Technical Assistance Response Plan – Terms of Reference

Country	**Vietnam**
Request ID#	2022000044
Title	Establishment of an integrated salinity intrusion data sharing system for adaptation to the climate change impacts in the Mekong Delta of Viet Nam
NDE	**Name:** Dr. Chu Thi Thanh Huong **Position:** Deputy Head, Division of GHG emission reduction and ozone layer protection **Organization:** Department of Climate Change (DCC), Ministry of Natural Resources and Environment (MONRE) **Phone:** +84-946543030 **Email:** chuthanhhuong@gmail.com **Address:** 10 Ton That Thuyet, Hanoi, Vietnam
Proponent	Viet Nam National Mekong Committee **Contact person:** Nguyen Huy Phuong, Director of the Center for Mekong River Basin Development Promotion, Viet Nam National Mekong Committee. **Telephone:** +84-913293995 **E-mail:** huyphuongmk@gmail.com

Summary of the CTCN technical assistance

Viet Nam's Mekong Delta (VMD) is the third largest delta on Earth, and currently home to 17 million inhabitants, whose livelihoods depend mainly on agricultural and aquacultural production. The VMD, with its extremely low-lying delta plain (average elevation of ~80 cm), is particularly vulnerable to even small changes in relative sea level rise, but also to other climate change impacts, such as increased frequency of intense dry seasons and droughts. Some of these effects are already being felt, e.g., with saline intrusion going deeper into the mainland and causing great damage to the environment and lives. It is expected that in the coming years, water resources in VMD will continue to face significant challenges, including the forecasted rapid increase in the intensity and extent of saline intrusion. Viet Nam's Nationally Determined Contribution document (NDC) submission to the UNFCCC in 2020 highlights saline intrusion as one of the climate change impact key areas affecting water resources and agriculture sectors, and several policy and planning instruments have been put in place to address this issue. Despite the investments made, including the setup of saline monitoring equipment, data remains fragmented among several institutions and both financial and technical barriers need to be addressed so that the existing physical monitoring stations can be effectively utilized to provide timely data to those who can make decisions and take timely and coordinated action to respond to salinity hazards and prevention.

This technical assistance aims to develop an Information Management System to exchange information and near-real time data on salinity intrusion, sharing salinity monitoring data and display maps of salinity intrusion in the Vietnam Mekong Delta region (VMD). To ensure sustainability of the results of this technical assistance, training will be provided on how to operate and utilize the Information Management System developed, so that the River Basin Organization and relevant institutions are able to effectively share data on salinity intrusion and

better incorporate the salinity data in decisions relating to climate change preparedness and hazard early warning.

Agreement:

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

National Designated Entity to the UNFCCC Technology Mechanism
Name: Dr. Chu Thi Thanh Huong

Title: Deputy Head, Division of GHG emission reduction and ozone layer protection, Department of Climate Change, Ministry of Natural Resources and Environment

Date:
Signature:

Chu Thi Thanh Huong

Proponent (signature of the Proponent is optional)
Name: Dr. Truong Hong Tien

Title: Deputy Director General, Viet Nam National Mekong Committee.

Date: 28 February 2024.
Signature:

Trương Hồng Tiến

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Rajiv Garg
Title: CTCN Director (a.i.)
Date: 06 March 2024
Signature:

better incorporate the salinity data in decisions relating to climate change preparedness and hazard early warning.

Agreement:

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National Designated Entity to the UNFCCC Technology Mechanism
Name: Dr. Chu Thi Thanh Huong

Title: Deputy Head, Division of GHG emission reduction and ozone layer protection, Department of Climate Change, Ministry of Natural Resources and Environment

Date: 28 February 2024
Signature:

Chu Thi Thanh Huong

Proponent (signature of the Proponent is optional)
Name: Mr. Nguyen Huy Phuong

Title: Director of the Center for Mekong River Basin Development Promotion, Viet Nam National Mekong Committee.

Date: 28 February 2024.
Signature:

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Rajiv Garg
Title: CTCN Director (a.i.)
Date:
Signature:

1. Background and context

Viet Nam is one of the countries most vulnerable to climate change in the world

Viet Nam, with its population of 99.2 million people in 2023, has been ranked among the five countries most vulnerable to climate change, and is amongst top 6 countries already affected by extreme weather events over the last 2 decades[1]. The impacts of climate change are felt acutely by the communities and national economy – it is estimated that in 2020 Viet Nam lost about $10 billion, or 3.2 percent of its gross domestic product, to climate impact. The impacts of extreme weather events are expected to accelerate rapidly, and early estimates indicate that without proper adaptation and mitigation measures, the changing climate will cost Viet Nam about 12 percent to 14.5 percent of GDP a year by 2050 and could plunge up to one million people into extreme poverty by 2030[2].

Viet Nam Mekong Delta: a hotspot for climate vulnerability

Viet Nam's Mekong Delta (VMD) is the third largest delta on Earth, and currently home to 17.8 million inhabitants in 2023, whose livelihoods depend mainly on agricultural and aquacultural production. Rice production has a particularly vital role for the country in terms of food security, rural employment and foreign exchange, employing two-thirds of the rural labour force and making Viet Nam as consistently one of the world's largest rice exporters[3]. Indeed, the VMD has an extremely low-lying delta plain, with an average elevation of ~80 cm, and is therefore extremely vulnerable to even small changes in relative sea level, which arise from the cumulative effect of global sea level change and local vertical land movements (e.g., land subsidence). The VMD currently faces high levels of land subsidence, up to 5 cm/year in some places, mainly driven by groundwater extractions. Should the rate of extraction remain at present-day level, the cumulative subsidence combined with sea level rise could cause most of the delta to fall below sea level by the end of this century – a critical threat to the communities and regional food security.

Salinity intrusion - one of the key climate-related threats to livelihoods and food security in VMD

From 2015 up to now, the Mekong River basin has had consecutive years of intense dry seasons, which lead to saline intrusion going deeper into the mainland, causing great damage to environment and lives. It is forecasted that in the coming years, water resources to the Mekong Delta will continue to face increasing challenges, as the upper Mekong countries continue to implement water exploitation and use plans to serve their economic development goals, including mainstream and tributary hydropower development, expansion of agricultural irrigated areas, and diverting water out of basins. With climate change making extreme weather events more severe, including increasing frequency of droughts and floods, the intensity and extent of saline intrusion is expected to continue to increase rapidly. Recent reports estimate that without adaptation measures, around 47.3% of the Mekong Delta area will be inundated[4] due to sea water level rise, the at an economic cost of about $17 billion by as early as 2030[5] due to salinity intrusion, underlining the urgency of addressing the issue.

