

Promotion of climate adaptation technology and business model innovations and entrepreneurship in Sierra Leone

Part I: Project Information

GEF ID

10680

Project Type

FSP

Type of Trust Fund

LDCF

CBIT/NGI

CBIT

NGI

Project Title

Promotion of climate adaptation technology and business model innovations and entrepreneurship in Sierra Leone

Countries

Sierra Leone

Agency(ies)

UNIDO

Other Executing Partner(s)

Environmental Protection Agency

Executing Partner Type

Government

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, Climate Change Adaptation, Adaptation Tech Transfer, Innovation, Livelihoods, Climate resilience, Private sector, Climate finance, Least Developed Countries, Influencing models, Deploy innovative financial instruments, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Stakeholders, Private Sector, SMEs, Individuals/Entrepreneurs, Gender Equality, Gender Mainstreaming, Capacity, Knowledge and Research

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Duration

72 In Months

Agency Fee(\$)

848,580.00

Submission Date

9/25/2020

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCA-1	LDCF	8,932,420.00	21,880,000.00
	Total Project Cost (\$)	8,932,420.00	21,880,000.00

B. Indicative Project description summary

Project Objective

Reducing vulnerability and increasing resilience of vulnerable populations by supporting MSME*-driven innovation, transfer and large-scale deployment of adaptation technologies, products and services in the water, agriculture and energy sectors in Sierra Leone.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. Strengthening institutional and policy frameworks and coordination mechanisms supporting 'adaptation MSMEs ' to develop and deploy their technologies, products and services into the water, agriculture and energy sectors	Technical Assistance	1.1 National policies and institutions in water, agriculture and energy sectors support and engage adaptation MSMEs in delivering their mandates with gender mainstreaming	<p>1.1.1 The Directorate of Climate Change, SMEDA and support institutions in water, agriculture and energy sectors capacitated through improved tools, planning instruments (technology roadmaps and climate smart investment plans) and training to support and engage adaptation MSMEs in their operations</p> <p>1.1.2 Relevant policies and strategies, related to water, energy and agriculture are updated and incentives established, in a gender responsive manner, to promote the role of adaptation MSMEs in the respective sectors</p> <p>1.1.3 Inter-ministerial coordination mechanism established to promote the integration of adaptation and resilience through engaging adaptation MSMEs in the water, agriculture and energy sectors</p>	LDC F	757,000.00	1,187,335.00

1.1.4 Technology show-casing and testing labs for climate adaptation and resilience technology innovations established

1.1.5 Climate data collection to facilitate the development of insurance schemes and awareness-raising for insurance companies on climate-risk insurance

2. Growth and scale-up support for adaptation MSMEs in water, agriculture and energy sectors	Technical Assistance	2.1 Adaptation MSMEs grow their businesses and operations	<p>2.1.1 Adaptation innovation ecosystem development workshops and events organized</p> <p>2.1.2 Existing business development accelerators and incubators are trained to apply climate adaptation and resilience specific curriculum and run 6 business accelerators for adaptation MSMEs in water, agriculture and energy sectors</p> <p>2.1.3 At least 200 high-impact adaptation MSMEs are trained and coached through competition based business accelerators to grow their businesses and operations</p> <p>2.1.4 Business replication and partnership services (including tools, business blueprints and franchise models) provided to help regional and global adaptation MSMEs establish climate resilient business operations in Sierra Leone</p>	LDC F	900,000.00	4,001,500.00
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2. Growth and scale-up support for adaptation MSMEs in water, agriculture and energy sectors	Investment	2.2 Adaptation MSMEs secure funding to grow and scale-up their operations and projects	<p>2.2.1 More than 80 successful adaptation MSMEs in the water, agriculture and energy sectors receive tailored business growth support services and result-based seed funding to expand and scale-up their business operations (making special efforts to reach out to female-led entrepreneurs to achieve fair share of female-led and/or gender balanced MSMEs)</p> <p>2.2.2 At least 30 high impact and replicable projects by adaptation MSMEs involving the deployment of innovative adaptation technologies, products and services in water, agriculture and energy sectors receive tailored investment facilitation support services and secure funding</p> <p>2.2.3 SMEDA and existing FSPs trained to strengthen and roll out their MSME financing schemes that have a focus on adaptation</p>	LDC F	2,300,000.00	6,000,000.00
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3. Vulnerable groups access financing to acquire climate resilience and adaptation technologies, products and services in the water, agriculture and energy sectors	Technical Assistance	3.1 Demand and accessibility to financing for adaptation services increased amongst vulnerable groups	<p>3.1.1 Adaptation MSMEs participate in annual roadshows and are connected to aggregator platforms and cooperatives to raise awareness of the resilience and adaptation benefits of their technologies, products and services amongst vulnerable groups and communities in rural areas</p> <p>3.1.2 Methodologies and guidebooks for assessing and quantifying adaptation and resilience benefits of projects developed and widely disseminated</p> <p>3.1.3 Financial service providers (FSPs) and MFIs trained to assess and capture resilience and adaptation benefits of projects in their portfolios and pipelines</p>	LDC F	300,000.00	1,000,000.00
3. Vulnerable groups access financing to acquire climate resilience and adaptation technologies, products and services in the water, agriculture and energy sectors	Investment	3.2 FSPs provide lending to vulnerable groups to acquire adaptation technologies, products and services	<p>3.2.1 FSPs and MFIs supported to develop and improve de-risking and climate-adaptive guarantee instruments for lending to vulnerable groups</p> <p>3.2.2 FSPs and MFIs selected on a competitive basis to establish and operate revolving funds that support the acquisition of climate adaptation technologies, products and services by the most vulnerable populations (to reach at least 250,000 beneficiaries)</p>	LDC F	3,850,000.00	6,073,939.00

4. Project Monitoring and Learning	Technical Assistance	4.1 Regular project monitoring and documentation for learning and knowledge sharing	4.1.1 Regular project monitoring and gender dis-aggregated data collection for impact tracking conducted 4.1.2 Knowledge materials and documentation on best-practices developed and disseminated widely	LDC F	310,000.00	1,328,235.00	
5. Project Evaluation	Technical Assistance	5.1 Project Evaluation	5.1.1 Project mid-term review and independent terminal evaluation conducted	LDC F	90,067.00	300,000.00	
Sub Total (\$)					8,507,067.00	19,891,009.00	
Project Management Cost (PMC)							
					LDCF	425,353.00	1,988,991.00
					Sub Total(\$)	425,353.00	1,988,991.00
Total Project Cost(\$)					8,932,420.00	21,880,000.00	

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
GEF Agency	UNIDO	Grant	Investment mobilized	140,000.00
GEF Agency	UNIDO	In-kind	Recurrent expenditures	510,000.00
Private Sector	AECF	Grant	Investment mobilized	3,000,000.00
Private Sector	AECF	In-kind	Recurrent expenditures	500,000.00
Recipient Country Government	SMEDA	In-kind	Recurrent expenditures	1,730,000.00
Recipient Country Government	SMEDA	Grant	Investment mobilized	3,000,000.00
Recipient Country Government	EPA	In-kind	Recurrent expenditures	1,000,000.00
Private Sector	CRAFT	Grant	Investment mobilized	4,000,000.00
Others	PFAN (REEEP)	Grant	Investment mobilized	8,000,000.00
Total Project Cost(\$)				21,880,000.00

Describe how any "Investment Mobilized" was identified

Recipient Government -Investment mobilized was identified in close consultation with the recipient government agencies mentioned in the above table. Private Sector AECF – is expected to work with MSMEs supported by the project and help them mobilize additional funding in form of catalytic grant and early stage seed funding investments through their extensive networks. In particular, AECF will help MSMEs supported by the project in leveraging matching capital to expand and grow their businesses and hence reach out to more beneficiaries. - PFAN – will work with MSMEs supported by the project and provide them with investment facilitation services so that they can leverage investments to expand their projects(grants, debt, equity) from their global, regional and national private financing networks. Furthermore, PFAN (REEEP) has equally a focus on adaptation. This can be seen in their regular call for adaptation proposals (<https://pfan.net/pfan-adaptation-call/>). Thus, the project will enable a select group of MSMEs to take part in the PFAN (REEEP) adaptation-focused workshops and mentoring programs. PFAN (REEEP) can provide business and investment support. - Equity Bank/Raw Bank – is potentially providing long-term funding to incubated/accelerated MSMEs and can therefore provide matching capital - MSMEs – are also expected to raise additional equity funding into their businesses and projects - CRAFT - The Climate Resilience and Adaptation Finance, Technology Transfer Facility (CRAFT), as the first private sector climate resilience and

adaptation investment fund and technical assistance facility for developing countries is foreseen to provide co-finance as it has become an independent fund that has raised significant additional funds from markets.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNIDO	LDCF	Sierra Leone	Climate Change	NA	8,932,420	848,580	9,781,000.00
Total GEF Resources(\$)					8,932,420.00	848,580.00	9,781,000.00

E. Project Preparation Grant (PPG)

PPG Required



PPG Amount (\$)

200,000

PPG Agency Fee (\$)

19,000

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)	
UNIDO	LDCF	Sierra Leone	Climate Change	NA	200,000	19,000	219,000.00	
					Total Project Costs(\$)	200,000.00	19,000.00	219,000.00

Core Indicators

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	0.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
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Documents (Please upload document(s) that justifies the HCVF)

Title

Submitted

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female				
Male				
Total	0	0	0	0

Part II. Project Justification

1a. Project Description

1a. *Project Description.* Briefly describe:

1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description);

1. Sierra Leone is situated in West Africa and, despite substantial progress in recovery and economic development since the end of the civil war in 2001, it is one of the most vulnerable countries to the adverse effects of climate change, ranking in 151th out of 181 assessed countries according to the ND-GAIN Country Index^[1]. Over the past decades, the human, economic and environmental impacts of floods and mudslides have skyrocketed, causing the death of thousands of people, forcing the relocation of communities, and resulting in great economic and infrastructure losses. For example, during the floods and landslides of 2017, Sierra Leone reported a total livelihood loss of USD 5 billion in the water sector alone.^[2] Furthermore, the Ebola virus disease outbreak as well as the flooding of urban settlements are recent disasters that have confirmed the country's vulnerability ranking as the third most disaster-prone nation.^[3]

2. According to the IPCC 5th Assessment report (RCP 8.5, Ensemble), mean annual temperature are projected to rise by 1.69°C, annual precipitation will rise by 4.85 mm, and annual maximum 5-day rainfall will rise by 30.08mm by 2040-2059.^[4] With a ~7% increase of theoretical water holding with every degree Celsius, the potential for heavy rainfall and rainfall unpredictability is increasing.^[5] Consequently, floods and landslides, the most common natural occurrences will increase in intensity and frequency. These changes will undoubtedly impact rain-fed agriculture and livestock productivity. Under both a low and a high warming scenario, climate variability and change could lead to decreasing GDP per capita compared to a scenario without climate change. The decrease could be up to -5% in 2030 and growing up to -20% by 2050. Most dramatically, in a country once plagued by Ebola and now COVID, changes in flooding, rainfall patterns, and drought will also adversely affect human health by increasing the likelihood of particular diseases (e.g. cholera, diarrheas).^[6]

3. Sea level rise is also projected to threaten low-lying coastal Sierra Leone (e.g., Kroo Bay and Moa Wharf). Increased coastal flood events, coastal erosion, reduction in freshwater quality, population displacement, loss of property, reduction in groundwater resources, and reduced agricultural potential for coastal areas (e.g. mangroves) are expected impacts. Floods during the rainy season due to heavy precipitation and from storm surges along the coast are projected to increase. Natural hazard events will take a toll on agricultural production, infrastructure, people's homes, public health and biodiversity along the coast.

4. Rural communities suffer from water, food and energy insecurity, underlined by their dependence on rain-fed agriculture and natural resources-based livelihoods. Sierra Leone's natural resources are under pressure from population growth (2.2% annually) and fuelwood dependency. These and other pressures lead to high rates of deforestation, increased soil erosion and a rise in occurrence of landslides.

5. Projected temperature increases, more variable annual precipitation and increased variability of rainy seasons also affect the operation of Micro, Small and Medium Entrepreneurs (MSMEs) active in the water, agriculture and energy sectors. MSMEs form the heart of private sector activities in Sierra Leone, employing about 70% of the population.

6. **Food, Water and Energy security:** About 59.7 per cent of rural households in Sierra Leone are food insecure, compared with 25.1 per cent in urban areas. Sierra Leone is strongly dependent on imports of food staples such as rice, which according to latest UNCTAD figures amounted to 15% of total food imports, standing at USD 190 m in 2017. Agriculture, the largest sector in the economy, accounted for 59 per cent of GDP in 2016, 62 per cent of the labour force, and 22 per cent of export earnings. Agriculture is predominantly dependent on rainfall and will be increasingly water insecure unless interventions are made. Also, in the rural regions energy security is minimal; Electricity access reaches a mere 23% on average, with only 6% in rural areas and 56% in urban areas, having access mostly around the capital Freetown.

7. The number of those facing food, water and energy insecurity will increase due to the following projected climate impacts:

8. **Climate Risks for Food Security:** Temperature increase will cause an increased proliferation of vector-borne diseases, including those that will impact livestock and crop yields. Crop yields are also likely to decrease during projected increase in heavy rain periods. Reduced agricultural potential will be seen for coastal areas due to increased coastal flooding and erosion events. Increased rainfall will cause nutrient leaching and fungal growth due to high humidity. Increased erosion will lead to damage to land and infrastructure on farms and in pastures.

9. Due to these climate risks, the 2018 published Third National Communication (3NC) of Sierra Leone to the UNFCCC calls for increased support towards adaptation measures in agriculture, such as the establishment of adequate weather data for farming purposes, innovative approaches towards irrigation and to provide appropriate agricultural infrastructure and mechanization.

10. **Climate Risks for Water security:** Current and projected periods of drought are decreasing the amount of water available. Sea level rise is causing saltwater intrusion and reduced freshwater groundwater reserves. Increased risks of flooding will lead to damaged water infrastructure and increased health risks such as in increased propagation of water-borne diseases. It is noted in the Third National Communication (3NC) as well as the NAPA, that a water resources adaptation strategy should foresee, inter alia, the use of solar pumps for well water extraction, an improved planning of the use of river basins as well as effective monitoring and management of watersheds, which are crucial in maintaining water availability during floods and droughts.

11. **Climate Risks for Energy security:** Energy security will be adversely affected by climate change when events such as torrential rains, flooding and storms lead to severe electricity outages. Limited access to energy can cause dire consequences such as at hospitals during this period of COVID-19 and can reduce economic opportunities and income that would otherwise strengthen the resilience of vulnerable groups. Moreover, Sierra Leone's energy sector is dependent on the availability of biomass, such as firewood. Erosion and destruction by floods of wood biomass will prevent electricity access during heavy rainfall events.

12. Additionally, **COVID** is another challenge that Sierra Leone must contend with. The [case fatality ratio](#) for COVID-19 has been much lower than [SARS of 2003](#), but the [transmission](#) has been significantly greater, with a significant total death toll.^[7] In comparison to other LDCs such as Bangladesh, Sierra Leone's response was severely limited by resources, and it has the highest fatalities per capita.^[8] Currently, infection rates are rising, and for complex reasons. Researchers say that infections are hard to spot, owing to asymptomatic cases among the overwhelmingly young population. Sierra Leone's population is around 7.4 million (40 per cent youth). Poverty is widespread but is particularly acute and concentrated in rural areas, where 59 per cent of the population lives. The rural poverty headcount of over 66 per cent is double that of urban areas. Women and youth are particularly vulnerable due to challenges associated with access to land, skills and capital, as well as customs. In order to have more food, water and energy security as well as to be able to more effectively respond to COVID within Sierra Leone, MSMEs are crucial conduits that can be used for the integration and deployment of innovative technologies, products and services that can build adaptive capacities, particularly opportunities and income that would otherwise strengthen the resilience of vulnerable groups. Moreover, Sierra Leone's energy sector is dependent on the availability of biomass, such as firewood. Erosion and destruction by floods of wood biomass will prevent electricity access during heavy rainfall events. In order to have more food, water and energy security as well as to be able to more effectively respond to COVID within Sierra Leone, MSMEs are crucial conduits that can be used for the integration and deployment of innovative technologies,

products and services that can build adaptive capacities, particularly in rural regions. MSMEs by their very nature operate in very decentralized and remote areas and are able to provide services on a very local level. They already have infrastructure and business relationships with people in rural areas, that are crucial in COVID-19 situation where decentralized energy, water and food supply systems are the required copying mechanisms.

13. Another challenge is that Sierra Leone's health systems lack resources to protect staff and care for people with the disease. Transmission of the virus has become especially hard as it reaches impoverished communities without running water and electricity. There, people share latrines and wells, and go to markets regularly to purchase food that cannot be stored at home. Coronavirus is beginning to spread from the affluent to the poor, where social distancing is almost impossible.^[9] Shutdowns and trade disruptions owing to COVID-19 are damaging the economies of low-income countries. Current trends suggest that falling economies will translate into a reduction of US\$2 billion in the health budgets of all low-income countries between 2020 and 2024. World Bank now projects at least **2.5 percent** reductions in GDP in 2020, an estimated **30 million more people in extreme poverty** by 2021 compared to the April 2020 GDP projections, and 100 million more compared to the pre-COVID trajectory.^[10]

14. In order to have more food, water and energy security as well as to be able to more effectively respond to COVID within Sierra Leone, MSMEs are crucial conduits that can be used for the integration and deployment of innovative technologies, products and services that can build adaptive capacities, particularly in rural regions. This project is anchored on the role of MSMEs in delivering adaptation solutions, technologies and services for the water, energy and food sectors, since MSMEs play a very critical role in the economy. As established in the national MSME development strategy, MSMEs are an anchor of the society as they provide vital services to their communities, from food vendors, garden cohorts selling their products on markets to providing technologies in rural regions, such as mobile phones and pay as you go systems. These services are a sound basis for integrating adaptation and resilience technologies, services and products. As further described, MSMEs form the core of the domestic private sector, being present throughout all sectors of the economy and providing livelihoods to about 70% of the population. MSMEs main activities include the food and agro processing sectors as well as light manufacturing for the local market. In order to support MSMEs and vulnerable, rural populations to access adaptation technologies and services, various barriers have to be addressed.

