

Monitoring & Evaluation (M&E) Plan and Impact Statement Form

CTCN Ref. RFP 3100006172

Deliverable 1.3 Impact Statement form

March 31st 2025

Objective of the M&E Plan and Impact Statement:

- The M&E Plan and Impact Statement must be designed based on the Technical Assistance Response Plan and must enable the Implementer to complete the Closure Report at the end of the assistance.

Process for filling in the form:

- The Implementer must identify relevant quantitative and qualitative indicators as specified in the Closure Report. A sub-set of indicators to monitor and assess must be chosen among these.
 - The Implementer may also identify other specific, measurable, achievable, relevant, and time-bound indicators suitable to monitor Activities, Outputs and anticipated Outcomes from the technical assistance and add to the M&E Plan and Impact Statement.
 - During implementation of the TA or FTA, the Implementer must collect all relevant data as described in the Monitoring & Evaluation Plan. Aggregated data on selected indicators as well as an updated version of the Impact Statement will be presented in the Closure Report at the end of the assistance.
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Basic Information	
Title of response plan	Establishment of an integrated salinity intrusion data sharing system for adaptation to the climate change impacts in the Mekong Delta of Viet Nam
Technical assistance reference number	3100006172
Country/ countries	Viet Nam
NDE focal point and organisation	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)

Sector(s) addressed	Water resources, agriculture, coastal zone, early warning and environmental assessment
Technologies supported	Salinity intrusion monitoring system and decision support systems
Implementation period and total duration	9 January 2025 – 9 January 2026 (12 months)
Total budget for implementation	USD 236 722
Designer of the response plan	Viet Nam National Mekong Committee
Implementer of response plan	DHI

[This table to be fully completed at closure stage of project by DHI]

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
Output 1: Development of implementation planning and periodical reporting documents				-
Activity 1.1: Preparation of mandatory PM outputs	6 mandatory outputs	Mandatory CTCN outputs delivered	At project closure	-
Output 2: Stakeholder engagement, and assessment of available data and existing salinity monitoring & forecasting systems in VMD				National institutions actively engaged and able to assign staff and time for participation in the activities
Activity 2.1: Preparatory analysis on current infrastructure and processes regarding monitoring of salinity intrusion in VMD and relevant international best practices	1 assessment report	1 report delivered on situation analysis	See implementation plan	
Activity 2.2: Stakeholder mapping and establishment of a project working group	Min 7 members	7 members confirmed for the WG	WG TOR and workshop minutes	
Activity 2.3: Stakeholder inception workshop	20 pax	20 stakeholder workshop participants	Agenda, workshop meeting minutes	
Activity 2.4: Capacity needs assessment and draft capacity	1 report	1 capacity needs assessment report submitted	See implementation plan	

development plan				
Output 3: Develop an integrated salinity monitoring IMS including database, software and application to exchange information and near-real time data on saline intrusion				DHI has timely access to the relevant data from PP and other national institutions at no additional cost and in sufficient quality.
Activity 3.1: Develop an integrated salinity monitoring IMS and mobile-compatible app	1 system	1 IMS system developed and deployed at VNMC		
Activity 3.2: Forecast near real-time salinity intrusion in the VMD	1 system	1 IMS system developed and deployed at VNMC		
Activity 3.3: Develop a set of tools to generate high-resolution mapping of saline intrusion progress	1 system	1 IMS system developed and deployed at VNMC, including tools for map generation		
Output 4: Capacity building for the effective use of the integrated salinity monitoring IMS				National institutions actively engaged and able to assign staff and time for participation in the workshops and training activities
Activity 4.1 Produce training materials & deliver training to VNMC/ and system operators	10 operators trained	Max 10 persons trained	Finalized training materials package Training agenda Workshop summary minutes/report	
Activity 4.2: Produce workshop materials and deliver a stakeholder workshop for end-users of the system	20 pax	Max 20 stakeholder workshop participants	Finalized training materials package Workshop agenda Workshop summary minutes/report	

Impact Statement	
Challenge	<p><i>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.</i></p> <p><i>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.</i></p>
CTCN assistance	<ul style="list-style-type: none"> - <i>Development of an Information Management System to exchange information and near-real time data on salinity intrusion;</i> - <i>Sharing of salinity monitoring data and display maps of salinity intrusion in the Vietnam Mekong Delta region (VMD);</i> - <i>Training on how to operate and utilize the Information Management System developed.</i>
Anticipated impact	<ul style="list-style-type: none"> - <i>Strengthened water resources management capacity of the Cuu Long River Basin Committee and relevant institutions;</i> - <i>Improved technical capacity to effectively share data, forecast, manage and respond to saline intrusion in the Viet Nam Mekong Delta;</i> - <i>Improved climate change preparedness and hazard early warning;</i>

	<ul style="list-style-type: none"> - <i>Improved technical capacities created to expand/enhance the application of smart technologies in agriculture and aquaculture production in the VMD.</i>
<p>Anticipated co-benefits from the TA</p>	<p><i>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.</i></p>
<p>Gender aspects of the TA</p>	<p><i>Initial consultations will be held with gender expert 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.</i></p> <p><i>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).</i></p> <p><i>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.</i></p>
<p>Anticipated contribution to NDC</p>	<p><i>Alignment with National Strategy on Climate Change Adaptation Period to Year 2050:</i></p> <p><i>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:</i></p> <ul style="list-style-type: none"> - <i>Control the degradation of water and land resources, to ensure adequate balance of water sources for daily life, industry, services and important economic sectors.</i> - <i>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 (...).</i> - <i>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.</i> <p><i>Several of the activities identified in the National Strategy are fully aligned</i></p>

	<p><i>with the proposed activities of this technical assistance, including:</i></p> <ul style="list-style-type: none"> - <i>Upgrading and modernizing technology for monitoring, analysing, forecasting, warning weather and natural disasters; application of advanced and modern forecasting technologies.</i> - <i>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.</i> - <i>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.</i> - <i>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;</i> <p><i>National priorities related to saline intrusion management identified are:</i></p> <ol style="list-style-type: none"> <i>1. Building construction systems to prevent salinity;</i> <i>2. Development of a salinity monitoring system;</i> <i>3. Forecasting salinity intrusion with modern technology that provides highly reliable results;</i> <i>4. Building a system to share information and data, serving people and businesses.</i> <p><i>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.</i></p> <p><i>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.</i></p>
<p>The narrative story</p>	<p><i>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.</i></p> <p><i>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:</i></p> <ul style="list-style-type: none"> - <i>There is no general technical regulation for all salinity monitoring units,</i>

	<p><i>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.</i></p> <ul style="list-style-type: none"> - <i>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.</i> - <i>The un-centralized management of monitoring data is the cause of ineffective prediction and warning of salinity.</i> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>
<p>Contribution to SDGs</p>	<p><i>SDG 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.</i></p> <p><i>SDG 13 (Take urgent action to combat climate change and its impacts): 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. 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.</i></p> <p><i>SDG 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</i></p>

	<p><i>technical assistance would also help local authorities to better protect terrestrial ecosystems in the VMD which are now threatened by salinity intrusion.</i></p>
Reference to knowledge products	<p><i>Technical reports resulting from the TA + training manuals for the operators on operating and maintaining the salinity intrusion monitoring system+ training materials package.</i></p>