[1] Global Climate risk Index 2020
[2] Vietnam Country Climate and Development Report, World Bank, 2022
[3] Vietnam Climate Risk Country Profile, ADB and WB, 2020
[4] Nationally determined contribution - Update in 2022
[5] Vietnam Country Climate and Development Report, World Bank, 2022

Saline intrusion has been highlighted in Viet Nam's Nationally Determined Contribution document (NDC) submission to the UNFCCC, updated in 2022, as one of the climate change impact key areas affecting water resources and agriculture sectors, as well as in a number of policy and planning instruments approved at the highest level, such as the National Strategy on Climate Change Adaptation (Decision 2139/QD-TTg, 5 December 2011), the National Action Plan on Climate Change for the period of 2012-2020 (Decision 1474/QD-TTg), and more recently, on 26 July 2022, the National Strategy on Climate Change Adaptation for 2050 (Decision 896/QD-TTg).

2. Problem statement

Despite the great results in the implementation of measures to prevent and adapt to climate change, in the past years, the Mekong Delta still faces great difficulties. The NDC document from 2020, specifically highlights the strong need for advanced technology and capacity in Viet Nam to cope with the climate change impacts, including institutional and technological capacities to effectively monitor, forecast, disseminate and operationalize data and information related to salinity intrusion which can support decisions relating to climate change preparedness and hazard early warning.

Notwithstanding the existence of a relatively high numbers of salinity monitoring stations in the VMD, the fact they are managed by differenced agencies (including the Ministry of Natural Resources and Environment, Natural Resources and Environment Department and Agriculture and Rural Development of the provinces in the VMD, saltwater control construction operators, farmers, and other actors) presents a number of limitations, including following:

- There is no general technical regulation for all salinity monitoring units, different monitoring equipment and technologies, the method of sampling, choosing the monitoring position is also different, the monitoring time is not consistent, leading to inconsistent monitoring results.
- The observed data is un-synchronous and managed by different agencies, resulting in a lack of an effective database and data sharing system which leads to ineffective operation of the saline control sluice system.
- The un-centralized management of monitoring data is the cause of ineffective prediction and warning of salinity.

Combined, these challenges lead to ineffective utilization of the existing physical monitoring stations, and lack of effective communication of salinity data to those that can make decisions and take timely and coordinated action to respond to salinity hazards and prevention.

For better management of water resources in the VMD, the Cuu Long River Basin Committee, an inter-agency under the Viet Nam National Mekong Committee, was established on 17 February 2021 to help manage water and related resources in the Viet Nam Mekong Delta. One of the tasks assigned to the Cuu Long RBC is to establish a water resources database including: water quantity, water quality, salinity and sediment, etc. However, due to the limitations of financial and technical resources, this task has not been fully implemented, and there is a particularly pressing need to establish the database on salinity intrusion that consolidates the data gathered by the monitoring stations, and to develop institutional capacity to manage and communicate effectively this information to decision makers.

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											
	1	2	3	4	5	6	7	8	9	10	11	12
***Objective**:* Develop an Integrated Information Management System to exchange information and near-real time data on salinity intrusion in the Vietnam Mekong Delta region (VMD) and develop institutional capacity for its effective maintenance and utilization												
Outcome: This technical assistance will contribute to strengthen the water resources management capacity of the Cuu Long River Basin Committee and relevant institutions, in particular their technical capacity to effectively share data, forecast, manage and respond to saline intrusion in the Viet Nam Mekong Delta. It will also enable Viet Nam to better incorporate the salinity data in decisions relating to climate change preparedness and hazard early warning, contributing to the implementation of its National Adaptation Plan, helping Viet Nam to better cope with climate change. It is also expected that the new capacities created will expand/enhance the application of smart technologies in agriculture and aquaculture production in the VMD.											
Output 1: Development of implementation planning and communication documents												
Activity 1: *All implementers must undertake the following activities at the beginning and at the end of the CTCN technical assistance.* i) 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; ii) Based on the work plan, a monitoring and evaluation 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); iii) A two-page CTCN Impact Description formulated in the beginning of the technical assistance and update/revised once the technical assistance is fully delivered (a template will be provided); iv) A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided); v) A project webinar held at the end of the technical assistance that presents the project outcomes to a broader stakeholder audience (the webinar will be hosted through the CTCN) vi) A gender assessment (refer to End Note for further guidance)												

Deliverable 1: i) Detailed work plan ii) Monitoring and evaluation plan iii) CTCN Impact Description iv) Closure and Data Collection report v) Project webinar vi) Gender assessment												
Output 2: Stakeholder engagement, and assessment of available data and existing salinity monitoring & forecasting systems in VMD. A strong stakeholder engagement approach will be followed throughout the implementation of the technical assistance and will include the establishment of a project key stakeholders working group, as well as broader stakeholder consultations. This will help establish a common understanding of the capabilities of the current saline intrusion monitoring and forecasting systems and of the capacities needed to respond to regional needs, as well as identify most pressing gaps. The findings of assessment will also incorporate stakeholder feedback on what aspects of the proposed integrated data sharing platform for saline intrusion would need to be developed to be able to respond effectively to regional and local needs. In particular, there will be the participation of organizations carrying out salinity monitoring in the Mekong Delta in the provinces: Long An, Tien Giang, Ben Tre, Tra Vinh, Soc Trang, Bac Lieu, Ca Mau, Kien Giang, Can Tho, Hau Giang. A review of best available technologies for addressing gaps identified (in particular in terms of the development and utilization of integrated information system/platform using near-real time data for monitoring and forecasting of saline intrusion) will be also prepared to inform discussions on the design of the integrated information management system. This review will include lessons learnt from at least 3 relevant international examples of technologies and systems in operation.												
Activity 2.1: Preparatory analysis on current infrastructure and processes regarding monitoring of salinity intrusion in VMD and relevant international best practices <u>Preliminary stock-take of salinity intrusion monitoring and forecasting in VMD</u> Consultative meetings with the VNMC/Cuu Long RBO/Water Resource Department of MONRE and other relevant institutions will be held to understand in depth the current processes/protocols for the generation, provision, management and sharing arrangements of salinity forecasting & monitoring data, as well as current prevailing technologies and risks associated with saline intrusion. Other means of gathering data may also be used. A preliminary report on the initial findings will be produced ahead of stakeholder inception workshop (Activity 2.3).												

