

**TERMS OF REFERENCE (TOR) FOR GHG EMISSION EXPERT IN
UTTARAKHAND CLIMATE RESPONSIVE RAIN FED FARMING PROJECT
PROJECT NUMBER-P179357
Ref No. 05/11-12(5)/UCRRFP/2025-26**

1. Project Overview

Uttarakhand Climate Responsive Rain-fed Farming Project (UCRRFP) will be implemented by the Watershed Management Directorate, Uttarakhand. The project development objectives are to improving the resilience and productivity of small holder agriculture for increased profitability with low GHG emission in selected micro-watersheds of Uttarakhand. UCRRFP is a six-year project to be operational from 2023 to 2029. The project cost is USD 138.39M (IBRD: USD 100M, State Govt. USD 32.82M & Beneficiary: USD 5.56M).

1.1 Project Description

Uttarakhand being a hilly state agriculture is pre dominantly rain-fed and remains vulnerable to moderate to extreme weather conditions. Sustaining increased agriculture outputs in a rapidly changing climate will require adaptation at a faster pace. Enhancing food security while reducing GHG Emissions from farming practices will require transition to production systems that are more productive, use input more efficiently, have greater stability in outputs and are resilient to short- and long-term climate variability.

Uttarakhand Climate Responsive Rainfed Farming Project (UCRRFP) will be implemented in 06 hilly districts and 02 plain districts of Uttarakhand covering about 1200 villages and comprising of 56 Micro watershed clusters.

1.2 Result Indicators

The following Key Performance Indicators (KPI) are proposed for measuring the core outcomes of the project: -

KPI #1:- Reduction in GHG emissions from representative cropped land parcels.

KPI #2: - Increase in productivity of selected crops.

KPI #3: Increase in net income of sampled households adopting improved agricultural technology.

KPI #4:- Increased water discharge in the identified spring-sheds.

1.3 Project Components

Component A- Participatory and Science based Planning (USD 20.91 million)

Given the science-based focus of the project the Project Management Unit (PMU) setup under the WMD will constitute a consortium that will engage researchers/scientist from leading institutes to handhold the project

implementation. The project implementation at ground level would involve a community demand driven approach where in through participatory approach climate resilient Gram Panchayat Plans will be developed. This would involve community mobilization, sensitization and their awareness building to the climate change mitigation and adaptation strategies.

Component B Building Climate Resilient Watersheds and Production Systems (USD 76.64 million)

To build the climate resilient watersheds with the support of participating communities, watershed and spring-shed management interventions shall be carried out. These initiatives would help in resolving the issues of availability of water for irrigation and other purposes which is critical for building the resilience of the marginal mountain farmers whose farming is totally rain-fed.

To increase the productivity, the project will give both technical and farming inputs to the farmers in agriculture, horticulture, allied sectors and small ruminants. In the endeavor to make farmers climate resilient integrated farming systems shall be promoted, organic farming, integrated pest management, integrated nutrient management and protected farming systems shall be developed. In the process the project will support interventions that reduce GHG emissions from farming systems.

Component C- Improving Income Resilience (USD 17.57 million)

The projects priority is to increase the income resilience of the mountain communities for this effort shall be made to strengthen the Agri-marketing systems of the farmers by organizing them into farmer's federations and by providing them value addition services, developing end to end supply chains and by making agro-logistics carbon neutral. The

project shall support the development of Agri-enterprise hubs by setting up of Agri Business Growth centers in the remote areas.

With the objective of the ensuring inclusiveness and equity various non-farm based livelihood initiatives will be provided to the marginalized households in the project villages.

Component D-Knowledge, ICT and Project Management (USD 23.27 million)

The project with the support of the consortia will set up a knowledge hub in the PMU.

This knowledge hub will analyze, synthesize and document the various methods/practices/approaches/strategies/required in the efficient use of the natural resources, GHG emission reduction, development of resilient integrated farming systems and marketing inputs. The project will work towards enhancing

the staff's capacity at the WMD and inter- departmental levels to mainstream climate resilient approaches at the state level.

