# POLICY BRIEF

July 2023

## *Inter-Provincial and Inter-Municipal Resource Pooling Mechanism for Disaster Risk Management in Nepal*


### Summary

A disaster is defined as a serious disruption of the functioning of a community or a society at any scale due to hazardous events resulting in human, material, economic and environmental losses. The effect of the disaster can be immediate and localized, but is often widespread, lasting over a long period of time. The disruption may put to test the capacity of a community or society to cope using its own resources, and therefore require assistance from external sources, which could include neighbouring jurisdictions, or those at the national or international levels (*UNDRR*, 2017). In the context of Nepal, pooling of resources for disaster response from neighboring provinces, municipalities and beyond can prove to be an effective way to cope against disasters. The sharing of resources among self-governed administrative bodies requires a robust and unambiguous framework articulating coordination mechanism, roles and responsibilities of stakeholders, protocol, resource and information management and legal provisions for resource pooling mechanism. This brief highlights the need for resource pooling in Nepal, drawing upon national and international case studies to identify key elements of resource pooling mechanism for disaster risk management.


### 1. Resource pooling for disaster management

In the context of disaster risk management, resource pooling can be defined as pooling of physical and virtual resources by two or more entities such as governments, communities, private sector, and development partners, to be better prepared to respond to and undertake response and relief measures to meet the needs of affected population. It is important, as disasters overwhelm the existing capacity of the local government, communities, private sectors, and other sectors of the affected areas. The capacity includes human resources, equipment, facilities, infrastructures, and procedures.

### 2. Significance of resource pooling for disaster risk management

***Maintaining disaster response inventory across sectors at local level is challenging***

A disaster not only impacts the existing capacity, which is primarily geared to cater to the needs of the population during the normal times, but also calls for additional resources to respond to the needs of the affected population. In 2015 Gorkha earthquake of Nepal, in Gorkha district, out of 78,074 houses, 65,168 houses were severely damaged or destroyed. The loss of houses required immediate provision of temporary shelter for 65,168 households and repair and reconstruction of 65,168 houses in due course (*National Planning Commission, 2015*). Although emergency needs must be met, it is often

extremely difficult to maintain inventory of temporary housing material at such a scale at the district level due to several reasons, including cost.

In August 2014, a rainfall-induced massive landslide hit Jure village of Sindhupalchowk district, Nepal killing 156 people (*Acharya et al., 2016*). The landslide extended 1.26 km from head to toe and was 0.81 km wide at the bottom. It destroyed land, houses, property, and other infrastructure along the failure surface and created a 55 m-high dam in the Sunkoshi River. The debris dam led to the formation of a lake, which inundated houses, farms, and a hydropower plant up to 3 km upstream from the base of the landslide. There was a high risk of an outburst flood, which necessitated the evacuation of settlements downstream. The Araniko Highway, Nepal's only road connectivity to China was severely damaged, with nation-wide repercussions for trade and general mobility (*Geest, 2018*). The response required resources across several sectors ranging from housing to health and from roads and highway to supply chain. The Jure village case highlights that maintaining inventory of relief and rehabilitation items across sectors at local level is extremely challenging. It illustrates that in case of incidents of medium to large scale, the local resources cannot meet the surge in demand and requires assistance beyond the local geographical and administrative boundaries.

### *Swift access critical during golden hours*

The availability of resources from outside requires robust supply chain and access. The issue of access in Nepal is challenging due to topography and limited infrastructure. All weather roads play a crucial role in disaster response, including medical evacuation of injured people, movement of response team and relief items. It is important to emphasize that the first few hours after a disaster are considered golden hours for saving lives. According to the Government of Nepal's (GoN's) economic survey report of 2018-19, the local road network stands at 60,162 kms. About 40% of roads in Nepal are national highways, of which 77% are in poor condition. Similarly, 82% of the feeder roads are in a bad condition (*Ministry of Finance, 2019*). This will impact the movement of goods, services, and human resources for disaster response, especially accessing goods, services, and human resources from distant places. It signifies the importance of access to disaster response resources availability in the vicinity of an affected area.

