting adoption of new improved inputs, technologies or practices (40 per cent at MTR and 100 per cent at completion)

[50] https://www.lisgis.net/county.php?&fd0e78b77a58d689bbb27b3e1c037717=Qm9uZw per cent 3D per cent 3D

[51] While the most substantive support is foreseen for the Ministry of Agriculture and the Liberia Agriculture Commodities Regulatory Authority (LACRA), other public entities such as the Ministry of Commerce and Industry and CARI will be considered.

- Component 1: Percentage of households reporting an increase in production (25 per cent at MTR and 100 per cent at completion)
- Component 2: Percentage of supported rural producers' organisation members reporting a decrease in post-harvest losses (30 per cent at MTR and 100 per cent at completion)
- Component 2: Percentage of persons reporting improved physical access to market, processing and storage facilities (40 per cent at MTR and 100 per cent at completion)

2.3 Project implementation structure

Project Management

1. The implementation arrangements for the project will follow the implementation model for the on-going AfDB, IFAD, and World Bank projects in the agriculture sector. The MOA-PMU has been established as a cost-effective way to implement all investment projects in the sector and it gained a considerable experience in investment project implementation over the years of its functioning. The project will further strengthen the capacity of the PMU through the competitive recruitment, adoption of the monitoring and evaluation (M&E) system, provision of communication infrastructure, audit and strengthening the financial management and accounting systems.
2. The national staff will receive in-service training including skills transfer from international experts. Furthermore, and in keeping with standard procedures, the PMU will ensure the active participation of the appropriate national and field staff of the Ministry of Public Works and EPA in the execution of civil works. The National Climate Change Steering Committee (NCCSC), an inter-ministerial Steering Committee will oversee the project implementation. The NCCSC is a clearinghouse on all Climate Change matters in Liberia
3. At the field level, agriculture advisory and extension agents will be recruited competitively and retrained on climate smart agricultural activities. The recruitment will focus on youth however on those that have graduated from agriculture colleges of universities and TVET institutions.

National Climate Change Steering Committee (NCCSC) roles and responsibilities

4. The project will have a steering committee. The National Climate Change Steering Committee, headed by the Minister of Finance & Development Planning, Co-Chair by EPA will serve as the Project Steering Committee. The members will include the Ministries of Agriculture, Youth and Sports, Gender Children &Social Protection, CARI, LACRA, CDA, and representatives of Civil Service Organizations.
5. The committee will serve as advisory committee and provide management guidance; review and approve Annual Work Plan and Budget review reports, monitor sites periodically and provide feedback to the project management.

Project Implementation Unit (PIU) roles and responsibilities

6. The PIU is the project implementation arm of the Ministry of Agriculture. It is autonomous of the mainstream public activities of the MOA but works in close collaboration with the MOA.
7. The PIU will be responsible for the day to day management of the project providing directions and guidance to project partners and coordinating the project implementation with the MOA. MYS and the EPA.
8. The PIU Financial Unit will document all financial transactions and prepare the financial aspect of the project quarterly and annual reports.
9. The PIU will have Monitoring Unit for monitoring and documenting and analysing project data to generate reports about the project performance.

Project implementation and financial risk management

10. The PIU will consistently ensure proper financial management practices. Costing took into consideration all elements of the project activities including project management and local partners' activities and administrative cost.
11. The PIU will release project funds on the basis of benchmarks throughout the life of the project. A financial system will be established to monitor and control disbursement and expenditure of the project.
12. Past experience is that procurement is the riskiest of financial management that often affects project performance. An example of procurement problem is quality of inputs and value for money. Very often, specifications are either not provided or clear to the vendor. As such, there is no yardstick for checking the quality of inputs.
13. The PIU will remain cautious of this and monitor the quantity and quality of procurements. The PIU will encourage the preparation of quarterly cash flows showing benchmarks for amount stipulated in the project.
14. The PIU will establish the project account in a reputable local bank in Monrovia with three signatories, the Coordinator of the PIU, Deputy Minister of Administration and the Project Comptroller. The Comptroller will develop a petty cash control and management system and set ceiling on petty cash.
15. Where and when necessary for the interest of beneficiaries, PIU will seek approval for budget realignment within the percentage provided for in the project financial policy. PIU will submit quarterly project performance reports to IFAD and each will be complete with standard financial component according to the donor's standards.
16. PIU will facilitate annual audits of the project financial management including procurements and other transactions.

IFAD will supervise the project directly and the IFAD Country Office will provide continuous back support and guidance. A baseline study will be carried out in the first year of project implementation to establish future monitoring and impact assessment benchmarks. A Mid-Term review will be carried out jointly with the government to evaluate project progress, identify areas for further improvement and revise project approach, activities and budgets on the basis of MTR findings.

2.4 Adaptation Fund

The Adaptation Fund will strongly support climate resilience of smallholder farmers and other value chain actors in many THE PROJECT activities to complement their income and livelihood sources. The AF will implement additional non-co-financed activities to assist Liberia to meet the costs of adaptation activities and increase resilience at the community and national levels. The activities are:

- Capacity building for MOA and CARI
- Train youth as solar technicians and install solar electrification in rural villages.
- MoU with MOA to plant sustainable Acacia forestry plots for charcoal and furniture, raise awareness against slash and burn, pilot low cost efficient charcoal kilns.
- Support alternative forestry livelihoods: poultry, honeybee and snail farming, aquaculture in earth dams and small ruminants.
- Support the Meteorological Department by developing a governance management plan to successfully and sustainably install and operate the weather stations to support the development of an Early Warning System service to farmers.
- Support EPA in a climate change awareness-raising programme.

The Adaption Fund is also expected to support the cost of mainstreaming the ESMF into the project project implementation.

2.5 Other potential partnerships

The project will also leverage from the TCEP-II projects currently running in Nimbe and Lofa.

A range of public and private sector service providers and implementation partners will be engaged by the project to facilitate project implementation at different stages of the value chains and build the capacity of the project target groups towards agriculture as a business. The modalities for the engagement of the service providers will be specified in the description of the outputs in the PDR.

2.6 Key issues identified on social and environmental management

Land tenure. To move smallholder farmers from subsistence farming to a market-oriented production, improving access to land and securing land tenure are capital. In Liberia, there are three types of land ownership: state /public land, individual proprietorship, and tribal land ownership. Inadequate/insecure property rights, recurring land disputes, and restricted number of women with access to land need to be addressed in order for the farmers and the agricultural sector to thrive. The recently established Land Commission and the new Land Rights Act (under review at the Legislature) will help resolve land disputes, improve access to land, and enforce property rights. Bong County is no exception; the proper land use policy causes local communities and individuals to expand shifting cultivation practices, destroying the forest and its biodiversity.

Road management. Road management is a major problem in Liberia: only 657 km of total road network system (10,600km) is paved. Torrential rains, lack of maintenance, overloaded trucks, and the long rainy season contribute to the deterioration of this under developed road network. Bong County being located far from Monrovia, the limited connection within the county and between the county and the rest of the region is a major burden for farmers and cooperatives. Thus, the transport of their production (rice and, cocoa) to the different markets is expensive, especially during the raining season. As a result, cross border market Guinea and Sierra Leone are flourishing and the middle buyers have gain substantial bargaining power at the expense of smallholder farmers.

Post-harvesting processing. Inadequate postharvest practices hinder the quality of the cocoa beans, reduce the farmers and cooperatives sales revenues, and lessen the overall performance of the national cocoa production value chains. Post harvesting management has been a major challenge for cocoa farmers in Bong. Post harvesting processing includes fermentation, dying to the ideal moisture content (7 to 7.5 per cent), storage of the dried cocoa in an environment to avoid re-humidification, and contamination by strong odours, and shipping and grading standard. The project completion report of the Smallholder Tree Crop Revitalization Support Project (STCRSP) reveals sub-optimal use “solar dryers” and mini-warehouses provided by the project throughout the district. In addition, the cocoa grading system between the farmers/cooperatives and their main private sector partner has cause the fallout between the two parties. In the absence of good post-harvesting processing mechanisms, and fair and transparent grading system, the cocoa value chain will remain broken and the farmers will end up selling their goods, for a lesser price, to middle buyers.

Availability of farming inputs and support services. Most cooperatives and some farmers in the county rely on a private sector partner and on middle buyer to pre-finance each cocoa season. The challenges with not having reliable agricultural banking systems are many folds. First, when the farmers are pre-finance by the middle buyer, they are bind to sell their production to the latter at a much lower price than the indicative price for the season. This also impacts the cooperatives, which cannot meet it quota with the private sector that have pre-finance the season.

In sum, The AF component will contribute to reduced vulnerability and increased adaptive capacity to respond to the impacts of climate change, including variability at local and national levels as well as on natural resources critical for sustaining agricultural production and increasing food security with respect to:

- Climate-proofed agricultural value chain (production, post-harvest and marketing) and climate resilient livelihood diversification
- Water control, security and management measures
- Enhancement of climate service infrastructure, delivery and warning in agriculture

2.7 Key potential impacts

The project is not foreseen to have a significant negative environmental impact. Namely, rehabilitation/revitalization existing cocoa farms and planting new farms on existing agricultural land will not cause any direct form of direct form of deforestation. Similarly, the roads component of the project will only be undertaken on already established feeder roads and track ways. Establishing new farms, among other things, entails planting new trees, which can contribute to an increase in soil carbon sequestration, thus the project in the long run will have positive impact on the environment.

Although the social impact of the project is minimal (no physical-economic displacement of indigenous peoples, or destruction of historic, religious or cultural sites), land tenure being a major issue in most part of the country, the project will consult extensively with community leaders to minimize any land tenure related conflicts that could arise. The project will emphasize on the need for fair and transparent processes, this includes discussing with the farmers and cooperatives the selection process.

Climate change and adaptation

The project's primary goal is to boost the cocoa sector by increasing smallholders' productivity and profitability. This could have unintended impact on the environment if adequate measures and means to enforce them are not undertaken at throughout the project lifecycle.

Changing patterns in rainy seasons can affect the farmers' ability to anticipate the best time to infield their cocoa seeds. Also, even though cocoa trees are generally resistant to high temperatures, farmers understand and have adopted coping mechanisms to make their farm more productive (limited de-shading on their farms). The project also advocates for the adoption of cocoa varieties more resilient to higher temperatures, this will require cooperation with Universities and research center such as the Central Agricultural Research Institute (CARI).

*2.8*Environmental and Social category

The project is rated as **Category B** in **Environmental and Social** risk and **High** in terms of **Climate** risk. The key climate issue for Climate projections includes that of higher temperatures, decrease soil quality, and altered precipitations patterns; which could negatively impact agricultural production. However, Climate change could have a positive impact on cocoa production in Liberia. Liberia, together with Sierra Leone, Ivory Coast, Ghana, Togo, Nigeria, and Cameroon (the West African cocoa belt) produces almost 70 per cent of the world's cocoa. A study by Schroth et al. (2016)[52] projects that changes in climate (temperature and rainfall) will vary within the West African cocoa belt in the long run (2050s). Changes in the climate could have a negative impact on the production for Bong County. In the absence of adequate measures and conversion policies, the resulting intensification of cocoa production in these counties could cause greater deforestation. This classification is based on the fact that Liberia is classified as one of the Least Developed Countries (LDC), least able to adapt to climate change. The project target group is totally dependent on climate-sensitive natural resources such rain-fed agriculture and it is vulnerable to the increase in unpredictable rainfall patterns and increases in temperature, all of which is also predicted to

[52] http://dx.doi.org/10.1016/j.scitotenv.2016.03.024

reduce climate suitability of high yield cocoa varieties by up to 40 per cent .[53] Funding from the Adaptation Fund is expected to assist in addressing some the causes of the elevated vulnerability to climate change.

Sustainable development in a largely agrarian economy is heavily reliant on the sustainable use of biodiversity and natural resource management.

3. LEGAL, INSTITUTIONAL AND REGULATORY FRAMEWORK FOR ESIA AND AGRI-BUSINESS IN Liberia

3.1 Legal Framework

3.1.1 The Constitution of Liberia 1986: provides that, the Republic shall, consistent with the principles of individual freedom and social justice enshrined in the Constitution, manage the national economy and the natural resources of Liberia;

3.1.2 Environmental Protection Agency (EPA) Act, 2003: creates EPA as the principal authority in Liberia for the management of the environment and shall co-ordinate, monitor, supervise all activities in the protection of the environment and sustainable use of natural resources;

3.1.3 Environmental Protection and Management Law, 2003: forms the legal framework for the sustainable development, management and protection of the environment and natural resources by EPA in partnership with its stakeholders in Liberia;

3.1.4 EPA Regulations and Procedures: these Regulations combine both the assessment and environmental management systems and prohibit commencing an undertaking/activity without prior registration and Environmental Permit (EP) by the EPA.

3.2 Institutional and Policy Framework

The National Environment Policy of Liberia, 2002

The policy's goal is to ensure long-term economic prosperity of Liberia through sustainable social and economic development which enhances sustainable environmental quality and resource productivity

The National Policy and Response Strategy on Climate Change, 2008

National Adaptation Policy Framework recognizes that there are four major principles that provide a basis from which integrated actions to adapt to climate change can be developed. These are: Adaptation to short-term climate variability and extreme events to serve as a starting point for reducing vulnerability to longer-term climate change; Adaptation at different levels in society, including the local level; Adaptation policy and measures assessed in a development context; and The adaptation strategy and the stakeholder process by which it is implemented given equal importance. Based on this framework and elements of adaptation strategy, key sectors are identified and their corresponding adaptation policy and strategies formulated. The Policy and Response Strategy recognizes forestry and wildlife, agriculture, coastal areas, water resources, fishery, energy, mining, industry, transport, tourism, Infrastructure, urbanization and settlement, and health as priority sectors for adaptation[54].

[53] Götz Schroth et.al. (2016). Vulnerability to climate change of cocoa in West Africa: Patterns, opportunities and limits to adaptation. Science of the Total Environment 556, 231–241

[54] http://www.epa.gov.lr/sites/default/files/National per cent 20Policy per cent 20and per cent 20Response per cent 20Strategy per cent 20on per cent 20Climate per cent 20Change per cent 20Final per cent 20Document-min_0.pdf

The National Forestry Reform Law, 2006

The law aims at assuring the sustainable management, conservation, protection and sustainable development of Liberia forestland. It provides for rules on the ownership and use of forest resources, policy and planning in relation to forests, the commercial and other use of forest resources, contractual aspects of forest resources licenses, relations between neighbouring forest areas, environmental protection, protected areas network and wildlife conservation, community rights and forests management; rights of land owners and occupants, public use of holder infrastructure, trade in forest resources, fiscal provisions, measures for the promotion of forestry and wildlife activities, dispute resolution, miscellaneous, offenses and penalties, regional and international forestry initiatives and conventions.

The Regulation on Environmental Impact Assessment, 2009

The 2009 Regulation on EIAs implements Chapter 19, Section 19.1 (g), (h), (j) and (k) of the 2006 Forestry Reform Law. It deals with the submission of Environmental Management Plans, the consultation and decision-making processes as well as the EIA process. It also singles out provisions on monitoring.

The National Rice Development Strategy of Liberia, 2012

Aims to improve food security and achieve self-sufficiency through the doubling domestic rice production by 2018. The strategies proposed were aimed at achieving the doubling of domestic rice production by increasing the rice productivity in both upland and lowland ecosystems and by expanding the land area under rice cultivation in the lowlands.

The Land Administration Policy, 2015

This document resents a framework for land administration in Liberia with a focus on the main features of good land administration and those pertaining to the identification, ownership, use, and valuation of land, as well as the identification of land and the determination of rights to the land

The Land Rights Policy, 2013

The Policy provides a framework for the management of land in Liberia. Covering public lands, government, customary lands

The Water Supply and Sanitation Policy, 2009[55]

The policy articulates principles for both urban and rural water supply and sanitation service provision. In doing so it provides a means for the future integration and development of the sector; giving it more visibility; putting an end to the fragmentation that has held the sector back in the past; creating a framework for investment and enabling effective service delivery that will facilitate progress towards the priority interventions articulated in Liberia's Poverty Reduction Strategy; and a the first step towards a Sector Wide Approach[56].

3.2.7 Liberia's Intended Nationally Determined Contribution (INDC)[57]

Vulnerability and adaptation assessments conducted have revealed that Liberia is faced with climate change and variability leading to extreme events, which have negative impact on agriculture, forestry, health, energy and other sectors. Climate change impacts are marked by irregular patterns of rainfall, flooding, high temperature, and coastal erosion. These factors result to crops and livestock losses that intensify food insecurity and loss of income. For the most part, women and children are particularly vulnerable to the impacts of climate change. However, their unique knowledge and perspectives also provide opportunities for inclusive, equitable and efficient adaptation responses and coping strategies. The

[55] https://wash-liberia.org/wp-content/uploads/sites/54/2013/08/Water-Supply-and-Sanitation-Policy.pdf
[56] https://wash-liberia.org/wp-content/uploads/sites/54/2013/08/Water-Supply-and-Sanitation-Policy.pdf
[57]https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Liberia per cent 20First/INDC per cent 20Final per cent 20Submission per cent 20Sept per cent 2030 per cent 202015 per cent 20Liberia.pdf

limited supporting infrastructures increase the vulnerability of the population. Coastal areas in Liberia are the most populated and economically vibrant areas. Sea erosion continues to pose increasing threats to the shorelines of coastal cities including major infrastructures and investments. It can also lead to displacement, loss of lives and properties and can severely undermine national security.

The three priority areas for adaptation based on Liberia's NAPA are; a) Agriculture - Enhancing resilience to increasing rainfall variability through the diversification of crop cultivation and small ruminants rearing; b) Building of a national hydro-meteorological monitoring system and improved networking for the measurement of climatic parameters; and c) Building of coastal defence walls to reduce the vulnerability of urban coastal areas. The long-term adaptation initiatives will include fishery, health, and transport, all with an integrated gender-responsive approach to ensure progress toward efficient and effective adaptive capacity and resilience.

3.2.8 Global Alliance for Resilience (AGIR), 2012[58]

The Global Alliance for Resilience (AGIR) Sahel and West Africa, is a framework that helps to foster improved synergy, coherence and effectiveness in support of resilience initiatives across the 17 Sahelian and West Africa countries. The Liberia Government in collaboration with partners is committed to addressing food and nutrition crisis prevention and management through a number of policy directions that are contributing to resilience building for the most vulnerable population.
AGIR focuses on a 'Zero Hunger' goal in the next 20 years through four strategic pillars:

- Restore, strengthen and secure livelihoods and improve social protection for the most vulnerable communities and households;
- Strengthen nutrition of vulnerable households;
- Sustainably strengthen agricultural and food productivity and incomes of vulnerable households and improve their access to food;
- Strengthen governance for food and nutritional security.

These indicators measure AGIR's progress:

- An increase of vulnerable people with access to basic social services such as health, education, water, sanitation and hygiene, and ability to increase their income;
- A reduction of at least 50 per cent of people seeking humanitarian aid in high-risk zones;
- A prevalence below 5 per cent of global acute malnutrition among children under five (currently often 15 per cent);
- A child mortality rate of less than 2 deaths per 10 000 children;
- Progress on spacing births and increasing the age of first pregnancy.

