

Country	Cambodia
Request ID#	2021000015
Title	Climate risk assessment for subnational adaptation and establishment of a local climate information system for climate change adaptation (LISA)
NDE	<p><i>Please add name, position, organization, email and address</i></p> <p>Dr. Hak Mao Director of the Department of Climate Change General Secretariat of the National Council for Sustainable Development/ Ministry of Environment of the Kingdom of Cambodia maohakccd.se@gmail.com No. 503, Road along Bassac River, Sangkat Tonle Bassac, Chamkarmon, Phnom Penh, Cambodia</p>
Proponent	<p><i>Please add name, position, organization, email and address</i></p> <p>Dr. Hak Mao Director of the Department of Climate Change General Secretariat of the National Council for Sustainable Development/ Ministry of Environment of the Kingdom of Cambodia maohakccd.se@gmail.com No. 503, Road along Bassac River, Sangkat Tonle Bassac, Chamkarmon, Phnom Penh, Cambodia</p>

Summary of the CTCN technical assistance

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

Cambodia is one of the most vulnerable countries to climate change and has difficulties in implementing the country’s climate change response due to a lack of available quality assured information and knowledge on climate change in the country. Significant gaps still remain in creating the conditions for science-based climate-informed decision making, in particular related to the production, access and use of climate information at local levels.

The technical assistance (TA) aims to design a local climate information system for climate change adaptation (LISA), which is a web-based platform helping stakeholders access climate risk information and providing science-based quality assured information to support climate-informed decision making at the sub-national level. In the TA, the current status of the climate information systems in Cambodia will be reviewed. After selecting one municipality where the LISA concept will be designed, climate information needs from key stakeholders will be identified, and climate change risk assessment at the selected municipality will be conducted, helping to establish baseline information for the system. Afterwards, contents and technical specifications as well as data management process for LISA will be designed, and management protocols for LISA will be documented, so this web-based local information system can effectively support climate-informed decision making processes at the sub-national (municipality) level, responding to the stakeholders’

needs identified. A capacity needs assessment and capacity building program will be also developed to ensure a locally led, effective operation and progressive enhancement of LISA, and to maximize utilization of the system by local government authorities and other key stakeholders. It is expected that climate resilience and associated stakeholders' awareness and capacity at local levels in Cambodia would be enhanced through the establishment of LISA to be designed through the TA.

Agreement:

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

**National Designated Entity to the UNFCCC
Technology Mechanism**

Name: Hak Mao

Title: Director of the Department of Climate
Change

Date: 05 July 2021

Signature:



Proponent (signature of the Proponent is optional)

Name: Hak Mao

Title: Director of the Department of Climate
Change

Date: 05 July 2021

Signature:



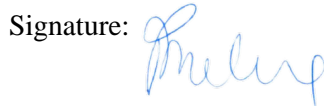
UNFCCC Climate Technology Centre and Network (CTCN)

Name: Rose Mwebaza

Title: CTCN Director

Date: 05.07.2021

Signature:



1. Background and context

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

Cambodia is considered by several international climate change indexes one of the most vulnerable countries to the impacts of climate change and is particularly vulnerable to floods, droughts, windstorms, and seawater intrusion. As highlighted in its Nationally Determined Contribution (NDC), Cambodia's vulnerability is characterised by frequent floods and irregular rainfall, coupled with an agrarian based economy, limited human and financial resources, insufficient physical infrastructure, and limited access to technologies.

If the impact of climate change on its economy is expected to be significant - with a projected reduction of the country's annual average GDP growth to 6.6% and absolute GDP by 2.5% in 2030, and up to 9.8% in 2050 - the impact on its people is not less severe. The increase in frequency and intensity of extreme floods and drought events is already resulting in damage to crops, loss of human life and livelihoods. In the country's fragile socio-economic context, these impacts affect disproportionately different social groups, with women, children, the disabled, the elderly and other socially marginalized groups suffering the most.

Cambodia's Second National Communication (SNC) provides an assessment of climate change impacts and vulnerability for key sectors, including water resources, forestry, coastal zones and human health. It indicates for example that under future climate conditions (2050) most of Cambodia's agricultural areas will be exposed to higher risks of drought, and floods will have a significant impact on yields, as well as on agriculture supply chains due to disruptions to logistical corridors. The negative impacts on agriculture production can lead in turn to the breakdown of food systems, with vulnerable groups taking the heaviest toll.

