UN Climate Technology Centre & Network
UNFCCC Technology Mechanism

CTCN Technical Assistance
Request Submission Form

Guidelines:

- This Request Submission Form should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question
- The Form must be signed by the NDE. Please see updated contact list of NDEs here: http://unfccc.int/ttclear/support/national-designated-entity.html
- The Form can be submitted as a Word file containing a digital signature or as a signed and scanned PDF file in combination with an un-signed Word file
- For requests submitted by multiple countries, all the NDEs of the respective countries shall sign identical Forms before official submission to the CTCN
- NDEs have the opportunity to submit CTCN requests in collaboration with National Designated Authorities (NDAs) for the Green Climate Fund (GCF) if targeting the GCF Readiness Programme.

Requesting country or countries:	Bangladesh
Request title:	**Strengthening Institutional Capacity for Technology for Monitoring & Assessment of Climate Change Impact on Geomorphology in the Coastal Areas of Bangladesh**
NDE	**Dr. Abdul Hamid** Director General Department of Environment E-16, Agargaon, Sher-e-Bangla Nagar, Dhaka-1207, Bangladesh. Phone: +88 02 81 81800 Email: dg@doe.gov.bd
Request Applicant:	**Md Saiful Hossain** Chief Engineer (c.c), River Management, BWDB, saiful1963.bd@gmail.com Address: Pani Bahaban, 72, Green Road, Dhaka-1205

Climate objective:

☒ Adaptation to climate change
☐ Mitigation of climate change
☐ Combination of adaptation and mitigation of climate change

Geographical scope:

☐ Community level
☒ Sub-national
☐ National
☐ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Problem statement related to climate change (up to one page):

Climate variability and change is accentuating the intrinsic risks, already being felt by Bangladesh´s increasingly vulnerable coastal communities: (i) cyclones and storm surges (ii) erosion of river banks, islands and chars, (iii) sea level rise, (iv) salinity intrusion, (v) floods, (vi) droughts, (vii) drainage congestions and (viii) coastal erosion. Evidence indicates that climate change impact is resulting in sea level rise along the coast of Bangladesh, with the magnitude, duration and frequency of extreme weather events, such as droughts, floods and cyclones expected to increase, along with increased saline intrusion in coastal areas of the country. The need for strengthening institutional technical capacity to monitor the impacts of climate change, in particular in vulnerable coastal areas of Bangladesh still persists, despite government´s efforts to respond to the threats posed by a changing climate.

The present request builds on efforts already initiated in Bangladesh to strengthen knowledge and technical capacity of the country to better understand, monitor and assess the impacts of sea level rise and its interaction with the natural morphological processes (e.g., erosion, accretion, subsidence) as well as anthropogenic changes. Technologies and tools for monitoring and analysing changes on the ground due to climate change, which have been already identified, developed and customized for Bangladesh with previous support from CTCN, need now to be able to be well understood by and mainstreamed into relevant national and sub-national institutions so as to enable their effective use in support of planning and decision-making processes.

Past and on-going efforts to address the problem (up to half a page):

There are several studies reported by the Climate Change division of The Ministry of Environment and Forests that assessed the impact of climate change in the coastal areas. But the analyses in the studies were mostly based on secondary sources of data.

A review of past studies that relate to this request include:
- *Investigating the Impact of Relative Sea-Level Rise on Coastal Communities and their Livelihoods in Bangladesh*;
- *Development and climate change in Bangladesh: Focus on coastal flooding and the Sundarbans*;
- *Where land meets the sea – A Profile of the Coastal Zone of Bangladesh*.

There are other studies conducted by NGOs on:
- *Social mobilization and policy advocacy to mitigate the recurrent environmental crisis of water-logging in the southwest coastal region in Bangladesh*. The project dealt with disaster risk reduction (DRR) in an innovative way. The core thrust was on community-based river basin management to reduce the risk factors related to environmental disasters that happened in the region for more than a decade. Synergy between indigenous knowledge along with academic knowledge is important for any sustainable plan. That was why Institute of Water Modeling (IWM) and Centre for Environment and Geographic Information Services (CEGIS) were involved with the people's plan. IWM and CEGIS have contributed their scientific expertise to validate the technical soundness and environmental viability of the plan envisaged in the report. The plan was developed with community consultations throughout the eleven river basins in the region.
- *Climate change vulnerability of drinking water supply infrastructure in coastal areas of Bangladesh*, presented in a report in 2015 by CEGIS and IUCN. This study made very good suggestions on technical aspects for adaptation to meet the needs of drinking water supply. But still there is no methodology to monitor the changes in freshwater quality, and projections on the intrusion of saline water. Implications of climate change and various adaptation measures on other aspects of climate change were proposed in another study sponsored by Practical Action.