Initial consultations will also be held to understand key gender issues in the VMD, in particular regarding awareness of and access to information on the impacts of and responses to saline intrusion. This will enable the implementer to propose ways to better mainstream gender in the work to be carried out under this TA. This will be completed in future consultations and will inform the capacity needs assessment and some of the products generated through this TA. <u>Review of international best practices on monitoring and forecasting salinity intrusion relevant to the VMD</u> With the initial understanding of the VMD physical and institutional context related to salinity forecasting and monitoring data, and the barriers identified in the TA request as well as through the consultations undertaken, a review of relevant international best practices and technologies will be produced to inform the design of the integrated information management system and applications to end users. It is understood that the VNMC/ Cuu Long RBO will facilitate timely access to the lead implementer of this TA to forecast models/ monitoring data of most available existing salinity monitoring networks in Mekong Delta region, through the provisions of institutional management mandates, collaboration between VNMC/ Cuu Long RBO/ MONRE with other ministries (namely MARD) and VMD provincial agencies.												
Activity 2.2: Stakeholder mapping and establishment of a project working group A broader stakeholder mapping will be conducted, enabling the identification of the stakeholders that will need to be involved at different levels/stages during and post implementation of this technical assistance, as well as the identification of a smaller group of key stakeholders (up to 15) to integrate the project working group. The stakeholder mapping will also include and engagement plan, which will consider existing relevant forums, taskforces, consultation groups and processes. The project working group to be established will include representatives from the VNMC/ Cuu Long RBO/ MONRE with other ministries (namely MARD) and VMD provincial agencies, private sector (farming cooperatives, farmers, etc.), research organizations among others. Attention will be given to keeping vulnerable groups and a gender balanced representation. The working group will be established with Terms of Reference and will provide technical overview and high-level guidance throughout the implementation of the technical assistance. A first meeting of the project working group will be called ahead of the stakeholder inception workshop (Activity 2.3) to introduce the project, review/approve TOR for the group and receive final inputs on the detailed workplan.												

Activity 2.3: Stakeholders inception workshop A multi-stakeholder inception workshop will be held to understand the expectations, identify current infrastructure, policy and operational guidelines, the needs and gaps (technical and institutional), as well as results and lessons learned from current operation of existing salinity monitoring systems in VMD region, especially in terms of informing/sharing monitoring & forecasting data to the needed & interested stakeholders in the region (e.g. agriculture and aquaculture farm owners, etc.). The workshop will be chaired by the VNMC/Cuu Long RBO/ MONRE with the support of the Implementing Partner. It is envisioned that it will be a 1-day workshop a maximum of 20 participants participating both virtually and in person. The workshop will also include a brief presentation on this technical assistance and a presentation of (and request feedback on) the findings from the preliminary analysis undertaken in activity 2.1.												
Activity 2.4 – Capacity needs assessment and draft capacity development plan Data gathered in activities 2.1 and 2.2, as well as follow-up investigations, will be reviewed and will be the basis for the preparation of the capacity needs assessment. The information collected will enable the identification of the relevant salinity monitoring and/or forecasting information systems in the VMD region that will be part of the integrated data sharing platform for this TA – their capacities will be further assessed in-depth. The results will be captured in a detailed capacity needs assessment report and a draft capacity development plan, which will include, amongst other, the proposed training programs to be undertaken under this TA (Activity 4), as well as detailed recommendations for further action outside the scope of this TA (including recommendations for strengthening the network of monitoring stations, technology upgrades, HR/technical support, etc. if required, to be taken within 3 years following completion of this TA). The draft capacity development plan will be finalized during Activity 4.3. The capacity needs assessment will address issues and recommendations based on a gender analysis to be conducted as part of this activity (building on the findings from the preparatory analysis - Activity 2.1). The capacity needs assessment report will include, in a separate annex, a report on the gender mainstreaming analysis conducted.												
Deliverable 2:												

Deliverable 2.1: Preparatory report with findings from preliminary stock-take and relevant best practices (as 2 separate or 1 combine report). Deliverable 2.2: TOR and minutes of the first meeting of the project working group (including composition). Deliverable 2.3: Stakeholders Inception Workshop Report. Deliverable 2.4: Capacity Needs Assessment Report (this will include the consolidated/final stock-take findings and the gender analysis conducted) and draft Capacity Development Plan.												
Output 3: Develop an integrated information management system - including database, software (for PC), applications (for mobile devices) - to exchange information and near-real time data on saline intrusion. Activities include an assessment of existing server of Cuu Long RBO in Vietnam Mekong Committee Head Office, and of the existing servers of identified salinity monitoring and forecasting system in Mekong Delta region that will be part of the system being developed (as per findings of Activity 2.4). The assessment will include, amongst other, storage capacity, database storage structure and format, and data transmission mode, as well as protocols in place. The outcome of this initial assessment will be used for the design of the database structure and configuration of existing server at Cuu Long RBO office. A period of 1-year maintenance should be included to cover costs of keeping the system online at VNMC/ Cuu Long RBO's infrastructure. The lead implementer will facilitate discussions with the Proponent and other relevant institutions to delineate a pathway to ensure sustainability of the platform (IDMS) beyond the 1-year maintenance period.												
Activity 3.1: Develop an integrated information database management system (IDMS) including: database, software (for PC), applications (for mobile devices) to exchange information and near-real time data on salinity intrusion This activity will include: 3.1.1 Server configuration and database structure design and configuration 3.1.2 Integrated database and management system, IDMS (commercial software purchase/installation and configuration*) 3.1.3 Investigate and design connection protocol and mechanism for data from various sources (database type, data format, data exchange, query protocol – information will be partially collected in Activity 2.4) 3.1.4 API at back-end server for front-end apps (WEB, Android, iOS) 3.1.5 Web page, iOS, Android design												