Barrier 1: Limited national policy and institutional frameworks and coordination mechanisms to support and engage MSMEs in mainstreaming climate resilience and adaptation-oriented technologies, products and services in the water, agriculture and energy sectors

15. The Small and Medium Enterprises Development Agency (SMEDA) Policy (National SME Policy 2019) and MSME National Development Strategy do not actively promote mainstreaming climate resilience and adaptation technologies, services and products. Although there are policies in place that promote sustainable agriculture, water management and energy efficiency, they do not elaborate on how to support and engage adaptation MSMEs* to deliver their mandate. Thus, there is a need to establish a policy environment for the engagement of adaptation MSMEs that creates the demand and market-pull for technologies, products and services.

16. According to Sierra Leone's water and sanitation (WASH) policy,^[11] it is essential to keep stakeholders aware of sector problems to encourage exchange of solutions and experiences across sectors and to provide mechanisms for joint action. The lack of an effective cross-sectoral coordination, within the agriculture, water and energy sectors, in particular, has caused duplication efforts and a misallocation of available resources – as evidenced by a stock-

taking exercise cited within the National Sustainable Agriculture Development Plan 2010-2030. Given the interrelatedness of the water, agriculture and energy sectors, there are efficiency gains and opportunities for synergies that can be realized through an integrated approach. The lack of cross-sectoral coordination resulted in lost benefits and opportunities for MSMEs to expand their market share.

Barrier 2: Low awareness and appreciation of the benefits of climate adaptation and resilience-oriented technologies, products and services

17. Awareness of climate change induced events and their adverse impacts on the environment remain low within public and private institutions including MSMEs underlined by the fact that there is no reference to climate change in the MSMEs National Development Strategy. Although improved access to water and electricity are high on the national development agenda, government institutions still lack the know-how and capacity on how to deal with climate change adaptation, in particular the impact of climate change on delivering their mandates. Furthermore, they lack the tools and instruments on how to engage adaptation MSMEs to help them deliver their mandates. Specifically, these sectors are not sufficiently informed about how adaptation MSMEs can contribute towards mainstreaming adaptation and resilience technologies, products and services with multiplier effects, especially for vulnerable populations. As an example, the use of technologies for water conservation or drainage is generally very low, and hence the potential for irrigation remains largely unexploited and developed as a business opportunity. Subsequently, the lack of awareness of this business opportunity among Financial Service Providers (FSPs, such as Microfinance Institutes - MFIs etc) result in them being unable to tailor financial services to vulnerable populations, such as rural farmers that help them to deal with climate change adaptation. Equally, large banks are incapable of assessing and quantifying adaptation benefits of projects in their portfolio and determining the extent to which their operations are at risk to climate change.

18. The lack of awareness and appreciation of the benefits of climate adaptation and resilience-oriented technologies, products and services is particularly acute amongst the vulnerable communities who are mostly affected by climate change. To begin with, most vulnerable communities are located in rural and remote areas and they have limited access to climate information, and they have minimum interactions with adaptation MSMEs. In addition, they do not fully comprehend how various innovations like climate indexed insurance products help them to be resilient to climate change. Consequently, this lack of understanding of the benefits manifests itself in a low willingness to pay for services whose value is not fully recognized. Therefore, it becomes very important to create a platform where the concept of adaptation and its benefits are explained and also for adaptation MSMEs to promote their technologies, products and services and hence create a market.

19. Knowledge and expertise on adequate solutions providing climate adaptation benefits is still very low due to a limited availability of specialized training programs and curricula on climate change and climate adaptation in institutions of higher learning.

Barrier 3: Limited innovation and enterprise growth support to MSMEs that provide adaptation technologies, services and products

20. Overall, the adaptation ecosystem in Sierra Leone is very weak. Ecosystems players do not systematically work to support the growth and scaling up of innovative technologies, products and services by adaptation MSMEs. On the supply side of innovations, very early stage innovations, especially those that are developed in institutions of higher learning are not systematically identified and promoted. Consequently, the potential of such innovations is never realized. Other adaptation innovation ecosystem players like large corporations are not informed of the potential role of adaptation technologies, products and services in enhancing their resilience and hence do not even engage adaptation SMEs.

Some MSMEs in the country provide some adaptation technologies, products and services such as solar water pumping etc. In the first instance, these technologies, products and services are not specifically developed since they are not necessarily recognized as related to climate change adaptation by policy makers, vulnerable communities and the MSMEs themselves. Given that this sector has not been developed specifically, there are cases of mismatch between the available technologies, solutions and services and the real but unexpressed need of the users, especially vulnerable groups. As an example, most climate insurance service providers provide services only to population segments that can make monthly payments. Yet most vulnerable groups are farmers who only receive incomes annually. Furthermore, some of the technologies, services and products have not reached their full potential as have not been adapted into fit-for-purpose products and in some cases, they have not yet reached maturity.

21. MSMEs that have adaptation technologies, products and services in Sierra Leone require specialized training, coaching and mentoring to grow and scale-up their business. In particular, some of the adaptation MSMEs who provide adaptation technologies, products and services as a small part of their broader operations have not invested in growing and scaling the operations related to adaptation. Furthermore, MSMEs that have developed very innovative adaptation technologies, products and services (See Table 2 below for some examples of adaptation innovations) lack the business acceleration services that will support them in transforming their innovations[12] into marketable products. The limited access to expertise as well as market information hamper innovation and entrepreneurial activity. The country has very few accelerators and incubators in operation, none of which is focused on adaptation. They provide general acceleration services that are not palatable to the specific needs of adaptation MSMEs. It is therefore very important that accelerators and incubators in the country are trained on how to accelerate adaptation MSMEs. Institutions of higher learning including universities and research centers have limited capacity and testing facilities to offer dedicated innovation support, especially for developing climate adaptation solutions.

22. MSMEs act as hubs in society and are spread throughout the country reaching rural areas as well as being at the core of business in cities. However, MSMEs are not aware of adaptation as a business opportunity yet most adaptation technologies, services and products have multiplier effects that extend past economic growth in the long-term. In fact, there are limited facilities and policy support mechanisms that nurture adaptation innovation so that resilience can be built and expanded into the Sierra Leone economy. Existing adaptation innovations that are ready for the market are not supported to grow and expand because resilience benefits are not recognized and prioritized. Furthermore, MSMEs are not encouraged to expand their services to include and adopt innovative adaptation technologies, products and services as they lack appreciation of the business opportunities in the sector.

23. Furthermore, established adaptation MSMEs in other countries in the ECOWAS region are not supported to expand their businesses beyond their countries of origin, despite sharing similar climate change adaptation targets, similar economic activities (e.g., similar agriculture production systems) as well as commonalities in local languages across countries. In particular, adaptation MSMEs in other countries who have interest in expanding their operations in Sierra Leone face challenges in establishing their businesses due to difficulties in identifying appropriate partners and in handling regulatory requirements.

Barrier 4: Limited access to finance by adaptation MSMEs and vulnerable populations

24. According to the National Sustainable Agriculture Development Plan 2010-2030, about 50-60 suppliers of micro-finance are currently active in the country, supplying around 13,000 customers. Although about 70 percent of MSMEs have an account at a financial institution, less than 20 percent have received any credit.[13] The root causes of limited investments in MSMEs include: a) lack of formalization, b) low management capacity, c) the high cost of capital and d) strict loan requirements. In Sierra Leone, the bank interest rates for any loan are very high and vary from 26% to 36% per year. High interest rates have resulted in high default rates. Commercial bank loans to agriculture and agribusiness, in particular, are mostly short-term (up to 12 months) and long-term finance is not available in the market. This high interest rate and strict repayment schedules have an overall effect of limiting potential funding to

resilience and adaptation related projects that usually have long payback periods. The high interest rate is a particular challenge for new MSMEs that focus on resilience and adaptation-oriented technologies and solutions and need patient and non-dilutive capital to grow and expand their businesses. Local banks also require very high collateral guarantees before issuing a loan.

25. In general, the market for adaptation technologies and services is not developed. As such, adaptation MSMEs and the private sector in general face significant market entry barriers. Additionally, climate adaptation and resilience-oriented technologies in the water, energy and agriculture sectors are not systematically funded. This is mainly due to lack of appreciation of the resilience and adaptation benefits of projects that focus on these technologies. In particular, Finance Service Providers (FSPs) lack the tools and methodologies to quantify resilience and adaptation benefits of projects that use such technologies and are therefore unable to assess the extent to which these technologies and services contribute to the viability of projects. Similarly, while the demand for climate risk insurance is not immediate in Sierra Leone, insurance groups are lacking the data to assess risks of crop failure due to weather, such as trends in rainfall and other indicators. With the onset of climate change, this kind of insurance will become a crucial part of the puzzle for climate finance.

26. Vulnerable groups have limited access to finance because most Financial Service Providers (FSPs) and MFIs consider the poor and vulnerable groups as high risk and consequently charge very high interest rates (20% and upwards). This creates a vicious cycle where the most vulnerable lack of access to finance and technology, and therefore cannot access productive assets to repay loans. Furthermore, most farmers and women in rural areas do not have qualified collateral nor banking profiles, so they are automatically excluded from FSP and MFIs services. According to the World Bank, Sierra Leone women have unequal access to productive assets, finance and other services.

Barrier 5: Lack of access to credit and other support systems by women and youth

27. Women face additional barriers in accessing technologies and opportunities due to cultural and social norms, and gender imbalances of policies in Sierra Leone. Women do not have permanent land rights and cannot inherit land, and they are further discriminated in accessing credit, legal and other advisory services. Female employment in the formal sector is extremely low and women dominate the informal sector with poor working conditions and limited social protection. While women are instrumental in driving the agriculture sector's production, they often are marginalized in accessing opportunities such as training and access to income diversification activities.

2) the baseline scenario and any associated baseline projects,

28. The National Adaptation Plan of Action (NAPA) of Sierra Leone highlights the country's significant vulnerability to climate change and emphasizes on the need to build adaptation and resilience towards thunderstorms, shifting rainfall patterns, landslides, and especially droughts and floods. Other hazards described include the rise in temperature and sea levels which cause loss of property, displace populations and result in coastal flooding as well as decrease water availability and contribute towards disease outbreaks. All of these hazards represent a direct impediment to the development of the domestic economy, which heavily relies on agriculture, and consequently water and energy resources.

29. The Medium term National Development Plan (MTNDP) 2019-2023, recently issued by the government of Sierra Leone, has stipulated four main goals: i) A diversified, resilient green economy; ii) A nation with education, empowered and healthy citizens capable of realizing their fullest potential, iii) A society that is peaceful, cohesive, secure and just; and iv) A competitive economy with a well-developed infrastructure.

30. The National MSME Development Strategy (2013), relevant priorities: improving the capacity of MSMEs by increasing the number and variety of avenues by which small business owners and managers build business knowledge and skills; and increasing the number of MSMEs that receive formal financial services by decreasing the significant gap between the market that MFIs can serve and the market served by commercial banks.

31. The entrepreneurial spirit in Sierra Leone is manifested by its high growth rate of MSMEs in the past years and the growing support for MSMEs. The government's 2014 Statement of Economic and Financial Policies established the framework for a MSME Fund, a revolving fund, to support business entrepreneurial skills, innovation, expansion, and development, and to improve access to credit for women and youth. It is expected to be launched by SMEDA at the end of 2020. It will provide a low-interest (single digit 9%) rate financing to MSMEs in Sierra Leone. While the initial operations stage of the Fund will not be sector specific, it is hoped that in the long term, the Fund will introduce sector-specific products. More details will follow during the PPG phase.

32. The 2015 Statement of Economic and Financial Policies also adopted a policy that 30 percent of all government-funded procurement transactions should go to women to promote empowering women, especially women-owned businesses. The SMEDA (Small and Medium size Enterprise Development Agency) was only recently established in 2017. SMEDA's role is to facilitate, assist and provide market access and business linkage opportunities to SMEs in order to enable them to compete successfully in national and international markets.

33. Furthermore, incubators and accelerators have been created to support MSMEs in transforming their business models, products and technologies into sustainable and profitable enterprises. The main hubs/accelerators are listed below.

- **SensiTech Hub**, a social enterprise offering incubation to young people, is focusing on creating an open community space where technology and entrepreneurship collide and thus build the next generation of innovative solutions. Only recently, SensiTech Hub has organized a workshop on "Responding to the climate change crisis in Sierra Leone" stakeholders to provide knowledge and best practice sharing exercises.

- **Innovation Axis** is Sierra Leone's first fully functioning incubator and accelerator framed around the formation, validation, scaling and growth stages of start-ups in the country. It builds on the experience from a worldwide start-up scene, drawing on best practices, partnerships, mentors and investors to support business growth. Its core focus is on exponential technologies, education and agriculture tech as well as on social innovation, femtech and fashion.

- **"Freetown Pitch Nights"** are organized to provide entrepreneurs in Sierra Leone with the opportunity to pitch their ideas in front of potential investors. This initiative is co-organized by GEN-SL and the Sierra Leone Brewery that is part of Heineken.

- The **Aurora Foundation** is focusing on business support services, being the latest addition to Sierra Leone's innovation centers. With its launch in late 2019, the foundation is offering a selection of business skills and support services to micro and small businesses by e.g. digital business trainings.

- **UNDP Accelerator Lab, Sierra Leone** is a lab using experiments to promote innovation adoption for local contexts. The aim of the lab is to accelerate development programming

34. A preliminary stocktaking of existing finance institutions shows that there is an infrastructure and willingness of the latter to engage in financing innovative business solutions.

- **Apex bank** is a commercial bank headquartered in Sierra Leone with several regional branches that has a focus on rural finance. They have agri-business products and an expansive reach throughout Sierra Leone. (<http://apexbanksi.com/>)

- **Eco Micro bank** currently helps over 2 million low income individuals through support to other Microfinance Institutions with one of the bank's core sectors being loans to agriculture, forestry and fishery sectors.

- **Village Capital** supports agriculture entrepreneurs and innovators to have the potential to raise productivity for small farmers and food security, improve and secure the value chain, and strengthen links to markets, all while generating job growth and local economic development. Village Capital also initiated an innovative programme, VilCap Communities Africa, that aims at accelerating the flow of capital to early stage companies in sub-Saharan Africa,

including Sierra Leone.

BRAC Intl, an international development organization, is the largest microfinance provider by the number of clients in Sierra Leone, operating in 13 out of 16 districts. One of its programmes focuses on Agriculture, Food Security and Livelihood (AFSL) to improve food and nutrition security and empowering women and youth across the value chain.

Union Trust Bank (UTB), the only indigenous private bank in Sierra Leone which targets local MSMEs and women owned businesses in agriculture and energy.

Business as Usual (without project intervention)

35. As evident, in the above stocktaking of existing innovation accelerators, business growth support services and financial service providers, the innovation and entrepreneurship ecosystem in Sierra Leone has limited focus on climate adaptation technologies, products and services. In absence of this project, innovation will be stifled in the adaptation space. MSMEs would continue to have limited support to focus on adaptation. An enabling environment for financing of adaptation MSMEs to scale up their businesses and a MSME policy framework that recognizes adaptation would be lacking. There would also be limited coordination mechanisms and policies to engage MSMEs to mainstream climate resilience. SMEDA and other MSME focused organizations would focus on green growth in general but not proactively on adaptation. These organizations would also not try to capitalize on synergies across ministries active in the water, energy and agriculture sectors to support cross-sectoral innovations that build resilience and attack water, food and energy insecurities. Nature Based Infrastructure interventions would continue receiving only external donor support only (rather than homegrown support) and would remain a patchwork of measures used to improve natural resource management.

36. Existing accelerators / incubators and testing labs would continue operations without prioritizing innovation in adaptation and would continue to lack the capacities to transform adaptation technologies, products and services into marketable products. Without an understanding on how to quantify adaptation and resilience benefits of projects, FSPs would not have the capacities to tailor financing (seed and business growth capital) to support adaptation MSMEs to grow nationally and regionally.^[14] Still only 20% of MSMEs would have access to credit, and none for adaptation specifically.

37. On the local level, there would be limited awareness and capacities to acquire adaptation technologies by rural populations. Vulnerable communities including woman and youth who are most impacted by climate change impacts would not have access to safety nets and diversified livelihoods (such as MFI products) to withstand climate change impacts. They would not be able to voice their needs on what kind of adaptation measures can improve their productivity in a sustainable way, such as women who manually cultivate in the agriculture sector.

38. In a post COVID world, there would be limited means to increase nationally-driven country resilience to combat disease proliferation without donor support for innovation. Women and youth would continue lacking skills and capital to use adaptation innovations, exploit value chains and increase asset bases.

39. Fortunately, UNIDO has wealth of knowledge and experience in developing MSMEs, regional experience in SSA and its strong partners, that will be able to support this project. In particular, UNIDO will leverage its partnerships are follows:

a. The **Africa Enterprise Challenge Fund (AECF)** is the most active fund for SSA based green investments. They invest in many firms but with very small capital (often in the form of grants) per each firm. AECF has a record in operating and supporting MSMEs in Sierra Leone with a focus on agribusiness development, and seek to expand their portfolio for adaptation MSMEs. UNIDO and AECF have since established an MoU to collaborate on developing climate technology industries across SSA.

b. The **Private Financing Advisory Network (PFAN)**, hosted jointly by UNIDO and the **Renewable Energy and Energy Efficiency Partnership (REEEP)** is a global network of climate and clean energy financing experts that offer business coaching and investment facilitation to entrepreneurs developing climate projects in emerging markets. The experts in the REEEP PFAN network offer personalized one-on-one coaching and targeted introductions to investors, providing a fast-track to commercial investment.

c. UNIDO and UNEP are leading the transfer of climate technologies, especially adaptation technologies through hosting the **Climate Technologies Centre Network (CTCN)**. The CTCN programme recently added a new financing opportunity for the most climate-vulnerable communities under the Adaptation Fund’s overall Innovation Facility, which includes a recently launched separate innovation grant funding window that is available to accredited national implementing entities (NIEs). The Adaptation Fund also recently launched new grant funding windows to accelerate project scale-ups and disseminate knowledge of effective adaptation actions

d. The project will have strong coordination mechanisms with the regional **Adaptation SME Accelerator Project (ASAP)**. During consultations between UNIDO and the Lightsmith Group, it was agreed to link ASAP’s activities with regard to methodologies and adaptation framework for MSMEs to accelerator programmes will be updated to have an adaptation focus. Successful MSMEs which are identified at these adaptation-focused accelerators will participate at regional convenings under ASAP Project.

e. Sierra Leone is part of the Economic Community of West Africa States (ECOWAS). In the ECOWAS region there are very few climate-focused accelerators, namely the **Ghana Climate Innovation Centre (GCIC)** and **Nigeria Climate Innovation Centre**.

f. The project will work with the international climate-focused accelerator, **Climate-KIC**.^[15] Climate-KIC will share innovation ideas and could potentially collaborate with exchange programmes. Climate-KIC will work with the project to build a supportive MSME ecosystem for the adaptation space that will train young innovators, develop corporate relationships, provide investor introductions.