More recently, a CTCN technical assistance (TA) project implemented by DHI has developed and made

available tools for Monitoring & Assessment of Climate Change Impact on Geomorphology in the Coastal Areas of Bangladesh which can assist with monitoring and the analysis of key parameters that are affected by climate change and thus better inform development planning and management efforts, in particular in coastal areas of Bangladesh.

The present request builds on the results obtained so far from this TA effort in Bangladesh and aims to build institutional technical capacity of relevant institutions and decision makers for utilizing of the technology, information systems, and analysis that is made available.

Specific technology[1] barriers (up to one page):

This section should answer the questions "what are the technology barriers that hinder national efforts described above" and "how will the CTCN technical assistance complement these efforts?" Building upon the problem statement and taking into consideration the existing efforts described above, please describe the specific technology barriers encountered by the requesting applicant to identify, assess or deploy climate technology(ies) in an effort to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).

The two main barriers that this technical assistance request is trying to address are the following:

- need to increase institutional capacity and build ownership on the technologies and tools available (developed by the previous TA project) on the use of Earth Observation (EO) technologies for monitoring the dynamics of Bangladesh coastlines and assessing the impact of climate change and storm surges on the coastal zone, and for impact analysis and early warning of inland bank erosion inland bank erosion.

- need to raise awareness and understanding regarding the potential of EO tools and respective analysis to inform relevant decisions and policy processes, as well as to identify the need for the eventual development or strengthening of policy and regulatory frameworks.

Sectors:

Please indicate the main sectors related to the request:

☒ Coastal zones	☒ Early Warning and Environmental Assessment	☐ Human Health	☒ Infrastructure and Urban planning
☒ Marine and Fisheries	☒ Water	☒ Agriculture	☐ Carbon fixation
☐ Energy Efficiency	☒ Forestry	☐ Industry	☐ Renewable energy
☐ Transport	☐ Waste management		

Please add other relevant sectors:

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

☒ Communication and awareness	☐ Economics and financial decision-making	☒ Governance and planning	☐ Community based

[1] *"**any equipment, techniques, practical knowledge and skills** needed for reducing greenhouse gas emissions and adapting to climate change" (Special Report on Technology Transfer, IPCC, 2000)*

☒ Disaster risk reduction ☐ Ecosystems and biodiversity ☐ Gender

Technical assistance requested (up to one page):

Founded on the problem statement, past/on-going efforts and technology barriers, please describe the requested technical assistance. The technical assistance should clearly contribute to mitigation or adaptation to climate change as described in the problem statement and contribute to overcome the specific technology barriers.

Within a clearly defined scope, the description of technical assistance should be structured into the following:

- *Overall objective*
- *Anticipated groups of activities to be performed by the technical assistance*
- *Anticipated products to be delivered by the technical assistance.*

Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.

Overall objective:
The technical assistance requested is directly linked to the barriers identified above and aims to build ownership and institutional technical capacity of relevant institutions and decision makers to utilize the Earth Observation (EO) technology, information systems, and analysis that was made available through the earlier CTCN TA project on Technology for Monitoring & Assessment of Climate Change Impact on Geomorphology (Sea level rise/fall, Salinity, Sedimentation etc) in the Coastal Areas of Bangladesh.

Anticipated groups of activities:

- Update of the Existing Manual on EO based approaches to detect coastal accretion and erosion.
- Training in Bangladesh (1 week training in Kula, TBC) on the information system, tools and analysis for monitoring and assessment of climate change impact on geomorphology of coastal areas in the country. The train will serve to test/complement the existing Manual and should target mid and junior level officers of relevant institutions (including DoE, BDWB, IWM, and possibly planning staff from sub-national government from a selected coastal area).

