

Please fill in the form in the grey spaces, by following the instructions in italic.

Requesting country:	<i>Bangladesh</i>
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Request title:	<i>Technical assistance for saline water purification technology at household level and low-cost durable housing technology for coastal areas of Bangladesh.</i>
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Contact information:		
<i>{Please fill in the table below with the requested information. The request proponent is the organization that the request originates from, if different from the National Designated Entity (NDE).}</i>		
	National Designated Entity	Request Applicant
Contact person:	Md. Raisul Alam Mondal	<i>Md. Abdul Karim</i>
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Technology Needs Assessment (TNA):
<i>{Select one of the three boxes below:}</i>
<input checked="" type="checkbox"/> <i>The requesting country has conducted a TNA in October 2012</i>
<input type="checkbox"/> <i>The requesting country is currently conducting a TNA</i>
<input type="checkbox"/> <i>The requesting country has never conducted a TNA</i>
<i>{If the requesting country has completed a TNA, please indicate what climate technology priority this request directly relates to. Please indicate reference in TNA/TAP/Project Ideas.}</i>

CTCN Request Incubator Programme:
<i>{Please indicate if this request was developed with support from the Request Incubator Programme:}</i>
<input checked="" type="checkbox"/> <i>Yes</i>
<input type="checkbox"/> <i>No</i>

Geographical focus:

{Select below the most relevant geographical level for this request:}

- Community-based
 Sub-national
 National
 Multi-country

{If the request is related to the sub-national or multi-country level, please indicate here the areas concerned (provinces, states, countries, regions, etc.)}

Coastal areas of Bangladesh

Theme:

{Select below the most relevant theme(s) for this request:}

- Adaptation to climate change
 Mitigation to climate change
 Combination of adaptation and mitigation to climate change

Sectors: *{Please indicate here the main sectors related to the request. e.g. energy, industry, transport, waste, agriculture/fisheries, forestry, water, ecosystem/biodiversity, coastal zones, health, education, infrastructure/human settlement, tourism, businesses, early warning/disaster reduction, institutional design and mandates, cross-sectoral}*

Water & Infrastructure:

- Purification technology for saline water at household level.*
- Low cost durable housing technology for coastal areas of Bangladesh.*

Problem statement (up to one page):

{Please describe here the difficulties and specific gaps of the country in relation to climate change, for which the country is seeking support from the CTCN. Please only provide information directly relevant to this request, and that justifies the need for CTCN technical assistance.}

Climate change is a global threat, particularly for the least developed vulnerable countries. It has a wide range of impacts such as extreme weather, rise in sea level, biodiversity loss and human health hazards. In Bangladesh, due to sea-level rise, saline water intrusion in the coastal areas increased significantly while, on the other hand, sweet water flow from the upper riparian countries is gradually decreasing. As a result, most of the land areas there are becoming saturated with saline water. Ultimately, potable water is going to become scarce. So, collecting sweet water is becoming a major task for the women and children of the poor households in the salinity-prone areas. Salinity in water also causes major health hazards, including high blood pressure and other diseases, for those living in the coastal areas. So, technical assistance is required to install desalination plants or other desalination technologies at affordable prices at the household level.

To collect sweet water from the desalination plants or from any other source at the community level, people -- particularly women and children -- have to spend a lot of their time of a day as they often

have to walk long distances - (about 3-4 kilometers) for this. Due to this barrier, sometimes people do not feel comfortable to collect water from the community-based desalination plants or from the community ponds. This problem is more acute in the scattered villages. In times of disaster, this becomes more serious. So, the problem should be addressed immediately.

In our past experience, it was observed that most of the community desalination plants were not working properly due to some technical difficulties and lack of knowledge among the local people about how to handle it. However, community-based desalination plants might be useful for the people of the vicinities. To address these issues of supplying drinkable sweet water, introduction of an easy and affordable desalination technique at the house-hold level is the most appropriate solution.

Low-cost climate resilient housing is another important issue concerning the coastal people of Bangladesh. In the coastal region of Bangladesh, most people belong to the poor and the ultra-poor groups, with their earnings well below the national per capita income and houses made of low-quality local wood and other materials. The intensity and frequency of cyclones and storm surges increased significantly over the last few decades. Besides, the soil and water in these areas are greatly affected by the salinity intrusion. The houses made of low quality materials cannot last long. The durability of structures built using local sand, bricks and saline water is very poor as the salt-containing materials absorb moisture from weather in the wet season, and during the dry season, the structures, especially those with casting and plaster (casting and mortar: mixture of sand, cement, water and brick chips) demoteurize. As a result, efflorescence takes place on the surfaces of the structures and they lose their strength long before the expected time. Furthermore, some structures are costly and not affordable for the poor or the ultra-poor. So, low-cost salinity-proof structures are essential for the poor communities living along the coastal belt of Bangladesh.