The lack of adaptive capacity and the ability to define and implement adaptation strategies, in particular at the local level, is further hindered by significant gaps in information. According to the mid-term review (2019) of the Cambodia Climate Change Strategic Plan (2014-2023) which has been guiding both adaptation and mitigation efforts in the country, substantial gaps in the production and use of relevant data at different scales need to be addressed to improve (local) decision making process on adaptation. Though a number of climate change projects have been implemented or are under preparation, significant gaps still need to be addressed.

2. Problem statement

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

Despite of the progress made, implementation of the country's climate change response remains hindered by a lack of available quality assured information and knowledge on climate change in the country. Surveys conducted by the Department of Climate Change (DCC) indicate that policy-makers, planners, and other practitioners working at the sectoral and sub-national levels often lack the

information and knowledge they need to effectively conduct their work.

Though Cambodia has already established a climate change data portal, providing access to several climate relevant data sets (e.g., climate finance and vulnerability to climate hazards), there is still limited use of the information and data available to inform local adaptation planning. The National Adaptation Plan (NAP) Information Portal, to be developed with the support of the GCF NAP Readiness program, is also expected to provide a tool to coordinate national adaptation response (though integrating initiatives conducted at the local level). Thus, at present significant gaps still remain in creating the conditions for science-based climate-informed decision making, in particular related to the production, access and use of climate information at the local level.

Furthermore, strengthening capacities for science-based decision making at the sub-national level is facing with the following challenges:

- Governance challenges – better coordination will be needed from a sectoral but also from a spatial perspective, notably between National Council for Sustainable Development (NCSD), National Committee for Sub-national Democratic Development (NCDD) and the Department of Local Governments in the Ministry of Interior (MoI).
- Technical and institutional challenges – There is limited capacity and skilled personnel in country, in particular at the sub-national level, to conduct vulnerability assessments (sector- or geographical area- specific), and to develop and use decision support systems to improve mainstreaming of climate change in sub-national development planning or urban planning. There is also lack of a protocol for the management and exchange of data, lack of a central clearing house that ensures climate data is analysed/updated/managed, low availability of climate modelling information to public institutions, no mechanism in place to systematically gather evidence on what works well and what works less well, so that best practices can be replicated/scaped up.
- Lack of awareness and education – The majority of the people need to be acquainted with climate change impacts, environmental and economic benefits of increasing resilience, and the benefits derived from the use of science-based decision support systems to address climate change challenges. Engagement of stakeholders in the development of a focused (relevant to the local context) sub-national climate information system can help communities better understand climate change impacts and the benefits of investing in climate resilient development.

The CTCN support is needed to design a web-based local climate information system and establish associated baseline (including related management protocols), which can support adaptation decision-making processes, and provide services for climate information delivery at the sub-national (local) level.

<p>iii) Technical assistance closure report</p>											
<p>Output 2: Identification of the current status of the climate information systems in Cambodia</p>											
<p>Activity 2.1: A kick-off meeting and stakeholder consultations</p> <p>A kick-off meeting and consultations with government and non-government stakeholders will be carried out (in-person or online¹). Through this activity, the lead implementer will understand and assess the expectations of stakeholders about the TA. Moreover, current status of climate information generation and collection, and the process of its dissemination at local/national level in Cambodia will be shared with the lead implementer during stakeholder consultations.</p>											
<p>Activity 2.2: Review of the climate information systems in Cambodia</p> <p>The lead implementer with support from the national expert will carry out literature review and interviews with relevant Ministries and public agencies (if required) regarding the current status of development and operation of climate information systems in Cambodia. In particular, results and lessons learnt from completed and ongoing projects/programmes to establish/strengthen climate information systems at local and national levels in the country will be reviewed, and available climate data that can be used during the implementation of the TA and their sources will be identified through this activity.</p>											
<p>Activity 2.3: Investigation of best practices of operating local climate information systems</p> <p>The lead implementer will review different cases of the best practices that have been conducted for developing and operating the climate information system at the local level in developed/developing countries, with a focus on those targeting municipalities. Through this activity, success factors of such systems, as well as key</p>											

¹ If the border lockdown is continued due to the COVID-19 pandemic, the lead implementer will take into account conducting the kick-off meeting and stakeholder consultations on an online basis with support from the NDE and the national expert.

