Country	**Sierra Leone**
Request ID#	**2025000022**
Title	Climate-Smart Aquaculture Zoning in Sierra Leone: Development of a GIS-Based Decision-Support Tool to Enhance Resilience and Sustainable Fish Farming
NDE	*Ibrahim Sinneh Kamara* *Director General/PR with WMO* *Sierra Leone Meteorological Agency* *Ministry of Environment and Climate Change* *F18 Charlotte Street* *Freetown, Sierra Leone*
Proponent	Ministry of Fisheries and Marine Resources Mr. Sheka Kargbo Email: shekakargbo2002@yahoo.com

Summary of the CTCN technical assistance

The summary should provide a brief description of the problem (barrier to climate technology deployment) and how the technical assistance will address it (summary of outputs and activities). Please also briefly indicate national actors involved and the anticipated timeline. Please note this summary will be used for public communication purposes so it is important that it is well written. (maximum 1250 characters including spaces)

Sierra Leone's aquaculture sector faces mounting threats from climate change, including erratic rainfall, flooding, and rising temperatures that undermine fish production and livelihoods. This CTCN technical assistance will develop a **climate-smart, GIS-based decision-support tool** to guide aquaculture zoning and investment. By integrating environmental, hydrological, and socio-economic data with climate projections, the tool will identify suitable and climate-resilient sites for fish farming. Key outputs in this TA include a **national aquaculture baseline map**, environmental and climate layers, a **multi-criteria suitability index**, and an **interactive web-based GIS portal**. The project will also strengthen institutional capacity through training and establish data-sharing frameworks to improve cross-agency coordination. This initiative supports Sierra Leone's **Feed Salone Strategy** and **NDCs**, promoting food security, inclusive growth, and gender-responsive climate adaptation in the aquaculture sector.

Agreement:

(If possible, please use electronic signatures in Microsoft Word file format)

National Designated Entity to the UNFCCC Technology Mechanism

Name: Ibrahim Sturman
Title: DG
Date: 08/12/2025
Signature:

Proponent (signature of the Proponent is optional)

Name: Sheka H. Kanko
Title: Deputy Head of Aquaculture
Date: 11/12/2025
Signature:

Adaptation Fund Focal Point

Name: Abu-Bakar Massaquoi
Title: Executive Chairman, EPASL
Date: 06/12/2025
Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Ariesta Ningrum
Title: CTCN Director
Date: 15.12.2025
Signature:

1. Background and context

Please provide a brief description of the background and context for the CTCN Response Plan. Please include national and sectoral information using recognized and publicly available sources. (maximum 2500 characters including spaces).

Sierra Leone, a coastal West African nation, possesses significant potential for aquaculture development due to its abundant inland water bodies, extensive coastline, and favorable environmental conditions. However, the growth of this sector is increasingly threatened by the impacts of climate change, which compound existing challenges in environmental management, land use, and policy implementation.

Climate-related disruptions—such as erratic rainfall patterns, sea level rise, and temperature fluctuations—are undermining the stability of aquatic ecosystems, and in turn, threatening aquaculture viability. These vulnerabilities are exacerbated by the country's underdeveloped spatial planning systems, including limited use of Geographic Information Systems (GIS) for aquaculture zoning and climate resilience.

Sierra Leone experiences a tropical climate marked by a distinct wet season (May to October) and dry season (November to April), with annual rainfall ranging from 2,000 mm in the interior to over 3,000 mm along the coast (World Bank, 2021). While this rainfall supports freshwater fish farming, increased climate variability has led to erratic precipitation, flooding, and longer dry spells—all of which affect water quality, fish breeding cycles, and the productivity of aquaculture ponds. Rising temperatures and changes in the timing of rainfall further disrupt the thermal balance and oxygen levels required for healthy fish growth. Coastal aquaculture is similarly under threat from sea level rise and saltwater intrusion, which degrades freshwater ecosystems and reduces the suitability of many traditional fish farming sites.

In terms of land use and soil characteristics, Sierra Leone's lowland and inland valley swamps are suitable for aquaculture due to their alluvial soils and relatively flat topography. However, poor land use planning, widespread deforestation, and unsustainable agricultural practices have led to soil erosion, sedimentation of water bodies, and land degradation—factors that reduce water retention and quality in potential aquaculture sites (FAO, 2020). Additionally, competing demands for lands such as mining, agriculture, and urban development, contribute to the absence of clear zoning regulations for aquaculture. These overlapping land uses often result in conflicts, limiting the identification and preservation of areas best suited for sustainable aquaculture development.

Despite recognition of aquaculture's potential, Sierra Leone has made limited progress in conducting systematic studies using GIS to guide aquaculture zoning. GIS technology is a powerful tool for integrating environmental, climatic, and socio-economic data to identify optimal aquaculture zones that are resilient to climate change. However, its use in Sierra Leone remains minimal, largely due to inadequate technical capacity, limited data availability, and limited institutional coordination.

According to a 2024 UNDP-supported report, while the government has initiated policies under the "Feed Salone" strategy aimed at improving food security through aquaculture, there is still a critical gap in spatial planning and zoning supported by climate-smart data tools (UNDP Sierra Leone, 2024). In conclusion, the major climate-related challenge facing Sierra Leone's aquaculture sector is the compounded impact of climate variability on aquatic ecosystems, worsened by poor land use practices and the lack of climate-informed spatial planning. Selection of sites for aquaculture at subsistence or commercial level hence suffers from synergistic effects of climate and non-climate

induced impacts that erode the capital worth of aquaculture infrastructure such as ponds, water channels and business systems. Integrating climate and non-climate criteria under tools like GIS to determine viable aquaculture zones based on climate resilience and ecological suitability, will ensure sustainability of the sector in the long term. Thus, investments in dynamic multi-criteria analysis of environmental and socioeconomic data, land use policy reform, and technical capacity building are needed to guide sustainable aquaculture development in a changing climate.

