



DISASTER MANAGEMENT POLICIES IN NEPAL: CURRENT STATUS AND WAY FORWARD

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Abstract:

Nepal as being a mountainous country, vulnerability, hazard, and risk is everywhere. This paper contributes to the study of disaster-related existing policies in Nepal. The research is based on an extensive literature review and meta-analysis of the existing literature on disaster risk reduction and management. The results revealed that after the state restructuring in 2015, there are several policies either formulated or in the process of formulation. The Constitution of Nepal (2015) has stipulated that DRM is a shared responsibility of all levels of government including federal, provincial, and local levels. Precisely, before 1982, disaster management activities were carried out in an unorganized way. Importantly, it is also highlighted that the Disaster Risk Reduction and Management Act 2017 is the milestone in the DRRM section in Nepal. One of the key aspects of the DRRM Act 2017 is the provision for forming community-based Disaster Preparedness and Response Committees. Thus, this research leads us to embedding principles of sustainability and inclusivity in the DRRM cycle under the context of the new governing system in Nepal. We recommend that if the current policies continue to shape national policy, they will impede the potential for transformative collaborative action for DRRM in Nepal.

Key Words: Policy, Plan, Action, Institution, Legal Framework

Background:

Nepal as being a mountainous country, vulnerability, hazard, and risk are everywhere (Pant, 2020). The country is one of the most vulnerable countries to climate change, inhabitants in Nepal are invariably exposed to water-induced disasters and hydro-meteorological extreme events such as droughts, storms, floods, inundation, landslides, debris flow, soil erosion, and avalanches (MoHA, 2019). In addition, Nepal is classified as a low-income country with a medium human development index, ranked 147 out of 189 countries with a human development index (HDI) of 0.60 HDI (Dhungel, 2018). High levels of poverty and social inequality based on ethnic and caste-based discrimination prevail in all the provinces of Nepal, especially in the Karnali Province. This combination of geophysical and social vulnerability renders Nepal highly susceptible to a high magnitude disaster. The country falls in the top 20th list of the most multi-hazard prone countries in the world and ranks 4th, 11th, 20th, and 30th about relative vulnerability to climate change, earthquake, multi-hazard, and flood landslide hazards, respectively (UNDP, 2009). In an average of the three decades' disaster events in Nepal from 1980 to 2010, every year some 358 people lose their life to disaster and damage equivalent to NRP 6.84 billion. More than 80 % of the total population of Nepal is at risk of natural hazards such as floods, landslides, windstorms, hailstorms, fires, earthquakes, and Glacial Lake Outburst Floods (GLOFs) (MoHA, 2019).

The disaster-related management policy is the key recommendation from international conventions and protocols on disaster as it adapts in the overall country programs (Tuladhar, 2012). The collaborations of interdisciplinary, international, and cross-sector scholarly help to answer the pressing challenges posed by disasters worldwide. Factors such as weak governance, population growth, rapid urban expansion, relatively weak land-use planning, the spread of informal settlements, poor construction methods, steep land farming practices, encroachment of settlements into river plain and forest areas, and environmental degradation play very important role in increasing the incidence of disaster in Nepal. It is necessary to give attention to estimates of the impact of past events, to devise a reasonable estimate of the nature and extent of disasters in the future (Aryal, 2012). Effective governance is particularly hindered by the complex interplay of power and knowledge among diver groups of actors with unequal command over resources (Vij, 2020). This complex interplay of power and knowledge among diverse stakeholder groups gives rise to different governance approaches in Disaster Risk Reduction and Management (DRRM) (Jones et al., 2014).

Before the enactment of the Natural Calamity- Relief Act (NCRA, 1982), disaster management activities were carried out in an unorganized way in Nepal (Tuladhar, 2012). The formulation and implementation of the National Strategy for Disaster Risk Management (NSDRM) in 2009 is another step to mainstream the DRRM activities in Nepal. The DRRM Act, 2017 is the latest act formulated to address disaster risk reduction and management effectively after the promulgation of the new constitution of Nepal in 2015. The success of disaster management activities largely depends on the systematic formulation of policy strategies, legal provisions, institutions, and its roles and responsibilities in dealing with disasters at federal, provincial, and local levels (Tuladhar, 2014, GoN, 2015). According to Pant et al. (2020), there arises a major obstacle to co-ordinate response activities during a disaster in the absence of a well-articulated and organized institutional structure, where academia and research institutions could play a vital role

Though the Government of Nepal has made efforts to formulate and implement various legal and policy provisions, the goal has not been achieved yet so, with the realization of this very context, this paper aims to explore in-depth studies about the policy processes in DRRM, institutional setup and analyze the gaps and constraints and help in-state restructuring of Nepal by providing a way forward for DRRM and sustainability for the overall developmental processes.