<p>information and services provided through the system in each case will be identified. Findings from this activity will be later used in identifying potential stakeholders of a local climate information system for climate change adaptation (LISA), and in designing its structure and functionalities, and required capacity building program. An initial set of recommendations and concept for the web-based LISA will be formulated by the implementer and discussed with NDE.</p>												
<p>Deliverables 2: i) Report on the kick-off meeting and stakeholder consultations ii) Report on the review of the climate information system in Cambodia iii) Report on the investigation of best practices of operating local climate information systems iv) Initial considerations and draft concept for LISA.</p>												
<p>Output 3: Identification of stakeholder’s needs and climate change risk assessment at the selected municipality</p>												
<p>Activity 3.1: Consultations to select the most appropriate municipality to design LISA</p> <p>The lead implementer will have consultations (in-person or online²) with the NDE (also the proponent of the TA), relevant Ministries and local authorities, as well as with non-government stakeholders to select a municipality for the design of LISA in Cambodia and to discuss initial concept for LISA. To allow for the design of LISA to be conducted within the limited time of the TA, the municipality to be selected should be the one with adequate access to data.</p>												
<p>Activity 3.2: Mapping of the potential stakeholders at the selected municipality and survey of their needs</p> <p>The lead implementer will identify different groups of stakeholders at the selected municipality who will be the potential users (primary beneficiaries) of LISA to be designed through the TA. The results of the stakeholder</p>												

² If the border lockdown is in effect, due to the COVID-19 pandemic, the lead implementer will take into account conducting the stakeholder consultations on an online basis with support from the NDE and the national expert.

<p>mapping will be used in selecting members of a stakeholder working group in Activity 3.4.</p> <p>The lead implementer with support from the national expert will carry out a survey to identify climate information needs of potential stakeholders at the selected municipality, as well as relevant planning and decision-making processes where adaptation/climate proofing can be leveraged. Questionnaires should be developed with specific attention to local needs and gender issues. The results of the survey will be analyzed and shared with the NDE and the selected municipality to determine the scope of local climate information services that LISA will provide to stakeholders at the selected municipality.</p>													
<p>Activity 3.3: Climate change risk assessment at the selected municipality</p> <p>The lead implementer will develop a methodology to conduct climate change risk assessment at the selected municipality, in consultation with the NDE, local authority, and climate adaptation experts from NCSD and relevant national universities. Using IPCC latest guidance while designing this methodology, the implementer will also consider relevant methodologies previously developed or in use related to climate change risk assessment and vulnerability assessment applicable at the municipality level, as well as existing relevant policy guidance on such methodologies, so as to build on and strengthen existing processes. The following matters (but not limited to them) would be considered:</p> <ul style="list-style-type: none"> • The scope of the sectors for climate change risk assessment at the selected municipality • Climate change vulnerability assessment at the selected municipality • Climate model downscaling • Data collection and generation <p>The lead implementer with support from national expert will then carry out climate change risk assessment in collaboration with the NDE (also the proponent of the TA) and the local authority. The results of the assessment will include climate risk mapping at the selected municipality and for prioritized sectors (e.g., agriculture, human health, water, etc.).</p>													
<p>Activity 3.4: Organisation of the stakeholder working group</p>													

<p>A restrictive group of the stakeholder working group (up to 10 persons) will be created based on the results of Activity 3.2 and recommendations from the NDE (also the proponent of the TA). The stakeholder working group shall maintain a gender balance and an adequate representation of vulnerable groups. The members of the group will provide an overview and a guidance during the implementation of the TA. For this purpose, they should have the capacity to take key decisions with regards to establishment of LISA at the selected municipality.</p>												
<p>Activity 3.5: Organisation of a meeting with the stakeholder working group</p> <p>The results of Activities 2.3, 3.2 and 3.3 will be shared with the stakeholder working group in a virtual meeting. The lead implementer will show the results of mapping the potential stakeholders at the selected municipality and their needs that will be identified through the survey. Moreover, key findings from the climate change risk assessment at the selected municipality will be provided to the stakeholder working group. Feedback from the stakeholder working group will be used in Activity 4.1.</p>												
<p>Deliverables 3:</p> <ul style="list-style-type: none"> i) Report on the consultations to select the most appropriate municipality to design LISA ii) Report on the mapping of the potential stakeholders at the selected municipality and survey of their needs iii) Report on the climate change risk assessment at the selected municipality iv) Detailed description of the stakeholder working group, with name and contact details of the members, respective institutions, gender, etc. v) Minutes of the stakeholder working group meeting with a list of participants disaggregated by gender, materials used, and summary of the discussions held 												
<p>Output 4: Development of LISA at the selected municipality</p>												
<p>Activity 4.1: Design of contents and specifications for LISA</p> <p>The lead implementer will design the structure of LISA (web-based platform) taking into consideration the results of Activities 2.2-3, 3.1-3, and 3.5. Contents to be provided through LISA (including data and metadata to be included, as well as reports to be generated) will be defined. In particular, the type, quantity and hierarchy</p>												

