

GGGI Insight Brief: Nepal

# Establishing and Operationalizing a Local Emergency Operation Center: Early Experiences from Madhesh Province

December 2023



Ministry of Health  
Ministry of Energy, Water Resources and Irrigation  
Department of Hydrology and Meteorology  
Flood Forecasting Center

NAVY ALL SWITCH CURRENT FORECAST FLOOD HAZARD MAP COMMUNITY OUTREACH PROJECTS PUBLICATIONS

Last updated on Mon, Jun 5, 2023 10:32 AM

Sl. No.	Station Name	Station Type	Province Name	District	Water Level (m)	Warning Level (m)	Danger Level (m)	Trend	Status	o/m/t/y
1	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
2	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
3	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
4	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
5	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
6	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
7	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
8	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
9	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
10	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
11	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
12	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
13	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
14	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	
15	...	...	...	...	...	...	...	STEADY	BELOW WARNING LEVEL	



# CONTENTS

<i>Executive Summary</i>	1
<b>1</b>	
Background and Introduction	2
<b>2</b>	
LEOCs Face Practical Challenges	5
<b>3</b>	
Institutionalizing LEOC: Steps Taken by GGGI	6
<b>4</b>	
Recommendations	9
<b>5</b>	
Conclusions	9
<i>Annexes</i>	10

# contents

# EXECUTIVE SUMMARY

The Constitution of Nepal 2015 and the Disaster Risk Reduction and Management (DRRM) Act 2017 place the responsibilities for disaster risk reduction and management with local governments (municipalities). The DRRM Act mandates each local government to establish and operationalize a Local Emergency Operation Center (LEOC), tasked with collecting, validating, and disseminating information related to hazards, risks, vulnerabilities, and disaster updates. However, only a few municipalities have established LEOCs in Nepal, of which the majority are in the nascent stage. Since municipalities lack the necessary equipment, personnel, and budget, the mere establishment of LEOC units does not necessarily guarantee additional support in disaster management. This insight brief provides information, guidelines, learnings, and recommendations for LEOC establishment and operationalization based on GGGI's experiences in Madhesh Province, Nepal. It also provides instructions on conducting Disaster Risk Management Capacity Assessments of municipalities along with required resources for LEOC operation, helping risk informed decision-making for emergency interventions and setting disaster preparedness and response priorities.

# 1. Background and Introduction

---

Nepal is highly vulnerable to natural disasters. Studies and reports have repeatedly confirmed Nepal's status as the 20th most hazard-prone country globally, ranking 11th in terms of earthquake risk, 30th in terms of risks related to water-induced hazards, and falling in the high-risk category for the impacts of climate change. The country faces recurring hazards such as floods, landslides, fires, epidemics, avalanches, hailstorms, cold waves, and heat waves. Earthquakes, although less frequent, also constitute a serious threat.

## Box 1:

The Sendai Framework for Disaster Risk Reduction (SFDRR) is the first major agreement of the Post-2015 Development Agenda following the conclusion of the Millennium Development Goals in 2015. The Post-2015 Development Agenda, encapsulated in the Sustainable Development Goals (SDGs), is a worldwide initiative with a holistic approach to address interconnected issues such as poverty, hunger, health, education, and environmental sustainability. The United Nations adopted this agenda with the goal of achieving these objectives by 2030. The SFDRR focuses on reducing disaster risk and provides member states with concrete actions to protect development gains from the risk of disaster. In accordance with the SFDRR, Nepal has produced the National Policy for Disaster Risk Reduction 2018 which is supported by the National Strategic Action Plan for Disaster Risk Reduction, 2018-2030.

Nepal is a signatory to the Sendai Framework for Disaster Risk Reduction (SFDRR), a globally accepted document in disaster risk management. Among the four outlined priorities, priorities two and four specifically emphasize the importance of strengthening disaster risk governance to integrate risk reduction and management across all sectors and levels. Additionally, they underscore the enhancement of emergency preparedness to respond to and recover from disasters, with a particular focus on implementing the 'Build Back Better' concept.

In line with priority two, effective disaster risk governance plays a critical role in reducing disaster risk and enhancing resilience at the local level. Furthermore, among the seven development goals set forth in the SFDRR, goal four aims to significantly reduce damage to critical infrastructure, prevent disruptions to essential services, including health and education facilities, and enhance their resilience. Goal seven seeks a substantial increase in the availability and accessibility of multi-hazard early warning systems and disaster risk information and assessments for the population by 2030.

In alignment with these global objectives and guided by the DRRM Act 2017, the Local Government Operation Act 2017, and the National Climate Change Policy 2019, Nepal's local governments, in collaboration with federal and provincial authorities, are tasked with formulating strategic plans to mainstream disaster risk management at the local level and strengthen the resilience of vulnerable communities.

