

Country	Kingdome of Cambodia
Request ID#	2026000013
Title	Strengthening Climate-Resilient Water Storage Systems for Agriculture in Cambodia through Feasibility Assessment and Investment Readiness of Improved Rainwater Harvesting Solutions
NDE	Name: Mr. Ou Chanthearith Position: Director, Department of Science and Technology, General Directorate of Policy and Strategy, Ministry of Environment (MOE) Role: National Focal Point for the Climate Technology Centre & Network (CTCN) Email: chanthearithccd@hotmail.com / chanthearithdst2023@gmail.com / ou.chanthearith@moe.gov.kh Address: Morodok Techo Building (LOT 503) Tonle Bassac, Chamkarmorn, Phnom Penh, Cambodia
Proponent	Name: H.E. Sum Thy Position: Director General of the General Directorate of Policy and Strategy Role: GCF NDA National coordinator Email: sumthy@yahoo.com / sum.thy@moe.gov.kh Address: Morodok Techo Building (LOT 503) Tonle Bassac, Chamkarmorn, Phnom Penh, Cambodia

Summary of the CTCN technical assistance

Cambodia is highly vulnerable to climate change, with increasing exposure to droughts, floods, rising temperatures, and changing rainfall patterns. These impacts directly affect agricultural productivity, food security, freshwater availability, and rural livelihoods. Severe drought events, including the 2015 drought that affected approximately 2.5 million people, highlight the urgency of strengthening water security and climate resilience.

A large share of Cambodia’s agriculture remains rain-fed, while existing irrigation systems are often insufficient, poorly maintained, or unreliable. Rural ponds and reservoirs commonly suffer from seepage losses, evaporation, sedimentation, and water quality issues, limiting their effectiveness in providing stable water supply.

This technical assistance will support Cambodia in conducting a comprehensive feasibility study of improved rainwater harvesting systems. The study will assess a range of technical options to enhance water storage and retention, including improved pond and reservoir designs, lining systems, evaporation reduction measures, and water quality protection approaches.

The assessment will cover technical, economic, environmental, social, institutional, and market dimensions. Based on the results, the TA will develop an implementation roadmap, financing strategy, and a draft Green Climate Fund (GCF) concept note to enable large-scale deployment.

The expected outcome is strengthened national capacity and an evidence-based pathway for scaling up climate-resilient water systems to support agriculture, food security, and rural livelihoods.

Agreement:

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

National Designated Entity to the UNFCCC Technology Mechanism

Name: Ou Chanthearith
Title: Director of the Department of Science and Technology, the General Directorate of Policy and Strategy, Ministry of Environment

Date: 08.06.2026

Signature: 

Proponent (signature of the Proponent is optional)

Name: H.E. Sum Thy
Title: Director General of the General Directorate of Policy and Strategy, Ministry of Environment

Date: 08.06.2026

Signature: 

UNFCCC Climate Technology Centre and Network (CTCN)

Name: Ariesta Ningrum
Title: Director, CTCN

Date: 12 June 2026

Signature: Tomoko Furusawa, OIC



1. Background and context

Cambodia ranks among the most climate-vulnerable countries globally. Climate change is intensifying drought frequency, rainfall variability, and extreme weather events, significantly affecting agriculture and water availability.

Agriculture is highly dependent on rainfall, with only a limited proportion of farmland supported by reliable irrigation systems. Many irrigation infrastructures are outdated or not functioning effectively, leading to unstable water supply. As a result, rural communities remain highly exposed to climate risks.

Rainwater harvesting has been identified as a priority adaptation solution in Cambodia's Technology Needs Assessment and national strategies. However, existing systems are often inefficient due to seepage, evaporation, sedimentation, and contamination risks.

Improving decentralized water storage systems represents a key opportunity to enhance resilience in the water-agriculture nexus. Various approaches such as improved pond design, lining systems, evaporation reduction measures, and water quality protection can significantly improve water retention and availability.

However, Cambodia currently lacks a comprehensive national-level assessment of these options in terms of technical performance, economic feasibility, scalability, and suitability across different regions.

This technical assistance will address this gap by generating robust, evidence-based analysis to inform policy, planning, and investment decisions.

2. Problem statement

Cambodia faces increasing water stress as a result of climate change, particularly through more frequent droughts, changing rainfall patterns, rising temperatures, and localized extreme weather events. These impacts directly affect rural communities whose livelihoods depend on agriculture, aquaculture, and livestock. Since a large share of Cambodia's agricultural production remains rain-fed, reduced or delayed rainfall can quickly translate into crop losses, lower household income, food insecurity, and increased vulnerability among poor and smallholder farmers.

Existing irrigation and rural water storage systems are not sufficient to address this growing climate risk. Many irrigation facilities and reservoirs are aging, poorly maintained, or inadequately designed, and therefore cannot provide stable water supply during dry periods. In many rural areas, ponds and reservoirs are simple excavated structures that lose significant amounts of stored water through seepage into the ground and evaporation from exposed water surfaces. Sedimentation also reduces storage capacity over time, further limiting their usefulness for agriculture and other rural water needs.

