

NATIONAL POLICY FOR DISASTER RISK REDUCTION

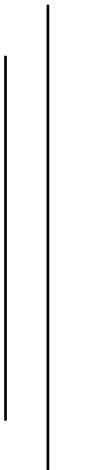
2018



The Government of Nepal
Ministry of Home Affairs

NATIONAL POLICY FOR DISASTER RISK REDUCTION

2018



**The Government of Nepal
Ministry of Home Affairs**



GOVERNMENT OF NEPAL
MINISTRY OF HOME AFFAIRS



Singh Durbar
Kathmandu, Nepal.

Ref No.:

Date 12 Feb, 2019

Message

It is my pleasure that National Disaster Risk Reduction Policy, 2018 has been endorsed by Disaster Risk Reduction and Management National Council meeting held on 18 June 2018 in line with the provision of Disaster Risk Reduction and Management Act, 2017. This is the first policy prepared aiming at ensuring a long-term policy provision in the area of disaster risk reduction and management.

This policy is formulated to systematize and streamline the work effectively in all stages of disaster management. It includes disaster risk reduction activities for effective relief and response operation after disaster and rehabilitation & reconstruction focusing on sustainable development along with the awareness raising programmes and actions.

This policy was developed based on the learning and experiences received from the implementation of different legal instruments of the past. And also from the learning and experiences of the 'Gorkha Earthquake 2015' and by making reference of other recent disasters in the country, so as to reduce the prevalent risks of disaster and for the effective prevention measures to the possible risks. I am convinced that this policy would be useful to government bodies in the recently implemented federal, province and local governments, development partners, non-government organizations, private sectors and even in the community level.

It is expected that disaster resilient Nepal can be built with the effective implementation of the policy-based provisions ensured in this policy which accommodates the country's needs and in line with the recent global agendas including Sendai DRR declaration, Sustainable Development Goals, Paris Declaration on Climate Change and others committed at international forum.

I would like to express my sincere thanks to different ministries of the Government of Nepal and all other agencies, development partners and others including private sectors for their contribution to prepare the National Disaster Risk Reduction Policy. Likewise, I would like to thank the United Nations Development



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Programme (UNDP) and its Comprehensive Disaster Risk Management Programme for providing technical and financial supports in formulating and publishing the National Disaster Risk Reduction Policy. I would also like to commend the works of Joint Secretary Ms. Indu Ghimire and Under Secretary Mr. Bamsi Kumar Acharya for their coordination in publishing this National Disaster Risk Reduction Policy.

I am confident that the National Disaster Risk Reduction Policy, 2018 shall give information to all organizations and individuals active in disaster risk management field and all the general public in a clear and integrated manner to execute works in a more professional way in the days to come.


Prem Kumar Rai
Secretary



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Kathmandu, Nepal.

Ref No. :

Date: 12 Feb, 2019

Acknowledgement

It is evident that Nepal has witnessed various types of natural and non-natural disasters in the past. Nepal's geographical location, unplanned infrastructure development and rising urbanization have resulted into these disasters. Reducing the impacts of these disasters is the need of the hour. Realizing these realities, Disaster Risk Reduction and Management National Council held on 18 June, 2018 has endorsed the National Disaster Risk Reduction Policy, 2018 to broadly streamline the disaster risk reduction and management in a comprehensive manner. It is a matter of pleasure to all of us to publish this booklet of the approved policy and bring it to the access of all stakeholders.

This national policy shall offer a guideline to systematize and direct the overall aspects of disaster risk reduction and management through mainstreaming the diverse areas of disaster management, risk reduction, efficient and effective response as well as adopt the approach of Build Back Better (BBB) for rehabilitation and reconstruction in the post-disaster period. Nepal would immensely benefit from this policy with regards to disaster management at a time when disaster management stakeholders are active in making Nepal more resilient along with the Sustainable Development Goals (SDGs). I am confident that this policy would be useful to all government agencies, development partners, non-government sectors and others including private sectors at federal, provincial and local levels in Nepal.

The Sendai Framework on Disaster Risk Reduction declaration for 2015 to 2030 and Sustainable Development Goals for 2015 to 2030 are the recent major frameworks on disaster management for multi-dimensional aspects agreed in different international forum. This policy prepared by considering different aspects of disaster risk management of Nepal by keeping these all frameworks and goals into consideration has realized the need to build a resilient Nepal by the effective implementation different programmes based on the spirit of strategic policies of this document.



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I would like to thank the officials and experts of six different thematic groups, the then joint secretaries Mr. Krishna Bahadur Raut and Mr. Kedar Neupane, under secretaries, section officers, representatives from DPNet and AINTGDM for their contribution in preparing this action plan. Similarly, I appreciate the efforts and contribution of Mr. Bamshi Kumar Acharya, under secretary for his work in preparing and publishing the document. Finally, I would like to thank Mr. Vijaya Prasad Singh, United Nations Development Programme and Mr. Krishna Raj Kaphle from Comprehensive Disaster Risk Management Programme, representatives from technical supporting agency and Dr. Narayan Bahadur Thapa, national coordinator and Dr. Dilip Gautam lead technical expert for their thorough engagement & contribution in preparing, finalizing and publishing the action plan.

This policy shall largely support the stakeholders in implementing the activities of disaster risk management in a more systematic, professional and objective oriented manner in the days to come. I am confident that this shall guide all to move ahead in the area of disaster risk reduction and management.

Indu Ghimire
Joint Secretary

12 Feb. 2019

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NATIONAL POLICY FOR DISASTER RISK REDUCTION, 2018

1. Background

Nepal is one of the most disasters prone countries affected by recurrent multiple hazards. Every year, the country suffers from great loss of human lives and damage to properties due to natural and non-natural disasters like flood, landslide, thunderbolt, fire, road accidents, and epidemics. The country is affected by natural hazards like earthquake, flood, landslide, soil erosion, inundation, lightning, drought, snowstorm, hailstorm, avalanche, glacial lake outburst, heavy rainfall, rainfall deficit, windstorm, cold wave, heat wave and forest fire due to the adverse geography, fragile geology, climate variability and climate change. Nepal is also affected by the non-natural hazards like road accidents, epidemics, famine, insect and micro-organism havoc, animal and bird influenza, universal contagious pandemic flu, snake bite, animal terror, accidents in mines,

air, water and industry, fire, poisonous gas, chemical or radiation leakage, gas explosion, poisonous food consumption, environmental pollution, deforestation or physical infrastructure damage and accident during rescue, The latest examples are Gorkha earthquake of April 2015, flood and landslide of 2014 and 2017 and great loss of lives and damages of properties by these disasters. Increasing population, poverty, unplanned urban settlement, and lack of risk-informed development activities have been further increasing the disaster vulnerabilities.

The Government of Nepal has developed various legal and institutional arrangements to plan and manage the Disaster Risk Reduction and Management activities. In this context, Natural Calamity (relief) Act 1982; Local Self Governance Act 1998; Building Act 1998; National Building Code 2004; National Strategy for Disaster Risk Management 2009, Climate Change Policy 2011, Land Use Policy 2012, Water Induced Disaster Management

Policy 2015; National Reconstruction and Rehabilitation Policy 2015; National Disaster Response Framework 2013, Basic Guideline related to Settlement Development, Urban Planning and Building Construction 2016; National Urban Development Strategy 2016 are important legal and Policy framework. Similarly, Constitution of Nepal 2015, and recently approved and enacted Local Government Operation Act 2017 and Disaster Risk Reduction and Management Act 2017, are the latest major legal arrangements. In addition, Natural Disaster Relief Committees established from the center to the local level as per the law, various agencies and institutes of the Government of Nepal can be taken as important institutional arrangements. The National Council, Executive Committee, National Disaster Risk Reduction and Management Authority and Disaster Management Committees at Province, District and Local levels are new institutional arrangements as per the Disaster Risk Reduction and Management Act 2017.

It is necessary to develop an umbrella policy for Disaster Risk Reduction considering the international agreements mainly the Sendai Framework for Disaster Risk Reduction, Sustainable Development Goals, Paris Convention on Climate Change as well as national needs. Taking into account of the lessons learned and experiences gained from the implementation of National Strategy for Disaster Risk Management 2009, the learnings and experiences of the Gorkha earthquake 2015 and recent other disasters for reducing the existing disaster risks and preventing of new potential risks, this National Disaster Risk Reduction Policy 2018 has been prepared to build safer, adaptive and resilience nation from disaster risks. This policy has been approved by Disaster Risk Reduction and Management National Council as per the mandate of Disaster Risk Reduction and Management Act 2017, Section 5(a) on 18th June 2018 (4 Ashad 2075) and came into effect thereafter.

2. Vision

The long-term vision of this policy is to contribute to sustainable development by making the nation safer, climate adaptive and resilient from disaster risk.

3. Mission

The mission of this policy is to substantially reduce the disaster risk and losses in lives, livelihoods and health as well as in the economic, social and physical infrastructure and cultural and environmental assets of persons, communities and nation and to increase their resiliency by implementing disaster risk reduction and management activities in a balanced way.

4. Goal

The goal of this policy is to reduce disaster mortality and number of affected people substantially, increase resiliency by reducing disaster damage to means of livelihoods as well as critical infrastructures and disruption

of basic services such as agriculture, industry, roads, communication, water supply and sanitation, education and health facilities, and reduce direct disaster economic loss.

5. Objectives

The main objective of this policy is to substantially reduce the natural and non-natural disaster losses in lives and properties of persons, health, means of livelihood and production, physical and social infrastructures, cultural and environmental assets.

The other objectives of the policy are the following:

- 5.1. To increase understanding on disaster risk and ensure the access of information related to the disaster risk at all levels.
- 5.2. To strengthen disaster risk governance for disaster risk reduction and management.

- 5.3. To mainstream disaster risk reduction in all development processes by integrating it with climate change adaptation activities.
- 5.4. To enhance disaster resilience by increasing public and private investment in disaster risk reduction.
- 5.5. To make disaster preparedness and response effective by improving disaster information management system and developing and expanding multi-hazard early warning system.
- 5.6. To ensure “Build Back Better” approach for post-disaster recovery, rehabilitation and reconstruction.

6. Concept

Disaster risk reduction national policy is based on the following concept:

- 6.1. As per the Constitution of Nepal, to adopt the principle of coordination and

cooperation among local, provincial and Federal government in the disaster risk reduction, prevention and management.

- 6.2. As per the disaster risk governance principle, to pursue the involvement and partnership of all stakeholders of the society, and gender and social inclusion by embracing the principle of participation, accountability and transparency.
- 6.3 To pursue the concept of risk sensitive development.
- 6.4 To pursue the concept of multi-hazards disaster risk management.
- 6.5 To pursue the use of science and technology based on local characteristicsand optimum utilization of local means, resources, knowledge and skills.

- 6.6 To follow the concept of innovative financial investment.
- 6.7 To pursue the concept of “Build Back Better” in recovery, rehabilitation and reconstruction.

7. Policy

The following policies will be adopted to achieve the above mentioned objectives:

- 7.1 The subject of disaster risk will be incorporated in the curriculum of school and the higher level of education.
- 7.2 The disaster information, awareness and learning will be increased up to the community level in an accessible way by preparing the programs on public awareness and information through effective use of information and communication system.
- 7.3 Natural and non-natural disasters will be monitored and measured regularly.

- 7.4 Disaster risk assessment and mapping system will be developed. Identifying vulnerable communities, capacity development activities will be conducted for them.
- 7.5 Identifying the probable road accident areas based on the disaster assessment and mapping, disaster prone areas will be decided and such information will be disseminated to the public to reduce the accidents.
- 7.6 Assessment and mapping of disaster risks will be conducted and disseminated in the areas of education, health, agriculture, industry, tourism, energy, housing, transportation, water supply, sanitation including infrastructure, and historical and cultural heritages.
- 7.7 Disaster risk will be assessed to reduce the probable risk on business, public health and nutrition.
- 7.8 Disaster information management system based on Remote Sensing

System, Geographic information system and open source technology will be developed and made easily available to the public and stakeholders.

- 7.9 An appropriate technology will be used for disaster risk reduction conducting the study and research on geology, seismology, geographical information system, remote sensing system, satellite technology, radar technology and early warning system including modern and traditional technologies.
- 7.10 National Disaster Risk Reduction Research and Training Institute will be established for research and capacity development on disaster risks, disaster prevention, preparedness, search and rescue as well as post-disaster recovery, rehabilitation and reconstruction.
- 7.11 The participation and collaboration of government agencies, development partners, private and non-government

organizations, Red Cross, universities, research centers and other stakeholders will be promoted in the study and research on disaster risk.

- 7.12 Disaster management committees will be formed at the Federal, Provincial and Local level and their capacities will be developed.
- 7.13 The institutional capacity will be enhanced by establishing, developing, extending and networking the National Disaster Risk Reduction and Management Authority (NDRRMA), Volunteer's Bureau, Flying squad, Fire brigade, Emergency Operation Centers and Health Emergency Operation Centers.
- 7.14 National Road Safety Council will be formed and made active.
- 7.15 National Road Safety Strategic Action Plan will be developed and implemented to ensure the road safety.

- 7.16 For the community level disaster risk reduction, participation of local users, community organizations and community people will be ensured in formulation, implementation and management of plans for irrigation, river control, forest management, school, health institutions, drinking water and sanitation.
- 7.17 As per the National Land Use Policy, development and management of safer settlement will be promoted by formulating risk sensitive land use plan based on multi-hazard risk assessment at the local level. In addition, a policy will be adopted for relocation of unsafe settlements to a safe place.
- 7.18 Entire development process will be implemented and managed in reducing the prospective risks on the basis of multi-hazard risk sensitivity.

- 7.19 As per the principle of integrated water resource management, master plan will be developed and implemented for land and watershed conservation, addressing the river management and inter-relationship of upper and lower riparian areas.
- 7.20 Chure management master plan will be effectively implemented to reduce the potential risks in Chure area due to its fragile geographical formation.
- 7.21 Access, representation and meaningful participation of women, children, senior citizen, people with disabilities and the people from economically and socially marginalized communities will be ensured in all steps and structures of disaster risk reduction based on inclusive disaster management concept.

- 7.22. As per the concept of disaster sensitivity, public physical infrastructure (government offices, educational institutions, health institutions, community buildings and shelters etc.) will be made senior citizen, gender, people with disability and children friendly.
- 7.23 An institutional arrangement will be made to ensure effective mobilization of the volunteers for Disaster Risk Reduction and Management at the community level.
- 7.24 For the promotion of safer building construction from disaster risks, National building code and local bylaw will be updated periodically and implemented.
- 7.25 Disaster resilient infrastructure policy will be pursued in design and construction of physical infrastructure in development. In addition, climate

change adaptive infrastructure construction will also be promoted.

- 7.26 Risk reduction policy will be adopted conducting study for impact of disaster risks and climate change during planning, designing, construction and management of the mega projects for development.
- 7.27 Culture of disaster safety will be promoted and adopted to build safer society.
- 7.28 Organizational structure of the government agencies involved in disaster risk reduction and management will be reviewed and strengthened. Additionally, organizational and institutional development of National Disaster Risk Reduction and Management Authority will be carried out for effective operation and management of the disaster risk reduction and management related activities.

- 7.29 An inclusive mechanism will be established at federal, provincial and local levels for effective monitoring and evaluation of the activities related to disaster risk reduction and management.
- 7.30 National Disaster Risk Reduction platform will be extended up to the local levels and strengthened.
- 7.31 The involvement of private sector will be encouraged in the disaster risk reduction and management activities.
- 7.32 Disaster resilient community will be developed by diversifying means of livelihoods.
- 7.33 Flood, inundation and draught resistant and climate change adaptive agriculture system will be developed with the support from Nepal Agricultural Research Council, Nepal Academy of Science and Technology and other research centers.

- 7.34 Flood, inundation and draught resistant and climate change adaptive health service system will be developed with the support from Nepal Health Research Council and different health institutions including research centers.
- 7.35 The private sector, bank and financial institutions, insurance company, development partners and donor agencies will be encouraged for the investment on disaster risk reduction.
- 7.36 The community and cooperative institutions will be encouraged for the investment on disaster risk reduction.
- 7.37 Insurance of crops, livestock and business/livelihood for risk sharing and risk transfer of vulnerable communities will be promoted and made it easily accessible. In addition, disaster affected community will be provided soft loan from banks and financial institutions.

- 7.38 The social security programs will be included and implemented in disaster response, post-disaster recovery and reconstruction.
- 7.39 For the compensation of losses and damages due to disasters mandatory insurance system will be promoted for public, private, and community building, educational and health related infrastructure and other physical infrastructure including water supply.
- 7.40 Programs on disaster risk reduction and management will be conducted by the allocation of certain percentage in the annual budget of federal, provincial and local governments.
- 7.41 Disaster risk reduction works will be integrated and mainstreamed in the development activities. The recommendations in different sectors made by local disaster risk

management plan will be included and implemented with preference in the local development plan.

- 7.42. Natural hazards like flood, landslide, drought, thunderbolt, windstorm, hot wave, cold wave, fire, epidemics and glacier lake outburst will be monitored and forecasted regularly and Forecast-Based Preparedness and Response Plans will be developed and implemented by developing early warning system.
- 7.43 Community based disaster risk reduction activities will be implemented by the maximum utilization of local knowledge, skill, resources and materials.
- 7.44 The capacity of emergency operation centers will be enhanced and incident command system will be extended and implemented up to the local level.

- 7.45 Emergency preparedness plan and disaster preparedness and response plan will be prepared and implemented at federal, provincial and local levels. In addition, business continuity plan for public, private, and non-government sectors will be prepared and implemented.
- 7.46 Search and rescue teams will be formed, and their capacity will be developed and enhanced at federal, provincial and local levels.
- 7.47 Disaster management fund will be established at federal, provincial and local levels as per the law to mobilize the resources.
- 7.48 Educational institutions, hospitals and shelters will be upgraded to make them useful in emergency situation.
- 7.49 Open spaces will be identified, developed and managed for disaster

preparedness and response as well as accessible and safe shelters will be constructed at vulnerable areas. In order to make disaster response effective, humanitarian support and logistic areas will be established, developed and expanded.

- 7.50 Emergency relief warehouses will be established, developed and expanded and necessary rescue and relief materials will be stockpiled for effective disaster response in the federal, provincial and local levels.
- 7.51 The necessary arrangements will be made for easy delivery of the humanitarian assistance from international community during big disaster.
- 7.52 Trauma care centers will be established in major cities.

- 7.53 The capacity volunteers to be mobilized during disaster at the local level will be developed.
- 7.54 The concept of “Build Back Better, Stronger and Safer” will be promoted to avoid future disaster risks and to reduce disaster risks in post disaster recovery, rehabilitation, and reconstruction works.
- 7.55 Communication and Dissemination System based on modern information technology such as web-based system, mobile phone based services (apps, short message service-cell broadcasting, interactive voice response), emergency telecommunication centers will be promoted for disaster preparedness and response.
- 7.56 Bilateral, regional and international coordination, cooperation and collaboration in disaster risk reduction,

preparedness, recovery, rehabilitation and reconstruction will be promoted.

- 7.57 Necessary arrangements will be made to mobilize the political parties and their sister organizations to support disaster responses like search, rescue and relief operation at federal, provincial and local levels.
- 7.58 The approach of cluster system will be established and implemented with the participation of all concerned stakeholders for effective disaster response work at federal, province and local levels.
- 7.59 Accountability, transparency and high-quality service will be ensured in the activities of Disaster Risk Reduction and Management.

8. Policy Implementation

The following approaches will be adopted to implement this policy:

- 8.1 The disaster risk reduction and management strategic action plan including periodic, annual and emergency plan will be prepared and implemented at the federal, provincial and local level for planned implementation of this policy.
- 8.2 This policy will be taken as the guideline during formulation and implementation of the program for the sectoral ministry, public entities, development partners and the private sectors.
- 8.3. This policy will be taken as the guideline during the formulation and implementation of periodic and annual program and plan at provincial and local levels.

- 8.4 The federal, provincial and local governments will allocate necessary budget for disaster risk reduction and management programs to implement this policy.
- 8.5 The necessary institutional structures will be formed as per the provision of Disaster Risk Reduction and Management Act 2017.
- 8.6 Line ministries and departments will be restructured based on organization and management study as felt necessary for effective implementation of this policy.
- 8.7 Necessary legal and institutional arrangement will be made to implement this policy.

9. Coordination, Monitoring and Evaluation

- 9.1. A mechanism of coordination and cooperation will be established among the government, private sector, non-government organizations, Red Cross, political parties and other concerned

stakeholders at federal, provincial and local levels for effective implementation of disaster risk reduction and management related activities.

- 9.2 The Disaster Risk Reduction and Management National Council will monitor and evaluate the implementation of the policy at the national level.
- 9.3 While monitoring the contribution of disaster risk reduction activities, the attention will be given to the saved assets, advantages and services provided by the physical infrastructure made for risk reduction and prevention and the changes observed on resilience capacity of the disaster-affected community.
- 9.4 All efforts related to the disaster risk reduction and management will be updated and published annually on “Nepal Disaster Report”.

10. Policy Revision

The policy will be revised as deemed necessary.