3.2.9 Traditional Management Practices

Local level resource management is implemented through traditional systems and practices. At the lowest level of local administration, power and decision-making is in the hands of traditional tribal authorities. The highest rank is that of Paramount Chief who is responsible for the actions of a number of Clan Chiefs. The Paramount Chief is elected by the chiefs and elders but serves at the discretion of the President, who may veto the election.

The Council of Elders (elderly, respected community members) must be consulted on important matters. The Paramount Chief has responsibility for enforcement of tribal customs, aspects of law and order, collection of taxes by lower rank chiefs, and promotion of agriculture, industries, trade and welfare. It is difficult to judge the power of the chiefs, who remain strongly influenced by the secret societies (Poro/Sande) in relation to observance of tribal customs. Chiefs are not government employees but retain a portion of taxes for their services and for local projects. Traditionally, their power is largely determined by their control (not ownership) of land. The interactions between the State and its institutions with the traditional tribal institutions and practices are regulated by the Hinterland Laws 1949. These institutions will be key on matters of possible land disputes during project implementation i.e. opening up new cultivations will likely trigger conflict in the participating communities.

[58] https://ec.europa.eu/echo/what/humanitarian-aid/resilience/sahel-agir_en

3.2.9.0 CENTRAL AGRICULTURAL RESEARCH INSTITUTE (CARI)

CARI is an agricultural research facility that is slowly recovering from the civil conflict. CARI was amongst the GoL institutions hardest hit by the protracted civil conflict, because it served as the base for three successive warring factions, then was home to over 10,000 displaced persons for five years, and finally became an UNMIL sector base. Current emphases include rice, cassava, and yam improvement; maize, fruits and vegetable screening and evaluation; animal husbandry; and, aquaculture. The commodity crops under the project will be part of the research agenda of CARI on a number of aspects such as varieties development and experimentation, pests and diseases and post-harvest.

Liberian Legal Framework

3.2.9.1 THE CURRENT CONSTITUTION OF LIBERIA 1986

The Constitution provides that, The Republic shall, consistent with the principles of individual freedom and social justice enshrined in the Constitution, manage the national economy and the natural resources of Liberia in such manner as shall ensure the maximum feasible participation of Liberian citizens under conditions of equality as to advance the general welfare of the Liberian people and economic development of Liberia.

3.2.9.2 ENVIRONMENTAL PROTECTION AGENCY (EPA) ACT, 2003

The Act creates the EPA as the principal authority in Liberia for the management of the environment and shall co-ordinate, monitor, supervise and consult with relevant stakeholders on all activities in the protection of the environment and sustainable use of natural resources. Part III of the 2003 Law establishes a fairly comprehensive framework for EIA, including procedures and substantive standards for the approval and rejection of projects. It also provides for public participation and procedures for appeals against EPA decisions.

3.2.9.3 ENVIRONMENTAL PROTECTION AND MANAGEMENT LAW, 2003

The law forms the legal framework for the sustainable development, management and protection of the environment and natural resources by the EPA in partnership with relevant ministries, autonomous agencies and organizations as well as in a close and responsive relationship with the people of Liberia. It addresses a wide range of environmental issues including EIAs amongst others in development projects.

3.2.9.4 EPA Regulations and Procedures

The EPA Regulations combine both assessment and environmental management systems. The regulations prohibit commencing an undertaking/activity without prior registration and Environmental Permit (EP). Undertakings are grouped into schedules for ease of screening and registration and for the EP. The schedules include undertakings requiring registration and, EIA mandatory undertakings (Schedule 2), as well as Schedule 5-relevant undertakings. The Regulations also define the relevant stages and actions, including: registration, screening, Preliminary Environmental Assessment (PEA), Scoping and Terms of Reference (ToRs), EIA, review of EA reports, public notices and hearings, environmental permitting and certification, fees payment, ESMP, suspension/revocation of permit, complaints/appeals etc.

3.3 IFAD Guidelines

3.3.1 IFAD Safeguard Policies

The IFAD'S ten Environmental and Social Values and Principles are relevant to the project project[59]. These social values and principles are:

- Address the vulnerability and adaptation needs for the rural poor
- Promote the sustainable use of natural resources and protection of key ecosystems.

[59] https://www.ifad.org/documents/10180/a5e3ffcc-0ed7-4bc6-b523-39c25dc1edd8

- Focus on partnership-oriented initiatives for improved social and environmental quality
- Address environmental and social impact assessments of agricultural and non-agricultural activities in an integrated manner.
- Incorporate externalities and minimize social costs.
- Implement participatory approaches, with special emphasis on the role of women.
- Promote the development of Indigenous Peoples and other marginalized groups (pastoralists, hunters and gatherers).
- Promote environmentally sound agricultural and manufacturing processes.
- Ensure systematic environmental and social monitoring.
- Undertake Strategic Environmental Assessments

3.3.2 IFAD SECAP Procedure[60]

The objectives of the Environment and Social Impact Assessment Study in the IFAD's SECAP procedure are to:

- identify key linkages between rural poverty and environmental management and assess the potential environmental and social impacts of the proposed project on the natural resource base and livelihoods of communities in the target areas;
- explore and identify key options for advancing environmental and social sustainability; and
- Recommend key opportunities to influence IFAD support towards environmental sustainability and climate smart development.

This ESMF is intended to provide options that would inform and thus improve decision making of the project design. The key environmental, climate change and social issues to be addressed include: (i) challenges faced to meet its rural development and food security goals; (ii) the major environmental, climate change and social issues that have a bearing on IFAD operations in the country; (iii) the direct impact and multiplier effect the mentioned issues have on the resilience of ecosystems and productivity of land and crops, natural resource management and rural livelihoods; (iv) the scale of volatility and risks resulting from climate variability and change; and (v) regulatory frameworks which are related to rural development and environmental issues.

The results of the ESMF and subprojects ESIA are: (i) an assessment of the environmental (and social/economic/institutional) issues particularly in the agricultural and rural development sector; (ii) the identification of links with relevant ongoing initiatives; (iii) the provision of specific measures, recommendations including opportunities to optimize adaptation, environmental management and resource use; in the project area. These results will shed light on the important opportunities available to build resilience and adaptive capacity in the program/project under development.

The Key Principles to guide the ESMF and the subproject ESIA are to:

- Look beyond the traditional 'do no harm' safeguards approach to mitigating environmental, climate change and social risks towards 'doing good' through greater focus on sustainability and management of environmental (rehabilitating degraded lands, seizing adaptation/mitigation opportunities and transforming the underlying inequalities that undermine inclusive development, etc.) and social impacts and risks;
- Begin the ESIA with a scoping exercise with the objectives of identifying as much as possible the relevant social, environmental, and climate change issues, so that baseline data collection and impact assessment can focus on them.
- Place strong emphasis on identifying opportunities and develop an appropriate management plan to enhance results and impact;
- Identify and compare alternative scenarios to recommend realistic proposals for design mission consideration;

[60] https://www.ifad.org/documents/10180/a36f992c-5e31-4fac-8771-404bea02796b

- Identify capacity needs required to effectively implement the environmental and social management plan;
- Produce a realistic monitoring plan, including appropriate change management processes.
- Engage affected communities and other interested stakeholders throughout the ESIA process, from scoping to review and comment on the final draft report prior to decision-making.

3.3.3 The IFAD Climate Change Strategy (2010)[61]

The IFAD's climate change strategy calls for the IFAD to more systematically respond to increasing demands from clients for technical support and innovation to better respond to climate change. This means analysing and addressing climate change challenges during the early stages of program and project design to build resilience and adaptive capacity. The strategy goal and purpose are to:

1. To support innovative approaches to helping smallholder farmers build their resilience to climate change
2. To help smallholder farmers take advantage of available mitigation incentives and funding
3. To inform a more coherent dialogue on climate change, rural development agriculture and food security

The main strategy output is a more 'climate-smart' IFAD, where climate change – alongside other risks, opportunities and themes – is systematically integrated into core programmes, policies and activities:

- On operations, climate change can be – and in many cases already is – factored into IFAD's operating model. This means incorporating it into our toolkit for the early stages of country programme and project design and for implementation.
- On knowledge, innovation and advocacy- IFAD will explore new arrangements for sourcing climate-related expertise, share ground-level experiences to ensure their application throughout IFAD-supported programmes, and continue our work to shape the global dialogue on climate change for smallholders.
- On resource mobilization, the focus is to make IFAD's expanding overall portfolio climate-smart. Increased supplementary climate funds will continue to be sought to deepen the integration of climate change into IFAD's core programmes and to cover the increased cost this implies.
- On internal organization, IFAD will make greater use of existing in-house skills and people, and will
- Implement a new organizational structure that brings together and increases its staff capacity on climate and the environment. It will also continue to demonstrate the values of environmental awareness internally.

3.3.4 The IFAD Environment and Natural Resource Management (ENRM, 2011) Policy[62]

Sustainable environment and natural resource management (ENRM) lies at the heart of delivering poverty reduction for rural people. Poor rural people face a series of interconnected natural resource management challenges. They are in the front line of climate change impacts; the ecosystems and biodiversity on which they rely are increasingly degraded; their access to suitable agricultural land is declining in both quantity and quality; their forest resources are increasingly restricted and degraded; they produce on typically marginal rain fed land, with increased water scarcity; energy and agricultural input prices are on a rising long-term trend; and declining fish and marine resources threaten essential sources of income and nutrition.

Environmentally damaging agricultural practices are a major driver of these challenges. There is growing concern over inappropriate approaches that drive excessive use of fertilizers and pesticides, pollution

[61] https://www.ifad.org/topic/tags/climate_change/2154532
[62] https://www.ifad.org/topic/resource/tags/climate_change/2096936

of waterways and aquifers, build-up of salt in the soil, water scarcity in major river basins, declining levels of groundwater and loss of crop biodiversity. Large parts of Africa rely on rainfed agriculture with little or non-existent use of organic or inorganic fertilizers, soil erosion and poor access to seed varieties. Strengthening governance, enhancing policies and changing consumption patterns could truly contribute to fighting environmental degradation: poor rural people, including smallholders, are often disempowered and thus unable to sustainably manage natural resources; a lack of clear land access and tenure rights removes incentives to maintain natural assets; distorting trade policies and fossil-fuel and other subsidies are key drivers. The response requires an 'evergreen revolution', powered by sustainable agriculture that balances crop/livestock, fisheries and agroforestry systems, so that surplus inputs are avoided and soil fertility and ecosystem services are not compromised, while production and income are increased. Building on a growing body of evidence of the success of sustainable agriculture investments, there is a huge opportunity to further scale up multiple-benefit.

IFAD's ENRM stresses that project designs present new opportunities to improve systematic integration and scaling up of ENRM of the portfolio. Such integration can help IFAD to engage in new and strengthened partnerships with specialized entities for enhanced and effective responses to issues associated with natural resources and, climate variability and change. ENRM is at the core of delivering IFAD's poverty reduction and sustainable agriculture mandate because its target groups rely directly on the environment and natural resources for their livelihoods, and client demand for support for ENRM is increasing.

3.3.5 Country strategic opportunities programme for Liberia 2020-2024

The Country Strategic Opportunities Programme (COSOP) 2020-2024 for Liberia covers the period 2020–2024 and will be anchored in the PAPD and aligned with the
second-generation Liberia Agricultural Sector Investment Plan II. Likewise, the COSOP is aligned with the United Nations Sustainable Development Cooperation Framework developed in parallel with the COSOP. Building on the findings from the COSOP consultations, the overall goal of the 2020–2024 COSOP is to increase income and employment opportunities for rural men and women while building resilience to climate change and food insecurity.

The strategic objectives of the COSOP are to:
(i) Enhance the performance and inclusiveness of value chains that offer job opportunities, wealth creation, food and nutrition security for rural people, including poor households, women and youth.
(ii) Contribute to an enabling environment for pro-poor policy development and enhance the capacity of the public sector in Liberia to deliver services to the rural poor.

Critical cross-cutting issues such as gender, youth, persons with disabilities, climate change and nutrition will be mainstreamed through these two broad strategic objectives.

4. DESCRIPTION OF THE ENVIRONMENTAL, CLIMATE AND SOCIAL CONTEXT

4.1 Environmental Context

Liberia has a rich and diverse ecosystem; it is well endowed in natural resources (vast forests, minerals deposits, fisheries, etc.). An adequate management of these resources will help alleviate poverty in a sustainable manner. The forest (estimated at 9.49 million ha) covers 45 per cent of the national territory. These forests can be classified in 3 main categories: closed dense forest (2.42 million ha), open dense forest (1.02 million ha), and classified as agriculture degraded forest (0.95 million ha). Liberia forests represent more than half of West Africa's remaining Upper Guinean tropical forest and therefore provides immense ecological benefits (medicinal plants, food source, non-timber products, energy, etc.). These forests also provide habitat to a diversity of plants and animals species. [63]

The 2015 FAO Global Forest Resources Assessment estimate Liberia biodiversity to consist of 590 bird species, 125 mammal species (hawks, eagles, rats, monkeys, leopards, elephants, etc.), 74 reptiles and amphibian species, 1,000 insect species, 2,000 flowering plants (59 endemic to the country), and 240 timber species. Despite the known importance of the Liberian forest and its biodiversity, currently there are only two actively protected forest areas (Sapo National Park and the East Nimba Nature Reserve) and eight forest reserves.[64]

4.2 Climate Change Context

Liberia's climate consists of two separate climate regimes: the equatorial climate regime restricted to the southernmost part of Liberia, where rainfall occurs throughout the year, and the tropical regime dominated by the interaction of the Intertropical convergence zone (ITCZ) and the West African Monsoon. Annual rainfall amounts are 4000-5000 mm along the coastal belt, declining to 1300 mm at the forest-savannah boundary in the north. The seasonal variation in rainfall has a critical influence on the vegetation. Liberia exhibits a fairly high average relative humidity throughout most of the year.[65]

Generally, Liberia is considered a tropical country with the average annual rainfalls ranging from 1,700 mm in the north and 4,500 mm in the south, the average temperatures vary between 24°C and 28°C, and the relative humidity ranges from 65–80 per cent . The climate is characterized by two (2) wet seasons in the southeast and one (1) wet season (May – October) for the rest of the country. Based on its agro-ecological characteristics, the country can be divided in 3 regions: coastal plains, forests and northern. [66]

[63] USAID, *Liberia Environmental Threats and Opportunities*, 2014<http://www.usaidgems.org/Documents/FAA&Regs/FAA118119/Liberia2014.pdf>
[64] Food and Agricultural Organization (FAO), *Global Forests Assessments,* 2015 <http://www.fao.org/3/a-i4808e.pdf>
[65] N Appleton & E Broderick, 'A Case Study for Liberian Agroforestry: Science and the Implementation of a Management Prospectus for Agriculture and Forestry (2018) 2 *Forestry Research and Engineering*
[66] Climatemps, 'Rainfall in Monrovia/Liberia' <http://www.liberia.climatemps.com/precipitation.php>

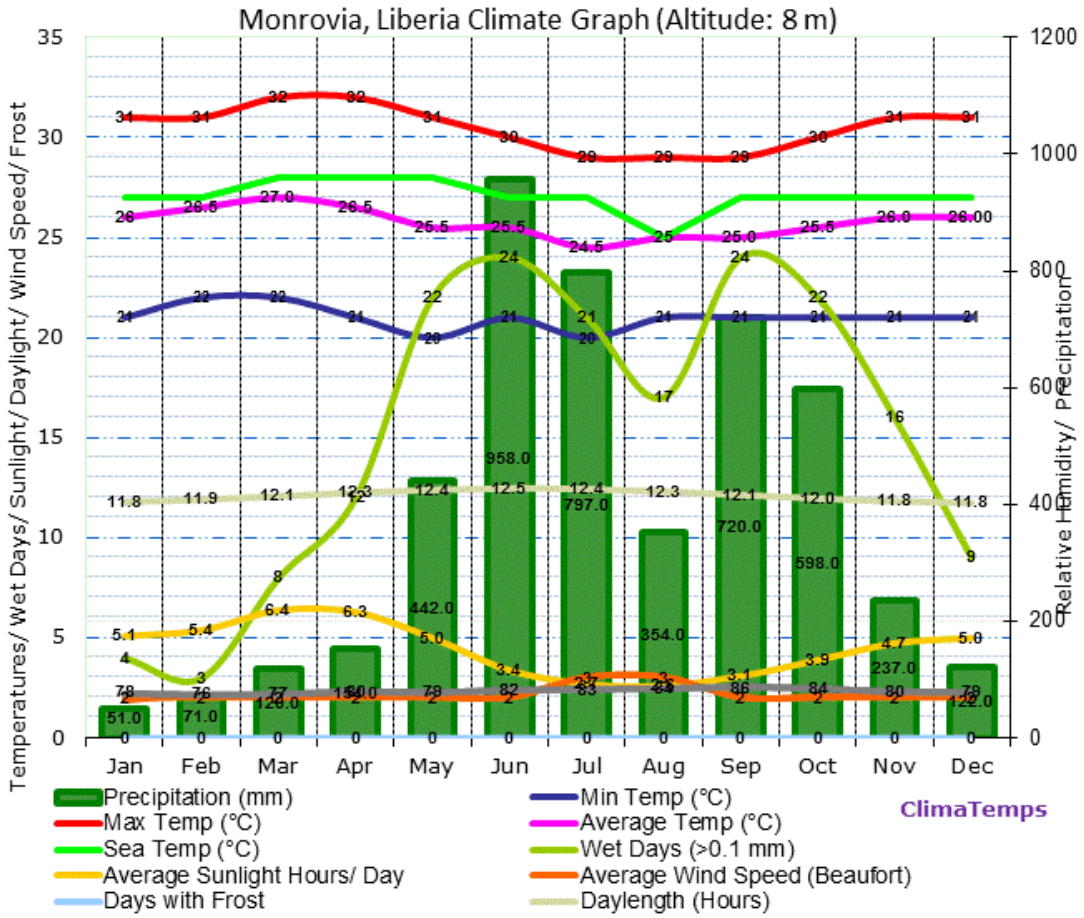


Figure 4: Climate Graph for Monrovia (Source: Liberia.climatemps)

Climate trends since the 1960s indicate a 0.8°C increase in average temperatures, a reduction in mean annual precipitation, and more flooding events. Furthermore, climate models project an increase in temperatures ranging from 0.9 to 2.6°C by 2060 and 1.4 to 4.7°C by 2090 (compared to 1970-1999 temperatures), a reduction average annual rainfall, an increase number of heavy rainfall along the coast and in flooding events, a 0.4 to 0.7m rise sea level by 210067, and soil erosion. There are 2 main contributing factors to climate change in Liberia. First is increasing population has led to an increase of demand for food and land resources, and second is the bad agricultural practices (deforestation, wetland reclamation, slash and burn to clear the land). Like most Least Developed Countries (LDCs), while Liberia's carbon footprint is low (0.0668 metric ton per capita), it remains one of the most vulnerable countries to the adverse impacts of climate change and variability.[69]

The sectors most likely to be affected by climate change are agriculture, forestry, fisheries, energy and mining. The population in the coastal areas and those who depend mostly on rain fed farming (close to 90 per cent of crop areas fall under this category) and fishing are the most vulnerable groups.
The Fisheries sector is also likely to be impacted by climate change (rising temperatures, frequency of extreme climate hazards, and the acidification of seawaters). For instance, increases in sea-surface temperatures make the coastal upwelling unpredictable and reduce fish productivity. The impact will vary between ecosystems and fishery regimes. Also, changes in precipitation and evapotranspiration could also affect inland waters impacting fish reproduction.[70]

[67]The World Bank's Climate Change Knowledge Portal
[68]Boden, T. and Andres, B. (2014). Global, Regional, and National Fossil-Fuel CO2 Emissions
[69] Ibid.
[70] Ibid

Although Liberia's tropical forests are likely to be impacted by climate change (change in aridity), human activities (slash and burn practices, urbanisation, logging, firewood, and charcoal production, etc.) are likely to have a more severe impact.