Water quality is another concern. Where surface water is insufficient, rural households and farmers may increase reliance on groundwater, which can create health risks in areas affected by arsenic contamination. Stored water in open ponds may also be exposed to contamination, sediment inflow, and biological growth, reducing its suitability for productive or household use. These challenges show that water storage capacity alone is not enough; improved design, water retention, water quality protection, and long-term operation and maintenance arrangements are also needed.

A further barrier is the lack of reliable data for planning and investment. Cambodia currently lacks comprehensive information on the location, number, size, storage capacity, surface area, physical condition, and current use of existing ponds and reservoirs. There is also limited data on local water demand, number of potential beneficiaries, seasonal usage patterns, daily consumption rates, alternative water sources, and community willingness or capacity to manage improved systems. Without such data, it is difficult for national and sub-national authorities to prioritize intervention areas, compare technology options, estimate investment needs, or prepare credible proposals for climate finance.

There is also a need to assess improved rainwater harvesting systems under Cambodia's specific local conditions. Different technical options such as improved pond and reservoir design, seepage reduction measures, evaporation reduction approaches, sedimentation control, and water quality protection may perform differently depending on soil type, rainfall patterns, pond size, user needs, available technical capacity, and affordability. A systematic feasibility assessment is therefore required to determine which solutions are technically appropriate, economically viable, environmentally sound, socially inclusive, and scalable.

Institutional and coordination challenges also limit scale-up. Effective implementation would require cooperation among national ministries, provincial departments, local authorities, agricultural cooperatives, community water user groups, and financing partners. Roles and responsibilities for data collection, technical planning, operation and maintenance, community engagement, and financing need to be clarified. Strengthened coordination is particularly important to ensure that improved rainwater harvesting systems are aligned with Cambodia's broader water resource management, agricultural resilience, rural development, and climate adaptation priorities.

Finally, Cambodia requires an investment-ready pathway to move from technical assessment to implementation. While improved rainwater harvesting is already recognized as a priority adaptation technology, additional work is needed to translate this priority into a scalable programme that can attract support from the Green Climate Fund, development banks, bilateral partners, and other financing sources. Without this technical assistance, Cambodia may continue to face fragmented planning, limited data, and insufficient financing readiness, delaying the deployment of practical water storage solutions that could strengthen rural resilience to climate change.

3. Logical Framework for the CTCN Technical Assistance:

(Guidance: Please note that multiple activities lead to one Output, and multiple Outputs lead to one Outcome. There can be several Outputs, but only one Outcome description capturing the CTCN technical assistance. Deliverables are the products or services to be delivered to the NDE/Proponent/CTCN based on the Activities and the Outputs.)

Objective: To support Cambodia in strengthening climate resilience in the water-agriculture nexus by conducting a comprehensive feasibility assessment of improved rainwater harvesting systems and developing an investment-ready pathway for their large-scale deployment in rural communities. The technical assistance will generate the technical, economic, environmental, social, institutional, and market evidence needed to inform national decision-making on climate-resilient water storage solutions. It will also strengthen coordination among relevant ministries and stakeholders, support capacity development, and prepare a draft Green Climate Fund concept note to facilitate follow-up financing and implementation.

Outcome: Improved national capacity and evidence-based decision-making in Cambodia for scaling up climate-resilient rainwater harvesting systems, resulting in a validated feasibility basis, strengthened stakeholder coordination, enhanced policy and institutional readiness, and a financing pathway for future implementation. The outcome will contribute to improved rural water security, enhanced agricultural resilience, reduced vulnerability to drought and rainfall variability, and stronger readiness to mobilize climate finance for water-sector adaptation.

	Month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mandatory Output: Project management															
<i>All implementers must undertake the following project management activities at the beginning of, during and at the end of the CTCN technical assistance.</i>															
Activity A: Beginning of implementation															
A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan;															
Based on the work plan, a monitoring and evaluation (M&E) plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan). This M&E plan also includes a CTCN Impact Description formulated in the beginning of the technical assistance which will be revised in the Closure and Data Collection report once the technical assistance is fully delivered (templates will be provided).															