Materials and Methods:

The research is based on an extensive literature review and meta-analysis of the existing literature on DRRM. The main objective of this review-based research work is to analyze the policy process on DRRM including acts, regulations, guidelines, and policies. Literature on disaster risk management was grouped into three broad categories by the objective of the study that includes legal frameworks, policies, and programs. In addition to the above publicly accessible literature as well as government websites, reports, and accessible documents regarding the legal basis, system, and structures that support disaster management in Nepal were the main source of this research study. Hard copy or internet portals of different institutions, such as the Ministry of Home Affairs (MoHA), United Nation Development Programme (UNDP), International Centre for Integrated Mountain Development (ICIMOD), National Society for Earthquake Technology (NSET), and others were collected to review the national policies, plans, and strategies in disaster risk management. Ongoing theoretical discussions concerning the recent national policies and reports on disaster and its management issues were analyzed in the key aspects of the social, economic, and environmental perspectives. Lastly, practical implications of the theoretical understanding of disaster management in the state restructuring of Nepal are discussed through reviewing various national and international literature.

Results and Discussion:

Major Legal provisions on DRRM:

For centuries, disasters in Nepal were viewed as acts of God and as a scourge. In the lack of promulgated acts or state laws, the disasters were treated as and when they occurred. The state mobilized its forces and resources on an ad-hoc basis when disasters occurred and many of the people would wait for their 'luck' and depend upon the 'mercy' of the decision-makers for any kind of relief or help. A succinct example is what happened in the aftermath of the great earthquake of 1934, when the then prime minister ordered to release the victims from their loan by dumping the loan papers under a pillar built at New Road, Kathmandu (Tuladhar, 2014). The fatalistic outlook is so deeply rooted in Nepali society that when the Government brought its first disaster management act in 1982, it was called "Daibi Prakop Uddar Ain, 2039", meaning Act to Relief from God scourged disasters. DRM Regulatory Frameworks Natural Calamity Relief Act (NCRA), 1982 was enacted in 1982 A.D. Before the enactment of the Act, disaster management activities were carried out in an unorganized way. Most of the major legal provisions associated with disaster risk reduction management are enlisted in the table1 below:

Table 1: Major legal provisions associated with disaster risk reduction management in Nepal

Name of the legislation	Year Enacted
Constitution of Nepal	2015
Natural Calamity (Relief) Act	1982
Soil and Watershed Conservation Act	1982
Water Resources Act	1992
Local Governance Act	1998
Building Act	1998
National Wetland Policy	2003
National Agriculture Policy	2004
National Strategy for Disaster Risk Management	2009
Climate Change Policy	2011, 2019
Land Use Policy	2012
National Disaster Response Framework	2013
Water Induced Disaster Management Policy	2015
National Reconstruction and Rehabilitation Policy	2015

National Urban Development Strategy	2016
Urban Planning and Building Construction	2016
Disaster Risk Reduction and Management Act	2017
Local Government Operation Act	2017
Nepal Government (Work Division) Regulations	2017
Private Housing Rebuilding Grant for the flood and Landslide victims	2017
Public Health Act	2018
National Policy on Disaster Risk Reduction	2018
Disaster Risk Reduction National Strategic Plan of Action	2018-2030
Public Housing Program Implementation Sample Guidelines	2018
Guidelines for the relocation and Rehabilitation of High Risked Settlements	2018
Environmental Protection Act	2019
Forest Act	2019
Disaster Risk Reduction and Management Regulation	2019
Environmental Protection Regulation	2020

Natural Calamity (Relief) Act, 1982:

This act was forwarded by late King Birendra to conveniently make arrangements for the operation of relief work and the maintenance of people's convenience to protect the life and property of the people in general and public property. For its effective formulation government poses strategies by thereby declaring the disaster area by specifying:

- The extent of the area affected or likely to be affected by Natural Calamity and declare such area, by publishing a notification in the Nepal Gazette as Disaster Area for a period specified in the same notice.
- Also, in case of the situation arising out of the Natural Calamity could not be brought under control within the period specified under Sub-section (1) the Government of Nepal may have published a notice in the Nepal Gazette for extending such period as required of Nepal.

Also, the Government of Nepal may give the order to carry out the Relief Work in Disaster Area, give orders to anyone concerned to undertake any or all of the following works:

- To close down as required the governmental or non-governmental office or educational institute or other institution in Disaster Area.
- To prohibit the activities which may hurt Relief Work in Disaster Area
- To depute the employee of the government office or non-government offices or of institutions,
- To evacuate or caused to be evacuated the people from the Disaster Area to the area of safety,
- To requisition movable or immovable property of any individual or institution temporarily for a prescribed period if such property is required to be used for Relief Work.
- To evacuate or cause to be evacuated goods and commodities from Disaster Area to the areas of safety,
- To make use of the means and resources of the government,
- To requisition and make use of the means of transportation owned by non-governmental offices, associations, or individuals of the concerned district for a fixed period,
- To requisition the food grains, clothes, medicine, construction materials, and other item belonging to non-governmental offices, institutions, and individuals of the concerned district and distribute them to victims of Natural Calamity,
- To try to save the land, houses, factories, temples and shrines and religious places, and other significant objects and places from destruction.
- To constitute aid groups and send them to Disaster areas,
- To take other necessary safety measures for the safeguard of the life and property of the common people,
- To do other works as specified by the Government of Nepal.