<p>of climate information/themes on LISA will be determined in close consultation with the NDE (also the proponent of the TA) and the local authority. Technical specifications (e.g., database structure, system architecture, functional requirements and appropriate technical solutions) will be developed, ensuring that the system design is scalable. Collaborations with international organisations/research institutes/public agencies required to collect and/or generate climate data/information will be proposed. The lead implementer will create/fill-in the content agreed to develop an initial mock-up of LISA (website)³ with suggested visualisation of contents/reports to allow access to climate data/information in a user friendly and timely manner.</p> <p>The lead implementer will build the website according to the design and technical features agreed to (using its own dedicated development server and uploading the website in a pre-testing server to allow for review of its content and testing of website, database and report generation). Moreover, the lead implementer will develop Terms of Reference (ToR) for the establishment/deployment of LISA at the selected municipality, including an estimated budget, expertise required, a work plan and estimated timeline for deployment of LISA, ensuring that guidance is provided on how to embed LISA in the context of the municipality’s systems and processes, and how LISA will link up with other national-level climate data portals (NCSD and the future NAP info portal).</p>												
<p>Activity 4.2: Design of the process of data management for LISA</p> <p>In consideration with Activity 4.1, the lead implementer will design the process of data management for LISA. The following matters (but not limited to them) would be considered: data from source into staging database; data entry quality check; data transfer from staging database to data warehouse; data transfer from data warehouse to data mart; and data transformation in data mart.</p> <p>The specifications for a central clearing house of data and information, ensuring that appropriate data quality standards and QA/QC procedures will be adopted so that LISA can provide quality assured, reliable, climate-relevant data and information, will be also defined in this activity.</p>												
<p>Activity 4.3: Development of the management protocols for LISA</p>												

³ A cost for the 6-month website hosting for the initial mock-up of LISA has been included in the budget estimation.

<p>Protocols that will be used for the operation and maintenance (O&M) and monitoring and evaluation (M&E) of LISA as well as data management and exchange for LISA will be documented. The roles and responsibilities for the management of LISA will be also developed and included in the protocols, in close consultation with the NDE (also the proponent of the TA) and the municipality/local authority.</p>												
<p>Activity 4.4: Development of the capacity building program for effective use of LISA</p> <p>Based on a capacity needs assessment and consultations with stakeholders (conducting a stakeholder survey if required), the lead implementer will propose a capacity building program to ensure a locally-led, effective operation and progressive enhancement of LISA, and to maximize utilization of LISA by local government authorities and other key stakeholders.</p>												
<p>Activity 4.5: Organisation of a meeting with the stakeholder working group</p> <p>The results of Activities 4.1, 4.2, 4.3 and 4.4 will be shared with the stakeholder working group in a virtual meeting. The lead implementer will provide contents, the initial mockup of LISA, and technical specifications designed for the system, and also show the suggested process of data management for LISA. With this, management protocols for LISA as well as capacity building programs, proposed for effective use of LISA, will be introduced to the stakeholder working group. The stakeholder group will be given access to the test website to review its content and verify that it meets the needs and follows guidance earlier provided. Feedback from the stakeholder working group will be integrated in completing Activities 4.1, 4.2, 4.3 and 4.4.</p>												
<p>Activity 4.6: Organisation of a 1-day stakeholder workshop for government bodies and stakeholders</p> <p>The lead implementer will organise and facilitate a 1-day workshop for national/local government officials and relevant stakeholders at the selected municipality. Contents and technical specifications as well as data management process for LISA will be introduced to participants in the workshop, allowing participants to have an initial experience of the future website/LISA portal. The lead implementer will also share management protocols for LISA as well as capacity building programs proposed for the effective use of LISA. With this,</p>												