### *Climate change and skewed development altering disaster risk*

The skewed/unplanned development, climate change, degradation of environment, migration leading to high density in certain pockets, etc. have reconfigured the intensity and frequency of hazard, vulnerability and exposure, thus the risk. Disaster response in the future is likely to be more intense and frequent and will require additional surge capacity compared to current disaster response. The data related to disasters in Nepal concurs with the increasing trend of damage and losses. The Building Information Platform Against Disaster (BIPAD) portal, which records past disasters, shows that the frequency of disasters and casualties due to disasters have increased in the recent decades in Nepal (*NDRRMA, 2023*). (*Refer Figure 1 & Figure 2*).

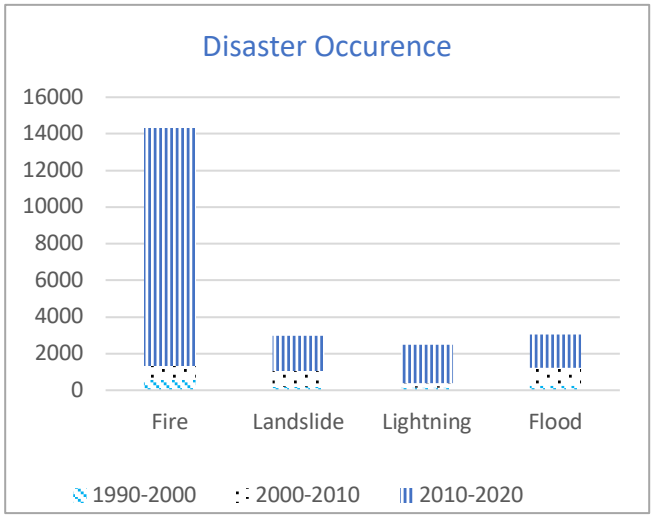


Figure 1. Frequency of disasters between 1990 - 2020 in Nepal
*Source: NDRRMA, MOHA, 2023*

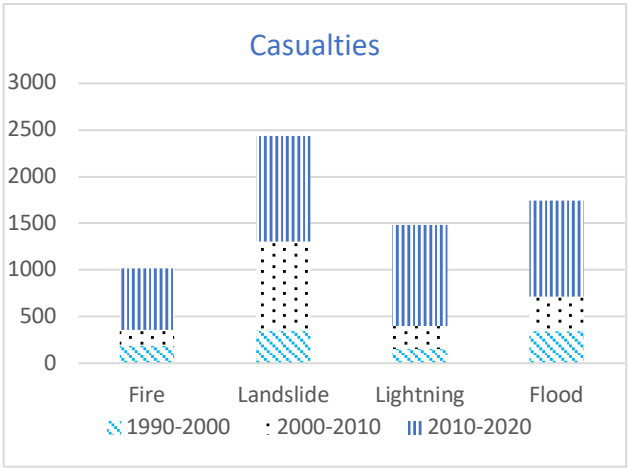


Figure 2. Casualties due to disasters between 1990 - 2020 in Nepal
*Source: NDRRMA, MOHA, 2023*


The significance of resource pooling has been unambiguously articulated in the Sendai Framework for Disaster Risk Reduction. The Framework's Section IV (g) calls for *promotion of regional protocols to facilitate sharing of response capacities and resources during and after disasters* at global and regional levels (*United Nations Office for Disaster Risk Reduction, 2015*). The disaster risk reduction policy of the Government of Nepal has recognized the significance of joint resource management for risk reduction. It's section 7.19 calls for development of master plan based on integrated water resource management for land and watershed conservation, addressing the river management and inter-relationship of upper and lower riparian areas (*National Policy for Disaster Risk Reduction, 2018)*. The disaster risk management related act and other legal instruments of Nepal lacks clear articulation regarding resource pooling among provinces and municipalities. However, there has been instances of resource sharing among municipalities for disaster management in Nepal. The case studies below on resource pooling for disaster risk management are from Nepal and other regions.