According to the NCR Act, 1982 Central Natural Disaster Relief Committee (CNDRC) was constituted under the chairmanship of the Home Minister to formulate and implement the policies and programs relating to the natural disaster relief work and to undertake other necessary measures related thereof. Moreover, the Central Committee prepares specific norms of relief assistance to be given to the disaster victims of the affected area in cash and/or in-kind through the District Natural Disaster Relief Committee (DNDRC). The Central Committee may constitute Relief and Treatment Sub-Committee (RTSC) and Supply, Shelter and Rehabilitation Sub-Committee (SSRSC) which provides necessary advice and suggestions to the 17 Central Committee, helps to execute policies and directives of the Central Committee and operates effectively the rescue, relief and rehabilitation works during mega-disasters (Narayan, 2022).

Constraints:

Ministry of Home Affairs 1999 stated that "disaster management is a difficult task". According to the Nepal Country report, 1999 disaster is a sudden phenomenon and during a serious natural disaster to manage

along with normal administrative setup and other limited funds and resources is a difficult task. Adding to that severe problem like poor public awareness, low literacy rate, mass poverty, fatalistic nature of some people, difficult and undeveloped physical infrastructure, unplanned settlement, lack of political commitment, slow decision-making process along with lack of cooperation and coordination among various disaster management related agencies and their behavior indifference, duplication of relief works, inadequate funds and resources and the lack of modern technology especially early warning system have made the disaster situation more complex.

Existing Plans and Policies:

Constitutional Provision on Disaster Risk Reduction Management:

The Constitution of Nepal, 2015 Nepal's current Constitution mentions disaster risk management in the country for the first time and it has assigned DRM as a concurrent responsibility of different tiers of governments, particularly the local governments. Article 51 stipulates the policies to be pursued by the state. The sub-article G relates to "policies relating to protection, promotion and use of natural resources," under which G (4) mentions that the state shall formulate policies on the development of sustainable and reliable irrigation by controlling water-induced disasters and expediting river management. Article 51(G) (9) of the Constitution states that the State shall pursue policies relating to, among several other issues, protection, promotion, and use of natural resources. Sub-article 51(G) 9 also allows Government to make policies related to "warning, preparedness, rescue, relief, and rehabilitation to mitigate risks from natural disasters." Further, Article 267 (4) of the Constitution gives the Government rights to mobilize the Nepal Army in DRM. The Constitution says, "The Government of Nepal may also mobilize the Nepal Army in, among other things, the disaster management works, as provided for in the Federal law." Article 273 (1) of the Constitution says if a grave emergency arises then-President has the right to declare or order a state of emergency. Article 273 (2) says, "if there arises a grave emergency in a State because of a natural calamity or epidemic, the concerned state government may request the Government of Nepal to declare a state of emergency in respect of the whole of the State or of any specified part thereof, (Government of Nepal, 2015). The Constitution of Nepal (2015) has stipulated that DRM is a shared responsibility of all levels of government. The Constitution states that natural and man-made disaster preparedness, rescue, relief, and rehabilitation responsibility falls under the concurrent power/jurisdiction of the federal and provincial government. Of the 22 tasks assigned to the local level, DRM is one of them (Schedule 8). In the list of concurrent powers of federal, provincial, and local level, DRM is put as one of the subjects (Schedule 9) implying that DRM is a shared responsibility of every layer of governance system, but more so at the lower level.

Disaster Risk Reduction and Management Act, 2017:

On 24 September 2017, the legislative parliament unanimously passed a new "Disaster Risk Reduction and Management Act 2017." In many respects, the Act is considered far more progressive than the existing Natural Calamity Relief Act 1982. First, its approach to disaster is more comprehensive and it recognizes both risk reduction and management as integral parts of the task. Second, instead of a committee-based coordination mechanism, the Act has proposed a clear multi-tier institutional structure of DRM (at the national, provincial, district, local/municipal, and community-based). Third, there is also a clear provision of Disaster Management Fund at the federal, provincial, and local levels. Fourth, the law has given the security forces the responsibility of search and rescue under civilian command. Fifth, the Government of Nepal has the ultimate 18 responsibility of declaring a disaster emergency if circumstances so emerge. The Act has developed two kinds of DRM structures, One with policy and administrative decision making and supervisory roles (consisting mainly of Disaster Risk Reduction and Management National Council and Executive Committee), and the other with more implementation roles (consisting mainly of National Disaster Risk Reduction and Management Authority, and the provincial, district and local DMCs). In tune with the federal structure of the country, the DRRM Act has envisaged a multi-tier DRRM structure, comprising of the NRA on top, followed by Provincial DM Committees, District DM Committees, and finally the Local DM Committees as the lowest units. There is also a provision for forming community-based Disaster Preparedness and Response Committees. The DRRM Act 2017 Act has replaced the earlier Natural Calamities (Relief) Act of 1982 which remained the blueprint for DRM in Nepal for about 35 years, with the aim of smooth implementation of relief and rescue initiatives under the leadership of MoHA. The 1982 Act had provisions of institutional coordination mechanisms required for DRM. However, despite two consecutive amendments in the Act, it still missed the provision of proactive risk reduction measures, such as mitigation, preparedness, and mainstreaming DRR in development.