<p>This output will generate the main technical and analytical evidence base of the technical assistance. It will assess the feasibility, suitability, affordability, scalability, environmental and social implications, and market conditions for improved rainwater harvesting systems in rural Cambodia.</p> <p>The assessment will focus on practical options to enhance water storage and retention, such as improved pond and reservoir design, seepage reduction approaches, evaporation reduction measures, sedimentation management, and water quality protection. The analysis will be comparative and context-specific, taking into account Cambodia’s climatic, hydrological, agricultural, socio-economic, and institutional conditions.</p>	
<p>Activity 2.1: Technical and field assessment of water storage systems</p> <p>The Implementing Partner will conduct a technical assessment of improved rainwater harvesting system options that can enhance water retention and climate resilience in rural communities. The assessment will examine how different approaches may improve the performance of existing or new ponds and reservoirs, particularly in relation to seepage, evaporation, sedimentation, water quality, usability, durability, and maintenance.</p> <p>Field assessments will be conducted in selected representative locations. These assessments will collect information on pond and reservoir location, surface area, estimated storage capacity, physical condition, water availability, seasonal use, surrounding land use, current water management practices, and potential for improvement. Where relevant, basic water quality considerations and contamination risks will also be assessed.</p> <p>The technical assessment will identify which types of improved rainwater harvesting systems are most suitable under different local conditions, including soil type, rainfall pattern, drought exposure, water demand, community capacity, and affordability. It will also identify technical risks and mitigation measures for future implementation.</p>	
<p>Activity 2.2: Water demand, economic, and financial feasibility analysis</p> <p>The IP will assess water demand and usage patterns for agriculture, aquaculture, livestock, and potentially other rural uses. The analysis will consider seasonal water needs, daily consumption rates, number of users, livelihood dependence, alternative water sources, and demand for improved storage systems.</p> <p>The economic and financial analysis will assess capital costs, operation and maintenance costs, lifecycle costs, cost-effectiveness, affordability for rural communities, and potential economic benefits. Benefits may include improved dry-season water availability, reduced crop losses, improved</p>	

<p>groups, recommended technical approaches, institutional responsibilities, implementation phases, capacity needs, data and monitoring requirements, and risk mitigation measures.</p> <p>The roadmap should propose short-, medium-, and long-term actions. Short-term actions may include additional site validation, pilot implementation, detailed design, and stakeholder coordination. Medium-term actions may include phased deployment in priority provinces, integration with rural water/agriculture programmes, and preparation of financing proposals. Long-term actions may include national scale-up, integration into Cambodia’s adaptation planning, and replication in other contexts.</p> <p>The roadmap should also consider how improved rainwater harvesting systems can support agriculture, aquaculture, livestock, and rural livelihood resilience in drought-prone communities.</p>	
<p>Activity 4.2: Financing and partnership strategy</p> <p>The IP will develop a financing and partnership strategy to support future implementation. The strategy will identify potential funding sources such as the Green Climate Fund, multilateral development banks, bilateral donors, public investment programmes, and other climate adaptation financing channels.</p> <p>The strategy will assess possible financing structures, co-financing opportunities, implementation models, and roles of public institutions, communities, development partners, and private-sector actors. It should also identify potential Accredited Entities or delivery partners for further development of the GCF concept note or future funding proposal.</p> <p>The financing strategy will estimate indicative investment needs for scale-up and identify additional project preparation steps required after completion of the TA. It should also consider affordability and sustainability, including operation and maintenance financing arrangements for rural communities.</p>	
<p>Activity 4.3: Draft GCF concept note and final validation workshop</p> <p>The IP will prepare a draft GCF concept note based on the feasibility study, roadmap, and financing strategy. The concept note should include the climate rationale, project/programme objective, target areas and beneficiaries, theory of change, proposed interventions, expected adaptation impacts, gender considerations, implementation arrangements, indicative budget, financing structure, risk analysis, and sustainability approach.</p> <p>The draft concept note should be prepared in consultation with the NDE, GCF NDA, relevant ministries, and CTCN. It should be sufficiently developed to support follow-up engagement with the GCF, Accredited Entities, development banks, or bilateral donors.</p>	

					<i>USD</i>	<i>USD</i>
Mandatory Output:					<i>5,670</i>	<i>6,300</i>
Project Management					<i>5,670</i>	<i>6,300</i>
Mandatory Activities:	IE1: 7 days	-	-	-	<i>5,670</i>	<i>6,300</i>
A: Beginning of implementation	IE2: 7 days					
B: Implementation	IE3: 7 days					
C : End of implementation	NE1: 7 days					
	NE2: 7 days					
	NE3: 7 days					
Output 1: Inception, baseline assessment, and feasibility methodology established					<i>36,450</i>	<i>40,500</i>
Activity 1.1: Inception, stakeholder alignment, and scope validation	IE1: 6 days	International travel: 5 days	In-person workshop (4 days)	-	<i>22,410</i>	<i>24,900</i>
	IE2: 6 days					
	IE3: 6 days					
	NE1: 11 days					
	NE2: 11 days					
	NE3: 11 days					
Activity 1.2: Baseline review of climate risks, water systems, and existing initiatives	IE1: 6 days	-	-	-	<i>6,210</i>	<i>6,900</i>
	IE2: 6 days					
	IE3: 6 days					
	NE1: 11 days					
	NE2: 11 days					
	NE3: 11 days					
Activity 1.3: Feasibility	IE1: 8 days	-	-	-	<i>7,830</i>	<i>8,700</i>
	IE2: 8 days					