3.1.6 Report on Establishment of a mechanism for sharing near-real time salinity monitoring data in the VMD and related technical reports including User's Manual of software, applications and tools * The Implementing Partner will consider the use of open software based on the findings from previous activities, and in consultation with the PP and the NDE.													
Activity 3.2: Forecast near real-time salinity intrusion in the VMD This activity will be executed with the understanding that the forecast models, historical and near real-time monitoring data will be freely shared to lead implementer for this TA by VNMC/ Cuu Long RBO and related identified salinity monitoring systems in the VMD. This activity will include: 3.2.1. Hydraulics and salinity intrusion base models calibrated, configured in IDMS 3.2.2. Data assimilation of forecast data and measured data 3.2.3. Integrated forecast model in the IDMS for real-time running													
Activity 3.3. Develop a set of tools to generate high-resolution mapping of saline intrusion progress in the VMD from near real-time monitoring data The tools and maps will be used for presenting the salinity intrusion progress in near real-time on the PC software, Web and Mobile applications to inform relevant stakeholders and decision-makers so that they are able to take timely action to respond to hazards. The lead implementer will develop and test an integrated tool/s to generate and store high-resolution maps (2D interpolation map) of salinity intrusion in the IDMS.													
Deliverables 3: Deliverable 3.1: Integrated Information Management System/Platform (IDMS) installed at existing server of VNMC/Cuu Long RBO. (The IDMS is configured with data sharing protocols with identified salinity monitoring systems in VMD, ready to share near real-time monitoring data received from salinity monitoring systems in VMD in WEB, apps in mobile devices)													

Deliverable 3.2: Salinity forecasting models configured to the IDMS, and ready to share forecasting data in WEB, and Apps in mobile devices. Deliverable 3.3: Mapping tool/s configured to the IDMS and ready to share high resolution maps of on-going salinity intrusion processes of identified monitoring areas. Deliverable 3.4: Report on Establishment of a mechanism for sharing near-real time salinity monitoring data in the VMD and related technical reports including User's Manual of software, applications and tools												
Output 4: Capacity building for the effective use of the Integrated Information Management System.												
Based on the capacity needs assessment and draft capacity development plan (developed in Activity 2.4), the lead implementer will produce materials for the online and face-to-face training sessions for system operators, as well as a workshop for end users of the Integrated Information Management System/Platform. Using findings acquired along the implementation of the TA, including inputs from the training and workshop participants, the lead implementer will also finalize the capacity development plan (with a suggested duration of 3 years, to be agreed with the Proponent and relevant stakeholders), detailing the awareness and capacity building activities that should follow the completion of this TA, with costing and indicating possible sources of financing.												
Activity 4.1: Produce training materials & deliver training to VNMC/ Cuu Long RBO and system operators The selected system operators will receive training in the usage and operation of the system. The proposed format is a face-to-face 3-day training session for a maximum of 10 participants, assuming active involvement of the designated staff, on use of the system. A Manual on the system's operation will be prepared and used in the training. Online ad-hoc assistance via email will be available for the trial operation duration.												
Activity 4.2: Produce workshop materials and deliver a stakeholder workshop for end-users of the system and closure report A broader range of selected relevant stakeholders (from those previously identified) will be invited to the project closure workshop. This will be done via ½ day workshop for a maximum of 25 participants (they may be the same as the inception workshop participants). Active involvement of the proponent is expected in the organization of the workshop in support of the lead implementer, similarly to the stakeholder inception workshop												

(e.g. chairing the event, sending official invitations and contributing to the agenda). Workshop materials will be prepared with a view of serving as reference materials for ongoing use of the system by end users. Reports on the capacity building/training activities conducted will be produced, including materials prepared and the outcomes of the technical training and of the stakeholder/end-users closure workshop, as well as participants' feedback and evaluation (these may be presented as one combined report). Reports on the capacity building/training activities conducted will be produced, including materials prepared and the outcomes of the technical training and of the stakeholder/end-users closure workshop, as well as participants' feedback and evaluation (these may be presented as one combined report).												
Deliverables 4: Deliverable 4.1: Training session delivered to VNMC/ Cuu Long RBO/ relevant system operators, and corresponding report. Deliverable 4.2: Manual for system operators. The manual will be prefaced with a note on the roles and responsibilities (TOR) for designated system operators, endorsed by the respective institutions. Deliverable 4.3: Closure stakeholder workshop for end-users of the system, including materials prepared (e.g. handout for end users). Deliverable 4.4: Final Capacity Development Plan. Deliverable 4.5: Project closure reports Deliverable 4.5: Signed agreement from the lead implementer confirming the 01- year maintenance period after TA project concludes.												

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 1% of the budget should explicitly target gender specific activities related to the technical assistance (please see section 10 for further information on gender). 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** *(Purpose, national vs. international, number of days)*	**Inputs: Meetings/events** *(Meeting title, number of participants, number of days)*	**Input: Equipment/Material** *(Item, purpose, buy/rent, quantity)*	**Estimated cost** *Please accumulate the costing at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan*	
					Minimum	**Maximum**
Output 1: Development of implementation planning and communication documents	*IE1: 6* *IE2: 1* *IE3:1* *NE1: 5* *NE2: 1* *NE3: 4*		*2 teleconferences min.*		**5,800 USD**	**6,380 USD**
Activity 1.1: Formulation of i) Detailed work plan, ii) Monitoring and evaluation plan, iii) CTCN Impact Description, iv) Closure and Data Collection report, v) Project webinar					5,800USD	6,380 USD
Output 2: **Stakeholder engagement, and assessment of available data and existing salinity monitoring & forecasting systems in VMD**	*IE1: 8* *IE2: 10* *IE3:9* *NE1: 20* *NE2: 20* *NE3: 8*	*International mission for 4 days* *Local travel to VMD*	*2 teleconferences min.* *Focus group meeting, 15-20 participants, 1 day*	*Meeting room*	**35,400USD**	**38,940 USD**
Activity 2.1: Preparatory analysis on current infrastructure and					20,800 USD	22,880 USD

processes regarding monitoring of salinity intrusion in VMD and relevant international best practices						
Activity 2.2: Stakeholder mapping and establishment of a project working group					4,800 USD	5,280 USD
Activity 2.3: Stakeholders inception workshop					3,000 USD	3,300 USD
Activity 2.4: Capacity needs assessment and capacity development plan					6,800 USD	7,480 USD
Output 3: Develop an information system including: database, software (for PC), applications (for mobile devices) to exchange information and near-real time data on salinity intrusion which includes (i) Provide and share salinity monitoring data on the database (ii) Display maps and salinity data for end user (iii) Reporting	*IE1: 10* *IE2: 25* *IE3:30* *NE1: 40* *NE2: 140* *NE3: 8*	*International mission for 4 days* *Local travel mission to VMD*	*Focus group meeting, 15 participants, 1 day*	*Meeting room* *(this indicative budget considers procurement of modeling and system software tool for configuration of Salinity forecasting and Information Management System)*	**140,500 USD**	**154,550 USD**