Sources:

- World Bank (2021). Climate Risk Profile: Sierra Leone. https://climateknowledgeportal.worldbank.org
- FAO (2020). Aquaculture Development in Sierra Leone – Status and Opportunities.
- UNDP Sierra Leone (2024). Annual Results Report: Enhancing Food Systems and Coastal Resilience
- through the Feed Salone Strategy.
- Ministry of Fisheries and Marine Resources, Sierra Leone (2024). Feed Salone Strategy for the Fisheries and Marine Resource Sector 2024–2035

2. Problem statement

Founded on the national and sectoral context as detailed in the section above, please include a brief problem statement clarifying the main problems and barriers for climate change mitigation and/or adaptation in terms of climate technologies that the CTCN Response Plan will address and overcome. (maximum 1250 characters including spaces).

Recognizing the growing threat of climate change to its food systems and aquatic ecosystems, Sierra Leone has taken several policies, institutional, and project-based steps to address these challenges, particularly in the context of sustainable aquaculture development. These initiatives driven by the government, supported by development partners, and aligned with national development goals, are gradually building resilience in the sector. While gaps remain, the following efforts reflect an evolving commitment to climate adaptation and aquaculture zoning.

1. **Feed Salone Strategy for the Fisheries and Marine Resource Sector (2024–2035)**
This ten-year national strategy represents Sierra Leone's most ambitious plan to transform its fisheries and aquaculture sectors. Implemented by the Ministry of Fisheries and Marine Resources with support from international partners, the strategy outlines actions to increase fish production, enhance food security, and build climate resilience through sustainable aquaculture. It calls for improved governance, research on inland and coastal ecosystems, and the development of zoning policies to manage aquaculture expansion. Though implementation is still in early stages, it signals a shift toward more structured planning and adaptation.

2. Feed the Future Sierra Leone Scaling Up Aquaculture Production (2021–2024)
This USAID-funded project aimed to enhance fish farming in Tonkolili District by providing smallholder farmers with inputs, training, and extension support. While not primarily climate-focused, the project introduced improved pond designs, water management techniques, and training in climate-smart practices. It helped improve yields and demonstrated how sustainable aquaculture can contribute to rural livelihoods under shifting climate conditions. The project emphasized the need for long-term **environmental monitoring and integration of GIS tools**, which remain underutilized.

3. *UNDP Coastal Resilience Programme (2023–2026)*
Led by the United Nations Development Programme and the Government of Sierra Leone, this initiative focuses on enhancing resilience to sea-level rise and coastal flooding, which directly affect aquaculture operations in coastal districts. The program includes mangrove restoration, community-based adaptation, and policy advocacy for climate-resilient coastal planning. It supports mapping of

vulnerable areas and promotes ecosystem-based adaptation approaches that benefit both aquaculture and biodiversity.

4. *West Africa Coastal Areas (WACA) Management Program – Sierra Leone Chapter*

Under the broader WACA framework supported by the World Bank, Sierra Leone has joined efforts to improve coastal zone management through better policy, data collection, and infrastructure investment.

Although primarily focused on erosion control and urban resilience, the WACA program supports environmental data systems and GIS mapping, which could be expanded to inform aquaculture zoning in climate-sensitive areas.

5. *National Adaptation Programme of Action (NAPA) and the Nationally Determined Contributions (NDCs)*

Sierra Leone's climate policy framework, including its 2015 NAPA and updated NDCs (2021), acknowledges the vulnerability of water resources and aquatic ecosystems to climate change. These documents propose actions such as promoting climate-resilient aquaculture and strengthening early warning systems. However, implementation has been slow, and integration with GIS-based planning remains weak. Still, they provide a foundation for future investments and institutional coordination in the sector.

6. *Smallholder Commercialization Programme and the Ministry of Agriculture's GIS Unit (Ongoing)*

The Ministry of Agriculture and Food Security has developed a GIS unit that supports land suitability mapping for various agricultural activities, including fish farming. While aquaculture-specific zoning using GIS is still at an early stage, this initiative lays the groundwork for more advanced spatial planning by providing geospatial data and capacity-building support to technical staff. While Sierra Leone's aquaculture sector continues to face serious climate-related challenges, these ongoing and past efforts reflect growing national awareness and commitment to addressing the problem. However, there is an urgent need to consolidate these efforts by mainstreaming climate adaptation into spatial planning, investing in aquaculture zoning using GIS, and fostering inter-agency collaboration to ensure sustainability.

Despite Sierra Leone's growing policy momentum to develop climate-resilient aquaculture—most notably through the Feed Salone Strategy and donor-supported projects, significant technology-related barriers continue to hinder progress. One of the most critical challenges is the scarcity and fragmentation of environmental and climate data. Currently, hydrological, soil, land use, and climate datasets are either outdated, inaccessible, or inconsistently collected, with no centralized or regularly updated system.

The absence of a functioning marine meteorological station further limits the ability to model and predict coastal flooding and salinity intrusion, which are vital for aquaculture site selection. In addition, the GIS infrastructure within the Ministry of Fisheries and Marine Resources (MFMR) remains basic and **outdated**, lacking modern tools to support spatial decision-making. Much of the spatial data management is still done manually, making it difficult to analyse or disseminate insights effectively.

A shortage of skilled professionals in geospatial analysis and climate risk assessment presents another major barrier. MFMR and other relevant ministries face significant capacity gaps, with limited training opportunities and minimal support for aquaculture extension services. This results in a situation where local farmers rarely receive guidance on suitable pond locations or climate-smart practices.

The problem is compounded by limited digital infrastructure, poor internet connectivity, high costs, and frequent electricity outages, making it difficult to adopt cloud-based GIS platforms or access large datasets. Moreover, institutional and inter-agency coordination remains weak. There are no formal data-sharing agreements among ministries, and the absence of standardized metadata

further reduces data usability across departments. Finally, the chronic underfunding of ICT maintenance and capacity-building efforts, amid Sierra Leone's high climate financing needs, means that any new technology often becomes obsolete or underutilized.

CTCN technical assistance directly addresses these barriers by **introducing a multi-criteria GIS-based dynamic mapping tool for aquaculture zoning that incorporates current and projected climate risks**. This tool will integrate layers such as hydrology, flood risk, soil quality, economic viability, and social factors to generate a suitability index for aquaculture site selection. By consolidating environmental and socioeconomic data into a centralized, open-source platform, it fills current data gaps and fosters regular updates.

The technical assistance will build national capacity through targeted training of fisheries staff and local extension officers, equipping them with the skills to use and maintain the system long after the project ends. It will also formalize data-sharing frameworks between ministries and align with broader initiatives such as the West Africa Coastal Areas (WACA) Program and Sierra Leone's NDC implementation.