methodology and data collection framework	IE3: 8 days NE1: 13 days NE2: 13 days NE3: 13 days					
Output 2: Comprehensive feasibility assessment of improved rainwater harvesting systems completed					<i>47,070</i>	<i>52,300</i>
Activity 2.1: Technical and field assessment of water storage systems	IE1: 14 days IE2: 14 days IE3: 14 days NE1: 20 days NE2: 20 days NE3: 20 days	International travel: 4 days	In-person workshop (3 days)	-	<i>26,010</i>	<i>28,900</i>
Activity 2.2: Water demand, economic, and financial feasibility analysis	IE1: 12 days IE2: 12 days IE3: 12 days NE1: 18 days NE2: 18 days NE3: 18 days	-	-	-	<i>11,340</i>	<i>12,600</i>
Activity 2.3: Market, environmental, social, gender, and implementation feasibility assessment	IE1: 10 days IE2: 10 days IE3: 10 days NE1: 16 days NE2: 16 days	-	-	-	<i>9,720</i>	<i>10,800</i>

	NE3: 16 days					
Output 3: Institutional capacity, policy support, and stakeholder ownership strengthened					52,920	58,800
Activity 3.1: Institutional, governance, and policy assessment	IE1: 6 days IE2: 6 days IE3: 6 days NE1: 10 days NE2: 10 days NE3: 10 days	-	-	-	5,940	6,600
Activity 3.2: Capacity- building programme for national and local stakeholders	IE1: 8 days IE2: 8 days IE3: 8 days NE1: 13 days NE2: 13 days NE3: 13 days	International travel: 5 days	In-person workshop (4 days)		24,030	26,700
Activity 3.3: Stakeholder consultation, technical validation, and ownership building	IE1: 6 days IE2: 6 days IE3: 6 days NE1: 13 days NE2: 13 days NE3: 13 days	International travel: 5 days	In-person workshop (4 days)	-	22,950	25,500

Output 4: Implementation roadmap, financing strategy, and draft GCF concept note developed					<i>33,750</i>	<i>37,500</i>
Activity 4.1: Development of implementation and scale-up roadmap	IE1: 6 days IE2: 6 days IE3: 6 days NE1: 10 days NE2: 10 days NE3: 10 days	-	-	-	<i>5,940</i>	<i>6,600</i>
Activity 4.2: Financing and partnership strategy	IE1: 6 days IE2: 6 days IE3: 6 days NE1: 10 days NE2: 10 days NE3: 10 days	-	-	-	<i>5,940</i>	<i>6,600</i>
Activity 4.3: Draft GCF concept note and final validation workshop	IE1: 7 days IE2: 7 days IE3: 7 days NE1: 7 days NE2: 7 days NE3: 7 days	International travel: 5 days	In-person workshop (4 days)	-	<i>21,870</i>	<i>24,300</i>
Estimated range of costing for the entire Response Plan					<i>175,860</i>	<i>195,400</i>

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. Please note that an expert with experience in gender mainstreaming is required. The CTCN Gender and Climate Technology Expert Roster can help you identify a suitable expert: <https://www.ctc-n.org/networking-and-collaboration/gender-and-climate-technology-expert-roster>

Experts required	Brief description of required profile
International Experts	
Team Leader / Climate Adaptation and Water Resource Management Specialist (IE1)	<ul style="list-style-type: none"> • Advanced university degree (Master’s degree or equivalent) in water resources management, hydrology, environmental engineering, climate change adaptation, agricultural engineering, or a related field. A Bachelor’s degree may be accepted in combination with at least 12 years of highly relevant professional experience. • Minimum 10 years of professional experience in climate adaptation, water resource management, irrigation systems, rural water infrastructure, or climate-resilient agriculture, preferably in developing countries. • Demonstrated experience in managing and delivering complex technical assistance assignments, including feasibility studies and multi-stakeholder projects involving technical, institutional, and policy components. • Strong expertise in project management, quality assurance, monitoring and evaluation, stakeholder coordination, and engagement with public institutions and development partners is required. • Experience with UN agencies, CTCN, climate finance mechanisms, MDB-supported projects, or similar international cooperation processes is highly desirable. • Excellent written and oral communication skills in English are required.
Agricultural Water Systems and Rainwater Harvesting Specialist (IE2)	<ul style="list-style-type: none"> • Advanced university degree (Master’s degree or equivalent) in agricultural engineering, civil engineering, irrigation engineering, hydrology, environmental engineering, or a related field. A Bachelor’s degree may be accepted in combination with at least 9 years of highly relevant experience. • Minimum 7 years of professional experience in water storage systems, rainwater harvesting, irrigation infrastructure, rural water supply systems, or related water management technologies. • Demonstrated experience in technical diagnostics, system design, performance assessment, and preparation of feasibility or pre-feasibility studies for water infrastructure or rural water management interventions. • Strong technical knowledge of pond and reservoir design, seepage reduction, evaporation control, sedimentation management, water quality protection, and operation and maintenance requirements is required. • Experience in field-based assessments and working in rural or decentralized systems is essential, and experience in tropical or monsoon environments is an advantage. • Strong analytical and technical reporting skills are required. • Excellent written and oral communication skills in English are required.