Past and ongoing efforts (up to half a page):

{Please describe here past and on-going processes, projects and initiatives implemented in the country to tackle the difficulties and gaps explained above. Explain why CTCN technical assistance is needed to complement these efforts, and how the assistance can link or build on this previous work.}

The following steps were taken to meet the scarcity of drinking water in the coastal belt of Bangladesh --

1.1 Deep Tube-well for Drinking Water: *Efforts were made to ensure the supply of potable water to the doorsteps of the targeted community members by installing deep tube-wells where safe drinking water is a crying need but salinity-free soil layer is very rare in the coastal belt of Bangladesh. It is mentionable that shallow tube-wells are not working at all in the coastal belt of Bangladesh.*

1.2 Desalination Plant: *In addition to deep tube-wells, community-based desalination plants have been installed to supply potable water to the coastal people. However, the desalination plants are expensive and substantial technical knowledge and knowhow is required to run those smoothly. Besides, it is not possible to install such expensive plants on a large scale. As there are not enough desalination plants, people have to walk long distances for collecting salinity-free water, which results in waste of their working hours.*

1.3 Pond Sand Filter (PSF): *Due to increase of salinity in the underground water in the coastal regions of Bangladesh, Pond Sand Filter was set up to purify surface water (to make it bacteria-free), especially for the people who are using the pond water for both domestic and drinking purposes. After the two recent devastating cyclones -- Sidr in 2007 and Aila in 2009 -- almost all the ponds, ditches, low lands and water retention bodies in the affected areas were affected by saline water. So, purifying surface water using this technology is not working well.*

1.4 Rain Water Harvesting System (RWHS): RWHS is provided both at the household and the community levels for a few months (3-4 months) of the year. There is no scope to get purified water through this technique except during the rainy season.

Very few climate vulnerable people are getting the aforementioned supports, that too in a very limited number of areas. Huge numbers of climate vulnerable people are not getting supports of these kinds to meet their demand for salinity-free water.

Though the people of coastal areas need durable and low-cost housing, no initiatives have yet been taken to address this important issue. So, CTCN technical assistance will be very helpful to address the two crying needs of the coastal people of Bangladesh. This will ultimately help to all the vulnerable people of the coastal region around the globe.

Assistance requested (up to one page):

{Please describe here the scope and nature of the technical assistance requested from the CTCN and how this could help address the problem stated above and add value vis-à-vis the past and on-going efforts. Please note that the CTCN facilitates technical assistance and is not a project financing mechanism.}

1. Low-cost durable housing: *Construction of durable houses is a must to keep the climate-vulnerable people in a safe home around the year, especially in times of hazards triggered by climate change (viz- cyclones, tidal surges, storms etc.). In our country, there are many techniques to make a house durable but the technologies required for that are highly expensive. We need a technology that can be used in building durable houses at low costs because these targeted peoples cannot spend a huge amount of money for residential purposes. These people are using indigenous knowledge to make the houses durable but this is not sufficient in the long run.*

Earlier, Palli Karma-Sahayak Foundation (PKSF) implemented some initiatives by its Community Climate Change Project (CCCP) viz- plinth raising and sanitary latrine installation in this areas. But no actions were taken to make their houses durable or to provide low-cost durable housing solution. CTCN assistance to enhance the technical knowledge is required to have the local experts develop a technique at the national level.

2. Purification technology of saline water at household level: *To supply potable water to the doorsteps of people in dire need of safe drinking water in the salinity-hit areas, it is required to provide desalination technology at the household level.*

Although there is a local desalination technology invented by local experts, it is not recognized at the national or the global level. So, technical assistance and expert opinion of CTCN is needed to enhance skills and knowledge of the local experts and academicians at the national level to develop a technology.

Expected benefits (up to half a page):

{Please outline here the medium and long-term impacts that will result from the CTCN technical assistance, including how the assistance will contribute to mitigate and/or adapt to climate change.}

1. **Short-term impacts:** *The targeted communities will have access to pure drinking water and safe houses during cyclones, storm surges, coastal flooding or other climate-induced calamities.*
2. **Long-term impacts:** *As a result of building safe houses, the poor will no longer need to shift to other houses in times of storms, tidal surges and cyclones, nor will they need to rebuild or repair their houses every year.*

These people will not be affected by chronic waterborne diseases, thanks to their access to pure drinking water. In the long run, they can save money and use it in income-generating activities.

Eventually, the community will be resilient to the adverse impacts of salinity-affected water as well as to the climate change fallouts.

