

**Ministry of Population and Environment (MoPE)**  
**Department of Hydrology and Meteorology (DHM)**  
**Community Based Flood and Glacial Lake Outburst Risk Reduction Project**  
**CFGORRP/DHM**

**Terms of Reference**

**To develop a Standard Operating Procedures (SOPs) on Community Based Early Warning System (CBEWS) for sharing and dissemination to Local stakeholders and to document the experiences and lesson learnt on flood 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 focuses on the Imja Glacial Lake Outburst Flood (GLOF) risk reduction in Solukhumbu (covering Chaurikharka, Namche 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 four outputs under Component II, (a) Sediment control and stabilization of hazard-prone slopes & river banks through structural and non-structural mechanisms; (b) Flood Proofing of Water and Sanitation Systems in Selected VDCs in Target River Basins; (c) Institutionalization of flood risk management skills and knowledge; (d) Flood preparedness training for district and VDC representatives, NGOs, CBOs and local communities in 4 flood-prone districts.

CFGORRP/DHM has established community based flood Early Warning System (EWS) in the targeted five river systems: Ratu, Gagan, Khando, Hadiya and Kong. Local volunteer Gauge Readers have been trained and mobilized as focal points for the regular use and maintenance of EWS including recording of the rain gauge stations and flood gauge. Likewise, Early Warning

Task Forces have been formed at community level have been trained and equipped with First Aid (FA) and Light Search and Rescue (LSAR) equipment. The task forces have undergone Mock-drill simulation exercises on the four core components of EWS: (a) Risk Knowledge, (b) Monitoring of flood hazard, (c) Warning communication, and (d) Response Capability.

The project has also supported flood vulnerable community with structural and non-structural measures to reduce flood risk. Embankments, Elevated Tube wells, Flood Proofing Drainage System (FPDS), Sediment Trap structures, Evacuation shelters are some of the structural measures supported to the community whereas early warning system, rain gauge stations, flood gauge posts, bridge pier calibration, siren, megaphone, LSAR equipment, Mock-drill, street drama, flood jingles broadcasted from FM radios comprise of the non-structural measures.

Embankments stretch of 12 km, 35 elevated tube wells, 7 km of flood proofing drainage system, 11 sediment trap structures upstream of Ratu River, 3 evacuation shelters are some physical structures constructed to reduce risk form flash floods. Like support towards generating awareness and building institutional capacity of local communities on early warning system 13 rain gauge stations, 8 flood gauge posts, 4 bridge pier calibration, 23 sets of siren, megaphone, LSAR equipment, 40 events of Mock-drill, 30 events of street drama and flood jingles from 6 FM radios have been broadcasted.

Based on the implementation of the above initiatives, CFGORRP/DHM now intends to hire a service provider/consultant to develop a Standard Operating Procedure (SOP) on Early Warning System and document project's experiences on flood risk management and mitigation measures adopted.

## **2. Objective of the Assignment**

The main objective of the assignment is to develop a SOP on CBEWS and to document project's best practices and lessons on flood risk management and mitigation.

### **Specific objectives include:**

- To develop a Standard Operating Procedure (SOP) on community based flood early warning system (CBEWS) in the form of a brochure/flyer to be shared and handed over to key project stakeholders as products (District -specially District Emergency Operation Centre, VDC and community level) for each five river systems.
- Based on the SOP, develop a poster depicting the flow of communication (network) for five river systems.
- Document project's best practice, experiences and lesson learnt from flood risk management and mitigation measures.

## **3. Scope of Works**

The scope of works include inter-alia, but not limited to the followings:

- Undertake desk review of the project document and annual progress reports of project interventions from CFGORRP/DHM including relevant materials from other organizations working in the field of EWS and DRR.
- Collect information related to the process, methodology, integrated approaches adopted by the project while undertaking structural and non-structural measures to reduce potential flood risk in the targeted working areas.
- Undertake field visit to collect and document project interventions at targeted geographical area for community based early warning system and institutional mechanism formed at the local level such as: local volunteer gauge readers, rain gauge stations, flood gauge stations, early warning task forces, CDMCs and LDRMCs.
- Undertake consultative meetings with District Emergency Operation Centre and project beneficiaries on the functionality and effectiveness of the structural and non-structural measure in order to draw information related to best practices and lessons on flood risk management.
- Based on the field visit develop a draft SOP on CBEWS including a poster to depict the mechanism and information flow.
- Organize a meeting at the local level (participants DHM/ or basin office, DDRC members /DEOC, LDRMC/CDMC, EWS Task force and other relevant) to share the preliminary findings of the products to solicit inputs.
- Finalize the products based on the inputs received.
- Submit the SOP on CBEWS (applicable for 4 districts contexts), communication flow Poster and best practice Report on flood preparation and mitigation.

