

**Development of Support System
for Comprehensive Disaster Risk Reduction and Management Plan
for Local Governments in Nepal**

(ネパールの地方自治体の総合的災害管理力を向上させる
計画策定支援システムの構築)

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Abstract

Nepal is a Himalayan landlocked country occupying 0.03 percent (147,181km²) area of the earth. The country is exposed to active tectonic processes resulting in a complex geology, high relief, and a wide variation in climatic conditions. A combination of such geo-physical and climatic conditions with rapidly increasing population and unplanned settlements, poor socio-economic conditions, and low level of awareness has put the country at a very high level of risk to a multiple of natural hazards. Disaster database shows that the country experiences two disaster events and three deaths every day on an average. Moreover, such events have repeatedly caused serious interruption in developmental pace and significant drop in the Gross Domestic Product (GDP) of the country. Extreme variations of topographic, climatic and socioeconomic conditions have generally led to spatial and seasonal variations in the occurrence of climatic and hydrologic hazard events. In many of such hazards, earthquake remains a big threat to the entire territory regardless of the seasons, and the geologic faults are of continental proportions distributed all over the country making every part highly prone to seismic shaking. Concentration of 3,000-4,000 mm of annual rains in the four months of the monsoon season and melting of the glaciers happen to trigger a series of primary and collateral hazards such as flood, debris flow, hailstorms and even drought which explains the high level of human casualty and loss of assets annually. Nepal is subject to more than 25 different natural and human induced hazards. Therefore, the country must consider Disaster Risk Reduction and Management (DRRM) as a national priority with strategies spelt out for all phases in the disaster cycle from mitigation, preparedness, early warning to damage assessment, response, recovery, and reconstruction. The local governments (LGs) are the one highly affected by disasters; therefore, they need to be well prepared with comprehensive DRRM plans prepared based on local context and with the involvement of all concerned stakeholders.

As per the recently adopted federal democratic republican system, the country exercises three levels of governance, namely, federal, provincial and local. In this context, the authorities and responsibilities, including those related to DRRM, have been decentralized to the provincial and LGs. The newly promulgated Constitution of Nepal 2015 has created a conducive environment for effective DRRM, and the newly promulgated legislations, notably, the Disaster Risk Reduction and Management Act (DRRMA) 2017, the Local Government Operation Act (LGOA) 2017 as well as the National DRRM Policy 2017 are major legal initiatives that have devolved legal authority and responsibility to LGs to develop policy and guidelines in their respective jurisdiction. Despite several policies and plans being developed, there remains a gap of robust system that could utilize the opportunities created by the improved legislation for

implementation for sustainable and practical solutions of comprehensive DRRM. Hence, there is a need of i) analysis of DRRM policies progression and institutional arrangements in relation to disaster impacts in Nepal, ii) the impact and response to disaster events have to be critically analyzed to incorporate the lessons in the policies to be developed and /or revised, and iii) comprehensive DRRM plans have to be prepared in all LGs.

The present research was undertaken in this context with the main objective to develop a support system for comprehensive DRRM plan for LGs, i.e., municipalities with the specific objectives to i) analyze DRRM policies, ii) identify gaps between preparedness and response as revealed during the 2015 Gorkha Earthquake and iii) develop a structure and procedures for developing, reviewing and updating the comprehensive DRRM plan for LGs (municipalities) in Nepal. To achieve these objectives, the researcher conducted a wide review of literature, including DRRM related legal documents, institutional arrangements in Nepal and related international practices. Further, information was collected through field surveys, focus group discussions, key informant survey, workshops and personal interactions with subject matter experts and other DRRM stakeholders.

The structured DRRM policy development process is quite new in Nepal. Most of the DRRM policies have been found to be triggered by disaster events; and they were reactive and centralized, which could not make significant improvement for sustainable solutions regarding DRRM in Nepal for many years even after the promulgation of the global frameworks for DRR, such as the Yokohama Plan of Action and the Hyogo and Sendai frameworks for DRR. However, after learning lessons from the 2015 Gorkha Earthquake, the government has taken important steps towards decentralization of DRRM authorities and responsibilities to LGs through act and policies to engender proactive actions for risk DRRM. The 2015 Gorkha Earthquake was an eye-opening for DRRM in Nepal. It revealed several gaps in preparedness and response, mainly i) lack of comprehensive DRRM plan at LGs, ii) weak coordination (vertical and horizontal) among the stakeholders, iii) lack of defined tasks with clear roles and responsibilities and iv) lack of awareness, preparedness and response capacity at national and community levels.

In this context, this research has come up with a proposed system for developing comprehensive DRRM plan for LGs (municipalities), which includes Municipal DRRM structure, procedure for identifying and prioritizing the countermeasures whole spectrum of DRRM, logical procedure for developing, review and updating the DRRM plans and an outline of the plan.

The proposed Municipal DRRM structure comprises one planning committee led by the mayor, inclusively engaging all DRRM stakeholders, and one working team led by chief administrative

officer (CAO) to ensure the implementation of policies, plans and decisions made by the planning team. Further, the proposed DRRM has in-built logical process for identifying and prioritizing the possible countermeasures with defined roles and responsibilities of the stakeholders based on the support system of ‘self-effort’, ‘mutual assistance’ and ‘public support’ based on the methodology developed by Meguro. It has proposed similar mechanism down to the ward level to ensure the implementation on the ground and for transferring responsibility and ownership. Further, for effective coordination and functionality, vertical coordination with the provincial and federal governments at the higher levels and wards and communities at the lower level, and horizontal coordination with other municipalities has been proposed.

The system proposed by this research envisions periodic field validation as the pilot municipality would gather experiences. In fact, the proposed system was discussed among relevant experts and authorities in several feedback workshop and meetings conducted to verify and receive feedback in the proposed DRRM structure and procedures. Representatives from one metropolitan city of the Kathmandu Valley and three municipalities from outside the valley, including mayors, ward chairs, CAO, chief of disaster management division/section, engineers, and media personnel participated in these feedback workshops. In the workshop, an anonymous survey was conducted using designed questionnaire to receive their opinions indicating “strongly agree” or “agree” or “neutral” or “disagree” or “strongly disagree”. As per the survey, 96 percent of the participants expressed their opinion in the form of either “strongly agreed” or “agreed” with the overall structure, while three percent stated “disagree” and one percent were “neutral”. The three percent of “disagree” were mainly in the arrangement of the two DRRM committees/teams in the Municipal DRRM structure and their concern was mainly the current conspicuous lack of human resources in the municipalities. As the current lack of human resources and DRRM capabilities are more of a temporary problem rather than a strategic one, majority of municipal authorities agreed with the proposed system. However, this suggests that while developing the plans, the concerned authorities have to be clear about the short term and long-term strategic plans and the constraints have to be contemplated.

In the changing context of the recently adopted federal democratic republican system, new Constitution of Nepal, enactment of long awaited DRRMA 2017 that adopts decentralized proactive approach for DRRM in the country, this research is expected to serve as a significant reference document for preparing comprehensive DRRM plans for the municipalities ensuring practicality and functionality, sustainability and owned by the stakeholders. The research has the potentiality for finding its use in the country and replication potential in other developing countries with similar context as it also embodies the rich experience of DRRM in Japan.