

**TERMS OF REFERENCE (TOR) FOR  
HYDRO-GEOLOGIST (DPMU Level)  
IN UTTARAKHAND CLIMATE RESPONSIVE RAIN FED FARMING PROJECT  
PROJECT NUMBER- P179357  
Ref No. 01/11-12(5)/DPMU//UCRRFP/2024-25**

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### **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 **"Improve resilience of production system to make mountain farming GHG Emission competitive and profitable in selected micro-watersheds of Uttarakhand."** UCRRFP is a six-year project to be operational from 2024 to 2030. The project cost is USD 138.05M (IBRD: USD 96.2M, State Govt. USD 34.19M & Beneficiary: USD 7.66M).

### **2. Project Description**

Uttarakhand being a hilly state agriculture is pre- dominantly rain-fed and remains vulnerable to moderate to extreme weather conditions. Sustaining increase 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 1000 villages and comprising of 58 Micro watershed clusters.

### **3. Result Indicators**

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

- ◆ KPI #1:- Reduction in GHG emissions from representative cropped land parcels (CRI).
- ◆ KPI #2:- Increase in productivity of selected crops
- ◆ KPI #3:- Increased water discharge in sample spring sheds

- ◆ KPI #4:- Farmers adopting climate smart agriculture technologies and practices promoted by the project.
- ◆ KPI #5:- Farm Income at HH Level with/without UCRRFP.

#### **4. Project Components**

##### **Component A- : Developing Resilient and GHG-efficient Production Systems (USD 46.84 million)**

The objective of the component is to improve productivity through land treatment and development, while simultaneously enhancing fertilizer efficiency, water productivity, and mitigating greenhouse gas emissions. The component establishes the groundwork for the project to transition cultivation towards an optimal input usage pattern, resulting in lower input costs and increased average income for farmers. Within this component, priority will be placed on expanding controlled irrigation coverage, encouraging protected cultivation, re-cultivation of fallow lands, fostering agricultural diversification, and bolstering farmer's income through varied livelihood options. Utilizing a landscape approach grounded in land-use capability, the project will furnish high-quality inputs and implement early warning advisory systems to facilitate the adoption of ecologically sensitive and diversified production systems. A decision support system for Climate-Smart Agriculture (CSA), grounded in evidence, will be established through strong partnerships with leading scientific entities, both within the state and at the national level. These collaborative partnerships will generate knowledge products through co-creation processes.

##### **Component B – Science-based Development of Resilient Spring-sheds (USD 62.71 million)**

To build 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 purposes which is critical for building the resilience of the marginal mountain farmers whose farming is totally rain-fed. To increase productivity, the project will provide both technical and farming inputs to the farmers in agriculture, horticulture, and allied sectors (fishery & livestock with small ruminants). Hence, under this component, depending upon the activities, the project will promote climate resilient agricultural practices, intensive / semi-intensive farming models, exploring agriculture

horticulture options, mixed / inter-cropping etc., based on its feasibility. Reducing cost of cultivation through natural farming / organic farming, promotion of carbon farming models, achieving nutrient use efficiency etc. will also be the points of intervention under the component.

### **Component C- Enhancing Income Resilience through Agribusiness (USD 14.78 million)**

The foremost goal of the project is to bolster the economic resilience of farmers, with special focus on mountain communities. To achieve this, the project will invest in fortifying the agricultural marketing systems. This involves uniting farmers into federations, offering value-added services, establishing comprehensive supply chains, and ensuring less carbon intensive / carbon-neutral logistics for agricultural products. The initiative also aims to foster the growth of agricultural enterprises by establishing Agri Business Growth Centers in remote regions. To promote inclusivity and fairness, the project will extend non-agricultural livelihood opportunities to marginalized households within the project villages.

### **Component D – Project Management, Monitoring & Evaluation, and Learning (USD 13.72 million)**

Supported by a consortium, the project aims to establish a knowledge hub within the Project Management Unit (PMU). This hub will analysis, synthesize, and document diverse methods, practices, and strategies essential for optimizing natural resource usage, reducing greenhouse gas emissions, fostering resilient integrated farming systems, and improving marketing inputs. Additionally, this component encompasses overseeing the institutional framework, coordination, monitoring, evaluation, and overall project management under the purview of the PMU.