Overall, the tool complements national efforts by providing the technological foundation and practical workflows needed to transform policy intentions into field-level action. This will support climate-informed aquaculture investments, improve risk management, and enable more equitable access to land and water resources. In doing so, it acts as a catalyst for sustainable aquaculture growth while enhancing Sierra Leone's resilience to climate change.

Sources:

- Ministry of Fisheries and Marine Resources, Sierra Leone (2024). Feed Salone Strategy 2024–2035.
- USAID Sierra Leone (2023). Feed the Future Aquaculture Scaling Project Report.
- UNDP (2024). Annual Results Report: Sierra Leone Coastal Resilience and Food Security.
- World Bank (2023). WACA Platform: West Africa Coastal Areas Management Program – Country Profile: Sierra Leone.
- UNFCCC (2021). Sierra Leone Updated NDC Submission. https://unfccc.int/NDC
- FAO & Ministry of Agriculture and Food Security (2022). Agricultural Land Use and GIS Mapping in Sierra Leone.

3. Logical Framework for the CTCN Technical Assistance:

(Guidance: Please note that multiple activities lead to one Output, and multiple Outputs lead to one Outcome. There can be several Outputs, but only one Outcome description capturing the CTCN technical assistance. Deliverables are the products or services to be delivered to the NDE/Proponent/CTCN based on the Activities and the Outputs.)

	Month											
	2	4	6	8	10	12	14	16	18	20	22	24
Objective: *The **overall objective** of this technical assistance is to develop and deploy a climate-smart, multi-criteria GIS-based decision-support tool for aquaculture zoning in Sierra Leone that integrates environmental, climatic, and socio-economic data, including future climate projections, to identify suitable and non-suitable areas for fish farm development, strengthen institutional and technical capacity within relevant national agencies, and support local extension services in guiding sustainable, climate-resilient aquaculture investments.*												
Outcome: *Anticipated products to be delivered by the technical assistance* • National Baseline Aquaculture Map • Environmental and Climate Data Layers • Climate Projection Layers (IPCC-based) • Multi-Criteria Suitability Index for Aquaculture Zoning • Geospatial Analysis of Aquaculture vs. Land Use Change Drivers • Interactive Web-based GIS Portal • Climate-Smart Aquaculture Zoning Tool (Decision-Support System) • Capacity Building Materials and Training Reports • Data Sharing and Maintenance Protocols												
Mandatory Output: Project management *All implementers must undertake the following project management activities at the beginning of, during and at the end of the CTCN technical assistance.*	■					■						■
Activity A: Beginning of implementation A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan. Based on the work plan, a monitoring and evaluation (M&E) plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan). This M&E plan also includes a CTCN Impact Description formulated in the beginning of the technical assistance	■											

which will be revised in the Closure and Data Collection report once the technical assistance is fully delivered (templates will be provided). Other additional monitoring and evaluation indicators or templates may be required depending on the donor that is funding the technical assistance. Furthermore, a gender evaluation and gender action plan (GAP) will be prepared and followed throughout the technical assistance (a template will be provided).[1]												
Activity B: Implementation A project steering committee will be formed, consisting of the implementing team (international and local consultants), the NDE, the project proponent(s), beneficiary(ies), and CTCN. The objective of this steering committee is for the implementing partner to report on progress, and to guide the implementation of the project at a high level. It is recommended that this steering committee is virtually meeting monthly.												
Activity C: End of implementation A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided). Potential project-end communication and dissemination activities (such as knowledge sharing webinar, dialogue with financial institutions, press release) may be conducted in collaboration with the CTCN Secretariat, subject to appropriateness.												
Mandatory deliverables: Deliverable A: Detailed work plan; M&E plan; gender assessment and gender action plan Deliverable B: Project Steering Committee meeting reports Deliverable C: Closure and Data Collection report; press release, webinar, dialogue with financial institutions	X		X			X						X X X
Output 1: Stakeholder Mapping and Establishing a Project Steering Committee *(Guidance: Outputs are new products and/or services that are produced by the implementers of the technical assistance, through completion of activities, and within the control of the CTCN technical assistance).* The Implementing Partner (IP) will conduct a stakeholder mapping and establish a stakeholder working group/project steering committee who will be engaged throughout the TA implementation phase.												
Activity 1.1: Identification of Stakeholders and Nomination of Project Steering Committee as required in B above The IP will identify relevant stakeholders among governmental institutions at the national and sub-national levels, in the aquaculture space and fish farming in general. This will ensure all relevant stakeholders are involved in the implementation of the TA. The project steering committee members will be proposed by the mapped stakeholders and will be limited to 8 representatives maintaining a gender balance and adequate representation from the youth												

[1] Additional information is available under Section 10 of the response plan.

and vulnerable groups. They will be expected to participate in all consultative workshops to provide views, expectations and contributions on aquaculture zoning. As stated in Activity B, the PSC will provide a technical overview and high-level guidance at every stage of the implementation of the technical assistance. A clear term of reference will be developed to support the operations of the PSC. This document will define the role (including the obligation to review the deliverables as well as any required obligations from each PSC member throughout the project implementation phase.), the document will also define the name and institution of each member.												
Activity 1.2: Conduct an Inception Meeting with the Project Steering Committee An inception meeting will be organized, in person, in the presence of at least one international expert and all the PSC members, to present the goals, milestones, anticipated deliverables, and the role of the project steering committee. All other members of the implementation consortium will join the meeting virtually. Local consultants will attend the meeting in person. CTCN will also join this inception virtually. Outcomes of the inception meeting will be fed into the implementation plan elaborated under Activity A of the Mandatory output. The ToR developed in Activity 1.1 will be presented and reviewed by the PSC. A DSA of 50 USD will be provided for each PSC member.												
Deliverable 1 1.1 Stakeholders mapping report +PSC Terms of references 1.2 Inception workshop report		X	X									
Output 2: Development of a National Baseline Aquaculture Map												
Activity 2.1: Mapping existing aquaculture activities across Sierra Leone The implementing partner will collaborate with the Ministry of Fisheries and Marine Resources (MFMR), local government authorities, and all relevant aquaculture stakeholders to develop a mapping protocol and data collection framework. With advice from the stakeholders, the IP will identify zones and districts based on existing aquaculture concentration and potential expansion areas. The IP will then develop a data collection Matrix with parameters including: • Geolocation (GPS points for small ponds, polygons for larger farms) • System classification by investment level: extensive, semi-intensive, intensive • Scale (pond size, production volume) • Technology used (e.g., species cultured, feed types, water management practices) • Operational status (active, seasonal, abandoned) • Ownership and management (commercial, smallholder, cooperative) • Socioeconomic data as relevant (gender of operator, labour force composition) With the framework ready, the IP will collect data and map the existing aquaculture activities across Sierraleone. The IP will then classify the data according to investment and technology levels using multi-criteria classification rules.												

