

Terms of Reference

---

# **DEVELOPMENT OF INSTITUTIONAL FRAMEWORK AND ORGANIZATIONAL STRUCTURE OF DHM**

(Contract ID No: PPCR/DHM/S/CQS-39)

Department of Hydrology and Meteorology (DHM),  
Building Resilience to Climate Related Hazards Project  
Kathmandu

October, 2015

## **1. Background**

The unique topography, largely poor and resource dependent population and, weak institutional capacity to manage the climate challenges has made Nepal, the fourth most climate vulnerable country in the world. Floods, droughts, and landslides are deadly and endemic. Moreover, the effects of climate change are expected to intensify extreme weather events and other climate risks in the region.

Recognizing the high level of exposure to climate change risks, the Climate Investment Fund (CIF) selected Nepal as one of the nine pilot countries for the Pilot Program for Climate Resilience (PPCR) in 2009.<sup>1</sup> In Nepal, PPCR is administered by Asian Development Bank, The International Finance Corporation and The World Bank.

Government of Nepal has prepared a Strategic Program for Climate Resilience (SPCR), which was approved by Climate Investment Fund (CIF). SPCR, Nepal identified five projects for investment. Presently, out of five, four projects are being implemented in Nepal. The Building Resilience to Climate Related Hazards (BRCH) is one of the four projects funded through the Nepal Pilot program for Climate Resilience (PPCR) under the Strategic Climate Fund.

The main objective of the BRCH project is to enhance government capacity to mitigate climate related hazards by improving the accuracy and timeliness of weather and flood forecasts and warnings for climate-vulnerable communities, as well as developing agricultural management information system services to help farmers mitigate climate-related production risks.

The above mentioned objectives would be achieved by establishing multi-hazard information and early warning systems, upgrading the existing hydro-meteorological system and agricultural management information system, and enhancing capacity of the government organizations, specifically the Department of Hydrology and Meteorology (DHM). Activities funded through the project would help improve decision-making and planning in key climate vulnerable and water resources dependent sectors particularly agriculture, health, water and disaster management, and contribute to building climate resilience for communities at risk. The BRCH project became effective in June 2013 and is currently under implementation.

The BRCH project comprises of the following four Components:

- A) Institutional strengthening, capacity building and implementation support of Department of Hydrology and Meteorology (DHM);

---

<sup>1</sup>For more information on PPCR visit,

[https://www.climateinvestmentfunds.org/cif/Pilot\\_Program\\_for\\_Climate\\_Resilience](https://www.climateinvestmentfunds.org/cif/Pilot_Program_for_Climate_Resilience)

- B) Modernization of observation networks and forecasting;
- C) Enhancement of the service delivery system of DHM; and
- D) Creation of an agriculture management information system (AMIS).

DHM is responsible for the implementation of Components A, B and C. Ministry of Agriculture Development (MoAD) is responsible for the implementation of Component D. Component A includes three sub-components:

**Sub-Component A.1** – Institutional strengthening:

- 1.1 DHM institutional development and strategic planning;
- 1.2 development and/or strengthening of a legal and regulatory framework for DHM operations, including development of standard operating procedures, assessment of new business models and enhancing public private partnerships; and
- 1.3 “twinning” operational support from advanced NMSs and WMO.

**Sub-Component A.2** – DHM Capacity Building:

- 2.1 Development and implementation of a DHM capacity building program including (i) DHM personnel training and retraining, (ii) professional orientation for DHM senior staff; (iii) education in universities and training in WMO regional training centers; and
- 2.2 Implementation of training activities (workshops, round tables, etc.) for major users (i.e., agriculture, water resources management, health, energy, transportation).

**Sub-Component A.3** – Systems Design and Integration, Project Management and Monitoring, which includes:

- 3.1 Provision of support for detailed design, procurement and implementation of DHM systems (General Consultant/Integrator);
- 3.2 Project management, reporting, monitoring and evaluation for Components A, B and C (which are the components managed by DHM);
- 3.3 Development of a needs assessment and design for air quality, water quality and sediment monitoring networks;
- 3.4 Development of design documents for reconstruction/refurbishment of DHM’s headquarters and regional offices; and
- 3.5 Support for environmental and social due diligence and protection.