***Disaster impact model highlights need for response planning on a mega-scale***

Several studies and disaster impact models have projected severe impact from disasters in Nepal. One of the studies, conducted by Durham University, has projected impact of earthquake using different magnitudes. The study projected impact of 7.8 magnitude earthquake, with epicenter at Rukum West district, on several sectors, including housing, in different provinces. For the housing sector, the study has estimated that 336,617 houses out of 982,307 houses will be completely damaged or destroyed in Lumbini province. The damage/destruction to approximately 35% of the housing stock is likely to overwhelm the response and relief capacity of Lumbini province and it will call for support from other provinces and beyond (*United Nations, 2020*).

## 3. Resource pooling in disaster risk management: framework and case studies

***Case studies from Nepal***

- Nepalgunj sub metropolitan city[1]: Nepalgunj sub metropolitan city located in Lumbini province has been engaged in resource pooling for fire response and COVID-19 response in the recent past. For fire response, Nepalgunj provided support to the adjacent municipalities, which include deployment of fire fighters, fire tenders and other response equipment. An informal mechanism has been set up between Nepalgunj sub-metropolitan city and adjacent municipalities to coordinate fire response, however there is a need for establishing a formal coordination mechanism with legal provision for resource sharing among municipalities. The metropolitan city has also experienced managing resource pooling for COVID-19 response. During COVID-19 crisis, holding centers were set up in Nepalgunj sub metropolitan city for entire western region of Nepal as the city was an entry point for the migrant population of western region entering Nepal from India. The operation was challenging in terms of resource sharing mechanism

[1] Presentation by Nepalgunj Sub-Metropolitan City during resource pooling workshop organized by the Strengthening Urban Preparedness, Earthquake Preparedness and Response in Western Regions of Nepal (SUPER) project on 2nd May 2023 at Surkhet. The SUPER project, under the European Union Humanitarian Aid's generous financial support, is being implemented by UNDP, UNICEF and UN Women.

as well as management of holding centers, when COVID-19 cases tapered off.

- Twinning city approach[2]: Government of Nepal through TAYAR project[3] has initiated twinning municipality approach to share the resources as well as the best practices to enhance resilience of 16 municipalities of Nepal. Under the approach, the twinned municipalities will carry out these two functions as follows:

- Municipality will provide necessary technical assistance to the twining municipality on disaster preparedness and response related initiatives such as formulation and implementation of law, policy, rules, frameworks and mainstreaming DRRM issues into annual planning based on lessons and learning received from the implementation of the project.

- Municipality will invite and engage twining municipality on capacity building initiatives related to disaster preparedness and response such as trainings, workshops, meetings, exposure visits to be conducted by municipality with its own funding support or by the funding support provided by development partners.

  At implementation level, one of the municipalities will function as a core and neighbouring municipality will function as satellite. The core municipality will be developed as a center to provide specialized services such as fire brigade, specialized health services among others. The centrally located municipalities are providing services to other municipalities and citizens for example, Neelakantha municipality provided expert services on DRR localization to Gorkha municipality, Bhimeshowr is supporting Jiri in cross learning and capacity building. This practice could be scaled up to expand to other municipalities. This practice of working together can expand beyond DRR, and beyond municipal boundary for a more integrated and regional area development.

***International Practices***

- **Sister municipality solidarity in Japan:** In Japan, each municipality is paired with another municipality as a "sister" or "twinned" municipality, supporting the affected municipality, during an emergency/disaster. As neighboring municipalities might be equally affected during disasters, the sister municipality is identified from a distant geographical location. Support ranges from human resources and relief materials to the provision of warehousing and logistics facilities and economic/funding for short-term, medium-term, and long-term support, including reconstruction efforts. If a municipality is overwhelmed with a crisis, human resources can be deployed from the sister municipality to complement the overwhelmed disaster response team in the affected municipality. This is a good example of horizontal collaboration that Nepal can consider institutionalizing among local governments to create synergistic capacity for municipalities facing disasters (*Bhandari et al., 2020*).