40. Via the regional partners aforementioned, the project will create an enabling environment for Sierra Leone MSMEs to expand in the region and vice versa. Regional MSMEs can act as models for business strategies or can even be syndicated in Sierra Leone.^[16] As an example, a regional company called ESOKO (www.esoko.com) that was supported by the GCIC provides digital services for farmers, providing weather forecasts, agronomic advice, market linkages and insurance coverage and expressed interest to expand their operations to Sierra Leone. Another example for the successful large scale deployment of adaptation innovations is the cold hubs fridge, which is a “plug and play” modular, solar-powered walk-in cold room, for 24/7 off-grid storage and preservation of perishable foods allowing the most vulnerable population in remote regions to reduce post-harvest loss (<http://www.coldhubs.com/>).

41. In addition to the aforementioned initiatives and the coordinating projects listed in Section 5, this project will build upon experiences and lessons learned from the baseline projects mentioned in the table below.

Table 1 indicates how the project will provide additionally from baseline projects.

Project Title	Amount, Time-frame	Source of Funds	Scope	Additionality
Agricultural Va	101 m	IFAD	- Invests in agricultural mechanization, irrigation	· Work with the farmer field schools to market and disse

Value Chain Development Project (AVCD)			<p>and water management, strengthening and climate-proofing rural infrastructure through the rehabilitation of feeder roads and warehouses to improve product drying and storage capacity.</p> <ul style="list-style-type: none"> - Builds the capacity of smallholder farmers through farmer field schools - Provide farmers with credit for their investments in smallholder farms - Focuses on three crops: rice, cocoa and palm oil, 	<p>climate adaptation technologies</p> <ul style="list-style-type: none"> · Work with SMEDA and support their new MF product to provide financial support for quality inputs and mechanized farming services · Provide technologies and solutions for improved performance and organization of agriculture, water and energy value chains
Arbaro Fund – Sustainable Forestry Fund	25 m, 2020-2033	GCF	<ul style="list-style-type: none"> - Afforestation or reforestation degraded land and protecting attached conservation areas of natural forest - Establish new carbon sinks and contribute to reduced emissions from deforestation and land use change. - Enable SL to achieve its climate targets from its INDC 	<ul style="list-style-type: none"> · Support GCF’s adaptive management practices with Nature-based Infrastructure solutions: • Support Adaptation MSMEs that contribute to reduced vulnerability of near-by natural forests and other natural ecosystems by soil conservation, improved crop rotation, and enhanced watershed management and by providing ecological corridors. · Highlight adaptation MSMEs that can 1) provide alternative livelihoods and 2) promote out-grower schemes, where communities in the proximity of a forest plantations will be trained to apply modern silviculture to their own land, thus providing several benefits such as additional and diversified income, economic empowerment and improving rural capacities.
Energizing Development (Endev) Project	USD 27 m Global (26 countries)	GIZ	<ul style="list-style-type: none"> - Provides better access to a sustainable, modern, reliable, affordable, socially responsible and environmentally friendly energy supply - Seeks to introduce sustainable solar energy systems, to establish functioning markets for PicoPV products 	<ul style="list-style-type: none"> · Expand marketing and deployment of successful products such as solar lamps, solar dryers and solar energy systems for household use · Propose additional adaptation technologies and solutions related to renewable energy and energy efficiency
Securing Water for Food (SWFF) Program		USAID	<ul style="list-style-type: none"> - Improves access to water for food innovations - Enhancing access to innovations that help farmers grow more food with less water - Improving water storage practices 	<ul style="list-style-type: none"> · Promote existing technologies that have increased agriculture production and increased water efficiency / storage · Demonstrate successful practices with the roadshows

			<ul style="list-style-type: none"> - Increasing the use of saline water and soils to grow and process food. 	
Promoting Climate Resilience in the cocoa and rice sectors as adaptation strategy in Sierra Leone	9.9 m, 2019 - 2025	IFAD and Adaptation Fund	<ul style="list-style-type: none"> - Testing integrated climate resilient rice and cocoa production approaches - Integrating environmental, pest and water management as well as climate-proofed infrastructure to improve access to markets and to reduce post-harvest losses - Targeting 35,000 smallholder farmers and 10,000 rice producers, 5,000 cocoa producers, of which at least 40 percent will be women and 40% young people. 	<ul style="list-style-type: none"> · Work with IFAD to promote and highlight climate resilient rice and cocoa production technologies, innovations and services (e.g., varieties, cropping systems, storage) · Support MSMEs that focus on the cocoa and rice sectors to understand and integrate adaptation · Support to smallholders to have access to financing to purchase the adaptation innovations
Creating Peaceful Societies through women's improved access to management of natural resources...	1.5 m, 2019 - 2020	FAO and ILO	<ul style="list-style-type: none"> - Land related disputes and discriminatory practices against rural women's access and ownership of land and other productive assets are reduced and women's decision making increased at all levels - Women are empowered to increase their agricultural economic opportunities and develop women-led cooperative businesses 	<ul style="list-style-type: none"> · Support to increase inclusive participation of women in decision-making about land · Provide training and financial services for women to engage in the agriculture sector · Enable women to pursue their entrepreneurial agribusiness ideas by prioritizing them in Adaptation Accelerators **
Boosting Agriculture and Food Security	5 m, 2017 to 2023	EU via UNIDO	<ul style="list-style-type: none"> - Increasing agriculture institutional capacity for formulating food security strategies and sector policies - Enhancing cashew, cocoa and coffee productivity, income generation for smallholders and exports - Fostering sustainable agricultural diversification by disseminating farming techniques adapted to climate change and ensuring that smallholders have fair market linkages 	<ul style="list-style-type: none"> · Use new testing labs to extend agricultural research · Promote technologies that support value addition in agribusiness · Foster sustainable agricultural diversification by disseminating farming techniques adapted to climate change and ensuring that smallholders have fair market linkages
Sierra Leone Agro-Processing Competitiveness Project	10 m, 2018 - 2023	World Bank, Ministry of Trade	<ul style="list-style-type: none"> - Investing in catalytic technologies such as agricultural mechanization, irrigation and water management - Strengthening sustainable biodiversity management and conservation 	<ul style="list-style-type: none"> · Highlight adaptation technologies and practices (such as soil management - NBI) that will enhance the agro-processing competitiveness and growth of agribusiness firms · Support specific MSMEs in agriculture, water and ener

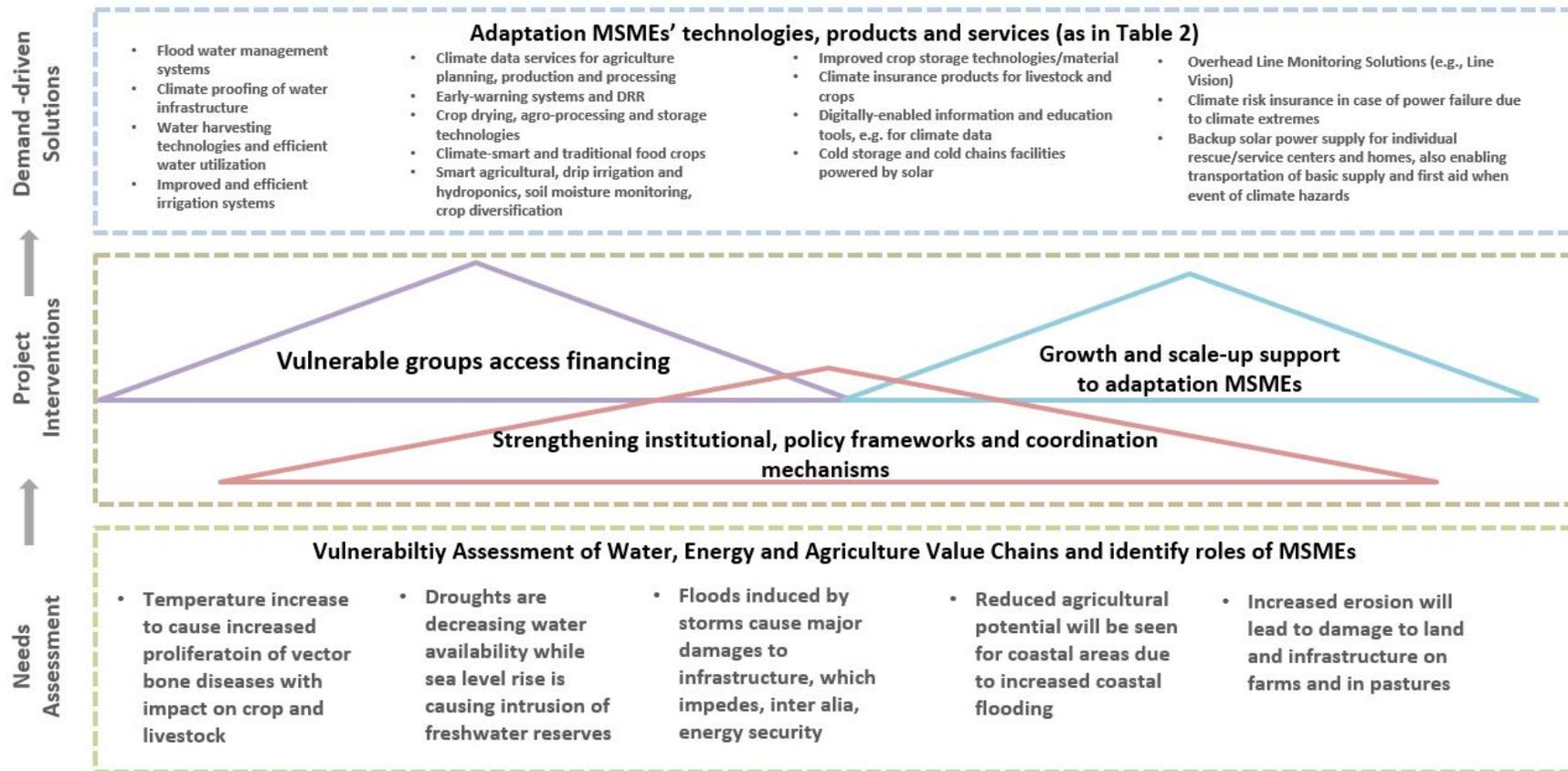
			- Increasing the production of other crops, such as vegetables, to ensure diversification.	gy value chains to perfect adaptation innovations for increased productivity
Quick Action Economic Response Project	Approx. USD 166 m (not all committed)	SL Govt	- Building and maintaining an adequate stock level of essential commodities at stable prices	<ul style="list-style-type: none"> · Enable better response to COVID by promoting energy efficient technologies for hospitals and innovations that support clean water for proper hygiene · Extracting safety net from working with safety nets for vulnerable groups.

3) the proposed alternative scenario with a brief description of expected outcomes and components of the project;

42. In order to address the aforementioned barriers and build on the existing initiatives (Table 1), the proposed project seeks to transform the market for adaptation technologies, products and services by nurturing and promoting technological and business model innovations that address the climate adaptation needs of vulnerable groups in Sierra Leone. The project will also support vulnerable populations to access financing for acquiring adaptation technologies, products and services from local financial services. The overall project objective is to increase the resilience of vulnerable populations through an integrated approach that accelerates the development and adoption of adaptation technologies, products and services in the water, agriculture and energy sectors. Ultimately, the project will create an ecosystem where adaptation MSMEs can provide their technologies, products and services and vulnerable groups can easily access financing to acquire these resilience-building technologies and services.

43. The proposed project interventions will build the capacities of existing accelerators and will integrate an adaptation-focused curriculum and have an open-innovation format to catalyze more adaptation MSMEs to transform and scale-up their innovations and operations. Furthermore, local adaptation MSMEs will be trained to adapt technologies and services developed in other countries and replicate them in line with local markets and adaptation needs. The formulation of business partnerships with international and regional MSMEs will be explored. Business growth and investment facilitation services will ensure that identified MSMEs will be nurtured to develop into commercial businesses with scalable solutions for large-scale deployment of adaptation solutions. As shown in figure 1 below, MSMEs already play a role in delivering goods and services with respect to the water, energy and food value chains, especially in the rural areas. Therefore this project would seek to make use of this infrastructure, market reach and service delivery capability to integrate adaptation technologies and services within operations of existing MSMEs.

Figure 1 - The relevance of MSMEs in delivering adaptation services, technologies and products along the water , energy and food value chains



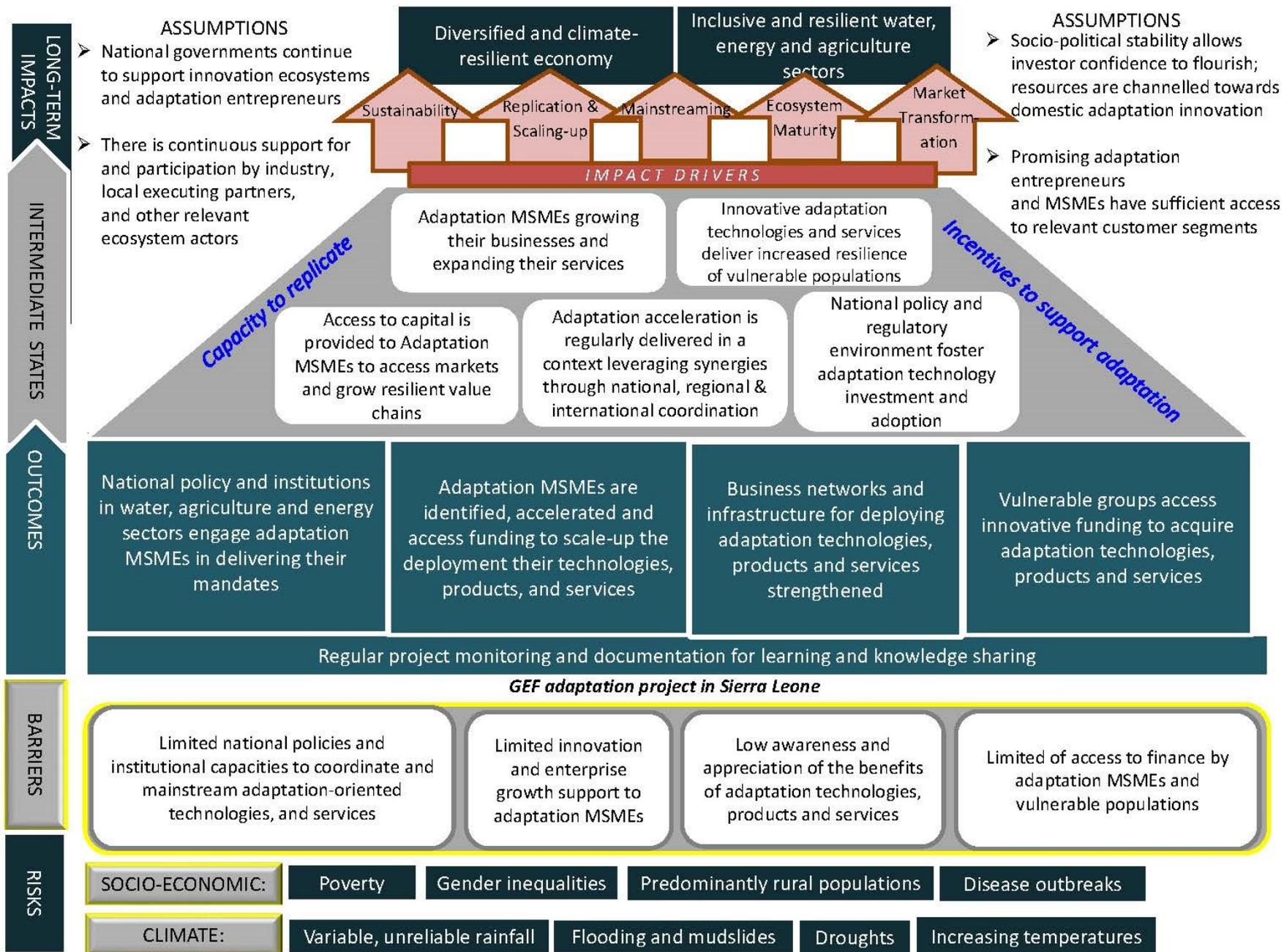
44. To ensure market accessibility and affordability of adaptation solutions for vulnerable populations, the project envisages awareness raising activities as well as improved provision of financial services to vulnerable groups. The project will train financial service providers on assessing and evaluating adaptation benefits and risks. In addition, Financial Service Providers (FSPs) will be supported in developing and operating revolving funds that will enable the vulnerable groups to borrow and acquire adaptation technologies, products and services. Therefore this project will catalyze transformational change in the adaptation market, where policy makers will collaborate with financing institutions and global partners to provide catalytic funding to adaptation MSMEs and support government to provide policy incentives for the dissemination of adaptation solutions.

45. To ensure sustainability, the Directorate of Climate Change, SMEDA and others relevant ministries / institutions working in the water, energy and agriculture sectors will be capacitated to mainstream resilience and innovation into their plans and policies and to engage and support adaptation MSMEs in delivering their mandates. The Directorate of Climate Change will also be tasked with coordinating all adaptation innovation work and in guiding the ministries of water, agriculture and energy to engage adaptation MSMEs to deliver their mandates in an integrated manner.

46. Within the past decades torrential rains have increased drastically in the regions of Bonthe and Port Loko. These rains have caused floods which have had damaging effects to infrastructure. Next to severe damages and losses, these floods have increased risks for epidemic outbreaks. Particularly in the district of Port Loko, such floods have had an impact on rice crops destroying planted fields and thereby decreasing food availability in the region. Additionally while floods are destroying infrastructure and agriculture throughout the country, including these two regions, annual rainfall has decreased by 305mm in Port Loko and 155mm in Bonthe between 1981 and 2018. Such a decrease has taken a toll on the farming population especially in rural regions, as most of the crops are dependent on seasonal rainfall. Therefore, this project will address such climate change adaptation issues in the target regions of Bonthe and Port Loko by striving to establish a market for adaptation technologies, innovations and services that enable resilience building to an increase in rainfall intensity and a decrease in overall rainfall.

47. The project Theory of Change (Figure 2: TOC) is illustrated in the figure below. In summary, Component 1 enables the groundwork for institutional support and coordination for adaptation innovation. Components 2 and 3 will together stimulate both demand (Component 2) and supply (Component 3) sides for scaled and effective deployment of adaptation-oriented solutions with an integrated water, energy and agriculture approach.