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National Disaster Response Framework (NDRF)



The Government of Nepal
Ministry of Home Affairs
July 2013



National Disaster Response Framework (NDRF)



**The Government of Nepal
Ministry of Home Affairs
July 2013**



GOVERNMENT OF NEPAL
MINISTRY OF HOME AFFAIRS



Ref No.:

Singh Durbar
Kathmandu, Nepal.

September 28, 2013
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FOREWORD

Nepal is one of the highest risk countries in terms of disasters. Different hazards such as flood, landslide, fire, storm, earthquake, thunderbolts cause loss of lives and properties, resulting devastating effect on the economy of the nation. The entire country from east to west lies in the active seismic zone and has already witnessed several earthquakes in the past. Following a mega disaster, it is important to maintain law and order situation and to support the affected people on time. The coordination with humanitarian organizations is equally important to save lives and to reduce sufferings. Government of Nepal endorsed National Disaster Response Framework (NDRF) as a key guideline for disaster response. It plays a vital role to mobilise international humanitarian assistance in mega disaster, in case if the government response is beyond its capacity. In the time of mega disaster, the CNDRC, an apex body, may recommend to the cabinet for international appeal for international humanitarian assistances and for the Search and Rescue Forces.

It is my pleasure that the National Disaster Response Framework is in place that fulfils the objectives of Natural Calamity Relief Act 1982, National Strategy for Disaster Risk Management (NSDRM), 2066 and helps to coordinate the cycle of Disaster Management. This framework will certainly address the deficiencies in Disaster Risk Management in the past and define the role and responsibility of all concerned Government, Non-Government and International Humanitarian Agencies. This document will also help to coordinate the international support from the United Nations, International Committee of Red Cross and Red Crescent (ICRC), Neighbouring and Friendly Foreign Countries, Donor Agencies and International Non-Governmental Humanitarian Organizations. I believe that after implementation of the NDRF, all concerned agencies will have clear responsibility and duty to perform, even with stipulated time. This framework provides procedural guidelines for the management of international appeal and also frames the Sectoral Strategic Action Plans of those agencies. I expect those agencies would come up with the action plan as stipulated in NDRF.

Finally, I would like to thank all Government agencies, UN agencies and UNOCHA in particular who actively supported preparing the NDRF. Also, I would like to thank all colleagues of the Ministry who have heavily contributed for the preparation of this document. Thank you.

Navin Kumar Ghimire

Secretary

Abbreviations and Acronyms

ACC	Association of Construction Contractor	IRA	Initial Rapid Assessment
AOAN	Airlines Operation Association of Nepal	LEMA	Local Emergency Management Agency
APP	Armed Police Force	MIRA	Multi Cluster Initial Rapid Assessment
CAAN	Civil Aviation Authority of Nepal	MNMCC	Multi National Military Coordination Center
CBOs	Community Based Organizations	MoAD	Ministry of Agriculture Development
CBS	Central Bureau of Statistics	MoCS	Ministry of Commerce and Supplies
CCCM	Camp Coordination Camp Management Cluster	MoCTCA	Ministry of Culture, Tourism and Civil Aviation
CMCC	Civil Military Coordination Center	MoD	Ministry of Defense
CNDRC	Central Natural Disaster Relief Committee	MoE	Ministry of Education
DC	Department of Custom	MoF	Ministry of Finance
DDA	Department of Drug Administration	MoFA	Ministry of Foreign Affairs
DDRCC	District Disaster Relief Committee	MoFALD	Ministry of Federal Affairs and Local Development
DEOC	District Emergency Operation Center	MoFSC	Ministry of Forest and Soil Conservation
DHM	Department of Hydrology and Meteorology	MoHA	Ministry of Home Affairs
DHS	Department of Health Services	MoHP	Ministry of Health and Population
DI	Department of Immigration	MoIC	Ministry of Information and Communication
DIG	Deputy Inspector General of Police	MOLJ	Ministry of Law and Justice
DLS	Department of Livestock Services	MOPPWT	Ministry of Physical Planning, Works and Transport Management
DMG	Department of Mines and Geology	M	Ministry of Science, Technology and Environment
DP-Net	Disaster Preparedness Network	MoUD	Ministry of Urban Development
DR	Department of Roads	MoWCSW	Ministry of Women, Children and Social Welfare
DT	Department of Transport	NA	Nepalese Army
DUDBC	Department of Urban Development and Building Construction	NDRF	National Disaster Response Framework
DWD	Department of Women Development	NEA	Nepal Electricity Authority
DWDO	District Women Development Office	NEOC	National Emergency Operation Center
DWIDP	Department of Water Induced Disaster Prevention	NFC	Nepal Food Corporation
DWSS	Department of Water Supply and Sewerage	NFIIs	Non-Food Items
EDCD	Epidemiology and Disease Control Division	NHRC	National Human Rights Commission
FJ	Federation of Journalists	NOC	Nepal Oil Corporation
FNCCI	Federation of Nepalese Chambers of Commerce and Industry	NP	Nepal Police
FTA	Federation of Transport Association	NRCS	Nepal Red Cross Society
Goon	Government of Nepal	NS	Nepal Scout
I/NGOs	International/Non-Governmental Organizations	NSC	National Seismological Center
IASC	Inter-Agency Standing Committee	NST	Nepal Science and Technology
ICAO	International Civil Aviation Organization	OCHA	Office for the Coordination of Humanitarian Affairs
ICIMOD	International Center for Integrated Mountain Development	OPMCM	Office of Prime Minister and Council of Ministers
IDP	Internal Displaced Persons	OSOCC	On-Site-Operation Coordination Center
IFRC	International Federation of Red Cross and Red Crescent Societies	RDRC	Regional Disaster Relief Committee
IHC	International Humanitarian Communities	RSS	Rastriya Samachar Samiti
INSARAG	International Search and Rescue Advisory Group	SAARC	South Asia Association for Regional Cooperation
IOM	International Organization for Migration	SAM	Severe Acute Malnutrition
		SAR	Search and Rescue

SC	Save the Children	UNFPA	United Nations Population Fund
SDMC	SAARC Disaster Management Center	UNHCR	United Nations High Commissioner for Refugees
SMS	Short Message Service	UNICEF	United Nations Children's Fund
SWC	Social Welfare Council	UNISDR	United Nations International Strategy for Disaster Reduction
TV	Television	USAR	Urban Search and Rescue
UN HC	United Nations Humanitarian Coordinator	VDC	Village Development Committee
UNDP	United Nations Development Programme	WASH	Water, Sanitation and Hygiene
UNDSS	United Nations Department of Safety and Security	WFP	World Food Programme
		WHO	World Health Organization

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National Disaster Response Framework

1. Background

Relief work following a major disaster in Nepal has been guided by the Natural *Calamity Relief Act* 1982. The National Strategy on Disaster Risk Management provides a strategic direction in covering all phases of the disaster management cycle. The National Disaster Response Framework has been prepared for the effective coordination and implementation of disaster preparedness and response activities by developing a National Disaster Response Plan that clarifies the roles and responsibilities of Government and Non Government agencies involved in disaster risk management in Nepal.

2. Objectives and Scope

- 1 The main purpose of this framework is to develop a clear, concise and comprehensive national disaster response framework for Nepal that can guide a more effective and coordinated national response in case of a large scale disaster.
- 2 National Disaster Response means “actions taken immediately before, during and after the disasters, or directly to save lives and property; maintain law and order; care for sick, injured and vulnerable people; provide essential services (lifeline utilities, food, shelter, public information and media); and protect public property”.
- 3 The scope of this framework is limited to preparedness and emergency response at national, regional, district and VDC/local level.
- 4 National Disaster Response Framework will come into effect immediately after the approval of the Government of Nepal (Cabinet) as recommended by the Central Natural Disaster Relief Committee.

3. National System for Disaster Response

- 1 *Natural Calamity Relief Act* 1982 and *Local Self Governance Act* 1999 are the existing legal foundations for disaster response in Nepal.
- 2 *Natural Calamity Relief Act* 1982 mandates the Ministry of Home Affairs as a lead agency for immediate rescue and relief work as well as disaster preparedness activities. Ministry of Home Affairs has also been coordinating preparedness and rehabilitation initiatives pursuant to the responsibilities given by the Work Division Regulation 2064 of the Government of Nepal to oversee the overall activities of the disaster response in Nepal.
- 3 The National Strategy for Disaster Risk Management was formulated in 2009. This Strategy outlines the Government’s vision for making Nepal a disaster resilient country.
- 4 The Cabinet, as per the recommendation of the Central Natural Disaster Relief Committee, shall declare a state of emergency in case of mega disaster that is beyond the existing capacity of the Government of Nepal.
- 5 As per the Disaster Rescue and Relief Standard 2064, the Natural Disaster Relief Fund shall remain active at the central, regional, district and local level. The Prime Minister Natural Disaster Relief Fund will be mobilized for disaster response as per the Prime Minister Natural Disaster Relief Fund Regulation 2064. In addition, there are several funds available at international and national humanitarian communities for disaster response. These funds are being used as per the response needs; therefore, it has been

realized to establish a dedicated disaster response fund at the central, regional and district levels.

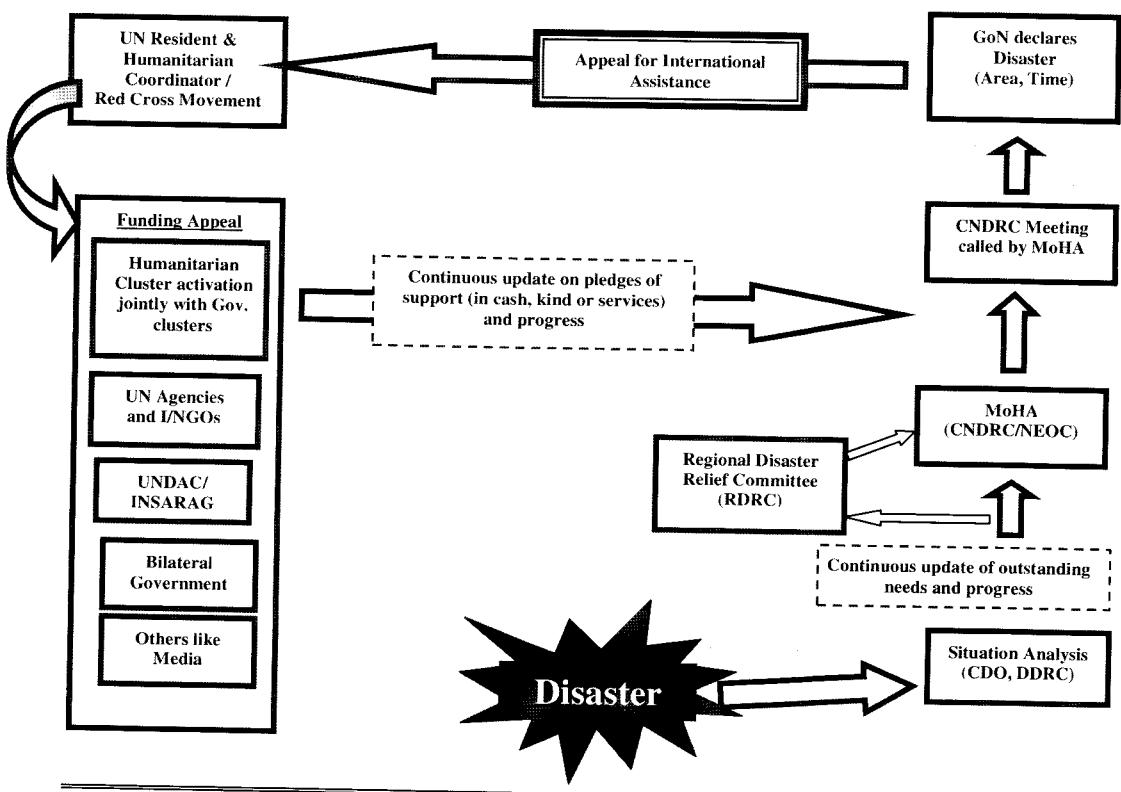
- 6 The formation of Central Natural Disaster Relief Committee (CNDRC), Regional Disaster Relief Committee (RDRC), District Disaster Relief Committee (DDRC) and Local Disaster Relief Committee (LDRC) is mandated by the Natural Calamity Relief Act 1982 for the overall disaster response in Nepal. In addition, there are Supply, Shelter and Rehabilitation sub-committee and Relief and Treatment sub-committee at the central level. In order to collect, analyze, disseminate and coordinate disaster related information, Emergency Operation Centers (EOCs) are functional at the central, regional, district and municipality level.
- 7 As provisioned by the Local Self Governance Act 2055, local bodies (DDC, Municipalities and VDCs) are responsible for disaster preparedness and response.

4. International Assistance for Disaster Response

- 1 In case of a mega disaster requiring international assistance, the Government of Nepal (Cabinet) may request the UN Humanitarian Coordinator, national and international governments, Red Cross Movement, regional organizations, donor communities, I/NGOs, political parties, different professionals, resident and non-resident Nepalese citizen, foreign citizen, and other sources for international assistance in terms of cash or services to respond to disaster through concerted national efforts and intensified regional co-operation. But in normal circumstance, the Ministry of Finance shall be consulted for such an appeal.
- 2 As per the call for assistance from the Government of Nepal, the United Nations and the Red Cross Movement shall appeal for the international assistance to respond to disaster.
- 3 Ministry of Home Affairs, in accordance with the Guidelines for Accepting International Assistance and Early Registration to be prepared in consultation with the Ministry of Finance, shall facilitate and coordinate the overall management of International Humanitarian Communities. This includes their listing, registration, as well as delineating priority response areas for them during the mega disaster.
- 4 Government of Nepal shall establish provisions for granting immediate visa, visa fees and custom duty exemptions at entry points (land or air) to International Humanitarian Communities (IHC) along with relief goods, search and rescue equipments, including medical equipments and accessories as per the Model Agreement for Emergency Customs Procedure 2007.
- 5 The Government of Nepal shall facilitate the issuance of entry visa for members of international community who come to Nepal for search and rescue and humanitarian support in times of mega disaster. In addition, the Government of Nepal shall also take initiatives, and facilitate as necessary, for the provision of transit visa for international humanitarian community coming to Nepal via India and the port facility for relief items destined to Nepal.
- 6 During a large scale disaster, the UN Humanitarian Coordinator shall activate the cluster system of Nepal. Government of Nepal shall nominate the full time focal person to the respective cluster in order to respond to disaster through a coordinated cluster approach. In addition, the Central Natural Disaster relief Committee may also activate the clusters as necessary.

5. National and International Assistance and Coordination Structure

- 1 The national and international assistance and coordination structure during emergency shall be as follows:



- 2 The coordination structure in Nepal is presented as below:

Name of clusters	Health	WASH	Shelter	Food security	Logistics	CCCM	Education	Protection	Telecommunication	Nutrition	Early Recovery Network
Cluster leads (Government)	MoPH	MoUD	MoUD	Mo AD	MoHA	MoUD	MoE	MoWCSW / NHRC	MoIC	MoHP	MOFALD
Cluster Co-leads (Humanitarian Agencies)	WHO	UNICEF	IFRC/UNHABITAT	WFP/FAO	WFP	IOM	UNICEF/SC	UNHRC/UNICEF/UNFPA	WFP	UNICEF	UNDP

- 3 As requested by the Government of Nepal, UN Humanitarian Coordinator of Nepal shall coordinate for International Urban Search and Rescue (USAR) team (based on *UN INSARAG Guidelines*) and UN Disaster Assessment and Coordination Team.

- 4 Government of Nepal shall ensure the coordination of international humanitarian communities and facilitate the establishment of Reception and Departure Centre for them at the airport and set up Base Camp for the Search and Rescue Team.
- 5 Members of Search and Rescue Team and other humanitarian assistance groups should inform the National Emergency Operation Centre of return upon completion of the work.
- 6 The National Emergency Operation Centre shall prepare a priority work-plan for the purpose of incoming and outgoing members of Search and Rescue Team and Humanitarian Assistance group and bringing in rescue and relief materials via air or land.
- 7 Government of Nepal shall do a bilateral and multilateral agreement with friendly and neighboring countries as necessary based on agreed procedures to support disaster response including entry process of the Search and Rescue Team.
- 8 If required, Government of Nepal may request for and manage international military assistance in accordance with the *Guidelines for Accepting International Military Assistance/Guidelines for the Civil and Military Defense Assets*.
- 9 Coordination mechanism among National Emergency Operation Center (NEOC/LEMA), Onsite Operation Coordination Centre (OSOCC), Multi National Military Coordination Centre (MNMCC) shall be automatically established for the effective coordination during mega disaster. In times of disaster, the National Emergency Operation Center shall act as the secretariat for the Central Natural Disaster Relief Committee as well as the response operation coordination centre. It can invite search and rescue and humanitarian assistance agencies working in Nepal for meeting and discussion.

Contact between the Onsite Operation Coordination Centre and Multi National Military Coordination Centre shall be maintained through the National Emergency Operation Center. The coordination framework shall be as follows:

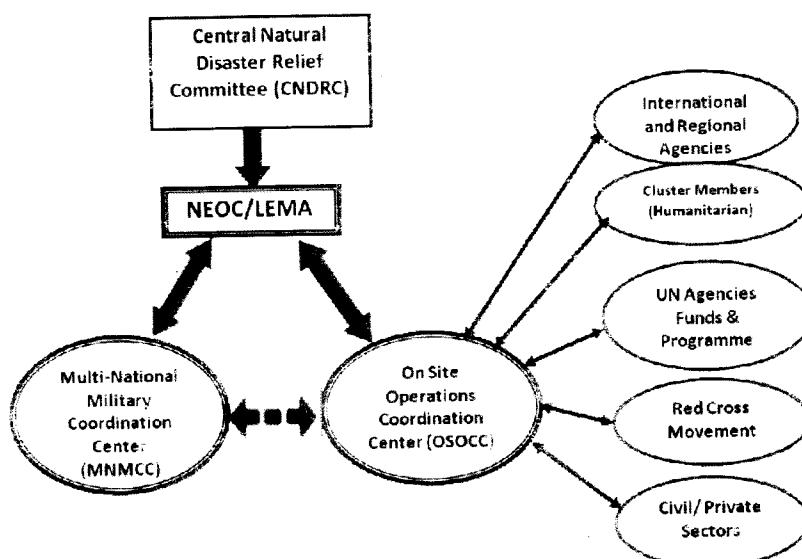


Figure 1: Coordination mechanisms between International and National Actors

- 10 There shall be separate focal persons in the above mentioned coordinating agencies. Those focal persons shall have regular meetings to review, analyze and evaluate the situation. In normal situation, the focal persons shall work as the disaster focal point of the respective Ministries/Departments/Offices and also liaise with the international agencies for effective disaster preparedness and response.
- 11 Disaster focal point of each Ministry and Department shall have to contact the National Emergency Operation Centre and come on their own in times of disaster.
- 12 On-Site Operations Coordination Center (OSOCC) shall link between international responders and Government of Nepal; provide a system for coordinating and facilitating the activities of international relief efforts at a disaster site; provide a platform for cooperation, coordination and information management among national and international humanitarian agencies. UN Humanitarian Coordinator shall appoint the focal person/agency for overall coordination of OSOCC.
- 13 Based on the need and existing situation, the Government of Nepal may accept or reject incoming members of Search and Rescue and humanitarian support agencies as well as the materials and equipments during mega disasters. Reception and departure centers shall be established at the Tribhuvan International Airport and other strategic locations to facilitate the arrival and departure of humanitarian and military teams and assets during disaster.
- 14 International Non-Governmental Organizations that come to Nepal to provide humanitarian assistance during disaster may do so at the direction of the Government of Nepal and in close coordination with Government bodies, local authorities and local NGOs.
- 15 Multi-National Military Coordination Center (MNMCC), under the direction of the Ministry of Home Affairs, in coordination with the NEOC and OSOCC and in the leadership of Nepalese Army, shall mobilize army manpower as necessary.

6. Special Operation Arrangement for National Disaster Response

For the effective implementation of the National Disaster Response Framework, there shall be the following special operation arrangement in place:

- 1 Response preparedness activities include collection, analysis and dissemination of early information on disasters, damage and needs assessments, regulating, awareness/capacity building, coordination, and logistic or relief prepositions. Timely response readiness is the responsibility of responders.
- 2 Immediate humanitarian service of the emergency response include the coordination; assessment; immediate priority services (search and rescue, logistics, medical/health, water and sanitation, shelter); restoration of critical infrastructure (roads, electricity, airport, water supply pipelines, communication, cultural heritages); provision of immediate humanitarian services (registration and tracking, food, NFIs, medicine, fuel supply); protection of vulnerable groups (nutrition support to children under 5 , pregnant and lactating women); security; evacuation/safe and open space set up; fire, debris and dead body management. Effective implementation of these activities - based on existing national and international standards - is the responsibility of the responders.
- 3 The responsible Ministries, Departments, Sections, Clusters, Red Cross Movements, I/NGOs, community based organizations shall have to execute their designated function for effective disaster response.