The establishment of Local Emergency Operation Centers (LEOC) represents a significant milestone in addressing the priorities and goals outlined in the SFDRR. These centers are expected to be instrumental in

supporting risk-informed decision-making by local governments and safeguarding the lives and assets of the people. The Emergency Operations Centre (EOC) are intended to serve as the hub for gathering, evaluating, displaying, and coordinating all activities related to disaster management. Essentially, the EOCs play a crucial role during times of disasters. In accordance with the country’s federal structure, the EOC has undergone a restructuring of its functions and operational areas, spanning from the highest to the lowest levels. Nepal now operates four tiers of EOCs: the National Emergency Operation Centre (NEOC); the Provincial Emergency Operation Centre (PEOC); the District Emergency Operation Centre (DEOC); and the Local Emergency Operation Centre (LEOC) (See Figure 1).

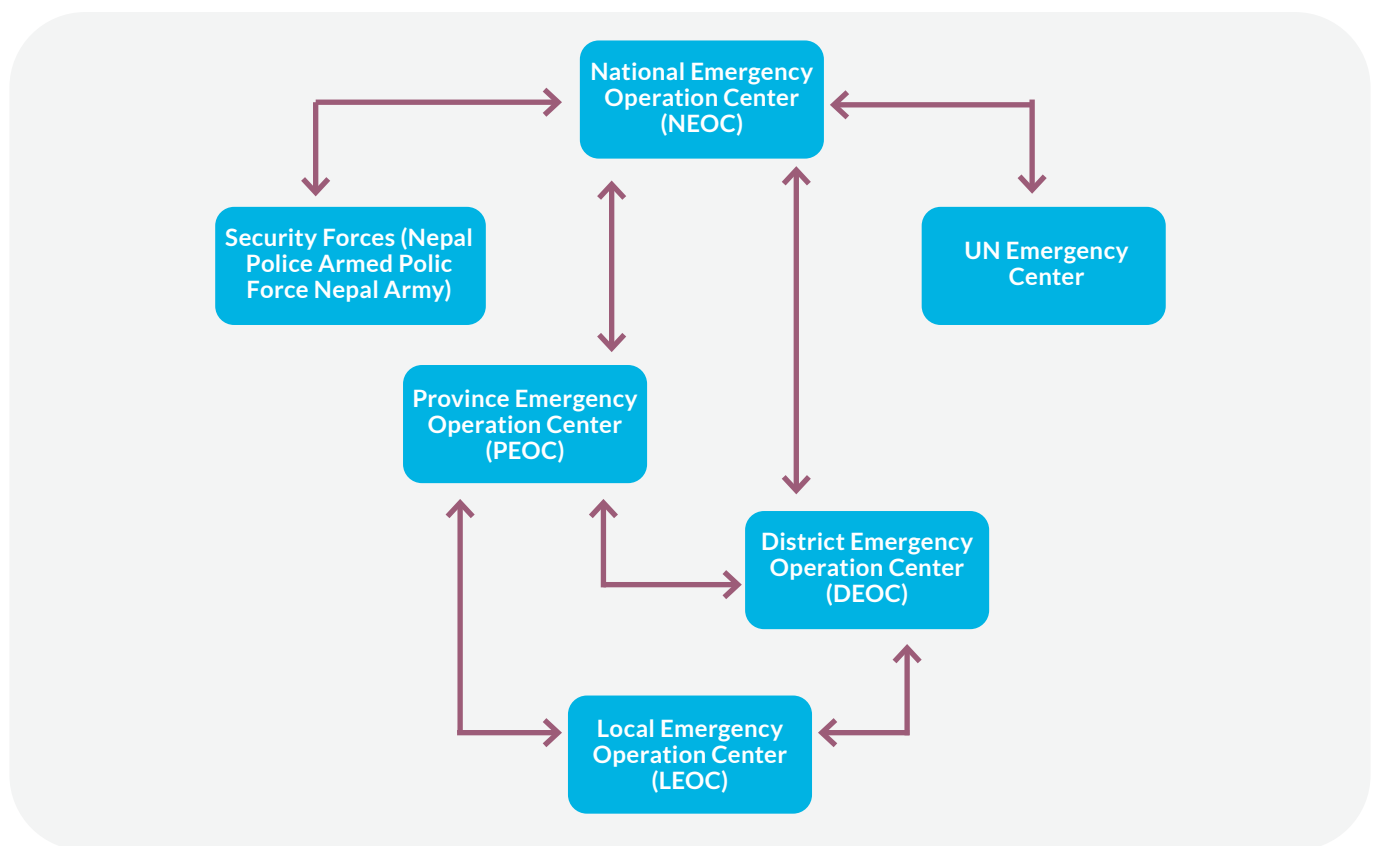


Figure 1. Structure of EOCs, Ministry of Home Affairs, 2019.