This component would also cover the institutional setup, coordination, monitoring and evaluation of the project and overall management of the project by the PMU.

NEED FOR CONSULTANCY SUPPORT

1. The consultancy is required as one of the interventions in the project are to reduce GHG emission in the farming systems and implementation of mitigation measures for sustainable agriculture.
2. Adopting climate-smart agricultural practices would result in carbon sequestration through underground biome and above ground biomass which is in accordance with state Govt's policy of reducing GHG emissions.

SCOPE OF WORK

1. The GHG Expert will be responsible for providing technical expertise and guidance on greenhouse gas emissions management and sustainable development initiatives, including calculation, monitoring, reporting and verification of emissions reduction and mitigation strategies including baseline measurement, mitigation actions identification, and monitoring and reporting of progress on emissions reduction targets.
2. Develop methodologies and tools for GHG emissions calculation and inventory under different scopes of emissions and provide technical support for related reporting and compliance requirements.
3. Develop a training manual and provide training to project staff and farmers on GHG mitigation measures and sustainable agriculture practices.
4. Conduct GHG emission assessments in the agricultural sector, including livestock and crop production.
5. Interact and coordinate with internal and external stakeholders to provide technical support and knowledge transfer on GHG emissions, mitigation, sustainable development, and carbon market opportunities.
6. Participate in the preparation of technical reports and presentations on GHG emissions management, sustainable development, and carbon market to stakeholders, internal and external.
7. Working together with stakeholders, including capacity building activities and trainings on data collection, analysis, indicators, the use of 2006 IPCC guidelines on national greenhouse gas inventories, the IPCC good practice guidance on the National GHG inventories and uncertainty Management, the IPCC Good Practice Guidance on Land use, land-use change and forestry and implementing and maintaining a National Greenhouse Gas Inventory system.

8. Evaluating the resultant Carbon stock developed during the project period which could be monetized as carbon credits thus providing the additional income for the Rain-fed farming systems.

JOB DESCRIPTION

Location of Job: PMU, UCRRFP, WMD, Dehradun, Uttarakhand.

Reporting Line: Project Director, UCRRFP, WMD.

WORK STATION

The consultants would be based in the Watershed Management Directorate, Dehradun and would make field visits to all project area as needed.

OWNERSHIP

Watershed Management Directorate of Uttarakhand will have ownership of the data/applications etc. The consultants will have no right of claim to the products developed and shall not replicate them without prior consent of WMD.

ESSENTIAL QUALIFICATION & WORK EXPERIENCE

1. Postgraduate Degree in Agriculture/ Horticulture/ Natural Resource Management/ Forestry/ Ecology/Environmental Science/Climate Change with minimum 5 yrs experience in related field.

OR

2. PhD in relevant field with research related to GHG emission techniques/ Climate Change

DESIRABLE QUALIFICATIONS

1. PG Diploma/Diploma Course/Certificate Course in the relevant field like; GHG Accounting, Carbon Management, GHG Measurement etc.
2. Having skills to use the applications of carbon sequestration/ carbon measurement/carbon monitoring, climate change modeling and GIS & Remote Sensing.
3. Extensive knowledge of Intergovernmental Panel on Climate Change (IPCC) methodologies and other methodologies for forest/agriculture carbon stocks measurement and monitoring and conventions on climate change, combating desertification and biodiversity (UNFCCC, UNCCD and CBD)
4. Knowledge and experience in project cycle management and well versed in logical frameworks
5. Ability to work effectively in a team interacts persuasively with a range of stakeholders, and travel extensively.

REMUNERATION:

Depending on qualification, experience and competency of the candidate, the salary is negotiable.

PERIOD OF SERVICE:

The contract shall be initially for a period of minimum 1 (one) year with a provision of further extension on an annual basis up to the end of the project, subject to satisfactory performance as assessed by the Project Director, UCRRFP.