  Training should focus on:

  - demonstration, methodological guidelines and technical training in using Earth Observation technologies for impact analysis and early warning of inland bank erosion.
  - demonstration, methodological guidelines and technical training in using Earth Observation technologies for monitoring the dynamics of coastlines and assessing the impact of climate change and storm surges on the coastal zone.
- South-south knowledge exchange initiative for Bangladesh policy makers to learn from another country´s experience in operationalizing similar monitoring and assessment systems and learn examples of how information produced is being utilized to inform key decision-making processes. This activity could include: (1) a preparatory (awareness raising) meeting with policy makers in Bangladesh (possibly including a brief presentation from participants of the 1 week technical training) and (2) a knowledge exchange visit to Thailand to learn from relevant technical/research institutions (e.g. Hydro-Informatics Institute of Thailand) and from government agencies and policy makers.

Anticipated products/results:

- Updated Manual on EO-based approaches to detect coastal accretion and erosion.
- 10-15 mid- and junior-level staff from different national institutions trained.
- 7-10 policy makers with increased awareness and knowledge of how the technology/ information/ analysis now made available can be used to inform decision-making processes, as well to identify areas where eventual development or strengthening of policy and regulatory frameworks may be needed.

Expected timeframe:

Please indicate the expected duration period for the requested technical assistance. Please note CTCN technical assistance is limited to a maximum duration of 12 months.

2 months

Anticipated gender and other co-benefits from the technical assistance:

Please describe the activities with gender linkages as well as the anticipated gender and other co-benefits (e.g. biodiversity, economic, social, cultural, etc.) that are likely to be generated as a result of the technical assistance.

For more information you can find guidelines on the CTCN's website here: https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development

Further reading on gender can be found on the CTCN website here: https://www.ctc-n.org/technology-sectors/gender

Capacity development and awareness raising activities will be designed considering this technical assistance as an opportunity to address gender imbalances still experienced in the composition of technical staff working in this field. Thus, when implementing the two main activities of this TA, selection of participants (both technical and policy maker participants) will take into consideration equal opportunity but also the need to strive for gender parity in the field.

In addition, while preparing discussions regarding the multiple applications of EO technologies to address climate change impacts, the gender dimension will be brought in. The design of these activities should enable participants to reflect on how the new information and capacity can contribute to better address still persistent gender inequalities, helping to identify climate change impacts to different groups and thus contribute to address these impacts in particular to the most vulnerable groups, including women, children and the elderly.

With increased institutional technical capacity and increased awareness and knowledge of policy makers, is expected to enable gains in terms of food security and access to water for the over 40 million people living in coastal areas of the country, as it will enable more informed decisions regarding the sustainable management of polders systems, and a better understanding needed to address saline intrusion processes that are threatening water security in these systems. The results of this technical assistance are also expected to be a significant contribution to the development of early warning systems for bank erosion which could add to the resilience of the entire coastal zone.

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	Guidance and supervision of the TA, coordination with different organizations to identify and facilitate access to the training and awareness raising initiatives. Facilitation of the dissemination of results of this TA and support the integration of findings/ learnings in future planning.
Request Applicant:	Act as the main counterpart to CTCN, in addition to the NDE.

Bangladesh Water Development Board (BWDB)	In close coordination with and guidance from the NDE, liaise with key stakeholders and participants involved in the two main activities of this TA, including coordination with national and local government as relevant. The project proponent (BWDB will also provide oversight to implementation of TA activities by the implementer, ensuring effectiveness of the training and knowledge exchange activities, and full ownership of the results of the TA.
Institute of Water Modelling (IWM)	Act as the lead technical counterpart of CTCN. In close coordination with the NDE and BWDB, IWM will provide his experience and technical support to the implementation of TA activities, and it is expected that it can serve in the future as a repository of national technical expertise and technical support to relevant national institutions (including BWDB) on EO technologies and systems that are the focus on this TA.
Local Government Institutions (LGIs)	Will provide relevant support to implement the activities at the field level.
Please add as many stakeholders and lines as required.	

Alignment with national priorities (up to 2000 characters including spaces):

Please describe how the technical assistance is consistent with national climate priorities such as: Nationally Determined Contribution, national development plans, poverty reduction plans, technology needs assessments, Low Emission Development Strategies, Nationally Appropriate Mitigation Actions, Technology Action Plans, National Adaptation Plans, sectorial strategies and plans, etc.