Local Government Operation Act, 2017:

The legislative parliament recently passed the Local Government Operation Act, 2017 that outlines the roles and responsibilities of rural municipalities, municipalities, district councils/district coordination committees, and provincial coordination councils. This Act entrusts the local level units with the responsibilities of formulating their laws, by-laws, regulations; levying taxes; and raising funds, in addition to the judiciary responsibilities. The Local Government Operation Act, 2017 defines the following disaster management responsibilities under the jurisdiction of urban and rural municipalities:

- DRM related local policy, law, guideline and implementation, oversight and monitoring of plan

- Local-level disaster preparedness and response plan, early warning, SAR and prepositioning and distribution of relief materials and coordination
- Local river embankment, landslide control, and management and control of rivers
- Mapping of disaster risk area and identification of settlements at risk and relocation
- Support, coordination, and cooperation between and among federal, provincial, and local communities and institutions and private sector
- Establishment of Disaster Management Fund, operation, and resource mobilization
- Formulation, implementation, monitoring, and oversight of local-level projects on DRM
- Local-level DIMS, research, and assessment
- Emergency operation system at the local level
- Operation of community-based DRM programs
- Other functions related to disaster management.

This new Act replaces the Local Self Governance Act, 1999 that helped institutionalize the concept of local-self-governance under decentralization framework and empowered the local bodies for managing environment-friendly resilient development.

National DRR Policy and Action Plan, 2018-2030:

The Ministry of Home Affairs has formulated National DRR Policy and Strategic Action Plan, which replaces the National Strategy on Disaster Risk Management, 2009 (NSDRM). Whereas the NSDRM was developed in tune with Hyogo Framework for Action (HFA), the NDRR Policy, 2018-2030 follows the Sendai Framework for Disaster Risk Reduction (SFDRR) priorities with a vision to make Nepal a safer and resilient nation by 2030. Aligned with the global SFDRR targets, it aims to substantially reduce death rates and size of the population affected by disasters and enhance the resilience of important infrastructures and basic services including livelihoods, agriculture, industry, road, communication, water and sanitation, health, and education, to reduce their loss and damage by disasters.

Related Other Acts and Policies:

There are a few more acts and regulations which are related to disaster management. Some of these legal provisions are; National Parks and Wildlife Conservation Act 2029 (1973), Soil and Water Conservation Act 2039 (1982) Regulations 2042 (1985), Environmental Protection Act 2076 (2019), Buffer Zone Management Rules 2052 (1996), and Nepal Building Act 2055 (1998) and Building Regulation 2066 (2009). Administered by the Ministry of Forests and Environment (MoEF), National Parks and Wildlife Conservation Act 2029 (1973), Buffer Zone Management Rules, 2052 (1996) Soil and Water Conservation Act 2039 (1982) Regulations 2042 (1985), Forest Act, 2076 (2019), National Water Resource act and regulation 2049 (1993), National Shelter Policy 1996, National Water Resource Strategy 2002, National Agriculture Policy 2004 National Urban Policy 2006, and National Nuclear Policy 2007 provide some legal basis for disaster risk reduction in Nepal.

An interesting provision laid by the Acts is the designation of a “Community Forest” and ‘buffer zones’ around national parks. In the creation of community forests, part of the national forest is formally handed over to “user groups” for its development, protection, and utilization in the common interest of the community (Simkhada, 2015). Similar provisions are there in the buffer zones. Both the legal schemes provide for community participation in management with broad conservation objectives and also some specific DRR objectives in terms of flood and landslide prevention in national park buffer zones (IFRC/RCS, 2011). These mechanisms allow the user groups to enhance community-level DRR projects specifically in areas with community forests. The Soil and Watershed Conservation Act 2039 and Regulations developed in 1985 provided a legal basis to establish the Department of Soil Conservation and Watershed Management (DSCWM). Its main purpose is to conserve land and watersheds “by controlling natural calamities such as flood, landslide, and soil erosion” in the interests of the convenience and economic interests of the general public. This Act also empowers the Government to declare certain watershed conservation zones and specify what activities can or cannot be conducted in them, and also to order industries or residents to move away from vulnerable land. The Act was also a precursor to expanding soil and watershed conservation throughout the country, which means activities to prevent or save any area from being destroyed from natural calamities such as flood, landslide, and soil erosion; and keep the volume and flow of water in a normal condition or keep on maintaining cleanliness by preventing the flow of water from being muddy (Pandit et al., 2007). Presently, DSCWM is providing its technical services to 73 out of the 77 districts of Nepal through 56 District Soil Conservation Offices (DSCO).

The Building Act in 2055, the Building Regulation developed in 2009, and the National Building Codes developed in 1994 are legal frameworks much related to earthquake-like disasters in Nepal. These provisions are administered by the Department of Urban Development and Building Construction (DUDBC). The DUDBC’s direct regulatory responsibilities extend only to public buildings, whereas District and local Municipal/VDC governments have the responsibility for implementation in private construction. There appears to be no specific law concerning the safety of current private buildings. This legislation must be implemented at

the local government level, and this is one of the major challenges facing Nepal in reducing the risk of earthquakes (IFRC/RCS, 2011).