- **European Civil Protection Pool:** The European Union created the European Civil Protection Pool in 2013 with the aim to enable a faster, better-coordinated, and more effective European response to human-induced disasters and natural hazards. It allows for better-organized, more predictable, and coherent disaster response. The pool brings together resources from 25 Member States and participating states, ready for deployment to a disaster zone at short notice. These resources can be rescue or medical teams, experts, specialized equipment, or transportation. The pool has 124 specialized response capacity, as of January 2023, and it ranges from mountain rescue teams to the availability of mobile laboratories, medical air evacuation and water purification equipment. The pool has a certification and registration process, which ensures that capacities (e.g., emergency response teams and equipment) provided by EU Member States and participating states meet high operational standards. The certification includes the participation of emergency teams in disaster simulation exercises so that their performance can be observed and assessed by a certifying team composed of peers and EU staff. The aim is to verify they operate properly during international deployments. Some of the recent deployments of the pool resources to disaster response include the Pakistan floods of 2022, the wildfire in Portugal and Albania in 2022 and the Haiti earthquake of 2021 (*European Union, 2023*).

## 4. Key elements of inter provincial and inter municipal resource pooling mechanism

The disaster risk reduction policy of Nepal has taken note of pooling of resources for land and watershed conservation. However, there is a need to move towards a comprehensive framework for resource pooling across disaster that is beyond land and watershed. The framework should be based on the country's policy, act and other legal instruments. The key elements of resource pooling mechanism are:

[2] Discussion with the Godavari Municipality, Sudurpaschim Province, Nepal

[3] USAID, Improved Disaster Risk Management Project (Tayar) project

- **Techno-Legal regime for resource sharing:** The framework for cooperation among provinces and municipalities for resource pooling need to be backed by legal instruments, which can be in the form of additional sections in the existing Disaster Risk Reduction and Management (DRRM) Act of 2019 or in the Local Government Operation Act of 2017 or any other relevant act. An MoU (Memorandum of Understanding) or a LoA (Letter of Agreement) type of instruments between partner municipalities are crucial for operationalization of the framework for resource sharing mechanisms. It will provide clarity, accountability and predictability in resource sharing arrangements. The protocols are essential for facilitating effective resource sharing mechanism at tactical level and it will provide guidance and procedures for coordinating the sharing, allocation, and utilization of resources among provinces, and municipalities.

Liability and immunity are also important considerations in resource sharing mechanisms between municipalities and provinces during disaster response. To address liability concerns, liability and the responsibilities of each party and its limitation should be included in the resource sharing agreements, such as MoUs or LoAs. These provisions may outline the extent to which the providing municipality/province assumes liability for the resources it shares. Immunity provisions can vary depending on the jurisdiction and the specific laws and regulations. It may grant immunity to both the providing and receiving municipalities, as well as to their employees, officials, and volunteers involved in the resource sharing process. The purpose of immunity is to ensure that parties involved in resource sharing are not unduly burdened by legal claims.

- **Institutional arrangement for coordination for resource pooling**: The institutional arrangement for resource pooling in Nepal can be informed by the following three types of coordination:
  - Among provinces
  - Among municipalities of same province
  -Among municipalities across provinces.

The provincial government can facilitate resource pooling coordination among its municipalities. At provincial level, Provincial Emergency Operation Centre (PEOC) is the communication and coordination focal point for disaster information across the province. PEOCs act as central hubs for information exchange between different provinces during a disaster. They facilitate coordination among provincial emergency management agencies, government departments, and other responding organizations. By sharing real-time information on available resources, capabilities, and needs, PEOCs enable effective resource pooling. The federal government can facilitate resource pooling coordination among the provinces while the MOFAGA can facilitate resource pooling among municipalities across the provinces. There are many administrative matters that will require attention while setting up an inter-provincial and inter-municipal coordination arrangement for resource pooling, which include identification and recording of tasks, sub tasks and other activities and partnership mechanism. It is important that each partner understands his decision-making authority, and the roles and responsibilities should be assigned equitably so that one partner is not able to exercise control over the others.