<p>cases of the best practices, with regards to operation of climate information systems at local level, and their impact on climate change response will also be provided during the workshop. After the workshop, a satisfaction survey from participants will be conducted to identify the level of their understanding regarding LISA.</p>												
<p>Deliverables 4: i) Report on the design of contents and specifications for LISA, with the initial mock-up of the system (website) and testing results. ii) Report on the design of the process of data management for LISA iii) Report on the management protocols for LISA iv) Report on the capacity building program for effective use of LISA v) Minutes of the stakeholder working group meeting with a list of participants disaggregated by gender, materials used, and summary of the discussions held vi) Materials for the workshop (e.g., presentations, satisfaction survey template, etc.) vii) Report on the 1-day stakeholder workshop for government bodies and stakeholders viii) Copy of all materials produced under this consultancy (including programming code and databases)</p>												

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 <i>(Title, role, estimated number of days)</i>	Input: Travel <i>(Purpose, national vs. international, number of days)</i>	Inputs: Meetings/events <i>(Meeting title, number of participants, number of days)</i>	Input: Equipment/Material <i>(Item, purpose, buy/rent, quantity)</i>	Estimated cost <i>Please accumulate the costing at Activity and Output level and provide an estimated costing range for each activity and the total Response Plan</i>

					Minimum	Maximum
Output 1: Development of implementation planning and communication documents					4,800	7,800
Activity 1: i) Detailed work plan, ii) M&E plan and impact statement, iii) Technical assistance closure report	<i>I1: 3 days I2: 3 days I3: 2 days I4: 3 days N1: 2 days N2: 3 days</i>				<i>4,800</i>	<i>7,800</i>
Output 2: Identification of the current status of the climate information systems in Cambodia					30,000	39,000
Activity 2.1: A kick-off meeting and stakeholder consultations	<i>I1: 6 days I2: 6 days I3: 2 days I4: 6 days N1: 3 days N2: 6 days</i>	<i>[International travel] 3 international experts for the duration of 4 days each for the kick- off meeting and stakeholder consultations</i>	<i>Kick-off meeting, 10 participants (including women’s representative), 1 day Stakeholder consultations, 15 participants (including women’s representative), 1 day</i>		<i>18,400</i>	<i>21,400</i>
Activity 2.2: Review of the climate	<i>I1: 3 days I2: 3 days</i>				<i>5,800</i>	<i>8,800</i>

information systems in Cambodia	<i>I3: 1 day I4: 5 days N1: 2 days N2: 5 days</i>					
Activity 2.3: Investigation of best practices of operating local climate information systems	<i>I1: 3 days I2: 3 days I3: 1 day I4: 5 days N1: 2 days N2: 5 days</i>				5,800	8,800
Output 3: Identification of stakeholder’s needs and climate change risk assessment at the selected municipality					54,700	69,700
Activity 3.1: Consultations to select the most appropriate municipality to design LISA	<i>I1: 5 days I2: 2 days I3: 2 days I4: 5 days N1: 2 days N2: 3 days</i>	<i>[International travel] 2 international experts for the duration of 3 days each for the stakeholder consultations</i>	<i>Stakeholder consultations, 15 participants (including women’s representative), 1 day</i>		11,000	14,000
Activity 3.2: Mapping of the potential stakeholders at the selected municipality and survey of their needs	<i>I1: 5 days I2: 1 day I3: 1 day I4: 5 days N1: 3 days N2: 10 days</i>	<i>[Domestic travel] 1 national expert for the duration of 3 days for the stakeholder survey</i>			8,200	11,200
Activity 3.3:	<i>I1: 15 days</i>	<i>[Domestic travel]</i>			30,200	33,200

Climate change risk assessment at the selected municipality	I2: 5 days I3: 5 days I4: 30 days N1: 5 days N2: 20 days	1 national expert for the duration of 2 - 3 days for the climate change risk assessment (if required ⁴)				
Activity 3.4: Organisation of the stakeholder working group	I1: 1 day I2: 1 day I3: 1 day I4: 2 days N1: 1 day N2: 2 days				1,500	4,500
Activity 3.5: Organisation of a meeting with the stakeholder working group	I1: 3 days I2: 1 day I3: 1 day I4: 3 days N1: 2 days N2: 3 days		Stakeholder working group meeting (online), 10 participants (including women's representative), 1 day		3,800	6,800
Output 4: Development of the baseline for establishing LISA at the selected municipality					81,300	99,300
Activity 4.1: Design of contents and specifications for LISA	I1: 10 days I2: 25 days I3: 10 days I4: 10 days N1: 3 days			6-month website hosting for the initial mock-up of LISA	25,700	28,700

⁴ The number of travelling will be determined later depending on data accessibility and availability at the selected municipality.