<p>Climate Finance, Economic Feasibility, and Investment Specialist (IE3)</p>	<ul style="list-style-type: none"> • Advanced university degree (Master’s degree or equivalent) in economics, finance, environmental economics, public policy, climate finance, or a related field. A Bachelor’s degree may be accepted in combination with at least 9 years of highly relevant experience. • Minimum 7 years of professional experience in economic and financial analysis, cost-benefit analysis, investment planning, climate finance, or preparation of financing strategies and project concept notes. • Demonstrated experience in preparing or supporting GCF concept notes, climate finance proposals, MDB project concepts, or similar investment-oriented documentation. • Strong knowledge of climate finance mechanisms, including GCF processes and investment criteria, as well as experience in identifying financing models such as public investment, private sector engagement, and blended finance. • Experience in developing financing strategies and supporting follow-up investment pathways for infrastructure or adaptation projects is highly desirable. • Strong analytical, financial modelling, and reporting skills are required. • Excellent written and oral communication skills in English are required.
National Experts	
<p>National Water Resources and Irrigation Specialist (NE1)</p>	<ul style="list-style-type: none"> • University degree (Bachelor’s degree or higher) in water resources management, irrigation engineering, hydrology, environmental engineering, or a related field. • Minimum 5 years of professional experience in Cambodia’s water, irrigation, or agricultural sectors, including experience with rural water infrastructure and local hydrological conditions. • Strong understanding of local water systems, irrigation practices, infrastructure conditions, and operational constraints is required. • Experience supporting technical data collection, field verification, stakeholder consultations, and review of technical or system planning materials is essential. • Experience working with relevant ministries, provincial departments, or local authorities is highly desirable. • Fluency in Khmer and good working knowledge of English are required.
<p>National Policy, Institutional Coordination, and Stakeholder Engagement Specialist (NE2)</p>	<ul style="list-style-type: none"> • University degree (Bachelor’s degree or higher) in public policy, environmental management, development studies, climate change, or a related field. • Minimum 5 years of relevant professional experience in policy analysis, institutional coordination, stakeholder engagement, or project implementation in Cambodia. • Strong familiarity with Cambodia’s policy and institutional framework in water, agriculture, and climate change is highly desirable. • Experience supporting workshops, stakeholder consultations, multi-agency coordination, validation processes, and synthesis of institutional inputs is required. • Experience engaging with government institutions, local authorities, and community-level stakeholders is an advantage. • Fluency in Khmer and English is required.

<p>National Gender and Social Inclusion Specialist (NE3)</p>	<ul style="list-style-type: none">• University degree (Bachelor's degree or higher) in gender studies, social sciences, development studies, or a related field.• Minimum 5 years of professional experience in gender mainstreaming and social inclusion in climate change, water management, rural development, or related sectors.• Demonstrated experience in conducting gender assessments, preparing Gender Action Plans, collecting and analysing sex-disaggregated data, and supporting inclusive stakeholder participation.• Strong understanding of gender roles, vulnerabilities, and social inclusion issues in rural Cambodia, particularly in relation to water access, agriculture, and livelihoods.• Experience integrating gender considerations into technical or infrastructure-related projects is highly desirable.• Fluency in Khmer and English is required.
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6. Intended contribution to impact over time

The technical assistance is expected to contribute to climate resilience in Cambodia over short-, medium-, and long-term time horizons.

In the short term, the TA will improve the availability of data and evidence related to rural water storage systems, water demand, and climate risks. It will strengthen the technical basis for decision-making by providing a comprehensive feasibility assessment of improved rainwater harvesting systems. It will also enhance coordination among key stakeholders and build capacity within national and sub-national institutions.

In the medium term, the TA will support the development of an investment-ready pipeline for scaling up climate-resilient water storage systems. The implementation roadmap and financing strategy, including the draft GCF concept note, will enable Cambodia to mobilize climate finance and initiate pilot or phased deployment in priority areas. The TA will also contribute to strengthening policy frameworks and institutional arrangements for water resource management and climate adaptation.

In the long term, the TA is expected to contribute to improved water security, increased agricultural productivity, enhanced resilience of rural livelihoods, and reduced vulnerability to drought and climate variability. It will support the transition toward a more systematic and scalable approach to climate-resilient water management in Cambodia.

7. Relevance to NDCs and other national priorities

The proposed technical assistance is highly consistent with Cambodia's national climate, water, and development priorities as outlined in key policy documents.

Cambodia's Nationally Determined Contribution (NDC 3.0) identifies drought, water scarcity, and agricultural vulnerability as key climate risks and prioritizes the rehabilitation and construction of irrigation infrastructure and water retention systems to improve water efficiency and manage flood and drought risks.

The Technology Needs Assessment (TNA) identifies rainwater harvesting, small reservoirs, and community irrigation systems as priority adaptation technologies for the water sector, directly aligning with the focus of this technical assistance.