The LEOC, along with its system and procedures, is designed to facilitate the swift collection, assessment, and relay of information to the relevant local authorities, development agencies, and stakeholders for appropriate actions. This rapid dissemination of information contributes significantly to expeditious responses and effective decision-making during emergency situations. Serving as the central point for coordinating and controlling all disaster response efforts, the LEOC operates under a unified command structure. Additionally, the LEOC has the mandate to act as the primary focal point for accessing, documenting, and disseminating validated disaster-related data and information at the local level.

The purpose of the LEOC is to serve as the single focal point and command centre for the management of information, decision-making, and resource support and allocation during an emergency and recovery process at the local level. The primary functions of the LEOC are to:

- Provide the Local Disaster Management Committee (LDMC) with necessary data, information and updates prior, during, and after a disaster event for risk informed decisions and taking necessary actions in disaster preparedness, response and recovery.

- Coordinate with the federal, provincial, and district Emergency Centers for early warnings and proper disaster information management system (DIMS).
- Function as a focal point for all the humanitarian support in the municipality and coordinate with the government and development agencies for integrated disaster preparedness and response.
- Identify the disaster vulnerable areas and population within the municipality and engage the vulnerable communities in disaster preparedness and response activities and plans.
- Prepare plans, policies, activities for localizing DRRM at the local level and project the annual budget and resources needed for it.
- Manage the disaster information management system at the local level, localize and regularly update BIPAD portal and share and archive necessary information, data, reports, documents etc. related to DRRM at the local level.
- Ensure that DRRM interventions at the municipality level are socially inclusive, disabled friendly, promote gender equality, and address the need of the vulnerable groups like women, children, elderly etc.

### Box 2: Legal framework for LEOC

The DRRM Act of 2017 envisioned LEOC as a mandatory task for smooth execution of DRRM provision. The DRRM Act of 2017 has mandated that each local government must establish and operate a LEOC and develop an effective Disaster Information Management System (DIMS) in each local government administration. Hence, to fulfil these requirements, all local governments are in the process of establishing LEOCs.



**Image 1.** The Focal Person of Provincial Emergency Operation Center (PEOC) sharing the risk communication channel with the municipality officials during the PEOC-DEOC-LEOC networking and coordination meeting under CSA project.

## 2. LEOCs Face Practical Challenges

---

All local governments have not been able to establish LEOCs. In an effort to align the DRRM Act with practical on-the-ground execution, GGGI, with collaboration from the Korea International Cooperation Agency (KOICA), is implementing a project for Climate Smart Agriculture (CSA) in the Madhesh Province. The project specifically aims to build capacity of local government in establishing and operationalizing LEOC; effectively carrying out assessment and information management of hazards, risks, and vulnerabilities; and managing agricultural climate risks to reduce losses. During project implementation, GGGI identified the following key challenges that have been limiting the establishment and operationalization of LEOCs.

- i. **Inadequate Policy Framework at the Municipality Level:** Most of the project municipalities do not have local acts and standard operation procedures that are prerequisite for establishing LEOCs. In addition, most of the municipalities do not allocate a dedicated budget for LEOC. The municipality should prepare a local DRRM Act, endorse the necessary plans and policies and provide a budget code for the LEOC regular operation.
- ii. **Inadequate Office Space and Human Resources:** Most of the municipalities have very limited office spaces to carry out their regular office work. Some of the municipalities have scattered offices and sections to deliver their services. Furthermore, most of the municipalities are currently understaffed and the municipalities do not have adequate financial resources. The available human resources do not have adequate knowledge and skills to operate the LEOC. The municipality should at least begin with allocating a desk for LEOC and appointing an officer (IT or agriculture) as LEOC focal person and initiate LEOC operations. The municipality should include the capacity-building and LEOC-upgrading plan in its yearly budget.
- iii. **Financial Constraints:** The DRRM is not prioritized compared to other physical activities like roads, bridges, culverts etc. Comparatively less budget is allocated for DRRM and the major share of that budget is for relief support. Although allocating a budget for DRRM including LEOC establishment is prescribed in the government guidelines and the Local Government Institutional Capacity Self-Assessment (LISA), none of the project municipalities had allocated budget for LEOC establishment.
- iv. **Infrastructure, systems, and practices for multi hazard early warning systems** are seldom in place and the LEOC are supposed to be activated during the monsoon when floods and landslides create very high risks. This hinders upgrading and institutionalizing the LEOCs. The scope of LEOC should be shifted from being focused only on the monsoon period to multi hazards, risks, and vulnerabilities for the entire year. The LEOC should plan simulation exercises, awareness campaigns, preparedness and anticipator actions for multi hazards. The LEOC should be able to engage communities in disaster preparedness and response activities.
- v. While LEOC establishment at local level is prioritized by the government and several development agencies are supporting the local governments, a gap exists in terms of sharing plans and progress among the development agencies. There are also cases of overlapping resources. It would be preferable if local governments would share their plans and progress with concerned agencies and stakeholders as well as with the central agencies responsible for institutionalizing the LEOCs. LEOC should have an updated list of the LEOCs established and their capacity status.
- vi. And, finally, Gender, Disability and Social Inclusion (GEDSI) focused DRR planning, resource allocation, and implementation is not well adopted at the local level. The DRRM interventions, early warnings, preparedness and response plans etc. are often unable to address the specific needs of the vulnerable groups (women, children, elderly, socially marginalized, and disabled). The local governments should prepare DRRM plans, policies, and SoP addressing those needs.