The first component, Institutional strengthening, Capacity building and Implementation Support of Department of Hydrology and Meteorology includes preparation of an Institutional Framework (organizational structure) that will help in the delivery of improved forecasting and weather and climate services, along with an institutional organogram for DHM, and a similar needs assessment of divisions, sections at Department level, regional offices, district offices and centers at local level; institutional structures and function

descriptions of staff at the division and other offices/centers.

## **2. Rationale**

Department of Hydrology and Meteorology (DHM) is an organization under the Ministry of Science, Technology and Environment, established with an objective to collect, monitor, disseminate hydrological and meteorological information to the public, private and government organizations. DHM is a public information provider for sectoral planning and also supplier of regular reliable and consistent data inputs for the sectors like water resources, agriculture, energy, aviation, transport, tourism, health and local development among others. DHM also needs to implement a variety cost recovery mechanisms as it improves the value addition of its services and incurs greater operational costs.

The responsibilities of Department of Hydrology and Meteorology (DHM) as the main agency to monitor all the hydrological and meteorological activities in Nepal, include the collection, analysis and monitoring of river hydrology, climate, agro-meteorology, sediment, air quality, water quality, limnology, snow hydrology, glaciology, and wind and solar energy. Early warning of weather and floods also fall under DHM responsibilities. General and aviation weather forecasts are regular services provided by DHM.

As a member of the World Meteorological Organization (WMO), DHM contributes to the global exchange of meteorological data on a regular basis. DHM actively participates in the programs of relevant international organizations, such as, the UNESCO's International Hydrological Program (IHP) and WMO's Operational Hydrology Program (OHP). In the past, DHM has hosted several regional and international workshops, symposia, seminars and meetings on different aspects of meteorology, hydrology, sediment, water quality and snow hydrology. The department is also a focal point for the Intergovernmental Panel on Climate Change (IPCC) and for the meteorological activities of the South Asian Association for Regional Co-operation (SAARC). The International Civil Aviation Organization (ICAO) has recognized DHM as an authority to provide meteorological services for international flights.

The Principal Activities of DHM among others include

- Collect and disseminate hydrological and meteorological information for water resources, agriculture, energy, and other development activities.
- Issue hydrological and meteorological forecasts for public, mountaineering expedition, civil aviation, and for the mitigation of natural disasters.
- Conduct special studies required for the policy makers and for the development of hydrological and meteorological sciences in the region.
- Promote relationship with national and international organizations in the field of hydrology and meteorology
- With these vast and important work areas where DHM plays a key role in the provision of weather, hydrological and climate related services, and based on these roles and

responsibilities entrusted to it, the Institutional Framework is to be designed and developed to undertake these responsibilities.

With support from the BRCH project, DHM is currently in the process of modernizing and developing its capacity for service delivery. As such, it is important to take stock of its existing strategic planning process, organizational structure, adequacy of staffing, options for revenue generation and cost recovery, impact of modernization and propose how they need to be adjusted.

Under this BRCH Project there are Project Management Unit (PMU) and System Integrator's (SI) office

The PMU includes technical, financial, procurement, environment, social, monitoring, and evaluation specialists under the Project Technical Coordinator (PTC) and is responsible for project management.

SI is hired for four years to provide service to DHM for the development of technical documentation and for the implementation of each of the project component and in providing effective technical support for project activities in order to achieve project goals.

SI has carried out analysis and evaluated the current situation of DHM including the evaluation of the staff capacity at national and subnational levels and also includes the assessment of future requirements. Furthermore SI has also conceptualized the DHM organizational framework. This document is expected to be a base document in expanding the institutional framework.

### **3. Objective**

The main objective of this assignment is to prepare (a) an Institutional framework of DHM covering the organizational structure described in an organogram and including job descriptions of all positions, and function of various divisions, workplans for each of its divisions, sections, units, as well as (b) a 5-year strategic plan for smooth operation and expansion of DHM services. This will be based on a review of the existing institutional framework, planning process, staffing and revenue generation options.