Activity 3.1: Develop an integrated information database management system (IDMS)					102,900 USD	113,190 USD
Activity 3.2: Forecast near real-time salinity intrusion in the VMD					17,900 USD	113,190 USD
Activity 3.3: Develop a set of tools to generate high-resolution mapping of saline intrusion progress in the VMD from near real-time monitoring data					19,700 USD	21,670 USD
Deliverable 3.4: Report on Establishment of a mechanism for sharing near-real time salinity monitoring data in the VMD and related technical reports including User's Manual of software, applications and tools					5,280 USD	7,480 USD
Output 4: Capacity building for use of the built Integrated Information Management Platform	*IE1: 8* *IE2: 12* *IE3:6* *NE1: 10* *NE2: 10* *NE3: 5*	*International mission for 4 days*	*Training* *Teleconferences*	*Meeting room* *Printing & translation*	**26,920 USD**	**29,612 USD**

Activity 4.1: Produce training materials & deliver training to VNMC/ Cuu Long RBO and system operators					9,300 USD	10,230 USD
Activity 4.2: Produce workshop materials and deliver a stakeholder workshop for end-users of the system					17,620 USD	19,382 USD
Estimated range of costing for the entire Response Plan					**213,900 USD**	**236,962 USD**

5. Profile and experience of experts

Experts required	Brief description of required profile
Please use the same titles for all experts as applied in section 4.	*Please provide a short description of expertise and experience needed (education, sectors of expertise, years of experience, country experience, language requirements, etc.).*
Project Manager / Water Resource Expert (IE1) (International expert)	The project manager shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in water resource management, climate or environmental sciences, engineering, or technology or an affiliated major • Experience in leading and managing projects and teams of experts from different cultural background and fields of expertise • At least 15 years of experience working on water resources management, water environments, and managing projects in large rivers/deltas • At least 5 references demonstrating experience in water resources management, water environments, and managing projects in large rivers/deltas • Previous relevant experience of working in Vietnam and in the Mekong Delta required • Experience with community engagement and participatory planning will be valued

	• Excellent written and communication skills in English are required.
Expert in River Hydraulic & Hydrology Modelling (IE2) (International expert)	The expert in river hydraulic & hydrology modelling shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in river hydraulic & hydrology modelling, water resources management, environmental sciences, or an affiliated major • At least 10 years of experience conducting studies in river hydraulic & hydrology modelling, preferably with proven experience in river system in Vietnam and Mekong Delta Vietnam, demonstrating a detailed understanding and good command of prevailing hydraulic & hydrology modelling tools being used water resource monitoring & forecasting systems in Vietnam/ Mekong Delta Vietnam region • At least 5 references demonstrating experience in conducting similar river studies, preferably demonstrating experience in river systems in Vietnam and the Mekong Delta region • Excellent written and communication skills in English are required.
Expert in DSS/IMS system configuration (IE3) (International expert)	The expert in DSS/IMS system configuration shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in information technology, computer sciences, data management or an affiliated major • At least 10 years of experience in design and development of decision support system or information management for environmental, water resource monitoring and forecasting, demonstrating a good command of prevailing DSS and IMS modeling tools being used in Vietnam, preferably with proven experience in Southeast Asia and/or the Vietnam Mekong Delta • At least 5 references demonstrating such experience, preferably demonstrating experience in river systems in Vietnam and the Mekong Delta region • Experience in identifying and prioritizing climate finance for deployment of the climate technologies in water and/or agriculture sectors in developing countries • Previous experience in Southeast Asia and/or the Vietnam Mekong Delta will be valued. • Excellent written and communication skills in English are required.
Expert in River Hydraulic & Hydrology Modelling (NE1) (National expert)	The expert in river hydraulic & hydrology modelling shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in river hydraulic & hydrology modelling, water resources management, environmental sciences, or an affiliated major • At least 5 years of experience conducting studies in river hydraulic & hydrology modelling in Vietnam, demonstrating a detailed understanding and good command of hydraulic & hydrology modelling tools being used water resource monitoring & forecasting systems in Vietnam and the Mekong Delta Vietnam region.

	• At least 2 references demonstrating experience in conducting similar river studies in Vietnam and the Mekong Delta region • Experience in community engagement processes, organizing workshops and/or capacity building trainings will be valued • Excellent written and communication skills in Vietnamese and English are required It is expected that the DSS/IMS system configuration expert will be based in Vietnam or with the availability to travel frequently and for long periods of time in Vietnam.
Expert in DSS/IMS system configuration (NE2) (National expert)	The expert in DSS/IMS system configuration shall have the following expertise and experience: • Master's degree or above (or equivalent experience) in information technology, computer sciences, data management or an affiliated major • At least 5 years of experience in design and development of decision support system or information management for environmental, water resource monitoring and forecasting, demonstrating a good command of prevailing DSS and IMS modeling tools being used in Vietnam • At least 2 references demonstrating such an experience, preferably demonstrating experience in river systems in the Vietnam Mekong Delta region • Experience in defining digital information system interfaces • Previous experience in the Vietnam Mekong Delta will be valued • Excellent written and communication skills in Vietnamese and English are required It is expected that the DSS/IMS system configuration expert will be based in Vietnam or with the availability to travel frequently and for long periods of time in Vietnam.
Gender expert (NE3) (National expert)	The gender expert shall have the following expertise and experience: • Bachelor's degree or above (or equivalent experience) in gender studies, social sciences or an affiliated major • At least 5 years of experience in gender studies and/or management of equality policies, preferably working in similar projects to strengthen gender focus. • At least 2 references demonstrating experience in gender studies in similar projects, preferably in Vietnam and/or the Mekong Delta region. • Experience in community engagement processes will be valued • Excellent written and communication skills in Vietnamese and English are required It is expected that the gender expert will be based in Vietnam or with the availability to travel frequently and for long periods of time in Vietnam.