# 3. Institutionalizing LEOC: Steps Taken by GGGI



Figure 2 – Key steps in institutionalization of LEOC

## 1. Capacity and Needs Assessment

As the first step, GGGI evaluated the municipalities' needs and capacity (Annex 1) to evaluate the status of the DRRM acts, policies, and frameworks at the local level. The capacity and needs assessment helped identify gaps in policy frameworks that provide a legal status to the LEOC. The assessment also examined the state of the physical infrastructure, which includes office spaces, furniture, communication equipment (such as phones, radio sets, computers, printers, and smart televisions, sirens, and megaphones), emergency response equipment (such as lifejackets, ropes, safety helmets, and fire extinguishers) and dedicated human resources such as an LEOC chief, IT officer, administrative assistant, and local/municipal polices. For the successful establishment and operationalization of LEOCs, robust policy frameworks, adequate human resources, and essential physical resources are imperative. Thus, the assessments carried out in conjunction with the municipalities assisted GGGI in identifying gaps and making appropriate plans for the establishment of LEOCs.

- GGGI carried out capacity and need assessments for ten project municipalities based on policies and frameworks for mainstreaming DRRM at the local level, and
- GGGI prepared vulnerability and risk maps for ten project municipalities for informed decision making.

## 2. Preparation of LEOC Standard Operating Procedures:

The Standard Operating Procedures (SoP) offers a set of guidelines and a legal framework for establishing and operationalizing the LEOC. The SoPs are endorsed by the Local Disaster Management Committee (LDMC) and published in the local gazette for their legal status and effective implementation. The SoPs are endorsed by the Local Disaster Management Committee (LDMC) for their effective implementation. A draft SoP (Annex 2) from the Ministry of Federal Affairs and General Administration serves as a roadmap for municipalities to prepare SoP for their LEOCs. None of the project municipalities had SoP and lacked the personnel with the necessary skills to draft one and GGGI offered technical assistance to all the project municipalities in the drafting of the SoP. GGGI is the first organization to include Gender, Disability and Social Inclusion (GEDSI) along with agricultural risk management in the SoP.

- GGGI supported ten project municipalities to formulate LEOC SoP, inclusive of GEDSI aspects and agricultural risk communication,
- GGGI finalized SoPs after a series of consultations with government agencies, stakeholders and communities.

### 3. Planning of Minimum Equipment and Human Resources for LEOC:

Due to physical and financial constraints of the municipalities, it is challenging to establish and operationalize a full-fledged LEOC during the initial phase. As noted in GGGI's capacity and needs assessment results, the majority of the municipalities are in rented office space which could hardly prioritize a dedicated space for LEOCs. Similarly, not all municipalities have hired municipal police, and there is a shortage of human resources in the municipalities. The municipalities also need to comply with strict procedures for owning radio sets. Therefore, GGGI recommends that careful planning must be done in order to establish a LEOC with the best facilities possible and then gradually upgrade it in order to operationalize fully in accordance with the SoP.

- GGGI prepared a list of minimum office furnishing and equipment at the LEOC for operation.
- GGGI supported computer, printer, smart television, siren, megaphone, lifejackets, fire extinguishers, fire blanket, safety rings and safety helmets for LEOC operations.