In 2013, the Government of Nepal, Ministry of Urban Development (MoUD), and National Society for Earthquake Technology- Nepal (NSET) organized a launching workshop on Building Code Implementation Programme in municipalities of Nepal (BCIPN). There is also the Construction Business Act 2055 (1999) and Construction Business Rules 2056 (2000). This is essentially a licensing scheme for construction business entrepreneurs which is also intended to ensure qualified technical support.

Various other national policies in Nepal have some direct or indirect implications for disaster risk reduction or management. One such policy is the Water Induced Disaster Management Policy 2015 which calls for mitigating the loss of lives and property arising from water-induced disasters like floods and landslides. It also highlights the preservation of rivers, river basins, and water-related environments for the sustainable use of natural resources and facilities like water supply, irrigation, water navigation, road transport, etc. Reclamation of riverbanks and flood-affected areas for the rehabilitation of landless people and conduct socioeconomic activities, institutional development for the control of water-induced disasters, and management of flood-affected areas are some of the important components of the strategy. Defining the role of local and central government institutions, NGOs, community-based organizations, and private institutions, the policy shows how to respond to the agenda.

Provision of DRRM on Periodic Plans:

Periodic Plans Nepal entered into the planned development with five-year or three-year plans soon after instating the democratic system in 1950. The initial decades mainly focused on infrastructure development such as communication, transportation, irrigation, agriculture production, and education. It was the Sixth Plan 1980- 1985 (NPC, 1981) where the agenda of environmental protection received due priority. The Sixth Plan 24 implemented three major projects related to disaster prevention. The projects were: Resource Conservation and Utilization Project, Tinau Watershed Management Project, and Bagmati Watershed Management Preservation Project which built embankments and dams for "control of landslides". The Eight Plan 1992-1997 (NPC, 1993) included a specific chapter on Environment and Resource Conservation under major national development policies. The Plan gave serious concern to the environmental degradation including erosion, landslides, flood, and declining soil fertility, and proposed to set up a high-level Environment Protection Council to formulate policies, give directives, and establish inter-ministry coordination and monitoring related to environmental management.

The Ninth Plan 1997-2002 (NPC, 1997) underlined the need to strengthen the disaster management capability by adopting various possible means. In its objective of environment and natural resource management, the Plan emphasized promoting national capacity in disaster control and management by developing necessary institutional infrastructure for the management of natural calamities. In its policy and implementation strategy, the Ninth Plan underlined to develop Natural Disaster Management Information System and mobilize international resources for mapping of areas prone to earthquakes, floods, landslides, etc. for integrated disaster mitigation, control, and management. The Tenth Five-year Plan 2002-2007 (NPC, 2002) elaborated the topics of disaster with a dedicated chapter entitled Population, Environment, and Natural Disaster Management. The objectives of the Tenth Plan on natural and man-made disaster management were to make public life secure by managing the natural and man-made disasters systematically and effectively and by making the development and construction-related programs in the country sustainable, reliable, and highly gainful. The 11th Three Year Interim Plan 2008-2010 (NPC, 2008) devoted a separate chapter. The 12th three-year development plan 2011-2013 (NPC, 2011) has also devoted a separate chapter for disaster management issues. This plan addressed disaster management issues more comprehensively. In specific, the 12th plan set its disaster management goal to achieve the goal of Hyogo Framework for Action by 2015. Long term goal of the plan is to develop disaster-resilient Nepal. Moreover, mainstreaming disaster risk reduction, institutional and legal reform, and preparedness for better response are the strategies of this plan. The 13th three-year plan 2014-2016 (NPC, 2014) has a dedicated chapter on disaster management (Chapter 6.6) with a long-term goal of making Nepal a disaster-resilient nation. It aims at mainstreaming disaster management in the development process to minimize the impacts of disasters. The 14th five-year development plan (2016-2020) accords priority to minimize impacts from water-induced disasters (NPC, 2016) on human lives, properties, and physical infrastructure. It prioritizes river embankment programs for control of floods and landslides and minimizes the impacts of inundation. The Plan also prioritizes disaster risk management due to environmental degradation and climate change.

Challenges in Implementation of Policies:

The Sendai Framework for Disaster Risk Reduction (SFDRR) has highlighted the role of stakeholders, including both the State and the non-state actors, with the former being the primary actor and the latter as one of the important collaborative actors in DRR/M (Narayan, 2022). The government of Nepal has highlighted the roles of "public and private" sectors for reducing disaster risk with preparedness plans, programs, and projects and building resilience with the goal of sustainable development (GoN, 2018). The disaster-related policies of Nepal have a greater focus on response and relief activities rather than preparedness and mitigation approaches.

The poor institutional arrangements along with regulatory and legislative gaps have made it difficult for the proper implementation of DRR activities like the duplication and redundancy of responses (Pandey, 2019). The lack of proper coordination within and among the government as well as non-governmental organizations further exaggerates the existing problems. Though the country is suffering from several disasters every year, the studies regarding identifying the most vulnerable places and types of disasters are still inadequate. Prioritized hazards and their preparedness and mitigation efforts are completely lacking. Similarly, the pre, during, and post-disaster activities for different hazards are yet to be established. In addition to the above drawbacks, the lack of proper policy and legal environment is the biggest impediment for an effective disaster management system in Nepal (Tuladhar, 2012). Political, social, and economic development in Nepal will go under noteworthy changes in the upcoming days. These changes will either intensify or reduce disasters and other risks. Along with the achievement of restructuring from the unitary system to a federal system of government, it is predicted that several activities will be successfully implemented in the field of DRR&M Act 2017, strategic action plan (2018-2030) SFDRR, and regional in the days/ years to come (MoHA, 2018).

