

**TOR for ECONOMIST / FINANCIAL ANALYST  
Advancing Climate Resilience in Water Sector in Bhutan (ACREWAS)**

**A. General information**

<b>Location:</b>	Thimphu based with field travel
<b>Services/Work Description</b>	Individual Consultant
<b>Type of Contract:</b>	Contract for Professional Services
<b>Scope of Advertisement</b>	National
<b>Starting date:</b>	18 October- 31 December 2021
<b>Duration of Initial Contract:</b>	35 days
<b>Expected duration of assignment</b>	30 working days spread over 18 October- 31 December
<b>Supervisor(s)</b>	Environment and Livelihood unit, UNDP Bhutan

**B. Background**

Water plays critical role and is key driver for Bhutan’s major economic sectors, amongst others – agriculture and hydropower. Water is often referred to as “white gold” given Bhutan’s enormous potential to generate hydropower. The current generation of 2,326 MW not only provides electricity to over 94% of the households, but also continues to be the major source of revenue through the export of surplus energy. Over 90% of water is consumed for agricultural production and food security. While not clearly accounted [for](#), water provides valuable ecosystem services and is also intricately linked to tourism industries and small- scale industries that depend on this natural capital. Further, ongoing COVID-19 pandemic reinforces that safe drinking-water, sanitation and hygiene are crucial for achieving human health outcomes and overall well-being.

Recognizing water’s major roles for social and economic development, the Royal Government of Bhutan has developed an integrated approach in “Water Resource Management” and is also identified as one of the “Flagship Program” of the Government in the 12<sup>th</sup> Five Year Plan. The main objective of this flagship program is to ensure 24x7 access to safe drinking and irrigation water. Bhutan has extensive network of river system flowing north to south fed by east-westerly tributaries system. Rainfall is the major source of discharge for these river systems, supplemented by glacial and snow melts resulting into a mean combined outflow estimated at 70,576 m<sup>3</sup> translating to per capita availability of 109,000 m<sup>3</sup> per year which is highest in the region.

Despite abundance of per capita freshwater availability, Bhutan suffers from chronic water shortages and getting water for drinking and irrigation is a challenge due to Bhutan’s rugged and mountainous landscape making the delivery of infrastructure and services hard and

expensive. The geophysical challenge is exacerbated by country's vulnerability to impacts of climate change (variation in temperature and precipitation) and extreme weather events including degradation of watershed conditions threatening the sustainability of water resources. Inability to meet the demand is likely to further accentuated by the impacts of climate change on the local communities due to country's low adaptive and coping capacities, poor economic status coupled with limited financial, technical, and human capacity.

Also, the water mandates and resources for water management are fragmented across ministries and agencies often resulting in duplication of effort and inadequate returns from public investments. Lack of clear coordination and governance system of water resources and water services development across relevant sectors and agencies have given rise to institutional, coordination, and planning bottlenecks.

### C. Objective of the Assignment

The objective of the assignment is to carry out economic and financial analysis of the ACREWAS project and its interventions during the design phase. The project interventions will increase climate resilience of rural and urban communities with adequate, clean, and uninterrupted water supply in three Dzongkhags of Gasa, Punakha and Tsirang. The three Dzongkhags (districts) form a major part of Punatsangchhu river basin, one of the five main river basin management units in Bhutan. It is the largest river basin in terms of geographical area and among the most climate-vulnerable watersheds in the country. The project will support ensuring that targeted catchment watersheds are managed to protect and restore their capacity to provide sustainable ecosystem services and bring about efficiency and effectiveness and climate resilience of infrastructure networks for drinking and irrigation water supplies.

### 2. Scope of the work

Under the guidance of International and National Specialist for GEF-LDCF ProDoc Development, the national economist and financial analyst will be responsible to ensure the development of required economic analysis to inform the preparation of the project document

The scope of the consulting services include:

- 1) Formulation of the ProDoc, CEO Endorsement Request and specific annexes (Component B):
  - a. Review Water NAP assessment report with specific focus on socio – economic impacts.
  - b. Update and validate socio economic impact assessment
  - c. Prepare detailed project cost estimates using either specialized software's or excel in consultation with project specialist, and project budget in alignment with GEF template including budget notes.