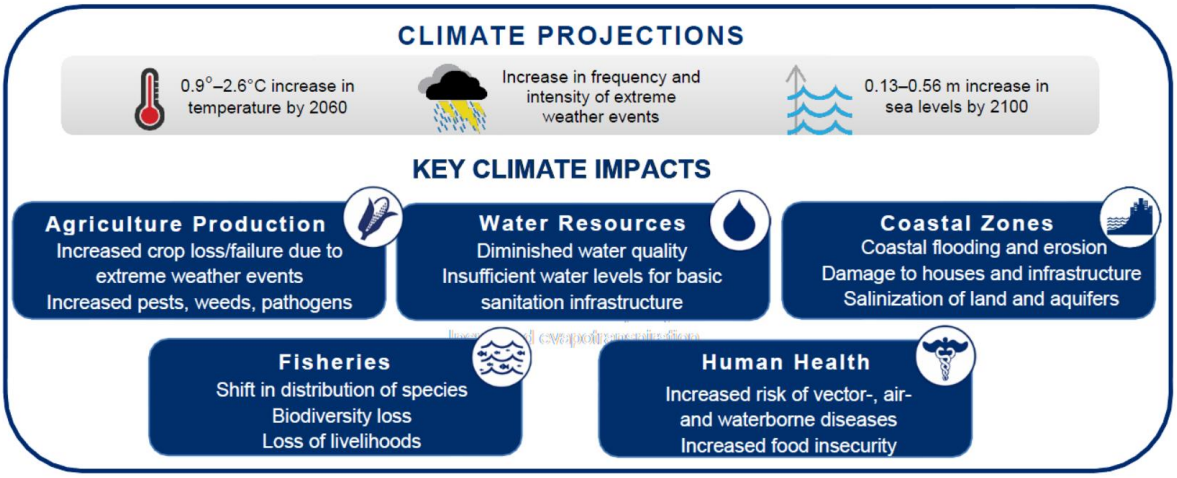


Figure 5: USAID, Country Profile: Liberia (2017)

While Liberia has a low-carbon footprint, the impact and effects of climate change may have severe consequences across multiple sectors, including agriculture, fisheries, forests, energy production related to the availability of water resources, coastal degradation and health. Around 70 per cent of the population depends on agriculture for their livelihoods, and improved plans for climate change will support Liberia in mainstreaming and accelerating policy support to achieve the Sustainable Development Goals for Climate Action, No Hunger and No Poverty. Strengthened capacity to plan for climate change, support policy and budgeting frameworks, and prepare vulnerable sectors for the impacts of climate change will also be essential in reaching the country's Nationally Determined Contributions to the Paris Agreement.[71]

Agriculture Sector

Out of the total land area (9.5 million ha), half is covered by tropical forest and arable lands (uplands and lowlands) covers around 47 per cent of the total land area. There are three types of farming systems in Liberia: traditional, commercial and concession. The traditional farming systems for the production of food (rice and cassava) and export crops (coffee, cocoa, rubber), and oil palm for consumption and resell. The commercial farms are used for the production of fruits, coffee, cocoa, and oil palm. The concessions plantations, owned and operated by foreign firms, produce mostly rubber and palm oil. Food crops (rice and cassava) productions are predominant.[72]

Rubber, oil palm, cocoa, and coffee are the main export crops contributing to approximately one third of the agricultural GDP. However, the production of coffee and cocoa is still lower than that of the 1989 pre-war levels, given that 61 per cent of the cocoa farms and 71 per cent of the coffee farms affected during the war still need to be rehabilitated.[73]

The Ministry of Agriculture (MoA) extension services in the different districts, as well as the farmers cooperatives capacity, needs to be enhanced through trainings and logistic support. Also, with the expected impact of climate change (disturbance in rainfall intensity and pattern, drought, rising sea levels, etc.) on the agricultural productions, there is a need to equip farmers with tools and knowledge to adapt to these changes and to assist them operate their farms using less time and labour intensive approach to farming.

[71] U. Goll, 'Towards a New Climate Change Treaty: Liberia's Contributions and Challenges' (2015); Kwaune, 'Integrate Climate Change Into Economic Planning' *Daily Observer,* 5th December, 2018
[72] Republic of Liberia, *Liberia Agriculture Sector Investment Programme (LASI)) Report*, 2010
[73] Ministry of Agriculture/Government of Liberia, *2015 Annual Report*.

Third, commercial banks' loans to the agriculture sector represents only 4.3 per cent (L$1,674,034.46) of total commercial bank credit to the economy. Furthermore, rural communities have limited access to financial services. Fourth, women (more than half of the agricultural workforce) and the youth, major stakeholders in the sector, still lag behind when it comes to access to land and involvement in cash crop production.

The majority of the population depend on agricultural sector for their livelihoods. These are major challenges preventing them from expanding beyond subsistence level. Another major constraint to the productivity and profitability of the agricultural sector relates to challenges in the underdeveloped value chain systems (unreliable private sector partners, insufficient and appropriate information on prices and quality control, etc.) and market accessibility (limited network of farm to market roads, bad conditions of main roads). Lastly, because of there are no national seed/ seedling production center to supply farmers with good quality seeds and seedlings for the major food and cash crops (rice, cocoa, coffee and oil palm), the country depends on imports from the neighbouring countries. These imported seeds and seedlings may not always be adapted to Liberia's environment and the potential yields are not maximized. *The country's food security challenges are not typically driven by climatic conditions.*

Land Rights

One of the major challenges facing the agriculture sector, especially for smallholders, is land tenure or access to land. The right to land is especially a major handicap for rural women, ethnic communities and other disadvantaged groups, including youth. At present the land tenure situation in the country is severe. It has been a pervasive problem since the independence of Liberia in 1847. Land tenure is believed to have been one of the problems leading to the brutal civil wars that occurred between 1989 and 2003.

The Land Rights Act was passed into law on August 23, 2018 by the Liberia National Legislature and signed into law by President George Weah on September 19, 2018. The new law is progressive and was shaped from the grassroots. However, there are still challenges to its successful implementation which would help to minimize land conflicts between local communities and agricultural and forestry concessions.
This Liberia COSOP acknowledges that the impact of climate change could further intensify conflict over resources, especially the right to land. Thus, the socioeconomic implications of changing climatic conditions and land rights will be closely monitored. Besides, citizens' engagement will be supported to complement the Government's ongoing efforts to promote social inclusion, grievance redress and sustainable management and transformation of natural resources into a source of economic dynamism. This includes the application of the principle of "Free, Prior, and Informed Consent (FPIC).

4.3 Social-economic and cultural context

The estimated population of Liberia is about 4.8 million.[74] In the 1990s and early 2000s, civil war and government mismanagement destroyed much of Liberia's economy, especially infrastructure in and around the capital. Much of the conflict was fuelled by control over Liberia's natural resources. With the conclusion of fighting and the installation of a democratically elected government in 2006, businesses that had moved out of the country began to return. The country achieved high growth during the period 2010-13 due to favourable world prices for its commodities.[75]

However, during the 2014-2015 Ebola crisis, the economy declined and many foreign-owned businesses moved with their capital and expertise. The epidemic forced the government to divert scarce resources to combat the spread of the virus, reducing funds available for needed public investment. The cost of addressing the Ebola epidemic coincided with decreased economic activity reducing government revenue,

[74] World Bank Data (2018).
[75] Africa Development Bank (AfDB), *Africa's 2019 Economic Outlook*

although higher donor support significantly offset this loss. During the same period, global commodities prices for key exports fell and have yet to recover to pre-Ebola levels.[76]

Demography

According to the Liberia Institute for Statistics and Geo Information Services (LISGIS),[77] approximately 48.9 per cent of Liberia's population are males while 51.1 per cent are females. Overall, nearly half (49.1 per cent) of population is made up of young people under the age of 18 years, of which approximately 47 per cent live in rural areas. Over 51 per cent of the population are women. Life expectancy has increased to 63 years of age.

Household size also varies by county, with a national average of 4.3 people per household. Fifty-nine (59 per cent) of households are headed by people aged 30-49. The dependency ratio is particularly high in rural areas (105.7 per cent). Seventy-five per cent (75 per cent) of households are headed by men.

Table 1: Population by Region and County

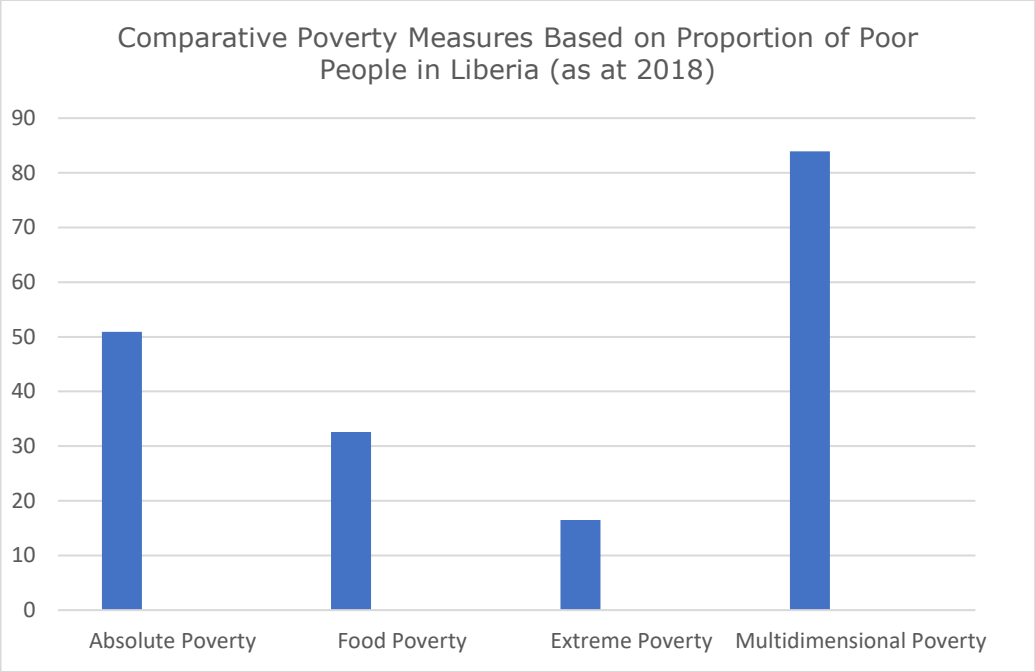
Region	County	Population	per cent
Montserrado	Montserrado	1,364,902	32.2
North Western	Bomi	102,674	2.4
	Grand Cape Mount	155,106	3.7
	Gbarpolu	101,782	2.4
South Central	Margibi	256,228	6.0
	Grand Bassa	270,594	6.4
South Eastern A	River Cess	87,282	2.1
	Sinoe	124,976	2.9
	Grand Gedeh	152,887	3.6
South Eastern B	River Gee	81,522	1.9
	Grand Kru	70,687	1.7
	Maryland	165,923	3.9
North Central	Bong	407,041	9.6
	Nimba	563,939	13.3
	Lofa	337,934	8.0

Source: LISGIS, 2017. HIES.

Poverty

Liberia faces enormous challenges in addressing poverty due to public and private underinvestment and years of civil war. According to the 2016 Household Income and Expenditure Survey (HIES) published by LISGIS,[78] 50.9 per cent of Liberia's population is classified as poor. Poverty is higher in rural areas (71.6 per cent) than in urban areas (31.5 per cent).

[76] Central Intelligence Agency (2019) *World Factbook* < https://www.cia.gov/library/publications/the-world-factbook/geos/li.html>
[77] LISGIS, 2017. HIES.
[78] LISGIS (2017) 2016 Household Income and Expenditure Survey (HIES)



The report also indicates that 51.2 per cent of Liberian households show food shortages, with urban areas at 44 per cent and rural ones at 56 per cent. Female-headed households face more food shortage (53.6 per cent) commonly than male-headed households with 46 per cent. [79]

Under education, 64.7 per cent of the country's population are literate with the urban population accumulating 78.1 per cent, while rural areas have a percentage of 21.9 per cent. As for under age ratio, there are more young people who are literate than older ones and unemployment stands at 3.9 per cent, which shows that Liberia has a low unemployment rate. The private sector remains the highest employer through which 64.9 per cent have benefited, while the government employs 19.5 per cent of the country's population, and other employers (not specified) picked 15.6 per cent respectively.

63.2 per cent of the country's 4.8 million people visit government-run health facilities, while 23.6 per cent goes to private hospitals and clinics; the remaining 13.2 per cent use other sources of healthcare such as traditional care.

The average household size is estimated to be 4.3 people per household, with Maryland County having the highest household size, while Gbarpolu County holds the lowest.[80]

Table 2: Regional poverty in Liberia

[79] The HIES 2017 methodology for calculting poverty in 2016 is based on a 12-month cycle, while the previous poverty measument of 2014 is based on a six-month measument. Therefore, poverty levels bewteen the two periods can only be compared by disagregating data obtained in 2016 and using data for the first six months of 2016. According to HIES 2017 poverty measurements to be used in the near future are expected to follow the same methodology as the one used in 2016 allowing for straight comparisons with overall 2016 data thereafter.

[80] Oxford Poverty and Human Development Initiative, 2017. Multidimensional Poverty Index 2017. Brief Methodological Note and Results. OPHI Country Briefing: Liberia. LISGIS, 2018 Report.

Region	Percentage of Population	Multidimensional Poverty Index (MPI)	Incidence of Poverty	Percentage of Population in Severe poverty
Monrovia	27.8	0.306	64.0	29.7
North Central	26.9	0.558	91.9	68.8
North Western	7.9	0.539	91.5	64.9
South Central	14.6	0.560	90.7	68.6
South Eastern A	6.7	0.5525	92.9	68.4
South Eastern B	6.9	0.539	91.1	68.8

5. REVIEW OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS

5.1 Potential Environmental Benefits

The promotion of agri-businesses in tree and canopy crops, like cocoa in already degraded lands and rehabilitation of abandoned plantations is expected to significantly improve the canopy agro-ecosystems with positive climate and environmental benefits. More climate and environmental provisioning services (including food and freshwater), regulating services (including carbon sequestration, flood and erosion prevention, land degradation prevention and restoration, water purification, soil remediation, and pollination), supporting services (including soil formation and nutrient cycling), and cultural services (including recreation and aesthetics), if done well, can bring environmental benefits. Such services will also enrich the biodiversity by creating new habitats and corridors for bird and animal populations. The mitigation monitoring strategy will ensure the preservation of virgin forests and wetlands. Adopting agroforestry (retaining trees in farmlands) and mixed cropping (with cover crops and anchor crops) will increase soil fertility, prevent erosion and reduce the usage of pesticides and agrochemicals, resulting in an overall cleaner and safer environment.

5.2 Potential negative environmental impacts

5.2.1 Deforestation and land degradation issues

Expanding tree crop plantations as a result of project activities could result in direct deforestation through tree crop farms expanding into forest land, or indirect deforestation where new tree crops displace other vegetable crops in the same farm, which in turn cause deforestation. In partnership with the other implementing partners, the project will build in safeguards through carrying out regular mapping of plot sites and monitoring of land use and forest cover by third party service providers. The maps generated will be compared with FAO's new database on protected forests to ensure that IFAD activities will not cause direct or indirect deforestation of designated protected forests.

5.2.2 Road construction and rehabilitation impacts:

The rehabilitation of feeder roads are essential to sustain the market linkages of the core commodity value chains supported by the project, but also to community and local economies at large. Lessons have been learned from other projects that greater attention needs to be paid to the environmental impact of such infrastructure projects to avoid obstructing drainage areas which cause water logging of otherwise arable land. The AF will support the carrying out of Environmental Assessments that will be conducted in accordance with EPA procedures to ensure planned activities such as culverts are included in the design and implementation of the feeder roads. The EPA will also be invited and supported to conduct minor infrastructure construction to ensure compliance with the ESMF mitigation plans. The project is not planning to build 250 km in continue but to rehabilitate feeder roads with a total length less than 10 km for each. In accordance with IFAD's Social Environment and Climate Assessment Procedures (SECAP), the SECAP note is sufficient to provide technical guidance at this stage for all roads less than 10 km and no ESIA is required as not resettlement/destruction of natural habitat are planned.

5.2.3 Pollution from Agrochemical use

One of the potential environmental impacts is that of incorrect agrochemical use. Fertiliser use is limited in Bong County but for rice farmers it is made available by MOA through a one bag for two bushels of rice basis. Farmers receive FFS training in agrochemical use although interviews with District Agricultural Officers (DAOs) revealed that farmers are still over-applying fertilisers and applying them at the wrong time, for example on already green rice instead of growing shoots in the mistaken belief that this will further

improve rice productivity, instead of damaging it. Based on the experience with the Tree Crops Extension Project (TCEP) in Liberia and with the support of the AF, the project will partner with MOA and CARI through a MoU to train a lead farmer per community to educate and monitor his or her community members on the correct application of fertilisers to reduce crop damage and fertiliser waste, reduce indirect GHG emissions and improve productivity. Youth will also be encouraged to create gainful employment and business value chain in fertilizer and agrochemicals application.

5.2.4 Dam construction

In order to reduce farmer vulnerability to rain-fed agriculture and hereby climate change, the project will support the construction of small dams. This will aim to provide a perennial source of water hereby typically supporting 120 farmers per dam to double or triple crop rice in 10ha each of land in the more arid upland regions. The construction of the new earthen dams will be based on the lessons learned from other projects which has problems in their pilot phase, which included structural problems of overflow due to a miscalculation of water quantities and causing flood damage.

5.2.5 Climate change issues

Projected climatic changes suggest that Liberia will suffer increasingly reduced climatic suitability for cocoa crops over the next 30 years. Maximum temperatures will increase and while overall precipitation is not projected to change significantly, the annual rainfall pattern and intensity will. This could result in increased risk of droughts during the wet season and rain during the dry season. Increased intensity when coupled with land clearing means a greater risk of surface runoff and topsoil erosion, increased risk of river damage to road infrastructure and increased risks of landslides.

Changing patterns in rainy seasons can affect the farmers' ability to anticipate the best time to infield their cocoa seeds. In addition, even though cocoa trees are generally resistant to high temperatures, farmers will be supported to adopt coping mechanisms making their farms more productive (limited de-shading on their farms). The project also advocates for the adoption of cocoa and rice varieties more resilient to higher temperatures; this will require cooperation with Universities and research centre such as the Central Agricultural Research Institute (CARI).