The major challenges that Nepal faces in implementing DRM policies and acts are as follows:

- Due to the fragile geophysical situation of the country and response-centric approach, the losses and damages from disasters are increasing. So far, more emphasis has been given towards disaster response and relief rather than complete approaches including planning, preparedness, and recovery.
- Because of the fatalistic nature of some people and the inadequate preparedness -- vulnerability to disasters is on the rise with grave consequences for the survival, dignity, and livelihood of individuals, particularly the poor and the extremely vulnerable groups.
- Despite growing understanding and acceptance of the importance of inclusive DRM, the vulnerable people are not fully aware of the causes and consequences of hazards; on the other hand, they have limited access to the information.
- Though mainstreaming DRR into development planning has been initiated recently, it has yet to be adequately incorporated into development plans and programs. There are two aspects of disaster mainstreaming, one is integrating DRR in all sectoral development plans and another is mainstreaming in the district and local development plan.
- As evident by the Gorkha Earthquake of 2015, Nepal's capability to respond to a mega-disaster is highly constrained by the lack of high-tech equipment and capacities to run effective SAR. Also, it lacks capacities in mobilizing international humanitarian support in the real-time of emergencies.
- Nepal needs to raise its technical and functional capacities to fully utilize available expertise, experiences, research, and human resources available within and outside the region
- Large-scale capacity building in the field of DRM and early warning systems at all levels of government (local, provincial, and federal) is a prerequisite for making Nepal a disaster-resilient nation.

The Constitution of Nepal (2015) has stipulated that DRRM is a shared responsibility of all levels of government including federal, provincial, and local levels in schedules 6, 7, 8, and 9 of the Constitution of Nepal. The newly introduced Disaster Risk Reduction and Management Act 2017, Local Government Operations Act 2017, National Policy on Disaster Risk Reduction 2018, National Strategic Action Plan for Disaster Risk Reduction 2018-2030 by the government of Nepal are said to be aligned with the SFDRR (2015-2030). These legislations have realized the role of local stakeholders, non-governmental organizations as well as community engagement. But, the binding policy and acts have no clear vision of materializing these benefits in a systematic way (Pandey, 2018). And, despite the two consecutive amendments in the DRRM Act, it still missed the provision of proactive risk reduction measures, such as mitigation, preparedness, and mainstreaming DRR in development. The acts, policies, and strategies have highlighted the roles of public and private actors along with community engagement through "Volunteers Bureau", it has no clear mention about roles of citizens, individuals of the community, and networked individuals in community groups in disaster management who will be impacted and who will response first (McEntire, 2015). For instance, in the aftermath of the April 25 earthquake in Nepal, the local people and the community were the first to respond as immediate responders, post-disaster as well as long-term recovery processes (Jones et al., 2014). Several kinds of literature suggest that community-led initiatives for disaster prevention and management are given less priority over the consultant-driven approach and thus leading to gaps in policy implementation. So, when the community engagement becomes ineffective with a low degree of public awareness and disaster preparedness followed by poor governance, and limited technical and financial resources hinders the effective DRR/M in Nepal and ultimately leads to a higher number of casualties (Tuladhar et al., 2014, Pandey, 2018).

The existing legal frameworks and acts for natural disaster management focus only on post-disaster rescue operations, while the national law also has a major focus on the aftermath of a disaster only. Risk assessments, Risk management, and disaster preparedness are not strengthened with the proper technical knowledge and proper monitoring. This shows the difficulty in the implementation of the policies due to the lack of a proper definition of the roles of the implementing bodies.

Existing DRM Institutions:

In the "Prevention and Mitigation" stage, the role of Ministry of Urban Development, Ministry of Physical Infrastructure and Transport Management, Ministry of Forests and Soil Conservation becomes crucial for scientific land use planning and management; while in the "Preparedness" stage, the role of Ministry of Irrigation, Ministry of Science, Technology, and Environment, and Ministry of Energy becomes very important for weather forecasting and early warning, and at the same time the role of Ministry of Home Affairs is important to declare evacuation zone and emergency planning. In the stage of "Recovery", the role of the Ministry of Defense and Ministry of Health becomes essential to effectively coordinate rescue operation and treatment of the victims. In the stage of "Risk Identification and Assessment", the role of universities, research institutions coordinated under the Ministry of Education becomes more important. National Platform on Disaster Risk Reduction (NPDRR), The Hyogo Framework for Action (HFA), and the subsequent first Global Platform on Disaster Risk Reduction (GPDRR) organized during 5-7 June 2007 have envisioned the establishment of the National Platform for Disaster Risk Reduction (NPDRR) in each country to provide policy and technical support to the government and also to complement the efforts. The platform is headed by the Ministry of Home Affairs (MoHA) and several relevant government agencies, UN organizations, and NGOs/INGOs sit as the members. The platform is believed mainly to develop consensus concepts and actions for mainstreaming disaster risk reduction into policy, plans, and programs through advocacy, coordination, and analysis; to ensure political commitments, and to provide directions and guidance on disaster risk reduction activities. Several institutions have roles to play in disaster risk reduction and management in Nepal. A summary of their profiles is given below:

Office of the Prime Minister and Council of Ministers:

The Office of the Prime Minister and the Council of Ministers provides policy directions and overview to implementation of response activities during major disasters including the declaration of emergencies. It further ensures the transfer of necessary resources from the government's relief fund and mobilization of other sources of funds required for making rescue and relief operations effective. Post-earthquake has played a key role in supervising NRA and providing an overview of recovery and reconstruction work.

Ministry of Home Affairs (MOHA):

MOHA is the focal ministry for disaster risk management in Nepal and has played a lead role in the post-disaster response, particularly managing rescue and relief operations, through mobilization of security forces 21 and other humanitarian actors, coordinated by Disaster Relief Committees at central, regional, district and local levels. The new DRRM Act, 2017 has envisioned a National DRRM Authority to be established within MoHA.

Ministry of Federal Affairs and General Administration (MoFAGA):

MoFAGA plays a critical role in enhancing the technical and functional capacities of the local bodies for mainstreaming disaster risk reduction into periodic development plans and control of fire. It developed several Guidelines and Manuals to support the local bodies to prepare harmonized DRM plan in consistence with the 14-step Planning Guidelines. It has also played a key role in post-disaster response and recovery as a member of the District Disaster Relief Committee.

National Emergency Operation Center (NEOC):

The National Emergency Operations Center (NEOC) was opened on 17 December 2010, by the Ministry of Home Affairs and is operated under the Planning and Special Services Division of MoHA (MoHA, 2022). The objective of the NEOC is to work as a coordination and communication point for disaster information across the country, including government agencies and other response and recovery stakeholders. The NEOC is a standalone prefabricated building situated at the Ministry of Home Affairs premises in Singha Durbar. The building has been built to earthquake standards and is completely self-contained, including multiple backup power supplies. The NEOC's working time is round the clock during the disaster period and never sleeps to get information. It has been run by a nine-member personnel team under the leadership of Under-Secretary. As part of MoHA's strategy to further develop Nepal's emergency preparedness and response capacity, it is planning to establish District Emergency Operation Centers (DEOCs) in all 77 districts. In the first phase, 11 districts have been selected to setup DEOCs.

National Planning Commission (NPC):

NPC plays a lead role in mainstreaming CCA and DRR into national policies and plans (periodic and annual plans) and ensures conformity of DRR policies with other national and sectoral policies. It also guides the sectoral ministries in preparing risk-resilient development plans and has recently drafted a mainstreaming guideline for them. Post-earthquake, was instrumental in finalizing post-disaster need assessment, developing policies for resilient recovery and reconstruction, mobilizing resources, and setting up the National Reconstruction Authority (NRA).

Ministry of Energy, Water Resources and Irrigation (MoEWRI):

Under the MoEWRI, the Water and Energy Commission (WECS) and the Department of Water Induced Disaster Management are the two institutions that are working in the field of DRM. WECS plays an

important role in conducting empirical studies on rivers and streams and developing policies and plans for sustainable management of water resources in the long run at river-basin and sub-basin levels. While developing such plans, attention is given to identifying current and future risks from water-induced disasters, and measures to minimize the risks during implementation. Department of Water Induced Disaster Management is mandated for formulating and implementing policy on water-induced disaster management, flood management, and river training. Likewise, the Ministry also works on minimizing future disaster risk during the construction of new irrigation schemes or maintenance of existing ones.

Ministry of Education Science and Technology, Youth and Sports (MoESTYS):

MoESTYS is for developing education curricula and raising technical capacity on DRM within MOE. In addition, in coordination with the Department of Urban Development and Building Construction (DUDBC) under the Ministry of Urban Development (MOUD) it has prepared earthquake resistant building construction Guidelines for schools and raised awareness programs on earthquake safety and resilient building construction for the teachers, students, and school management committees.

Ministry of Physical Infrastructure and Transport (MoPIT):

MoPIT is mandated with making settlements more resilient to natural and human-made disaster risks. MOUD has been putting considerable effort into the implementation of integrated policies and plans towards inclusion, resource efficiency, mitigation, and resilience to disasters while planning settlements and cities. The ministry's key priorities are the implementation of risk-sensitive land use planning and enforcement of building code for resilient construction in Nepal in the context of diverse ecological setting, which is prone to disasters of various kinds. Ministry coordinates and provides necessary guidance to the DUDBC for its effective and efficient technical support to implement risk-informed policy & plan.

Other ministries working on DRM include the Ministry of Forests and Environment (MoFE), Ministry of Science and Technology and Environment (MoSTE), Ministry of Health and Population (MoHP), Ministry of Industry, Commerce and Supplies (MoICS), Ministry of Agriculture, Land Management and Cooperatives (MoALMC), Ministry of Water Supply and Urban Development (MoWSUD).

