Ministry of Population and Environment (MoPE)
Department of Hydrology and Meteorology (DHM)

Community Based Flood and Glacial Lake Outburst Risk Reduction Project CFGORRP

Terms of Reference

To develop a handbook on "Imja Lake GLOF Risk Management".

1. Background

Community Based Flood and Glacial Lake Outburst Risk Reduction Project (CFGORRP) is a joint undertaking of the Government of Nepal (GoN), Global Environment Facility (GEF) and the United Nations Development Programme (UNDP). The project is being implemented by the Department of Hydrology and Meteorology (DHM) under the Ministry of Population and Environment (MoPE) as the lead Implementing Agency. Department of Water Induced Disaster Management (DWIDM), Department of Soil Conservation and Watershed Management (DSCWM) and Department of National Park and Wildlife Conservation (DNPWC) are the three collaborating partners of the project.

The CFGORRP/DHM has two outcomes: The First Outcome / Component I focusses on the Imja Glacial Lake Outburst Flood (GLOF) risk reduction in Solukhumbu (covering Chaurikharka, Namche, Juving and Khumjung VDCs including high risk settlements covering an area of 50 downstream of Imja lake) and the Second Outcome / Component II is aimed at reducing the flood risk in Terai and Churia covering 8 Village Development Committees (VDCs) namely Sarpallo and Nainhi in Ratu (in Mahottari district), Tulsipur and Pipra Pra Pi in Gagan (in Siraha district), Dighawa and Pakari in Khando (in Saptari district) and Hadiya and Jogidaha in Triyuga Watersheds (in Udayapur district). The project has thus a total of 8 VDCs coverage in Terai districts for flash flood and 3 in High Mountain (i.e. Solukhumbu) district for GLOF risk management thus totaling to 11 VDCs.

The two outcomes of project have eight main outputs i.e. four outputs under each outcome.

Imja Lake is considered as one of the rapidly growing lake located at Sagarmatha National Park. For the GLOF risk reduction of the Imja Lake, the project is implemented since 2013. The priority task under component I was Imja Lake lowering work. From the early of 2014, the project initiated to undertake studies for GLOF risk reduction of Imja Lake. Baseline and detail technical studies were undertaken to assess the areas where the design needs to focus for Imja Lake lowering; to take hydrological and meteorological measurements at Imja Lake; conduct vulnerability assessment of potential GLOF in the downstream valley; explore suitable early warning systems; carry out GLOF hazard zonation and safety evacuation plans etc. Based on these studies, the design for Imja Lake was prepared and approved. Based on the design, the lake level has been reduced by 3.4 m recently as per the design for reducing GLOF hazard level. Furthermore, the lake is being monitored by hydrological and meteorological stations, early warning systems (automated and community based) operationalized in the Lake and its periphery. GLOF risk management knowledge and skills institutionalized at local level through operationalization of Taskforces and Local Resource Persons.

The Project intends to compile and document all the Imja related activities under the component I and produce as Imja GLOF risk management handbook. The very first cut draft of table of content and materials will be provided by the project for synthesizing the document into basically four thematic areas, Imja Lake and its development, design and construction for lake lowering, early warning systems and institutionalization of GLOF risk management.

2. Objective

The main objective of this assignment is to document the outcomes of the results undertaken under component I to develop into a concise "Imja Lake GLOF Risk Management Handbook" that would become a key knowledge product for sharing and replication at national and international level.

3. Scope of Works

The scope of works includes inter-alia, but not limited to the following:

- Review all the report and documents under component one to summarize and synthesize achievements under each output.
- Prepare an inception report with clear methodology, outline of the work plan and standard table of content (ToC).
- Review previous and ongoing lake mitigation works in Nepal and in other countries to touch base on our current standings such as Tsho Rolpa – both Lake Lowering and CBEWS.
- Based on the available information, finalize a ToC which shall integrate four outputs. The handbook shall develop Imja Lake lowering as a case study.
- The ToC shall also include among others the institutional mechanism, sustainability aspects, capacity building needs and key lessons learned from the Imja Lake lowering works including steps and process to be followed in a World Heritage Site (WHS).
- Review design, drawing, information on Imja Lake lowering work and obtain necessary information on features, structures (natural and man-made) to incorporate into handbook.
- Organize consultation meetings with key stakeholders DHM, DNPWC, SNP, NA, UNDP, locals (telephonic conversations) and other personals involved in project activities related to component I for capturing different aspects of project implementation particularly focusing on strength and weakness, opportunity and threat, lessons learned etc. and document as appropriate.
- Based on the literature reviews, consultations and interactions for gathering information, develop a draft handbook and submit it to project team review for comments and inputs.
- Finalize the document after incorporating comments/feedbacks to give a final shape.
- Submit a final copy of the Imja GLOF Risk Management Handbook, including soft copy of the document.

4. Duration of the Assignment:

The duration of this assignment is of 8 weeks and the tentative timeline as:

Timeline	Activities
2 weeks	Soliciting technical and financial proposal from service providers/consultants
1 week	Review proposal and selection of service providers/consultants
1 week	Contract agreement with service provider/consultant
2 weeks	Submit a copy of inception report with working methodology, time schedule for delivery of output
4 weeks	Submit a copy of draft report for review and inputs
2 weeks	Submit a copy of final report after incorporating all comments and feedback received from the CFGORRP/DHM

5. Guidance and Supervision

The service provider/consultant will work under the overall guidance and supervision of National Project Director (NPD) and National Project Manager (NPM) and in close consultation with Senior Technical Advisor (STA) and Monitoring and Evaluation Officer (MEO).

6. Required Human Resources, Qualification and Experiences

Following human resources are required for the assignment:

Human Resource	Qualification and Experience	Remarks
Glacial Lake/ Environmental Expert	A Master's degree in Glaciology, Geology, Geomorphology, Environmental Science or Environmental Engineering with relevant professional working experiences of at least 5 years. Preferences will be given to those who have experience in Glacial Lake studies, disaster risk reduction and climate change adaptation works. The service provider/consultant must have analytical and a very good report writing skills in English.	The consultant must have adequate knowledge and understanding in GLOF, disaster risk reduction and climate change adaption.

7. Deliverables

The contract will be deliverable-based and payment will be made after submission of the followings:

- Inception report with clear work plan and timeline.
- Draft of Imja GLOF Risk Management Handbook.
- Final Imja GLOF Risk Management Handbook.

Deliverable Table

Deliverables	Timeline	Payment	Remarks
Submit a copy of inception report with work plan and timeline for delivery of output	Within 2 weeks after contract signing.	30% of the contract amount.	
Submit a copy of draft report for review and inputs	Within 6 weeks	40% of the contract amount.	
Submit a copy of final report after incorporating all comments and feedback received from the CFGORRP/DHM	Within 8 weeks	30% of the contract amount	Submit report in soft copy.

8. Mode of Payment

The service provider/consultant shall be paid in three installments upon receipt of request:

- First Installment: 30 % of contract amount will be provided upon presentation and acceptance of inception report with tax invoice,
- Second Installment: 40 % of contract amount will be provided upon submission and acceptance of draft handbook with tax invoice,
- Final Installment: 30 % of contract amount will be provided upon acceptance of final handbook with tax invoice.

9. Documents Required:

Following documents are required:

- Technical proposal illustrating the work plan and timeline and financial proposal in separate sealed envelope.
- Copy of company registration (not applicable for individual)
- Copy of VAT registration certificates with recent tax clearance
- Organizational profile (if individual - Curriculum Vitae required)