- 4 The National Emergency Operation Centre shall assess the capacity and maintain the records of experts, SAR materials and equipments, list and capacity of hospitals, blood bank and stocks, emergency communication equipments, ambulances, etc. in a timely manner.
- 5 During the emergency response, NEOC shall activate its level 4 operation as stated in NEOC Standard Operating Procedure, including the establishment of command post within NEOC compound; establishment of media management center within NEOC/DEOC/DDRC; deployment of Disaster Response Focal Points from the concerned ministries at NEOC; coordination and deployment of relief consignments; REOC/DEOC activation and networking; information dissemination by TV, Radio, and SMS; and regular information updates to public and disaster victims.
- 6 The Emergency Executive Members Meeting shall be conducted immediately after the incident report received from DDRC. The meeting shall be chaired by Secretary (MoHA), and other members including Joint Secretary (Disaster Management Division), Chief of NEOC, and Chief (Disaster Management Section). The meeting shall analyze the situation based on the incident report and decide the immediate actions to be taken.
- 7 The military command post shall be established within the compound of NEOC in order to mobilize rescue and relief teams immediately. The command post team shall be led by Chief (Joint Secretary) from the Disaster Management Division, and other members including Brigadier General from the Directorate of Military Operation, Nepalese Army; DIG from the Operation Division, Nepal Police; and DIG from Operation Division, Armed Police Force.
- 8 The chief of NEOC shall act as the Disaster Response Focal Point. The response focal person from the concerned Ministries, Departments, and Security agencies shall work under the leadership of the Chief of NEOC.
- 9 NEOC shall coordinate with the relevant Ministries/Departments/Offices and facilitate early recovery operations in parallel with the emergency response operation in accordance to this framework.
- 10 The Government of Nepal shall review and amend the National Disaster Response Framework as necessary based on the recommendation of the CNDRC meeting.
- 11 The rescue and humanitarian assistance operation shall be monitored and evaluated at the national and district level by CNDRC and DDRC respectively. RDRC shall monitor and evaluate the performance of DDRCs. The district level information needs is to be sent to the CNDRC.

7. National Framework for Disaster Response

1. Upon the receipt of disaster/potential disaster information from the districts or local level, the following lead agencies shall carry out the operational activities as specified in the matrix below.
2. CNDRC, RDRC and DDRC shall organize an emergency meeting in coordination with Government agencies, International and national NGOs as per the need.
3. Emergency operation centers at national, regional, district and municipality level shall coordinate with different organizations to make disaster response activities effective.

4. Within the respective mandate and scope, the following organizations including the Disaster Management Division of MoHA, shall work as support agencies in disaster response management:
- CNDRC members; Ministry of Finance, Foreign Affairs, Defense, Health and Population, Federal Affairs and Local Development, Agricultural Development; NHRC; Social Welfare Council; Department of Immigration, Waterborne Disaster Control, Health Service, Livestock, Hydrology and Meteorology, Road, Urban Development and Building Construction, Drug Management; Central Bureau of Statistics; National Seismological Centre; Waste Management Centre; National Trauma Centre; Nepalese Army; Nepal Police; Armed Police Force; Fire Brigade Office; Search and Rescue Team, RDRC/DDRC; DDCs; Local level Government Offices; Civil Aviation Authority; Nepal Food Corporation; and other concerned Ministries, Departments and Governmental and Non-Governmental Organization. UN Resident/Humanitarian Coordinator and UN agencies (UNDP, UNICEF, WHO, WFP, FAO, UNFPA, UNOCHA, IOM, UNHABITAT, UNHCR, UNDSS); relevant Clusters; multinational Organizations; ICIMOD; Diplomatic Missions; SAARC; INGOs, Red Cross movements; International Civil Aviation Organization.
 - Nepal Red Cross Society, Nepal SCOUT, government and private hospitals, NAST, DPNet, media, Community Based Organizations, Community Volunteers, Medical Associations, NSS, Press Council, Federation of Nepalese Journalists, Nepal television, Radio Nepal and other means of communications, Himalayan Rescue Organization, Mountaineering Training Academy, Civil Aviation association, medical council, Nepal Nursing Council, Builder's Association, Transportation Association, FNCCI, Telecommunications Authority, Nepal Engineering Association, and concerned expert agencies.

The following agencies shall coordinate the disaster response activities as mentioned below:

Timeline	Operational Activities	Responsible Lead Agencies
0 - 1 hour	1. Give early information on earthquake	National Seismological Centre
	2. Provide instruction on response to fire incidences	DDC, Municipality and VDC Offices
	3. Provide instruction for immediate search and rescue and mobilize security force for rescue operation	DDRCs and Security Force
	4. Public reporting on the extent of disaster and rescue efforts	MoHA/NEOC
	5. Establish the emergency information system and disseminate the information from the electronic media	MoIC, MoHA
0-7 hours	6. Disseminate early information on waterborne disaster	Dept of hydrology and meteorology
	7. Prepare situation report	CDO/DDRC
	8. DDRC meeting	DAO/DDRC
	9. Emergency meeting at MoHA	MOHA/NEOC
	10. NEOC starts activates as per its SOP for emergency management	MoHA/NEOC
	11. Develop emergency communication system and disseminate regular information for the public awareness through radio, TV, SMS etc.	NEOC/REOC/DEOC
	12. 6. CNDRC meeting	MoHA/NEOC
0-24 hours	13. Information about post disaster epidemics and its response	EDCD
	14. Coordination for animal disease control and management	Dept. of livestock
	15. Information about Nuclear Biological and Chemical Hazard and	Ministry of Science,

Timeline	Operational Activities	Responsible Lead Agencies
	rescue of the victims of such hazard.	Technology and Environment MoHA/CNDRC
	16. Coordination with national and international stakeholders for potential support	MoHA/CNDRC
	17. Mobilize NEOC as disaster response focal point	NEOC
	18. Deploy Search and Rescue teams for immediate rescue of the survivors	DEOC and security forces
	19. Provide first aid to the injured	Red Cross/hospitals
	20. Evacuation for treatment to severely injured victims	MoHA/hospitals
	21. Fire extinguish or control	Municipality
	22. CNDRC Meeting and emergency declaration	CNDRC/Cabinet
	23. Initial Rapid Assessment (IRA)	DDRC/DEOC
	24. Activation of UN Cluster	UN HC
	25. Appeal for National and International Assistance	Cabinet
	26. Establish Media Management Center within NEOC/REOC/DEOC	NEOC/REOC/DEOC
	27. Airport Security and Air traffic management	CAAN
	28. Restore road communications	Dept. of Road
	29. Evacuation and crowd management, communication, dead body handling of foreign tourist, diplomats, and others from the affected areas	MoFA
24 - 48 hrs	30. Management of transportation facilities for search and rescue materials and equipment	DoTM
	31. Availability of basic food items for survivals and IDPs	MoCS
	32. Registration and facilitation of International Humanitarian Communities (IHC) and relief consignments	MoFA/SWC
	33. Visa fees and custom duty exemptions at entry points (land or air) to IHC	DC and DI
	34. Coordination and deployment of relief consignments	NEOC/DEOC
	35. Electricity services to be made available to hospitals/health centers/medical centers/IDP Camps, schools	NEA
	36. Establishment of field hospitals at affected site	EDCD
	37. Water Supply, Sanitation and Hygiene facilities to be provided to hospitals, medical centers, IDP Camps, Schools, Other types of Settlements	DWSS
	38. Waste disposal for general solid waste, biological and hazardous waste produced	SWMC
	39. Maintenance of Law and Order around Warehouse, IDP Camps, personnel, humanitarian convoy, protect property and security in affected areas	MoHA
	40. Registration and tracking of affected families; issuance of Victims ID card and maintain database at districts and central level	DDRC
	41. Restoration of telecommunication services as soon as possible	MoIC
48 - 72 hrs	42. Rapid assessment of existing hospitals, schools, health facilities along with bridges, roads and others for structural damages	MoHA
	43. Debris Management (collection and disposal) including dead animals	Municipality/VDC
	44. Collection and management of animal carcass	Municipality/VDC
	45. Distribution of immediate lifesaving relief materials to the survivors as per the agreed standards	CDO/DDRC
72 hrs - 7 days	46. Proper management of dead body including cremation and issuance of death certificates	DDRC
	47. Special protection arrangement at the camps and distribution sites for the protection of women, children, elderly, disabled	MoWCSW
	48. Multi-Cluster Initial Rapid Assessment (MIRA) Activation	UN OCHA

Timeline	Operational Activities	Responsible Lead Agencies
	49. Distribution of non-food items such as cooking utensils, fuel, clothes, blanket, family kits, baby kits, hygiene kits	NRCS
7 days - 2 weeks	50. Set up of temporary shelter in the pre-determined safe and open/evacuation sites for displaced families	MoUD
	51. Monitoring of SAM children in the camps	MoHP
	52. Vector borne disease control in the open/evacuation sites	EDCD
	53. monitoring and reporting of humanitarian response and relief	DDRC
	54. Ensure safe environment for survivors particularly the vulnerable groups, and control gender based violence	DWDO
	55. Psychological rehabilitation to person with mental trauma	MoHP
2 weeks - 1 month	56. Social support to unaccompanied children, disabled and elderly who have lost their supporting family members; and reunion of their lost members or relatives	MoWCSW/DWDO
	57. Cash or other assistance to affected populations	DDRC
	58. Re-start schools to help children feel secure and help them to go back to normal life	Dept of Education
	59. Provide minimum essential services and security at the hospitals, schools etc in the camp sites	DUDBC
	60. Conduct Early Recovery Assessment and Plan Development Covering key sector including shelter, livelihood etc.	DUDBC
	61. Document the lesson learnt on search and rescue efforts, immediate relief, camp management and rehabilitation efforts and prepare an analytical report	MoHA

8. Future Courses of Actions on Emergency Response Preparedness

In order to implement the aforementioned response activities, it will be necessary to prepare the response preparedness plan of action. This framework provisions for the development of following action plan under the leadership of the agencies mentioned below:

S.N	Activities	Lead Agency	Coordinating and Supporting Agency	Timeline
1	Preposition of Fuel Stock near NEOC/REOC/DEOC including Kathmandu Valley	NOC	MoCS, Security Agencies, Petroleum Dealers Association, SAJHA Petrol Pump	Within 3 months
2	National Strategy on Early Warning System Finalization and Endorsement	MoSTE	MoHA, DHM	Within 6 months
3	Development of Emergency Communication Strategy	MoIC	MoHA, NEOC/REOC/DEOC, NRCS, media, Donor Agencies, I/NGOs	Within 6 months
4	Preposition of Food items at regional and district level.	MoCS	MoHA, Local Government, NRCS, I/NGOs, Donor Agencies	Within 6 months
5	Simulation exercises and drills plan	NEOC	NRCS, Security Agencies, DDRC, Local Government, UN Agencies, Clusters, I/NGOs, Donor Communities	Within 6 months
6	Response Focal Point Establishment	NEOC	MoHA, Concerned Ministries and Departments, Security Agencies, UN Agencies, Red Cross Movement, I/NGOs, Donor Agencies	Within 6 months
7	Agreement with Kolkata port authority and Western Indian Railways to fast track relief consignments/cargo to Birgunj dry port on large scale disaster response	MoPPWTM	MoHA/MoFA, SDMC, UN Country Team, UN Cluster and Member Agencies	Within 6 months

S.N	Activities	Lead Agency	Coordinating and Supporting Agency	Timeline
8	Develop plan for the rubles clearance	Local bodies	MoHA, local bodies, relevant Cluster members	Within 6 months
9	Construction of temporary bridges, and road for the transportation of search and rescue equipment and materials as well as development of plan for debris clearance	NA	MoPPTM, NP, APF, NRCS, local bodies	Within 1 year
10	Testing of Early Warning System between Technical Agencies and NEOC	MoSTE	MoHA, MoSTE, DMG, DHM, NSC, UN Cluster and Member Agencies, OCHA	Within 1 year
11	Resource Inventory and Assessment of institutional capacities (roster of experts; USAR equipments; list of hospitals and its capacity, and Ambulance) based on the roster policy for preparedness, response and recovery phases.	NEOC	MoHA, MoHP, NA, NP, APF, Medical Council, Nursing Council, Hospitals, NRCS, OCHA, donors	Within 1 year
12	Identification and site planning of open evacuation sites, and collective centers; evacuation routes mapping in major cities of Nepal	MoUD	MoHA, DUDBC, DWSS, DHS, DR, Local Government, Security Agencies, NEA, Telecommunication Authority, NRCS, IOM, I/NGOs	Within 1 year
13	Preposition of SAR Kits at 75 districts of Nepal	NEOC	DDRC, NA, NP, APF, NRCS, CAAN, Communities/Volunteer Organizations and other humanitarian agencies	Within 1 year
14	Development of SAR capacities (two medium and seven light team) as a national, regional and local response team	MoHA	UNOCHA, NA, NP, APF, Red Cross Movement, INSARAG, Donor Agencies	Within 1 year
15	Preposition of NFIs and other Relief items (Emergency Medicines)	NRCS	MoHA, Local Government, UN Agencies, Red Cross Movement, I/NGOs, Donor Agencies	Within 1 year
16	Emergency Communication Setup at national and district level; and trans-border	MoIC	NEOC, Security Agencies, NRCS, Telecommunication Authority, Telcom Service Providers, relevant cluster, UNDSS	Within 1 year
17	Preparation of Clusters contingency plan	NEOC	Concerned Ministries and Departments, UN Agencies, I/NGOs, Donor Communities, cluster members	Within 1 year
18	Preparation of Business Continuity Plan of key government ministries, security agencies, public utilities provider, financial institutions etc.	Line Ministries, Security Agencies	OPMCM, Experts, Donor Agencies	Within 1 year
19	Develop TIA disaster response plan and upgrade regional airports as alternative response hubs as well as preposition adequate ground handling and other equipment at airports	CAAN	MoCTCA, NA, AOAN, WFP, ICAO, DHL, Donor Agencies	Within 1 year
20	Agreement with friendly and neighboring countries and Regional Organizations on large scale disaster response	MoFA	MoHA, MoJ, Diplomatic Communities in Nepal	Within 1 year
21	Development of Guidelines for accepting international assistance and early registration	MoHA	MoF, MoFA, Red Cross Movement, OCHA	Within 1 year

S.N	Activities	Lead Agency	Coordinating and Supporting Agency	Timeline
22	Prepare unit team in each security agencies equipped with the disaster management tools and equipment including fire engine	Security forces	MoHA, MoD, MoF	Within 1 year
23	Development of Guidelines for accepting international military assistance	MoD	MoHA, MoFA, NA	Within 1 year
24	Develop Special Operating Procedure for OSOCC, MNMCCC	NEOC	MoHA, NA, OCHA, Clusters, Donors	Within 1 year
25	Provision of Visa fees and custom duty exemptions at entry points to IHC, relief goods, SAR equipments	MoHA	MoHA, MoFA, Dept. of Immigration, UN HC, Red Cross Movement	Within 1 year
26	Water Distribution and Management Plan in the major cities of Nepal	DWSS	MoUD, Security Agencies, Red Cross Movement, WASH Cluster and Member Agencies	Within 1 year
27	Action Plan of dead body management in the major cities of Nepal	DDRC	NEOC/MoHA, Security Agencies, local bodies NRCS	Within 1 year
28	Protection Plan of the Vulnerable Groups and Gender based Violence	DWDO	DWD, NHRC, NP, APF, Protection Cluster and Member Agencies	Within 1 year
29	Monitoring and Evaluation tools development for Rescue Operations and Humanitarian Assistance at national, regional and district level	NEOC	MoHA, DDRC/DEOC	Within 1 year
30	Development of the outline of standards and norms for Assistance from the Calamity Relief Fund	CNDRC	MoHA, Cabinet	Within 1 year
31	Development of Victims Registration and Tracking Tools, and database management	NEOC	MoHA, Central Bureau of Statistics, local bodies, clusters, donors	Within 1 year
32	Integrated Search and Rescue Plan at national, regional and district level	NEOC	MoHA, MoD, Local Government, NA, NP, APF, Fire Brigade, NRCS, OCHA	Within 1 year
33	Development of contingency plan for the immediate supply of electricity in the disaster affected area after the disaster	NEA	MoE, MoHA, MoUD	Within 1 year
34	Contingency plan of the national park and wildlife reserves considering the possibility of wild animal coming out to human settlement after disaster.	National Zoo	Dept of Wildlife Conservation, Nepal Natural conservation fund, local bodies, security force	Within 1 year
35	Development of action plan for the management of animal carcass	MoAD	MoHA, local bodies and donor agencies	Within 1 year
36	Development of integrated action plan for search and rescue operation at the national, regional and district level	MoHA	MoFALD, MoUD, Local Bodies, Fire brigade, NRCS, OCHA	Within 1 year
37	Capacity building national, regional and district level agencies for the effective emergency response and management	MoHA	MoHA, relavant Clusters, NRCS, Donors	Within 1 year
38	Construction, renovation, and maintenance of the warehouses at national, regional and district level for the prepositioning of the food and non food relief items	MoHA	MoCS, NFC, NRCS, UN Cluster and Member Agencies	Within 1 years
39	Development of action plan for flood and inundation response	Dept. of Irrigation	MoIrrigation, MoHA, MoFSC , Local Bodies, NRCS	Within 1 years

S.N	Activities	Lead Agency	Coordinating and Supporting Agency	Timeline
40	Emergency management action plan for watershed and land conservation	Dep of Land Conservation	MoFSC, MoI, MoHA, MoLRM, local bodies, NRCS	Within 1 year
41	Amendment of existing Dead Body Management Guidelines in view of mega disaster	MoHA	MoHP, NRCS, Medical Council, Local bodies	Within 1 year
42	Networking of the REOCs and DEOCs	NEOC	MoHA, Relevant Clusters, Donors	Within 1 year
43	Development of risk mitigation plan against forest fire	MoFSC	MoFALD, Dept. of Drinking Water, KUKL	Within 1 year
44	Development of action plan for water distribution during emergency and identification and maintenance of water point in the urban centers.	MoUD	MoFALD, Local Bodies, Dept. of Drinking Water, Kathmandu Valley Development Authority	Within 1 year
45	Earthquake risk analysis of the infrastructure at earthquake area	MoUD	MoHA, MoFALD, Local Bodies, Dept. of Drinking Water, Kathmandu Valley Development Authority	Within 1 year
46	Develop action plan for the feasibility study of an alternate airport and begin its construction	MoCCA	OPCM, MoHA, MoD, CAAN	Within 1 year
47	Establishment of EOC in Municipalities and preparation of coordination procedure at the district, municipality and village level	MoFALD	MoHA, Local Bodies and NGOs	Within 1 year
48	Issuance of Guidelines on open space with the motto of one area one open space in densely populated urban centers	MoUD	MoHA, MoFALD, Local Bodies, Kathmandu Valley Development Authority.	Within 1 year
49	Development early recovery work-plan	MoUD	MoHA, DUDBC, I/NGOs	Within 1 year

CHAPTER 1

INTRODUCTION

Background

Globally, Nepal ranks 4th and 11th in terms of its relative vulnerability to climate change and earthquakes, respectively (Maplecroft 2011, BCPR 2004 cited in MoHA 2015). In part, this is because Nepal is in a seismically active zone with a high probability for a massive earthquake. The country is among the 20 most disaster-prone countries in the world, both natural and man induced. Out of 21 cities around the world that lie in similar seismic hazard zones, Kathmandu city is at the highest risk in terms of impact on people. More than 80 percent 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).

Nepal, as one of the countries most vulnerable to climate change, is invariably exposed to water-induced disasters and hydro-meteorological extreme events such as droughts, storms, floods, inundation, landslides, debris flow, soil erosion and avalanches. The MoSTE identifies that current climate variability and extreme events have led to major impacts and economic costs in Nepal, emanating not only from floods and landslides but also from rainfall variability on agriculture (rain-fed agriculture, soil erosion, droughts) and Glacial Lake Outburst Floods (GLOFs) (MoSTE 2014).

The Ministry of Home Affairs (MoHA) together with the Ministry of Federal Affairs and Local Development (MoFALD) and the Ministry of Urban Development (MOUD) has been playing a key role in disaster preparedness and response and reducing disaster risks in coordination with different development partners. The MoHA has been producing biennial disaster reports (Nepal Disaster Report - NDR) since 2009 with support from development partners such as UNDP, DPNet-Nepal, NRCS and others. The published series of NDRs includes NDR 2009, NDR 2011, NDR 2013 and NDR 2015. The publication of NDR 2017 has been a joint endeavor of MoHA, UNDP and DPNet-Nepal with support from other development partners.

NDR 2017: Purpose and Process

The main purpose of NDR 2017 is to highlight Nepal's past experiences in DRM, documenting key learning and challenges in the course of managing disaster risk and identifying future priority actions for effective disaster response, risk reduction and recovery. This would in turn, inform the different stakeholders, policy makers, researchers and citizens of the country about the gravity of the problem and the need for a disaster aware paradigm of development.

The process of preparing the NDR 2017 includes:

- Reviewing the past NDRs (NDR 2009, NDR 2011, NDR 2013 and NDR 2015) to explore areas for improvement in terms of its quality and contents;
- Documenting the major disaster events that occurred during last two years (2015 and 2016) and the current disaster context of Nepal;
- Presenting given policy, legal and institutional set ups for managing disaster risks including the new DRM Act and the draft National DRR Policy and Strategic Action Plan;
- Consolidating experiences, challenges and lesson learned in managing disaster risks, and institutional efforts on recovery and reconstruction; and
- Understanding loss and damage caused by disasters.