Non - Governmental Organizations (NGOs and INGOs):

In addition to national governmental institutions, the following international agencies are also involved in disaster prevention and mitigation work in Nepal and they are Japan International Cooperation Agency (JICA), Asian Disaster Reduction Center (ADRC), Asian Disaster Preparedness Center (ADPC), United Nations Development Program (UNDP), International Center for Integrated Mountain Development (ICIMOD), International Red Cross Society (IRCS), United States Agency for International Development Mission to Nepal (USAIDMN), United Mission to Nepal (UMN), Cooperation for American Relief Everywhere (CARE), World Food Program (WFP), Save the Children Fund (SCF), Technical Cooperation of the Federal Republic of Germany (GTZ), Lutheran World Service (LWS) and various other professional and governmental organizations in Nepal also provide highly valuable support at the time of disaster (Poudyal Chhetri, 2001).

Disaster Preparedness Network Nepal (DPNet-Nepal) is the key national network of organizations and professionals working in the field of Disaster Risk Reduction (DRR) in Nepal. The DPNet-Nepal began its work on DRR as a loose network in the year 1996 through the initiations of like-minded institutions, organizations, and professionals. It was envisaged as a national-level platform that serves for coordination, capacity building, advocacy, and knowledge dissemination for DRR in Nepal. It got official recognition after being registered with the District Administration Office (DAO), Kathmandu under the Organization Registration Act 2034. It is also affiliated with the Social Welfare Council. DPNet-Nepal is envisioned to reduce the disaster risk in the country by working together with the partners and its mission is to advocate the issues of disaster management and establish an effective link between the government, UN agencies, and civic society to reduce the risks of disasters in the country.

The objectives of DPNet-Nepal are to act as the contact point between the governmental bodies, UN Agencies, I/NGOs, and professionals; enhance coordination, communication, and collaboration among disaster management-related organizations and individuals including the govt.; capacity building of partners; suggest policy initiatives to the govt.; educate, advocate and empower communities to strengthen local coping mechanisms and for the establishment of right-based approaches; carry out research and development; promote indigenous knowledge and replicate best practices; organize seminars, workshops, interactions, meetings, etc.; share experiences on DRR and develop DPNet-Nepal as a resource and information center.

Institutional Gaps and Constraints:

Regulatory and legislative gaps and institutional weaknesses have persisted in terms of mitigating disaster risk (Nepal et al., 2018). The disaster-related policies of Nepal have a greater focus on response and relief activities rather than preparedness and mitigation approaches. The poor institutional arrangements along with regulatory and legislative gaps have made it difficult for the proper implementation of DRR activities like the duplication and redundancy of responses (Pandey, 2018). The lack of proper coordination within and among the government as well as non-governmental organizations further exaggerates the existing problems. The role of community-organized groups can play a crucial role in disseminating disaster-related information. Studies

have shown the crucial role of these grassroots organizations in educating the citizens of Nepal for awareness regarding disaster management (IFRC, 2011). A disaster often happens without warning and the destruction it causes becomes very difficult to manage with a normal administrative setup. Given this suddenness, what the role, duties, and responsibilities of the various disaster management-related agencies should be; how co-operation and coordination between the various disaster management agencies can be established; and how mass public awareness can be raised is essential. Other severe problems for disaster management in Nepal include the following: indifference in behavior; a lack of co-operation and coordination among various disaster management-related agencies. The community-based disaster risk reduction projects have a focus on a specific community within the local level such as wards, but still, the approval process becomes complex due to the involvement of international agencies. The process is of course, very essential to align with the legal framework but it creates a barrier for the donor-funded projects. Also, the effective implementation of disaster preparedness activities has often been hindered by the lack of coordination between and within government and non-government organizations. There is thus a need for close co-operation and mutual understanding among all the agencies concerned. Given the above situation, well-trained technical manpower, advanced technology, and sufficient means and resources are needed to reduce the recurrence and the impact of natural disasters (Poudyal Chhetri, 2001).

Conclusion and Way Forward:

This is a review-based study on the DRRM sector in Nepal. As Nepal is one of the highly vulnerable countries in terms of different natural disasters, and currently the country is implementing the new governance system, this study could play a vital role to make the disaster-resilient community. The results revealed that after the state restructuring in 2015, there are several policies either formulated or in the process of formulation at local, provincial, and federal levels. The Constitution of Nepal (2015) has stipulated that DRRM is a shared responsibility of all levels of government including federal, provincial, and local levels in schedules 6, 7, 8, and 9 of the Constitution of Nepal. Precisely, before 1982, disaster management activities were carried out in an unorganized way, and the gap of this act is minimized in the new act of DRRM 2017. Importantly, it is also highlighted that the Disaster Risk Reduction and Management Act 2017 is the milestone in the DRRM section in Nepal. One of the key aspects of the DRRM Act 2017 is the provision for forming community-based Disaster Preparedness and Response Committees. Thus, this research leads us to embedding principles of sustainability and inclusivity in the DRRM cycle under the context of the new governing system in Nepal. We recommend that further in-depth study should be carried out for further insights on DRRM for making the disaster resilient community and sustainable development.

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