- **Developing inventory of resources for pooling:** An inventory of resources needs to be developed between partner municipalities/provinces. This can include personnel (e.g., emergency responders, medical professionals), equipment (e.g., vehicles, communication devices), supplies (e.g., food, water, medical supplies), and specialized capabilities (e.g., search and rescue teams, hazardous materials response teams). There needs to be regular updating and maintenance of the inventory to ensure accuracy and relevancy and establishment of protocols for municipalities to report changes or additions to their resource availability. Periodic audits or inspections to verify the accuracy of the inventory data need to be conducted. The National Disaster

Risk Reduction and Management Authority (NDRRMA), Nepal has developed 'GODAM', which is an online resource management system for emergency equipment/resources.

- **Resource mapping, updating and information management:** A mapping exercise involves assessing various factors such as capacity, access, risk profile, and distance for resource pooling. The potential partners for resource pooling during disaster response can be identified by considering geographical proximity, shared risks, and previous collaborations as factors in selecting partners. An evaluation of the capacity of each municipality and province in terms of their resources, infrastructure, accessibility, expertise needs to be conducted. Factors such as the size and capability of their emergency management departments, availability of emergency responders, stockpiles of supplies and equipment, road networks, transportation infrastructure, their vulnerability to various types of hazards, such as floods, landslides events should be considered. This assessment will help identify which partners have the resources and capabilities that can be pooled during a disaster.

  A common warehouse for inter municipal and inter provincial resource sharing can significantly enhance the effective mobilization of stock items and heavy equipment during disaster response. The stock items and heavy equipment that are commonly required during disaster response across the participating municipalities and provinces needs to be identified. This may include items such as emergency supplies (food, water, medical kits), temporary shelters, communication equipment, and heavy machinery like excavators, trucks, and cranes. Then, a central and strategically located warehouse that is accessible to all participating municipalities and provinces needs to be selected considering factors such as proximity to major transportation routes, availability of utilities (electricity, water), and adequate storage capacity to accommodate the identified resources.

  Implementing an effective information management system for mapped resources is crucial for resource pooling between inter municipalities and inter provinces. It helps to capture, organize, and share critical information on capacity, location, and other relevant details. A centralized database or information management platform where data related to resources, capacities, locations, and other relevant information can be stored and accessed. Mechanisms need to be implemented for real-time updates and synchronization of data in the information management system. This can include automated data feeds, manual updates by authorized personnel, or integration with other relevant systems. The stakeholders should have access to the most up-to-date information, enabling timely decision-making during disaster response. Creating interactive maps that display resource locations, distribution centers, warehouses, and other key infrastructure relevant to resource pooling can also be relevant, and enables stakeholders to easily identify available resources and its proximity to affected areas during disaster response. The information system should be in sync with national disaster management information systems, databases and portals for interoperability.

- **Funding mechanism**: The funding mechanism for resource sharing between inter municipalities and inter provinces can be structured in line with Nepal's financial and legal framework. In the common resource pool, designated for resource sharing during disaster response, all participating municipalities and provinces should contribute. The federal government can also contribute to the pool and encourage it. The contribution can be based on a predetermined formula, which should consider the financial capacity, vulnerability to disasters and other factors. The common pool ensures that there is a shared financial resource available for resource sharing activities. An operational guideline on contribution to the common pool, access to the pool, type of services covered by the pool, recording transactions and roles and responsibilities specific to financial obligations of each party should be developed and updated.

- **Testing and updating resource pooling framework:** The resource pooling framework and operational mechanism need to be periodically tested. An annual table-top exercise or mock drills engaging provinces and municipalities to test various response scenarios is an important tool to test readiness and identify areas of improvement. A realistic disaster scenario that requires resource pooling between multiple municipalities and provinces needs to be developed, considering various types of disasters relevant to the region, such as earthquakes, floods, landslides, or severe storms.

  The scenarios shall be designed to reflect the challenges and complexities of coordinating resources across different administrative boundaries and jurisdictions. The engagement of relevant stakeholders including representatives from participating municipalities, provinces,

federal government, development partners, Nepal Army and others for resource management, logistics, coordination, and decision-making should be tested. It should also include the process of resource request and its allocation, communication and coordination among participating municipalities, provinces and other partners.

It is important to encourage collaboration and learning among municipalities and provinces by organizing workshops, webinars, peer-to-peer exchanges, or training sessions where good practices can be shared and discussed.

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