Activity 2.2: Establishing a spatial snapshot of aquaculture distribution Building on the comprehensive mapping of existing aquaculture activities (Activity 2.1), this activity will create an integrated spatial snapshot to visualize and analyze the current distribution, intensity, and dynamics of aquaculture across the country. This snapshot will inform spatial planning, identify ecosystem pressures and conflicts, and reveal emerging trends and investment gaps. The IP will Consolidate geospatial data collected in Activity 2.1 with ancillary datasets such as: • Satellite imagery, land use/land cover maps (to identify suitable zones and assess potential land-use conflicts. • Recently compiled national scale LULC maps with relevant land cover classes maybe used.), • Hydrology (specifically drainage and hydrology analysis mapping rivers, streams, wetlands, and watersheds to evaluate water availability and flood risks), • Infrastructure, and environmental quality indicators. The IP will then Incorporate temporal data where available to capture seasonal or year-to-year changes in aquaculture activity. The IP will then Use GIS techniques to produce detailed maps illustrating aquaculture density, system types, technology adoption, and production scale at national and sub-national levels. These maps will Identify spatial patterns such as clustering, expansion corridors, or underutilized areas. The exercise will be concluded by overlaying aquaculture distribution with environmental datasets (e.g., flood risk zones, water quality indices, biodiversity hotspots) and competing land uses (agriculture, mining, urbanization). From this exercise the IP will identify potential vulnerabilities and conflict areas where aquaculture may impact or be impacted by ecosystem degradation or other land uses. The produced snapshots will be integrated into the GIS-based zoning tool for dynamic scenario analysis and ongoing monitoring.												
Deliverables 2: National Baseline aquaculture map				X								
Output 3: Generation of Key Environmental and Climate Layers												
Activity 3.1: Terrain Analysis: The objective of this activity is to develop a high-resolution Digital Elevation Model (DEM) and conduct terrain analysis covering Sierra Leone to assess slope, elevation, and drainage characteristics critical for optimal aquaculture pond site selection. The IP will obtain the most recent and highest resolution available DEM datasets from sources such as the Shuttle Radar Topography Mission (SRTM), ALOS PALSAR, or national topographic surveys as available. The IP will then collect complementary spatial data including hydrology, soil types, and land cover to enhance terrain evaluation.												

The IP will conduct DEM processing and terrain analysis while integrating aquaculture constraints. This process should incorporate feedback from local fisheries experts and extension agents on terrain-related site suitability The final products of this activity will be detailed maps and technical reports illustrating DEM products, suitable terrain zones, and recommendations for pond sitting.												
Activity 3.2: Compilation of Climate Layers This activity will compile relevant gridded (raster) climate data layers at monthly/seasonal scales, e.g. temperature, precipitation, and humidity averages relevant for fish species grown in Sierra Leone, and for site selection. Data maybe compiled from remote sensing and model sources.												
Activity 3.3 Integration of Climate Change projections In this activity, the IP will integrate various climate change projections including Intergovernmental Panel on Climate Change (IPCC)-aligned future climate scenarios, projected changes in temperature, rainfall, and extreme weather patterns. This activity will also involve model outputs such as RCPs or SSPs relevant for aquaculture viability under medium and long-term conditions. The IP will then assess how these climate variables interact with hydrology, land degradation, and aquaculture suitability.												
Deliverables 3: 3.1 Terrain Analysis report 3.2 Climate layers report 3.3 Climate change projections report												
Output 4: Geospatial Suitability Analysis for Aquaculture Siting												
Activity 4.1: Multi-criteria Analysis for Aquaculture suitability The aim of this activity is to systematically evaluate, rank, and prioritize potential aquaculture sites across Sierra Leone by integrating multiple biophysical, climatic, and socio-economic criteria through a transparent Multi-Criteria Analysis (MCA) framework With the analysis ready, the IP will then overlay current and projected development patterns, including infrastructure, agriculture expansion, and land degradation to understand their aquaculture suitability.												
Activity 4.2: Development of a suitability index and zoning layers The final activity in output 5 will be the development of a suitability index and zoning layers to inform government, investors, and communities on optimal and risk-prone areas.												
Activity 4.3 Validation and Stakeholder Engagement workshop The implementing partner will conduct validation workshop with local communities, government agencies, and technical experts to review and validate the MCA outputs. Stakeholders will provide feedback which the IP will incorporate and use to refine criteria weights, thresholds, and suitability classifications. All meeting participants will receive a DSA of 50 USD each.												
Deliverables 4: Suitability analysis report for Aquaculture siting & Workshop report												
Output 5: Development of a Climate-Smart user friendly Aquaculture Zoning Tool												