## **5. PROJECT AREA-**

The project will be operational within the state of Uttarakhand. Total project area will cover about 2.38 lakh hectare of land spread in 58 Micro watersheds in 8 districts. About 1000 villages with an approximate 76000 HH and approx. 3.81 lakh population will be benefited by the Project outcome.

## **THE PROJECT PERIOD-**

The project duration is 6 years and the project cycle in each GP will be 5 years in following three phases:

- Preparatory phase : - First year
- Implementation Phase : - Four years.
- Withdrawal Phase : - Sixth year

## **PROJECT IMPLEMENTATION ARRANGEMENTS**

The UCRRFP is based on joint relationship among three entities: (i) village communities and GPs; (ii) PMU; and (iii) Consortia of Science Based Research Institutes. All these three stakeholders will fulfil their respective roles and responsibilities for the project to be successful.

## **NEED FOR CONSULTANCY SUPPORT**

Increasing productivity in Rainfed hilly areas/project area is challenging and water plays a central and dynamic role. The key objective of the proposed consultancy is to assist in planning, implementation & assessing the impact of project initiatives in watershed and spring-shed management interventions mainly sustainability of the existing water sources, recharging, rejuvenating of water sources and moisture regime in the selected spring-sheds and rivers. The Results Frame Work of the Project identifies the key outcomes and results indicators that are to be monitored and evaluated during the course of this project related to this intervention. A strategy would be required to disseminate project information and educate all the stakeholders about the spring-shed management interventions.

**This consultancy support is proposed for field divisions of UCRRFP, the consultant is expected to be stationed in the DPMUs office- i.e., either Tehri Garhwal, Uttarkashi, Rudraprayag, Pauri, Almora, Nainital of the UCRRFP.**

## **SCOPE OF WORK**

- Develop baseline information of water sources and water harvesting structure in Project areas to establish water conservation, water harvesting and water use baseline and coordinate with technical staff of field units.
- Geo-hydrology assessment of different water resources as required in

preparation of Spring-shed Management Plans in different Project Villages.

- Help creating Stream-shed Management Plans and drainage line/catchment area treatment plan in different project villages.
- Coordination with PMU/GIS/MIS at Watershed Management Directorate for implementing recommendations made by consortia partners and technical agencies, viz, M&E Agency etc.
- Provide technical inputs for meeting the project objectives and coordination with PMU experts and evaluation of various reports.
- Analysis of impact of different Spring-shed Management Plan being implemented in the project villages.
- Technical support for creation of different water harvesting structures and develop strategy for water use efficiency and water productivity and impact evaluation of the same.
- Give technical support to district and unit staff for use of different IT/ Web based Application for planning, implementation and Monitoring & Evaluation for the above works, to PMU, if required.
- Any other tasks as assigned by the DD-DPMU.

## **JOB DESCRIPTION**

**Location of Job:** DPMU, UCRRFP, for any of the Project Districts.

**Reporting Line:** Deputy Director, UCRRFP.

## **ESSENTIAL QUALIFICATION**

- Postgraduate or equivalent degree in Hydrology/Geo-Hydrology/Geology or relevant in Hydrology and Geology subjects from Government of India approved and Recognized UGC university.

## **WORK EXPERIENCE**

- He/ She should have at least 03 years working experience in relevant field and adequate knowledge of report writing and computer operations.

## **DESIRABLE QUALIFICATIONS**

- Doctorate in above subject in Soil & Water Conservation Engineering.
- Priority for Field experience in watershed/ Spring-shed Management and knowledge of Hydrology.
- Having experience in externally aided /Centrally Sponsored /Government Projects.

**AGE LIMIT: - 25-50 Years.**

## **TERM AND CONDITION**

- Candidates Services should not have been terminated by any organization due to non-performance.
- Service related term and condition will be disclosed at the time of contract.

## **REMUNERATION: -**

Rs.50,000/- (Negotiable), depending on qualification, experience and competency of the candidate.

## **PERIOD OF SERVICE: -**

The contract shall be initially for a period of 6 (Six) Months through direct contract and on satisfactory performance would be shifted to Human Resource Providing Agency. There will be a provision of further extension on an annual basis up to the end of the project, subject to satisfactory performance as assessed by the Deputy Director, UCRRFP.

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