5.3 Potential social benefits

The project will target about 6,000 direct beneficiaries drawn from smallholder farmers, FBOs including cooperatives, partnering financial institutions, small scale rural entrepreneurs, women and rural youth (18 – 35 years). It is expected to reduce unemployment especially among the youth, reduce poverty and create wealth and income, improve the food security situation, improve access to social (health and education) and financial services and reduce travel time especially among the teeming rural population. Rehabilitation of rural feeder roads and farm tracks will improve the life and livelihoods of more indirect beneficiaries of the project through savings in transport cost, post-harvest losses and access to the market. Hundreds more will directly benefit through short term labour, as contractors, and as construction supervisors.

5.4 Potential negative social impacts

5.4.1 Land Access issues

Security of tenure remains by women and youth remains a challenge in Liberia. Without secure ownership or at least guaranteed access to land for women and youth, the development of sustainable agri-enterprises will be extremely difficult, if not impossible and this could negatively affect the project. The risk of being pushed out of the land leading to loss of investments after improvements have been made or even cash crops planted is high if the land is not appropriately secured or authorized by the relevant community and government institution.

5.4.2 Social Exclusion and Gender inequality

Liberia has been described as one of the places with the highest gender inequalities[81]. Decisions making in the Districts are made at community-level by leaders/traditional rulers or Paramount Chiefs who are men in consultation with a council of elders who are also mostly men. Women and youth are often not sufficiently represented even in making decision that affect them. Thus women and youth not only risk being marginalized in land access, but also when opportunities or slots are allocated for economic activities in the community.

5.4.3 Unsafe and Non-Healthy Working Conditions

Working conditions across sectors are generally poor in the rural areas of Bong county because of general poverty, and poor production methods. In the agricultural sector, most farmers do back-breaking work and are regularly exposed to agro-chemical toxins from the overuse of fertilizer and pesticides.. Rice farmers will be supported to use Personal Protective Equipment (PPE) to avoid cases of water-borne diseases.

5.4.4 Managing expectations and Conflicts resurgence

Generally, since the end of the civil war and Ebola epidemic, the country has made efforts to be peaceful. However, poverty and deprivation among youth, if not properly addressed, may breed more areas of conflicts.

5.4.5 Risks

In order to avoid risks of negative impact on target beneficiaries, the Project will aim at strengthening existing Weak and non-transparent national policy shapers and governance structures

[81] http://hdr.undp.org/en/content/table-5-gender-inequality-index-gii

6. ENVIRONMENTAL, CLIMATE AND SOCIAL MANAGEMENT PLAN FOR THE PROJECT

6.1 Introduction

The environmental, climate and social management plans (ESMPs) presented below are relevant to the entire project, including the agri-enterprise and related infrastructure sub-projects whose locations are not yet known. However, for these subprojects, a separate screening as outlined in chapter 8 is still required. The outcome of this screening and subsequent review may lead to the development of more detailed, location- and project-specific ESMPs.

6.2 Responsibilities

The project will have a steering committee headed by the Minister of Agriculture or designate and members will include the Ministries of Finance and Development Planning, Youth and Sports, Director Generals of EPA, CARI, LACRA, CDA, and representatives of Civil Service Organizations.
The committee will serve as advisory committee and provide management guidance; review and approve Annual Work Plan and Budget review reports, monitor sites periodically and provide feedback to the project management.

6.3 Outline of the Management Plans

Tables 6.1 and 6.2 present the environmental and climate and social management plans. For each of the potential overall impacts described in chapter 5, the plans indicate a significance rating and (geographical) extent/prevalence of each impact, recommend mitigation measures, identify who is responsible for implementation of the mitigation measures, how implementation can be verified, and how frequently. The plans have been developed with input from a broad range of government ministries, department and agencies and other stakeholders consulted. The recommended adaptation measures mostly apply to all the districts. It is important to re-emphasize that these management plans are relevant to the entire project, including the agri-enterprise and related (market) infrastructure sub-projects whose locations are not yet known. For these subprojects, a separate screening as outlined in chapter 8 is still required.

A copy of the environmental and management plans should be made available to all program staff, participating institutions and other key stakeholder representatives as well as used in community sensitization (i.e. awareness- raising and training) activities.

Table 6.1: Environmental (incl. Climate Change) Management Plan

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
ENVIRONMENTAL MITIGATION PLAN						
Deforestation (from tree crops especially cocoa plantation expansion into natural forest area) and upland crop production	High	All districts	▪ Strongly discourage cocoa plantation in and around virgin forest and forest regrowth areas ▪ Strong emphasis to be placed on rehabilitation of existing and abandoned cocoa plantations ▪ Limit approval for and cocoa plantations to already degraded land/degraded secondary bush areas or deforested areas ▪ Strengthen participation in the processing and marketing value chains to create more jobs especially for women ▪ Strengthen partnership with the forestry department to train farmers in sustainable agroforestry	NPCU and District MOA, Service Providers	▪ Per cent decline in forest cover ▪ Number of people engaged in the processing and marketing value chains ▪ MOU with the forestry department ▪ Number of Training conducted with farmers on agroforestry techniques	Reference/baseline, Mid-term, End-Term Mid-Term, End-Term Mid-Term, End-Term Annual
Biodiversity loss, Bush Fires/slash and burn agriculture	Medium	All districts	▪ Limit cultivation of rice in the mangrove ecosystem to reduce mangrove forest loss ▪ Discourage slash and burn and train farmers on sustainable land preparation and development options ▪ Avoidance of areas that infringe on known migration patterns of protected, endangered or rare species and maintain known wildlife migration corridor	NPCU and District MOA, Service Providers	▪ Per cent decline in mangrove forest ▪ Number of farmers that received training on sustainable land preparation and management ▪ Biodiversity surveys	Mid-Term, End-Term Quarterly Annual
Land and soil degradation	Medium	All districts	▪ Production of project-specific ESIA by contractors should be required for all feeder roads construction ▪ Train farmers and service providers on sustainable land development and preparation methods including zero or minimum tillage. ▪ Encourage crop intensification and discourage opening of virgin forest for cropping. ▪ As much as practicable, encourage mixed cropping of target crops with cover crops	NPCU and District MOA, Service Providers	▪ Production of project-specific ESIA for feeder road construction ▪ Number of farmers that received training on sustainable land preparation and management ▪ Consummated MOUs with Research Institutes and agencies dealing with soil	Annual Quarterly Mid-Term, End-Term

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			and anchor crops (especially for cocoa at early stage) ▪ Involve partners from the Ministry and research institutes in training farmers on soil conservation techniques		conservation techniques	
Water pollution	Medium	All districts	▪ Minimize use of inorganic fertilizers and encourage use of biodegradable organic manures (especially in rice, maize and vegetable fields) and agrochemicals in cocoa plantations ▪ Consider training youth in sustainable agrochemical application as an enterprise to promote environmental-smart agricultural value chain	NPCU and District MOA, Service Providers	▪ Number of farmers that use organic manure instead of inorganic fertilizer ▪ Number of youth engaged in integrated agrochemicals and pesticides application enterprise	Annual Annual
Wetland (especially mangrove) degradation and removal	Medium	All districts	▪ Discourage removal and draining of mangroves for rice paddies and vegetable farming	NPCU and District MOA, Service Providers	▪ Per cent decline in wetland	Reference/baseline, Mid-term, End-Term Mid-term, End-Term
Erosion and landslide/mudslide	Medium	All districts	▪ Encourage agronomic practices such as contour ploughing, terraces and bunds in erosion and landslide/mudslide prone hill-slope areas ▪ Encourage the planting of cover crops and anchor crops with the main crop ▪ Encourage buffers along river bank to prevent erosion ▪ Design and construction of roads, bridges and culverts to be properly monitored to prevent inappropriate termination that can lead to erosion	NPCU and District MOA, Service Providers	▪ No of farmers in erosion/landslide/mudslide prone areas adopting sound and sustainable agronomic practices	Mid-term, End-Term
Flooding (from rivers and possible over flow/collapse of the earthen dam), Water logging, soil salinization and alkalization			▪ Improve on the design of earthen dams in IVS using hydrological long-term(50-100 years) flood return periods to improve dam resilience ▪ Sustaining and improving on the partnership with the Meteorological Agency to improve their capacity to generate forecast of extreme rainfall events and disseminate climate information ▪ Consider introducing no regret option including crop insurance as part of the farmers and Agri-enterpreneurs' package	NPCU and District MOA, Service Providers	▪ Number of rainy season with no dam overflow ▪ Improved capacity of the Met Office to generate forecast on extreme events ▪ Number of agro-entrepreneurs receiving climate information ▪ Number of farmers that signed off unto agric insurance ▪ Result from soil analysis	Annual Quarterly Quarterly Annually Biennial

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			▪ Production of project-specific ESIA by contractors should be required for all feeder roads construction to prevent obstructing drainage and causing waterlogging of rice fields ▪ Analyze soils and monitor changes that potential problems can be managed. Allow for access to channels from maintenance in design ▪ Provide water for leaching as a specific operation			
Agrochemical Waste proliferation	Low	All districts	▪ Consider creating a value chain/service provider in soil testing for fertilizer applications to improve place and context-based fertilizer and agrochemical application ▪ Encourage development and use of improved and resilient local crop varieties to reduce pest resistance and use of agro-chemical ▪ Training youth in sustainable application of agrochemicals enterprise as part of the value chain ▪ Encourage use of organic manures ▪ Service providers and agro-chemical input suppliers to follow high standard of security and safety precautions in storage and transport of agrochemicals	NPCU and District MOA, Service Providers	▪ Number of soil testing service providers ▪ Number of farmers using improved and resilient local crop varieties ▪ Number of youth trained and engaged in integrate pesticide and agrochemicals management as part of value chain ▪ Number of trained and certified agrochemical suppliers	Annual Annual Annual
Dry spell and Increase storm and wind activity	Moderate	All districts	▪ Sustaining and improve on partnership with the Meteorological Agency to improve their capacity to generate and disseminate agriculture-specific forecasts to farmers in good time through additional weather stations and other appropriate weather data collection tools especially in the rural interiors ▪ Improve the capacity of the Meteorological Agency to collate and process climate data through appropriate Hardware, Software and mobility support ▪ In addition to agric extension officers, engage other means including farmers organization forum, community radios, text messages, transmitter broadcast (in remote areas) to disseminate weather and	NPCU and District MOA, Service Providers	▪ Number of additional weather station supported/established by the THE PROJECT ▪ Central data processing server and mobility support for the Met Office ▪ Regular issuance of agro climatic forecasts issued by the Meteorological Agency ▪ Number of farmers receiving and using climate information	Annual Once Quarterly Quarterly Annual

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			climate information to farmers (possibly in local languages) ▪ Integrate use of traditional forecasting knowledge through regular feedback from farmers ▪ Consider introducing no regret option including crop insurance as part of the farmers and Agri-enterpreneurs' package ▪ deliver training and agricultural inputs in good time to assist farmers to adjust and adapt their planting and harvesting methods and timing		▪ Number of entrepreneurs that signed on to agricultural insurance ▪ Number of feedbacks from farmers/farmers organization on climate information	Quarterly
GHG emissions from rice paddies	Moderate	All districts	• Discourage opening of new virgin forests and coastal mangrove wetlands • Train farmers on how to drain rice paddies in mid-season to reduce CH4 emission and improvement in nutrient management including the retention of rice residues • Encourage use of clean energy in processing activities	NPCU and District MOA, Service Providers	▪ Per cent decline in forest and wetland areas ▪ Number of farmers traine in sustainable rice paddies management ▪ Number of processing units using sustainable energy	Reference/baseline , Mid-term, End-Term Annual Reference/baseline , Mid-term, End-Term

Table 6.2: Social Management Plan

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
SOCIAL MITIGATION PLAN						

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
Land tenure issues – role of paramount chiefs	High	All districts	▪ Advocate for the implementation of the new land policy to guarantee land tenure security for beneficiary farmers ▪ Massive sensitization across the districts and chiefdoms on land tenure and access to land for the intended beneficiaries ▪ Engage with Paramount Chiefs to secure land for intending beneficiaries with no access to land ▪ Make access to land by women and youth one of the preconditions for a community to participate in the project ▪ The project (through the NPCU and District MOA) to sign land guarantee and documented lease agreements with land owners for 10-25yeras for intending beneficiaries without access to land	NPCU and District MOA, Service Providers	Number of women ad youth participating in THE PROJECT (from the project register Number of people without access to land participating in THE PROJECT Secure land access and number of land lease agreement signed with land owners Attendance register of sensitization meetings with Paramount chiefs and other stakeholders	Quarterly Quarterly Every six months At every project activity
Gender inequality and targeting	High	All districts	▪ Spend enough time (at least 2-3months) for mobilization on targeting to reach everybody at community meetings (Do not leave selection of beneficiaries to the paramount Chiefs). Use the local media as well as local trusted NGOs ▪ Encourage active participation of women in the project up to 40 per cent ▪ Engage women organizations and advocacy and right groups to mobilize women to participate ▪ Give some concessions/incentives to women farmers to enable them participate ▪ Encourage men through advocacy to support women participation through guarantee of land and other resources required	NPCU and District MOA, Service Providers	Minutes and Attendance register at community meetings Number of women and youth participating in THE PROJECT (from the project register Number of women advocacy groups working with AVPD	At targeting mobilization meetings Quarterly Annually
Social exclusion of women and youth due to limited access to land	High	All districts	▪ Actively involve women and youth in all components and levels of decision-making within the project; ▪ Strive to maintain Project beneficiaries ratio of 40 per cent women and 20 per cent youth (men and women under 35 years old) ▪ Encourage the submission of business proposals from women-only groups (incl. cooperatives); ▪ Ensure women hold at least 30-40 per cent of leadership posts in the farmer apex	NPCU and District MOA, Service Providers	Attendance lists Lists of approved projects and their beneficiaries Membership and staff lists Attendance lists at sensitization workshops and	At every project activity At business plan approval and every six months thereafter

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			organizations and project management team; ▪ When organizing meetings or events, ensure they are appropriate to women's time and venue constraints; ▪ Access to land for women and youth should be a precondition for community selection/participation ▪ To avoid obstructionism ('blocking behaviour'), ensure men are included ('carried along') in sensitization activities. Work with locally-trusted CSOs in community sensitization (working towards 'attitudinal change') ▪ Make road and dam construction contractors to hire labour form the local communities to increase sense of belonging and participation ▪ Consider using local labour for farm tracks construction and rehabilitation instead of machines to increase number of indirect project beneficiaries		beneficiary / community feedback during site visits Community agreement on lan access for women and youth Number of community yout engaged as labour in road an dam construction and farm track rehabilitation	Every six months At every project activity Annual
Managing expectation	High	All districts	▪ The project targeting and up scaling mechanism should be explicitly and transparently explained in the project implement manual (PIM) ▪ Selection criteria, what the project offers and expectations from intended beneficiaries should be explicit and unambiguous (and translated into the local languages so that everybody will be carried along) ▪ Carry the community and agro-entrepreneurs representatives along in the project implementation (and possibly the Paramount Chiefs or their representatives) in every stag of project implementation ▪ Maintain robust knowledge management and information dissemination to keep everybody abreast of happenings	NPCU and District MOA, Service Providers	Project implementation manua Project selection criteria in local languages Knowledge management and communication material	Before project commencement 6months into project Quarterly
Unsafe and non-healthy working conditions	Medium	All districts	▪ Incorporate environmental and social guidelines in contracts with service providers and ensure compliance; ▪ Sensitize project beneficiaries and their wide communities on health & safety standards,	NPCU and District MOA, Service Providers	Contractor Guidelines Health & Safety flyer	□Within 6 months of project start and half-yearly

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			incl. safe use of production, processing and transport machinery, agro-chemicals (pesticides and fertilizer), electrical installations and wiring (in particular in wet areas / during rains; ▪ Sensitization of selected communities on child rights and ensure that there is no child labour on selected agri-enterprise projects.		or poster Community meeting Community meeting	review thereafter Within 6 months of project start, half- yearly thereafter Within 6 months of project start and half-yearly review thereafter Within 6 months of project start, half- yearly thereafter
Elite capture	Medium	All districts	▪Detailed screening of business plan proposals on commercial viability, conflicts of interest and corruption. Exclude (use of) service providers owned by/tied to politicians or political parties; ▪Ensure compliance with pre-approved, objective selection criteria and transparent information- sharing and decision-making ▪Sensitize communities on project objectives, target groups, beneficiary selection criteria, and ▪risk of elite capture ('hijack'); ▪Agreement with traditional rulers and council of elders on community and beneficiary selection, and adherence to representative and transparent decision-making related to the project (via letter of understanding, MoU or another appropriate format). Involve locally-trusted CSOs.	NPCU and District MOA, Service Providers	Completed proposal screening forms Review missions Item on steering committee agenda Community meeting Agreement document	▪ During half-yearly review missions ▪ During half yearly committee meetings ▪ Monthly during first months, quarterly thereafter ▪ Within 6 months of start of project

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
Loss and Disturbance of Cultural Resources such as sacred forest and archeological site	Low	All district	▪ Do not approve projects to located in or around sacred forests and community groves and archaeological sites	NPCU and District MOA, Service Providers	Inventory of cultural resources	▪ Annual
Conflict resurgence	Medium	All districts	▪ Maintain robust knowledge management, information dissemination and community engagements to keep everybody informed ▪ Develop a clear complaints, grievances redress and dispute resolution framework and make this known to all stakeholders ▪ Develop a clear and simple stakeholder engagement plan (SEP) (incl. communication/outreach strategy), particularly on project objectives and staffing (incl. who's responsible for what), criteria for community and beneficiary selection, community – project communication structure / methods, and grievance/conflict management; ▪ Keep relevant stakeholders informed about project progress on a regular basis; ▪ Involve youth and women leaders as well as respected elders in key project decisions and sensitization activities; ▪ Publicly disclose relevant information on contracts and payments; ▪ Encourage contractors / service providers to give employment preference to local community members ▪ Develop a code of conduct for all stakeholders ▪ Sensitize women and particularly youth on what it is like to be an agri-entrepreneur (give a realistic picture of economic, social and environmental benefits but also challenges and responsibilities). ▪ Involve locally-trusted CSOs in community sensitization	NPCU and District MOA, Service Providers	Stakeholder engagement plan (SEP) Stakeholder meeting reports, project flyers Complaints register Meeting records, observation Service provision contract and employment lists Code of conduct Community meeting Knowledge management materials Number of local CSOs in partner with THE PROJECT	Within 2 months of start of project Quarterly Quarterly At every project activity Upon award of contracts and after payments Within 6 months of project start At every project activity during first 6 months, quarterly thereafter Quarterly Annually

Impact	Significance Rating (likelihood x consequence)	Extent / Prevalence	Recommended Mitigation	Responsibility for implementing mitigation	Means of verification	Timing / frequency of verification
			▪			
Health						
Water borne diseases	Medium	All districts, especially in the Inland Valley Swamp	▪ Efforts to focus on inland valley swamp to protect farmers from schistosomiasis, a water-borne disease in flooded rice fields, with rice boots and medication	NPCU and District MOA, Service Providers	Sensitization materials Number of farmers using rice boots	▪ Annual
Dust from road construction	Medium	All districts	▪ Road contactors to present an Environments and Social Impact Assessment with Management Plan for managing externalities as part of the bidding processing ▪ Consider using the Autoseal technology (a polymer based technology which hardens and can last for 5yeras or more) to help tackle the dust inhalation problem	NPCU and District MOA, Rural Infrastructure Engineer, contractors / Service Providers	Number of ESIA for road rural feeder road projects	Quarterly

6.4 Stakeholder Engagement, Community Sensitization and Expectation Management

Experience with previous IFAD and other economic and social investment projects indicate that stakeholder engagement and sensitization are of critical importance to project success. In the absence of clear communication with relevant stakeholders and appropriate sensitization of local communities, rumors, misinformation and speculation thrive, and accusations and tensions easily boil over into (violent) conflict w within and between communities. Therefore, for many of the potential environmental and social impacts, the management plans recommend the development of a stakeholder engagement plan with a clear communication strategy and the organization of community sensitization activities on a regular basis.