The objective of this output is to design and implement an intuitive, dynamic GIS-based tool that integrates multiple input data layers and geospatial models for comprehensive aquaculture site selection, investment guidance, and spatial planning under current and projected future conditions												
Activity 5.1 Platform Design and Architecture: The IP will develop a modular architecture combining environmental, climatic, socio-economic, and land-use layers with analytical models and design interfaces for both expert and non-expert users to perform static (predefined queries) and dynamic (customizable) spatial analyses.												
Activity 5.2 Integration of Input Datasets Next the IP will consolidate geospatial data from outputs 3 and 4 including suitability indexes, terrain, hydrology, land use, climate projections, and infrastructure. The IP will ensure interoperability, standardized metadata, and regular update mechanisms to maintain data accuracy and relevance.												
Activity 5.3 Functionality and Analytical Capabilities Next the IP will Enable multi-criteria evaluations, scenario simulations, and site suitability ranking within the tool. The tool must support query features such as interactive site selection by location, criteria filtering, and visualization of trade-offs across scenarios. Finally, the tool must Include both web-based and offline mobile versions for field usability by extension agents.												
Activity 5.4: User Experience and Accessibility: The IP will develop a clean, intuitive graphical user interface (GUI) with clear workflows, help. The GUI will Incorporate data visualization tools (maps, charts, dashboards) that convey complex spatial data simply. With the GUI ready, the IP will Conduct iterative usability testing with target users (government staff, local extension officers, investors) to refine tool design.												
Deliverables 5: 5. Rolled out Aquaculture zoning tool and accompanying user manuals								X				
Output 6: Creation of a Web-Based GIS Portal and Simulation Platform The objective of this output is to operationalize the user-friendly GIS-based decision support tool developed in output 5 by deploying it as an accessible, interactive web portal that enhances stakeholder engagement and enables real-time spatial exploration of aquaculture suitability and climate scenarios												
Activity 6.1: Portal development The IP will transition the GIS-based decision support tool into a robust web platform, leveraging the modular data layers, models, and analytical functionalities already integrated. The goal is to ensure seamless integration of interactive maps, suitability layers, and simulation modules developed earlier												
Activity 6.2 User Accessibility and Interface: The IP will design an intuitive, responsive web interface optimized for desktop and mobile browsers, emphasizing usability for diverse user groups including government planners, extension officers, investors, and												

local communities. The portal should retain the user-centric design principles established in Output 5, with streamlined workflows and visualization tools for spatial queries and scenario analysis.												
Activity 6.3 Real-Time Scenario Exploration: Finally, the IP will Incorporate dynamic simulation tools enabling users to model and visualize future aquaculture expansion, climate change impacts, and land use dynamics interactively. The platform will be organized to facilitate side-by-side comparison of baseline and projected scenarios to support evidence-based decision-making.												
Deliverables 6: Web based GIS portal and simulation platform										X		
Output 7. Capacity Building and Institutional Support												
Activity 7.1: 2-Days Capacity building workshop The IP will organize a demonstration and training workshop for 2 days, to facilitate usability by national agencies, especially the Ministry of Fisheries and Marine Resources (MFMR), EPA-SL, all related ministries and local extension officers. This workshop will cover the use, interpretation and maintenance of the whole system. The IP will prepare for this training by developing relevant manuals that can be followed even post TA implementation phase. The meeting participants will be limited to a maximum of 25 including the Project Steering Committee. DSA of 35 USD will be paid to all meeting participants (Extension agents, Officers from the ministry) except the PSC members who will be paid 50 USD per person.												
Activity 7.2: Roadmap for Sustainability The IP will prepare a roadmap for long term sustainability of the tool including protocols for data sharing, tool updates, and Maintenance. The sustainability plan will include operational protocols for portal maintenance and data governance in collaboration with national agencies. A framework on how the portal management can be embedded within the MFMR institution to ensure long-term sustainability aligned with national aquaculture and climate adaptation goals.												
Deliverables 7: 7.1Capacity building and workshop report 7.2 Sustainability roadmap report 7.3 Policy framework 7.4 Workshop report											X X X	 X

4. Resources required and itemized budget:

Please provide an indicative overview of the resources required and itemized budget required to implement the CTCN technical assistance, including for M&E-related activities, using the table below. Important to note that minimum 5% of the budget should explicitly target gender specific activities related to the technical assistance (please see section 10 for further information on gender). A maximum of 20% of the budget can be allocated to procurement (e.g. infrastructure purchase, technology piloting), Once the Response Plan is completed, a Response Implementation partner(s) will be selected by the Climate Technology Centre (CTC). A detailed activity-based budget for the CTCN assistance will be finalized by the CTCN and selected Implementer.

Activities and Outputs	**Input: Human Resources** *(Title, role, estimated number of days)*	**Input: Travel[2]** *(Purpose, national vs. international, number of days)*	**Inputs: Meetings/events[3]** *(Meeting title, number of participants, number of days)*	**Input: Equipment/Material** *(Item, purpose, buy/rent, quantity)*	**Minimum Budget**	**Maximum Budget**
Mandatory Output	*IE1 10days NE1 10days NE3 4days*				8800	9680
Output 1: Stakeholder Mapping and Establishing a Project Steering Committee					8400	9240

[2] All budget values related to Daily Subsistence Allowance or logistical support for local participants shall remain as indicated.
[3] All budget values related to the organization of meetings and events shall remain as indicated.

Activity 1.1: Identification of Stakeholders and Nomination of Project Steering Committee	*IE1 5days NE2 2days NE3 5days*					
Activity 1.2: Conduct an Inception Meeting with the Project Steering Committee	*IE1 1 day NE1 1day NE2 1day NE3 1day*	*International Travel - IE1*	*International DSA - IE1 National DSA - NE1, NE2, NE3 8 PSC members (DSA)*	*Workshop materials and conference room (Refreshments inclusive)*		
Output 2: Development of a National Baseline Aquaculture Map					**11000**	**12,100**
Activity 2.1: Mapping existing aquaculture activities across Sierra Leone	*IE1 4days IE2 5days NE1 4days*					
Activity 2.2: Establishing a spatial snapshot of aquaculture distribution	*IE1 3days IE2 6days NE2 6days*					
Output 3: Generation of Key Environmental and Landscape Layers					**10 900**	**11 330**

Activity 3.1: Terrain Analysis	*IE1 3 days NE1 3 days NE2 3 days*					
Activity 3.2: Compilation of Climate Layers	*NE2 3 days IE3 3 days*					
Activity 3.3. Integration of Climate Change projections	*IE13 days IE2 5 days IE3 3 days NE2 3 days*					
Output 4: Geospatial Suitability Analysis for Aquaculture Siting					**12800**	**14 080**

Activity 4.1: Multi-criteria Analysis for Aquaculture suitability	*IE1 5 days IE2 5 days NE3 3 days*					
Activity 4.2: Development of a suitability index and zoning layers	*IE1 3 days NE1 3 days NE2 3 days*					
Activity 4.3: Validation and Stakeholder Engagement workshop	*IE1 1 day NE1 day NE2 day NE3 day*	*International Travel - IE1*	*International DSA - IE1 National DSA - NE1, NE2, NE3 8 PSC members (DSA)*	*Workshop materials and conference room (Refreshments inclusive)*		
Output 5: Development of a Climate-Smart Aquaculture Zoning Tool					**38500**	**42 350**