### 4. Capacity Building of the Municipal Officials:

The municipality office bearers, such as mayors, deputy mayors, members of municipal board etc., must be aware of the legal frameworks and the significance for establishing and operationalizing LEOC. Similarly, all municipal employees, such as chief administrative officers, planning officers, agriculture officers, IT officers, and DRR focal points, should receive training on the SOP of the LEOC. GGGI conducted multiple orientation sessions for municipal officials to enhance their knowledge and understanding regarding LEOC. GGGI provided trainings to staff to give them the knowledge and skills necessary for accessing, validating and disseminating early warnings, disaster information management system and procedures, and the forms and formats to be used for communication and documentation etc. The municipality should have a proper human resource plan to engage staff for leading and supporting the LEOC and establish linkages with development agencies.

- GGGI organized capacity building trainings for municipal officials for operationalizing LEOC and risk communication

### 5. Networking, Coordination and Monitoring:

The LEOC is responsible for the planning, documentation, reporting, and monitoring of DRRM related activities at municipal level. However, the LEOC should be linked to the Provincial Emergency Operation Center (PEOC) and District Emergency Operation Center (DEOC) for official communication and operation. GGGI facilitated meetings and workshops to strengthen the linkages and networking among the PEOC-

DEOC and LEOC for effective risk communication and disaster information management system. For the same reason, the LEOC should develop its network with other government agencies (agriculture knowledge center, health offices, schools etc.), Nepal Red Cross Society, Department of Hydrology and Meteorology (DHM), National Disaster Risk Reduction and Management Authority (NDRRMA), security forces, communities, farmers, community based organization. The LEOC should also monitor the disaster related program and activities in the municipality and function as a secretariat for all the data and information related to the hazards, risks, vulnerabilities, impacts and losses.



**Image 2.** Officials from Mithila Bihari municipality, District Coordination Committee Dhanusha, GGGI and KOICA during the LEOC Inauguration and Equipment Distribution Program at Mithila Bihari Municipality Office on 5th June 2023.

## 4. Recommendations

---

### 1. Office Space and Physical Resources

In case the municipality does not have a separate designated office space for an LEOC—an issue repeatedly noted by GGGI—a designated desk should be made available to carry out day to day functions. Similarly, even in the absence of a strict online portal, disseminating information and updates would be just as successful through networks such as an official Facebook page, WhatsApp group, or Twitter handle. With such basic steps, municipalities can gradually upgrade resources.

### 2. Trained Human Resources

If the municipality lacks sufficient personnel to operate the LEOC, those employees who currently hold the necessary credentials, expertise, and abilities may be assigned to this role. For instance, the municipality's IT officer could take on responsibility for DIMS and offer technical support to the LEOC as part of their expanded duties. Similarly, early warning systems and risk communication can be assigned to the agriculture officer. Nonetheless, the municipality needs to have a well-defined strategy for recruiting the necessary personnel for the LEOC.

### 3. Financial Resources

The municipality should provide a separate budget code for the establishment and operationalization of the LEOC and allocate an adequate budget of about NPR 1,000,000 initially. The budget could consider physical upgrading of the LEOC, training the human resources and carrying out necessary assessments, study, surveys etc. for disaster preparedness and response. Initially the municipality should also allocate the budget for localizing the Building Information Platform Against Disaster (BIPAD) portal. In addition, there are various development agencies such as USAID, UNDP, UNICEF, WFP, GGGI, Oxfam etc. that are providing technical and financial support to the municipalities for establishing and operationalizing LEOC. The municipality should strengthen partnership with the development agencies for generating additional resources for the LEOC.

## 5. Conclusions

---

The establishment and operationalization of LEOCs in Nepal is crucial to ensure disaster preparedness and response at the local level. Despite facing challenges such as inadequate policy frameworks, limited resources, and the need for trained personnel, the efforts made by organizations like GGGI in collaboration with local governments presents practical learnings and a way forward to expedite the process. Through careful planning, capacity building, and effective networking with relevant stakeholders, LEOCs can become indispensable hubs for coordinating disaster management efforts. Furthermore, partnership among governments and development partners should be strengthened for institutionalizing LEOC at the local level. Such partnership is crucial in achieving the national, regional, and international targets and commitments for DRRM like the SFDRR and SDGs. A functioning LEOC supports the municipality in better Disaster Risk Reduction and Management and reducing the losses of lives and properties due to different disaster events. Thus, LEOC can play significant role in climate resilience

# ANNEXES

---

Annex 1 - [Capacity Assessment Template](#)

Annex 2 - [Sample SOP](#)



The Global Green Growth Institute

19F Jeongdong Building, 21-15, Jeongdong-gil,  
Jung-gu, Seoul, Korea 04518

Follow our activities on Facebook, X, LinkedIn and YouTube.



[www.GGGI.org](http://www.GGGI.org)