- d. Review the costing of various activities and conduct financial analysis of the project including NPV and IRR and project sustainability including livelihood and income diversification.
- e. Conduct economic analysis of the project (Cost Benefit Analysis, sector analysis, demand analysis, risk analysis and other related works).
- f. In consultation with the NAP project and the GCF project on agriculture, estimate and establish the incremental costs necessary to improve climate resilience of irrigation and drinking water schemes.
- g. Identify, assess and formulate mechanisms for engagement with the private sector and public-private-sector partnerships (PPP) in relevant aspects of the project
- h. Assess economic and livelihoods assessment of the project dzongkhags and gewogs (in the context of project objective to enhance community resilience)
- i. Assess innovative financing mechanism and propose;
  - community and private sector activities including PES mechanisms
  - Nature based private sector enterprises proposed that support sustainable watershed management and water catchment enrichment such as eco-tourism, recreation, fodder development etc.through concessionary arrangements (The UNDP supported GEF project on Mainstreaming Biodiversity in Ecotourism will develop concessionary framework for engagement of the private sector in ecotourism by mid 2022)
  - Develop a youth based enterprises engagement guideline/framework for O&M of drinking and irrigation water schemes using smart water management technologies and other related innovative solutions.
  - The DHI's Innotech Department has developed a prototype technology for water management. The scope and modality of engagement of the DHI Innotech department in testing and upscaling of this technology may be considered among other appropriate smart water management technologies in this context.
  - Asses and propose inclusion of enabling mechanisms to sustain water utility services to be developed through the project such as water tariff

2) Validation Workshop (Component C):

- a. Conduct stakeholder consultations and final validation workshop; and
- b. Support all necessary revisions that arise during the workshop, as appropriate.

3) Final Deliverables:

- a. Economic analysis report, including incremental cost analysis due to climate change, to inform;
- b. Financial analysis report.
- c. Detailed documentation of community consultations and workshops;
- d. Appropriate inputs on the integration of economic analysis in the Final Project Document,
- e. Description of project activities related to private sector engagement, community and youth through nature based enterprises including economic viability and water tariffs for sustainability

- f. Project costing and budget in alignment with GEF template including budget notes with list and assumptions and unit rates applied for activity costing
- g. Support to the safeguard's expert on environmental safeguards, i.e potential risks to communities and the environment from construction activities
- h. Identify project risks pertaining to economic, financial and fund flows with mitigation measures.

### **Institutional arrangements**

The national consultant will directly report to Chimi Rinzin, Portfolio Manager, Environment and Livelihood Unit, UNDP CO Bhutan

### **6 . Workplan and Timeline**

	<b>Activity/ Deliverables</b>	<b>Timeline</b>	<b>Payment</b>
1	Contract signing and first consultation meeting		20% payment
2	Stakeholder consultation and Submission of draft report		30% payment
3	Validation workshop		
4	Submission of final report (incorporating all revisions and feedback and annexes as per the final deliverables)		50% payment

### **7. Duration**

- Total 35 working days spread over 18 October – 31 December 2021

### **8. Station**

- Thimphu and travel to project sites in the 3 districts of Gasa, Punakha, and Tsirang

### **9. Qualifications**

- Master's degree or higher in a relevant field, such as development economics, or natural resource economics.
- Minimum 10 years of demonstrable experience working in national and international development context;
- Experience working with UNDP on GEF projects and familiarity with UNDP safeguards standards will be an advantage.
- Proven experience working on economic and financial analysis of projects.
- Excellent written and oral communication skills in English and Dzongkhag (national language)

- Ability to deliver results, while remaining flexible and adaptive in light of challenging circumstances due to the evolving COVID-19 situation;

***Evaluation criteria***

The consultant who fulfills the requirements will be assessed based on a combined scoring of:

- Technical evaluation 70%.
- Financial evaluation 30%.

***Recommended Presentation of Offer :***

Please submit the following documents with your Presentation of Offer

- a) **Personal CV or P11**, which can be downloaded from UNDP at <http://www.bt.undp.org/content/bhutan/en/home/operations/jobs/> indicating all past experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references;
- b) **Summary of proposed methodology** as per the deliverables expected from the national consultants
- a) **Financial proposal** – Financial Proposal that indicates the all-inclusive fixed total contract price, supported by a breakdown of costs. The consultant shall submit the price offer indicating a lump sum all-inclusive cost for the assignment (i.e daily fee, per diem, travel etc) with the Technical Proposal.

Above documentation should be submitted by email to [procurement.bt@undp.org](mailto:procurement.bt@undp.org) on 13th October by 5pm .