### **4. Scope of the Services**

The specific scope of services include, but not limited to, the following:

- a. Review of all relevant DHM institutional documents relating to formation of DHM and subsequent documents related to institutional structure and entrusting responsibilities thereafter.
- b. Assess if DHM hashistorical work plans, how are they prepared, process through which they are prepared, and how often they are updated. Based on the review of DHM's planning process, propose recommendations on how it can be strengthened. Carry out

- SWOT analysis of the DHM organization in light of its plan to operate a modernized observation system and provide client-oriented hydrological and climate services
- c. Review existing organogram, functions and responsibilities of DHM as presently organized (i) at HQ and (ii) at regional, district, and basin offices. Assess their modalities of functioning and how this can be strengthened. Based on this review also WMO guidelines and international best practices, propose how DHM's existing organogram can be strengthened.
  - d. Assess staffing and skill mix at the national and sub-national offices. Identify gaps and propose recommendations on how the staffing and skill needs to be strengthened at the national and sub-national levels. Analysis should also look at how staff at local offices might be affected through the modernization process and options for training and retraining.
  - e. Prepare an analysis of increase in staff costs and changes to DHM's organizational structure as part of the modernization process. The consultant should propose some options for a modernized DHM including a range, with minimum necessary (staff and operational costs) needed to deliver a satisfactory quality level and the max representing a realistic cost for delivering state of the art services.
  - f. Prepare the DHM institutional framework including vision, mission, objectives and deliverable outcomes with clear cut definition of scope, duties and responsibilities of DHM, activities to be carried out for this purpose, and the resources required.
  - g. Prepare a job description for each staff position with associated needed qualifications and experience.
  - h. Identify career tracks for career development for staff, aligned with the organogram. More specifically it should clarify responsibility in provision of services related to hydrological and meteorological services, monitoring and observation, weather, services related to aviation, hydrological and flood forecasting, and delivery of climate services. It should also clarify responsibility on issuance of severe weather warnings and alerts related to weather, water and climate induced risks and hazards.
  - i. Prepare a draft 5-year strategic plan of DHM
  - j. Conduct a workshop to receive inputs and feedback from DHM and stakeholders on issues identified from the reviewed documents and analysis carried out thereafter along with the strategic planning.
  - k. Incorporate the comments/inputs/feedback received during the workshop and finalize the organizational structure along with organogram and job descriptions.
  - l. Finalize) the draft 5-year strategic plan of DHM

While reviewing/studying documents and preparing recommendations, the consulting firm shall work in close collaboration with DHM including PMU and SI and with other stakeholder

organizations and also with the consulting firm working on Legal and Regulatory framework of DHM to draft the institutional framework and staff planning for DHM and the preparation of strategic planning.

The consulting firm shall use international and country-based experience in preparing the institutional framework considering reports prepared by SI, the present DHM structure and the legal aspects governing the institutions.

The scope of work of the consultanting firm includes the following tasks:

**Task 1.1** Review of existing institutional framework and working procedure as well as delegation of duties and responsibilities and the assigned job description of the staff. Also review and analysis of the existing administrative governance modality.

**Task 1.2** Review of the recruitment process, promotion modalities, staff adequacy and the departmental resources.

**Task 1.3** Review of the organizational structure of National Hydrological and Meteorological Services (NMHSs) in other countries as appropriate including their cost-recovery models.

**Task 1.4** Assessment of the need of various divisions/section/units within the Department and also the need of regional/districts/basin and field offices and at local level.

Also assess the number of staff required in each divisions/section/units and regional/district/basin offices/centers and also provide the additional number of staff required after modernization for the sustainability of the new system and services.

**Task 1.5** In coordination with DHM and other relevant agencies, organize series of consultations to get feedback for the preparation of the draft institutional framework and strategic planning.

**Task 1.6** Prepare a draft report covering the scope of work described above which includes the organization structure and the organogram of DHM along with duties and responsibility of each division/section and basin offices and the job description of the staff in a Nepal government accepted format. Also draft recommendation on the governance modality in the context of cost-recovery models as well.

**Task 1.7** Finalize and submit draft 5-year strategic plan

## **5. Consultant's Qualification and Experience**

- At least 5 Years of experience in providing strategy development consulting services.
- At least 3 years of specific experience in providing consulting services in the area of Institutional development, HR planning and O&M services.

- Ability to interface with the Government officials, relevant research centers, and other stakeholders working with groups on hydromet field, climate/water induced disasters and climate information for improved disasters and climate risk management;

## **6. Staffing Requirements**

### **Key professionals:**

- a. Institutional/Organizational and Management Expert- National- Team Leader (3 man month)
- b. Strategic Planner-1 (1.5 man month)
- c. Hydrology Expert- 1 (0.5 man month)
- d. Meteorology Expert - 1 (0.5 man month)
- e. ICT Expert- 1 (0.5 man month)

## **7. Minimum and preferred Qualification & Experience**

### **I. Institutional/Organizational Management Expert (Team Leader):**

- Minimum of Master's Degree in Personnel Administration, Management and/or Business Administration: Ph. D preferred.