Activity 5.1 Platform Design and Architecture:	*IE1 5 days* *IE4 5 days* *IE2 5 days*			*Software/ License Purchase +one year support* **$ 10000 (Min)** **$ 11 000 (Max)**		
Activity 5.2 Integration of Input Datasets	*IE1 5 days* *IE3 5 days* *IE4 7 days*					
Activity 5.3 Functionality and Analytical Capabilities	*IE1 5 days* *IE3 5 days* *IE4 5 days*					
Activity 5.4: User Experience and Accessibility:	*IE3 5 days* *IE4 5 days*					
Output 6: Creation of a Web-Based GIS Portal and Simulation Platform						

Activity 6.1: Design and launch the interactive web portal	*IE1 9 days IE5 9 days NE3 9 days*					
Activity 6.2: User Accessibility and Interface:	*IE1 5 days IE4 5 days IE5 5 days*					
Activity 6.3 Real-Time Scenario Exploration:	*IE1 3 days IE3 3 days IE4 3 days*					
Output 7. Capacity Building and Institutional Support						
Activity 7.1: 2-Days Capacity building workshop	*IE1 NE1 NE2 NE3*	*International Travel - IE1*	*International DSA - IE1 National DSA - NE1, NE2, NE3*		*Workshop materials and conference room*	

			8 PSC members (DSA) for 2 days *Training participants DSA* (25 for 2 days)*		*(Refreshments inclusive)*	
Activity 7.2: Roadmap for Sustainability	*IE1 3 days* *IE3 3 days* *NE1 3 days* *NE2 3days*					
Estimated range of costing for the entire Response Plan					***128, 150***	***140, 305***

5. Profile and experience of experts

Experts required	Brief description of required profile
Project Manager / Climate Adaptation Specialist (IE1)	• **Education:** Master's or PhD in Environmental Science, Climate Change, Natural Resource Management, or related field. • **Experience:** 10–12 years managing international climate-related projects; at least 5 years in Africa/West Africa. • **Role:** Lead implementation, coordinate with ministries/partners, oversee M&E and main communication focal point • Fluency in English is Mandatory • Women Candidates are encouraged to apply
Aquaculture and Fisheries Expert (IE2)	• **Education:** Masters in Aquaculture, Fisheries Science, or Marine Biology. • **Experience:** 8–10 years in aquaculture planning and management, preferably in tropical/sub-Saharan Africa. • **Role:** Provide technical input on aquaculture systems, species suitability, and sustainability standards. • Fluency in English is Mandatory • Women candidates are encouraged to apply
Climate Data & Modelling Expert (IE3)	• **Education:** MSc/PhD in Climate Science, Meteorology, or Hydrology. • **Experience:** 8–10 years in climate modelling; hands-on with IPCC scenarios (RCPs/SSPs). • **Role:** Generate climate projection layers, interpret rainfall/temperature shifts, model climate risks to aquaculture. • Women candidates are encouraged to apply • Fluency in English is Mandatory
Software Developer / GIS Tool Developer (IE4)	• **Education:** BSc/MSc in Computer Science, GIS Software Engineering, or Data Science. • **Experience:** 5–7 years in developing decision-support systems, preferably GIS/web-based platforms. • **Role:** Build the aquaculture zoning tool (desktop & web-based), ensure mobile/offline access.
Web-Based GIS Portal Developer (IE5)	• **Education:** BSc in Computer Science, Web Development, or IT. • **Experience:** 5–7 years in interactive GIS portals, open-source platforms (e.g., GeoNode, QGIS Server). • **Role:** Launch the web portal, integrate simulation platform, manage data visualization and user interface.
Land Use & Environmental Planning Specialist (National Expert) (NE1)	• **Education:** MSc in Land Use Planning, Environmental Management, or Natural Resource Governance. • **Experience:** 7–10 years in LULC mapping, ecosystem assessments, and policy integration. • **Role:** Oversee land use conflict analysis, advise on sustainable land allocation for aquaculture.

	• Fluency in English is Mandatory
Hydrology & Watershed Management Expert (NE2)	• **Education:** MSc in Hydrology, Water Resources Engineering, or Environmental Engineering. • **Experience:** 7–10 years in drainage, watershed, and flood risk modelling. • **Role:** Map rivers, wetlands, evaluate water availability, flooding, and hydrological suitability for aquaculture.
Gender & Social Inclusion Expert (NE3)	• **Education:** MSc in Gender Studies, Development, or Social Sciences. • **Experience:** 7–10 years in gender mainstreaming, preferably in climate/agriculture projects. • **Role:** Develop Gender Action Plan, ensure women, youth, and vulnerable groups are engaged.

6. Intended contribution to impact over time

The project will create a foundation which will enable informed decision-making for climate-resilient aquaculture investments and sustainable site selection amid climate risks like erratic rainfall, sea-level rise, and temperature fluctuations.

This project will strengthen inter-agency coordination, enhance technical capacity in geospatial analysis, and support the integration of climate resilience into national policies. Fisheries staff and local extension officers will become key actors in guiding fish farmers on climate-smart practices, bridging the gap between policy and practice.

Ultimately this project will drive sustainable growth in Sierra Leone's aquaculture sector by promoting climate-resilient fish farming that contributes to food security, livelihoods, and economic development.

By ensuring aquaculture's adaptability to changing climate conditions, the project will enhance sector resilience, encourage private sector investment, and foster inclusive growth aligned with Sierra Leone's climate and development goals.