#### **4. Target Stakeholders**

The main stakeholders include: members of Task Forces (First Aid, Light Search and Rescue, Flood Early Warning system), Community Disaster Management Committee (CDMCs), Local Disaster Risk Management Committee (LDRMCs), User Committees of construction works, Volunteer Gauge Readers, and local communities. District Development Committee (DDCs), Local VDCs, District Disaster Risk Management Committee (DDRMC), Nepal Red Cross Society (NRCS), DHM basin office / Gauge readers, Nepal Police and Nepal Army are the key stakeholders at the District level.

#### **5. Field Coverage**

Beneficiaries of target VDCs: Sarpallo, Nainhi, Bardibas of Mahottari district; Tulsi of Dhanusha; Tulsipur and Pipra Pra.Pi. of Siraha district; Dighwa and Pakari of Saptari district; and Hadiya and Jogidaha of Udayapur districts.

Target Rivers: The upstream, mid-stream and downstream flow study of the rivers: Ratu (Mahottari), Gagan (Siraha), Khando (Saptari) and Hadiya and Kong (Udaypur) are the target rivers to be taken during the study.

## 6. Duration of the Assignment

The duration of this assignment is of one month including field visit and report preparation 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
1 week	Submit a copy of inception report with working methodology, time schedule for delivery of output
2 weeks	Submit a copy of draft report for review and inputs
1 week	Submit a copy of final report after incorporating all comments and feedback received from the CFGORRP/DHM

## 7. Guidance and Supervision

The service provider/consultant will work under the overall guidance and supervision of National Project Director (NPD) and National Project Manager at PMU, the service provider/consultant will work in close consultation and coordination with District Project Coordinator, Field Coordination Office (FCO) Lahan, Monitoring & Evaluation Officer and District Project Officers.

## 8. Required Human Resources, Qualification and Experiences

Following human resources are required for the assignment.

Human Resource	Qualification and Experiences	Remarks
Disaster Risk Management Expert	A Master's degree in Disaster Risk Management, Water Resource Management, Sociology, Rural Development or a relevant discipline with at least 5 years of working experience in the areas of Flood Risk Management/DRR in Nepal.	The consultant must have adequate knowledge and understanding in flood early warning system and Flood risk management of Churia originating rivers with excellent report writing skills.

## 9. Deliverables

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

- Submission of inception report with clear work plan and timeline,
- Submission of draft on Standard Operating Procedures (SOPs) on Community Based Early Warning System (CBEWS) for sharing and dissemination to Local stakeholders and to document the experiences and lesson learnt on flood risk management,
- Submission of final report.

### Deliverable Table

<b>Deliverables</b>	<b>Timeline</b>	<b>Payment</b>	<b>Remarks</b>
Submit a copy of inception report with work plan and timeline for delivery of output.	Within 1 week after contract signing.	30% of the contract amount.	
Submit a copy of draft report for review and inputs.	Within 3 weeks.	40% of the contract amount.	
Submit a copy of final report after incorporating all comments and feedback received from the CFGORRP/DHM.	Within 4 weeks.	30% of the contract amount.	Submit report in soft copy.

### 10. Mode of Payment

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

- First Installment: 30% of the contract amount shall be paid upon signing of the contract and submission of inception report with tax invoice.
- Second Installment: 40% of contract amount shall be paid upon submission and acceptance of draft report with tax invoice.
- Third/Final Installment: 30% of the contract amount shall be paid upon submission and acceptance of final report with tax invoice.

### 11. Documents Required:

Following documents are required

- Technical proposal illustrating the technical parts of EWS SOP, 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)