Additional degree on Environmental Law/ Water Law/Hydrology/Meteorology will be an advantage.

- Proven professional experiences on organizational management.
- At least 10 years of experience on professional practice in organizational management, organizational research and review.
- Excellent communication skills; and excellent knowledge of English language (both spoken and written).

### **II. Strategic Planner:**

- Minimum Master's degree in related subject; Ph. D preferred;
- At least 10 years of experience in related field with 5 years in strategic planning;
- Excellent communication skills; and excellent knowledge of English language (both spoken and written).

### **III. Hydrology Expert:**

- Minimum Master's degree in civil/water resources/ hydrology;
- At least f 10 years' experience in related field.
- Excellent communication skills; and excellent knowledge of English language (both spoken and written).

### **IV. Meteorology Expert:**

- Minimum Master's degree in meteorology/atmospheric science;



- At least 10 years' experience in related field.
- Excellent communication skills; and excellent knowledge of English language (both spoken and written).

**V. ICT Expert**

- Minimum of Bachelor's Degree in Electronics & Communication and/or Computer or related field. Masters degree preferred.
- At least 5 years of experience in ICT sector.
- Excellent knowledge in written and spoken English.

**VI. Research Assistant**

- Minimum of Bachelor's Degree in law, environment law, management and or related field.
- At least 5 years of experience in research and report writing.
- Excellent knowledge in written and spoken English.

**8. Deliverables**

1. A comprehensive report on Institutional Framework for DHM in English and Nepali both along with proposed organization structure and organogram defining the role and responsibility of each division/section/units of the department and offices at local level. The report will include specific recommendations on the administrative governance modality. It should be clearly organized in different chapters with each Chapter reflected key tasks identified in the scope of work. A table of contents should be shared with DHM at the beginning of the consultancy.
2. Organization Structure with Position classification and Job Description of all the staff in the Government of Nepal accepted format including recommendations for technical staffing changes to address modernization needs . This can be included as an Annex of the Main report indicated in point 1 above.
3. Draft 5-year Strategic plan of DHM

**9. Client's Input to the Consultant**

At the request of the Consultant, the DHM shall provide the following:

- Project briefing.
- Description of current organizational structure and financial system of DHM, available legal and regulatory documents.
- Project Appraisal Report (PAD), results of missions and other World Bank materials, related to preparation and implementation of the Project;

- Facilitate meetings with other relevant departments, and private sector relevant to DHM services.

## **10. Performance and Reporting Requirement:**

The Consultant shall,-

- a. Submit **Inception Report** to set out analytical framework and methodology for undertaking the consultancy work within 3 weeks from the date of signing the contract.
- b. Submit a **First draft report** of DHM Institutional framework consisting functions and responsibilities of all divisions, sections, units and its all Local offices with a Job responsibilities of each positions within 2 months from the date of signing the contract..
- d. **Second draft report** incorporating all the comments and feedbacks from the stakeholders within 3 months from the date of signing the contract including the Draft 5-year Strategic plan of DHM e.**Final draft** of the organization structure and organogram along with proposed increases in staffing job descriptions in English and Nepali as per deliverable mentioned above in clause 9, within 4 months from the date of signing the contract.
- f. Submit Ten hard copies (5 in English and 5 in Nepali) and one electronic copy of all the reports.

## **11. Time-frame and payment modality:**

**Timeframe:** Total duration of the project is 4 months.

### **Payment Modality:**

- The consulting firm shall be paid 20% of the total amount after submission and acceptance of inception report.
- 25% shall be paid after submission of draft document of review report and first draft institutional framework.
- 25% shall be paid after consultations and submission of second draft report and revised organogram document.
- Remaining 30% shall be paid after submission and acceptance of all final deliverables.

The Consulting firm shall be responsible for all taxes and duties including income tax applicable as per the Rules of Government of Nepal.

## **12. Consultant's Selection Method**

The consultant shall be selected on the basis of CQS (cost and quality) and consistent with

the World Bank's Consultant Selection Guideline, 2011, and on the basis of required qualifications and related experiences.