With the technical support of UNDP, preparation of NDR 2017 followed a participatory process under the overall guidance of MoHA through its Disaster Management Division (DMD). UNDP, through its Comprehensive Disaster Risk Management Programme (CDRMP), further supported data collection, field verifications and analysis. An editorial board led by the MoHA with representatives from UNDP and DPNet-Nepal provided guidance on overall content and structure of the report. A two-person expert team hired by UNDP was tasked for collecting and validating data from various sources and for writing the report. DPNet-Nepal provided coordination and secretarial support to the expert team in organizing meetings and data analysis.

The draft NDR 2017 was widely circulated among the stakeholders in September 2017 and feedbacks were incorporated into the final report, which was shared with all the stakeholders in a national workshop in December 2017 organized by MoHA.

Methodology

Both quantitative and qualitative approaches based on social-science research methodology were used for data collection. Key documents and reports (published and unpublished) on DRR and CCA were obtained from relevant ministries and departments, key development partners and academic institutions. This was complemented by open access online documents retrieved mostly from the worldwide web.

Desk review. The initial segment of work involved desk review of the available documents and reports that included legal and policy frameworks, guidelines, SOPs, progress reports, and documents on HFA, SFDRR, and other global instruments. The past NDRs and lessons learnt from 2015 earthquake and sectoral plans were also reviewed.

Key Informant Interview (KII). In order to identify the key challenges and future priorities related to DRR, a few key informants were specifically interviewed. Select officials of MoHA, UNDP Nepal, DPNet-Nepal, and Association of International NGOs in Nepal (AIN) were also interviewed to know about the progress made during HFA, areas for future improvement and challenges in achieving SFDRR targets.

Field Visit. The expert team accompanied by the officials of MoHA and the Editorial Board visited Kaski district to enquire about the on-going DRM initiatives and learn about mobilization of volunteers in the immediate aftermath of 2015 earthquake for response and early recovery.

Key Messages from the Earlier NDRs

Since the first Nepal Disaster Report (NDR), published in 2009, the MoHA, in close partnership with the development partners, has been publishing NDRs every two years. The NDRs serve as an important tool of communication for the general public on various aspects of disaster risk management and to update information on lives lost, houses damaged, people missing and injured by different disasters. Main points of the last four NDRs are summarized below:

Nepal Disaster Report 2009: The Hazards and Vulnerability. Being the first national disaster report of Nepal, the NDR 2009 tried to highlight Nepal's exposure to multi-hazards and vulnerabilities faced by its population. The main purpose of the report was to raise awareness among policy makers, practitioners, researchers, students and others towards understanding disasters and taking timely actions to reduce disaster risks.

Nepal Disaster Report 2011: Policies, Practices and Lessons. The NDR 2011 made an attempt to compile the data on occurrences of disaster events and disaster risk management efforts of the government and non-government partners including the communities. In addition, the NDR 2011 looked into how the country was exposed to multi-hazard risks, the cost of not responding to them and inter-related challenges in implementation.

Nepal Disaster Report 2013: Participation and Inclusion. The focus of the NDR 2013 was on the issue of ‘participation’ and ‘inclusion’ in disaster risk management. In addition to periodic updates on past disasters and likely future disaster risks, it drew examples of inclusive and participatory DRM practices backed by policy, legal and regulatory provisions and captured successful examples of Early Warning System, community based DRM, warehouse and stockpiling facilities, mainstreaming DRR into development, volunteerism and application of indigenous knowledge into DRM.

Nepal Disaster Report 2015. The NDR 2015 mostly covered the 2015 Earthquake and compiled findings of study reports on mass casualty management, trends of Nepal’s disaster management policy, impact of Hudhud Cyclone in Himalayan region of Nepal and Seti flash flood. As in the earlier reports, it also presented updated disaster statistics and trends of disaster events during the reporting period.

The NDR 2017 differs from the earlier NDRs in several aspects. It not only captures disaster statistics and trends, but more importantly it reviews the achievements made by Nepal during the period of HFA implementation (2005-2015), analyzes recent policy and regulatory environment and effectiveness of disaster risk management and preparedness in view of current and future risks, and recommends steps for achieving SFDRR targets (2016-2030).

Learning from HFA and the Thrust of the SFDRR

Nepal’s HFA report for 2013 to 2015 (Table 1.1) places the aggregated average achievement percent in all five priority actions areas at 57 percent of the target. This clearly indicates that Nepal has accomplished foundational work in the field of DRR, but there is still a long journey ahead to make Nepal a disaster resilient country. Both the 2013-2015 HFA bi-annual progress report and the ten-year HFA evaluation report (2005-2015) clearly indicate major challenges in successfully achieving the HFA priority action. The most common challenges identified are: lack of pragmatic DRM Act, relief and response centric DRM activities, a lack of dedicated high level DRM institutions, weak implementation of activities, poor monitoring and evaluation mechanisms, inadequate trained human resources at all levels, ineffective information management system, etc., among others. Despite several efforts made in the past to strengthen gender mainstreaming into DRM and make

DRM approaches inclusive¹ to all, actual success on the ground was limited until recently.

Table 1.1: Assessing Nepal's progress on HFA

Priority for Action	Level of Progress (scale: 1-5)
Ensure that DRR is a national and local priority with a strong institutional basis for implementation	3.00
Identify, assess and monitor disaster risk and enhance early warning	2.50
Use knowledge, innovation and education to build a culture of safety and resilience at all levels	3.00
Reducing the underlying risk factors	2.50
Strengthen disaster preparedness for effective response at all levels	3.25
Aggregated average level of progress	2.85

Source: HFA Progress Report (MoHA 2015)

With an understanding of the main challenges that the country faced during the HFA period (2005-2015), a successful implementation of SFDRR (2015-2030) is admittedly not an easy task. These two reports and many other documents had consistently identified the need for a new and comprehensive DRRM Act and a dedicated DRM institution important for transforming the relief and response centric disaster management approach towards risk reduction approach by mainstream DRR into development.

At present, with new comprehensive DRM law in place and a designated DRR institution under making, one can say that Nepal has built necessary foundations to work towards SFDRR² priorities. However, effective implementation of the new DRRM Act in the context of federalization and state restructuring and existing capacity gaps in priority setting and implementation of provincial and local governments, are seen as major challenges.

1 The National Women's Conference on Gender Responsive Disaster Management held in Kathmandu (March 2016) called upon the Government to adopt gender, age, disability and culture in all policies and practices and promote women and youth leadership, and new provisions to strengthen the role of women and girls for community's disaster resilience, gender equality and women's empowerment (Women Group Working on Common Charter of Demand on Humanitarian Response (2016) in accordance with the "Sendai Framework." It calls for NRA to draft and implement necessary policy and plans to ensure gender proportionate and inclusive participation (50:50) for gender responsive disaster management in the context of post-earthquake reconstruction. It further calls for developing "humanitarian assistance national standard" by the government in order to implement disaster response programme by fully guaranteeing people of all age, gender, class, ethnicity, indigenous nationalities, religion the basic and special rights of women of all kinds of physical, mental and marital status, in order to address the existing inequality.

2 The four priority areas of SFDRR are: a) understanding disaster risk, b) strengthening disaster risk governance to manage risk, c) invest in disaster risk reduction, and d) enhance disaster preparedness for effective response and build back better.

Budget constraints to prioritize DRR actions over mainstream development activities is yet another hurdle in realizing SFDRR priorities. Sectoral allocation for DRM is still very marginal compared to the actual needs. About five percent of the total capital expenditure of the government being currently spent in DRM (UNDP Nepal 2015) is insufficient given the scale of disasters in the country.

Summary

This chapter reviews the earlier National Disaster Reports (NDRs) produced by the MoHA biennially, and specifically the NDR 2017, which highlights Nepal's experiences in DRM over the last two years including the learning from post 2015 Earthquake response and challenges in the course of managing disaster risks during Hyogo period. The NDR 2017 further identifies future priorities for risk reduction and making disaster response and recovery effective and lays out the methodology for the same.

CHAPTER 2

PERIODIC REVIEW OF DISASTER STATISTICS

Disaster Information Management in Nepal

A comprehensive disaster information management system (DIMS) in Nepal is still under development. Various systems for collecting disaster data exist but they mostly operate in isolation and are not linked to any one common national system, which is still under making. Disaster data are mostly used during disasters to report on loss and damage and facilitate post disaster response. The government owned SAHANA System and DRR Portal are weak in making forecasts and generating early warnings.

The World Bank has supported geo-spatial data management system, which is a web-based application using GIS platform and deploys spatial data infrastructure. Disaster data are first recorded in Excel format, then geo-referenced using QGIS software before being uploaded into Geo Node system. Nepal Geo-portal (Figure 2.1) has been set up for this purpose, which displays Nepal's hazards and vulnerability. The system is robust enough to create customized maps as per the need and printing them. Technically the system is maintained by the WB and operates outside the government system.

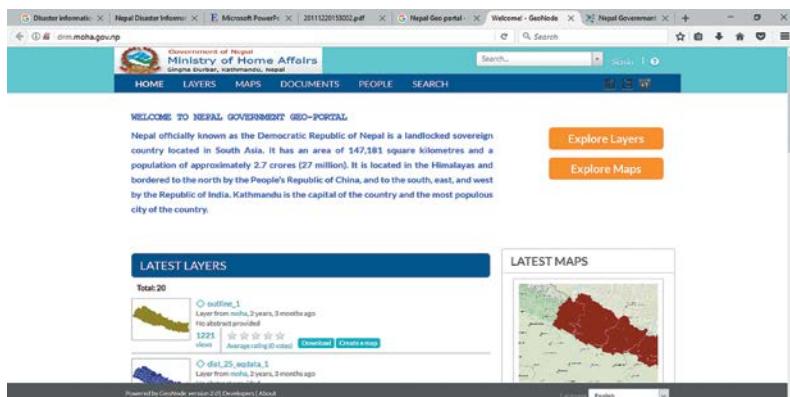


Figure 2.1: Screenshot view of Nepal government Geo-Portal

National Emergency Operation Centre (NEOC) under MoHA supported by UNDP manages Nepal Disaster Risk Reduction Portal (DRR Portal) and SAHANA System for disaster Information management (Figure 2.2). SAHANA is an open source web-based disaster information management platform, which allows customized data collection for disaster occurrence, loss and damage and emergency supplies. The first version of SAHANA was created in Sri Lanka to help coordinate the response to the 2004 Tsunami. Functional effectiveness of SAHANA System is constrained by poor flow of information from DEOCs to NEOC through this System. Due to lack of trained human capacity, reliable internet connectivity and back-up power supply at DEOCs, they mostly collect disaster data in spreadsheets and manually communicate to NEOC for feeding into DRR Portal.

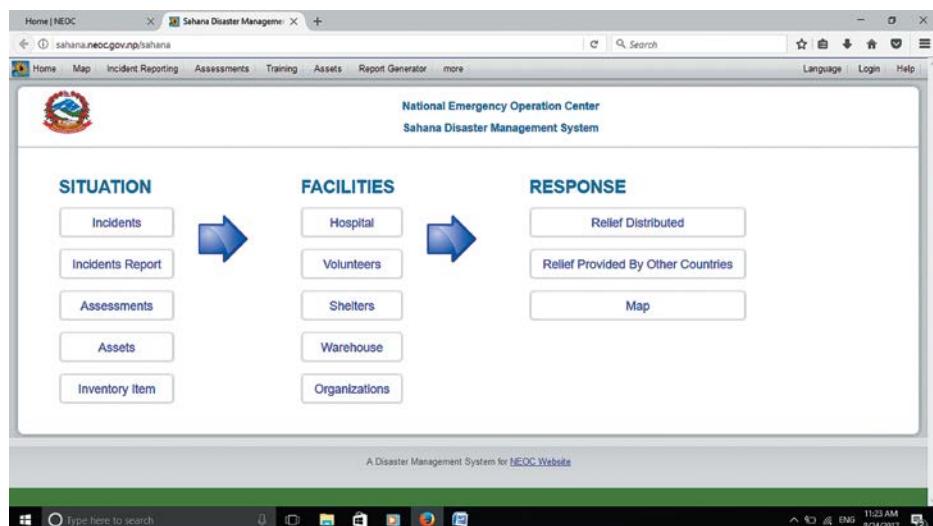


Figure 2.2 Screenshot view of Sahana software used by NEOC

The Nepal disaster data has been made publicly available at www.desinventar.net¹, where a systematic database of natural disasters that have occurred in Nepal for a period of 42 years (1971 January to December 2013) has been prepared and made available and which also allows analysis of the data and trends. Currently, the historical data is available up until 2013. The effort was focused mainly on collection, computer-entry, and analysis of natural disaster data. A standard data collection format was developed and used to capture the data from different sources and entered into the "DesInventar" System. The objective of establishing the **DesInventar** database was to institutionalize the Disaster Inventory/Information Management System in Nepal at a national level.

¹ Raw data from 1971 onwards is also available directly from NSET offices.

The data collection and analysis were continued and updated in the database system on an annual basis till 2013. The database includes: event, region, district, village, Date, Cause, Description of Cause, Source, Magnitude, Deaths, Injured, Missing, Houses Destroyed, Houses Damaged, Victims, Affected, Relocated, Evacuated, Losses (\$USD), Losses (\$Local), Damages at crops in hectare, Lost Cattle and Damages of roads (Mts). The data is mostly collected from newspapers namely Gorakhpatra, demonstrated to be a reliable source - or other reputed newspapers, the Department of Water Induced Disaster Prevention (DWIDP), and special bulletins². The DesInventar largely covers earthquake, floods, landslides, drought, and epidemics events, and at all scales of disaster impact. From 2010 MoHA started collecting and archiving similar data and information of disaster incidents occurring across the country into its website: drrportal.gov.np.

Institutions Involved in DIMS

A great potential exists for transforming Nepal DRR portal into an integrated and comprehensive DIMS to make reliable disaster forecasts, generate “end-to-end” and “people-centered” early warning³ and support resilient development planning. A comprehensive DIMS requires linking hazard information and disaster data with hydro meteorological data juxtaposed with socio-economic, physiographic, population and poverty data obtained from satellite imagery, census data and land-use and topographic maps. A pre-requisite towards establishing a robust and functional DIMS, is for various line agencies of the government that are engaged in managing disaster information, as given below, to work together and share information through a common platform.

Department of Hydrology and Meteorology (DHM) is the principal government agency to collect and analyze meteorological and hydrology data and disseminate information on water discharge, weather forecasts and early warnings. Their information is very useful for sectoral ministries, particularly in the planning and management of water resources, agriculture, energy, mountaineering, civil aviation and disaster mitigation. It has established flood monitoring and early warning systems in major rivers in Nepal, which has been very effective in saving lives during monsoon floods.

² Pilot projects have also been conducted in several districts, in which locally-collected data is directly input into the DesInventar system. However, it is recognized that significantly more resources are required to implement this modality of data collection, than national-level data collection.

³ Effective “end-to-end” and “people-centered” early warning systems may include four interrelated key elements: (a) disaster risk knowledge based on the systematic collection of data and disaster risk assessments; (b) detection, monitoring, analysis and forecasting of the hazards and possible consequences; (c) dissemination and communication, by an official source, of authoritative, timely, accurate and actionable warnings and associated information on likelihood and impact; and (d) preparedness at all levels to respond to the warnings received. These four interrelated components need to be coordinated within and across sectors and multiple levels for the system to work effectively and to include a feedback mechanism for continuous improvement. Failure in one component or a lack of coordination across them could lead to the failure of the whole system (UNISDR 2017).

Department of Water Induced Disaster Management (DWIDM) collects data on water induced disasters, mainly floods, at river basin level and prepares water-induced disaster management plans, hazard and risk maps, and applies environment-friendly mitigation measures in the downstream areas to help minimize human casualties and damage of infrastructure.

Department of Soil Conservation and Watershed Management (DSCWM) collects information on hazard, risks and vulnerability at watershed level mainly to control the damage caused by sediment landslides, debris flow and soil erosion, and maintain ecological balance of the watersheds to enhance soil productivity.

Department of Mines and Geology (DMG) operates the National Seismological Centre, which collects seismological data throughout the country through a network of 21 seismic stations and 7 accelerometers. It uses micro-seismic monitoring tool that allows seismic surveillance to support post-earthquake rescue operation.

Department of Health Services (DHS) manages and maintains Health Management Information System to support post disaster emergency response through control of epidemic outbreak. Under GIS based health facility mapping initiative, it operates Health Emergency Operation Centre (HEOC), equipped with necessary resources and information, to serve round-the-clock during health emergencies.

Department of Survey (DoS) is the primary government agency responsible for doing geodetic, gravity and other surveys throughout the country. It produces topographic base maps and carries out cadastral survey, maintains multi-resolution geo database and produces information on land-use pattern and land-use maps.

Central Bureau of Statistics (CBS) is the central agency under National Planning Commission of Nepal responsible for collection, consolidation, processing, analysis, publication and dissemination of socio-economic statistics and other information of the entire country based on census data and surveys. It compiles and archives data on population, agriculture, forest, environment, poverty, labor, and others on regular intervals, which are useful for comparison and analysis to help understand the trends and changes over time.

International Centre for Integrated Mountain Development (ICIMOD), a regional inter-governmental agency serving eight member countries of the Hindu Kush Himalayas including Nepal, has supported the development of forest fire detection and monitoring system based on Moderate Resolution Imaging Spectro-radiometer (MODIS) data. The system carries out automated data acquisition, processing, and reporting on fire location at 1x1 km resolution.

Key Hazards

The MoHA disaster data archives maintain loss and damage data for a total of 16 kinds of active disasters in Nepal. These disasters in alphabetic order are, *asinapani* (heavy rainfall with hailstones), avalanche, boat capsize, cold wave, drowning, earthquake, epidemic, fire, flood, heavy rainfall, high altitude, landslide, lightning, snow storm, wind storm, excluding the “other” category. This illustrates Nepal’s exposure to multiple hazard risks (Annex 1 for loss and damage data due to multi-hazards between 1971 and 2016). Thirteen different types of disaster have been recorded during the past two years.

The 2010 Nepal Hazard Risk Assessment (ADPC, NGI and CECI 2010) identifies 13 of Nepal’s 75 districts exposed to 4 types of hazards at a time, while other 3 districts are exposed to as many as 5 types of hazards. The remaining 59 districts are categorized as those exposed to three types of hazards at a time.

An assessment of three categories of national level disaster data on loss in 2015-16 (human, casualties, financial loss and the number of families affected) reveals that earthquake, fire, flood, landslide and lightning are the top five deadly disasters in Nepal in the order of intensity and impact (Box 2.1).

As Table 2.1 displays, a total of 2,940 events of disaster have been recorded in the review period, of which incidents of fire (N=1,856) outnumber the others. Incidents of fire are followed by lightning (N=299), landslide (N=290), flood (N=244) and heavy rainfall (N=118). Other disasters also took place but they were less in frequency (by two digits or even less).

Box 2.1: Key hazards of the years	
Overall (1971-2016)	Review years (2015 and 2016)
Earthquake Epidemic Fire Flood Landslide	Earthquake Fire Flood Landslide Lightening

Table 2.1: Aggregate disaster data (2015 and 2016) by human loss and injuries

Types of disaster	Number of events	Human loss		
		Death	Missing	Injured
Boat capsize	4	7	1	8
Earthquake (local magnitude 4>)	35*	8,970**	195	22,302
Epidemic	5	20	0	35
Fire	1,856	104	0	278
Flood	244	101	39	23
Landslide	290	276	42	226
Heavy rainfall	118	9	0	24
Wind storm	43	2	0	9
Lightning	299	185	0	369
<i>Asinapani</i>	16	0	0	0
Drowning	5	5	3	0
High altitude	10	13	0	0
Other	15	6	1	43
Total	2,940	9,698***	281	23,317

Source: MoHA 2017

Note:

* Source: National Seismological Centre, as reconfirmed by NEOC on 20 September 2017.

**Source: MoHA 2016, p. 58.

*** There is discrepancy in the available data. The actual total number of death during 2015 and 2016 is reported to be 9,708 elsewhere.

Human Casualties. Of these killer hazards, earthquake stands out from the rest in all respects – death, disappearance and injuries, a fact reiterated by the 2015 Earthquake. Of the total 9,708 disaster-related human deaths during those two years the 2015 earthquake alone claimed the lives of 8,970 persons (92.5 percent). Landslide, lightning, fire and flood claimed the second highest number of lives (in a range between 276 and 101 each) during 2015 and 2016.

Earthquake also appears to top the list of disasters leading to the largest number of missing persons. Of the total number of missing persons (N=281) in those two years, 195 (69.4 percent) went missing due to earthquake alone. People also went missing during floods and landslides, but were far less in number. A total of 22,302 persons sustained injuries in 2015 due to earthquake alone. This is 95.6 percent of the total persons injured (N=23,317) during the review period. Injuries caused by other hazards are far less.

An increasing number of deaths and injuries seem to also be resulting from lightning: during the review period, lightning injured a total of 369 persons. Fire and landslide follow lightning in the extent of injuries sustained (Table 2.1).