	<i>N2: 5 days</i>					
Activity 4.2: Design of the process of data management for LISA	<i>I1: 5 days I2: 5 days I3: 15 days I4: 5 days</i>				<i>10,800</i>	<i>13,800</i>
Activity 4.3: Development of the management protocols for LISA	<i>I1: 5 days I2: 8 days I3: 5 days I4: 8 days N1: 2 days N2: 5 days</i>				<i>11,400</i>	<i>14,400</i>
Activity 4.4: Development of the capacity building program for effective use of LISA	<i>I1: 3 days I2: 5 days I3: 2 days I4: 5 days N1: 2 days N2: 5 days</i>				<i>6,900</i>	<i>9,900</i>
Activity 4.5: Organisation of a meeting with the stakeholder working group	<i>I1: 3 days I2: 3 days I3: 3 days I4: 3 days N1: 2 days N2: 3 days</i>		<i>Stakeholder working group meeting (online), 10 participants (including women’s representative), 1 day</i>		<i>5,200</i>	<i>8,200</i>
Activity 4.6: Organisation of a 1- day stakeholder workshop for government bodies and stakeholders	<i>I1: 6 days I2: 8 days I3: 2 days I4: 8 days N1: 4 days N2: 10 days</i>	<i>[International travel] 3 international experts for the duration of 4 days each for the stakeholder workshop [Domestic travel]</i>	<i>Stakeholder workshop, 20 participants (including women’s representative), 1 day</i>		<i>21,300</i>	<i>24,300</i>

		<i>3 international experts and 2 national experts for the duration of 2 days each for the stakeholder workshops</i>				
Estimated range of costing for the entire Response Plan					170,800	215,800

5. Profile and experience of experts

Based on the required Human Resources identified in section 4 (Resources required and itemized budget) please provide a description of the required profile of all involved experts for the implementation of the CTCN Response Plan.

Experts required	Brief description of required profile
<i>Please use the same titles for all experts as applied in section 4.</i>	<i>Please provide a short description of expertise and experience needed (education, sectors of expertise, years of experience, country experience, language requirements, etc.).</i>
Project Manager (I1) (International expert)	<p>The project manager shall have the following expertise and experience:</p> <ul style="list-style-type: none"> • Master’s degree or above (or equivalent experience) in environmental engineering, technology and/or management, climate technology and/or management, climate change response or an affiliated major • Experience in leading and managing a project and a team of experts from different cultural background and fields of expertise • At least 10 years of experience in projects on climate, environment and other relevant sectors, as well as experience in working with governments including local/municipal authorities and agencies • At least 5 references demonstrating experience in developing climate/environment information system, platforms or databases at urban/municipal levels in developing countries • Experience in organising workshops and/or capacity building trainings • Previous experience in Cambodia will be valued. • Excellent written and communication skills in English are required.
Expert in web design and development (I2) (International expert)	<p>The expert in web design and development shall have the following expertise and experience:</p> <ul style="list-style-type: none"> • Master’s degree or above (or equivalent experience) in information technology, computer science or an affiliated major • At least 8 years of experience in the design and/or development of the web-based information systems/platforms

	<p>(with experience in the web-based climate information systems/platforms preferred)</p> <ul style="list-style-type: none"> • At least 5 references demonstrating experience in designing and developing web-based information systems/platforms in developing countries • Experience in organising workshops and/or capacity building trainings • Previous experience in Cambodia will be valued. • Excellent written and communication skills in English are required.
<p>Expert in data management and design (I3) (International expert)</p>	<p>The expert in data management and design shall have the following expertise and experience:</p> <ul style="list-style-type: none"> • Master’s degree or above (or equivalent experience) in information technology, computer science, data management or an affiliated major • At least 8 years of experience in web-based data management and design (e.g., design of the user-friendly interface and design of visualization modules), with experience in web-based climate data management and design preferred • At least 5 references demonstrating experience in designing and developing web-based database in developing countries • Experience in organising workshops and/or capacity building trainings • Previous experience in Cambodia will be valued. • Excellent written and communication skills in English are required.
<p>Expert in climate change risk assessment (I4) (International expert)</p>	<p>The expert in climate change risk assessment shall have the following expertise and experience:</p> <ul style="list-style-type: none"> • Master’s degree or above (or equivalent experience) in environmental engineering, technology and/or management, climate technology and/or management, climate change response, urban planning, or an affiliated major • At least 8 years of experience in conducting climate change risk assessment at urban/municipal/country levels • At least 5 references demonstrating experience in conducting climate change risk assessment at urban/municipal levels in developing countries • Experience in organising workshops and/or capacity building trainings • Previous experience in Cambodia will be valued. • Excellent written and communication skills in English are required.