Post-technical assistance plans (up to half a page):

{Please describe here how the results of the CTCN technical assistance will be concretely used by the applicant and national stakeholders, to pursue their efforts of resolving the problems stated above after the completion of the CTCN intervention (list specific follow-up actions that will be undertaken).}

The following steps will be carried out after getting the technical assistance:

1. *Formation of a team of experts who will oversee and provide inputs to decision makers*
2. *Preparation of long-term plan from related stakeholders*
3. *Technology adaptation to local conditions (market demand, skilled manpower, facilities, etc.)*
4. *Preparation of basic and detailed design, construction, installation of equipment, etc.*
5. *Technology development i.e. proceeding for mass production*
6. *Technology dissemination (increased production, improved knowledge and skills learned at the regional level)*
7. *Assisting the monitoring and evaluation activities*

Key stakeholders:

{Please list in the table below the main stakeholders who will be involved in the implementation of the requested CTCN technical assistance, and what their role will be in supporting the assistance (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.). Please indicate what organization(s) will be the main/lead counterpart(s) of CTCN experts at national level, in addition to the NDE.}

Stakeholder	Role to support the implementation of the assistance
<i>National Designated Entity (NDE)</i>	<i>Will submit the proposal to CTCN after having it reviewed by its technical committee.</i>
<i>Department of Environment (DoE)</i>	<i>Will provide technical support to NDE.</i>
<i>Palli Karma-Sahayak Foundation (PKSF)</i>	<i>Will initiate the proposal and send it to NDE.</i>
<i>Local Government Institutions (LGIs)</i>	<i>Will provide relevant support to implement the activities at the field level.</i>

<i>Civil Society (NGO representative)</i>	<i>Will support implementation of the activities at the field level.</i>
<i>Local elite personalities</i>	<i>Will help to select the spots as well as beneficiaries and to ensure transparency, accountability and monitoring.</i>

Alignment with national priorities (up to half a page): *{Please demonstrate here that the technical assistance requested is consistent with documented national priorities (examples of relevant national priorities include: national development plans, poverty reduction plans, technology needs assessments (TNAs), LEDS, NAMAs, TAPs, NAPs, sectoral strategies and plans, etc.). For each document mentioned, please indicate where the priorities specifically relevant to this request can be found (chapter, page number, etc.).}*

<i>Name of document</i>	<i>Year</i>
<i>National Adaptation Program of Action (NAPA)</i>	<i>2009 (Section -4, Article-A.1 & C.4, Page-45,47)</i>
<i>Bangladesh Climate Change Strategy and Action Plan</i>	<i>2009(Programme –TIP7, Page-39)</i>
<i>Bangladesh Technology Needs Assessment and Technology Action Plans for Climate Change Adaptation (Part-2)</i>	<i>2012(Chapter-1, Article # 1.4.1.3, Page- 30) Low cost housing is a community problem and it has not been mentioned properly in TNA.</i>

Development of the request (up to half a page):

{Please explain here 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.)}

A national consultation workshop on CTCN was held on the 21st January, 2016 at PKSf auditorium. Based on that consultation and notification from NDE and nationwide field-level program implementing capacity, PKSf is now implementing Community Climate Change Project (CCCP) in the coastal, flood- and drought-prone, and climate vulnerable areas, but is facing problems to address the two issues mentioned earlier. PKSf underscores the need for preparing a request to be submitted to CTCN through NDE to urgently address these two issues. So, after discussions and consultations with all the relevant project implementing partners under CCCP, who have the experience to do the work in those two fields, a proposal has been prepared on the basis of TNAs, NAPA, BCCSAP and NAPs, by PKSf following all national strategies and policies as well as considering the social and environmental issues. NDE reviewed the proposal by consulting with relevant experts including DoE and other LGIs.

Expected timeframe: *{Please propose here a duration period for the assistance requested.}*

Total 12 months :

Activities	Days					
	1-2	3-4	5-6	7-8	9-10	11-12
1. Identification of organization having technical knowledge						

2. Selection of user and development of technology						
3. Technology transfer and implementation						
4. Impact assessment and generalization of the technology						

Background documents:

{Please list here relevant documents that will help the CTCN understand the context of the request and national priorities. For each document, provide web links if available, to attach to the submission form while submitting the request. Please note that all documents listed/provided should be mentioned in this request in the relevant question(s), and that their linkages with the request should be clearly indicated.}

Monitoring and impact of the assistance:

{Read carefully and tick the boxes below.}

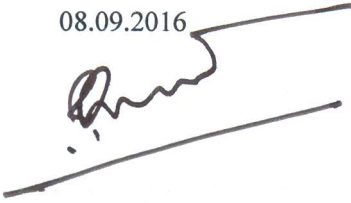
By signing this request, I affirm that processes are in place in the country to monitor and evaluate the assistance provided by the CTCN. I understand that these processes will be explicitly identified in the Response Plan in collaboration with the CTC, and that they will be used in the country to monitor the implementation of the CTCN assistance.

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: **Md. Raisul Alam Mondal**

Date: 08.09.2016

Signature: 

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

Need help? The CTCN team is available to answer questions and guide you through the process of submitting a request. The CTCN team welcomes suggestions to improve this form.

>>> Contact the CTCN team at ctcn@unep.org