Socio-Economic Losses. When one looks at the economic and financial losses as a result of disasters, earthquake clearly leads this list too. This includes houses damaged, economic loss and number of families affected (Table 2.2). All disasters recorded in MoHA database reveal that a total of one million, eighty-five thousand, seven hundred and ninety-seven houses were damaged during the review period, of which 98.7 percent of the houses damaged was due to the earthquake. This is followed by a host of other disasters attributable to fire and landslide (0.3 percent each) and to flood, heavy rainfall and windstorm (0.2 percent each) (Table 2.2).

Of the total economic loss that occurred during the review period, worth more than seven hundred nine billion rupees, about 99.5 percent was due to earthquake alone. Another category of disaster that caused economic loss was fire. But its effect was far less (0.3 percent) when compared to the effect of the earthquake.

Unfortunately, the data related to the loss of old heritage sites in the country is very blurred. Even in the case of 2015 earthquake, the impact to the old temples, monasteries and other historical infrastructures particularly in the rural areas of the country are almost unavailable. Due to the lack of proper and regular maintenance of such historical infrastructures in many urban and rural areas, such heritage sites have been either damaged or have ultimately collapsed.

Several communities have been displaced due to regular exposure to disasters. Such displaced people have either shifted to other parts of the same districts or to the flat plain of the Tarai in southern Nepal. Due to displacement to new locations many community groups have lost their traditional institutions and also the indigenous knowledge and practices, the monetary value of which is hard to ascertain.

Table 2.2: Aggregate disaster data on economic and financial loss (2015 and 2016)

Type of disaster	Number of events	Economic and financial loss		
		Houses damaged	Economic loss (in NRs.)*	Families affected
Boat capsize	4	0	0	8
Earthquake	70	1,072,093	706,461,000,000	1,072,093
Epidemic	5	0	0	20
Fire	1,856	2,997	2,420,480,490	3,898
Flood	244	2,628	47,296,501	7,141
Landslide	290	2,980	811,084,600	1,936
Heavy rainfall	118	2,486	18,969,500	683
Wind storm	43	2,547	24,186,000	191
Lightning	299	65	5,271,000	415

Drowning	5	0	0	7
High altitude	10	0	0	9
Others	15	1	0	19
Total	2,975	1,085,797	709,788,288,091	1,086,420

Source: MoHA 2017, NPC 2015b.

Note: * Economic loss from the 2015 Earthquake has been added in the table as published in PDNA report (NPC 2015b).

A total of one million, eighty-six thousand, four hundred and twenty families were affected by one or more disasters during the review period of which one million, seventy-two thousand and ninety-three (98.7 percent) families were affected by the earthquake. This is followed by incidences of flood and fire, affecting 0.7 and 0.4 percent of the total affected families. To conclude, earthquake, flood and fire are the three disasters that affected a large number of families in Nepal during 2015 and 2016 (Box 2.2).



People left stranded after floods in Rapti River swept a bridge away in Duduwa, Banke.
(Photo credit: Thakur Singh Tharu, The Kathmandu Post, 16 August 2017)

Box 2.2: The 2017 Monsoon flood

Beginning 11 August 2017 Nepal experienced its worst rains in 15 years, resulting in large scale impact on life, livelihood and infrastructure across 35 districts. The districts hit hard by the 2017 flood are Panchthar, Ilam, Jhapa, Morang, Sunsari, Saptari, Siraha, Dhanusa, Mahottari, Sarlahi, Rautahat, Bara, Parsa, Chitwan, Makwanpur, Lalitpur, Sindhuli, Nawalparsi, Palpa, Kapilvastu, Dang, Banke, Bardiya, Kailali, Surkhet, Salyan and Kalikot. The Department of Hydrology and Meteorology (DHM) recorded the highest ever mean rainfall of 1,800 mm, substantially exceeding the average of 1,200 mm in the recent past. This triggered flash floods across all Tarai districts.

This emergency came at a time when Nepal was already struggling to recover from the 2015 earthquake, with much reconstruction and recovery work still to be done. Five of the current flood affected districts were also the earthquake affected districts, while four of the current flood affected districts were hit by large scale floods in 2014 also, and were yet to fully recover (UN ORC 2017).

The death toll from floods and landslides across the country during the monsoon reached 134 (NPC 2017c, Table 1). At least 29 people went missing and 22 were injured. According to MoHA, 43,400 houses were destroyed, 191,700 houses were partially damaged and further 20,900 families were temporarily displaced. According to NPC, as many as 1,688,474 persons were affected by this flood (NPC 2017c). Around 80 percent of the land, in flood-affected Tarai districts, was inundated.

The Government deployed over 26,000 human resources, including security personnel, for search and rescue operations. Seven choppers of the Nepal Army and six helicopters of private companies along with rubber boats and motor boats were mobilized in the flood-hit areas. The government distributed NRs. 200,000 each to the next of kin of those deceased by the flood and NRs. 10,000 to each to families whose house had been destroyed. On 23 October 2017, the Cabinet decided to form a Flood Reconstruction and Rehabilitation Project and placed it under the NRA.

Expenditure on Disaster Risk Management by Select Agencies

Recognizing that budgetary allocations plays a critical role for successful DRM efforts, effort has been made for the first time to compile DRM related budgetary allocations and expenditures by the sectors including from the non-government organizations. As the Government does not yet have a separate budget code on DRM, it remained a daunting task to ascertain actual expenditure made by the government. In the absence of a coherent reporting mechanism from non-government and semi-government organizations to a national system, getting data on DRM budget allocation and expenditures from the INGOs, the academic institutions and private sector was equally challenging. Although complete information on budget released and expenditure made in DRM in Nepal for the period under review could not be obtained, an attempt was made to compile the available information.

Over a period of two years (2015 -2016), the official records of the Government show that, little more than NRs. twenty-one billion, nine hundred ninety million (NRs. 21,990,192,958) was released on disaster relief and response activities from the Central Natural Disaster Relief Fund (CNDRF). While 56.6 percent of this was released in 2015, the rest was released in 2016, which is attributable to the incident of 2015 mega earthquake. It is interesting, however, to note that about 91 percent (little more than nineteen billion, nine hundred ninety-five million rupees) of the total amount released in those two years was channeled to DDRCs, followed by line ministries and security forces (getting 8.3 percent of the total amount released). Share of the cost released for the use of helicopters for rescue and relief operations remained less than one percent (little more than one hundred fifty-nine million rupees) (Annex 2).

It is evident that the total amount released from the CNDRF during those two years was mainly on relief and response. It is to be noted that Government fund for disaster preparedness and mitigation is channeled mostly through government line agencies, such as Water and Energy Commission, Ministry of Federal Affairs and Local Development, Ministry of Irrigation, Ministry of Education, Ministry of Forests and Soil Conservation, Ministry of Environment, Ministry of Science and Technology and Environment, Ministry of Health and Population, Ministry of Industries, Ministry of Agriculture Development, Ministry of Water Resources, Ministry of Urban Development and other institutions.

Attempt was also made to get the DRM expenditure of the select ministries and departments. The NEOC sent requests to seven Ministries and Departments, of which, only four Departments and one Division responded. Annex 3 records the DRM expenditure of four agencies (Departments of Mines and Geology, Hydrology and Meteorology, and Water-Induced Disaster Management, and Epidemiology and Diseases Control Division) and the National Reconstruction Authority for the review period.

The total expenditure of the Government agencies, which reported their budget in both years, crossed little over NRs. eighty-five billion, eight hundred forty-nine million. While in 2015 the total expenditure was over NRs. twenty-eight billion, four hundred fifty-three million (or 33.1 percent), it was over NRs. fifty-seven billion, three hundred ninety-five million (or 66.9 percent) in 2016.

It is to be noted that of the total expenditure through government line agencies, about 84.6 percent was spent by NRA alone (that crosses NRs. seventy-two billion, one hundred sixty-seven million). This is followed by Department of Water-Induced Disaster Management with second largest expenditure with NRs. thirteen billion, six hundred twenty-eight million, and the Department of Mines and Geology having smallest budget of little more than NRs. thirty-three million.

An attempt was also made to get data on DRM expenditure from different UN agencies during the review period. Information from seven UN agencies (namely UNDP, WHO, UNICEF, FAO, IOM, UNFPA and WFP) was received, with respect to their fund mobilization for the year 2015 and 2016. As Annex 4 reveals, a total of little more than one hundred twenty one million USD was mobilized during the review period by the seven UN agencies for DRM. The amount mobilized in both years is 66 percent in 2015 and 34 percent in 2016 respectively. WFP appears to be the largest contributor, mobilizing over seventy one million, followed by UNDP, which mobilized over eighteen million and similarly WHO mobilized over seven million. FAO, IOM and UNFPA each contributed between five to six million. Although it is difficult to say so definitively, UN agencies' area of DRM support seems more towards preparedness for response and risk reduction than response. In a way this compensates Government's relatively heavier investment in response.

Additionally, with the support of DPNet-Nepal, attempts were made to compile information from INGOs receiving direct funding from the donors for implementing DRR activities. Only five INGOs (ActionAid Nepal, ADRA Nepal, CBM International, World Vision International Nepal and Christian Aid) shared their expenditure information, which show that together they spent little more than NRs. one billion, two hundred eighty-one million during the period of two years.

Of the five participating INGOs, ActionAid Nepal is the largest one in terms of size of budget invested in DRM. It has invested over six hundred seventy-six million rupees in DRM activities in four districts including the Kathmandu Valley. ADRA Nepal ranks second in terms of budget and works in eight districts out of Kathmandu Valley with a budget nearly over four hundred forty-three million rupees. CBM International mobilized a little more than NRs. seventy-eight million, followed by World Vision International Nepal investing little more than NRs. sixty million. The Christian Aid, which works in four districts of Nepal, invested nearly NRs. twenty-two million rupees in those two years (Annex 5).

DRM expenditure made by Nepal Red Cross Society (NRCS) has been estimated to be over NRs. two billion, four hundred sixty-eight million during the reporting period, which is nearly 66 percent of the total in INGO category.

The expenditures made by INGOs included support during both pre-disaster and post-disaster period for addressing specific needs of the most vulnerable and excluded group of people (such as dignity kits to women and girls, school safety kits to school children, etc.) and promoting income generation and livelihoods in the areas where government support was lacking.

Assessing Environmental Impacts of Disasters

The *Guidelines for Rapid Environmental Impact in Disasters* (Benfield Hazard Research Centre, University College London and CARE International 2005) and Field Environment Assessment Tool (FEAT) developed by UN agencies provide a comprehensive description of the rapid environmental assessment process together with background information on key tasks needed to complete the assessment. It attempts looking into factors influencing environmental impacts, environmental threats of disasters, unmet basic needs, and negative environmental consequences. The Post Disaster Needs Assessment published by National Planning Commission observed that:

Large landslides, mudflows and other large-scale dislocation of hillsides inflicted damage in forest areas. There was sustained damage to nature tourism infrastructure such as nature trails, trekking routes and sites in protected areas (PAs). Damage to Renewable Energy Technology (RET) solutions such as improved cook stoves (ICS) and biogas are paramount as these lead to improvements in the lives of rural communities and also lead to significant positive environmental outcomes (e.g. reduced deforestation; reductions in GHG emissions) (NPC 2015b, p. 53).

Immediately after the 2015 Earthquake, Ministry of Science, Technology and Environment commissioned a rapid environmental assessment (MoSTE 2015), which reported that the earthquake had triggered at least 2,780 landslides and many ground cracks in 31 districts, significantly damaging settlements, infrastructure, agricultural land, forests and water resources. Based on satellite imagery analysis, it further identified that the frequency of landslides was three times greater than that before the earthquake. A large avalanche in Langtang valley destroyed the popular trekking destination of Langtang village and flattened the nearby forest.

The assessment reported that the moraine dams of three glacial lakes had destabilized and changed the water sources in some areas, with reduced or no flows in some, and new sources starting to flow in others. Freshwater ecosystems in the Koshi and Gandaki basins, as the assessment identified, were affected by increased amounts of sediment, and landslides temporarily blocked a few rivers. Risk of downstream flooding was reported to have increased due to deposition of large amounts of sediment.

The PDNA estimated that 2.2 percent of forest cover in the affected areas was lost, mainly pine forest and sub-temperate forest (NPC, 2015b). It will take many years for many sites to stabilize and for vegetation to be re-established.

The PDNA further revealed that seven protected areas and their management were severely affected due to the earthquake. Community and government forest governance was disrupted,



Landslides and soil erosion after the 2015 earthquake (Source: MoSTE 2014)

which increased the risk of illegal extraction. Some wild animals are known to have been killed directly by the earthquake (MoSTE 2015). The forest areas in the quake-affected districts are likely to face human pressure and subsequent deforestation in post-earthquake times, as timber and other forests resources will be in high demand to rebuild houses.

Loss of water resources due to landslides triggered by the earthquake may have created a critical problem in some villages adding to the woes of already drying water sources because of climate change. This problem can be the cause of internal migration in many places. Water shortage has become more severe as earthquake-affected districts also saw very scanty rainfall in following monsoon season.

Waste management is yet another dimension of environmental impacts of disasters. A huge amount of debris was generated from damaged buildings after the 2015 earthquake. Hazardous waste released into the environment included medical waste that was haphazardly disposed of. Some toxic chemicals could end up in ground water or rivers; some of which are persistent pollutants.

The MoSTE report also notes that waste generated in emergency camps was not well managed, and plastic generated during the relief phase was either burned (causing air pollution), or dumped (that will remain undecomposed). Dead bodies and livestock carcasses also contaminated the environment. The assessment came up with a set of 11 principles for recovery and reconstruction (Box 2.3).

Box 2.3: Principles of making recovery and reconstruction environment sensitive

- Ensure land use planning incorporates hazards and disaster risk reduction
- Promote the use of safe and green building materials and reuse of disaster debris
- Develop environmentally responsible solid and hazardous waste management plans
- Ensure strategic road planning and reconstruction
- Promote alternative energy and energy efficiency methods
- Improve water and sanitation and promote integrated watershed management
- Support alternative livelihoods and environmentally responsible agriculture
- Promote reforestation and sustainably sourced timber for reconstruction
- Promote sound environmental practices through schools and other academic institutions
- Promote equity in the recovery and reconstruction process with particular attention to women and vulnerable or marginalized groups
- Incorporate climate change into recovery and reconstruction

(Source: MoSTE 2015, pp. xii-xiv)

Why is Safeguarding Development Gains So Important?

Natural disasters can hit the economy and can rollback development gains or exacerbate inequality. The PDNA (NPC 2015b) reports that the destruction caused by 2015 earthquake was widespread, impacting residential and government buildings, heritage sites, schools and health posts, rural roads, bridges, water supply systems, agricultural land, trekking routes, hydropower plants and sports facilities. A macroeconomic impact assessment done under PDNA, reveals that “total damage to existing stock of assets has been estimated at over NRs. 500 billion, with economic losses that flow from destruction, estimated at nearly NRs. 200 billion – taken together both figures represent an economic force equivalent to about one third of Nepal’s GDP” (NPC 2015b, p. 76).

According to the World Bank estimates, the earthquake is likely to push an additional 2.5 to 3.5 percent of the population into poverty in the fiscal year 2015-16 (NPC 2015b, p. xviii). That means, at least, 700,000 additional people are likely to fall under the poverty line as a direct effect of the earthquake.

In addition to the economic costs of damage and losses, there is also the cost of reconstruction. Revising the PDNA estimation of NRs. 669,505 million financial requirement for managing

reconstruction works of various sectors, the NRA later estimated it to be NRs. 837,742 million. Hence, it is very clear that one single disaster can pull the economy down tremendously.

A report published by the Ministry of Science, Technology and Environment (MoSTE) about the economic impacts of climate change variability, assessed historical information on floods and landslides. This report shows that the direct economic cost of impacts of water-induced disaster ranged from US\$270 to 360m per year during a 30 year period (1980-2010) which was 1.5 to 2 percent of the GDP at 2013 value (Figure 2.3). It could reach as high as five percent in extreme years; the indirect cost was as high as 100 percent of the direct impact (MoSTE 2014). There are also indirect impacts, which arise as a consequence – e.g. business disruption, lost wages and macro-economic costs – of the effects of major disasters on consumption, inflation and the shift of resources to relief and reconstruction. As a broad indication, these issues would increase the costs reported above by 25–100 percent (MoSTE 2014, p. 6).

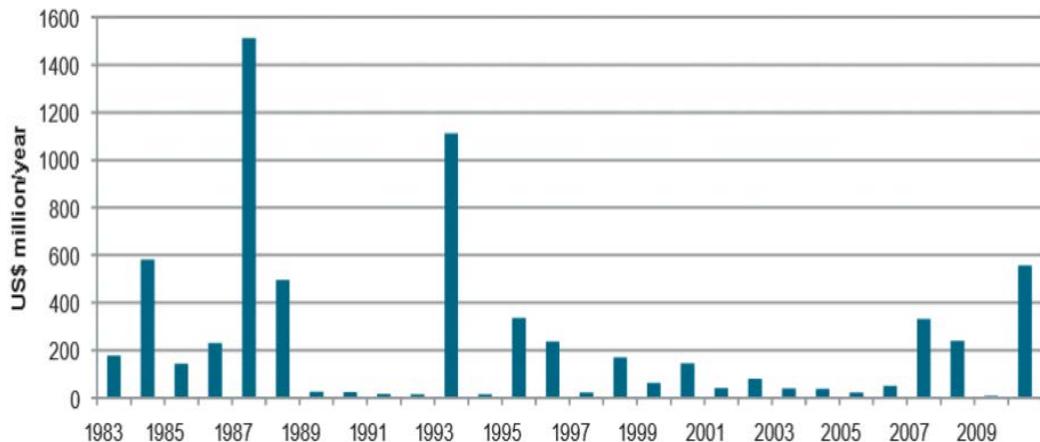


Figure 2.3: Longitudinal pattern of economic costs of water-induced disasters in Nepal, 1983-2010

(Source: MoSTE 2014, Figure 3)

The PDNA report concludes that “the earthquake upsets the nation’s high aspirations for swifter economic progress in the short run” shaking the national hope for graduation of the country from its current status as a Least Developed Country (LDC) to developing country, possibly by 2022 (p. 76).

Summary

This chapter reviews the DIMS in Nepal and reveals inconsistency in collection of disaster data and inadequacies in using them to generate information for broader use by development sectors. It also notes that the death toll, loss of public and private property, assets and livelihoods are increasing over the years due to disasters. The chapter reinforces the need for setting up a robust and comprehensive DIMS capable of generating information to guide national and sectoral planning to make development resilient to risks and be able to make effective response to disasters. The Chapter further highlights how the country faces multiple risks posed by multi-hazards and recurrent disasters due to faulty development plans, weak monitoring mechanisms, climate change, and poor environmental management. It further reviews loss and damage by disasters during the report period and extends information on budgetary allocations and expenditures made by the government and non-government sectors.

CHAPTER 3

THE 2015 EARTHQUAKE AND THE LESSONS LEARNED

The 2015 Gorkha Earthquake

Nepal suffered a massive loss of lives and property on Saturday, 25 April 2015, when a devastating earthquake of 7.6 magnitude struck the country. Subsequent aftershocks,¹ including one of magnitude 7.3 near the Chinese border on 12 May, resulted in additional losses of life and property. The earthquakes shook almost the whole country, and the destruction was extensive, lasting and widespread, in terms of human casualties, social suffering as well as environmental, infrastructural and heritage related damages. The earthquake triggered avalanches in the Mount Everest region and in the Langtang Valley. Villages were flattened and people were made homeless within less than a minute. Considering the severe level of humanitarian crises, Government of Nepal declared 14 out of 31 badly affected districts as “crisis-hit.”

The *Post Disaster Recovery Framework* (NRA 2016) prepared by the National Reconstruction Authority and the *Post Disaster Needs Assessment* (NPC 2015b) prepared by the National Planning Commission took stock of the damages and losses and estimated recovery costs together with an outline of the reconstruction strategy.

As a result of the earthquake, 8,970 people died and more than twenty three thousand people were injured (MoHA 2016). The PDNA showed that at least 498,852 private houses and 2,656 government buildings were destroyed. Another 256,697 private houses and 3,622 government buildings were partially damaged. In addition, 19,000 classrooms were destroyed and 11,000 damaged (NPC 2015b).

The earthquake affected manufacturing, production and trade in agriculture as well as tourism and other areas of the service sector. On the whole, it weakened the national economy with wider

¹ According to National Seismological Centre the major two earthquakes were followed by 486 aftershocks with local magnitude 4 and over until 24 August 2017.

ramifications. It posed a challenge to Nepal's aspiration of upgrading herself to a developing country category by 2022, and to its national commitment of poverty reduction (NPC 2016).

According to initial estimates NRs. US\$ 6,695 million would be required to reconstruct damaged properties and infrastructure and to support recovery in affected sectors of the economy (NPC 2015c, Table 3). A revised estimate drawn as part of developing the Post Disaster Recovery Framework, however, identified US\$ 8,377 million needed for reconstruction (NRA 2016, Table 4).

Experiences from the Relief Operation

Relief operations started from the second hour of the earthquake and lasted till 19 May 2015; for a little less than a month. Key highlights of relief operation are drawn hereunder.