<p>Gender expert (N1) (National expert)</p>	<p>The gender expert shall have the following expertise and experience:</p> <ul style="list-style-type: none"> • Bachelor’s degree or above (or equivalent experience) in social science or an affiliated major • At least 8 years of experience in gender studies and/or management of equality policies • At least 2 references demonstrating experience in gender studies in the context of climate change responses/strategies, with experience of gender analysis in the context of climate change risk assessments at urban/municipal levels in developing countries preferred • Excellent written and communication skills in Cambodian and English are required. • It is expected that the gender expert will be based in Cambodia or with the availability to travel frequently and for long periods of time in Cambodia.
<p>Climate change and local coordination expert (N2) (National expert)</p>	<p>The climate change and local coordination expert shall have the following expertise and experience:</p> <ul style="list-style-type: none"> • Master’s degree or above (or equivalent experience) in environmental engineering, technology and/or management, climate technology and/or management, climate change response or an affiliated major • Local coordination support to the lead implementer, working with the NDE and local/national authorities for data collection and consultations • At least 8 years of experience in the field of climate change adaptation in Cambodia as well as experience in working with governments including local/municipal authorities and agencies • Excellent written and communication skills in Cambodian and English are required. • It is expected that the climate change expert will be based in Cambodia or with the availability to travel frequently and for long periods of time in Cambodia.

6. Intended contribution to impact over time

Please provide a brief description of the intended contribution to impact over time of the outcome and outputs provided by this technical assistance on resilience to climate change and/or carbon abatement. To the extent possible, please quantify the intended impact contribution, for example by indicated estimated number of people potentially impacted over time, GDP contribution of the focus sector, carbon emissions by the focus sector, etc. This intended contribution to impact is what will happen if the objective (as articulated in section 3) is met. Please ensure relevant complementarity with text in sections 7 to 12. (maximum 1250 characters including spaces)

A concept and structure of LISA for the selected municipality will be provided through the TA, together with the results of climate change risk assessment. Findings from the TA will be used as inputs for a scaling up project of developing and deploying LISA at the selected municipality as well as inputs for replication of the TA in other climate vulnerable municipalities in Cambodia. After developing and deploying LISA to be designed through the TA, residents at the selected municipality will be primary beneficiaries. Moreover, the local (or municipal) climate information/data provided through LISA will be able to be transferred to the national climate information system/platform in Cambodia. Integration of the local climate information/data into national database and its use for national decision making on climate change response will contribute to enhancing climate resilience in Cambodia.

7. Relevance to NDCs and other national priorities

Please identify relevance and contribution from the technical assistance to the Nationally Intended Contributions (NDC) and other relevant national prioritized efforts (TNAs, TAPs, NAPs, NAMAs, etc.). (maximum 2500 characters including spaces)

The TA is in line with national strategies and plans of Cambodia for climate change response.

- **Nationally Determined Contribution (2020):** 3 Adaptation contribution - 3.3 Prioritised adaptation actions - 3.3.1. Prioritised adaptation actions – Table 10 Priority adaptation actions
 - 31. Prepare spatial planning (city/district/municipality) guidelines at all levels for climate change adaptation (page 36)
 - 34. Vulnerability assessment towards the development of climate change strategic plans to respond to the impacts on land, housings, coastal management and building due to climate change (page 36)
 - 39. Strengthening Climate Resilient Cities (page 37)

8. Linkages to relevant parallel on-going activities:

Please identify relevant previous and ongoing public and private sector initiatives, projects or programmes that the CTCN assistance will specifically build on and contribute to. To the extent possible, please add practical and operational details on the linkages between existing activities and the CTCN assistance. (maximum 2500 characters including spaces)

Findings and anticipated outcomes from the TA will be linked with the existing NSCD climate data portal and planned/ongoing national projects/programmes for climate change adaptation in Cambodia. For example, a GCF Readiness proposal for establishing an evidence-based NAP process in Cambodia is almost ready to be submitted to the GCF. Climate information and data at subnational levels, to be gathered through the GCF Readiness program, will be able to be provided

through LISA after its establishment at the selected municipality.