A stakeholder engagement plan (SEP) should include at least the following components[82]:
a) Principles, objectives and scope of engagement b) Regulations and (institutional) requirements
c) Summary of previous stakeholder engagement activities d) Stakeholder mapping and analysis
e) Strategies of engagement
f) Key messages and communication channels
g) Grievance mechanism (see also section 9.6 below)
h) Resources and responsibilities
i) Monitoring and evaluation

Community sensitization (i.e. awareness-raising and training) activities need to be clear, timely and culturally appropriate; this means that key messages need to be communicated in a format and language that is easy to understand, preferably by someone who speaks the local language and is familiar with local customs and sensitivities, and during a time that is convenient and sufficient for all key community groups, particularly women and youth. To ensure appropriate community entry and reach target groups most effectively and efficiently, it is advisable to also involve those civil society organizations that are already active in and trusted by the selected communities.

6.5 Grievance Management

Whenever a project causes negative environmental or social impacts there will be grievances (complaints) from people who are affected. "Having a good overall community engagement process in place and providing access to information on a regular basis can substantially help to prevent grievances from arising in the first place, or from escalating to a level that can potentially undermine project performance[83]

In order to reduce conflicts, a robust grievance / complaints mechanism that meets at least the following 'effectiveness' criteria should be instituted[84]:

a. *Legitimate*: enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes;
b. *Accessible*: being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access;
c. *Predictable*: providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation;
d. *Equitable*: seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms;

[82] Adapted from IFC (2007) *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets* (IFC: Washington, D.C.), pp.164-168

[83] IFC (2007) *Stakeholder Engagement,* p.69 and p.72

[84] Office of the High Commissioner on Human Rights (OHCHR) (2011), *UN Guiding Principles on Business and Human Rights*(OHCHR: Geneva), pp.33-34

e. *Transparent*: keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake;
f. *Rights-compatible*: ensuring that outcomes and remedies accord with internationally recognized human rights;
g. A source of *continuous learning*: drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms;
h. Based on *engagement and dialogue*: consulting the stakeholder groups for whose use they are intended on their design and performance, and focusing on dialogue as the means to address and resolve grievances.

IFAD has established a Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its Social, Environmental and Climate Assessment Procedures in the context of IFAD-supported projects. The procedure allows affected complainants to have their concerns resolved in a fair and timely manner through an independent process. Although IFAD normally addresses potential risks primarily through its enhanced QE/QA process and by means of project implementation support, it remains committed to: (i) working proactively with the affected parties to resolve complaints; (ii) ensuring that the complaints procedure is responsive and operates effectively; and (iii) maintaining records of all complaints and their resolutions[85].

The Project will as much as possible utilize every available grievances redress mechanisms including: associations (including farmers' associations/organizations) traditional council (Paramount Chiefs and elders), village square engagement (consisting of representatives of men, women and social groups), village general assembly, the project NCPU, etc.

[85] IFAD (2016) *Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP)* (IFAD: Rome), p.12

7. Review of Environmental, Climate, Social Impacts of Sub-Projects

7.1 Potential Impacts and Recommended Mitigation for Agri-Enterprise Projects

7.1.1 Cocoa Farming

It has been estimated that almost 40,000 households produce cocoa in Liberia[86]. The vast majority of cocoa trees in Liberia are over 20 years. The Liberia Cocoa Corporation (LCC) is the major concession in the cocoa sector. Due to limited investments, smallholder cocoa farmers yield on average 200 kg per hectare, compare to 350-400kg/ha in Ghana and 435-470/ha in Ivory Coast as shown in the figure below. Farmers currently lack the essential inputs to deliver quality cocoa that conform to international grades. Constraints in the cocoa sector include lack of access to finance and limited storage and transport facilities.

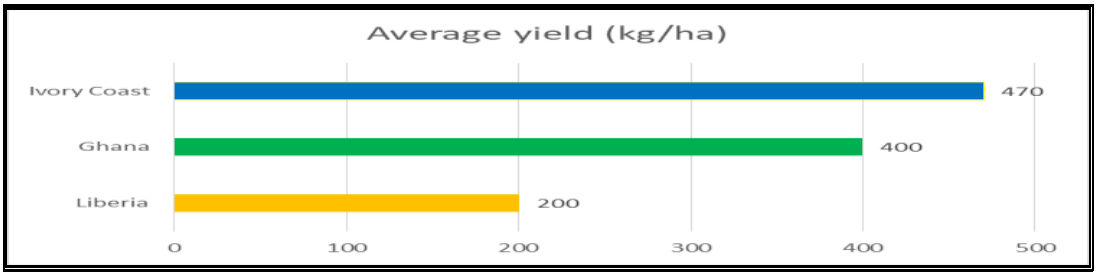


Figure 3: Average cocoa yield for Liberia, Ghana and Ivory Coast

Some of the recommended adaptation measures for cocoa farming include:

- Encourage the use of existing farms or fallow lands or abandoned plantations, as well as the adoption of early maturing varieties with organic manure to discourage the opening of virgin forests;
- As much as possible, create a fire buffer zone around the cocoa plantation;
- Encourage more entrepreneurs along the cocoa value chain including processing, transportation and marketing
- Encourage farmers to sign on to agricultural insurance.

7.1.2 Rice/Legume Farming

Rice: Rice is Liberia's staple food crop and is generally grown on upland ecology, with a limited percentage planted in lowland ecology. The country however does have a comparative advantage in lowland rice production, with current average yield at 2.0 MT/ha[87] for lowland; and national average of 1.18 MT/ha, the lowest in West Africa. By comparison, neighboring Côte d'Ivoire has increased its average yield from 1.8 MT/ha in 2009 to over 2.5 MT/ha in 2015[88]. Annual per capita consumption of rice is estimated at 90.8kg, one of the highest in Africa[89]. Currently, Liberia is producing less than its national requirements and the country is still largely "food insecure". The country spend approximately US$200 million annually on rice imports and the Government is keen on increasing production and productivity to ensure food security[90].

[86] Liberia Agriculture Sector Investment Program (LASIP) Report 2010 (Pg. 7)
[87] National Rice Development Strategy 2012_(Pg. 41) [17]
Rice_Liberia.PDF (Food Fortification Initiative)
[88] www.faostat 2016
[89] Food and Agriculture Policy and Strategy (Pg. 21)
[90] Liberia: Desk Study of Extension and Advisory Services - June 2017_(Pg. 18)

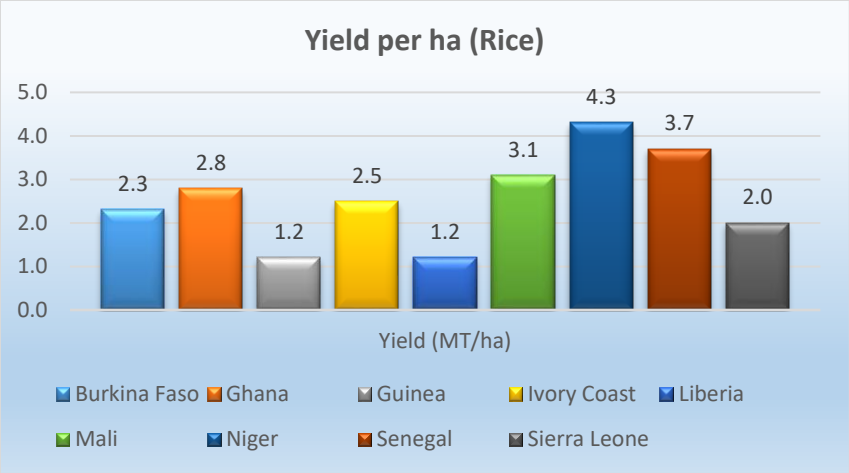


Figure 2: Rice yield (MT/ha) of selected countries in West African counties

Some of the recommended adaptation measures for rice farming include:

- Strongly discourage rice cultivation in the coastal mangrove swamps to forestall storm surges and disastrous flooding from the ocean.
- Train farmers on draining methods of rice paddies in mid-season to reduce GHG emission;
- Train farmers on improved nutrient management, including the retention of rice residues;
- Discourage excessive opening of virgin forests and wetlands for rice cultivation;
- Minimize the use of pesticides and agrochemicals and encourage the use of organic manure to reduce impact on waterbodies;
- Encourage the use of scare-crows and other innovative methods to dissuade birds, instead of bird traps and other methods that can negatively impact bird population;
- Encourage farmers to sign on to agricultural insurance.

7.2 Potential Impacts and Recommended Adaptation Measures for (Market) Infrastructure Projects

The following are some of the (market) infrastructure projects likely to be embarked upon by the Project

1. Construction and rehabilitation of feeder roads and farm tracks
2. Construction and rehabilitation, including culverts and bridges
3. Rehabilitation of Agro Business Centres (ABC)
4. Land development activities
5. Small scale (earthen) dams and irrigation schemes

Some of the potential impacts of market infrastructure development include:

7.2.1 Land Access

Market infrastructure will require the availability of land resource for their provision. The arrangement made for land will go a long way in determining sustainability of market infrastructure. About 24,000 ha (12000 rehabilitated and 12000 new) of land is expected to be brought under cultivation and 600km of feeder roads to be constructed and 1800km of farm tracks. 20 earthen dams are expected to be constructed. Land development, irrigation activities and road construction all require large expanse of land. Some preconditions for market infrastructure include assurance that government or the community has guaranteed the lease of land to the beneficiaries during the program life, and the development of strategies for the maintenance and sustainability of the infrastructure by the concerned parties.

7.2.2 Dust, Vibration, Mudslide and Noise

The degree to which individuals perceive dust to be a nuisance depends on the frequency, intensity and duration of a dust-generating event. Farmers usually engage in a variety of activities that uses equipment or practices that create dust. Most land clearing equipment generates some dust. Dust may also be generated as fugitive dust when fine particulates are lifted from fields, roads, buildings and yards via air turbulence. The main mitigation measures recommended for mitigating dust including dust protection masks for machine operators and the spraying of water to reduce the level of dust during construction and/or transport activities.

Heavy equipment used for road construction create ground movement such that cracks can occur in adjacent buildings. These can also create some form of discomfort to inhabitants of the surroundings. An assessment of surrounding buildings would be carried out to ascertain the level of susceptibility to cracks because of ground movement. The buildings are to be strengthened and compensation paid for damages where it is unavoidable. Noise from the use of equipment is also a major concern. Operators should only use construction equipment that produces a moderate decibel level and consider the times when people will experience less discomfort (i.e. day-time only). Because of the nature of the terrain in Liberia, roads construction through hills and valleys are of environmental concerns to prevent landslide. Road construction contractors will be expected to produce Environmental Management Plans for road construction and conduct environmental screening for the construction of farm tracks.

7.2.3 Deforestation

The removal of vegetation cover and trees during construction can lead to deforestation, and should therefore be avoided as much as possible. Where tree removal is unavoidable, this should be compensated by tree and vegetation replanting along the constructed roads.

7.2.4 Ground Water Contamination

Unchecked and unmonitored underground exploration, for example during dams' construction, can lead to ground water contamination. Appropriate impact studies should be conducted prior *to* the construction of dams.

7.2.5 Flooding/ Erosion

Flooding and erosion can occur because of poor judgement and poor design and construction practices. Adequate drainage should be provided for surface water run-off. Vegetation cover should be provided for slopes. Unnecessary dug- outs and/or excavation of soil from its natural terrain should be avoided. Replacement of dug out soils should be carried out when necessary.

7.3 Environmental and Socio-Economic Management Framework (ESMF)

Table 7.1 provides a framework for managing the likely impacts of the various activities expected to be implemented during the key parts in the agricultural value chain, i.e. production, processing, marketing, transport (and supply). It is important to re-emphasize that these management plans are relevant to the entire project, including the agri-enterprise and related infrastructure sub-projects whose locations are not yet known.

Table 7.1 Environmental and Social Management Framework (ESMF) for Agricultural Value Chain Stages

Part in value chain	Key issue affecting the Environment	Potential impact				
		Environmental	Social & Institutional	Economic	Standard Mitigation Measures	Monitoring & indicators
Production	Land preparation – land clearing, cultivation and other issues Use of earth-moving machines, e.g. tractors for clearing Use of agro-chemicals Use of pesticides	Forest and wetland removal Land & soil degradation Water and soil pollution Flooding Erosion and mudslide Slash and burn / Bush fire Biodiversity loss Waste management GHG emission	Increased youth, women and men employment directly and indirectly ▪ Increased youth, women and men interaction and cooperation ▪ Increased sense of pride and responsibility by participating youth and women ▪ Inter- and intra-community conflict on land ownership ▪ Possible agitation from youth not presently included in the programme and whose expectations are not properly managed ▪ Social exclusion especially lack of access to land by women and youth ▪ Possible loss of cultural assets	Increased sales and household income Increased youth employment and social well-being Improved nutrition and food security Increased ability of women and youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development Increased import substitution especially of rice But increasing associated environmental and social costs	As much as possible, discourage the opening of virgin forest and wetlands Train farmers in sustainable land management practices to reduce environmental impacts Deliver training and agricultural inputs to farmers on-time to enable them to adjust and adapt their planting and harvesting methods and timing Adopt and enforce health, safety and environment rules at production sites to ensure clean, sustainable and environmentally friendly as well as climate-smart production processes Encourage full exploration of the value chain including creating service providers in soil testing and agrochemical services Develop a clear and simple Stakeholder Engagement Plan (SEP), incl. grievance mechanism, to manage expectations Actively involve women and youth in all components and levels of decision-making within the project	Number of farmers that received training on sustainable land preparation Changes in forest and wetland Results from periodic soil and water analysis Heath, safety and environment manual Number of value chain enterprises around soil testing and agrochemicals management Stakeholder Engagement Plan Conflict resolution committee meetings Lists of approved projects and their beneficiaries A greement on land access for women and youth and land lease documents

Processing	□ Use of processing machines	□ Waste generation □ Air, water and land pollution □ GHG emission from machines	□ Unsafe and non-healthy working conditions Possible use of child labourers	□ Increased sales and household income □ Increased youth employment and social well-being □ Improved processing capacity, value additions and value chain development □ Improved nutrition and food security □ Increased ability of youth to manage their enterprises in productive and profitable manner, thereby increasing GDP and manpower development □ Increased import substitution of Rice □ But increasing associated environmental and social costs	□ Encourage the use of renewable and low-carbon energy sources during processing operations □ Adopt health, safety and environment rules at processing sites □ Train farmers in sustainable agro-processing practices to reduce environmental impacts □ Step up knowledge management and information dissemination to showcase the achievement of the project	□ Number of operators adopting renewable low carbon technologies □ Number of enterprises established focusing on processing □ Number of entrepreneurs adopting sustainable processing operations □ Knowledge management /communication plans, stakeholder meeting reports, communication project flyers/leaflets
Marketing	□ *Construction of market infrastructure*	□ Dust, smoke, noise, ground movement / vibration □ Deforestation □ Water pollution □ Flooding and erosion and mudslide from poorly constructed culverts, roads, etc.	□ Better access to market □ Better access to production and processing sites by supervisory agencies □ Improved access to rural communities □ Conflict over land and demand for compensation where infrastructure is to be constructed	□ Improved market penetration □ Access to market information and market linkage and support services □ Strengthened market value chain, with more profitable enterprises □ Improved storage and reduced waste and postharvest losses	□ Use construction equipment with moderate decibel during construction □ Develop/adopt and enforce health, safety and environment rules at construction sites □ Lawful and willing consent of community/or individuals on land site for market infrastructure	□ Observation of construction equipment for dust, noise, smoke, vibration, etc. □ Work inspection report on the environmental quality of market infrastructure □ Health, safety and environ

Transportation	□ Use of motorized and heavy transportation machines	□ GHG emission from transportation	□ Influx of rural migrants to agri-enterprise sites and processing areas □ Increased number of service providers, which boost the economy	□ Increased ownership of motorized and other transport system □ Increased number of service providers □ Increased GDP □ But increasing associated environmental and social costs	□ Organize transport entrepreneurs into an association for easy management □ Develop a code of conduct, and health, safety and environment regulation for transport operators	□ Code of conduct for transport operators □ Minutes of meetings of transport operators' association

7.4 Analysis of Alternatives

The traditional approach to cocoa tree crop farming in Liberia has been by default organic farming, this has been primarily due to a lack of agrochemical availability. Based on the analysis of the approach thus far, the outcome has been to focus on high-yielding cocoa and rice varieties. This has environmental implications of increased agrochemical use, the exhaustion of already poor soils and the excessive de-shading of natural forest trees. On the basis of this analysis the project decided to use climate resilient planting materials and intercropping instead of pursuing maximum yields.

Under other projects in Liberia, farmers were encouraged to abandon the destructive shifting agriculture practice typically employed in the uplands. The abandonment of slash and burn was encouraged through the promotion of climate resilient rice production. Slash and burn is practiced by the extremely poor farmers and involves blanket burning to clear forestland to grow rice, vegetables, produce firewood and charcoal. Cultivation of Rice in the mangrove area is becoming popular because of the inherent fertility of the mangrove swamp. This has severe consequences with loss of mangrove which can lead to flooding and storm surges. The project will discourage the cultivation of land in the mangrove dominate wetland areas.

To discourage the opening up of virgin forests for cocoa production, which result in felling of trees for wood fuel, the project will only support the rehabilitation of abandoned cocoa plantations. It will only support new plantations if they are to be sited in already degraded areas or secondary degraded bush areas. No new plantation in virgin forest will be supported.

8. ENVIRONMENTAL AND SOCIAL SCREENING OF SUB-PROJECTS

8.1 Introduction: Screening and Review

The Environment and Social Risk Category of the project is 'B' which means 'some adverse impacts can be readily remedied by appropriate preventive actions and/or mitigation[91]. However, to remain a 'B' Category Project serious attention has to be paid to cocoa production (because of its huge potential to cause deforestation) and the construction of feeder roads considering the terrain in most districts of Bong County of Liberia.

During the implementation of the project, all sub-project proposals will be screened, first on eligibility on the basis of the 'letter of interest' / application form (see Annex 1), and secondly on the basis of environmental, climate and social impacts using the more detailed screening forms (see Annex 2). Project Screening for Environmental Impacts will ensure that sub-projects with high and irreversible impacts on the environment or people that cannot be readily mitigated are not eligible for support by the project.

Sub-project proposals with medium (manageable) environmental and social impacts should include the following basic elements in the application and contain in the project-specific ESMP:

- A summary and description of the possible adverse effects that specific sub-project activities may occur;
- A description of any planned measures to avoid or mitigate adverse impacts, and how and when they will be implemented;
- A system for monitoring the environmental and social effects of the project;
- A description of who will be responsible for implementing and monitoring the mitigation measures; and
- A cost estimate of the mitigation measures, which should be included in the sub-project proposal.