Quick and Swift Initial Response. This has been widely observed that Government of Nepal's response was quick and swift during the initial phase of search, rescue and relief response. The first meeting of the Central Natural Disaster Relief Committee (CNDRC) took place at NEOC within the first two hours of the tremor, and the first emergency meeting of the Cabinet took place within the first four hours. These meetings managed to (a) immediately release NRs. five hundred million through CNDRC, (b) call for international humanitarian support, and (c) declare emergency in 11 "crisis-hit" districts (MoHA, 2016)², apart from taking other decisions. Certain institutional and policy frameworks put in place earlier enabled the government to organise quick initial response. The role of NEOC and the National Disaster Response Framework (NDRF), 2013 assigning clear and time-bound roles and responsibilities was extremely helpful in managing initial response.

On the third day of the earthquake, the Government managed additional buses to support movement of outbound passengers who wished to leave the ravaged Kathmandu and to join their families in outside districts. In the week that followed, about one hundred thousand people left Kathmandu, easing the pressures on emergency response to a great extent.

Breakdown and Revival of Communication and Information Networks. For a coordinated and informed response, smooth functioning of the communication system is essential. Getting information on loss and damage and disseminating clear instructions are two key actions in this period. Nepal's communication infrastructure crumbled immediately owing to the earthquake both literally and figuratively (EIAS 2016). Mobile networks, landline telephones, means of mass communication (such as television) were all paralyzed. This had implications on mobilization and optimum utilization of international responders who entered the country without knowing where

² Emergency was later imposed on additional three districts after getting detailed report.

their assistance was most needed. The Government established toll free call centers (with number 1234) as an alternative way to allow people to convey their messages to the Government, which received a total of 69,890 calls seeking support. The Government also tried to maintain alternative ways of information flow of relief and rescue through the Nepal DRR Portal (<http://drrportal.gov.np/>).

SMS and Twitter facilities were also put in place, which complemented flow of information to some extent. As means of communication (such as internet) were revived, it added much value. International communication companies, namely T-Mobile, Sprint, Verizon, Vodafone, Time Warner Cables and others, offered free calls from and to Nepal. Payment providers such as Apple, PayPal and Square Cash waived their fees to ease the donations process. Google and Facebook enabled useful tools to help search for missing and displaced persons (EIAS 2016). The lesson learned is that Nepal should invest much in making communication and information systems resilient.

Resource Mobilization during relief Operations. Chapter 2 has already detailed the budget release and investment made for post-earthquake response and recovery, showing that in a period of two years a little more than NRs. twenty-one billion, nine hundred ninety million (NRs. 21,990,192,958) was released towards disaster relief and response activities from the Central Natural Disaster Relief Fund (CNDRF). It also gives details about the investment by the non-government sector, including different UN agencies and other stakeholders such as I/NGOs. Over a period of two years (2015 -2016), the official records of the Government show that, little more than NRs. twenty-one billion, nine hundred ninety million (NRs. 21,990,192,958) was released on disaster relief and response activities from the Central Natural Disaster Relief Fund (CNDRF). While 56.6 percent of this was released in 2015, the rest was released in 2016, which is attributable to the 2015 mega earthquake. Data from different UN agencies show that a little more than one hundred twenty one million USD was mobilized during the review period, though this seems to be more towards preparedness for response and risk reduction than response. Data from INGOs shows that together they spent little more than NRs. one billion, two hundred eighty-one million during the period of two years. The expenditures made by INGOs included support during both pre-disaster and post-disaster period for addressing specific needs of the most vulnerable and excluded group of people and promoting income generation and livelihoods in the areas where government support was lacking.

However, this description of budget allocation and investment on DRM by different sector actors is not conclusive due to several constraints, and there is a need for a systematic effort and a culture of institutional accountability on the part of DRM actors in Nepal – both government and nongovernment.

Cash Compensation to the Affected Families. On the fifth day of the earthquake, the Government made a number of decisions on extending relief. Families who lost family members

would be compensated with NRs. one hundred thousand each. The bereaved family would also get NRs. 40,000 for funeral costs. Those whose houses were damaged would get NRs. 15,000 for repair work. Those whose house had collapsed would get NRs. 5,000 for managing immediate shelter (NRs. 3,000 for the ones whose house was only damaged). To manage food for immediate consumption, each affected family would get NRs. 2,000. When the reconstruction intervention was delayed due to bureaucratic and political inefficiencies, in view of upcoming winter, the Government also decided to give NRs. 25,000, as advance to every affected family for managing temporary shelter and NRs. 10,000 to manage “warm clothes” like rugs and blankets. While all this diverse range of relief was essential, there was debate whether cash transfer such as this was the best mode of immediate humanitarian support, or if there were better alternatives.

Troubles in Identification of Needs and Managing Supplies of Relief Materials and Services. In the post-disaster chaos, if institutional memories are not strong and if standard operating procedures are not put in place, proper identification of relief materials needed on ground becomes a challenge. In addition, the list of necessary relief items needs to be constantly updated with changing needs, as evidenced in the frustrating experience post the 2015 Earthquake. Senior Government officers deputed in Central Command Post at NEOC found it difficult (for lack of proper information or difficulty in compiling and prioritizing the needs) to decide what and where to dispatch the piles of relief materials. Later, the Government had to depute a team of senior government officers (from three different ministries led by MoHA) in the emergency warehouse at Tribhuvan International Airport itself. To address the problem of mismatch between the relief items needed on ground and the supply of donations of such items, the CNDRC on 30 April 2015 instructed secretaries of the MoHA, Ministry of Commerce and Supply, Ministry of Industry, Ministry of Agriculture Development, Ministry of Finance and the Ministry of Urban Development to sit together to identify and finalize the list of items needed and disseminate the information widely to national and international donors and volunteers.³

Distributing relief materials to rural areas remained a particularly challenging task given the perennial problems of rugged topography, remote and inaccessible countryside, poor road networks and transportation facilities. Although by and large, the situation remained calm, a few incidences of looting and capturing of dispatched materials on the way were reported (EIAS 2016). To ensure safe delivery of relief materials in designated points, Government later air lifted relief supplies or used overland transportation by Nepal Army and the Armed Police Force (MoHA 2016).

3 The Government also deputed a team in each Customs Offices other than TIA, comprising Local Development Officer, chiefs of district security forces, chief of the respective Customs Office, and led by Chief District Officer of the respective district, as the Relief Materials Screening Committee mandated with screening and approving relief materials imported that are duty-free and maintaining record of all the items received and informing CNDRC quickly (MoHA 2016, pp. 231-232).

Donors, international development partners and domestic volunteer groups had also begun to distribute relief materials on their own and that created problems of duplication and roadside bias. Thus, the Government decided to “route earthquake donations through the bank account of the Prime Minister’s Disaster Relief Fund, trying to provide a one-window service to the affected people by consolidating amounts, avoiding duplication of effort and ensuring proportional and equitable access to relief by needy victims in all areas.” International development partners, however, lacked trust in the government (EIAS 2016), and some of them circumvented the government decision and sent aid directly through NGOs for distribution (MoHA 2015).

Lessons Learnt

Command and Coordination Mechanism. As with all major disasters, the 2015 Earthquake became a test case for the Government’s coordination mechanism at various levels. Although CNDRC remained active and functional throughout, its effectiveness fell short of the urgency of the circumstance. On the one hand, there was a multi-tier mechanism of command, control and coordination, on the other, there was a parallel entity created for overview and monitoring, which primarily comprised of political representation.

The Central Command Post was established at MoHA under the leadership of MoHA Secretary, drawing secretaries of other nine relevant ministries (MoHA 2015, p. 7). It was the apex operational unit. At the District level, DDRCs were active as per the mandate. To support their working, one Joint Secretary was deputed in each affected district supervised directly by a designated Secretary from Kathmandu.

In addition, in each electoral area of the earthquake affected districts, one Search and Rescue (SAR) Command Post was set up, under the leadership of MoHA Joint Secretary sent from Kathmandu, comprising of a team of senior officials from the Nepal Army, the Nepal Police and the Armed Police Force to look after issues of debris management, corpse management, and distribution of relief materials and to take preventive measures to control outbreak of epidemic. This mechanism is yet to be assessed in terms of its effectiveness, overlaps of responsibility and conflict of interest with DDRCs. About 66,069 army personnel, 41,776 police personnel, and 24,775 APF personnel were mobilized under the SAR Command Post. As mentioned earlier, a team of senior government officers (from three different ministries led by MoHA) was deputed in the emergency warehouse at Tribhuvan International Airport for on-the-spot coordination in supply, distribution and delivery of relief materials.

Experiences from the Ongoing Recovery and Reconstruction

Since 19 May 2015, the Government decided to end the relief operations and transition towards recovery phase. Some of the salient issues of recovery phase have been drawn hereunder.

Establishment of National Reconstruction Authority. The National Reconstruction Authority (NRA), a coordinating and facilitating body formed by the Government of Nepal to manage, oversee and coordinate the reconstruction work was constituted on 25 December 2015, following the enactment of the NRA Act on 20 December. By law, its functions included assessing the damages caused by earthquakes, fixing the priorities of reconstruction, preparing policies, plans and programs, and facilitating implementation. It can carry out reconstruction, or ensure that it is done through different agencies, obtain land for reconstruction, and prepare plans for developing integrated settlements and for ensuring that reconstruction is carried out in keeping with safety standards.

The objectives of the NRA as articulated in the National Reconstruction and Rehabilitation Policy, among others, are to coordinate the work of, and collaborate with, non-governmental organizations, private sector or communities in order to reconstruct, retrofit and restore partially and completely damaged residential, community and government buildings and heritage sites; to make them disaster resistant using local technologies as needed; and to reconstruct (restore) damaged cities and ancient villages to their original form, while improving the resilience of the structures.

It is also empowered to raise financial resources for reconstruction and to make arrangements for its effective use. The Authority is responsible for carrying out technical reviews of damaged or unsafe physical structures and order safe demolition, where required. For all practical purposes, it is the one-stop institution to oversee, coordinate, and facilitate Nepal's efforts to build back better, promote national interest and provide social justice by facilitating resettlement and translocation of the persons and families displaced by the earthquake (adapted from the NRA Act) – that underpins the reconstruction policy.

Formulation of Post Disaster Recovery Frameworks. In May 2016, the NRA brought a new *Post Disaster Recovery Framework* (PDRF) (NRA 2016). The PDRF lays out strategic recovery objectives and summarizes institutional arrangements and financing strategies, as well as implementation and monitoring systems, to help plan and manage recovery and reconstruction. It also sets out sector priorities that will contribute to the achievement of the strategic recovery objectives. With the vision of “establishment of well-planned, resilient settlements and a prosperous society,” the PDRF sets out the following strategic recovery objectives:

- Restore and improve disaster resilient housing, government buildings and cultural heritage, in rural areas and cities.
- Strengthen the capacity of people and communities to reduce their risk and vulnerability and to enhance social cohesion.
- Restore and improve access to services and improve environmental resilience.
- Develop and restore economic opportunities and livelihoods and re-establish productive sectors.
- Strengthen capacity and effectiveness of the state to respond to the people's needs and to effectively recover from future disasters.

Before this, the Government had endorsed the *National Reconstruction and Rehabilitation Policy* (NRRP), 2016. The NRRP provides policy instrument for steering reconstruction and rehabilitation and outlines organizational structure of the NRA and the implementation modality and approaches. These policies and guidelines clarify the roles and responsibilities of different institutions working on reconstruction and rehabilitation. The Advisory Council, Steering Committee and the Executive Committee of the NRA are now in place. The Council of Ministers has approved guidelines for the following interventions:

- Housing grant distribution
- Environmental impact assessment
- Land acquisition and land registration
- Public procurement
- Reconstruction regulation
- Land registration, and
- Working with non-governmental organizations.

The key elements of the NRRP are: (a) Reconstruction of housing and cultural heritage sites following a standard approach of owner-driven housing reconstruction. (b) Relocation and land use, although there is emphasis that most reconstruction will take place in-situ. Relocation of villages is discouraged. The policy addresses pooling and developing land, discouraging scattered settlements and promoting larger and integrated settlements. (c) Engaging the community (including affected vulnerable social groups, women, children, people with disabilities and senior citizens), private sector, volunteers and Diasporas in reconstruction. (d) Integrating principles of disaster risk reduction and build back better, for which use of local building materials is encouraged and safer designs and stronger infrastructure specifications have been put in place. (e) Linking financial assistance for housing recovery to the progress of construction.

Private House Reconstruction. Private house reconstruction is one of NRA's top priority areas. In two years after the devastating earthquake that destroyed over 765,000 houses, reconstruction of private houses has gathered little momentum. As of August 2017, 632,047 beneficiaries had signed the grant agreement and 603,072 of them had collected the first tranche whereas only 56,687 beneficiaries had received the second (Figure 3.1).

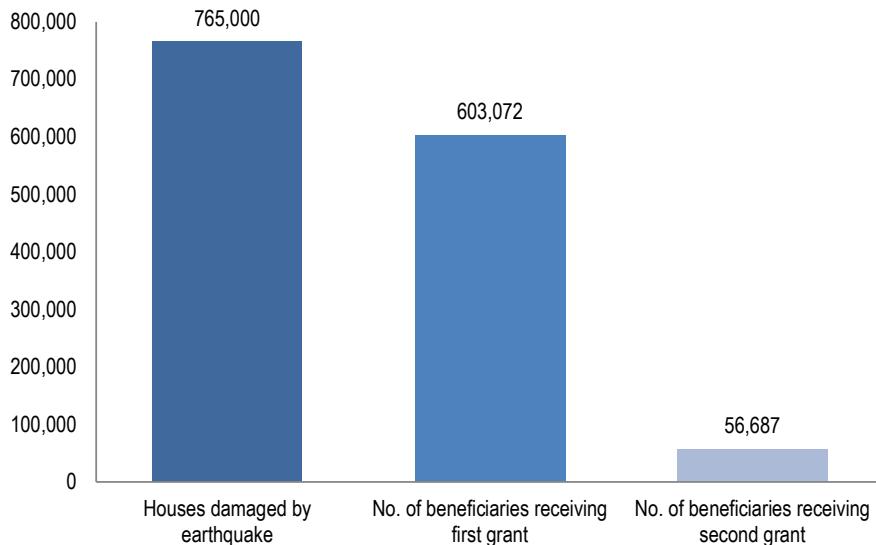


Figure 3.1: Ratio of beneficiaries receiving house reconstruction grants in 14 crisis-hit districts

(Source: NRA 2017, as of September 2017)

The current fiscal year 2017/18 is seen as the year of reconstruction. The target is to complete the reconstruction of private households and public infrastructures within the specified timeframe. To speed up the grant distribution procedures, the NRA has disbursed second and third installments in advance at the local level. In order to expedite the reconstruction of private houses the NRA has adopted the following principles:

- Devolution and allocation of reconstruction work among the newly elected local representatives in respective districts.
- To speed up the grant distribution process, necessary technical assistance to be disbursed in affected districts.
- Required technical and economic support to be provided to shift the vulnerable settlements to safer locations.
- Several programs on livelihoods to be continued, including agriculture, animal husbandry, irrigation, etc.

- NRs. 50,000 additional grant or technical support (or both) be made available to single women, Dalits, elderly and differently able-person to enable them to build earthquake resilient houses in compliance with the prescribed standards.



(A house under reconstruction in Tipling village, Dhading (Photo credit: Baliyo Ghar/NSET)

Relocation of Hazard-Prone Settlements. NRA has enforced a new procedure to make necessary arrangements for the beneficiaries and families of the hazard-prone settlements that have been affected by the earthquakes. The “Procedures for the Relocation and Rehabilitation of Hazard-prone Settlements, 2073 (2017)” has been enforced from 7 April 2017 as per the authority provided by Clause 31 of the “Reconstruction and Rehabilitation of Structures Affected by the Earthquakes Act, 2072”. As per the new procedure, “hazard-prone settlement” refers to “... settlements or families residing in [areas] ... identified as hazard-prone” by NRA based on official geological reports (NRA 2017a). A study conducted by NRA to identify vulnerable settlements after the 2015 earthquake recommended that a total of 2,751 families of 112 communities have to be relocated to safer places (NRA 2017b).

In such a case, the beneficiaries will be encouraged to create users’ groups involving at least 10 families in each settlement so that the committee can select a safe location for the development of an integrated settlement. Then, the beneficiaries will be required to submit the land purchase certificate to NRA. The lands shall be integrated and the relocation and rehabilitation plan prepared, after which separate programs shall be implemented to gradually develop structures (NRA 2017a). The procedure also mentions gradual establishment of basic-needs structures like roads, drinking water supply, electricity, health centers and educational institutions for the integrated settlement.

Youth Volunteerism and Building Temporary Class Rooms in Kaski

Spontaneous and self-motivated volunteerism proliferated across the earthquake-hit districts immediately after the 2015 earthquake, initiated by young people on their own. As one of the best examples, voluntary mobilization of young people in Kaski district for school restoration work was exemplary in bringing people's life back to normalcy immediately after the earthquake. With this, the youths in Kaski proved that if responsibilities are given to them, they could perform any emergency activities in a very coordinated manner without any political, personal or financial interests and without asking the donors for any funds. (Box 3.1)

Box 3.1: Volunteerism

On 26 April 2015 (next day of the earthquake), both government officials (Regional Administrator, Chief District Officer, Chief Regional Police Office) and representatives of civil society, media representative and youth and women volunteers met together in Pokhara and decided to support government relief and rescue operation in a coordinated manner. One of the major decisions was to form "Citizen Support Committee for Disaster Management" (CSCDM) under the leadership of Mr. Bishnu Bahadur Bhattarai. To coordinate properly, the CSCDM formed four sub-committees: impact assessment, volunteer coordination, relief management, and monitoring and evaluation. The sub-committees held wider consultations with local political leaders, business houses, students, community level organizations, etc. and developed their plan for immediate restoration of normal life. Youth Volunteers Coordination Sub-Committee (YVCsc) was formed and entrusted with the task of mobilizing and coordinating local youths. In a week, the YVCsc organized a meeting with all like-minded volunteer clubs and local organizations in the district. The Chief District Officer, Local Development Officer, District Education Officer, head teachers of affected schools were also invited. The meeting decided to immediately start constructing temporary class rooms in all schools that were damaged by the earthquake.

Based on the assessment report provided by the Impact Assessment Sub-Committee, the YVCsc, immediately deployed a four member team to assess the damages in class rooms in various schools, and explored possibility of using locally available materials for the construction of temporary class rooms. Taking suggestions from District Education Office, District Development Committee and other related organizations, they developed and shared their plans to rebuild temporary class rooms, their locations, and design layouts with government and non-government stakeholders. They also developed a consensus on applying locally available materials, such as bamboo, bamboo net and tarpaulin, as per the need.

Within two weeks of the April 2015 earthquake, the YVCsc commenced construction of class rooms with support from local school teachers, parents and students. By the first week of Jestha, 2072, 50 percent of the targeted rebuilding of temporary class rooms was achieved and schools were able to resume classes. A total of 106 temporary class rooms in 32 schools were completed and classes resumed. A total of 750 volunteers from 45 organizations were mobilized under this initiative. Later, all these temporary class rooms were replaced by new and permanent class rooms. The YVCs were able to achieve this with funds generated locally and in many cases managed by the volunteers themselves. They did not request for funds from any of the donors.

Key Lessons Learned

Lessons Learned during the Relief Phase. Despite quick and swift initial response on the part of the Government, as time progressed, coordination and command issues became increasingly challenging. A huge influx of international humanitarian teams and the government coordination mechanism posed a conflict. Some of the lessons learned could be summed up as follows.

- Establishment of NEOC and EOCs network proved to be quite effective, particularly in the event of breakdown of communications system. It also served as the backbone of the main line of command and control.
- The NDRF developed in 2013 was implemented for the first time in 2015 Earthquake. This proved to be quite instrumental, along with the realization that it needs to be revised based on the lessons learned.
- The coordination mechanism envisaged by Natural Calamity Relief Act, 1982 proved to be insufficient. The Government of Nepal, driven by circumstances, took one decision after another on matters of effective coordination and oversight. This has to be reviewed and an appropriate and robust coordination framework has to be worked out.
- A robust, well tested and resilient information and communication system has to be maintained, and use of information and communication technology, social media and apps needs to be promoted that can be of use during and after emergency.
- A legally-binding and effective “one window framework” should be put in place beforehand in a way that does not undermine the sense of voluntarism and spontaneous humanitarian support initiatives. Trust, transparency and recognition of contribution have to be ensured. Since the ‘one window framework’ has been understood differently, the Government should endorse a guideline for the same.
- An integrated but separate national body of INSARAG-standard SAR needs to be immediately instituted drawing resources from the Nepal Army, the Armed Police Force and the Nepal Police.
- Arrival of international humanitarian response team should be need-based and smaller in size so that they do not create extra pressure on coordination, and the domestic SAR capacities are not undermined.
- Due to varied level of understanding of the local DRR entities, such as the DDRCs, there was also variation in effectiveness of institutional capacity to respond.

Lesson Learned from Recovery Phase. Despite good intentions, recovery and reconstruction have been very slow. Though unacceptable, the reconstruction process has been an endeavor of trial and error and is stuck in political and legislative delays and conflict of interests (NRA 2017b, p. 2).