6. Intended contribution to impact over time

Many of the 17 million inhabitants of the VMD who are exposed to climate-induced extreme weather events, including droughts, but in particular those whose livelihoods depend mainly on agricultural and aquacultural production, are already being affected by saline intrusion processes, which are causing great damage to environment and their lives.

This technical assistance will provide an effective information system on salinity intrusion (including the consolidation of information of existing salinity intrusion monitoring stations), and provide the necessary institutional capacity to manage the system, so that it will support effective communication of data to those that can make decisions and take timely and coordinated action to respond to salinity hazards and prevention.

The ultimate outcome of the development of such information system for salinity intrusion, backed up with the necessary institutional capacity to manage it going forward, will be that a greater number of people in the VMD whose livelihoods depend directly or indirectly on agriculture and aquaculture production will be able to better cope with extreme weather events, safeguarding economic livelihoods, and ultimately improving food security.

Furthermore, results from this TA may assist other countries in the Mekong who are facing saline intrusion issues (eg from increased pressure from agriculture activities in the context of a changing climate); results can also inform efforts in other coastal/delta regions facing similar issues.

7. Relevance to NDCs and other national priorities

Alignment with National Strategy on Climate Change Adaptation Period to Year 2050
In this national strategy, which was recently approved by the Viet Nam Prime Minister by the decision No 896/QD-TTg (26 July 2022), some of its key objectives relate to salinity intrusion management, such as:
- Control the degradation of water and land resources, to ensure adequate balance of water sources for daily life, industry, services and important economic sectors.
- Complete important infrastructure works to adapt to climate change, with safety standards, before natural disasters, especially works for natural disaster prevention, flood prevention, saline intrusion, water storage works (…).
- The scientific and technological level of hydro-meteorological forecasting and early warning of natural disasters is on par with developed countries in Asia; climate change monitoring capacity and disaster risk management is on par with leading countries in the region.

Several of the activities identified in the National Strategy are fully aligned with the proposed activities of this technical assistance, including:
- Upgrading and modernizing technology for monitoring, analysing, forecasting, warning weather and natural disasters; application of advanced and modern forecasting technologies.
- Strengthening capacity to prevent flash floods, landslides, storm prevention, prevention of major floods and extreme floods; prevent and control the harmful effects of drought, high tide and saline intrusion.
- Exploit the advantages of digital technology, improve the quality of communication on the mass media in order to provide complete, accurate and timely information on climate forecasts, hydrological forecasting and warning of natural disasters for government agencies at all levels, organizations and households.

- Effectively apply technologies of cloud computing, big data, Internet of things, artificial intelligence, blockchain, etc. in building and implementing solutions to respond to climate change; in forecasting and forecasting the impacts of climate change on natural and social systems in order to contribute to transforming challenges into development opportunities and to support ministries, sectors, localities, organizations and individuals, improve capacity to respond to climate change.

National priorities related to saline intrusion management identified are:
1. Building construction systems to prevent salinity;
2. Development of a salinity monitoring system;
3. Forecasting salinity intrusion with modern technology that provides highly reliable results;
4. Building a system to share information and data, serving people and businesses.

The above national priorities are consistent with the objectives of this technical assistance, which are (1) to establish an integrated salinity intrusion data sharing system for enabling inclusion of salinity data in the climate change impact management in the Mekong Delta of Viet Nam, and (2) to strengthen the institutional capacity for salinity data utilization and salinity management in the Mekong Delta of Viet Nam.

Alignment with the Degree No. 1055/QĐ-TTg dated 20 July 2020 of the Prime Minister on National Plan for Climate Change Adaptation from 2021 to 2030, vision to 2050

The national plan aims to strengthen resilience to climate change, improve the effectiveness of adaptation to climate change, and reduce natural disaster risks, including salinity intrusion.

Alignment with the Nationally Intended Contributions (NDC)
As mentioned above, this TA is aligned with the country's NDC (2022), where the need to address the impacts of saline intrusion (e.g. on aquaculture, on transportation infrastructure, on food systems) is underlined.

8. Linkages to relevant parallel on-going activities:

There are a number of initiatives and work conducted which stem from the direction set at the policy level to address climate change challenges in Vietnam. These include important decisions and policy and planning instruments approved at the highest level, such as: the National Strategy on Climate Change Adaptation, approved by the Prime Minister on 5 December 2011, by Decision 2139/QD-TT; the National Action Plan on Climate Change for the period of 2012-2020 (to implement the National Strategy) approved by Decision 1474/QD-TTg; and more recently, the National Strategy on Climate Change Adaptation for 2050, approved by Decision 896/QD-TT.

Of the 65 programmes, projects and tasks which have been carried out as part of the National Action Plan 2012-2020, the following relevant programmes from the Task Group 3 "Actively responding to sea level rise that are appropriate for vulnerable areas" (which is closely related to saline intrusion in the VMD) have been implemented:

- Activities of forecasting and assessing impacts due to sea-level rise (ministries, branches and localities have carried out research and assessed the impact of climate change);
- Integration of Climate change and issues to cope with saline water intrusion, especially in the Mekong Delta, South Central region, in the 5-year National Socio-Economic Development Plan 2016-2020. Here programmes No. 12 (integration of saline intrusion issues in the Integrated Mekong Delta Planning) and No. 20 (research on structural solutions in coastal areas to cope with sea level rise and salinity intrusion) are particularly relevant to saline intrusion.

- Planning of residential areas to cope with climate change, the system of residential clusters and lines over floods in the Mekong Delta.

Of relevance is also the work being carried out by the Mekong River Commission, including the establishment of a hydrological and meteorological real-time database for the Lower Mekong. This data is obtained by MRC´s Monitoring System and shared to member countries, however it does not include salinity data.