Figure 2: Theory of Change – Sierra Leone, UNIDO-GEF project



Component 1: Strengthening institutional and policy frameworks and coordination mechanisms supporting 'adaptation MSMEs to develop and deploy their technologies, products and services into the water, agriculture and energy sectors

Addressing Barrier 1: Limited national policy and institutional frameworks and coordination mechanisms to support and engage MSMEs in mainstreaming climate resilience and adaptation oriented technologies, products and services in the water, agriculture and energy sectors

Addressing Barrier 2: Low awareness and appreciation of the benefits of climate resilience and adaptation oriented technologies, products and services

48. The project will strengthen the capacities of the Directorate of Climate Change (DoCC), SMEDA and other key institutions in the water, energy and agriculture sector to integrate adaptation-oriented innovation into planning and policies by supporting and engaging adaptation MSMEs. The National MSME Development Strategy (2013) will be updated to integrate and promote the role of adaptation MSMEs in promoting resilience in the water, agriculture and energy sectors. The Small and Medium Enterprises Development Agency (SMEDA) Policy (National SME Policy 2019) and MSME National Development Strategy will be updated to provide incentives to support MSMEs for adaptation solutions. They will establish an inter-ministerial coordination mechanism involving ministries responsible for water, agriculture and energy so as to promote integration of adaptation and resilience through engaging adaptation MSMEs in the specific sectors. The project will support the line ministries in developing policies, regulations and appropriate financial incentives related to water, energy and agriculture sectors that will support the dissemination of adaptation solutions. This will ensure that adaptation MSMEs have no gaps in support and will promote synergies and larger market opportunities for the adaptation MSMEs. The platform will provide services that include improved tools for cross sectoral planning and formulation of priority actions for climate adaptation with an integrated water, energy and agriculture approach and engaging adaptation MSMEs. In order to incentivize needed investments and private sector engagement in climate resilience and adaptation building, policy guides and associated technology roadmaps will be developed. This will guide and stimulate the development of adaptation oriented industries, and inform on opportunities in emerging markets for businesses and investors equally.

49. To ensure sustained buy-in especially by the vulnerable populations, technology showcasing and testing labs will be established to showcase innovative adaptation technologies, products and services and create continued market demand. As there are many well-formed tertiary educational facilities in Sierra Leone, universities laboratories will be enhanced to serve as adaptation innovation testing labs. Amongst others, potential partners would be the University of Sierra Leone and the University of Njala, located in Freetown. The University of Sierra Leone's Fourah Bay College is the country's main tertiary education facility for Engineering and thus can offer a substantial input in running a testing lab on adaptation technologies, services and products. The Njala University has three research and teaching laboratories with well-trained staff and sophisticated equipment, which can be used to interpret, and analyze various ecological samples to support monitoring and evaluation of adaptation innovations. On the identification of technologies, input could be sought from staff of the Ernest Bai Koroma University of Science and Technology, which hosts the Faculty of Agriculture and Natural Resource Management. All partner universities as well as the exact locations of the testing labs will be defined during the PPG phase.

50. Furthermore, Component 1 will include climate data collection as a public good by the Meteorological Division to support and validate adaptation innovations and services and to support the development of future insurance schemes for the most vulnerable.^[17]

Component 2: Growth and scale-up support for adaptation MSMEs in water, agriculture and energy sectors

Addressing Barrier 3: Limited innovation and enterprise growth support to adaptation MSMEs in the water, agriculture and energy sectors

Addressing Barrier 4: Limited access to finance by adaptation MSMEs

51. Under this component, adaptation MSMEs will receive specialized training and technical assistance to help them understand and access financial services such as microfinance products for improving their innovations. Successful adaptation MSMEs will receive specialized business growth support and result based seed funding to grow their businesses. Through these interventions, adaptation MSMEs will improve their businesses and secure funding to scale-up the delivery of technologies, products and services in the water, agriculture and energy sectors.

52. Initially, an assessment of the adaptation innovation ecosystem will be conducted in order to understand the ways in which adaptation MSMEs can best be supported. Adaptation ecosystem building activities such as trainings and entrepreneur-investor meetings will be organized regularly. Based on outlined climate change impacts and vulnerabilities in the NAPA, INDC and 3NC for the water, agriculture and energy sectors, the project will identify best-practice examples and best available technologies, which can create clear climate adaptation benefits and have high replication potential. The selection criteria for climate adaptation technologies and business models will be developed around market assessments and by using the Lightsmith SME Adaptation Taxonomy (See Annex D) (https://lightsmithgp.com/wp-content/uploads/2020/09/asap-adaptation-solutions-taxonomy_july-28-2020_final.pdf). By establishing Adaptation Innovation Calls, [18] technology innovations with high-impact potential in the area of climate change adaptation will be admitted into competition-based accelerator programmes at existing accelerators. The goal of Adaptation-focused Accelerators will be to formalize the MSMEs and help them grow and expand their operations. The acceleration and enterprise growth support provided by the project has an overall effect of driving adaptation MSMEs towards formalisation, and scaling up. Accordingly as part of SMEDA's cofinancing contribution Component 2 will also focus on formalizing the Adaptation MSMEs to help them grow and expand their services so that they can access SMEDA services such as the SMEDA MSME fund. SMEDA's mandate will be to guide them to secure registration that is recognized by SMEDA and other FSPs. Once they are officially registered, the MSMEs can have access to SMEDA and MSME financing provided by other FSPs. In particular, the accelerations will inherently steer them towards finding adaptation solutions that can be integrated into their operations and services. In this way, the MSMEs will be able to access financing facilities as recognized enterprises, in particular the SMEDA MSMEs low-interest financing product currently under development.

53. The project will also ensure that the MSME operations / infrastructure are resilient: business plans will be mandated to reflect the realities that climate shocks can and will disrupt adaptation technology proliferation. Training to be supported to MSMEs will ensure that their business practices can be adaptive to adjust to the climate risks at hand. For instance, if a water conservation technology is employed but flooding becomes more problematic, the MSME will be guided to reflect these risks in their plans and to have mitigation measures such as robust technologies that can withstand flood events. By providing the tools for MSMEs to identify risks and mitigation measures, it will be more likely that their ideas will be used in the long-run throughout Sierra Leone.

54. Lessons from Climate-KIC and Climate Innovation Centres (CIC) in Nigeria and Ghana [19] will be instrumental in how to successfully support adaptation MSMEs. Through partnerships, the project will invite some adaptation-focused MSMEs from Climate-KIC and CICs to demonstrate good business models and assist entrepreneurs and MSMEs in having commercially successful business models. The project will work with these regional accelerators to exploit common trainings, facilitate corporate relationships and investor introductions.

55. The project will use ASAP's Accelerator Taxonomy to measure adaptation results and to identify high-impact adaptation-oriented innovations. In coordination with the GEF-World Bank Sustainable Cities Impact Program (SCIP) (**Nature Based Infrastructure (NBI)**) such as innovative water harvesting schemes and water/energy efficient irrigation systems will be stressed as critical adaptation solutions that adaptation MSMEs can develop further and adapt to their operations. Furthermore, a methodology for accelerating adaptation MSMEs will be adopted from regional the GEF project: Adaptation SME Accelerator Project (ASAP) which is executed by the Lightsmith group. UNIDO and Lightsmith group have agreed to incorporate the developed methodology by Lightsmith group under the ASAP programme by the national accelerator programme to ensure alignment and consistency.

56. Existing accelerators such as Innovation Axis will be capacitated to highlight adaptation-focused solutions. Existing accelerators will be supported to have an Adaptation Innovation Call after they receive training on the SME Adaptation Taxonomy. They will have to submit an application showing how they will tailor their existing accelerator to have Adaptation-specific calls for MSMEs. SMEDA and the EPA will decide which accelerators will receive financing for Adaptation-focused programmes based upon criteria to be defined during PPG. At least 3 different accelerators will be chosen to ensure that there is a diversity in the Adaptation Accelerator Programmes offered. This will minimize delivery risk.

57. Through the integration of an adaptation-focus into existing accelerators, the project seeks to replicate identified international best-practices and successful technology applications for Sierra Leone. This will be achieved through pairing established enterprises with local entrepreneurs to develop localized business models ensuring high replicability and scaled deployment. This will be facilitated through manuals, tools and business blue prints proven to be profitable. The accelerator programme will furthermore allow open-innovation applications to propel the potential of the youth and women innovators towards the market and investments. This two-fold approach of replication and open-innovation accelerators will deliver a pipeline of innovative technologies and services which will generate the expected climate adaptation results.

58. It is expected that the project will conduct 6 cycles of annual competitions at the end of each year enabling one year of set-up and capacity-building / marketing for the accelerators. Collaboration with ASAP will provide an opportunity for successful MSMEs to participate in regional and global events and plug into a regional and global network of businesses. Through a staggered selection process, MSMEs focused on adaptation innovations will be progressively trained to have effective business models. Initially, a total of 200 MSMEs will be selected during Adaptation Innovation Calls at all accelerators. They will receive training, coaching and mentoring. Subsequently, at least 80 MSMEs will be chosen to receive business growth support via a private sector-focused mentorship programme and will receive seed funding (for MSMEs). Actual funding amounts to companies and the combination of repayable and non-repayable loans will be determined based on the business capacity of the MSME to manage funds. The project will work with existing FSPs including commercial banks, MFIs and funds who can provide seed funding, credit and/or guarantees schemes to select adaptation-focused entrepreneurs. BRAC has already benefitted thousands of women and entrepreneurs with micro-loans for groups and small enterprise loans for individuals. Due to numerous years of experience and work with rural clients, these FSPs as well as others that will be targeted will have sufficient core capacity for training on adaptation, management of new credit lines (brought by the revolving fund) and provision of services targeted to rural-focused MSMEs and cooperatives. They will also be trained to have adaptive financing products for adaptation MSMEs considering climate risks.

59. Ultimately, a total of 30 high-impact and replicable projects by adaptation MSMEs involving the deployment of innovative technologies, products and services will receive tailored investment facilitation services so that they can secure financing for their projects. Woman and youth led and focused MSMEs will be highlighted in annual competitions for adaptation innovation. Awards such as 'Best Woman Entrepreneur in Adaptation' will be distributed and part of the EPA's Environment Care Awards[20].

60. The acceleration of these technology innovations, business growth and investment facilitation services will ensure development of economic sound businesses as well as creation of effective market linkages for deployment of adaptation technologies, products and services. The project will leverage UNIDO's strong connection of adaptation MSMES and their projects to Private Financing Advisory Network (PFAN) (REEEP) who will offer one-on-one mentoring and targeted introductions to climate-focused investors at national, regional and global levels. The project will also link enterprises with Climate-KIC, the CTCN and the African Enterprise Challenge Fund (AECF) to provide experts to support business plan development, post-acceleration technical trainings and seed funding. The project will blend the CTCN and AECF financing and potentially CRAFT funding with that of commercial lenders so that adaptation MSMEs can receive prioritized financing for scaling up.

61. During the PPG phase, selection criteria will be further elaborated and direct climate adaptation impacts in short-term, medium and long term will be determined based on a thorough Environmental and Social Management Plan. The selection criteria will be based around key measures including: innovative climate adaptation solutions with strong catalytic and multiplier effects; substantial potential for scaling-up / replication and hence maximizing impact for resilience building and increasing the cost-effectiveness of innovation support. In addition, applications will be screened considering their contribution to employment creation, empowerment of women and the youth, and to social and economic development in general, which, in turn, will also strengthen the resilience of the population. Sector specific selection criteria will be defined, according to sectoral adaptation needs and technology requirements. It should be noted that some of these interventions are cross-sectoral since they provide multiple adaptation benefits. Table 2 below shows a draft selection criteria, to be expanded and validated during PPG.

	Sector specific identified adaptation-oriented technologies and service innovations	Projected Climate Impact to be Addressed	Adaptation impact/selection criteria		
			Short	Medium	Long
W a t e r	<p>Nature-based Infrastructure investments that use natural capital in an integrated manner to build resilience include:</p> <ul style="list-style-type: none"> · Rainwater harvesting, efficient water management strategies across all sectors and solar water pumping systems · Improved water management technologies · Flood water management systems · Climate proofing of water infrastructure, flood water management systems · Water harvesting technologies and efficient water utilization 	<ul style="list-style-type: none"> - Annual precipitation increase by 4.85 mm, and an annual maximum 5-day rainfall increase by 30.08mm by 2040-2059 - Increased potential for heavy rainfall and rainfall unpredictability, - Increased temperatures, promoting algal growth and offering breeding grounds for waterborne diseases 	<ul style="list-style-type: none"> - Reduced cost related to (waste-) water management and energy - Increased access to water - Reduced energy requirements for treatment, thus minimizing carbon footprint and costs - Reduced maintenance requirements and promotes state of art production facilities through installation of new, water efficient technologies 	<ul style="list-style-type: none"> - Efficient utilization of water across various economic sectors - Reduced pressure on freshwater ecosystems - Reduction in polluted wastewater discharge into local freshwater ecosystems, e.g. by on-site water recycling and reduced water use 	<ul style="list-style-type: none"> - Climate proofing of water infrastructure for improved health and sanitation especially in events of climate hazards - Flood prevention

		<p>erborne disease vectors</p> <ul style="list-style-type: none"> - Reduced water availability during critical periods (dry season) 			
Agriculture	<ul style="list-style-type: none"> · Improved and efficient irrigation systems · Climate data services for agriculture planning, production and processing · Early-warning systems and DRR[21] · Crop drying, agro-processing and storage technologies · Climate-smart and traditional food crops · Focus on drought resistant crops · Smart agricultural, drip irrigation and hydroponics, soil moisture monitoring, crop diversification · Climate smart fertilizers and agricultural practices and inputs, nutrient management systems. · Improved crop storage technologies/material · Climate insurance products for livestock and crops · Digitally-enabled information and education tools, e.g. for climate data[22] · Cold storage and cold chains facilities powered by solar 	<ul style="list-style-type: none"> - Mean annual temperatures are projected to rise by 1.69°C - Increased intensity and frequency of floods and landslides - Increased coastal erosion, reduction in fresh and groundwater quality, yield reductions and crop failure due to waterlogging along coastal production areas 	<ul style="list-style-type: none"> - Reduction in post-harvest losses - Efficient utilization of agricultural inputs - Improved planning and monitoring for agriculture production systems and along the agri-value chains - Reduced post-harvest losses - Reduced loss of live stock (through innovative climate insurance systems) 	<ul style="list-style-type: none"> - Strong models promoting women and youth engagement in income diversification along the agriculture value-chain - Sustainable land and resource management 	<ul style="list-style-type: none"> - Sustainable food systems - Diversification of agriculture production and valorization along the agriculture value-chain through improved agro-processing
	<ul style="list-style-type: none"> · Overhead Line Monitoring Solutions 	<ul style="list-style-type: none"> - Increase in 	<ul style="list-style-type: none"> - Improved, continual 	<ul style="list-style-type: none"> - Enabling income 	<ul style="list-style-type: none"> - Climate

E n e r g y	(e.g., Line Vision)	intensity and destruction of infrastructure by floods, landslides	energy access in rural and decentralized areas	me diversification for improved resilience building	resilient energy infrastructure enabling more climate adaptive economic development
	<ul style="list-style-type: none"> Climate risk insurance in case of power failure due to climate extremes Backup solar power supply for individual rescue/service centers and homes, also enabling transportation of basic supply and first aid when event of climate hazards 	<ul style="list-style-type: none"> - More frequent dry periods 	<ul style="list-style-type: none"> - Shortened and independent recovery of vulnerable communities thus enabling provision of other basic services 	<ul style="list-style-type: none"> - Reduced pressure on natural resources based energy sources 	

Table 2: Draft sector specific criteria for identification and evaluation of innovative technologies and services

Component 3: Vulnerable groups access innovative financing to acquire climate resilience and adaptation technologies, products and services in the water, agriculture and energy sectors

Addressing Barrier 2: Low awareness and appreciation of the benefits of climate resilience and adaptation oriented technologies, products and service

Addressing Barrier 4: Limited access to finance for vulnerable populations

Addressing Barrier 5: Lack of access to financing and services by women and youth

62. Component 3 seeks to introduce demand side-oriented interventions to improve and facilitate accessibility for vulnerable groups to the identified and nurtured technologies, products and services. This will be achieved through developing and conducting awareness raising and information programmes for the target groups on climate change impacts and suitable adaptation technologies, products and services appropriate to the agriculture, water and energy sectors. In coordination with the GEF-World Bank's SCIP project, **Nature-based Infrastructure** solutions will be stressed due to their integrated approaches and cross-sectoral benefits. As indicated by the National Sustainable Agriculture Development Plan 2010-2030, extension services will be trained to improve soil and water management and to use climate-appropriate crops. For example, the project will incorporate lessons learned from IFAD such as avoiding the use of NERICA rice that faced difficulties to adapt to Sierra Leone's long wet season. Additionally, integrated solutions that can build resilience including solar driers and solar pumps for agriculture will be highlighted. Similarly, in conjunction with other projects like the Agro progressing Competitiveness Project, trainings will be provided on value chain business opportunities such as eco-processing and sustainable packaging and conservation. The project will seek technology transfer across the spectrum of needs along value chains so that they can become more resilient. This will include making value chains more robust using climate-relevant services such as weather-index based insurance. Note that this project will take the first step towards developing insurance products by collecting the required data for payout schemes in Component 1.

63. As a first step, the entrepreneurs who had excelled in the Adaptation Accelerators will be able to market their technologies in the field. GEF funds will be used to support the entrepreneurs to have technology roadshow demonstrations for interested cooperatives / associations and service extension units in the project's targeted regions. The project will leverage on existing aggregator platforms, including vocational training centers to showcase most suitable technologies and climate smart practices applicable in the selected regions and create the required market linkages to vulnerable groups. To reach higher number of beneficiaries and to ensure sustainability, existing local organizations will be engaged such as Farmer Extension Services, Water Management Groups and Women and Youth Groups. In particular, the project will support Farmer Extension Services delivery system to integrate the engagement of communities in adaptation planning to generate the demand for the adaptation technologies, services and products. Furthermore the project will support the radio and TV emissions as well as mobile phone based platforms such as social media and platforms that traditionally provide information to farmers to create demand for adaptation solutions. Furthermore, brochures on adaptation solution will be printed and publicized through FSP and MFIs. Demonstrations, information events, exhibitions and roadshows and training will spur greater understanding and interest in using and disseminating appropriate technologies, products and services. This greater understanding of the benefits of the technologies and the availability of revolving funds from FSPs and MFIs will create a willingness to pay for adaptation technologies, products and services. It is imagined that some demonstrations will take place in Freetown when the innovations are city-pertinent. Care will be taken to engage the youth and women in the demonstrations to get their feedback on how the technologies / services can be improved. This will create a bottom up approach to identify adaptation solutions with the best potential through community based participation.