- Despite a number of policy frameworks already in place before the 2015 Earthquake, and additional policy documents developed for and by NRA (Box 3.2), there is still a need to put in place a set of standard guidelines, operating procedures and systems, including strict implementation of building codes.

Box 3.2: Reconstruction related policy and legal frameworks

- Reconstruction and Rehabilitation Guidelines, 2072
- Private Housing Grant Distribution Procedure, 2072
- Environmental Impact Assessment Related Procedure, 2072
- Land Acquisition Related Procedures, 2072
- Land Registration Related Procedures, 2072
- Public Procurement Related Procedures, 2072
- Mobilization of NGO Sectors Related Procedures, 2072
- Post Disaster Recovery Framework, 2073
- Grievances Hearing Procedure, 2073
- Reconstruction Fund Mobilization Related Procedure, 2073
- Community Rebuilding Committee Related Procedure, 2073
- Private Housing Reconstruction Technical Inspection, 2073
- Training Procedure, 2073
- Training Strategies, 2073
- Reconstruction of Schools Procedure, 2073

(Source: NRA 2017b, p. 7)

- Management and mobilization of competent human resources is a major stumbling block that needs to be addressed.
- Coordination, collaboration and cooperation among governmental, non-governmental, private sectors, and the affected community remained a challenge. Observations show that in DDRCs, mechanisms that are better experienced at local level coordination and facilitation, are grossly bypassed in the reconstruction process.
- The PDRF identified the need for USD 9.3 billion for reconstruction. So far the pledged amount from international development partners stands at USD 4.3 billion. There is an evident resource gap (46.2 percent) to accomplish the task of complete reconstruction.

- In addition to resource gap, there is also a capacity gap of NRA in implementation. An overview of NRA's expenditure portfolio shows that a considerable size of capital fund has remained unspent over the last two consecutive financial years.
- Local NGOs and NRCS district chapters proved to be better district lead support agencies than INGOs since they are better versed with coordination, joint discussion and facilitation.
- Nepal's post-earthquake reconstruction did not succeed in maintaining the pace in building private houses also because there was a dearth of trained engineers willing to work in earthquake-hit districts. Those who were deployed by NRA to earthquake hit areas, were mostly engaged in certifying eligibility to get next installment of payment instead of facilitating the re-construction process.

Summary

This Chapter takes a relook at the 2015 Gorkha Earthquake and reviews follow up response and recovery activities. It also draws on learning from relief operations conducted immediately after the Earthquake, and on-going recovery and reconstruction work. It throws light on the inability of the prevailing coordination mechanism to keep up with the requirements of the relief operation and the main hurdles impeding momentum of response work. This was most evident in case of distribution of relief materials through the “one window policy” of the government, which underlines the necessity for developing legally binding guidelines and making it public beforehand in case of future disasters. The chapter also shares the lessons learnt both during the relief phase and the recovery phase.

CHAPTER 4

THE POST-2015 DRM REGULATORY FRAMEWORK IN NEPAL

The Constitution of Nepal, 2015

Nepal's current Constitution mentions disaster risk management in the country for the first time and it has clearly 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 that relates to "policies relating to protection, promotion and use of natural resources," mentions that the state shall formulate policies on 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 "advance warning, preparedness, rescue, relief and rehabilitation in order to mitigate risks from natural disasters." Further, Article 267 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 of the Constitution gives the President several emergency powers. 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."

The Constitution of Nepal has clearly stipulated that DRM is a shared responsibility of all levels of governments (Table 4.1). The Constitution states that natural and man-made disaster preparedness, rescue, relief and rehabilitation responsibility falls under the concurrent power/jurisdiction of federal and provincial government. Of the 22 tasks assigned to 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.

Table 4.1: Constitutional provisions on DRM responsibility

Schedule	Subject of schedule	Provision related to DRM
Solo power		
5	Federal Powers/Jurisdiction	<ul style="list-style-type: none"> Land use policy, housing development policy, tourism policy, environment adaptation (#29)
6	Provincial Powers/Jurisdiction	<ul style="list-style-type: none"> Land management (#16) Forest, water and environment mgmt. (#19)
8	Local Level Powers/Jurisdiction	<ul style="list-style-type: none"> Disaster management (#20)
Concurrent power		
7	Federal and Provincial Powers/Jurisdiction	<ul style="list-style-type: none"> Natural and man-made disaster preparedness, rescue, relief and rehabilitation (#17)
9	Federation, Provincial and Local Level Powers/Jurisdiction	<ul style="list-style-type: none"> Disaster management (#9)

Source: Constitution of Nepal, 2015.

The new 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 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 committee-based coordination mechanism, the Act has proposed a clear multi-tier institutional structure of DRM (at the national, provincial, district, local/municipal, and the 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 responsibility of declaring 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, and. 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.¹

Other DRM Regulatory Frameworks

Apart from the provisions of the Natural Calamity (Relief) Act, 1982 disaster response planning and implementation has been steered by several Operational Guidelines and Action Plans such as National Action Plan on Disaster Management in Nepal (1996) and the Guidelines for distribution of relief materials to disaster affected people. The Tenth Five year Plan (2002 - 2007) and the subsequent Three Year Plans (2007-2010 and 2011-2013) had given due focus to mainstreaming DRM in sectoral plans of agriculture, water resources, health, housing, mines and geology, etc. directed by respective sectoral policies.

Existing legal framework comprises of the following:

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 own 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.

¹ It is after the declaration of the International Decade for Natural Disaster Reduction (1990-1999) that both the government and non-government agencies started to emphasize preparedness and mitigation activities in Nepal.

- 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 assessments.
- Emergency operation system at 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, 2017-2030. The Ministry of Home Affairs has led the process of formulating National DRR Policy and Strategic Action Plan, which will replace 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, 2017-2030 follows the 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 resilience of important infrastructures and basic services including livelihoods, agriculture, industry, road, communication, water and sanitation, health and education, in order to reduce their loss and damage by disasters.

National Disaster Response Framework, 2013. The Government of Nepal endorsed the National Disaster Response Framework (NDRF) in 2013 with a view “to guide more effective and coordinated national response in case of a large scale disaster.” Its scope of work includes: a) the response preparedness and emergency response at national, regional, district and local levels, and b) actions to be taken immediately before, during and after the disaster directly to save lives and property, maintain law and order, take care of sick, injured and vulnerable people, and to provide essential services and to protect public property.

The NDRF, 2013 clearly lays down the role of the government after a major disaster strikes and the attributes of an effective coordination to be maintained through humanitarian clusters and with international teams, donors. It also explains the special arrangements to be made for national response during emergencies and the roles that various organizations would perform from hour zero of the incident till a month after. The government has planned to revise the NDRF, 2013 to make it more pragmatic based on the 2015 earthquake response experiences.

Existing DRM Institutions and Mandates:

There are a number of institutions that 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 declaration of emergencies. It further ensures transfer of necessary resources from government's relief fund and mobilization of other sources of funds required for making rescue and relief operations effective. Post-earthquake, it has played a key role in supervising NRA and providing overview to recovery and reconstruction work.

Ministry of Home Affairs (MoHA) is the focal ministry for disaster risk management in Nepal and has played a lead role in post disaster response, particularly managing rescue and relief operations, through mobilization of security forces 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 Local Development (MoFALD) plays a critical role in enhancing 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 District Disaster Relief Committee.

National Planning Commission (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, it 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).

Water and Energy Commission (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 identify current and future risks from water induced disasters, and measures to minimize the risks during implementation.

Central Natural Disaster Relief Committee (CNDRC), comprising of 27 members chaired by the Minister for Home Affairs, is the highest operational body mandated for effective and efficient relief and ensuring coordination between government and non-government agencies as stipulated in the Natural Calamities (Relief) Act, 1982. The Committee holds at least two meetings annually, or as necessary, to manage challenges posed by any disaster at any time. The existence of CNDRC will soon be over with the enactment of the new DRRM Act, 2017.

Ministry of Irrigation through 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 construction of new irrigation schemes or maintenance of existing ones.

Ministry of Education (MoE) is mandated for developing education curricula and raising technical capacity on DRM within MoE. In addition, in coordination with Department of Urban Development and Building Construction (DUDBC) under 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 Urban Development is mandated with making settlements more resilient to natural and human-made disaster risks. MoUD has been putting considerable efforts into 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:

- Ministry of Forests and Soil Conservation (MoFSC)
- Ministry of Environment (MoEn)
- Ministry of Science and Technology and Environment (MoSTE)
- Ministry of Health and Population (MoHP)
- Ministry of Industries (MoI)
- Ministry of Agriculture Development (MoAD)
- Ministry of Water Resources (MoWRs)

DRM Priorities under Current 14th Development Plan

The current 14th five-year development plan (2016-2020) accords priority to minimize impacts from water-induced disasters (NPC 2016, pp. 84-87) on human lives, properties and physical infrastructure. It prioritizes river embankment programmes for control of floods and landslides, and minimizes the impacts of inundation. The Plan also prioritizes disaster risk management due to environment degradation and climate change (pp. 252-261).

Summary

This chapter mainly draws on existing institutional and policy framework with regard to DRM in Nepal, namely the 2015 Constitution of Nepal, the Local Government Operation Act, 2017 the Disaster Risk Reduction and Management Act, 2017 and the draft DRR Policy and Strategic Action Plan. Since the time of the 10th Plan (2002-2007) Nepal's periodic development plans have consistently mentioned DRM priorities. However, without a clear understanding about how DRM is linked to development, the respective sectoral plans could not be specific to DRR priorities. The new DRM Act, the draft National DRR Policy and Strategic Action Plan and the draft Mainstreaming Guideline provide systematic guidance on making effective disaster response, risk reduction, mitigation and recovery.

CHAPTER 5

FROM HFA TO SFDRR: CARVING THE ROAD AHEAD

Nepal's Response to Yokohama Strategy

During the International Decade for Natural Disaster Reduction, 1990-2000, the World Conference on Natural Disaster Reduction was organized in Yokohama, Japan on 23-27 May 1994. The Conference adopted the Yokohama Strategy and the related Plan of Action for a Safer World for the rest of the decade and beyond. The Yokohama Plan of Action promised to promote and strengthen international cooperation to prevent, reduce and mitigate natural and other disasters with particular emphasis on (a) human and institutional capacity building and strengthening, (b) technology sharing, the collection, the dissemination and the utilization of information, and (c) mobilization of resources (UN Department of Humanitarian Affairs 1994).

In response to the Yokohama Plan of Action, Nepal constituted the IDNDR National Committee, which prepared the National Action Plan on Disaster Management in Nepal, adopted by the Government in 1996 (MoHA 1996). Primarily in the form of a matrix, this Plan of Action gave an outline of preparedness, response, reconstruction and rehabilitation, and mitigation with stipulated priority activities, time of completion and roles assigned to implementing agencies. The Action Plan also constituted an M&E committee in order to monitor the implementation, which, however, remained weak.

HFA (2005-2015) Achievements

The World Conference on Disaster Reduction was held from 18 to 22 January 2005 in Kobe, Hyogo, Japan, which adopted the HFA, 2005-2015. The Conference provided an opportunity to promote a strategic and systematic approach to reducing vulnerabilities and risks. It underscored the need for building the resilience of nations and communities to disasters (UNISDR 2005).

The scope of HFA, according to UN Office for Disaster Risk Reduction, encompassed disasters caused by hazards of natural origin and related environmental and technological hazards and risks

(UNISDR 2005). It thus lent a holistic and multi-hazard approach to DRM and the way in which it can have a significant impact on social, economic, cultural and environmental systems, as stressed in the Yokohama Strategy.

HFA Priorities for action were to (a) ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation, (b) identify, assess and monitor disaster risks and enhance early warning, (c) use knowledge, innovation and education to build a culture of safety and resilience, (d) reduce the underlying risk factors, and (e) strengthen disaster preparedness for effective response at all levels (UNISDR 2005).

Nepal's performance in translating HFA's commitments into reality achieved mixed success (MoHA 2015, UNDP Nepal 2015). The progress and achievements also remained uneven in Nepal – as evidenced in the national progress reports submitted to the UN on the implementation of the HFA (2009-2011, 2011-2013, and 2013-2015).

The final report submitted to the UN, entitled “National Progress Report on the Implementation of the Hyogo Framework for Action” (MoHA 2015) and an independent assessment of DRM integration into development plans (UNDP Nepal 2015) show that though there are a few achievements, there is tremendous scope for improvement. The Government of Nepal directed the local authorities to allocate 5 percent of local budget for DRM. A consolidated guideline and plan for mainstreaming DRR into development is under making. Nepal utilized the National Adaptation Programme of Action (NAPA) and the Local Adaptation Plan of Action (LAPA) to mitigate some key climate risks and mainstream climate change adaptation into development planning at the national, regional and local levels.

Strengthening policy and institutional framework remained largely unachieved. The most awaited Disaster Management Act could not be endorsed during the review period. The NRRC Flagship Programmes (now phased out) contributed to ensure risk reduction efforts aligned with NSDRM.

Box 5.1: Nepal's key policy response to HFA

- Adoption of the cluster approach (2008 onward)
- National Strategy for Disaster Risk Reduction (NSDRM), 2009
- District Disaster Preparedness Response Plan, 2011
- Local DRM Plan Guideline, 2012
- National Disaster Response Framework (NDRF), 2013
- Post-Disaster Recovery Framework (PDRF), 2016.

During HFA period, in the absence of a high level dedicated national DRR institution, disaster preparedness activities were mainly executed by MoHA while actions on DRR mainstreaming, recovery planning, seismic resilience building and disaster mitigation were carried out by other agencies in coordination of MoHA.

A high level Climate Change Council, formed under the chairmanship of the Prime Minister to support inter-sectoral coordination on climate change actions, could not be very effective. Now that a new DRRM Act has been endorsed, a new DRR institution at national level linked to provincial, district and local level set ups, is soon expected to be set up.

MoFALD in collaboration with IFRC developed a set of criteria to define ‘community resilience’ and used this as a standardized tool to gauge resilience level of the community. Information obtained through this was further used to identify capacity gaps of the community and design interventions to mitigate those gaps. Using this approach over 635 VDCs and municipalities (a quarter of the population) were reached. In addition, MoFALD supported 58 municipalities in equipping them with fire brigade services and was instrumental in founding crops and livestock insurance system. During this period, national and district level land use mapping was completed, including that of 254 VDCs and Early Warning System (EWS) was set up in seven major river basins. However, the approval of ‘Early Warning Strategic Action Plan’ to guide installation, operation and maintenance of EWS throughout the country remained pending and local capacities for multi-hazard risk assessment could not be built.

National capacities for emergency preparedness and response were enhanced during the review period through the establishment of NEOC in Kathmandu and expansion of a network of EOC throughout the country that included 5 in regions, 49 in districts and 1 in municipality. The EOCs are now equipped with 24/7 communication system and Standard operation procedure (SOP) to work under emergency and have played a key role in conducting simulation exercises in many districts. A tailor made SAHANA System for managing disaster information was introduced within MoHA which is yet to be fully institutionalized and made operational.

During the review period, 12 warehouses were established in strategic locations with the support of Nepal Red Cross Society, with a capacity to support a maximum of 36,000 families. This was far lower than the agreed goal of establishing a network of warehouses across the country with adequate food supply. Further, the Government identified and secured 83 safe open spaces for emergency response within Kathmandu Valley to serve as hubs for response efforts during a large-scale disaster.

A nationally owned humanitarian cluster system approach has been very effective as a primary response mechanism for making immediate response and providing early recovery support. A total of 11 humanitarian clusters, each representing members from government, non-government, donors and UN Agencies, has been set up for providing humanitarian assistance in the aftermath of a disaster. Each of the clusters are further engaged in developing early recovery plans which are integrated with cluster specific response plans. The *National Disaster Response Framework*

(NDRF) served as a key tool for coordination of 2015 earthquake response and facilitated timely decision making and flow of information from Kathmandu to the districts.

To respond to the recovery and reconstruction needs of post 2015 Earthquake, the National Reconstruction Authority (NRA) was established on 25 December 2015 (2072) for five years, to lead and manage the recovery and reconstruction of damaged houses and infrastructure. Under the guidance of Post-Disaster Recovery Framework (PDRF) (2016-2020) the NRA aims to complete the entire reconstruction work within five years' time based on the principles of Build Back Better in coordination with development partners.

Sendai Framework for Disaster Risk Reduction

The Sendai Framework aims at achieving “substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries” by 2030. This expected outcome would be monitored through indicators against seven targets. The seven targets aim to contribute to reducing (a) mortality, (b) number of affected people, (c) economic losses, and (d) damage to critical infrastructure; and in increasing (e) the number of national and local DRR strategies, (f) level of international cooperation, and (g) availability of and access to multi-hazard early warning systems and disaster risk information.

The four Priorities Areas of SFDRR are explained below in a given context:

Understanding disaster risk. The primary focus of understanding disaster risk is to conduct periodic disaster risk assessments and disseminate risk information to the policy makers and other actors working on disaster risk reduction planning. For this, a comprehensive and robust disaster information management system capable of generating updated information on disaster loss and damage and anticipated disaster risks is a must. This should be followed by a mechanism of regular information dissemination about nature and characteristics of hazards, exposure and vulnerability to help risk-informed development.

Nepal's current status. Nepal has a system of collecting data on past disaster occurrences and loss and damage but the system has a lot of inadequacies. Disaster data are collected, compiled and maintained by MoHA in an online DRR Portal outside the SAHANA System, which was introduced as the main element of a functional DIMS. Due to limited institutional capacity to relate disaster information with development planning, setting up of a DIMS did not ever get priority over the core business of MoHA and existing SAHANA System was not utilized to its full potential. Loss and damage data are not linked to hazard and socio-economic data or connected to geospatial

and physiographic data. A system of conducting periodic risk assessment does not exist. Limited capability for analysis of available data, leads to poor understanding of current and future trends of disasters and its potential impacts on development, and undermines the opportunity of timely informing the policy makers about the risks. National capacity gaps in understanding disasters are further widened by lack of a committed DRR training institute.

Strengthening disaster risk governance to manage disaster risk. Progress on disaster risk reduction depends upon how disaster risk management priorities are integrated into existing governance system of a country at national and sub-national or even local levels with respect to planning, implementation and monitoring of development results. A separate system for delivering results on disaster risk reduction - reducing loss and damage caused by disasters and avoidance of creating new risks - outside the prevailing governance mechanism, can neither be effective nor long lasting. Only through a risk-informed governance system, integration of disaster risk reduction priorities into national and sectoral plans and budgets can be ensured.

Nepal's current status. Despite Nepal having observed notable success in formulating disaster management law and regulations in the past as compared to many other countries, it remains far behind in bringing up needed timely reforms, which heavily push Nepal's risk management approach backward and make it primarily response-centric. The NSDRM (2009) made an effort to transform Nepal's response-focused disaster management approach to a more comprehensive and proactive risk reduction approach, but it could not succeed much due to lack of a progressive DRM law and a dedicated national DRM institution. Despite the NSDRM having made clear mention of gender sensitivity and social inclusion issues in its directive principle the actual implementation could not prioritize inclusive DRRM. As a result, disaster risk reduction, response and recovery did not get adequate attention in national planning and the actions were predominantly influenced by ad-hoc way of responding to the needs.

Promulgation of NDRF (2013), the new DRM Law (2017) and finalization of long-term national DRR policy and strategic action plan aligned to SFDRR priorities, demonstrate strong commitment of the government for building resilience to disasters by establishing a system of risk-governance at all levels. A new institutional architecture being worked out by the Government as per the provisions of the new DRM Law is expected to institute risk-governance in each three tiers of the government set up under the new federal structure.

Disaster preparedness for effective response and 'build back better.' Being prepared for disasters and making effective response requires having knowledge and capacities to effectively anticipate, respond to, and recover from the impacts of disasters. Capacities are needed to manage all types of emergencies and for transitioning from response phase to recovery. Effective response

to disasters is based on sound preparedness guided by risk analysis and effective early warnings. Capabilities for contingency and evacuation planning, stockpiling of emergency equipment and supplies, conducting simulation exercises and coordination and communication system during emergency are most needed. This must be further supported by formal institutional, legal and budgetary capacities.

Nepal's current status. Nepal's capacities for responding to small scale disaster has developed fairly well over the past few years mainly for flood hazards. Guided by a number of policies, guidelines, manuals and regulatory provisions related to disaster response, past work on early warning, developing contingency plans, conducting relief operations and emergency management has been relatively successful despite some capacity gaps with respect to trained human resources and equipment on SAR within security forces (including Nepal Army, Armed Police Force, and Nepal Police) and abilities to make gender responsive disaster response.

National capacities required to respond to medium to large disasters across the country need to be augmented through a pool of dedicated Light and Medium SAR Teams and community-based first responders deployed at strategic locations and provisions of adequate equipment and infrastructure for SAR training and operations.