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

This technical assistance will provide improved access information and near-real time data on salinity intrusion in the Vietnam Mekong Delta region (VMD) and develop institutional capacity for the effective maintenance and utilization of an integrated information management system/platform (embedded in the VNMC/Cuu Long RBO), based on identified participating monitoring stations/institutions. These institutions will continue to build their capacity on the operation of the system (in particular during the 1st year of operation of the system so that any issues can be timely detected and resolved), with participating institutions taking a lead in raising stakeholders' awareness and facilitating the use of high-quality information on saline intrusion to inform decisions.

It is expected that additional institutions/monitoring stations will put in place the necessary protocols to integrate the platform in the future, thus strengthening overall capacity to address saline intrusion issues in the VMD.

The results of the capacity needs assessment and the capacity building plan to be produced as part of the technical assistance, as well as lessons from the operation and use of the platform following the completion of the technical assistance, will set out in detail the activities to be taken by different stakeholders that should follow this technical assistance so that improved access to high-quality on saline intrusion can better inform decisions relating to climate change preparedness and hazard early warning (including regulations/protocols for the establishment of new monitoring stations/infrastructure).

10. Gender and co-benefits:

Imbedded in design of the activities:	Gender will be mainstreamed throughout the implementation of this technical assistance, with an initial gender analysis to be undertaken at the start of the implementation (in particular regarding awareness of and access to information on the impacts of and responses to saline intrusion), as part of Activity 2.1. This will be complemented and will inform the capacity needs assessment and capacity development plan (Activities 2.4 and 4, respectively). Attention to a balanced gender representation will be always given, including in the establishment of the project working group, in interviews and consultations, as well as in the participation in training sessions and workshops to be conducted as part of this technical assistance.
Gender and co-benefits intended as	This technical assistance will improve access to high-quality information on saline intrusion which can inform decisions of farm owners and families

result of the activities:	whose livelihoods depend in particular on agriculture and aquaculture. Particular attention will be given to raise awareness and develop capacity of female farmers to access and use this information to improve their ability to cope with climate change and saline intrusion hazards.

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

In country stakeholder	Role in implementation of the technical assistance
National Designated Entity: Ministry of Natural Resources and Environment	MONRE as the National Designated Entity for the CTCN will be responsible for appointing an operational focal point to monitor the implementation of the technical assistance, providing the necessary clearance for all deliverables to be produced by the implementer (as to their alignment with this response plan/TOR).
Project Proponent: Viet Nam National Mekong Committee	VNMC will act as the chair of the stakeholder project working group and will be the main focal point in this technical assistance with the role of facilitating implementation, support stakeholder engagement, and provide regular feedback on activities and deliverables. VNMC, together with the NDE, will provide clearance of all deliverables produced by the lead implementer (as to their alignment with this response plan/TOR). VNMC will be responsible for designating relevant technical staff for the operation of the system.
Provincial People's Committees in the VMD	The provinces are responsible for appointing the focal points of the Department of Agriculture and Rural Development and Department of Natural Resource and Environment to participate in the project, supporting for the project implementation in the province, Receiving project results.
Provincial People's Committees in the VMD	The provinces are responsible for appointing the focal points of the Department of Agriculture and Rural Development and Department of Natural Resource and Environment to participate in the project, supporting for the project implementation in the province, Receiving project results.
Departments of Natural Resources and Environment in the VMD	Provide the focal point to the project, provide data and information relating to the salinity monitoring in the province.

Departments of Agriculture and Rural Development in the VMD Provinces.	Provide the focal point to the project, provide data and information relating to the salinity monitoring in the province.
Irrigation management companies	Provide the focal point to the project, provide data and information relating to the salinity monitoring in the province.
Southern Regional Hydrometeorological Center	Provide the focal point and technician experts to the project, provide data and information relating to the salinity monitoring in the VMD.
Southern Institute of Water Resource Planning	Provide the focal point and technician experts to the project, provide data and information relating to the salinity monitoring in the VMD
Southern Science Institute of Water Resource	Provide the focal point and technician experts to the project, provide data and information relating to the salinity monitoring in the VMD

12. SDG Contributions:

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	This technical assistance would provide better information on how to address climate change impacts on salinity, which is taking a toll on livelihoods in the VMD, thus help to reduce climate change impacts on food security.
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).*
	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	This technical assistance aims to strengthen human and institutional capacity for adaptation to and impact reduction and early warning, as well as raise awareness for measures that need to be taken to cope with impacts of climate change on salinity in the VMD
	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	This technical assistance is providing support to Viet Nam to cope with climate change impacts on salinity in the Lower Mekong Delta, and it is expected it can serve as a model for climate action in other countries in the Mekong basin as well as other developing countries facing similar issues.
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	This technical assistance would help protect terrestrial ecosystems in the VMD which are now threaten by salinity intrusion.
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 indicate primary type of technical assistance. Optional: If desired, indicate secondary type 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	☐	☐
☐ 3. Recommendations for law, policy and regulations	☐	☐
☐ 4. Financing facilitation	☐	☐
☐ 5. Private sector engagement and market creation	☐	☐
☐ 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 prioritisation	☐	☐

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; (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance; and (iii) the CTCN Director about timeliness and appropriateness of the delivery of the activities and outputs.

NOTE (regarding Activity vi of Output 1):

The gender assessment will include at least the following components:
1) Gender Disparities Analysis (evaluate the status of gender disparities in the project's context, including socio-economic, cultural, and institutional factors. Identify areas where inequalities exist etc)
2) Data Collection (collect and analyse gender-disaggregated data to understand the specific needs and preferences of different genders)
3) Gender-Responsive Design (assess the project's design to ensure that it considers the different roles, responsibilities, and interests of various genders. Consider how the project can empower marginalized genders and promote gender equality.
4) Gender and Innovation ecosystem (assess how the technology could foster women as entrepreneurs
5) Gender Budgeting (budget allocation to target gender mainstreaming activities. Also ensure that gender-specific needs are adequately funded)
6) Capacity Building
7) Monitoring and Evaluation (shall include regular gender-sensitive assessments to track progress and adjust as necessary.