64. Furthermore, Component 3 will support the development and strengthening of microfinance schemes to improve access to funding for vulnerable groups in order to ensure access to appropriate adaptation-oriented technologies and services and to ensure sustainability beyond project intervention. The project will support FSPs in general, such as [Apex](#) (a commercial lending institute) and [BRAC International](#) (a world-leading MFI). The existing institutions have various products and services including for rural populations. Apex bank has agri-business products and several branches so that they have an expansive reach throughout Sierra Leone. Training for the FSPs will include providing financing products that are climate-sensitive and which will reflect the reality that production along the value chains can be impacted by climate shocks.

65. According to IFAD, lack of upfront capital can be a major drawback for farmers to adopt climate-resilient practices.^[23] This project will support MFIs to establish revolving funds to provide credit lines to cooperatives / associations that require financial support in acquiring adaptation technologies, products and services. FSPs and MFIs will be selected on a competitive basis to establish and manage revolving funds. Loans will be provided on the condition that the technologies acquired are deemed supportive of adaptation and resilience building.

66. This project will also use Component 3 to address the 'last mile' i.e. where demand side changes or behavior changes are a critical assumption and are likely to affect project impact. According to the GCF behavioral study,^[24] nudges can be an effective way to steer decision-making, particularly when the motivation of individuals is unclear. In the context of this project, MFI lenders will send out text messages to remind borrowers to repay the loans and the lenders themselves can receive electronic suggestions on how to improve financial management skills. Similarly, the project will exercise 'boosts' that empower individuals to foster competencies. Specifically, 'personal initiative' trainings will be used to strengthen investments and responsibilities to repay.

Component 4: Project Monitoring and Learning

Addressing Barrier 1: Low awareness of the benefits of climate resilience and adaptation oriented technologies and services as well as limited access to climate information for building adaptive capacity and resilience in the water, energy and agriculture sector

Addressing Barrier 6: Gender-related barriers

67. The Monitoring, Evaluation and Learning (MEL) system will be an add-on of the existing M&E system in the EPA. It will allow monitoring and impact tracking to ensure quality outputs and achieving expected project outcomes. This project will follow UNIDO standards for monitoring and reporting of processes and procedures and in consistency with the GEF Monitoring Policy. Further, Component 4 envisages the development of supporting documentation and knowledge materials on best-practices for engaging adaptation MSMEs in the integration of adaptation technologies, products into the water, agriculture and energy sectors. SMEDA will become an MSME knowledge hub to be able to continually provide training. An on-line marketplace platform will be developed by SMEDA to highlight adaptation solutions offered in Sierra Leone. This will further strengthen the enabling environment to address medium- and long-term adaptation needs by providing options for a wide range of adaptation modalities, measures and tools. Thereby it will enhance their visibility and also help them connect with potential consumers and investors. In addition, SMEDA will provide a help desk support facility that will support the formalization of adaptation MSMEs through the online platform. It is further envisaged that only adaptation MSMEs that are formalized would be profiled on this platform.

68. Environmental, social, and gender-disaggregated indicators and decision metrics will be chosen in a participatory manner with stakeholder involvement. Process indicators will be used to identify if project interventions are effective in achieving progress towards impact. The project tracking will have a vital focus on gender, in particular on the empowerment of women and involvement of youth. A dedicated project webpage under the website of the Environmental Protection Agency will be established to communicate and share knowledge and information products with a wide range of stakeholders. Lessons learned will be disseminated to communities of practice and national, regional and global levels (e.g., AdaptationCommunity.net, CoP for Resilience, the Global Commission on Adaptation).

Component 5: Project Evaluation

69. Under Component 5, the project will conduct independent project mid-term review and terminal evaluation, whereas the mid-term review will be used as a tool to assess project progress and propose necessary revisions of project activities in the project framework if required.

4) alignment with GEF focal area and/or Impact Program strategies;

70. The project is designed in compliance with the objective of the GEF LDCF programmatic direction, GEF/LDCF Climate Change Adaptation Focal Area 1: *Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation*. The project interventions are tailored to enable private sector (especially adaptation MSMEs and financial sectors) engagement for climate adaptation action and provision of localized and suitable solutions for vulnerable segments of the population with increased exposure to the consequences of climate change in the country.

71. The project will focus on fostering innovation and investments for scaled dissemination of adaptation-oriented technologies and services related technologies with significant adaptation benefits ultimately contributing to reducing the vulnerability and increasing climate resilience in the priority key areas as identified in the NAPA for Sierra Leone: i) improved access to climate data for monitoring and planning; ii) development of an Integrated Natural Resources and Environmental Management Programme; iii) development of irrigation and drainage systems for agricultural production. It responds to the NAPA of Sierra Leone with the deployment of critical measures and technologies to address pressing adaptation needs in the key priority sectors including mainly agriculture/food security, water, and energy and v) improvement of energy efficiency and conservation of energy resources

72. Through promotion of innovation and entrepreneurship and targeted private sectors engagement, the project seeks to engage youth through green jobs creation and alternate income generation activities among various stakeholders, further contributing to resilience building in vulnerable communities. Through the initial GEF funding, the project seeks to establish the required mechanism in Sierra Leone to catalyze large-scale deployment of climate adaptation oriented technologies and reduce systemic risk across the adaptation finance landscape. The proposed set of interventions under the project, are fully aligned with the GEF's comparative advantage and updated LDCF Programming Strategy (2018-2022).

5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

73. Total GEF contributions to the project amount to USD 9,990,145 and will be used to finance catalytic activities and provide strategic inputs to achieve adaptation benefits and increase resilience in Sierra Leone. The additional cost of this project will be to address climate change adaptation through transfer and large-scale deployment of adaptation-oriented technologies, products and services at the local level cutting across the economic and climate vulnerable sectors of water, agriculture and energy.

74. The project will provide complementary technical assistance to build national institutional capacities and a supportive ecosystem to accelerate and grow promising adaptation MSMEs to deliver climate adaptation solutions. The LDCF funding will be utilized to provide the necessary early-stage innovation and entrepreneurship and business growth support matched with initial grant support to transform proof of concept climate change adaptation innovations into marketable products for large-scale deployment. The project will expand the catalytic grant investments through the LDCF to establish an enabling environments and reduce systemic risk across the adaptation finance landscape in order to enable the private sector to act as an agent for market transformation as well as leveraging other partner contributions (e.g., AECF, CRAFT, PFAN (REEEP), ASAP, FSPs, MFIs) to deliver greater impact and scaled-up finance.

75. The proposed project was designed with a view to maximize the positive impact on the most vulnerable population groups, i.e., to substantially reduce vulnerability and strengthen resilience and adapt to climate change. The project seeks to achieve maximum impact by adopting a strong private sector-driven market approach and by addressing both the supply side of climate adaptation-oriented technologies and service (through innovating MSMEs) under component 2 as well as the demand side (access to financial products and services for vulnerable people to acquire adaptation innovations) under component 3. Access to finance is one of the key obstacles to private sector innovation activity as well as business expansion and growth. Lack of access to financial products and services adapted to the needs of vulnerable populations impedes them from adopting climate adaptation technologies, products and services.

76. Supporting private-sector adaptation MSMEs with their climate adaptation innovations has strong catalytic and multiplier effects: assisting MSMEs with transforming their early-stage ideas into viable businesses and subsequently supporting commercialization and large-scale deployment of their climate adaptation solutions for the most vulnerable. Through the provision of multidisciplinary services, technical training in applying appropriate technologies including the demonstration of equipment and services, the project will create the required market linkages between vulnerable populations and the private sector. The project will address the main barriers toward achieving adaptation targets and simultaneously support green jobs creation with empowerment of women and youth while increasing social and economic development and income generation in order to ensure water, food and energy security.

77. During the PPG phase, a detailed mapping of the existing local financial service providers (FSPs) – both private and public – and their products and services will be conducted. This will include microfinance institutions, commercial banks, incubators, VC/equity funds, national and international / bilateral and multilateral finance institutions and programmes, etc. The objective will be to identify potential partners that will provide additional early-stage capital as

well as long-term financing for high-potential adaptation MSMEs for business expansion and scaling up; as well as adapted financial products and services for the target customers of climate adaptation products and services.

78. With a view to catalyze additional financing and maximize additional private sector capital, the proposed interventions will include:

- Targeted training and capacity building of FSPs, especially related to technologies and services that address the effects of climate change and offer solutions for climate adaptation; assessment of the climate adaptation potential of different technologies and solutions, including, for instance, (digitally-enabled) climate information tools; evaluation of MSMEs with climate adaptation innovations and new business models; risks assessment of innovative technologies and business models; adequate financial instruments, etc. The training programmes will target management as well as loan officers and credit officers at HQ as well as the regional level;
- The development of appropriate risk mitigation instruments to mobilize increased private sector financing, such as guarantee instruments and new revolving funds for select MFIs to provide adaptation-specific credit lines for vulnerable groups.

79. This project will mobilise additional co-financing from national stakeholders that include the lime ministries and other institutions. It will furthermore leverage cofinancing from national, regional and continental stakeholders including the Environmental Protection Agency, Small and Medium Enterprise Development Agency (SMEDA), Africa Enterprise Challenge Fund, Private Finance Advisory Network. Exact amounts of co-financing will be re-confirmed during the PPG stage.

- *African Enterprise Challenge Fund* will co-finance in cash this project for an estimated amount of USD 3,000,000 in grant that will be raised through their donor contributions. They will also provide an additional USD 500,000 in-kind contribution. This in-kind contribution includes human resources, training materials, events and workshops, communication channels and campaigns to assist with the achievement of the proposed project outcomes. The grant will be focused on providing growth stage support to adaptation MSMEs
- The *Small and Medium Enterprise Development Agency* will cofinance the project for an estimated amount of USD 4,730,000. This will mainly be in the form of USD 3 m cash that SMEDA will provide as microfinance to MSMEs and adaptation projects. The rest will be in kind, mainly their tools, methodologies, market infrastructure, time for staff etc.
- The *Environmental Protection Agency* will provide in-kind cofinancing up to USD 1 m in terms of staff time, facilities to host the project and other services to support project execution
- FSPs and MFIs will provide USD 8.85 m as both in-kind and cash cofinancing. The project will engage FSP and MFIs in developing and expanding revolving funds that will help the vulnerable groups borrow and acquire adaptation technologies, products and services. The in-kind co-financing will come from the networks, time and other resources that the FSPs and MFIs bring to establish and run the revolving funds.
- *PFAN (REEEP)* will provide up to USD 8 m co-financing in form of the access that it will provide the adaptation MSMEs to investors once they receive the investment facilitation services.
- Incubators and Accelerators will provide co-financing up to USD 4 m mainly using their network and processes to accelerate and incubate adaptation MSMEs.
6) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

80. The project will thus achieve the following adaptation benefits (See also Annex A):

- Training on adaptation technologies that support agriculture, water and energy value chains for at least 256,000 (50% women) (30% youth) (See Annex E)
- Improved and climate-resilient productivity for farmers along 26,000 hectares (See Annex E)

- More than 200 MSMEs (50% women) (30% youth) with high-impact innovative climate adaptation-oriented technologies and solutions are trained and coached through competition-based accelerators to transform and improve their businesses
 - More than 80 successful MSMEs receive business growth support and seed funding to deliver suitable solutions and grow their climate adaptation businesses
- At least 30 MSMEs receive investment facilitation support for projects that deliver climate adaptation technologies and solutions at scale
- Support to at least 30 MSMEs with the SMEDA MF finance product
- 70 people receive training on adaptation innovation with at least 30% women representation, 10 from each agency: Agriculture, Water, Energy, SMEDA, EPA, and 20 across the private sector
 - Empowerment of 500 farmer associations / cooperatives with MF credit lines supported by the project's revolving funds
- Mainstreaming of adaptation into the National MSME Development Strategy

Other Nature-based Infrastructure solution benefits that are more difficult to quantify will likely include:

- Farmers switching from sweet to saltwater agriculture (supporting FAO's Fish Pond project)
- More sustainable soil and land management
- Integrated Water Resources Management reducing flood damage and promoting infiltration to ensure more sustainable water resources for irrigation
- Establishment of buffer zones to prevent flooding of rice paddies
- Use of more solar pumping and solar powered irrigation enabling more water and energy security for farmers during flood and drought periods

7) innovation, sustainability and potential for scaling up.

Innovation

81. The project is *innovative* as it supports the launch of Adaptation Accelerators. Ministries and technical institutions as well as private banks and credit lending institutes will receive training on adaptation innovation successes and lessons learned. MSMEs will be partnered with local entrepreneurs as well as regional and international businesses to have effective business models that facilitate replication and large-scale deployment.

82. Along with ASAP, the project will support large scale deployment of adaptation-oriented technology and business model innovations jointly through categories instead of supporting single track technology deployment. For example, in coordination with the World Bank's SCIP program and IISD, Nature-Based Infrastructure practices providing sustainable solutions to address changes in rainfall patterns and resulting seasonal variations in water scarcity such as re-vegetation with drought-resilient plants will be identified. MSME's will receive targeted technical support on how to best address the specific climate

adaptation needs as well as respond to market specific requirements and consumer demands. It is expected that this approach will provide cost-effective and tailored innovations according to the specific market and climate needs (e.g., storage and conservation). Such innovations will be highlighted by the ASAP project and IISD.

Sustainability

83. The proposed project will empower MSMEs and expand markets for climate adaptation products and services, generating diversified productive livelihoods and supporting overall resilience building for the most vulnerable Stakeholders implicated in the agriculture, water and energy value chains. In Component 1, the project will support the existing Directorate of Climate Change to support mainstreaming of adaptation in MSME-focused strategies / policies and to coordinate access to adaptation-focused innovation and financing. The DoCC will link international and national partners, financing bodies and training and research institutes (testing labs) from various sectors with MSMEs. It will streamline cross-sectoral support and build national institutional capacities on adaptation innovation to ensure that innovations will continue to receive support financially across sectors.

84. Component 2 will ensure project sustainability by building on the existing rural MSME support provided by the WB Agro progressing Competitiveness Project. The project will support SMEDA's efforts to provide a low-interest rate MF product. Project funds will be used to tailor a product version focused on adaptation. The design of the project interventions will ensure continuity of activities and introduced services post project completion as the project will focus on capacitating the Adaptation Accelerator programmes to identify early investors and to support with filling large seed funding gaps that are required for Sierra Leone MSMEs and scaled deployment of adaptation solutions according to SMEDA.

85. The project will cooperate with existing institutions including incubator centers, professional training organizations, aggregator platforms, associations and private sector entities to ensure project activities are implemented with a view to achieve maximum outreach and sustainability beyond project duration. With a view to ensure the sustainability of operations, the project will enhance private sector engagement such as with VC firms, major corporations/industries, network operators etc. Furthermore, linkages with international accelerator and financing platforms such as ASAP and AECF will provide business growth services to MSMEs to ensure sustaining established services beyond project duration.

86. The project will attract and nurture top talent to find solutions for the most vulnerable to adapt to climate change. Youth and women will be encouraged to submit adaptation ideas. In such a manner, the government who has highlighted tackling youth unemployment rates and women poverty rates, will have the capacity and understanding on how to improve the access of women and youth to MSME funding and training needs.

87. Simultaneously, the project will use UNIDO's unique advantage in the innovation space to pool technical support and financial support from regional organizations such as AECF and international network such as PFAN (REEEP). The new Adaptation Accelerator will promote interest and innovation in the adaptation space and has been devised to crowd in other funding to ensure continuity. A systematic pipeline of enterprises will graduate from the Adaptation Accelerator into AECF and subsequently into PFAN (REEEP). This will ensure the continuous business support and finance facilitation needed for MSMEs to grow into commercially viable business ventures. This strategic alignment will provide a continuous support for MSME's, throughout the various business development stages.

88. Component 3 will build on value chain support provided by the baseline initiatives (e.g, World Bank and GEF projects). Highlighting opportunities along the value chain such as by supporting Nature-Based Infrastructure will ensure that the rural populations can exploit diversified, productive livelihoods. The project will work with community organizations to obtain their feedback on how adaptation innovations can make the greatest positive impact with providing jobs and diversifying livelihoods. Additionally, the project will work from the ground up to gain local support and ownership. Women and youth-based organizations will receive targeted trainings and will be encouraged to access lending products that have been developed with rural productivity constraints in mind. The project will also support select FSPs to establish and manage revolving funds that will supply credit lines which will support adaptation innovation proliferation.

89. Finally, in Component 4 all knowledge on best practices and technologies will be stored in the EPA's existing M&E database. Specifically, by adding a learning emphasis and by targeting gender inclusion, this will ensure that best innovations are used by all actors along the essential oil value chains. Storing this knowledge will enable innovations to be easily identified for further scale-up after project termination.

Scaling Up

The project will support the scaling up of adaptation innovations by addressing two key issues:

I. Lack of available funding and investment vehicles aimed at early stage companies:

90. The project will support SMEDA's new MF product in addition to any existing MF products to ensure the successful graduation of MSMEs into commercial businesses. A strategic alliance with SMEDA in this project will facilitate tailored technical and financial services to MSME's. The project will work with other innovation and adaptation innovation programmes such as ASAP for financing the scaling up and deployment of MSME ideas.

91. Innovation support will be provided via blended finance by linking SMEDA with regional ASAP, AECF and PFAN (REEEP) programs. Blending will be achieved by providing seed capital and loans alongside development finance and commercial capital. The blended finance will reduce the implementation risk of adaptation-oriented technologies and is expected to create a conducive investment climate to attract large-scale investments and galvanize funding for large-scale deployment and replication.

II. Limited access to financing and risk mitigation products by stakeholders working along the value chains:

92. With support for MFIs and FSPs to establish and manage revolving funds, the project will support the most vulnerable to access credit lines in the agriculture, water and energy sectors. The credit lines will be essential for ensuring mass adoption of the technologies. Furthermore, the project will set the groundwork to introduce climate-risk insurance products by supporting climate data collection and making Sierra Leone insurance groups aware of such existing products.

*MSMEs is defined to mean entrepreneurs, start-ups and micro, small and medium-scale enterprises. In accordance with the Lightsmith SME Adaptation Taxonomy, an Adaptation MSME is defined as a company providing technologies, products and/or services that either address systemic barriers to adaptation by strengthening users' ability to understand and respond to physical climate risks and related impacts and/or capture related opportunities and/or contribute to preventing or reducing material physical climate risk and/or the adverse associated impacts on assets, economic activities, people or nature.

**The project's Adaptation Accelerators will act as support mechanisms to identify, engage and empower MSMEs to provide their adaptation solutions to users. Support will be provided to enhance strategic business models, to provide technical and operational capacity building and to assist with scaling up and financing. The accelerators will ensure that the Adaptation MSME innovations meet ESG and impact criteria.

