



“Increasing climate resilience through small-scale infrastructure investments and enhancing adaptive capacity of vulnerable communities in Kampot and Koh Kong Provinces in Cambodia”

I. Position Information

Position	Consultant to conduct Feasibility Study and Detailed Engineering Design for Irrigation System in Kampong Trach District, Kampot Province
Post Level	National Consultant
Report to	National Project Manager/National Team Leader
Contract Type	Individual Contractor (IC) or Team
Duty Station	Phnom Penh, Cambodia
Expected Place of Travel	Kampot and Koh Kong Provinces, Cambodia
Assignment Duration	80 Working Days

II. Project Description

The National Council for Sustainable Development (NCS), Ministry of Environment (MoE), Cambodia and the United Nations Human Settlements Programme (UN-Habitat) have been successful in securing funding from the Adaptation Fund to implementing a four-year climate change project in the two coastal provinces of Cambodia, “Increasing climate resilience through small-scale infrastructure investments and enhancing adaptive capacity of vulnerable communities in Kampot and Koh Kong Provinces in Cambodia.”

The overall objective of the project is to support climate resilient and adaptive development and increase the capacity for climate variability/change adaptation of target communities living in Kampot and Koh Kong Provinces. This objective will be achieved through the following specific objectives:

- To implement concrete adaptation actions that support climate resilient infrastructure in Kampot and Koh Kong Provinces to adapt to current impacts of climate change, in particular, extreme hydro-meteorological events.
- To reduce the impacts of coastal climate hazards by recovering coastal ecosystems (Ecosystem-Based Adaptation) and minimizing related socioeconomic impacts on communities.
- To enhance institutional capacity at the provincial and local level, relevant Government entities, and communities for decision-making and management of the implementation of adaptation measures/actions to address climate change and variability in Kampot and Koh Kong Provinces.

The project is structured around the following three components:

Component 1: Increasing coping capacity by promoting climate-resilient small-scale infrastructure.

Component 2: Adapting to current impacts of climate change through recovery of coastal ecosystems, and livelihood improvement and diversification, and

Component 3: Building capacity and knowledge sharing to reduce vulnerability to climate change.

III. Scope of Work

The consultant will work closely with National Project Leader and under the management of the National Project Manager to implement the project activities on timeline and reach the target objectives effectively under technical advice of the UN-Habitat team in close coordination with other staffs and consultants involved in the project while coordinating and communicating with relevant stakeholders involved in the project.

Objective of Assignment

The main objectives of this assignment are:

- To assess the technical, economic, social, and environmental feasibility of the proposed irrigation system.
- To prepare a Detailed Engineering Design (DED) including drawings, specifications, cost estimates, and implementation plans.
- To ensure the proposed system is sustainable, climate-resilient, and aligned with local agricultural needs.

Scope of Work

The consultant/contractor shall conduct the following:

A. Feasibility Study

1. Situation Analysis
 - Review existing irrigation infrastructure, water sources, and agricultural practices.
 - Assess land use, soil conditions, and topography.
 - Identify key stakeholders (farmers, local authorities, water user groups).
2. Hydrological and Water Availability Assessment
 - Study rainfall patterns, river flows, and groundwater availability.
 - Estimate water demand for irrigation (crop water requirements).
 - Analyze climate change risks and water scarcity scenarios.
3. Technical Feasibility
 - Propose irrigation system options (gravity-fed, pump-based, canal systems, etc.).
 - Evaluate reservoir/dam sites (if applicable).
 - Assess infrastructure needs (canals, pipelines, pumps, gates, etc.).
4. Economic and Financial Feasibility
 - Cost-benefit analysis of proposed irrigation schemes.
 - Financial sustainability (farmers' willingness to pay, O&M costs).
 - Funding options (government, donors, private sector).
5. Social and Environmental Impact Assessment
 - Stakeholder consultations (farmers, local authorities, NGOs).
 - Environmental screening (potential impacts on ecosystems, water quality).
 - Resettlement/land acquisition issues (if any).
6. Institutional and Management Framework
 - Assess capacity of local water user associations (WUAs).
 - Recommend governance and operation & maintenance (O&M) models.

B. Detailed Engineering Design (DED)

1. Topographic and Geotechnical Surveys
 - Conduct detailed land surveys (using GPS, drones, or LiDAR if needed).
 - Soil testing for canal lining, dam foundations, etc.
2. Hydraulic Design
 - Design canals, pipelines, reservoirs, and control structures.

- Calculate water flow rates, pressure requirements, and pump specifications.
- 3. Structural Design
 - Prepare detailed drawings for weirs, gates, culverts, and other infrastructure.
 - Ensure compliance with national/international engineering standards.
- 4. Cost Estimation & Bill of Quantities (BoQ)
 - Detailed cost breakdown for construction, labor, and materials.
 - Procurement plan and tender documents.
- 5. Implementation Plan
 - Phased construction schedule.
 - Risk assessment and mitigation measures.

Deliverables

The consultant shall submit:

1. Inception Report (Work plan, methodology, timeline).
2. Draft Feasibility Study Report (for review and feedback).
3. Final Feasibility Study Report (including economic analysis and recommendations).
4. Detailed Engineering Design (DED) Report (drawings, BoQ, specifications).
5. Environmental & Social Management Plan (ESMP) (if required).
6. Stakeholder Workshop Presentations (validation meetings).

IV. Duration of Work

Working closely with the Team Leader and under the management of the National Project Manager, and technical advice of UN-Habitat team. The Consultant report to Project Manager of MoE.

V. Duty Station

The consultant will be working at the Ministry of Environment, subject to travel to provinces.

VI. Minimum Qualifications

The consultant shall have the following qualifications:

Education:	Minimum Bachelor level degree in environmental sector, engineer, or other related fields of climate change, urban planning and human settlements and geography is strongly encouraged.
Experience and skills:	<ul style="list-style-type: none"> - A minimum of 5 years for specific experience in planning, project preparation, construction and/or project management of infrastructure projects related to waste management sector is required. - Experience in irrigation projects in Cambodia/Southeast Asia. - Team of hydrologists, civil engineers, agronomists, and environmental specialists. - Familiarity with Cambodian water resource policies - Good communication and writing skills; - Good experience in multi-stakeholder coordination;

Language Requirements:	Excellent command of Khmer and English (both spoken and written)
Key Considerations for Kampong Trach Irrigation System <ul style="list-style-type: none">• Climate resilience (drought/flood adaptation).• Farmer participation (ensuring WUA involvement).• Sustainable water use (avoiding over-extraction).	