The scope of any environmental and/or social review and related mitigation measures will be determined by the relevant (environmental/climate change) NCPU staff in consultation with technical experts where needed, via the sub-project screening and approval process. Sub-project proposals with only minor or no adverse impacts do not need a separate review (or ESMP).

8.2 Screening for Eligibility

The PDR will provide a detailed description of the targeting and selection process for beneficiaries. Annex 1 provides the proposed format for the letter of interest / application form, which should be completed by each intended beneficiary and will be used as the primary tool for screening for eligibility.

8.3 Screening for Environmental and Social Impacts and Climate Impacts

Based on relevant SECAP guidelines, two separate environmental and social screening forms have been developed: for agri-enterprise (Annex 2) and related (market) infrastructure subprojects (Annex 3), and climate screening form for sub-projects (Annex 4).The intended beneficiaries are only required to complete the intention/application form in Annex 1 while the screening is done using the form in Annex 2, 3 and 4 by the NCPU Environmental/Climate Change Officer (assisted by any Service Provider for that purpose).

[91] Source: IFAD (2016) Managing Risks to Create Opportunities. IFAD's Social, Environmental and Climate Assessment Procedures (SECAP) (IFAD: Rome), p.18

Annex 5 provides environmental and social guidelines for contractors especially those handling the construction of market infrastructure such as the construction /rehabilitation of market-connected rural feeder roads. Sound environmental and social management of construction projects can be achieved only with adequate site selection and project design. As such, the ESMP for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design. The guidelines include the site selection, prohibitions, construction management measures, safety during construction, community relations, chance finds procedures and environmental supervision during construction.

8.4 Impact Significance Rating

In order to determine the significance of impacts, the likelihood of an impact occurring is considered against the consequence or magnitude of the impact if it was to occur. Likelihood is defined as the frequency of an impact occurring.

Table 8.1 Definitions of Consequence

Consequence	Definition
No Impact / No change	□ No impacts on biophysical and social environments / livelihood / health / gender □ No public concerns □ No legal issues
Negligible	□ Low/minor impact on environment / livelihood / health / gender □ Minor social impacts □ No legal issues
Intermediate	□ Some level of impact on environment / livelihood / health / gender □ Social issues apparent □ May have legal implications
Severe	□ High level impacts on environment / livelihood / health / gender □ High public concerns or perceptions □ Legal non- compliance
Unknown	□ Extent of the impact cannot be determined at this point □ Apply precautionary principle

Projects that have low significance impacts may not require a new ESMP; in that case the standard ESMP and ESMF in this report will suffice. In the case of project with medium significance, the development of appropriate plans, in addition to the standard ESMP and ESMF may suffice to manage the severity of the impacts. In the case of projects with impacts of high significance, a separate ESIA is almost always required.

9. MONITORING OF ENVIRONMENTAL, CLIMATE AND SOCIAL IMPACTS

9.1 Introduction

The overall objective of environmental and social monitoring is to ensure that recommended mitigation measures are incorporated, and that activities carried out during sensitization (i.e. training and awareness-raising) and infrastructure construction/maintenance are environmentally and socially acceptable, and therefore sustainable.

9.2 Key Performance Indicators

For the project performance indicators (as set out in Section 2.2) are:

- Goal: Total outreach - number of households receiving services promoted or supported by the project (15,000 at MTR and 25,000 at completion)
- Goal: Percentage of households that experience a reduction of hungry season from 4 to 2 months (50 per cent at MTR and 80 per cent at completion)
- PDO: Number of rural producer organisations engaged in formal partnerships/ agreements or contracts with public or private entities (100 at MTR and 250 at completion)
- PDO: Number of existing regulations/policies/strategies proposed to policy makers for approval, ratification or amendment (one at MTR and two at completion)
- Component 1: Percentage of persons/households reporting adoption of new improved inputs, technologies or practices (40 per cent at MTR and 100 per cent at completion)
- Component 1: Percentage of households reporting an increase in production (25 per cent at MTR and 100 per cent at completion)
- Component 2: Percentage of supported rural producers' organisation members reporting a decrease in post-harvest losses (30 per cent at MTR and 100 per cent at completion)
- Component 2: Percentage of persons reporting improved physical access to market, processing and storage facilities (40 per cent at MTR and 100 per cent at completion)

Various project impacts and aspects relate to these overall performance targets. When the activities and indicators are established, baseline data needs to be collected to serve as a benchmark and against which changes in the identified indicators can be measured. The types of parameters that can be monitored may include mitigation measures or design features, or actual impacts. In some cases, such as drainage structures and soil conservation interventions, monitoring is fairly straightforward and can be done as part of routine or periodic maintenance. However, other parameters, particularly those related to social, ecological and climate change issues can only be effectively assessed over a period of 2 to 5 years.

The monitoring plan in Table 9.1 lists the parameters to be monitored, activity that will generate the parameters, monitoring indicator, and responsibility, monitoring means, frequency and the estimated cost.

Table 9.1: Environmental and Social Monitoring Plan

Parameter	Activity	Monitoring Indicator	Responsibility for monitoring	Monitoring means	Recommended frequency of monitoring	Estimated Monitoring Costs (USD)[92]
ENVIRONMENTAL MONITORING						
Site specific ESIAs for road construction	Environmental Screening and impact assessment	Baseline on status of the environmental conditions	NCPU-Environmental Officer, Market Infrastructure Engineer	ESIA reports Adherence to laid legal and policy requirements	Once (project specific)	49,180
Site specific ESIAs for Earthen dam construction	Environmental Screening and impact assessment	Baseline on status of the environmental conditions	NCPU-Environmental Officer, Market Infrastructure Engineer	ESIA reports Adherence to laid legal and policy requirements	Once (project specific)	32,787
Site specific environmental screening (ES) for farm tracks	Environmental screening for farm tracks	Baseline status of environmental conditions	NCPU-Environmental Officer, Market Infrastructure Engineer	Environment Assessment report	Once (project specific)	29,508
Environmental baseline study	Environmental and social baseline for the project	General conditions of the entire study area	NCPU-Environmental Officer	Remote sensing and field assessment	Baseline	26,230
Land, soil and water degradation assessment (including waste and agrochemicals in land, soil and water) - two yearly	Assessment of soil, water, land and vegetation	Status of land, soil, water and vegetation characteristics including soil microorganism count and water quality	NCPU-Environmental Officer	Field investigations and Laboratory Analysis	Biennial	78,689
Forest and (mangrove) wetland deforestation assessment -two yearly	Assessment of forest and mangrove wetlands	Status of forests and mangrove wetlands	NCPU-Environmental Officer	Remote Sensing and Field survey	Biennial	78,689
Erosion/mudslide and flooding - two yearly	Assessment of soil erosion and flooding	Changes in soil/land resulting from soil erosion/mudslide and inundation	NCPU-Environmental Officer	Field measurement and laboratory test	Biennial	78,689
Biodiversity and Cultural Resources surveys - annually	Biodiversity survey	Changes in abundance of plant and animal biodiversity	NCPU-Environmental Officer	Field biophysical survey	Annual	157,377
Access to climate information and agro-decision makings and GHG emissions	GHG measurement and Survey of access to climate information and agro-decision makings	Level of access to climate information by rural small holders farmers Extent of GHG emission from rice paddies	NCPU-Environmental Officer	Social survey and field investigation	Biennial	47,213
SOCIAL MONITORING						
Social / livelihood (SLA) baseline	Rapid appraisal of livelihoods of	Status of rural sma holder farmers livelihoods	NCPU-Environmental	Social Surveys/Rapid rural appraisal	Once	52,459

[92] The estimated costs presented cover the monitoring expenses for all the 16 districts

	rural small holders farmers		Officer and Gender Officer			
Livelihood monitoring	Appraisal of rura livelihood improvements through THE PROJECT	Status of rural sma holder farmers livelihoods	NCPU-Environmental Officer and Gender Officer	Social Surveys	Annual	78,689
Other social monitoring	Engagement on land tenure and land access, gender, social exclusion, elite capture, monitoring conflict, managing expectations and health & safety issues.	Extent of project compliance with social safeguards	NCPU-Environmental Officer and Gender Officer	Social Surveys, meetings, trainings	Annual	65,574

9.3 Summary of Environmental and Social Monitoring Costs

Table 9.2 shows the summary of the monitoring costs among the monitoring activities shown on Table 9.1 for year 1 and the years 2-6 of the project project life cycle.

Table 9.2: Summary of Environmental Monitoring costs

Monitoring Parameter	Total for Bong County	Year ½	Year 2 - 6
Site specific ESIAs for roads per district*	62786	30000	39344
Site specific ESIAs for earthen dams per district	32786	16393	16393
Environmental baseline study	25000	25000	
Environmental monitoring **	160000	60000	100000
Survey climate information access and GHG emissions study -	47214	23607	23607
Social / livelihoods baseline study	49951	49951	0
Livelihoods monitoring	78689	13115	65574
Other social monitoring ***	65574	10929	54645
Total monitoring costs	**522000**	**228995**	**299563**

*include ESIA for 120km road and environmental screening
** include monitoring of land and soil degradation (including soil, water, land and agrochemicals), forest and wetland, flooding, erosion and mudslide, and biodiversity survey
*** includes monitoring of conflict, land access, social exclusion, gender, elite capture, and health & safety issues

As shown on Table 9.2 a total of **USD 522,000** has been estimate for the environmental and social monitoring for the project. This represents about **5.58 per cent** of the total estimate project cost. The detailed overview of the monitoring costs is shown on Annex 6. A total of **USD 228,995** is expected to be expended at the base year while the rest is spread across the 2nd to the 6th year (end of the project life cycle). The financing of the monitoring costs is expected to be supported by the Adaptation Fund, and relate especially to: Climate Resilient and Smart Agricultural Production (Component 1) and Climate Resilient

Rural Infrastructure (which is under component 2) of the project

10. CAPACITY BUILDING AND TRAINING FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

10.1 Strengthening Capacity and Improving Resilience

A successful mainstreaming of climate change and the ESMF into implementation of the project requires the strengthening of institutional capacities, in particular those of the Meteorological Agencies, EPA, CARI, Farmers Organization, MOA and Women Organizations. Moreover, there is a strong need for context-specific, in-situ training sessions for farmers, and others in the value chain, for example on climate-smart agriculture and climate change adaptation, to improve their resilience to deal more effectively with climate-related weather events.

10.2 Training Topics

Proposed training topics include, at the very least:

- Community sensitization;
- Requirements of IFAD's SECAP and ERNM, Gender, as well as Climate, Land and Disclosure policies;
- ESMF processes, procedures and institutional arrangements to develop and implement required management plans;
- Data gathering and use of tools for data analysis;
- Screening and rating as prescribed in the ESMF;
- Environmental, social and climate impact assessment, and requirements;
- Preparation, implementation and monitoring of ESMPs and ESIAs;
- Reporting and monitoring implementation of ESMPs;
- Farmers Field School training on climate smart agriculture, environmental and social best practices, including: Sustainable land preparations, agrochemical application and pest and disease management, sustainable agronomic practices, soil fertility management, low-impact farming methods,
- Conflict resolution and grievance management mechanisms;
- Environmental (EMS 14001) and social audit, and report writing

10.3 Target Audience and Approach

The target groups for training should include, at least:

- Project Steering and Technical Committees; NPCU
- District MOA/Project Staff
- Meteorological Agency and CARI staff
- Service providers
- Beneficiaries (i.e. incubators and apprentices)
- Farmers Organizations

The training topics will be delivered based on the needs of each training target group. As much as

possible, Training the Trainers (TOT) will be encouraged, where applicable, to manage resources and effectively reach the target audiences.

Table 10.1: Training Activity and Estimated Cost

SN	Activity	Year						Budget (USD)	Remarks
		1	2	3	4	5	6		
1	General Stakeholders and community sensitization using the media and workshop	X						10,000	Local media+1 day workshop in each of the 16 districts
2	Community sensitization in the districts		X	X				10,000	2day workshop
3	ToT training for regional and state environment /climate specialists, CARI staff and other relevant stakeholders on: (a) Requirements of IFAD's SECAP and ERNM, Climate, Land and Disclosure Policies (b) ESMF processes, procedures and institutional arrangements to develop and implement required management plans; (c) Subproject Screening (d) Environmental, social and climate impact assessment and mitigation; (e) Preparation, implementation, monitoring and reporting of ESMPs and ESIAs	X		X				10,000	5day workshop
4	Soil testing and analysis for production	X	X	X	X	X	X	10,000	
5	Data gathering and analysis for Environmental and Climate M & E	X						10,000	3day workshop
6	Farmers Field School training on climate smart agriculture, environmental and social best practices, including: Sustainable land preparations, agrochemical application and pest and disease management, sustainable agronomic practices, soil fertility management, low-impact farming methods	X	X	X	X	X	X	15,000	
7	Conflict resolution and grievance management	X						5,893	
8	Environmental (EMS 14001) and social audit and report writing	X						5,000	5day workshop
								75,839	

The total training cost is estimated at **USD 75,839** which represents about 0.77 per cent of the project cost. In total, both the Environmental and Social Monitoring costs and Training cost accounts for 6.03 **per cent** of the estimated project cost.

Annex 2: Screening for eligibility

INTEGRATED INITIATIVES TO PROMOTE CLIMATE RESILIENCE IN COCOA AND RICE VALUE CHAINS IN LIBERIA
Letter of Interest (Eligibility Screening Form) Please complete all the required spaces in this form

1. Name: Surname ----------Other Names:----------

Maiden name (for married women):----------

2. Sex: (a) Male { } (b) Female { }

3. Date of birth: ----------

4. Highest Education Level: (a) No formal education { } (b) Primary School { } (c) Secondary School { } (d) Vocational school (e) Tertiary Education { }

5. Which community do you belong to: ----------

6. How long have you lived in this community: ----------

7. How do you belong to this community: (a) by birth { } (b) by marriage { } (c) other (specify):--

---

8. Chiefdom ---------- District ----------

9. What enterprise are you interested in ----------

10. Do you have any experience in this enterprise: (a) Yes { } (b) No { }. If yes, how many years:

---

11. Do you belong to any youth or women organization: (a) Yes { } (b) No { }. If yes, what is the name: ----------

---

12. Do you belong to any cooperative society: (a) Yes { } (b) No { }. If yes, what is the name: -------

---

13. Do you have access to any land for the enterprise: (a) Yes { } (b) No { }

14. If yes to question 13, where is the land located----------; and what is the area size of the land? ----------

---

15. What kind of title to you have to the land: (a) Government paper { } (b) Inheritance from parent {} (c) husband or wife's consent { } (d) family allocation { } (e) community's allocation { } (f)

Others (specify):----------

Endorsements:

Applicant: I certify that the information provided here is correct
Name: ----------

Signature: ----------

Date: ----------

Community/traditional leader:

Name: ---------- Sign: ----------
---------- Date: ----------

Verifications:

Comments by the Local Government Liaison Office:----------

Name of Officer: ---------- Designation: ----------

Sign and date: ----------

Comments by the District Project Coordination Office:----------
---

Name of Officer: ---------- Designation: ----------

Sign and date: ----------

Annex 3: Screening for Agric Enterprises

A: Screening Form for Agri-Enterprise Projects

General Information

Project Name:	
Name of applicant:	
Name of Cooperative: Contact person's details:	
Name of Group: Contact person's details:	
Project Location:	
Project sector (e.g. rice farming, cocoa seedling processing, etc.)	
Estimated Cost:	
Proposed Date of Commencement:	
Expected Project duration:	
Site (estimated area in ha):	
Any equity/contribution brought into the project:	
Any plan for new construction:	

B: Screening for Environmental and Social Issues for Sub-projects

Question	Yes	No	Additional explanation of
1. Will the sub-project develop any wetlands?			
2. Would the sub-project result in economic displacement[93] (loss of			
3. Would the sub-project result in conversion and/or loss of Physical Cultural Resources?			
4. Will the sub-project have significant social adverse impacts (affecting access to and/use rights to land, access to potable water and water for other uses) on local communities or other project-affected parties?			
5. Will the project trigger unsustainable natural resource management practices (fisheries, forestry, livestock, and significant increase in use of agrochemicals) that exceed the			
6. Does the sub-project include conversion of significant areas (above 50 ha) of natural forests/other wild lands?			
7. Would the project potentially cause significant adverse impacts to habitats and/or ecosystems and their services (e.g. habitat loss, erosion/ other form of land degradation, fragmentation, hydrological changes)?			
8. Does the proposed project target area include ecologically sensitive areas[94] of global significance for biodiversity conservation and/or biodiversity-rich area; habitats depended on by endangered species?			
9. Does the project involve fisheries development in situations where little information exists on sustainable yield?			
10. Could the project pose a risk of introducing invasive alien species?			

[93] Economic displacement implies the loss of land, assets, access to assets, income sources or means of livelihoods (see SECAP Procedure Guidance Statement 13)

[94] Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race

11. Does the project involve the transfer, handling or use of genetically modified organisms/living modified organisms that may have an adverse effect on threatened biodiversity?			
12. Does the project involve land use changes (agricultural intensification and/or expansion of the cropping area) and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods?			
13. Will the project result in increased use of agrochemicals which may affect the natural environment/human health?			
14. Does the project include small-scale irrigation and drainage projects, and water impoundment including small dams (except in wetlands)?			
15. Does the project involve agricultural intensification and/or expansion of cropping area in non-sensitive areas?			
16. Do the project activities include rangeland and livestock development?			
17. Does the project involve artisanal fisheries where there is information on sustainable yield?			
18. Do the project activities include aquaculture and/or			
19. Do the project activities include watershed management or rehabilitation?			
20. Does the project include large-scale soil and water conservation measures?			
21. Does the project include small and micro enterprise development sub-projects?			
22. Does the project involve credit operations through financial service providers, including credit for pesticide/other agrochemicals, livestock purchasing,			
23. Do the project activities include natural resources-based value chain development?			
24. Would any of the project activities have minor adverse impacts on physical cultural resources?			
25. Would the project have low probability to have physical resettlement or economic displacement?			
26. Does the project include development of agro-processing facilities?			
27. Will the project require a migrant workforce during construction?			

28. Will the project require seasonal workers to plant and/or harvest produce			
29. Will the construction or operation of the project cause an increase in traffic on rural roads?			

Guidance for sub-project categorization:

"Yes" response to any of questions 1-11	Sub-project Environmental and social	ESIA is required for subproject
"Yes" response to questions 12-29	Sub-project Environmental and social	Sub-project to adopt the ESMP in the general ESMF
"No" response to almost all questions	Subproject Environmental and social	No further analysis is required

Annex 4: Screening for Market Infrastructure

A: General Information for (Market) Infrastructure Sub-Projects

Name of market infrastructure:	
Infrastructure type:	
Location:	
Proposed Date of Commencement:	
Expected Project duration:	
Estimated cost:	
Estimate number of communities to be served:	
Estimated number of entrepreneur to be served:	

B: Screening for (Market) Infrastructure Sub-projects

Question	Yes	No
1. Will the project activities include construction/rehabilitation of rural roads or other rural infrastructure in protected/sensitive areas?[95]		
2. Does the project include construction of roads or other infrastructure that entail the total area being cleared of 50 ha or above?		
3. Does the project include construction of dam (s)/reservoir (between 5-15 m high with a reservoir exceeding 2 million m^3)?		
4. Does the project involve large-scale irrigation schemes rehabilitation/ development (above 100 ha)?		
5. Does the project involve significant extraction of ground water (significantly above recharge capacity)?		