[1] <https://gain.nd.edu/our-work/country-index/rankings/>

[2] WB and GFDRR, Rapid Damage and Loss Assessment, 2017 Flood and Mudslides

[3] Sierra Leone Medium Term National Development Plan

[4] WB Climate Change Knowledge Portal, Sierra Leone

[5] Sierra Leone climate projections, US-Aid Fact Sheet 2016

- [6] WB Climate Change Knowledge Portal, Sierra Leone
- [7] https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Sierra_Leone
- [8] <https://reliefweb.int/report/pakistan/initial-covid-19-responses-bangladesh-kenya-pakistan-sierra-leone-and-uganda>
- [9] <https://www.nature.com/articles/d41586-020-02173-z>
- [10] <https://www.cgdev.org/publication/covid-19-and-budgetary-space-health-developing-economies>
- [11] WASH Policy
- [12] As defined in table 2
- [13] World Bank, Agro-Processing Competitiveness Project
- [14] Sierra Leone is part of the Economic Community of West Africa States (ECOWAS). In the ECOWAS region there are very few climate-focused accelerators, namely the **Ghana Climate Innovation Centre (GCIC)** and **Nigeria Climate Innovation Centre**. There are successful adaptation MSME models in the ECOWAS region, mainly in Nigeria and Ghana, however, there is limited knowledge sharing for MSMEs to expand regionally.
- [15] <https://www.climate-kic.org/>
- [16] <https://www.facebook.com/GhCIC/> and <https://nigeriacic.org/>
- [17] FAO experts estimate that crop insurance is likely to be a long term need, and particularly important in the future to protect farmers from vulnerabilities, and promote lending. Crop insurance can be indexed to price or weather. Price indexed insurance is typically offered for export crops, such as coffee which could be affected by drops in the international prices. Weather indexed insurance covers loss due to poor weather conditions. More preparation would be needed to monitor and assess rainfall and weather patterns throughout the country so as to inform the risk level and pricing. All this presupposes a level of planning and product development prior to launching for sale on the market.
- [18] Adaptation Innovation Calls will include publicity campaigns to attract adaptation MSMEs to submit their ideas and to be accepted as a cohort of companies in the Adaptation Accelerator programmes.
- [19] <https://www.facebook.com/GhCIC/> and <https://nigeriacic.org/>
- [20] <https://epa.gov.sl/>
- [21] The project will adhere to the Sendai Framework Priority 3 which stresses investing in DRR for resilience-building
- [22] Sierra Leone National Innovation Digital Strategy 2019-2029
- [23] IFAD Climate Change Risk Assessments in Value Chain Projects
- [24] Kruger C and Puri J, Independent Evaluation Unit GCF: *Going the Last Mile: Behavior Science and Investments in Climate Change Mitigation and Adaptation, Climate 2020 – The Worldwide Online Climate Conference*

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

93. The interventions will take place in the northwest and south of the country where a) agriculture is prevalent, b) there is significant food and water insecurity (See Annex A), c) climate risks in the form of droughts and floods are highest and d) adaptation solutions can deliver the greatest resilience benefits.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities No

Civil Society Organizations Yes

Private Sector Entities Yes

If none of the above, please explain why:

If None of the above, please explain why.

94. The following organizations were consulted during PIF development:

- Environment Protection Agency - Sierra Leone (Chairperson & Executive Director / GEF PPP, Director, Dep. Director Climate Change Secretariat/OFP)
- Ministry of Energy (Chief Technical Advisor)
- National Water Resources Management Agency (Director of Hydrological Services)
- Small and Medium Enterprises Development Agency Sierra Leone (CEO)
- Ministry of Agriculture and Forestry
- Sierra Leone Local Content Agency (Director General)
- Microfinancing institutions

- Financial service providers
- Selected adaptation MSMEs

- Potential beneficiaries

Due to the COVID pandemic, organizations in the rural regions could not easily be reached. Such consultations will be held during the PPG phase.

95. This project will continue to develop cooperations with the Government institutions, academia, research institutes, farmer/water associations / cooperatives, women's and youth associations, private industrial players and NGOs, as well as with financial organizations (commercial banks and micro finance institutions). Sierra Leone is home to about fifteen ethnic groups, each with its own language. While Sierra Leone has enjoyed a long period of relative peace and stability since the end of the conflict, many underlying issues such as poverty and inequality persist, particularly in the rural regions where the indigenous live. The target regions of Port Loko and Bonthe (See Annex E) include some indigenous populations. Therefore, this project will seek to engage all sectors of the country and pay particular attention to the circumstances and needs of minority ethnic groups whose circumstances may be particular to their localities. In particular, the project design will involve extensive and inclusive consultations with all populations, emphasizing woman and ethnic groups in the target areas so that their views and circumstances are considered in the applications of technologies and in the design of the project interventions. The project will use the appropriate Environmental and Social Management safeguards to ensure that any indigenous or ethnic populations are included in decision-making. The roles of the groups in general and for the project are described in Table 3 below.

Table 3: Stakeholders and their role

Stakeholders	Current Role	Role in Project
Government		

NATIONAL		
Ministry of Environment	<ul style="list-style-type: none"> Supports policy reviews and other statutory instruments on climate change adaptation / mitigation; Ensures coordination between resources during capacity building sessions Ensures Sierra Leone is following international climate mandates 	<ul style="list-style-type: none"> Support the coordination of the overall project implementation and management; Lead the inter-ministerial committee on climate change adaptation on integration into various sectors; Promote synergies between this project and other initiatives funded by other donors/institutions. Guide activities under Component 1 including capacity building and awareness on adaptation innovations across sectors
Directorate of Climate Change, EPA	<ul style="list-style-type: none"> Supports institutional and human resources capacity building in climate change; Supports the creation and production of informative material about climate change and innovation (leaflets, guide books, documentaries, videos, etc.); 	<p>Lead Project Executing Entity,</p> <ul style="list-style-type: none"> Lead the coordination of the project with other projects / initiatives (Component 1); Provide guidance with integrating adaptation innovation into planning / policies (Component 1)
Sierra Leone Meteorological Agency	<ul style="list-style-type: none"> Supports the collection and dissemination of weather / climate data into other sectors such as water, agriculture and energy 	<ul style="list-style-type: none"> Climate and weather data dissemination along with and for improved adaptation MSME services Support on how to integrate and enhance data collection for climate risk insurance (Component 1) Provision of data for quantifying adaptation benefits Assist technicians and other experts on identification and assessment of new adaptation technologies Provide technical support in the reformulation of key policies with climate risk data Support to climate -data focused MSMEs with reducing their barriers to entry when scaling up adaptation solutions
Ministry of Agriculture and Forestry	<ul style="list-style-type: none"> Institutional and human resources capacity building for the agriculture sector; Supports the creation and production of informative material about climate change and agriculture (leaflets, guide books, videos, etc.); 	<ul style="list-style-type: none"> Support to extension services, farmers organizations on adaptation awareness Support with tradeshows and field demonstrations of adaptation technologies

		<ul style="list-style-type: none"> Work with FSPs to create financial products geared to farmers Support adaptation MSMEs with innovation scale-up; Support the agriculture/agri-business related activities and revision of related policies with the view of integrating adaptation innovation;
Ministry of Water Resources	<ul style="list-style-type: none"> Institutional and human resources capacity building for the water sector; Supports the creation and production of informative material about climate change and water (leaflets, guidebooks, videos, etc.) 	<ul style="list-style-type: none"> Support to ensure innovations promote water conservation Promotion and awareness raising on Integrated Water Resources Management and other forms of Nature-based Infrastructure as adaptation innovation and engagement of adaptation MSMEs Technical expertise and validation for water-related innovations and services Creating supportive policies and reducing barriers to entry for water-related climate solutions
Ministry of Energy	<ul style="list-style-type: none"> Institutional and human resources capacity building for the energy sector; Supports the creation and production of informative material about climate change and energy (leaflets, guide books, videos, etc.); 	<ul style="list-style-type: none"> Support to ensure innovations promote energy efficiency Promotion and awareness raising on decentralized and renewable energy integration as adaptation innovation Technical expertise and validation for energy-related innovations and services Creating supportive policies and reducing barriers to entry for energy-related climate solutions
Ministry of Industry and Trade	<ul style="list-style-type: none"> developing policies and programmes to stimulate local and export trade as well as to enhance private sector investment, industrial and economic growth 	<ul style="list-style-type: none"> Support to MSMEs to find blended capital Support to integrate adaptation innovation into MSME policies
Small and Medium size business Development Agency (SMEDA)	<ul style="list-style-type: none"> Facilitates, assists and provides market access and business linkage opportunities to SMEs in order to enable them to compete successfully in national and international markets 	<ul style="list-style-type: none"> Support with adaptation accelerators Support in accessing SMEDA Fund and the SMEDA Microfinance product Support the adaptation MSMEs with demonstration / trade shows Train adaptation MSMEs with business plan development for effective scale-up

		<ul style="list-style-type: none"> Develop an on-line marketplace platform to highlight adaptation solutions offered in Sierra Leone.
Private Sector		
Incubators and accelerators	<ul style="list-style-type: none"> Offers incubation for people to brainstorm about the next generation of innovation solutions Supports the formation, validation, scaling and growth stages of start-ups in the country Offers mentorship services and support services to MSMEs 	<ul style="list-style-type: none"> Along with SMEDA, integrate adaptation focused sessions into existing incubators and accelerators Attend training sessions on adaptation innovation Work with international groups such as the Climate Innovation Centres to nurture adaptation-focused innovations
Union Trust Bank	<ul style="list-style-type: none"> As the only private, indigenous bank in SL, UTB offers financial products for agriculture 	<ul style="list-style-type: none"> Support with tailoring financial products for MSMEs and rural populations
Universities / Research Institutes		
University of Sierra Leone & Njala University	<ul style="list-style-type: none"> Conduct scientific research; Provision of interns to work on project activities; Inclusion of best practices into curricula; 	<ul style="list-style-type: none"> Creation of partnerships with adaptation MSMEs to test innovative schemes; Develop tailor-made learning programs on adaptation innovation
Associations, NGOs and development partners		
UNIDO	<ul style="list-style-type: none"> Support for enhancing value chain productivity 	<p>Implementing Agency</p> <ul style="list-style-type: none"> Responsible for project evaluation; Provision of knowledge management tools for data and experience sharing;
PFAN (REEEP)	<ul style="list-style-type: none"> Provide personalized one-on-one coaching and targeted introductions to investors, providing a fast-track to commercial investment 	<ul style="list-style-type: none"> Support for Component 2 relative to providing training and mentoring for MSMEs Support with connections to investment groups and regional investor convenings
AECF	<ul style="list-style-type: none"> Support for Component 2 relative to providing financing for MSMEs with potentially viable business plans and good potential for scaling up 	<ul style="list-style-type: none"> Provides MSMEs with business growth support and seed funding (often in the form of grants) to support climate innovations and projects in agri-business development, energy and water sector

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International Institute for Sustainable Development (IISD)	<ul style="list-style-type: none"> Support creative, bold solutions with significant impact that address adaptation to climate change Fostering sustainable natural resources management 	<ul style="list-style-type: none"> Collaboration to highlight best innovations that support sustainability and adaptation to climate change
UNDP	<ul style="list-style-type: none"> Support for the economic and social development of Sierra Leone 	<ul style="list-style-type: none"> Ensure synergy with existing projects and incubators Support the accelerator lab with integrating adaptation innovation
NGOs, POs and local associations (including women and youth organizations)	<ul style="list-style-type: none"> Organization of awareness raising campaigns / demonstration Ensure local buy-in from direct beneficiaries of projects 	<ul style="list-style-type: none"> Support with tailoring innovation and financial services to local needs and contexts Support with training and awareness raising
World Bank	<ul style="list-style-type: none"> Support for the economic and social development of Sierra Leone 	<ul style="list-style-type: none"> Create synergies with the Agriculture Commercialization project
Finance institutions		
FSP and MFIs	<ul style="list-style-type: none"> Develop and provide Microfinance products 	<ul style="list-style-type: none"> Provide flexible loan schemes with GEF financing for credit lines Work with project to provide less stringent collateral requirements for vulnerable populations in rural regions along value chains Establish and operate revolving funds to help vulnerable groups access finance to acquire adaptation technologies, products and services
Local/National Production Groups		
Federation of Growers' Groups	<ul style="list-style-type: none"> Support for sustainable agriculture practices Capacity building Ensuring local buy-in and community participation 	<ul style="list-style-type: none"> Support with scaling up awareness of agriculture-related adaptation innovations Training and capacity building Collecting feedback on the efficacy of agriculture innovations and services
Water User Associations	<ul style="list-style-type: none"> Support for efficient water management 	<ul style="list-style-type: none"> Support with scaling up awareness of water-related adaptation

	in communities	innovations
	· Capacity building	· Training and capacity building
	· Ensuring local buy-in and community participation	· Collecting feedback on the efficacy of water innovations

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

96. UNIDO's Guide on Gender Mainstreaming Energy and Climate Change Projects will be used as a framework and guide in order to ensure that the project is in line with both UNIDO and GEF gender policies. Based on the guidelines, attention will be paid to:

- Gender-sensitive recruitment at all levels where possible, especially in selection of project staff. Gender responsive TORs will be used to mainstream gender in the activities of consultants and experts. In cases where the project does not have direct influence, gender-sensitive recruitment will be encouraged. Furthermore, whenever possible existing staff will be trained and their awareness raised regarding gender issues.
- Considering gender dimensions in all decision-making processes (this will consider but will not be limited to efforts to achieve gender balance/representation in such processes), including Project Steering Committee meetings.
- Collection of sex-disaggregated data.
- Consultations with and involvement of stakeholders focusing on gender equality and women's empowerment issues, such as gender experts and organizations, CSOs and NGOs promoting GEEW (providing them with equal voice), e.g. for outreach purposes.
- A gender analysis will be conducted during the preparatory phase to identify the specific circumstances of women and youth in Sierra Leone, and will provide a basis on how the priorities and needs of these groups will be integrated in the implementation of the project. During the project development (PPG) phase, UNIDO will ensure that the relevant gender dimensions are considered, and the project log-frame will be developed to reflect key gender dimensions of the respective outputs, activities, indicators and targets

97. Sierra Leone's HDI value for 2018 is 0.438— which puts the country in the low human development category—positioning it at 181 out of 189 countries and territories.³ Between 1990 and 2018, Sierra Leone's HDI value increased from 0.270 to 0.438, an increase of 62.2 percent. Sierra Leone's HDI for 2018 is 0.438. However, when the value is discounted for inequality, the HDI falls to 0.282, a loss of 35.7 percent due to inequality in the distribution of the HDI dimension indices.^[1]

98. According to the National Sustainable Agriculture Development Plan 2010-2030, there are the so-called "women's crops" (cassava, groundnut, maize, potato and vegetables) and there are those other crops mostly grown by men (coffee, cacao and oil palm). Similarly, women are associated with the rearing of small ruminants (goats and sheep), gathering of fuel wood and inland fisheries while the men are mostly known for cattle rearing, piggery, logging for timber and marine fisheries. Women also play a significant role in the processing and distribution of fish products by handling, preserving, processing, storing and transporting fish. According to the 2004 census, there are more female farmers in Sierra Leone (52.2%) compared with male farmers (47.8%).

99. Nonetheless, women do not normally share direct benefits of additional income from their labour. In fact, agricultural activities by status in the census report noted that men dominate the paid and self-employed category while women mostly belonged to the unpaid family workforce.

100. Similarly, according to the National Youth Policy (2003) and the 2005 Poverty Reduction Strategy Paper (PRSP), youth employment was determined to be one of the country's main development challenges and crucial for maintaining peace and promoting pro-poor growth.

101. In response to this, the project will build on the support for women such as FAO / ILO's *Peaceful Societies through women's improved access to management of natural resources, land tenure rights and economic empowerment in Sierra Leone*. The project will take a first step of formally including 30% women and youth in decision-making. The project will work with existing Agriculture Extension Services and Water Management Committees and will

mandate that 30% are women. The project will expand this work by focusing on provision of innovations that reduce the manual, intensive labor of women involved in agriculture. It will also target women to provide them access to finance for purchasing adaptation technologies.

102. This project will reach out to existing social networks, such as women's groups as crucial adaptation tools. Specifically, during the implementation of the project, attention will be given to (1) engaging Adaptation MSMEs that will have a significant impact on women, and (2) ensuring equitable opportunities for women to participate in the project and in all Adaptation Accelerator training activities.

103. This project attacks the problem of increased vulnerability of women and youth by enabling both to diversify their sources of livelihoods with resilient job options. The project will reinforce the capacities of women and youth organizations to access tailored credit products. Also, the innovations that will be supported via national or regional programs (e.g., ASAP, AECF) will provide equal opportunities to exploit agriculture, water and energy value chains (e.g., food processing and conservation).

104. The project will link women and youth with the necessary entrepreneurial skills and competences at school, universities or at specialized business schools. The testing labs will provide technical trainings on how to improve and tailor adaptation technologies. The project's Directorate of Climate Change will also link existing innovation finance mechanisms such as the Ecobank to employment and training opportunities related to adaptation innovations with a first-time emphasis on targeting women and youth in the agriculture, water and energy sectors. The project will also promote women and young entrepreneurs by creating special award categories for participants in the Adaptation Accelerator.

105. The project strategy and implementation modalities for gender equality and women's empowerment will also be designed by using a guide for gender integration to ensure that it is in line with both, UNIDO (UNIDO Energy Department's Guide on Gender Mainstreaming Energy and Climate Change) and GEF requirements (the Guidance to Advance Gender Equality in GEF Projects and Programs (GEF/C.54/Inf.05 June 1, 2018)).^[2]

106. Finally, in the Monitoring, Evaluation and Learning Component 4, gender disaggregated indicators at the project's outset will be participatively designed to consistently measure the impact of the project regarding gender dimensions. This will include the percentage of women in trainings, percentage of new green jobs for women, particularly value chains, as well as representation in consultation processes.