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

Please describe the expected future use of the outputs and deliveries produced by this technical assistance, after the CTCN implementation is completed, towards contributing to the anticipated impacts over time articulated in section 6. For example, what organizations or stakeholders will use the outputs of the technical assistance after it is completed, for what purpose, at what scale and scope the outputs and deliveries will be applied, when and what will be the next steps undertaken, etc. (maximum 2500 characters including spaces)

Once the TA is completed, the selected municipality, with support from the NDE of Cambodia and other Ministries, would be expected to establish/launch LISA as well as operate it (based on the work and specifications to be developed through this TA), embedding it in its existing planning and decision making processes. A pilot testing and validation of LISA could be conducted, funded by proper financing mechanisms or instruments. If the usefulness and effectiveness of LISA are demonstrated through the pilot testing at selected municipality, more projects/programmes could be launched to replicate the outputs and outcomes of the TA in other municipalities in Cambodia.

10. Gender and co-benefits:

<p>Imbedded in design of the activities:</p>	<p><i>A gender mainstreaming analysis is mandatory to include for all technical assistances. A gender expert will be assigned to carry out an assessment and evaluation regarding gender mainstreaming during the implementation of the TA.</i></p> <p><i>In addition, please describe all support to gender aspects, women’s equality and other co-benefits embedded into the Response Plan (please include a reference to the actual activities and outputs as described in section 3).</i></p> <p>Most activities of the TA are designed with an imbedded intention of gender mainstreaming and providing other co-benefits to vulnerable groups. The lead implementer will be requested to assign a gender expert to conduct the monitoring and evaluation of gender mainstreaming during the implementation of the TA.</p>
<p>Gender and co-benefits intended as result of the activities:</p>	<p><i>Please describe all gender aspects, women’s equality and other co-benefits expected as a result of the CTCN technical assistance.</i></p> <p>In the rural areas of Cambodia, more than half of women are dependent on local natural resources for their livelihoods. There are efforts to address gender-related vulnerabilities and risks to climate change; however, levels of understanding, knowledge and skills for addressing them are still limited in the country. Establishment of LISA to be designed through the TA will increase opportunities for women to access climate information, which will help them enhance their knowledge to address vulnerabilities and risks to climate change. Information to be included in LISA is expected to assist in addressing and measuring impact on key climate-related gender issues.</p>

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

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

In country stakeholder	Role in implementation of the technical assistance
Department of Climate Change / General Secretariat of the National Council for Sustainable Development / Ministry of Environment <i>(National Designated Entity, TA Proponent)</i>	<ul style="list-style-type: none"> - Support for coordination of the TA and facilitation of stakeholder engagement - Provision of feedback to the CTCN and the lead implementer during the implementation of the TA - Facilitation of linkages with the national climate data portal and other climate-relevant information - Facilitation of contacts with key stakeholders
National Committee for Sub-National Democratic Development (NCDD)	<ul style="list-style-type: none"> - Consultation about climate change risk assessment at the selected municipality - Facilitation of access to socio-economic climate-relevant information at sub-national/municipal level - Facilitation of contacts with local authorities/agencies and other relevant stakeholders at sub-national level
Department of Meteorology / Ministry of Water Resources and Meteorology	<ul style="list-style-type: none"> - Consultation about climate change risk assessment at the selected municipality and provision of climate information and data - Consultation about the baseline for establishing LISA at the selected municipality (e.g., structural design of LISA, the central clearing house and the protocol for data management and exchange for LISA)
Gender and Climate Change Group / Ministry of Women's Affairs	<ul style="list-style-type: none"> - Consultation about potential stakeholders (users) of LISA at the selected municipality - Consultation about climate change risk assessment at the selected municipality
Local government (selected municipality)	<ul style="list-style-type: none"> - Consultation about potential stakeholders (users) of LISA at the selected municipality - Consultation about climate change risk assessment at the selected municipality - Consultation about the baseline for establishing LISA at the selected municipality (e.g., structural design of LISA, the central clearing house and the protocol for data management and exchange for LISA) - Provision of access to climate information and data and/or associated systems at the selected municipality

12. SDG Contributions:

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

<https://sustainabledevelopment.un.org/partnership/register/>.

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)

1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	
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	This TA will contribute to enhancing climate resilience at the selected municipality
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	This TA will contribute to enhancing climate resilience at the selected municipality by providing climate change risk assessment and the baseline for establishing LISA
	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 TA will provide the 1-day stakeholder workshop for government bodies and stakeholders, supporting them to increase their knowledge on the local climate information system.
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

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

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