The National Adaptation Plan emphasizes the need to expand irrigation coverage, strengthen water infrastructure, and improve data management systems related to water resources and climate change.

The Cambodia Climate Change Strategic Plan highlights strengthening adaptation capacity in water systems, improving rural infrastructure resilience, and enhancing institutional and human capacity as key priorities.

The GCF Country Programme identifies water resources and rural communities as priority areas for adaptation investment, emphasizing the need for sustainable irrigation systems and improved water management.

The TA directly contributes to these priorities by providing a feasibility-based pathway for scaling up improved rainwater harvesting systems and by preparing a draft GCF concept note to support access to climate finance.

8. Linkages to relevant parallel on-going activities:

The proposed technical assistance will build on and complement existing national and international initiatives in Cambodia, without duplicating ongoing efforts.

The Government of Cambodia, with support from development partners such as ADB, the World Bank, AFD, JICA, FAO, Australia, and others, is actively implementing programmes related to irrigation rehabilitation, water resource management, and agricultural development.

Existing initiatives primarily focus on infrastructure development and rehabilitation, whereas this TA will focus on data collection, feasibility assessment, and investment readiness, addressing critical gaps identified in the request.

The TA will leverage existing coordination mechanisms such as the National Climate Change Committee (NCCC), Climate Change Technical Working Group (CCTWG), and Agriculture and Water Technical Working Group.

The TA will ensure alignment with ongoing initiatives by engaging relevant ministries and development partners throughout implementation and by identifying opportunities for integration with existing irrigation and water programmes.

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

The TA is designed as a foundational step toward large-scale implementation and climate finance mobilization.

Short-term follow-up activities (1-2 years) include:

- Submission of the GCF concept note developed under the TA to secure funding for implementation
- Engagement with development partners, MDBs, and bilateral donors for co-financing
- Pilot implementation of improved rainwater harvesting systems in selected priority areas to validate feasibility findings

Medium-term follow-up activities (3-5 years) include:

- Expansion of improved rainwater harvesting systems across drought-prone regions
- Capacity building for local stakeholders to support operation and maintenance
- Integration of improved water storage systems into national and sub-national programmes

Long-term follow-up activities (5+ years) include:

- Nationwide scale-up of climate-resilient water storage systems
- Integration into Cambodia's long-term adaptation and water resource strategies
- Exploration of regional replication in other Southeast Asian countries

10. Gender and co-benefits:

Each technical assistance must integrate gender mainstreaming activities and lead to gender and other co-benefits. At least 5% of the technical assistance budget need to be allocated to gender mainstreaming activities. A suitable expert can be identified through the CTCN Gender and Climate Technology Expert Roster: <https://www.ctc-n.org/networking-and-collaboration/gender-and-climate-technology-expert-roster>

<p>Gender benefits embedded in the implementation and as a result of activities:</p>	<p>During implementation, gender considerations will be integrated through the following measures:</p> <p>A Gender Assessment and Gender Action Plan (GAAP) will be developed at the outset of the TA, identifying:</p> <ul style="list-style-type: none"> – Gender-differentiated vulnerabilities related to water scarcity, drought, and agricultural productivity – Differences in access to water resources, agricultural inputs, and decision-making processes – Capacity gaps among women and vulnerable groups in water resource management <p>A minimum of 5% of the TA budget will be allocated to gender mainstreaming activities, including targeted consultations, data collection, and monitoring</p> <p>Ensuring meaningful participation of women in:</p> <ul style="list-style-type: none"> – Inception and validation workshops – Field data collection and stakeholder consultations – Capacity-building and training activities <p>Integration of gender considerations into technical outputs, including:</p> <ul style="list-style-type: none"> – Inclusion of gender-responsive indicators in the feasibility study – Consideration of women’s water access and usage patterns in system design and planning – Collection of sex-disaggregated data where relevant <p>As a result of these measures, the TA will contribute to:</p> <ul style="list-style-type: none"> · Reduced time burden for women related to water collection and management · Increased participation of women in water management decision-making processes · Improved access to water resources for women-led households and vulnerable groups · Enhanced resilience of women and communities to climate-induced water stress
<p>Other co-benefits embedded in the implementation and intended as result of the activities:</p>	<p>Environmental co-benefits:</p> <ul style="list-style-type: none"> · Reduced water loss through improved storage efficiency (reduced seepage and evaporation) · Reduced pressure on groundwater resources and associated arsenic exposure risks

<ul style="list-style-type: none"> · Improved water resource sustainability in drought-prone areas <p>Economic co-benefits:</p> <ul style="list-style-type: none"> · Increased agricultural productivity and crop reliability · Reduced economic losses from drought and rainfall variability · Improved investment planning through availability of reliable feasibility data <p>Social co-benefits:</p> <ul style="list-style-type: none"> · Improved food security and nutrition outcomes in rural communities · Increased resilience of livelihoods dependent on rain-fed agriculture · Strengthened community-level water management practices <p>Institutional co-benefits:</p> <ul style="list-style-type: none"> · Improved data availability and decision-making capacity · Strengthened coordination among ministries and stakeholders · Enhanced readiness for climate finance and large-scale investment