[1] http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/SLE.pdf

[2]To collect gender-related information and sex-disaggregated beneficiary data, and to determine the baseline situation; ▪ inform or form part of the project's Social and Environmental Screening procedure; ▪ integrate gender considerations into the program/project theory of change to understand how and why a given intervention will lead to a specific change; ▪ determine program/project activities required to respond to gender risks, differences, gaps, and opportunities; and ▪ support the formulation of indicators relating to sex disaggregation and gender sensitivity, to be included in program/project results framework.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources; Yes

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

107. As the baseline section indicated, there is a weak environment for private sector involvement in the adaptation space. The project will create a nurturing environment so that investment in adaptation MSMEs is facilitated and that there is a demand and market-pull for their technologies, products and services. The project will capacitate the newly created SMEDA to engage with the private sector to quantify the risks and opportunities associated with adaptation. The project will work with large banks to assess adaptation benefits of projects in their portfolios. The goal will be to pool and tailor financial products to MSMEs that focus on resilience and adaptation-oriented technologies and solutions and need patient and non-dilutive capital to grow and expand their businesses. Financial support by various private sector parties will be provided at different stages of the innovation cycle. For instance, seed capital can be provided by CTCN that provides up to USD 250k per MSME. The SME Fund can also contribute with commercial lenders to boost the capacity of adaptation MSMEs to have viable business models. Later on, financial support with regional partners such as AECF and ASAP can support entrepreneurs / MSMEs to make their products commercially ready. Simultaneously, the project will capacitate the adaptation MSMEs to have better management capabilities and bankable innovation ideas.

108. The project will also work with the existing incubators and accelerators to widen the spectrum of innovation competitions to include adaptation. For instance, the Freetown Pitch Nights Accelerator that is sponsored by Münzig (owned by Heineken) can promote a competition to innovate for more efficient water and energy use – both critical for beer brewing. Adaptation calls will enable the private sector to see how innovations can make their processes more cost-effective and sustainable. Any innovations that facilitate climate and weather data collection will be publicized to insurance and reinsurance groups as a first step to exploiting this data to establish weather-index based insurance products.

109. At the local level, the private sector will also be engaged. For the first time, the UNIDO-GEF project will support FSPs to establish revolving funds that will provide credit lines for vulnerable farmers. In such a manner, private financial channels will be used to reduce risks associated with innovation. Collateral requirements can be made more flexible. The project will also work with MFIs to create unique, lower interest products for rural populations working in the agriculture, water and energy sectors. Due to having revenues that are bound by cultivation cycles or water/energy capital investment plans, the project will reinforce the capacities of existing financial services to have more flexible loan products for stakeholders along the value chain that can be given on the condition that their productivity is enhanced or becomes more efficient by applying adaptation innovation.

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

Risk	Risk Level	Mitigation Action
<p>Political risk I</p> <p>Government priorities not placed on climate change adaptation when urgent resources are required for crises such as pandemics</p>	<p>P= 2</p> <p>I=2</p>	<p>Component 1 includes streamlining the importance of adaptation innovation into policies and coordinating the relevant actors across sectors. This includes reinforcing their capacities in understanding the cost-benefits of adaptation so that they will prioritize adaptation initiatives. Also, support for the private sector Adaptation MSMEs including with financial products will enable continued and sustained support for innovation that will be driven by business forces. The MSMEs and FSPs will be trained to identify outlying risks such as pandemics so that they can be prepared with appropriate mitigation measures.</p>
<p>Political risk II</p> <p>Change of political leadership</p>	<p>P=2</p> <p>I=2</p>	<p>Sierra Leone is a post conflict country that has seen smooth and peaceful transfer of power several times. The project will engage both the high level political leadership from the concerned ministries, but also technical and operational staff will drive the project activities. Therefore, change in leadership of the country should not have a strong impact on the project outcome, since all previous governments have consistently advocated the need to respond to climate change issues. Furthermore, the project involves many government departments that should changes happen in one department, the other departments will continue to support the project. While the project is focused on adaptation, its strategy of promoting innovation and entrepreneurship answers one of the key challenges that any new government will have to address i.e. creating employment. As such, the very project strategy and how it is linked to key development issues in the country is such that any new leadership will be enticed to support the project. Nevertheless, in order to mitigate possible low awareness of the host government, UNIDO will consistently engage with the government in place in order to promote the importance of adaptation technologies in the country. By engaging both high level political leadership and operational – civil service staff, the project will also ensure that the operational level will conti</p>

		<p>hieve to drive the project work even in cases where the political levels may not be fully engaged for various reasons.</p>
<p>Political risk III Local against national politics</p>	<p>P= 2 I=2</p>	<p>The project will support the developing and setting of policies at national level. In this process the project will ensure adequate and extensive consultation of local governance structures, especially structures involved in the energy, food and water sectors. This will minimize potential challenges at operational levels. More specifically regional community leaders such as governors of provinces and chiefs of community groups will be involved in all key consultations as to include their views, needs and priorities into the project approach. The risk is also be minimized by the fact that Components 2 and 3 will be led by private sector that will seek to operate despite of political situation. Furthermore, project will actively engage local leadership under output 3.1.1 in organizing roadshows so they are seed bringing solutions to their populace and hence will see the political benefits of being actively engaged.</p>
<p>Financial risk I Widespread poverty and lack of sustainable sources of income, resulting in low ability to scale up adaptation technologies and ideas. Low revenues particularly after the impact of COVID coupled with weak access to local credits could be an obstacle for smallholder organizations to adopt and scale up climate-resilient production systems</p>	<p>P=2 I=3</p>	<p>The entrepreneurs will be supported by the national banks, AECF and REEEP-PFAN once they have gone through the existing accelerators that have adopted an adaptation-focused path. Existing financing agencies are also expected to provide MSMEs small loans to enable them to scale up their adaptation technologies and business ideas.</p> <p>The Directorate of Climate Change and SMEDA will be responsible for soliciting necessary funding for promoting and upscaling adaptation innovation. This will support the country economically and build the resilience of the growers by providing them an asset base. The project will support SMEDA's low-interest MF product.</p>
<p>Financial risk II More favorable terms & conditions for commercial financing for MSMEs (high interest rates, collateral requirements etc) cannot be obtained due to banks viewing agricultural-based repayments as risky</p>	<p>P=2 I=2</p>	<p>The project will work with established MFIs that have already provided support to SL farmers. New low-interest financing will be bundled in order to mitigate the risk that nature-based production and their value chains become vulnerable to outlying hazards such as extreme weather events. Adaptation focused revolving funds to provide credit lines for vulnerable, credit-worthy groups.</p>
<p>Financial risk III Risk that access to finance for target cust</p>		<p>The project will work with existing successful cooperative structures to have access to existing and new financing schemes. Access</p>

<p>omers remains limited resulting in low ability to scale up adaptation technologies and ideas</p>	<p>P=3 I=2</p>	<p>to financing will also be facilitated by supporting the existing MFIs to expand the reach of their products and to tailor them to the water, agriculture and energy sectors. Furthermore, these products will be publicized at innovation show-casings. All Stakeholders along the value chains will be provided awareness raising on how to access different stages of financing.</p>
<p>Environment risk Poor management of natural resources</p>	<p>P=2 I=4</p>	<p>The project puts a strong emphasis on strengthening sustainable land, soil, water and energy use. The project will highlight and reward the best Nature-based Infrastructure innovations (such as restoring soil quality with crop rotation schemes and combining agriculture and aquaculture where appropriate)</p>
<p>Climate risk Increased severity of floods and dry periods reduce the productivities of vulnerable populations along value chains</p>	<p>P=3 I=4</p>	<p>The Adaptation Innovations will be chosen based on the highest vulnerability priority regions indicated in the Third National Communication. Focusing on these regions with targeted adaptation innovations will build their resilience during climate shocks. They will also be chosen based on the criteria outlined in the PIF, Table 2 and Annex D.</p> <p>Adaptation MSMEs will be chosen based on their adherence to the SME Adaptation Taxonomy (Lightsmith). MSMEs will be supported to develop business plans that will reflect the realities that climate shocks can and will disrupt adaptation technology proliferation. Training to be supported to MSMEs will ensure that their business practices can be adaptive to adjust to the climate risks at hand. For instance, if a water conservation technology is employed but flooding becomes more problematic, the MSME will be guided to reflect these risks in their plans and to have robust technologies that can withstand flood events. By having acceleration and mentoring services provide tools for MSMEs to identify risks and mitigation measures, it will be more likely that their ideas will be used in the long-run throughout Sierra Leone.</p> <p>This project will also strengthen adaptation and resilience measures by enabling the most vulnerable to access adaptation innovations via tailored lending products. Innovations will enable the most vulnerable to fully exploit their value chains sustainably. With an</p>

vulnerable to fully exploit their value chains sustainably. With an asset base and risk mitigation measures, the vulnerable populations, particularly women and youth will be able to have higher asset bases and will become more resilient during climate shocks.

COVID risk analysis

Risk	Risk level	Mitigation measure
Technical expertise is not readily available due to the pandemic	P=3 I=2	The project will identify alternate technical expertise in case it is required. Planning will be flexible enough to reschedule activities onsite that require specific expertise. This is particularly important if government experts are not available due to emergencies.
Possible re-instatement of COVID-19 containment measures limits available capacity or effectiveness of project execution/ implementation	P=2 I=2	The project will be ready to strengthen the capacity of the stakeholders via online interactions with secured access to commercially available conferencing systems. In the case of strict restrictions against in-person meetings, the accelerator cycles will be ready to be conducted remotely.
Some project supporters, co-financiers or beneficiaries may not be able to continue with project execution/implementation.	P=2 I=2	The project will have to monitor closely the situation of these counterparts in order to find alternate supporters or co-financiers, or to readjust the list of beneficiaries.
Price increases for procurement of goods/ services	P=3 I=3	The project team will have to work harder in finding alternate providers and making sure that competitive pricing is obtained.

COVID-19 opportunity analysis

Opportunity	Opportunity level	Opportunity optimization measure
New business opportunities created in response to COVID-19 related restrictions and measures	High	Response to COVID-19 restrictions, such as remote working arrangements and no-contact business modalities will require solutions that can be turned into new business models. These opportunities will be analyzed at the national levels and shared with entrepreneurs as part of the market intelligence information. Additionally, based on spurred international trade due to COVID restrictions, this project will support the uptake of domestic markets to substitute missing products from global value chains.
New business opportunities to build back better for business continuity and economic recovery post-COVID-19	High	By design, the project engages the private sector (especially MSMEs) to promote adaptation technologies, business models with resilience to climate change, and circular business practices. New business opportunities and management suggestions will be provided to the Accelerators so that the entrepreneurs are fully informed of the market and environment trends.

110. With regards to **opportunities for the project to address COVID**, its integrated water, energy and food approach will help to secure supply chains. Innovations to improve food, water, energy security will also promote job creation and training, local economic development, productivity improvements and improved access to essential services. For instance, continual access to water will support existing MSME initiatives to install handwashing stations in high traffic public spaces and markets. Currently, innovation in the awareness sector is booming in Sierra Leone where ideas like hand-washing are being disseminated with free cellphone messages, neighborhood broadcasts, and songs created by popular musicians. Furthermore, nature-based innovations will protect natural capital and increase the economic resilience and adaptive capacity of people in the most vulnerable rural regions. For example, directly related to reducing the spread of COVID, SARS or Ebola, this project will promote sustainable land uses and limit deforestation to reduce human-wildlife contact. In the long-term, adaptation MSME innovations will improve domestic productivity and thereby increase the resilience of the ecologic and socio-economy systems to weather emerging infectious diseases in the future.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

111. UNIDO, as GEF implementing Agency for the Project, will play a close coordination and liaison role with the executing partners, and with the GEF Secretariat. UNIDO will also be responsible for all enquiries regarding the project implementation progress, project-level reporting, mid-term review, terminal evaluation and the achievement of the project's impacts on the global environment.

112. With regards to opportunities for the project to address COVID, its integrated water, energy and food approach will help to secure supply chains. Innovations to improve food, water, energy security will also promote job creation and training, local economic development, productivity improvements and improved access to essential services. For instance, continual access to water will support existing MSME initiatives to install handwashing stations in high traffic public spaces and markets. Currently, innovation in the awareness sector is booming in Sierra Leone where ideas like hand-washing are being disseminated with free cellphone messages, neighborhood broadcasts, and songs created by popular musicians. Furthermore, nature-based innovations will protect natural capital and increase the economic resilience and adaptive capacity of people in the most vulnerable rural regions. For example, directly related to reducing the spread of COVID, SARS or Ebola, this project will promote sustainable land uses and limit deforestation to reduce human-wildlife contact. In the long-term, adaptation MSME innovations will improve domestic productivity and thereby increase the resilience of the ecologic and socio-economy systems to weather emerging infectious diseases in the future.

113. The Directorate of Climate Change in the Environment Protection Agency – Sierra Leone will be the Lead Project Executing Entity and will promote synergy and collaboration with relevant stakeholders and other on-going GEF programme and projects related to the scope of this project. Furthermore, EPA-SL will also promote synergies and collaboration between this project and other initiatives funded by other donors/institutions. They will also guide activities under Component 1 including capacity building and awareness on adaptation innovations across sectors and promote coordination with support institutions in water, agriculture and energy.

114. SMEDA will be engaged as a service provider for Component 2 to support the development and growth of MSMEs in the country. As such, the project will help build the capacity of SMEDA to support the development and growth of adaptation MSMEs and unlock financing. Other supportive execution partners include *AECF*, *Lightsmith* and REEEP-PFAN that will bring their tools and methodologies in supporting growth stage enterprises and investment facilitation support.

115. The Environment Protection Agency (EPA-SL) under the Ministry of Environment will be responsible for guiding Component 3. They will coordinate the flow of funds, technical and financial support across the sectors of Agriculture, Water Resources and Energy. They will also guide NGOs/CSOs, extension services, farming and water user associations with training on adaptation innovations for vulnerable populations. Furthermore, FSPs will be selected on a competitive basis to implement parts of this components, especially the development and operation of revolving funds. The selection will consider geographical coverage, conditions and market access.

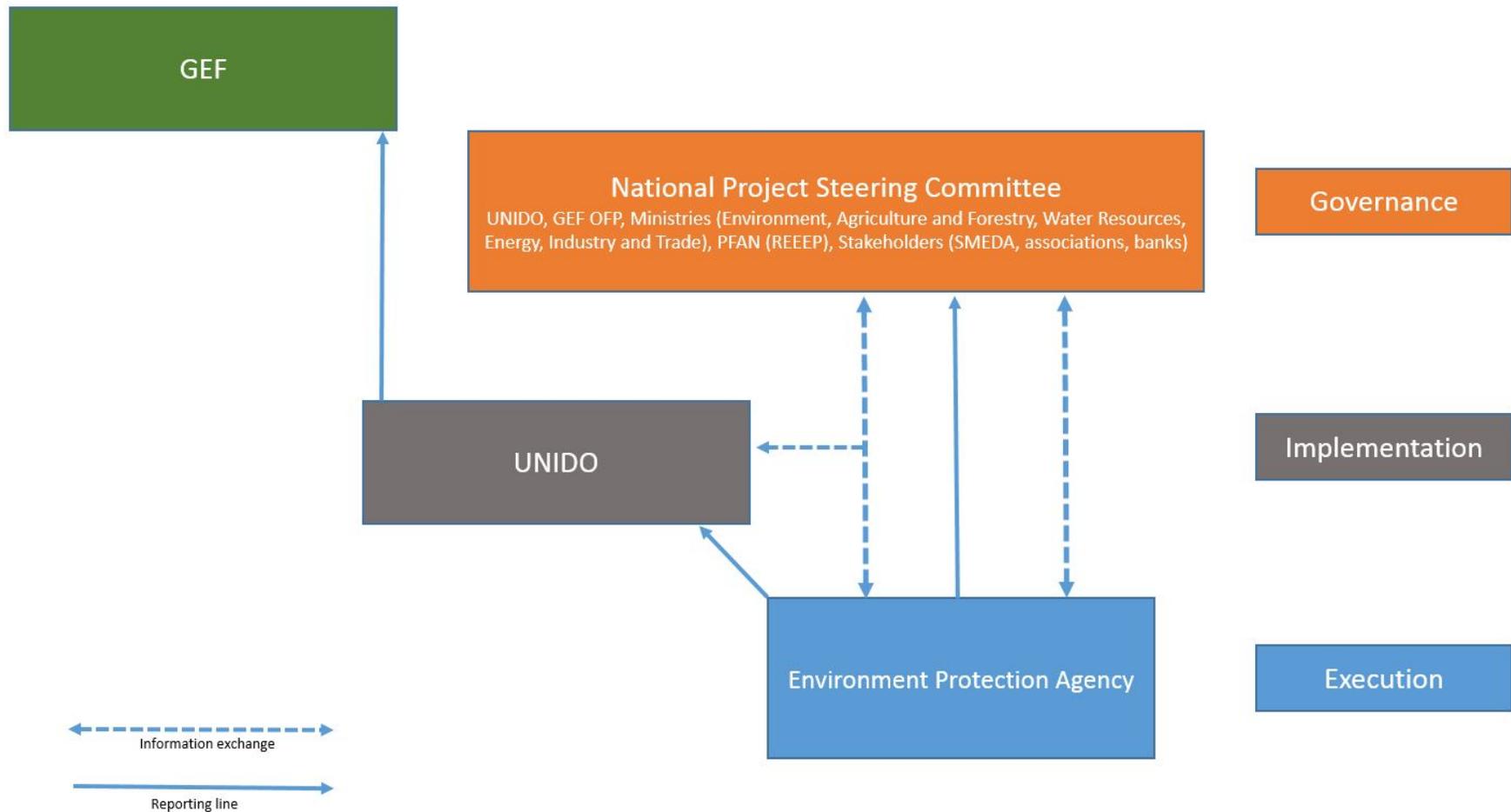
116. A project Steering Committee (PSC) will be comprised of representatives from the Ministry of Environment, Ministry of Trade and Industry, Small and Medium Enterprise Development Agency (SMEDA), PFAN as well as the Ministries of Agriculture and Forestry, Water and Energy, a representative of FSPs, among others. At the discretion of the PSC, relevant national stakeholder such as Incubators/Professional Training Institutions, MSME Promotion Agencies/Business Associations will be invited to participate in the PSC to ensure local ownership and guidance for the project. The PSC will act as an advisory mechanism to maximize synergies and ensure the successful design and implementation of the project. The main role of the PSC will be to provide

operational guidance as well as overall, high-level coordination and project validation during the implementation of the project. They will act as a decision-making body in the case of updates to the executing entities. The PSC will meet regularly at least biannually to track progress and provide opportunities for identifying potential synergies, as well as to increase uptake of lessons and build synergies.

117. A Project Management Unit (PMU) will be established under the project consisting of a National Project Coordinator and National Project Assistant and will ensure regular project monitoring and evaluation, as described in the above section on alternative scenario. It is proposed that the PMU will be hosted at the Environmental Protection Agency.[1]

118. A schematic of this arrangement is shown here:

Figure 3: Implementation Arrangement Schematic



119. There are a number of planned activities and GEF-financed projects in SL that present potentials for synergies and collaboration with the proposed UNIDO project. The project will link strongly link with the National Adaptation Planning (NAPs) process with regards to capacity building on adaptation for cross-sectoral institutions. The project will also collaborate with all LDCF funded adaptation projects and build on the awareness campaigns of climate change already conducted. A brief summary on synergies are listed in Table 5:

Table 5 indicates how the project will coordinate with GEF projects.