7. Relevance to NDCs and other national priorities

Reference document (please include date of document)	**Extract** (please include chapter, page number, etc.).
Nationally Determined Contribution (NDC)	Direct alignment and contribution to NDC implementation is required for all CTCN technical assistance. Please include a direct reference to the INDC/NDC document (chapter, page number, etc.).
Technology Needs Assessment and Technology Action Plan	On Page 99 of Sierra Leone TNA developed by the UN technology bank, Sierra Leone, the country prioritized technologies to improve fish farming such as fishponds, processing and storage facilities including intensive pond technologies for aquaculture.
National Adaptation Plans	
GCF Country Programme	This technical assistance directly complements Sierra Leone's GCF Country Programme by filling several strategic gaps related to climate information systems, climate-resilient food systems, geospatial decision support, and capacity building. The GCF Country Programme identifies priorities such as strengthening climate information and early warning systems, improving resilience of livelihoods, enhancing climate-smart agriculture, expanding geospatial climate data, and mainstreaming adaptation into planning. This TA contributes to these priorities by establishing a national aquaculture baseline map, generating environmental and climate risk layers, and integrating IPCC-aligned climate projections into a functional GIS platform that can guide investment and planning. It operationalizes the GCF's emphasis on climate-informed decision-making by providing a sector-specific tool for aquaculture, a sector not yet covered by existing GCF projects such as SAP033 (Climate Information System) and SAP036 (Coastal Resilience). The TA strengthens and extends these GCF investments by adding a new climate-sensitive productive sector—aquaculture—to the broader climate information and spatial planning architecture.
National Policies	Feed Salone Strategy (2024–2035): Food Security & Climate-Smart Aquaculture The TA supports the Feed Salone Strategy by strengthening climate-smart aquaculture planning, enabling sustainable expansion, and reducing climate-related losses. It provides the spatial zoning and climate-risk data

	needed for evidence-based investment, which the Strategy identifies as a core gap in the fisheries and aquaculture sector.

8. Linkages to relevant parallel on-going activities:

The TA complements existing national programmes such as the Feed Salone Strategy, UNDP's Coastal Resilience Programme, the WACA coastal management initiative, SLMet's climate information upgrades, and ongoing GIS and land use mapping by the Ministry of Agriculture. It strengthens these programmes by providing climate-smart aquaculture zoning, geospatial decision tools, climate risk layers, and institutional capacity that enable sustainable, resilient aquaculture development in Sierra Leone

9. Anticipated follow up activities after this technical assistance is completed:

Development of Policy framework for aquaculture zoning:
One of the anticipated follow up activities from this TA can be the development of a comprehensive policy framework for aquaculture zoning to ensure national ownership and enforce effective zoning practices that minimize losses caused by poor site selection.

This framework will establish mandatory consultation processes that aquaculture farmers must follow prior to pond construction and clearly define zoning protocols to be adopted nationwide. Crucially, it will institutionalize the use of the GIS platform and zoning tool as an essential, step in the decision-making process for aquaculture development, thereby supporting sustainable, climate-resilient aquaculture growth in Sierra Leone.

10. Gender and co-benefits:

Each technical assistance must integrate gender mainstreaming activities and lead to gender and other co-benefits. At least 5% of the technical assistance budget need to be allocated to gender mainstreaming activities.

Gender benefits embedded in the implementation and because of activities:	Empowerment of Women in the Fisheries Sector: Women in Sierra Leone play vital roles in aquaculture, particularly in post-harvest processing and marketing. This TA will support women involvement by improving access to climate-smart technologies and data, which can enhance their economic contributions and livelihoods in the sector. Capacity Building and Inclusive Participation: The TA includes capacity building for fisheries staff and extension officers, ensuring that women fish farmers and entrepreneurs receive targeted support, training, and guidance on climate-resilient aquaculture practices and business models. Addressing Gender Inequality in Resource Access: By incorporating socio-economic data into aquaculture zoning and planning tools, the TA will help identify gender disparities in access to land, water, credit, and technology, and encourage the country to foster equitable resource distribution.
Other co-benefits embedded in the implementation and intended as result of the activities:	The TA will improve and promote sustainable aquaculture in Sierraleone.

11. Main in-country stakeholders in implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted during implementation of the assistance.

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
National Designated Entity	Member of the Steering Committee
• Ministry of Fisheries and Marine Resources (MFMR)	Proponent and Member of the Steering Committee
• Ministry of Environment and Climate Change:	Member of the Steering Committee
• Ministry of Agriculture and Food Security	Member of the Steering Committee
• Environmental Protection Agency (EPA) •	Member of the Steering Committee

• Local Government Authorities	Member of the Steering Committee or key observer
• National Protected Areas Agency	Member of the Steering Committee or key observer
• Development Partners and Donors:	Potential Donors
• Research and Academic Institutions: Such as Njala University	Member of the Steering Committee or key observer
• Local Aquaculture Farmers and Fisheries Cooperatives	Member of the Steering Committee or key observer
• Private Sector	

12. SDG Contributions:

*Instructions: Please complete the grey section below for **a maximum of three SDGs** that will be advanced through this TA. A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/.*

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)
1	End poverty in all its forms everywhere	Overtime sustainable aquaculture will minimize losses and lead to economic growth in the sector
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	Sustainable Aquaculture will contribute to food security in Sierra Leone as fish is the main source of protein in the country
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	
6	Ensure availability and sustainable management of water and sanitation for all	
7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing	

	countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	*All TAs should indicate relevance to Goal 13 and at least one target below (13.1 to 13.b). This is a climate adaptation project*
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	
	13.2 - Integrate climate change measures into national policies, strategies and planning	
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please tick off the relevant boxes below	*Primary*	*Secondary*
☐ 1. Decision-making tools and/or information provision	X	☐
☐ 2. Sectoral roadmaps and strategies	X	
☐ 3. Recommendations for law, policy and regulations	X	
☐ 4. Financing facilitation	X	☐
☐ 5. Private sector engagement and market creation	☐	X
☐ 6. Research and development of technologies	☐	☐
☐ 7. Feasibility of technology options	☐	☐
☐ 8. Piloting and deployment of technologies in local conditions	☐	X
☐ 9. Technology identification and prioritization	☐	☐

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.

14. Monitoring and Evaluation process

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; and (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance. Furthermore, the NDE together with the project proponent(s) will complete a periodic post-implementation form to track the impact of the activities beyond the technical assistance end date.