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
National Designated Entity: Department of Science and Technology, General Directorate of Policy and Strategy, Ministry of Environment	<ul style="list-style-type: none"> · Overall oversight and strategic guidance of the TA · Ensuring alignment with national climate policies (NDC, NAP, CCCSP). · Coordination with CTCN and endorsement of key deliverables. · Day to day management and coordination of the TA, and communication with stakeholders. · Provision of feedback (practical or technical issues) to the CTCN and the consultants during the implementation of the TA. · Planning process/project management and co-organize consultation workshops and capacity building events. · Support and guidance on data collection, survey, interview, bilateral meetings, etc.
Ministry of Environment (MoE)	<ul style="list-style-type: none"> · Lead drafting, revision, and finalization of the National Green Hydrogen Roadmap. · Ensure green hydrogen initiatives align with environmental protection goals. · Establish environmental standards and guidelines for hydrogen projects. · Conduct or oversee Environmental Impact Assessments (EIAs) for hydrogen projects. · Ensure hydrogen policies contribute to national and international commitments (e.g., Paris Agreement).

	<ul style="list-style-type: none"> · Provide inputs on biodiversity and ecosystem protection in roadmap development.
Ministry of Agriculture, Forestry and Fisheries (MAFF)	<ul style="list-style-type: none"> · Lead technical counterpart for agricultural water demand analysis. · Coordination with farmers, cooperatives, and local stakeholders. · Support for data collection and validation.
Ministry of Water Resources and Meteorology (MoWRAM)	<ul style="list-style-type: none"> · Provision of hydrological and rainfall data. · Technical input on water resource systems and infrastructure. · Support for field assessments and analysis.
Ministry of Rural Development (MRD)	<ul style="list-style-type: none"> · Input on rural water supply systems and community-level implementation. · Support for coordination with rural communities.
Provincial Departments (MAFF, MoWRAM, MRD)	<ul style="list-style-type: none"> · Support field data collection, surveys, and stakeholder consultations. · Provide local context and validation of findings.
Agricultural Cooperatives and Community Water User Groups	<ul style="list-style-type: none"> · Provide data on water usage, demand, and local practices. · Participate in consultations and validation processes.
GCF National Designated Authority (NDA)	<ul style="list-style-type: none"> · Support development of GCF concept note. · Ensure alignment with national climate finance priorities. · Evaluates and issues formal "no-objection" letters for funding proposals
Development partners (ADB, World Bank, FAO, etc.)	<ul style="list-style-type: none"> · Provide input on financing opportunities and potential scale-up pathways.

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	The TA improves agricultural water availability and resilience, supporting climate-resilient food production and reducing vulnerability to drought.
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	The TA strengthens water storage systems and improves water resource management through data-driven planning and technology assessment.
7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	

	7.3 - By 2030, double the global rate of improvement in energy efficiency	
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	The TA enhances adaptive capacity to climate change by improving resilience to drought and rainfall variability and enabling climate-informed decision-making.
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	
	13.2 - Integrate climate change measures into national policies, strategies and planning	
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	
	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 type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 2. Sectoral roadmaps and strategies	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 3. Recommendations for law, policy and regulations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 4. Financing facilitation	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>

<input type="checkbox"/> 7. Feasibility of technology options	<input checked="" 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 checked="" 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; and (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance. Furthermore, the NDE together with the project proponent(s) will complete a periodic post-implementation form to track the impact of the activities beyond the technical assistance end date.

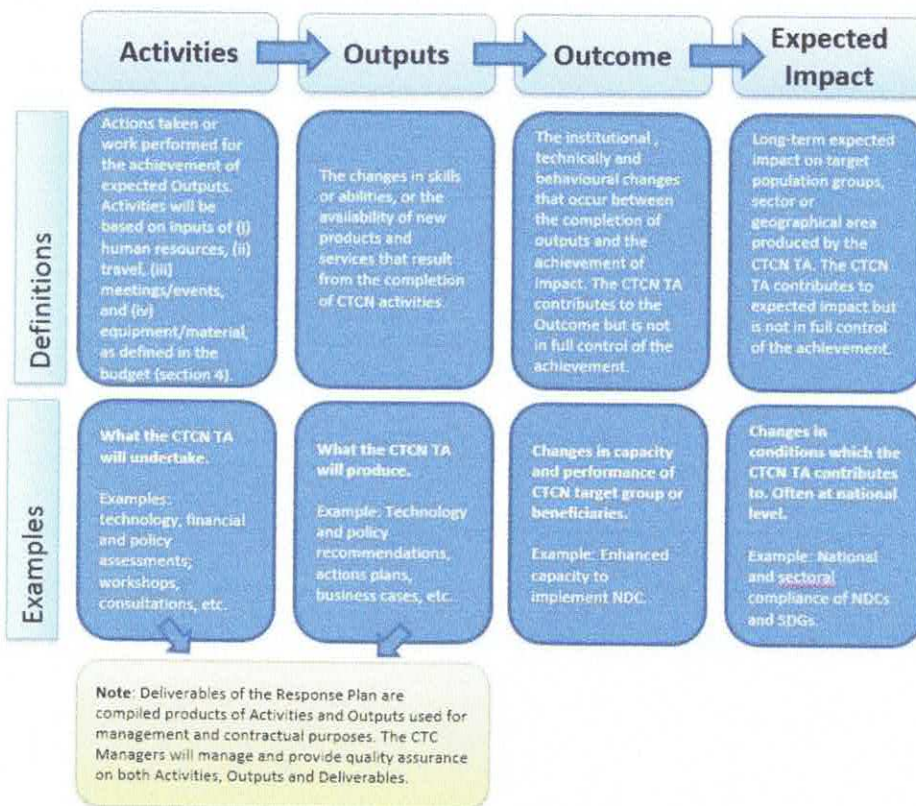
Annex 1: Guidance note for designing a Response Plan (to be deleted when submitting the Response Plan)