Project Title	Amount, Time-frame	Financiers	Coordination Mechanisms
Adaptation MSME Accelerator Project (ASAP)	2019-2021	GEF, the Lightsmith Group and Conservation International Ventures	<ul style="list-style-type: none"> · Use of ASAP's taxonomy and toolkit to identify, recruit and support adaptation MSMEs for Sierra Leone's Adaptation Accelerators to be placed in existing accelerators · Regional and global marketing support for EO focused MSMEs identified such as through publicizing with company profiles · Sending Sierra Leone EO focused MSMEs to Regional Adaptation MSME Networks · Joint discussions with government representatives to pinpoint policies the government can take to help build the markets for adaptation and climate resilience solutions and local MSMEs
CTCN	2014 - 2020	GEF and AfDB	<ul style="list-style-type: none"> · Collaboration on promoting solutions to make agricultural water infrastructure climate resilient, to prevent flooding, facilitate irrigation, and employ strategies for agro-forestry and erosion control · Working together to improve market access for the EO Sector
CRAFT	USD 1 m, 2017- 2019 (ended)	GEF via CI	<ul style="list-style-type: none"> · CRAFT was the first private sector climate resilience and adaptation investment fund and technical assistance facility for developing countries and invested in companies with climate resilience solutions in 20 market segments including agriculture, water, energy, transportation, and finance · CRAFT fund could be a potential funding resource for the selected MSMEs in Sierra Leone
Building Resilience to Climate Change in the Water and Sanitation Sector	33mIn, 2016 - 2020	GEF via African Development Bank	<ul style="list-style-type: none"> · Work together to improve access of smallholder farmers to private sector investment. · Support CNHEO to coordinate the Climate Change Trust Fund's contribution to the EO sector · Support GHG emission reductions from deforestation · Collaborate on deploying targeted loan products, profit participation loans (PPL) and financial support to communities, farmer organizations and adaptation focused MSMEs
Adaptation Climate Change	2017 - 2020	GEF via UNDP	<ul style="list-style-type: none"> · Working together to introduce climate resilient livelihood options and approaches to a

Adapting to Climate Change Induced Coastal Risk Management	9.9min, 2017 - 2022	GEF via UNDP	<ul style="list-style-type: none"> Working together to introduce climate resilient livelihood options and approaches to address the climate risk facing coastal communities
Using systemic approaches and simulation to scale nature-based infrastructure for climate adaptation		GEF via UNIDO	<ul style="list-style-type: none"> Within the framework of the accelerator and trainings, promoting innovative for Nature Based infrastructure and adaptation. Supporting technologies and solutions that support biologically diverse forests, mangroves, wetlands, grasslands and agricultural lands to provide valuable ecosystem services and adaptation Ensuring that adaptation focused MSMEs support topics such as carbon sequestration, nutrient removal, water storage, harvesting
Sustainable Cities Impact Program (SCIP)	To start implementation	GEF via World Bank	<ul style="list-style-type: none"> Working together to find adaptation technologies that will provide nature-based solutions and waste management solutions for Freetown's development problems

[1] Legal Clause: The Government of the Republic of Sierra Leone agrees to apply to the present project, mutatis mutandis, the provisions of the Standard Basic Assistance Agreement between the United Nations Development Programme and the Government, signed and entered into force on 21 December 1977.

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

The project is fully aligned with the following national priorities:

120. The Medium term National Development Plan (MTNDP) 2019-2023 has the following targets relevant to the agriculture, water and energy sectors. The MTNDP focuses on the following relevant priorities; improving the productivity and commercialization of the agricultural sector, promoting and inclusive rural economy, energy efficiency, improving the water infrastructure system and building national environmental resilience. Accordingly, by focusing on promoting resilience into the water, agriculture and energy sectors, this project will immensely contribute towards these priorities.

121. The National Sustainable Agriculture Development Plan (NSADP) 2010-2030 has prioritized the following relevant goals; fostering increased agricultural productivity (intensification), promoting commercial agriculture through Private Sector (extensification), improving Research & Extension Service Delivery and mainstreaming cross-cutting themes: gender and youth promotion and natural sustainability. The project is fully aligned to these priorities as the adoption of adaptation technologies, products and services in rural areas will contribute toward increasing agricultural productivity and the engagement of adaptation MSMEs, i.e., the private sector.

122. The National Water and Sanitation Strategy (2010) has the following relevant goals; development of a comprehensive framework for management of water resources and sustainable development of water supply and sanitation services within an effective legal and institutional framework and address cross-sectoral interests in water resources through integrated and participatory approaches in the planning, development and management of the water resources. The project will contribute towards these goals by promoting resilience in the water sector as well as engaging the private sector in the process.

123. The National Renewable Energy Action Plan 2015/2020-2030 has the following targets; guarantee adequate, reliable, affordable, equitable and sustainable supply of renewable energy in an environmentally friendly manner; establish the process of acquisition and diffusion of technology, managerial expertise and indigenous participation in the renewable energy sector industry, for stability and self-reliance, develop the nation's renewable energy resources through the establishment of appropriate financing mechanisms that support private investment in the subsector and ensure effective coordination and collaboration among all players in renewable energy activities in Sierra Leone. The project will contribute towards these goals by supporting the deployment of adaptation technologies that can provide resilience to the energy sector (e.g., climate information services, climate resilient designs and predictive technologies for power line health, etc).

124. The project will also adhere to the NAPs core Strategic Axes 1 and 3: 1) Strengthening governance and integration of adaptation and 3) Financing adaptation to climate change. Other key strategies and plans include: National Adaptation Plan of Action (NAPA, 2007) and the Third National Communication to the UNFCCC, the NDC^[1]; the Poverty Reduction Strategy; Agenda for Prosperity; SME Strategy, SME Policy and SME Agency Act 2016; and the National MSME Development Strategy 2013.

125. The project is also aligned with recent Climate Risk Vulnerability Assessments conducted for Sierra Leone that have predicted that future climate conditions indicate an increase rainfall, particularly in terms of single rainfall events intensity.^[2] These future circumstances pose great risks to the water, agriculture and energy sectors within Sierra Leone through the increase in ocean levels that will affect agricultural land, ground water reserves and will

thereby hamper food production. Higher temperatures will cause more droughts and increased evaporation rates, which will drive further food insecurity and water access. Increased intensity of single rainfall events will hamper energy production through damage caused to infrastructure. The project will directly address these vulnerabilities by enabling and capacitating adaptation MSMEs to provide technologies and services that will provide resilience.

[1] <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Sierra%20Leone%20First/SIERRA%20LEONE%20INDC.pdf>

[2] USAID Climate Risk Profile – Sierra Leone

8. Knowledge Management

Outline the Knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

126. Component 4 of the project will establish a Monitoring, Evaluation and Learning (MEL) system to be managed by the EPA and to link with their current M&E system. The focus on learning takes on added significance in the context that the ecosystem of MSMEs in climate adaptation innovation in Sierra Leone is very much limited. Learning in fact underpins adaptation and innovation; thus, designing for adaptation requires designing for learning.^[1] The project will initiate and set up working groups of the key stakeholders of climate adaptation technologies, innovation as well as the MSME sectors and develop and share knowledge and lessons-learned for continuous capacity building. As such component 4 will create a system for continuous learning and knowledge sharing throughout the project implementation cycle. This will be documented through creating knowledge products for dissemination and sharing with national stakeholders as well as with international forums. As such component 4 seeks to identify best-practice examples to address key barriers/challenges for unlocking the climate adaptation market and providing technical guidance for the project implementation. All the lessons learnt from the project implementation will be properly documented through periodic reviews and sharing. During the project execution, 6 rounds of selected adaptation MSMEs will go through incubation and acceleration process. The project intends to gather all knowledge products to serve as a capacity building for the subsequent and future selected MSMEs. A dedicated page under the EPA's website will be created for the project, with user-friendly interface consolidating all lessons learned or any information for the project. SMEDA will also become the knowledge hub for training and outreach materials for adaptation MSMEs. SMEDA will be responsible for developing an on-line marketplace platform to highlight adaptation solutions offered in Sierra Leone. Furthermore, the project will organize networking and matchmaking events with a view to facilitate partnerships (e.g. with investors/financiers, distributors) as well as link to global forums. The project's webpage will also be linked to other websites that provide knowledge products like the CTCN.

127. The EPA will be responsible for establishing knowledge management indicators and metrics for the MEL due to their existing M&E database. They will be the ultimate owner of the data, statistics and knowledge products. They will also coordinate with ASAP that is simultaneously developing a curriculum, taxonomy, adaptation technology database and measurement metrics on best adaptation technologies/practices. A gender-disaggregated knowledge base will be developed to share best practices and lessons learned, as well as support information exchange with policy makers at global forums and regional events (such as those convened by ASAP) on climate adaptation innovation. The MEL will link with ASAP's global website to highlight entrepreneur success stories and lessons learned. As the project progresses and implementation results become demonstrable, the MEL knowledge management system will be used to develop benchmarks for innovations. A Knowledge Management Expert will conduct more frequent evaluations to iteratively improve the impact of the Adaptation Accelerators and the home-grown ideas that graduate from the Accelerators. Different communication channels to disseminate lessons learned and success stories will include training manuals, good practice guides, data sheets, posters, videos, radio programmes and regular updating on the UNIDO website. The results will be actively used to better inform policy dialogue and to strengthen methods to build resilience for the most vulnerable rural populations through a learning process. The MEL will support future entrepreneurs and potential investors to learn from past successes and failures.

128. Under Component 5, the project will conduct an independent mid-term review and independent terminal evaluation. The evaluations will be used as a tool to assess project results. The independent terminal evaluation will feed into learning and knowledge sharing for other adaptation projects in Sierra Leone and abroad so that successes can be repeated.

[1] STAP (2017). Strengthening Monitoring and Evaluation of Climate Change Adaptation: A STAP Advisory Document. Global Environment Facility, Washington, D.C.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF

CEO Endorsement/Approval MTR

TE

Medium/Moderate

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

A preliminary environmental and social risk screening was conducted according to the UNIDO Environmental and Social Safeguards Policies and Procedures (AI/2017/04). The screening categorized the project as "A". Category A projects are likely to induce significant adverse environmental and/or social impacts that are sensitive, diverse or unprecedented. A full Environmental and Social Impact Assessment (ESIA) and an Environmental and Social Management Plan (ESMP) will be developed during the PPG phase.

Supporting Documents

Upload available ESS supporting documents.

Title

Submitted

200260 ES Screening Cat A 25092020_signed

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And Gef Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Mr. Sheku Mark Kanneh	Assistant Director, National Climate Change Secretariat	Environment Protection Agency	7/7/2020

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

PROGRAM/PROJECT MAP AND GEOGRAPHIC COORDINATES

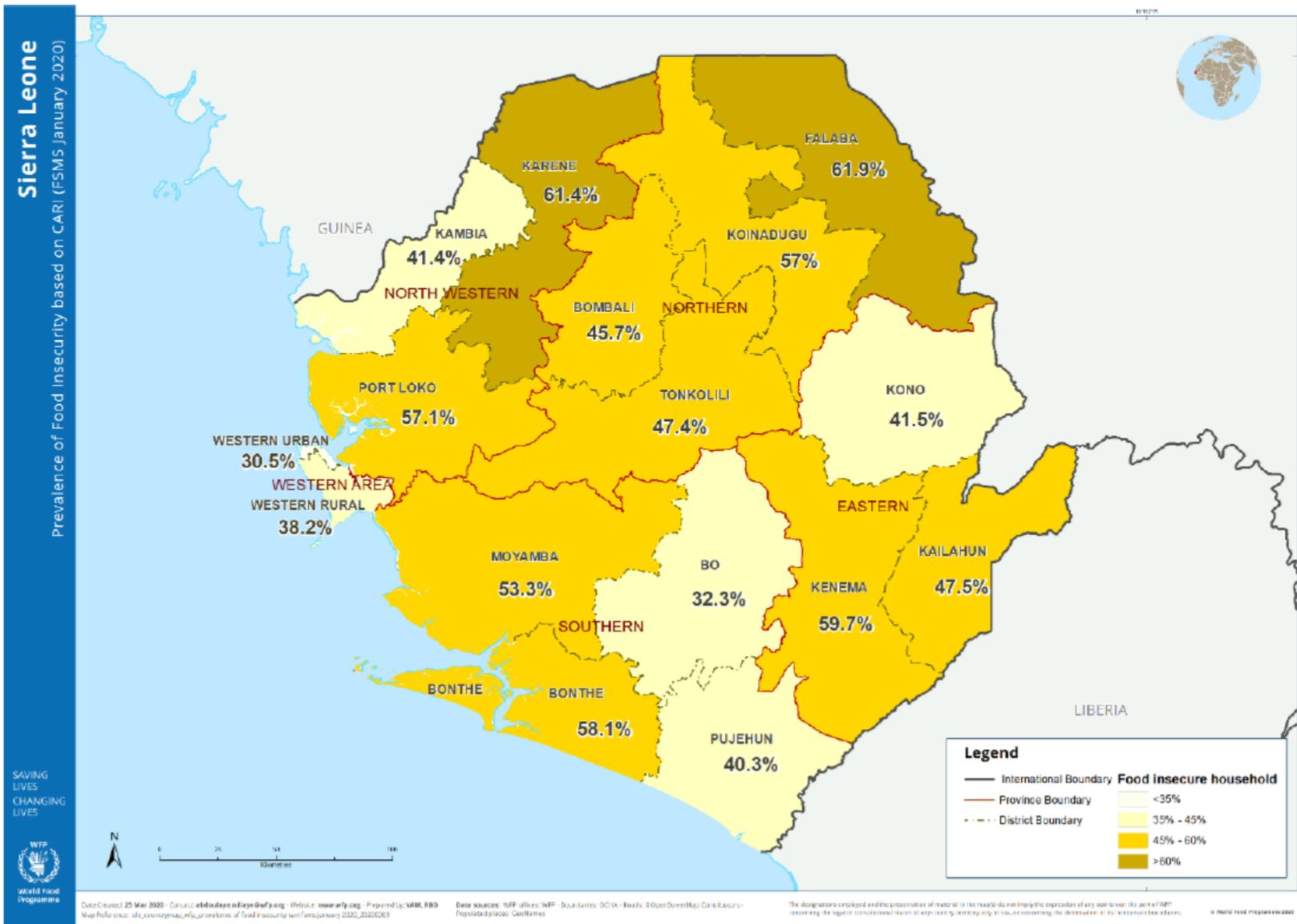
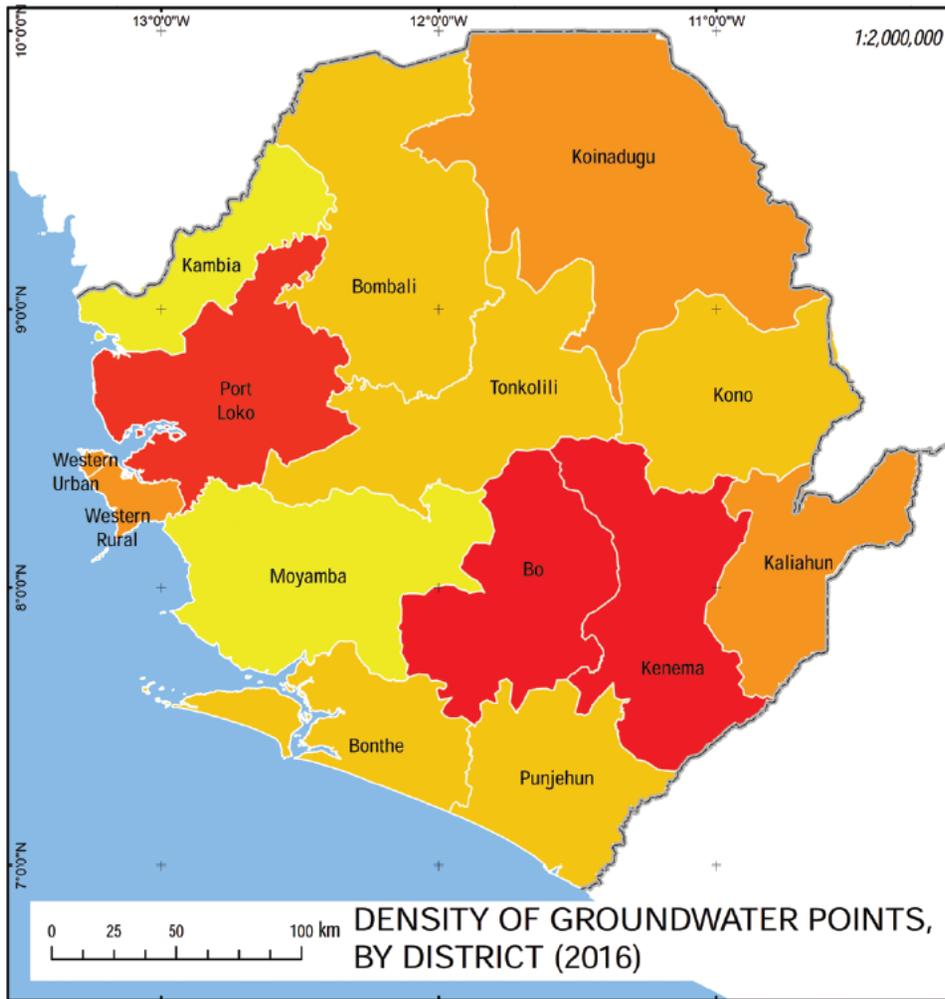


Figure 4: WFP 2020 Map Sierra Leone, FOOD SECURITY by province

<https://www.wfp.org/publications/finding-of-food-insecurity-sierra-leone-january-2020>



LEGEND

-  *International Boundary*
-  *Capital*
-  *District Capital*
-  *Main River*
-  *Secondary River*

Density of Groundwater Points, by District

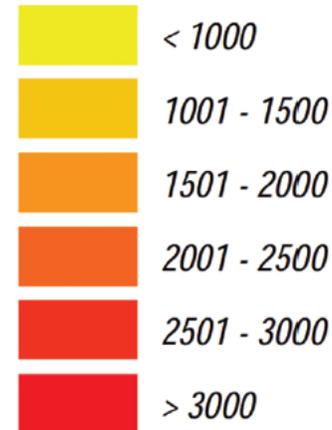


Figure 5: WASH 2012 (based on national data), Ground water points by district