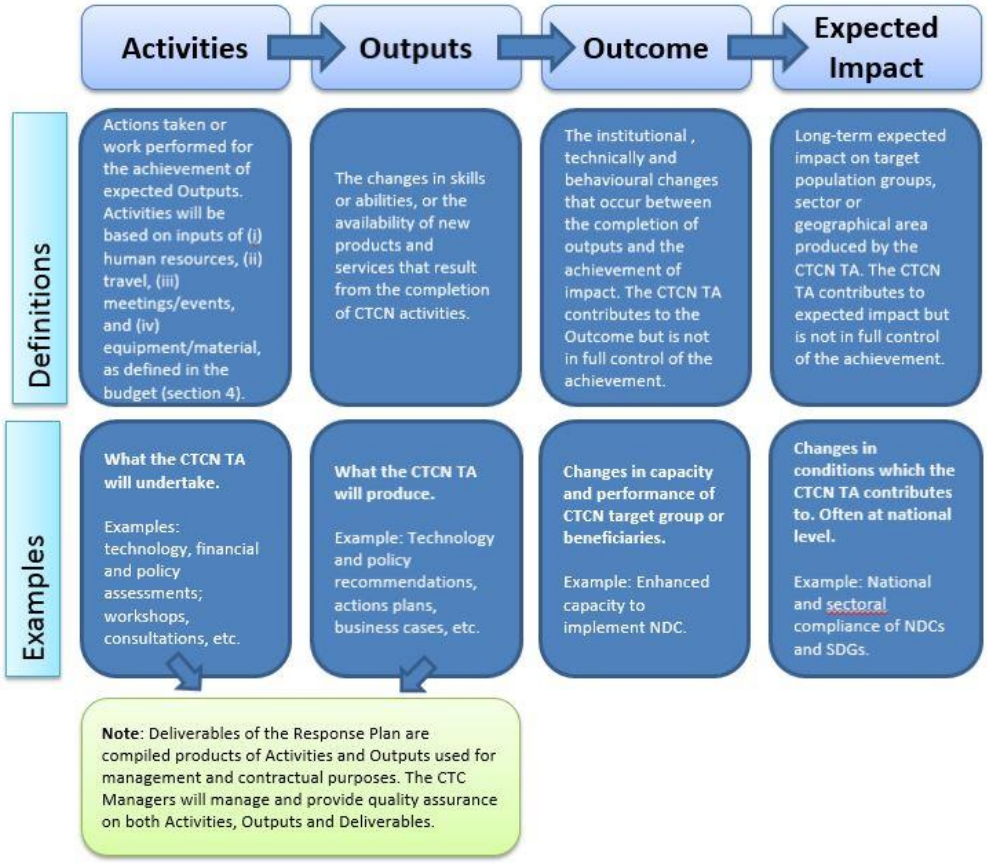
Annex 1: Guidance note for designing a Response Plan (to be deleted when submitting the Response Plan)

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. Role of the Response Planning Design Team

The Response Planning Design Team is selected by the Climate Technology Centre (CTC). The composition of the team depends on each particular request but may include the National Designated Entity (NDE), the request Proponent, Climate Technology Manager of the CTCN, experts from the CTCN Consortium, UNIDO and UNEP experts from regional offices and other experts as needed.

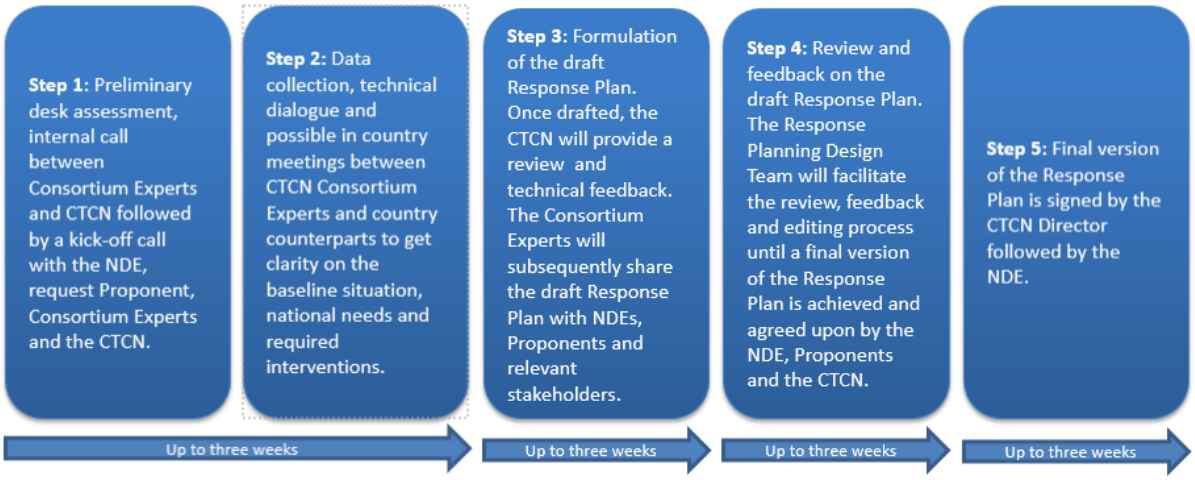
The role of CTCN Consortium experts is to lead the design of the Response Plan. The NDE will provide overall guidance on national context and priorities whereas the request Proponent will provide more detailed information on the sector, barriers and requested assistance. The Climate Technology Manager of the CTCN will provide quality assurance of timeliness and appropriateness of the Response Plan.

The Response Planning Design Team will draft all sections of the Response Plan template building on the information contained in the CTCN Request, based on expertise on the given topic and potentially further data collection, as required. This will be done by the CTCN Consortium Experts in consultation with the NDE, request Proponent and relevant stakeholders. The Response Plan has to be agreed to and approved by the NDE and the CTCN Director. This Response Plan will serve as the basis to identify, select and engage an expert institution from the Climate Technology Network or Consortium to lead the implementation of the CTCN Response Plan in the requesting country.

To the extent possible, staff from UNEP and UNIDO Regional, Sub-Regional and/or National Offices should be involve in all stages of formulation of the Response Plan to maximize synergies and avoid overlap with ongoing initiatives, as well as ensure relevance to regional and national context.

4. 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:



5. Design Considerations

Annex 1. Guidance Note for the Response Plan template

In order 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 taking into account 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 as a result of implementing the CTCN technical assistance.