[95] Sensitive areas' include: protected areas (national parks, wildlife/nature reserves, biosphere reserves); areas of global significance for biodiversity conservation; habitats depended on by endangered species; natural forests; wetlands; coastal ecosystems, including coral reefs and mangrove swamps; small island ecosystems; areas most vulnerable to climate change and variability; lands highly susceptible to landslides, erosion and other forms of land degradation and areas that include physical cultural resources (of historical, religious, archaeological or other cultural significance) and areas with high social vulnerability due to poverty, disease, ethnicity and race.

6. Does the project include water-based (ground or surface) development where it is believed that significant depletion due to climate change or overutilization has occurred?		
7. Does the project involve significant extraction, diversion or containment of surface water?		
8. Does the project include drainage or correction of natural water bodies (e.g. river draining)?		
9. Will the project include construction/rehabilitation of rural roads that pass through wetlands?		
10. Would any of the project activities have minor adverse impacts on physical cultural resources?		
11. Does the project include development of agro-processing facilities?		
12. Will the project require a migrant workforce during construction?		
13. Will the construction or operation of the project cause an increase in traffic on rural roads?		
14. Has the government or community guaranteed the lease of the land for the (market) infrastructure?		
15. Is there any plan in place for sustainability of the infrastructure during the project life time?		
16. Does the project include specific measures to protect against dust (such as dust masks and water spraying)?		
17. Has arrangement been made to pay adequate compensation for private property that may be affected by the construction of the project?		

18. Will construction equipment with moderate decibels be used and the timing of use be so that people will experience less discomfort?		
19. Will tree and vegetation replanting be carried out to stabilize slopes and re-green road sides?		

Guidance for categorization:

"Yes" response to any of questions 1-9	Environmental and social category is A	ESIA is required
"Yes" response to questions 10-13	Environmental and social category is B	Sub-project to adopt the general ESMP in the ESMF
"No" response to almost all questions 1-13 and 'Yes' to questions 14-19	Environmental and social category is C	No further analysis is required

Annex 5: Climate Screening Form

Climate Screening Form for Sub-Projects

To be used with the environmental and social screening forms.

Screening for Climate Issues

Question	Yes	No	Additional Explanation of 'Yes' response*
1. Is the project area subject to extreme climatic events such as flooding, drought, tropical storms, or heat waves?			
2. Do climate scenarios for the project area foresee changes in temperature, rainfall or extreme weather that will adversely affect the project impact, sustainability or cost over its lifetime?			
3. Will the project make investments in low-lying coastal areas/ zones exposed to river flooding and coastal storm surge?			
4. Will the project promote agricultural activity in marginal and/or highly degraded areas that have increased sensitivity to climatic events (such as on hillsides, deforested slopes or floodplains)?			
5. Is the project located in areas where rural development projects have experienced significant weather- related losses and damages in the past?			
6. Will the project develop/ install infrastructure in areas with a track record of extreme weather events?			
7. Is the project target group entirely dependent on natural resources (such as seasonal crops, rain-fed agricultural plots, migratory fish stocks) that have been affected by in the last decade by climate trends or specific climatic events?			

8. Will climate variability likely affect agricultural productivity (crops/ livestock/fisheries) or the associated incidence of pests and diseases for the project target groups?			
9. Would weather-related risks or climatic extremes likely adversely impact upon key stages of identified value chains in the project (from production to markets)?			
10. Is the project investing in climate-sensitive livelihoods that are diversified?			
11. Is the project investing in infrastructure that is exposed to infrequent extreme weather events?			
12. Is the project investing in institutional development and capacity building for rural institutions (such as farmer groups, cooperatives) in climatically heterogeneous areas?			
13. Does the project have the potential to become more resilient through the adoption of green technologies at a reasonable cost?			
14. Does the project intervention have opportunities to strengthen indigenous climate risk management capabilities?			
15. Does the project have opportunities to integrate climate resilience aspects through policy dialogue to improve agricultural sector strategies/policies?			
16. Does the project have potential to integrate climate resilience measures without extensive additional costs (e.g. improved crop variety, capacity building; or including climate risk issues in			
17. Based on the information available would the project benefit from a more thorough climate risk and vulnerability analysis to identify additional complementary investment actions to manage climate risks?			

Guidance for categorization:

"Yes" response to any of	Sub-project Climate risk is High	Climate risk Analysis is required for sub-project
"No" response to almost	Sub-project climate risk is moderate	Sub-project to adopt the ESMP in the general ESMF

Annex 6 - Environmental and Social Guidelines for contractors[96]

(for reference in contractor agreements/contracts)

Sound environmental and social management of construction projects can be achieved only with adequate site selection and project design. As such, the ESMP for projects involving any new construction, or any rehabilitation or reconstruction for existing projects, should provide information as to screening criteria for site selection and design including the following:

Site Selection

Sites should be chosen based on community needs for additional projects, with specific lots chosen based on geographic and topographic characteristics. The site selection process involves site visits and studies to analyse: (i) the site's, sub-urban, or rural characteristics; (ii) national, regional, or municipal regulations affecting the proposed sites; (iii) accessibility and distance from inhabited areas; (iv) land ownership, including verification of absence of squatters and/or other potential legal problems with land acquisition; (v) determination of site vulnerability to natural hazards, (i.e. intensity and frequency of floods, landslides, etc.); (vi) suitability of soils and sub-soils for construction; (vii) site contamination; (viii) flora and fauna characteristics; (ix) presence or absence of natural habitats and/or ecologically important habitats on site or in vicinity (e.g. forests, wetlands, rare or endangered species); and (ix) historic and community characteristics.

The rules (including specific prohibitions and construction management measures) should be incorporated into all relevant bidding documents, contracts, and work orders.

Prohibitions

The following activities are prohibited on or near the project site:

- Cutting of trees for any reason outside the approved construction area;
- Hunting, fishing, wildlife capture, or plant collection;
- Use of unapproved toxic materials, including lead-based paints, asbestos, etc.
- Disturbance to anything with architectural or historical value;
- Building of fires;
- Use of firearms (except by authorized security guards);
- Use of alcohol by workers.

Construction Management Measures

Solid, sanitation, and hazardous wastes must be properly controlled, through the implementation of the following measures:

Waste Management:

- Minimize the production of waste that must be treated or eliminated;
- Identify and classify the type of waste generated. If hazardous wastes (including health care wastes) are generated, proper procedures must

[96] Adapted from Ministry of Agriculture, Irrigation and Water Development, Republic of Malawi (2015) *Environmental and Social Management Framework for Programme for Rural Irrigation Development in Malawi*, pp.76-80.

be taken regarding their storage, collection, transportation and disposal;
- Identify and demarcate disposal areas clearly indicating the specific materials that can be deposited in each;
- Control placement of all construction waste (including earth cuts) to approved disposal sites (>300 m from rivers, streams, lakes, or wetlands). All garbage, metals, used oils, and excess material generated during construction should only be dispose in authorized areas, incorporating recycling systems and the separation of materials.

Maintenance:
- Identify and demarcate equipment maintenance areas (>15m from rivers, streams, lakes or wetlands);
- Ensure that all equipment maintenance activities, including oil changes, are conducted within demarcated maintenance areas; never dispose spent oils on the ground, in water courses, drainage canals or in sewer systems;

Identify, demarcate and enforce the use of within-site access routes to limit impact on site vegetation;
- Install and maintain an adequate drainage system to prevent erosion on the site during and after construction.

Erosion Control
- Erect erosion control barriers around perimeter of cuts, disposal pits, and roadways;
- Spray water on dirt roads, cuts, fill material and stockpiled soil to reduce wind-induced erosion, as needed;
- Maintain vehicle speeds at or below 10mph within the work area, 15mph or below within 200m of the site, and abide by the relevant speed limits at all times to / from the work area.

Stockpiles and Borrow Pits
- Identify and demarcate locations for stockpiles and borrow pits, ensuring that they are 15 meters away from critical areas such as steep slopes, erosion-prone soils, and areas that drain directly into sensitive water bodies;
- Limit extraction of material to approved and demarcated borrow pits.

Site Clean-up
- Establish and enforce daily site clean-up procedures, including maintenance of adequate disposal facilities for construction debris.

Safety during Construction
The Contractor's responsibilities include the protection of every person and nearby property from construction accidents. The Contractor shall be responsible for complying with all national and local safety requirements and any other measures necessary to avoid accidents, including the following:
- carefully and clearly mark pedestrian-safe access routes;
- If school children are in the vicinity, include traffic safety personnel to direct traffic;
- Maintain supply of supplies for traffic signs (including paint, easel, sign material, etc.), road marking, and guard rails to maintain pedestrian safety during construction;
- Conduct safety training for construction workers prior to beginning work;
- Provide personal protective equipment (PPE) and clothing (such as goggles, gloves, respirators, dust masks, hard hats, steel-toed and – shanked boots, etc.,) for construction workers and enforce their use;
- Post Material Safety Data Sheets for each chemical present on the worksite;

- Require that all workers read, or have read, all Material Safety Data Sheets. Clearly explain the risks to them and their partners, especially when pregnant or planning to start a family. Encourage workers to share the information with their physicians, when relevant;
- Ensure that the removal of asbestos-containing materials or other toxic substances be performed and disposed of by specially trained workers;
- During heavy rains or emergencies of any kind, apply construction safeguards guidelines;
- Brace electrical and mechanical equipment to withstand unexpected events during construction.

Nuisance and Dust Control

To control nuisance and dust the Contractor should:

- Maintain all construction-related traffic at or below 15 mph on streets within 200 m of the site;
- Maintain all on-site vehicle speeds at or below 10 mph;
- To the extent possible, maintain noise levels associated with all machinery and equipment at or below 90db;
- In sensitive areas (including residential neighbourhoods, health centres, schools, etc.) more strict measures may need to be implemented to prevent undesirable noise levels;
- Minimize production of dust and particulate materials at all times, to avoid impacts on surrounding families and businesses, and especially to vulnerable people (children, elderly);
- Phase removal of vegetation to prevent large areas from becoming exposed to wind;
- Place dust screens around construction areas, paying particular attention to areas close to housing, commercial areas, and recreational areas;
- Spray water as needed on dirt roads, cut areas and soil stockpiles or fill material;
- Apply proper measures to minimize disruptions from vibration or noise coming from construction activities. **Community Relations**

To maintain cordial community relations the Contractor should:

- Following the country and ESMP requirements, inform the population about construction and work schedules, interruption of services, traffic detour routes, as appropriate;
- Limit construction activities at night. When necessary ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures;
- At least five days in advance of any service interruption (including water, electricity) the community must be advised through clearly visible posters at the project site and at central community locations;
- Where possible, particularly for tasks that can also be performed through low-skilled manual labour (such as digging of shallow trenches, etc.), make use of labour from the local community.

Chance Find Procedures for Culturally Significant Artefacts

In case culturally valuable materials (incl. shrines, graves, etc.) are uncovered during excavation:

- Stop work immediately following the discovery of any materials with possible archaeological, historical, paleontological, or other cultural value, announce findings to project manager and notify relevant authorities;
- Protect artefacts as well as possible using plastic covers, and implement measures to stabilize the area, if necessary, to properly protect artefacts;
- Prevent and penalize any unauthorized access to the artefacts;
- Restart construction works only upon the authorization of the relevant authorities.

Environmental Supervision during Construction

The bidding documents should indicate how compliance with environmental rules and design specifications would be supervised, along with the penalties for non-compliance by contractors or workers. Construction supervision requires oversight of compliance with the manual and environmental specifications by the contractor or his designated environmental supervisor. Contractors are also required to comply with national and state regulations governing the environment, public health and safety.

Annex 7: List of Stakeholders Consulted

No.	**Name**	**Organization**	**Current Title**	**Role**
1	Hon. Robert K. Fagans	Ministry of Agriculture	Deputy Minister for Planning & Development	Lead member of MOA Team
2	Mr. J. Dennis Wiagbe, Jr.	Ministry of Agriculture	M&E Director	Planning (M&E)
3	Mr. Randolph Kolleh	Ministry of Agriculture	Senior Economist	Economist
4	James T. Moore	Ministry of Agriculture	Marketing Director	Economist
5	Mr. Jeremiah G. Sokan, Sr.	Environmental Protection Agency	National Coordinator National Climate Change Secretariat	Lead member of EPA Team
6	Dr. Kolleh Bangura	Environmental Protection Agency	Chief Technical Advisor	Environmentalist
7	Ms. Salimatu Lamin	Environmental Protection Agency	Project Coordinator	
8	Mr. Benjamin Karmorh, Jr.	Environmental Protection Agency	Coordinator MEAs	
9		Ministry of Youth & Sports		

10	Dr. Moses M. Zinnah	University of Liberia	Agricultural Specialist	Consultant (IFAD)

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6	Dr. Kolleh Bangura	Environmental Protection Agency	Chief Technical Advisor	Environmentalist
7	Ms. Salimatu Lamin	Environmental Protection Agency	Project Coordinator	
8	Mr. Benjamin Karmorh, Jr.	Environmental Protection Agency	Coordinator MEAs	
9		Ministry of Youth & Sports		

10	Dr. Moses M. Zinnah	University of Liberia	Agricultural Specialist	Consultant (IFAD)

Annex 8: Reports of the consultative meetings in the two districts of the project and with the meteorological department

No	Name	County /District	Position	Contact
1.	Kumba Torgbor	Lofa	Member	0776115295
2.	Kumba Nyum	Lofa	"	
3.	Yeawa Sherman	Lofa	"	
4.	Hallie Jacob	"	"	
5.	Gabriel Fayiah	"	"	07769509545
6.	Harris Zazay	"	"	
7.	Tamba Wollie	"	"	
8.	Saah Lendor	"	"	
9.	Abu Kanyon	"	"	0772856041
10.	fallah oneday	"	"	
11.	David Nyumah	"	"	0770990841
12.	Fayiah Mccarthy	"	"	0778524307
13.	Tamba Nyumah	"	"	0770472225
14.	Tuwor Grabriel	"	"	
15.	John Pakauah	"	Youth Leader	0777637444
16.	Daniel F. Potokenor	"	City Mayor	0776019782
17.	N.David Ganowah	"	Member	0770516609
18.	Kpalloe F. Sandikie	"	"	0778248528
19.	Tamba Edward	"	"	
20.	Peter B. Lonpea	Nimba	Adm Assistant	0777223948
21.	Madison T. Gonkanue	"	DAO, MOA	0777451031
22.	Stanley Bella	"	MIA	0770242174
23.	Oretha Gborplay	"	City Mayor	0776207235
24.	Mary Gweh	"	Member	0773460615
25.	Peter Barleah	"	"	
26.	George K. Matiah		DAO, MOA	0777451032
27.	Joseph T. Gbala		MIA	0776756716
28.	James F. Barkar		City Mayor	0776756716
29.	Garrison G. Gbarto			0777251569
30.	Caroline M. Momoh	Lofa	City Mayor	0886630518
31.	Musu E. Tuahy Younn	Margibi	County Agriculture Coordinator	
32.	Jerry Sirtor	Grand Cape Mount County	County Agriculture Coordinator	0886832992
33.	Sam Kehlea	Nimba	DAO	0776143458
34.	John Zaza	Lofa	DAO	0776846450
35.	Halala W. Kokolo	Lofa	County Agriculture Coordinator	0776282026
36.	Edmond Greaves	Bomi	Regional County Agriculture	0777023043

Key Partners met during the field missions in the counties.

Annex 9: Terms of Reference, the National Climate Change Steering Committee (NCCSC)

TERMS OF REFERENCE

THE NATIONAL CLIMATE CHANGE STEERING COMMITTEE (NCCSC)

1.0 OVERVIEW & BACKGROUND

1.1 More than 190 countries have joined the United Nations Framework Convention on Climate Change (UNFCCC) to address global temperature increase. This action followed the alarm raised globally by the Intergovernmental Panel on Climate Change in 1988, presenting scientific findings on evidence of global warming, emission, increased climate impacts.

1.2 Climate Change Regulatory Frameworks were put into place by the establishment of two bodies:

- The United Nations Framework Convention on Climate Change (UNFCCC), which was established in 1992, with an objective to stabilize greenhouse mechanisms concentrates in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.
- The Kyoto Protocol which was adopted at the 3rd Session of the Conference of the Parties in Kyoto, Japan in 1997, with an objective to provide mechanisms (Clean Development Mechanism, Emission Trading and Joint Implementation), targets and timetable for the reduction of greenhouse gas emission.

1.3 Liberia is vulnerable to the impacts of climate change and the way of life of its people is under threat. Liberia is a country with low carbon emission; however the effects of climate change may be significant. Climate change could have deleterious consequences for the following in Liberia:

- Coastal Landscape
- Agriculture
- Health
- Livelihood
- Food Security
- Habitat /Settlement
- Water Resources
- Biological diversity

1.4 Liberia is a nation with significant remaining forces cover and therefore rich in sequestered carbon. Coupled with other ecosystem and livelihood services, the carbon storage in the forests provides a valuable resource in the global fight against global warming. Payments for this service could assist the country's development and contribute significantly to the actualization of the poverty reduction Strategy.

1.5 The Government of Liberia must ensure that the nation act with sufficient strength, speed and foresight to mitigate the efforts of climate change as well as to respond to any strategic opportunities that arise to be involved in the production and marketing of emission reductions.

2.0 INSTITUTIONAL FRAMEWORK

2.1 Article 9, Chapter II of the 1986 Constitution of Liberia encourages bilateral and regional co- operation, with international and regional organizations for the attainment of the global protection of the environment and the promotion of sustainable use of natural resources; Liberia is a party to the UNFCCC, the Kyoto Protocol and the United Nations Convention on Biological Diversity (UNCBD).

2.2 National response to climate change has being slow mainly because of the institutional and capacity constraints; however despite these constraints, Liberia is building institutions and capacities to ensure compliance with both the UNFCCC and Kyoto Protocol.

2.3 The Environmental Protection Agency (EPA) of Liberia is the Designated National Authority (DNA) for the CDM of the UNFCCC/ Kyoto Protocol and custodian of the environment. A National Environmental Policy Council oversees policy formulation at the EPA and sets priorities for national goals and objectives for the protection of the environment. The Minister of Lands, Mines and Energy heads the Policy Council. The EPA also has a Board of Directors that is the supervisory body of the Agency. The Minister of Planning and Economic Affairs serves as the head of the body of Directors of the EPA. The EPA has made a number of gains over the years, including the completion of National Adaptation Plan of Action (NAPA).

2.4 Internationally, with the launch of the World Bank's Forests Carbon Partnership Facility (FPCF) in Bali 2007, forest nations are now on track to be rewarded for any additionality to their conservation efforts that will bring about a reduction in greenhouse gas. Reducing Emission through Deforestation and Forest Degradation (REDD) is an imitative to provide a value for the forest other than that provided by deforestation activities. Liberia currently has a REDD Technical Working Group composed of representatives from Government and Civil Society, chaired by the Forestry Development Authority (FDA) and co-chaired by the Environmental Protection Agency (EPA) and coordinated by National Coordinator of the Climate Change Secretariat. Liberia's REED activities have been operational since 2012, with REDD+ Project Unit seated at the Forestry Development Authority(FDA) but is constrained by a limited mandate, uncertain delegation of responsibilities, and an unsustainable funding structure.