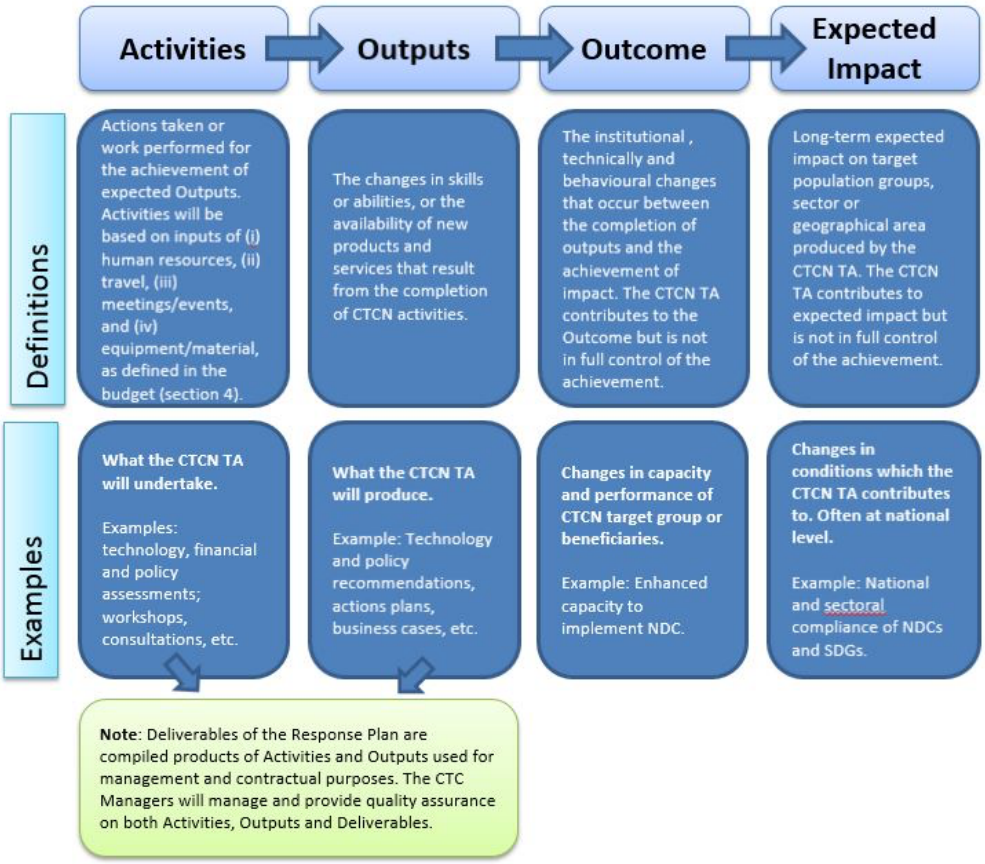
Annex 1: Guidance note for designing a Response Plan (to be deleted when submitting the Response Plan)

1. Objective of the Response Plan

The Response Plan is developed by CTCN specialists in response to a country request for technical assistance. It constitutes the Terms of Reference of the CTCN technical assistance that will be provided to the country, and it provides the formulation of and subsequent basis for the monitoring and evaluation of the Response Plan implementation, as well as its expected outcomes and anticipated impacts.

2. Results chain and Logical Framework Approach to be defined in the CTCN Response Plan

The result chain is the causal sequence that stipulates the necessary flow of actions and processes to achieve desired objectives and results – beginning with inputs, moving through activities and outputs, and culminating in individual outcomes. The outcome will contribute to the desired impact in the society. The Logical Framework Approach is an analytical process used to support objectives-oriented project planning and management. It provides a set of pre-defined concepts which are used as part of an iterative process to aid structured and systematic analysis and management of the CTCN technical assistance.



3. Process for designing the Response Plan

The Response Planning process should be completed over a period of up to 60 working days (12 weeks). Indicative steps and related timelines are laid out below:

4. Design Considerations

To maximize the impact of the technical assistance provided by the CTCN and provide an effective M&E process, the Response Plan should integrate as much as possible the considerations below:

Climate Technology focus: The Response Plan should have a clear focus on climate technologies, and identify activities that enable the identification, development, deployment or diffusion of one or several specific technologies (including equipment, techniques, knowledge and skills).

Barrier removal / Problem solving: The activities should contribute to address the specific problem statement identified in the Request. The barriers identified should be those hampering the identification, development, deployment or diffusion of one or several climate technologies or climate actions. Therefore, it may be necessary to limit the CTCN Response Plan to a set of activities for technical assistance commonly agreed with the NDE (and Proponent when needed) compared to the original request submitted. The CTCN will liaise with NDEs and Proponent in case the scope of the technical assistance deviates from the original request.

Use of the CTCN assistance by stakeholders: The Response Plan should identify clearly how the products of the CTCN assistance will be used in the short term once support is delivered, by who and when, to ensure it will lead to specific impacts in the country. The activities should engage the stakeholders that will use the concrete results of the assistance to deploy the technologies, including from the private sector, the public sector, research institutions, etc.

Within the scope of CTCN resources: The cost of the technical assistance provided by the CTCN cannot exceed USD 250,000 per Response Plan. Therefore, it may be necessary to prioritize activities and limit the CTCN Response Plan to a set of priority activities commonly agreed with the Proponent and the NDE to remain under this value. Under section 4 of the Response Plan template, an indicative activity-based budget should be presented. The proposed budget is indicative and should present an estimated costing range per activity, output as well as a total costing range for the delivery of the Response Plan. Once the Response Plan is finalised and published for tendering, interested parties will provide competitive offer against the indicative budget.

CTCN activities and outputs should be linkable to monitoring and evaluation indicators: All proposed activities and outputs must be linkable to monitoring and evaluation indicators that are specific, measurable, achievable, relevant, and time bound. The monitoring and evaluation process and

corresponding indicators will be developed by the Lead Implementer as part of the work plan and will allow the CTCN technology Manager to monitor the timeliness and appropriateness of the implementation.

Synergies with existing efforts: The Response Plan should focus on activities that are not already being fully supported or that are in the process of being fully supported by another national, regional or international organization. Synergies and complementarity also require that the CTCN assistance is not duplicating past activities. It is possible in the Response Plan to indicate co-financing from the government, the Proponent or another stakeholder, that will maximize the effectiveness of the CTCN assistance.

Gender mainstreaming: The CTCN mission is to build or strengthen developing countries' capacities to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies considering gender considerations. The Response Plan must therefore describe how gender considerations will be included and monitored within the proposed activities, and any gender co-benefits that will be gained because of implementing the CTCN technical assistance. For that purpose, a Gender Assessment and Action Plan (GAAP) template has been designed to be followed by the implementation partner.