1. Objective of the Response Plan

The Response Plan is developed by CTCN specialists in response to a country request for technical assistance. It constitutes the Terms of Reference of the CTCN technical assistance that will be provided to the country and it provides the formulation of and subsequent basis for the monitoring and evaluation of the Response Plan implementation, as well as its expected outcomes and anticipated impacts.

2. Results chain and Logical Framework Approach to be defined in the CTCN Response Plan

The result chain is the causal sequence that stipulates the necessary flow of actions and processes to achieve desired objectives and results – beginning with inputs, moving through activities and outputs, and culminating in individual outcomes. The outcome will contribute to the desired impact in the society. The Logical Framework Approach is an analytical process used to support objectives-oriented project planning and management. It provides a set of pre-defined concepts which are used as part of an iterative process to aid structured and systematic analysis and management of the CTCN technical assistance.



3. Process for designing the Response Plan

The Response Planning process should be completed over a period of up to 60 working days (12 weeks). Indicative steps and related timelines are laid out below:



4. Design Considerations

In order to maximize the impact of the technical assistance provided by the CTCN and provide an effective M&E process, the Response Plan should integrate as much as possible the considerations below:

Climate Technology focus: The Response Plan should have a clear focus on climate technologies, and identify activities that enable the identification, development, deployment or diffusion of one or several specific technologies (including equipment, techniques, knowledge and skills).

Barrier removal / Problem solving: The activities should contribute to address the specific problem statement identified in the Request. The barriers identified should be those hampering the identification, development, deployment or diffusion of one or several climate technologies or climate actions. Therefore, it may be necessary to limit the CTCN Response Plan to a set of activities for technical assistance commonly agreed with the NDE (and Proponent when needed) compared to the original request submitted. The CTCN will liaise with NDEs and Proponent in case the scope of the technical assistance deviates from the original request.

Use of the CTCN assistance by stakeholders: The Response Plan should identify clearly how the products of the CTCN assistance will be used in the short term once support is delivered, by who and when, to ensure it will lead to specific impacts in the country. The activities should engage the stakeholders that will use the concrete results of the assistance to deploy the technologies, including from the private sector, the public sector, research institutions, etc.

Within the scope of CTCN resources: The cost of the technical assistance provided by the CTCN cannot exceed USD 250,000 per Response Plan. Therefore, it may be necessary to prioritize activities and limit the CTCN Response Plan to a set of priority activities commonly agreed with the Proponent and the NDE to remain under this value. Under section 4 of the Response Plan template, an indicative activity based budget should be presented. The proposed budget is indicative and should present an estimated costing range per activity, output as well as a total costing range for the delivery of the

Response Plan. Once the Response Plan is finalised and published for tendering, interested parties will provide competitive offer against the indicative budget.

CTCN activities and outputs should be linkable to monitoring and evaluation indicators: All proposed activities and outputs must be linkable to monitoring and evaluation indicators that are specific, measurable, achievable, relevant, and time-bound. The monitoring and evaluation process and corresponding indicators will be developed by the Lead Implementer as part of the work plan and will allow the CTCN technology Manager to monitor the timeliness and appropriateness of the implementation.

Synergies with existing efforts: The Response Plan should focus on activities that are not already being fully supported or that are in the process of being fully supported by another national, regional or international organization. Synergies and complementarity also require that the CTCN assistance is not duplicating past activities. It is possible in the Response Plan to indicate co-financing from the government, the Proponent or another stakeholder, that will maximize the effectiveness of the CTCN assistance.

Gender mainstreaming: The CTCN mission is to build or strengthen developing countries' capacities to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies taking into account gender considerations. The Response Plan must therefore describe how gender considerations will be included and monitored within the proposed activities, and any gender co-benefits that will be gained as a result of implementing the CTCN technical assistance. For that purpose, a Gender Assessment and Action Plan (GAAP) template has been designed to be followed by the implementation partner.