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 assistances. Please include a direct reference to the INDC/NDC document (chapter, page number, etc.).* Though the updated 2021 NDC focuses mostly on mitigation, it highlights the vulnerability of Bangladesh and its coastal communities, highlighting also food security, water resources management and disaster management as a priority for the country. (NDC 2021 Updated, pp 20) In addition, the document also mentions capacity building and MRV systems as a priority for the country (though in a first phase, more focused on mitigation, it mentions it plans to set up governance arrangements for the NDC-NAP implementation framework. (NDC 2021 Updated, pp 21)
Technology Needs Assessment	This TA is aligned with (and contributes to) the priorities defined in the TNA/TAP for Adaptation (2012), which states that “the agriculture and water sector have been identified as a priority sectors where technological intervention through development and diffusion of climate smart technologies that will be required to make this sector resilient to the impacts of climate change”, mentioning specifically the need for “Monitoring of sea level rise, tidal fluctuation, salinity intrusion, sedimentation and coastal erosion”
National Adaptation Plans	Under development
Nationally Appropriate Mitigation Actions	

Bangladesh Climate Change Strategy and Action Plan (BCCSAP)	Research and knowledge management to predict the likely scale and timing of climate change impacts on different sectors of economy and socioeconomic groups; to underpin future investment strategies, and to ensure that Bangladesh is networked into the latest global thinking on science, and best practices of climate change management. (BCCSAP 2009, Page XVIII)
Add others here as relevant	

Development of the request (up to 2000 characters including spaces):

Please describe how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles?) and describe any consultations or other meetings that took place to develop and select this request, etc.

The present TA request was developed by BWDB and facilitated by the NDE, with the urgent intention to complete activities that were not carried out under a previous TA (ref- 2016000088) due to the Pandemic. BWDB, in discussions with the NDE Office, the CTCN and DHI, has stressed the need for a dedicated technical training as well as an awareness and knowledge sharing activity to engage policy makers, to ensure a full transfer of the technology, tools and knowledge produced under the previous TA project. IWM has also been involved in the last joint discussion on this TA request which took place on 30/6/2022 and agreed to participate in collaboration with DHI in the implementation of this TA. It is expected that IWM will be a source of additional technical support in the future to key stakeholders in the country on the use of the technologies. The aim is to ensure full ownership and in-country capacity to utilize and build onto the results produced by the earlier TA.

Background documents and other information relevant for the request:

- *Please list all relevant documents that will help the CTCN analyze the context of the request and national priorities. Please note that all documents listed/provided should be mentioned in this request in the relevant section(s), and that their linkages with the request should be clearly indicated. For each document, please provide web-links (if available) or attach to the submission form. Please add any other relevant information as required.*
- *Please indicate if this request has been developed with the support of the CTCN Request Incubator.*

The present request has not been developed through the CTCN Request Incubator (though the original TA request that preceded this request was developed under that programme).

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The CTCN is collaborating with the GCF in order to facilitate access to environmentally sound technologies that address climate change and its effects, including through the provision of readiness and preparatory support delivered directly to countries through their GCF NDA. These actions are in line with the guidance of the GCF Board (Decision B.14/02) and the UNFCCC, particularly paragraphs 4 and 7 of 14/CP.22 that addresses Linkages between the Technology and the Financial Mechanisms[2].
The CTCN is therefore implementing some of its technical assistance using GCF readiness funds accessed via the country's NDA. Any application for GCF support, including the amount of support provided, is subject to the terms and conditions of the GCF and should be developed in conjunction with the NDA.

Please indicate whether this request has been identified as preliminarily eligible by the NDA to be considered for readiness support from the GCF.

[2] Please see: https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

☐ Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.

☐ Advanced engagement (preferred): The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name:
Date:
Signature:

Monitoring and impact of the assistance:

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures.
I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:

NDE name: Dr. Abdul Hamid

Date: 19.09.2022

Signature:

Dr. Abdul Hamid
Director General
Department of Environment
Ministry of Environment, Forest
and Climate Change

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG
The CTCN is available to answer all questions and provide guidance on the application process.