2.5 Capacity Gaps. Climate change related disasters are a thing of daily occurrences in all parts of the world and they are predicated to increase to catastrophic levels in the near future if collective global actions are not implemented to reduce greenhouse gas emission and restore and maintain forests of all kinds. No one institution in Liberia has the resources to give climate change issues the kind of priority attention that it requires. Consequently, the following capacity needs still exist which the NCCS will endeavor to fill:

- Insufficient professionals with technical expertise on climate change due to emigration and reduced human capacity investment during the conflict;
- Inadequate infrastructure for climate data collection and monitoring;
- Limited public and governmental awareness of the efforts of climate change;
- Non-existence of a government entity with the ability to lead a coordinated multi-sectoral approach to climate change adaptation and mitigation.

3.0 NATIONAL CLIMATE CHANGE STEERING COMMITTEE

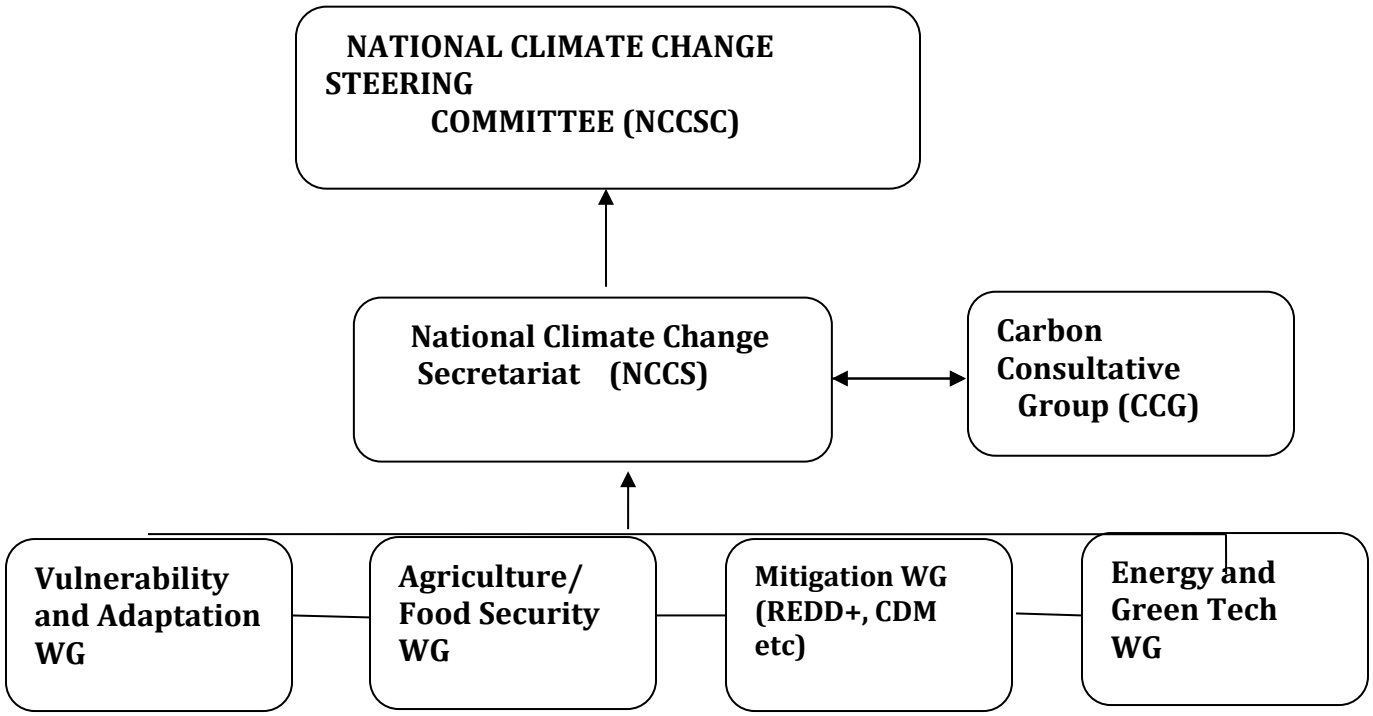
3.1 The National Climate Change Steering Committee (NCCSC), a high- level policy coordination committee, will be responsible for over-all climate change policy in Liberia. It shall comprise the President of Liberia, Ministers of Government, Directors of Government agencies, and the National Coordinator of the National Climate Change Secretariat, who serves as the secretary to the National Climate Change Steering Committee (NCCSC). Most of its work will be achieved through the NCCS that it oversees. Members will be entitled to entitled to honorarium/sitting fees based economic condition and availability of funds. Fees will not exceed $500 USD per member per meeting.

3.2 **Terms of Reference:**

1) Set overall climate policy in Liberia and oversees that such policy is carried out.
2) Operationalize and provide oversight to the NCCS
3) Create / Dissolve Working Groups (WG's) on an ad-hoc basis to assist in addressing technical issues related to Climate Change that may arise.
4) Establish credible consultative processes, which shall provide input to the NCCSC through the NCCS .
5) Adopt measures and take appropriate actions necessary for achieving the mandate and goal of the NCCS, including and in particular :

- To approve the workplan and budget of the NCCS;
- To authorize and / or approve the solicitation of external assistance;
- To recruit and have the power to dismiss the Head of Secretariat of the NCCS in accordance with the Labor laws of the Republic of Liberia, and regulations of the majority of funding partners of the NCCS
- To hire or approve the engagement of an independent auditor to perform audits of the NCCS financial transactions.
- To develop policies and processes associated with or required for executing the effective and transparent implementation of the mandate of the NCCS.

3.3 Organizational chart. (Note that the Working Group (WGs) are only suggestive; actual WGs will be formed on an ad-hoc basis.)



4.0 CARBON CONSULTATIVE GROUP

4.1 The Carbon Consultative Group, a multi- stakeholder structure including industry, civil society and development partners, will provide high- level strategic advice into climate change policy- making in Liberia.

4.2 **Terms of Reference:**

1) Facilitate and advise on the development and implementation of climate change policy and activities.
2) Facilitate a national consensus on climate change policy and activities through stakeholder engagement.

3) Assist in disseminating information to national and international audiences on climate change policy and activities nationally and internationally.
4) Advise and assist in the development of data base and information system for land use activities.
5) Assist in identifying capacity needs in governmental climate change policy and activities, and participate in their solutions;
6) Provide input into climate change mitigation or adaptation proposals that have fiscal consequences for the Government.
7) Advise on monitoring and validation system of terrestrial carbon stock, including the potential to establish independence or parallel monitoring in an advisory capacity;
8) Develop additional sub-groups as needed to advise and assist the NCCSC in particular subjects or technical areas.

5.0 THE NATIONAL CLIMATE CHANGE SECRETARIAT

5.1 The National Climate Change Secretariat, the operational arm of the NCCSC and the governmental liaison for the CCG will provide coordination, monitoring and evaluation; and serves as the links between the NCCSC and its technical level organ, the Working Groups (WGs) as well as with other government institutions and development partners on climate change matters.

5.2 **Terms of Reference**

1) Advise the GoL in the development of multi –sectoral land use and climate change policies, proposals and programs;
2) Coordinate policies relating to climate change;
3) Coordinate national adaptation and mitigation strategies;
4) Raise awareness on climate change;
5) Serve as liaison between the NCCSC, the CCG and the other relevant national stakeholders;
6) Engage in appropriate programs to strengthen national capacity in addressing climate change;
7) Cooperate with international organizations, regional centers, institutions and experts in developing programs for action to mitigate and adapt to climate change in the region;
8) Collate document and store data, record and disseminate climate change information;
9) Facilitate research on climate change effects, mitigation and adaptation potentials;
10) Maintain full records of the processes of the NCCSC, issue citations, serve as a clearing house on climate change, REDD+ and carbon matters, and inform all stakeholders on a regular basis;
11) Ensure that WGs give proper attention to all cross-cutting issues in the design, implementation and timely reporting on interventions.

5.3 **Staff Arrangement**: The National Coordinator, Head of the Secretariat shall report directly to the National Climate Change Steering Committee. There will be expert(s) covering priority technical areas and also an Administrative Assistant and support staff. The National Coordinator and other staff shall be recruited through a competitive process, in accordance with the laws of the Republic of Liberia and applicable regulations of the majority funding partner(s) of the Secretariat.

6.0 NATIONAL COORDINATOR (HEAD OF SECRETARIAT)

6.1 The National Coordinator shall be the Chief Executive of the NCCS and serves as the secretary to the NCCSC.

6.2 Terms of reference:
1) Responsible for the overall direction and coordination of the NCCS;
2) Liaise between the NCCSC, the CCG, WGs and other stakeholders ;
3) Mobilize resources to support the work of the Secretariat and WGs;

4) Ensure overall performance of staff to meet all targets, deadlines and project implementation;
5) Liaise with the international partners and donors in soliciting both technical and financial support for the effective operation of the NCCS in consultation with the NCCSC.
6) Develop the terms of reference (TOR) of the technical experts and support staff of the NCCS
7) Recruit technical and support staff in consultation with relevant funding partners and NCCSC
8) Work through the Cabinet and Autonomous Agencies to ensure complementarities between project implemented by the development partners and the government in support of the goals and objectives of the NCCS;
9)

7.0 ADMINISTRATIVE ASSISTANT

7.1 The Administrative Assistant shall assist the Heads of the Secretariat in administering the day- to day affairs of the Secretariat, supervising its staff and ensuring the timely implementation support of the Secretariat's work plan.

7.2 Terms of Reference :
1) Manage the affairs of the NCCS in assistance of the Head of Secretariat to enhance coordination in the implementation of national mitigation and adaptation strategies;
2) Manage the overall administration of the collection of information / data from implementing agencies, undertake or oversee monitoring and evaluation activities and ensure the timely preparation of relevant reports for the NCCS;
3) Liaise with WGs to ensure the collection of information /data from implanting agencies, undertake or oversee monitoring and evaluation activities and ensure the timely perpetration or relevant reports for the NCCS;
4) Develop an operating budget for the Secretariat, prepare monthly progress reports, account for all materials and supplies, and ensure full reporting on activities undertaken and results achieved;
5) Manage the daily schedule of the Head of Secretariat including preparing for meetings and ensure that tasks are performed by other administrative staffs of the secretariat.
6) Serve as the program officer of the Secretariat.

8.0 CLIMATE CHANGE MITIGATION AND ADAPTATION SPECIALIST

8.1 The Climate Change Mitigation and Adaptation Specialist shall be the technical expert at the NCCS responsible for issues pertaining to climate change adaptive mechanisms and mitigation programs.

8.2 If at any time in the future NCCSC shall wish to focus on different areas of climate change expertise, they may replace the Specialist with another technician of equal caliber for different substantive focus consistent with Liberia's Poverty Reduction Strategy.

8.3 Terms of reference:
1) Assess long-term projections of climate change, , including potential social, economic and environmental impacts;
2) Assess Liberia's vulnerability to climate change;
3) Identify appropriate adaptation and mitigation measures to climate change;
4) Design national adaptation and mitigation strategies, working with appropriate Ministries / Agencies;
5) Contribute to national awareness programs of adaptation to changing climatic and environmental conditions, including environmental educational schemes in schools and local stakeholder communities;
6) Investigate the potential for new technologies to mitigate the impact of climate change;

7) Identify capacity- building needs for the identification, evaluation and implementation of mitigation policies and measures.

9.0 REDD SPECIALIST

9.1 The REDD Specialist shall be the technical expert at the NCCS responsible for issues pertaining to emission and emission reduction through changing land use patterns.

9.2 If at any time in the future the NCCSC shall wish to focus on a different area of climate change expertise, they may replace the Specialist with another technician of equal caliber but different substantive focus consistent with Liberia's Poverty Reduction Strategy.

9.3 Terms of reference:

1) Assess the patterns of land used in Liberia, including but not limited to forestry and agricultural practices, but how it may contribute to carbon emission;
2) Assess the potential for Liberia to reduce emission by altering the land use patterns, including the facilitation of institutional or contractual innovations that may attract international financial flows for emission reduction;
3) Identify and oversee appropriate monitoring and compliance measures to track land use changes;
4) Oversee Liberia's successful implementation of FCFP REDD proposals and preparation;
5) Design national strategy to tackle long -term impediments to environmentally and financially efficient land use, working with appropriate Ministries/Agencies;
6) Contribute to national awareness programs of REDD programs, including environmental education schemes in schools and local stakeholders communities;
7) Identify capacity -building needs for the identification, evaluation and implementation of REDD policies and measures.

10.0 EXECUTIVE SECRETARY

10.1 The Executive Secretary shall ensure the efficient and well – documented operation of the NCCS, under the direct supervision of the Administrative Coordinator.

10.2 Terms of reference:

1) Maintain daily records of the NCCS including external/ internal communications, reports, and receipts;
2) Ensure an effective filling and/ or record system within the NCCS;
3) Draft letters, memoranda, circulars, and other official documents;
4) Assist the Administrative Assistant in performing administrative functions within the secretariat;
5) Perform any other task as designated by the National Coordinator or Administrative Assistant.

11.0 OFFICE ASSISTANT

11.1 The Office Assistant shall maintain a clean, orderly, and well –supported headquarters of the NCCS.

11.2 Terms or reference:

1) Distribute internal/external communications and ensure that they are delivered;
2) Maintain all offices within the NCCS, ensuring tidiness and proper arrangement on a daily basis;
3) Run errands and other external tasks as assigned members of the NCCS;
4) Support the overall vision of the NCCS buy closely assisting the Executive Secretary in the performance of duties / functions;

5) Observe working hours by preparing the secretariat offices before the start of day.

12.0 DRIVER

12.1 The Driver shall be shall be responsible for the transportation of NCCS members and the delivery of important documents.

12.2 Terms of reference:

1) Transport National Coordinator regularly and NCCS members in matters of + Secretariat business;
2) Deliver NCCS documents as needed;
3) Maintain a clean vehicle including supervising necessary maintenance and keeping all records.

13.0 WORKING GROUPS

13.1 Working Groups led by the relevant line Ministries / Agencies or NCCS technical expert will be formed on an ad-hoc basis and will be responsible for coordination of specific projects/ programs and regular reporting of progress on assigned tasks. WGs shall be composed of NCCS representatives, line ministries/agencies, commissions, UN Agencies, Donors, Private Corporation and key NGOs active within the area. WGs will be co-chaired by identified sector partners.

13.2 Each WG will have a Technical Coordinator who will be based in the NCCS or his/her respective ministry. If the Technical Coordinator is not based at the NCCS, he/she will be responsible for the regular communication with the NCCS.

13.3 Terms of reference:

1) Oversee the planning and imp lamentation of activities according to agreed priority results and outcomes as articulated by the Government. This will include cluster level and sectoral coordination of projects and programmes;
2) Meet regularly at such frequency to be determined by the Technical Coordinator;
3) Ensure that the relevant line Ministries/ Agencies, in collaboration with all relevant partners, prepare project and programmes in accordance with identified priorities;
4) Prepare the necessary documents for monthly reporting on the progress of implementation to the National Climate Change Steering Committee;
5) Ensure implementation of policy- level NCCSC decisions;
6) Ensure sectoral coordination through a lead line Ministry;
7) Prepare annual sector development plans for bi-annual reviews, and a monthly progress reporting ;
8) Conduct periodic reviews of projects in accordance with guidelines prepared by the NCCS.

14.0 NATIONAL CLIMATE CHANGE STEERING COMMITTEE MEMBERS

14.1 Old version

#	NAMES	POSITION
1	President of the Republic of Liberia-ex-officio	Ex- officio

2	Minister of Planning and Economic Affairs(MPEA)	Chairman
3	Energy, Environment and Climate Change Advisor to the President of Liberia	Member
4	Minister of Land, Mines and Energy (MLME)	Member
5	Minister of Agriculture(MoA)	Member
6	Minister of Finance (MOF)	Member
7	Minister of Gender and Development	Member
8	Managing Director of the FDA	Member
9	Executive Director of the EPA	Member
10	Chairman, National Investment Commission	Member
11	Commissioner of Liberia Maritime Authority	Member
12	Ministry of Internal Affairs	Member
13	World Bank	Member
14	University Of Liberia	Member
15	Program Manager, SADS	Civil Society Rep.
16	International NGO, Fauna & Flora International	Member
17	Coordinator, National Climate Change Secretariat	Secretary

14.2: Recommended Version from Stakeholder Consultation in Buchanan, Grand Bassa

Current version

#	NAMES	POSITION
1	Minister of Finance and Development Planning	Chairman
2	Executive Director of EPA	Co-Chair
3	Managing Director of FDA	Co-Chair
4	National Coordinator of NCCS	Sec. NCCSC
5	Civil Society Org/Prominent Citizen	Advisor
6	Minister of Child, Gender and Social Protection	Member
7	Minister Transport	Member

8	Minister of Lands, Mines & Energy	Member
9	Minister of Agricultural	Member
	Other non- nominated member	
10	Chairman, National Investment Commission	Member
11	Commissioner of Liberia Maritime Authority	Member
11	Ministry of Internal Affairs	Member
12	World Bank	Member
13	Universities Of Liberia Association	Member
14	Civil Society Organization	Civil Society Rep.
15	International NGO, Fauna & Flora International	Member
16	The Traditional Council of Liberia	Council Rep

DECISION MEMO

IFAD
Investing in rural people

TO: Donal Brown
Associate Vice-President, PMD

THROUGH: Paul Winters
Associate Vice-President, SKD

FROM: Margarita Astralaga Director, ECG

DATE: 16 January 2019

SUBJECT: Submission of the Liberia Project "Building Climate Resilience in Liberia's Cocoa and Rice Sectors" to the Adaptation Fund.

Attached for your approval for submission to the Adaptation Fund (AF), please find the funding proposal for the Liberia Project "Building Climate Resilience in Liberia's Cocoa and Rice Sectors" to be financed through an AF grant of US$ 9,908,356. Please note that corrections to the budget tables are pending prior to the submission to the AF. These corrections are currently being made. However, in order to meet the deadline for submission of Monday, 20th January 2020 advanced approval for submission is being sought. With inclusion of these corrections the document has been cleared by te technical design team LEG, and ECG.

I look forward to receiving your approval to submit the project to the AF Secretariat.

Clearance:

Lisandro Martin, Director, WCA

DECISION BY DONAL BROWN (AVP, PMD):

Approve:

Not approved:

Discuss with me:

Date: 20/01/2020

cc: Martin, Lisandro <lisandro.martin@ifad.org>; Astralaga, Margarita <m.astralaga@ifad.org>; Leclerc, Liza <l.leclerc@ifad.org>; Guedez, Pierre Yves <p.guedez@ifad.org>; Mazzoni, Matteo <m.mazzoni@ifad.org>; Damianov, Radu <r.damianov@ifad.org>; Buonanno, Vittorio <v.buonanno@ifad.org>; David, May <m.david@ifad.org>; Sene, Amath Pathe amath.sene@ifad.org; Cameron, Virginia <v.cameron@ifad.org>