Nepal's capacities for recovery from disaster is largely constrained by overlapping institutional mandates and post-disaster recovery not given due attention. Before 2015, process of drafting a national recovery framework had advanced to the extent of clarifying roles and responsibilities of different institutions during recovery. However, the process could not be completed and only after the devastating Earthquake of 2015 the concept of resilient recovery and reconstruction gained momentum. To facilitate expedited recovery and reconstruction of damaged houses, infrastructure and livelihood by the earthquake, the Government promulgated a National Reconstruction Act (2015) that led to setting up of the National Reconstruction Authority and formulated Reconstruction and Rehabilitation Policy and Post Disaster Recovery Framework (PDRF) in 2016. Current post earthquake on-going recovery and reconstruction is guided by these policies. The new DRM Act (2017) has emphasized on recovery from disasters at par with disaster risk reduction and response.

Investing in disaster risk reduction for resilience. Disaster risk reduction approaches often face severe setbacks due to lack of sufficient budget allocations from regular funding sources. Public and private investments in DRR for implementing both structural and non-structural measures to enhance the economic, social, health and cultural resilience of people, community and the society are essential. Investments in applying such DRR measures not only support innovation, growth and job creation but also contribute to saving lives, preventing and reducing losses and ensuring effective recovery and rehabilitation.

Nepal's current status. Nepal's investment in DRM has been mostly unpredictable and lopsided in favor of post disaster relief guided by the decisions of CNDRC. Approaches of DRR mainstreaming into national and sectoral plans and budgets based on periodic risk assessments and provisions of risk sensitive land-use plans are not yet institutionalized, which hinders investing for risk reduction, mitigation and resilience building through regular channels. Bringing private investments for risk reduction is at an experimental stage in Nepal. However, the mandatory provisions of Nepal Rastra Bank which is applicable to banking and financing institutions for approval of construction loans only for code complaint building designs, has created positive incentives for encouraging seismic resilience. There is a growing opportunity to invest for risk transfer through a viable insurance mechanism that would finally trigger building safety nets and protecting loss and damage to individual assets and community infrastructure.

Other International Frameworks and Commitments

The Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR). After the advent of the Sendai Framework, the first Asian Ministerial Conference for Disaster Risk Reduction (AMSDRR) was organized in India in November 2016. As a follow-up of the 6th Asian Ministerial Conference outcome (2014) and as a requirement of the Sendai Framework, the AMCDRR conference concluded with the adoption of the New Delhi Declaration; the Asia Regional Plan for Implementation of the Sendai Framework together with a ten point Voluntary Commitment Action Statements.

Box 5.2 : Key milestones of the AMCDRR roadmap by 2018

1. Technical guidance by UNISDR to national indicators is finalized with a link to SDG targets and indicators.
2. 50 percent of countries have prepared a design to establish a national mechanism to collect, analyze and disseminate information on disaster losses and risk aiming to achieve appropriate level of disaggregation for gender, age and disability.
3. 40 percent of countries have revised/ developed their national strategies and/ or plans for disaster risk reduction in line with the Sendai target (e).
4. 50 percent of countries have reviewed their initial progress in implementation of the Sendai Framework through the Sendai Monitor.
5. 40 percent of countries have established multi-sectoral and multi-stakeholder platforms at national and local levels to foster dialogue and cooperation between governments, science and technology community and other stakeholders for risk-sensitive development and innovative risk management.
6. 10 percent of countries have developed regulatory or policy frameworks to reinforce risk considerations and risk reduction measures into development initiatives, particularly in the infrastructure sector (Source: AMCDRR, 2016, p. 6).

AMCDRR provides, first, broad policy direction to guide the implementation of the Sendai Framework in the context of the 2030 sustainable development agendas in the region. Second, it also provides a long term road map, spanning the 15-year horizon of the Sendai Framework. This outlines a chronological pathway for implementation of priorities to achieve seven global targets. And finally, it provides a two-year action plan with specific activities that are prioritized based on the long term road map and in line with the policy direction (for milestone activities by 2018 Box 5.2).

The Paris Agreement. On 12 December 2015, the 1992 Parties to the UN Framework Convention on Climate Change (UNFCCC) adopted the Paris Agreement, and a new legally-binding framework for an internationally coordinated effort to tackle climate change (Climate Focus, 2015). The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise for this century below 2 degrees Celsius and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these goals, appropriate financial flows, a new technology framework, and an enhanced capacity building framework are being put in place. This will support action by developing countries and the most vulnerable countries, in line with their own national objectives (Box 5.3).

The Paris Agreement defines a universal, legal framework to “strengthen the global response to the threat of climate change” (Art. 2). It establishes the obligation of all Parties to contribute to climate

Box 5.3: The pre-2020 action of the Paris Agreement

The decision calls for enhanced action prior to 2020. This can be summarized in the following categories:

Mitigation: Parties are urged to ratify and implement the second commitment period to the Kyoto Protocol up to 2020, to make and implement a mitigation pledge, and improve ensuring and reporting processes. Parties resolve to strengthen the existing technical examination process on mitigation, which means increased cooperation with non-country stakeholders, increased consultations and dissemination of results.

Adaptation: Parties have decided to launch a technical examination on adaptation, which will function in a similar manner to the technical examination on mitigation, focusing on lesson sharing and identifying opportunities for implementation and cooperative action.

Finance: The COP decision ‘strongly urges’ developed countries to scale up their levels of financial support with a concrete plan to reach the USD 100 billion target by 2020. The Decision singles out adaptation finance as an area, which needs a significant increase of finance from current levels.

(Source: Climate Focus 2015)

change mitigation and adaptation. It requires that all countries develop plans delineating ways to contribute to climate change mitigation, and commit their “nationally determined contributions” (NDCs). The Paris Agreement is unique compared to any other international agreements as it puts emphasis on nationally owned processes to define the mitigation goals and on setting up mechanisms to monitor and report on progress and establishes a framework for cooperative action on climate change beyond 2020. It further aims at enhancing “adaptive capacity, strengthening resilience and reducing vulnerability to climate change” through cooperation between the countries.

Nepal ratified the Paris Agreement on climate change on 4 October 2016 and since then it has been actively engaged in implementation processes led by UNFCCC. Nepal submitted its first NDC in 2015 and is currently developing National Adaptation Plan (NAP) that would help address medium and long-term adaptation needs and reduce climate vulnerabilities through a sectoral approach. Nepal has put climate change adaptation at the centre of its development plans and policies and has successfully piloted community adaptation programmes through implementation of Environment-Friendly Local Governance (EFLG) Framework and Local Adaptation Plan of Action (LAPA) in collaboration with the local government authorities.

The Sustainable Development Goals. The 17 Sustainable Development Goals (SDGs) adopted by the world leaders in September 2015 at the UN Global Summit officially came into force on 1 January 2016. Over the next fifteen years countries will mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change (UN Sustainable Development Homepage, UN, 2017). The SDGs built on the success and challenges of the Millennium Development Goals (MDGs) aim to go further to end all forms of poverty (NPC, 2017a). Although, the SDGs are not legally binding, governments are expected to take ownership and establish national frameworks for the achievement of the 17 Goals. Six of the 17 Goals are directly related to disaster risk, climate change risk and resilience (Table 5.1). A reflection paper prepared by the UN Office for Disaster Risk Reduction identifies 25 SDG targets related to DRR (captured in 10 of the 17 SDGs), firmly establishing the role of DRR as a core development priority of the SDGs (UNISDR, 2015).

Table 5.1: Disaster risk, climate change risk and resilience issues embraced by SDGs

Goals	Targets
Goal 1. End poverty in all its forms everywhere	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other shocks and disasters (1.5)
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality (2.4)
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all (9.1) Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States (9.a)
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums (11.1) By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries (11.3) By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations (11.5)
Goal 12. Ensure sustainable consumption and production patterns	By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for DRR 2015-2030, holistic DRM at all levels (11.b) Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials (11.c)
Goal 13. Take urgent action to combat climate change and its impacts	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature (12.8) Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries (13.1)

Source: UNSD (2017)

The Government of Nepal has shown strong commitment to implementation of SDGs by publishing a national SDG report (SDGs 2016-2030)¹ in 2015 and a Baseline Report in 2017 which includes national baseline, targets and indicators against the global ones as well as analysis of policy and institutional context and challenges in achievements of each of the SDGs. Starting from the 14th 5-year development plan, the Government is all set to use the national SDG result framework to prepare consecutive periodic development plans till 2030. The SDG targets and indicators are well harmonized with Sendai targets and indicators, and conforms to integration of climate change adaptation and DRR into development.

The Addis Ababa Action Agenda. The Addis Ababa Action Agenda (AAAA), adopted at the Third International Conference on Financing for Development (Addis Ababa, Ethiopia, July 2015) and endorsed by the General Assembly in its resolution 69/313 of 27 July 2015, is a new global framework for financing sustainable development that aligns all financing flows and policies with economic, social and environmental priorities and ensures that financing is stable and sustainable. The Action Agenda draws upon all sources of finance, technology and innovation, promotes trade and debt sustainability, harnesses data and addresses systemic issues. The Action Agenda provides a comprehensive set of policy actions by Member States, with a package of over 100 concrete measures to finance sustainable development, transform the global economy and achieve the Sustainable Development Goals.

Global Platform for Disaster Risk Reduction, Cancun, Mexico. The Global Platform for Disaster Risk Reduction (Global Platform), as recognized by the UN General Assembly, is the main forum at the global level for strategic advice, coordination, partnership development and review of progress in the implementation of international instruments on disaster risk reduction. The 2017 Global Platform for Disaster Risk Reduction was held in Cancun, Mexico from 22-26 May, 2017. Nepal presented a National Position Paper in the Global Platform meeting covering Nepal's disaster profile, experiences and lessons learned from the 2015 Earthquake, updates on recovery initiatives, future challenges in resilience building and a way forward.

Led by MoHA and coined with Global Platform, a National Platform for DRR has been in operation in Nepal for quite some time. The National Platform plays an important role in bringing government and non-government actors together to discuss DRR related policy and institutional issues and make recommendations to help decision making.

The New Urban Agenda 2016: Ministry of Urban Development (MoUD) formulated and endorsed

¹ This made Nepal the first country in the world (UN, 2017) to publish its SDG country report and represents Nepal's commitment and readiness to execute the SDGs.

the National Urban Development Strategy (NUDS) 2017 for the next 15 years. This would adopt the new urban agenda 2016 on Housing and Sustainable Urban Development (Habitat III) declared in Quito, Ecuador, on 20 October 2016 by 167 participating countries including Nepal. NUDS aims to addresses critical issues related to urban development sectors such as system, infrastructure, environment and economy and also indicates the social, economic and cultural vision of urban areas reflecting the highest values of society. NUDS deals with mechanisms vital for realizing the desirable condition of the four development sectors, namely investment, finance, governance and land management. With a vision of balanced and prosperous national urban system, the strategy provides desirable conditions considering the changes in urban landscape and introduction of federal system in the country.

Summary

The chapter highlights Nepal's key achievements during HFA period and future challenges in working on SFDRR priority areas. It also analyzes other international instruments such as SDGs and Paris Agreement for their complementarity to SFDRR and how Nepal positions and prepares for benefiting from those instruments to augment resilience building at all levels. The Sendai Framework's primary focus is on risk reduction and resilience, which is a common element of the 2030 development agenda, the SDGs, and other instruments such as the Addis Ababa Action Agenda on Financing for Development and the Paris Agreement on Climate Change.

CHAPTER 6

KEY CHALLENGES AND PRIORITIES AHEAD

Enabling Environment

Nepal's long term vision to make Nepal a safer and resilient nation by 2030 is well reflected in the draft "National DRR Policy & Strategic Action Plan for Nepal" (2017-2030) which is aligned with four priority areas of SFDRR: a) understanding disaster risk, b) strengthening disaster risk governance to manage disaster risk, c) investing in disaster risk reduction for resilience and d) enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction. The Action Plan further identifies baselines and targets under the above four priority areas for five key sectors, viz., productive, social, infrastructure, environment and natural resources, and gender and social inclusion.

The Constitution of Nepal has emphasized on building resilience from disasters as key function of the government and identified concurrent functions of the three-tier government whereas the local governments are made directly accountable for responding to disasters. The new DRM Act serves as a tool to translate Nepal's vision of 'resilience building' into reality as per the constitutional provisions.

Anticipated Challenges

Among others, **effective Implementation of the New DRRM Act, understanding risk from a development perspective and capacity gaps at local level** are considered as major challenges in achieving the SFDRR targets by end of 2030.

- Regulatory provisions needed to bring the new DRRM Act into full force are still to be developed along with the establishment of new institutional arrangements for DRR at both national and sub-national levels as envisioned by the Act.
- Isolated actions on resilience building and DRR cannot be sustained in the long run unless embedded with the prevailing governance system responsible for development planning,

implementation and monitoring. Moreover, work on DRR without predictable financing commitments from the government sets the realization of national imperatives back.

- Though the newly promulgated Local Government Operation Act and the new DRRM Act devolve powers to the local governments (7 provincial and 753 municipal) for reducing and managing disaster risks, they are not yet ready to take that responsibility as they experience huge capacity gaps under current conditions.
- Integration of climate adaptation and risk reduction approaches, from policy to practice, largely suffers from very weak coordination between the agencies primarily responsible for dealing with these issues. Working with the three tiers of government under new federal system on different frameworks such as SFDRR and SDGs without an agreed institutional convergence at each level is going to be further challenging.

Key Priority Actions Ahead

Creating an effective institutional set up as provisioned under the new Disaster Risk Reduction and Management Act, 2017. Though MoHA has been working as the nodal government agency for DRM in Nepal under the mandates of Natural Calamity Relief Act, 1982. Nevertheless, by virtue of its core functions and prime mandates, the ministry is primarily response-centric. Hence the need for a separate DRR institution was deemed necessary since 2000 when the HFA came into existence. Now, with the provisions of the new DRRM Act, doors for setting up a **new institutional structure** at three-tiers of the government are open. The government needs to act with urgency towards setting up these institutions as envisioned by the DRRM Act namely NDRRM Council, Executive Committee, NDRRM Authority, and Provincial, District and Local Disaster Management Committees.

Capacity building at all levels of the government for disaster risk reduction, preparedness, and response and recovery. Disaster statistics reveal that number of natural disaster occurrences in the recent past is on an increase. This trend may further continue for next several years due to climate change, unplanned development and poor enforcement of land-use policy. To cope with these challenges and be able to save lives, livelihood and infrastructure from disasters, government needs to substantially invest in enhancing technical and functional capacities of the DRR institutions. It is imperative therefore that a resourceful National DRM Training Institute and Resource Centre be established and charged with the responsibilities of building such capacities at all levels.

Instituting a practice of risk-informed development and mainstreaming DRR and CCA into sectoral development planning. For a disaster prone country like Nepal, mainstreaming risk reduction approaches into development is the most effective way of protecting development

gains and achieving the SDGs. Past and on-going efforts led by NPC to mainstream DRR into development planning since 2002, have led to drafting a comprehensive mainstreaming guideline. Such coordinated efforts need to further continue until mainstreaming work is completely absorbed by the sectors to be able to make risk-responsive plans and budgets.

Ensuring allocation of adequate funding for DRR and CCA at all levels. Provision of regular budget from government sources based on actual needs identified through risk assessments is a must to sustain the DRM actions in the long run. Several ministries, due to lack of capacity for assessment of actual funding gaps in DRR, prepare budget on ad-hoc basis based on past experiences, which is inadequate. A systemic approach for budget planning by the sectors based on objectively identified needs has to be devised.

Empowering province and local governments for effective leadership role in disaster risk reduction and management. Nepal's conventional centralized institutional set up for DRM needs a complete overhaul as per the new DRRM Act and in line with state restructuring and devolution of power from the federal to provincial and local governments as mandated by the constitution. The government and the development partners are required to work together to make them capable of taking their constitutional responsibilities.

Setting up an effective Disaster Information Management System (DIMS) at the central and province levels as a one-stop information hub. A comprehensive, one-stop functional DIMS is a pre-requisite for an effective DRM system. The existing DIMS, managed by MoHA through Nepal DRR Portal and SAHANA System, needs to be upgraded for data consistency and reliability, automatic updates, capability to generate early warning and forecasts and disseminate risk information on time. The DIMS needs to be further linked to hazard and hydro-meteorological data, risk profiles and vulnerability information, together with socio-economic and physiographic data to support analysis of disaster trends and anticipate future risks.

Ensuring Gender Responsive and Disability Friendly Disaster Risk Reduction and Management. Enabling policies for mainstreaming gender and social inclusion into DRM has not been able to advance progress on gender-inclusive and disability friendly DRM because of prevailing structural barriers in the society, lapses in DRM data architecture and inherent methodological problems of DRR approaches. Except in training and awareness, role of women and disabled people in decision making and policy discourse has been minimal. The draft National DRR Policy and Strategic Action Plan (2017-2030) and the new DRRM Act have made mainstreaming GESI into DRM mandatory and underscored the need for disability friendly. Under the new federal system, women have got substantive representation in all three tiers of the government. This positive change has positioned the women to push for eliminating disparity between men and women and drive gender-responsive DRM at all levels and the opportunity created by this change need to be tapped.

Strengthening national capacity of SAR to the level of INSARAG standards. Nepal needs to invest on strengthening its SAR capacity upto INSARAG standard. Lessons from 2015 Earthquake reveal that existing capacity gaps with respect to skills, technologies, institution and resources of the national security forces to be able to protect the lives of the people trapped in built infrastructures is relatively low.

Summary

This chapter reiterates Nepal's long term vision to make Nepal a safer and resilient nation by 2030. Some of the key steps in that direction are laid in the draft "National DRR Policy & Strategic Action Plan for Nepal" (2017-2030), aligned to the SFDRR as well as the emphasis of the Constitution of Nepal on building resilience to disasters. It also takes a look at the challenges, ranging from the institutional to financial and regulatory to information system management and empowerment of new local government in realizing that vision. The new DRRM Act and the draft Policy and Action Plan build strong foundations to work on SFDRR priorities and achieving the SDGs. However, a huge institutional capacity gap exists at national, sub-national and local levels in implementing them.

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Annex 1: Multi-hazard scenario of Nepal by its socio-economic loss, 1971-2016

Type of disaster	Number of incidents	Human loss				Houses damaged or destroyed*
		Death	Missing	Injured	No. of family affected	
Fire	8,721	1,605	-	1,619	259,935	86,261
Thunderbolt	1,711	1,620	129	2,684	7,140	963
Landslide	3,246	4,980	174	1,871	558,264	33,617
Wind storm	44	2	-	11	191	215
Flood	3,950	4,445	42	554	3,710,065	216,190
Epidemic	3,452	16,583	-	43,111	512,989	-
Avalanche	2	16	3	7	-	-
Snow storm	5	87	7	-	-	-
Hailstones	131	9	-	24	3,280	155
Earthquake	175	9,771	-	29,142	890,995	982,855
Cold wave	390	515	-	83	2,393	-
Structural collapse	389	404	-	596	2,016	1,793
Total	22,216	40,037	355	79,702	5,947,268	1,322,049
(Average)	(494)	(890)	(8)	(1,771)	(132,162)	(29,379)

Source: MoHA, 2017.

* This includes animal sheds also.

Annex 2: Disbursement of Amount from Central Natural Disaster Relief Fund, 2015 and 2016

Activity	Amount disbursed by year (in NRs.)		Total (NRs.)
	2015	2016	
Fund transferred to DDRCs	10,837,872,745	9,157,939,750	19,995,812,495
Fund transferred to ministries and security forces	1,559,353,091	261,677,542	1,821,030,633
Helicopter costs for rescue and relief operations	30,936,157	128,147,986	159,084,143
Bank commissions	5,366,510	5,537,920	10,904,430
Cash reimbursed for treatment of the injured persons	2,087,479	73,778	2,161,257
Grants to institutions for assigned activity	450,000	150,000	600,000
Salary and remuneration, etc.	2,82,800	3,17,200	600,000
Total	12,436,348,782 (56.6 percent)	9,553,844,176 (43.4 percent)	21,990,192,958 (100 percent)

Source: Central Natural Disaster Relief Fund /Disaster Management Division, MoHA, 2017.

Annex 3: Expenditure by Government Departments in DRM, 2015 and 2016

Department/Division	Expenditure (in NRs.)		
	2015	2016	Total (NRs.)
Epidemiology and Diseases Control Division	1,200,000	4,800,000	6,000,000
Department of Hydrology and Meteorology	6,800,000	7,100,000	13,900,000
Department of Mines and Geology	4,500,000	29,000,000	33,500,000
Department of Water-Induced Disaster Mgmt.	5,965,500,000	7,663,300,000	13,628,800,000
National Reconstruction Authority	22,475,671,027	49,691,730,792	72,167,401,819
Total	28,453,671,027	57,395,930,792	85,849,601,819

Source: Reporting Government Departments through National Emergency Operation Centre, 2017.

Annex 4: Contribution by UN agencies on DRM Activities, 2015 and 2016

Agency	Area of support	Amount of expenditure (in USD)		
		2015	2016	Total
UNDP	Disaster risk reduction and preparedness for response	2,615,762	2,726,277	18,778,017
	Disaster recovery and reconstruction	6,405,713	7,030,265	
WHO	Health sector response support	1,260,220	929,877	7,073,201
	Logistics support to 2015 Earthquake	2,141,115	2,741,989	
UNICEF	Disaster risk reduction, emergency preparedness and response at national and sub-national level	505,625	6,257,422	6,763,047
FAO	Building resilience for community-based rehabilitation and mitigation	--	269,000	6,269,000
	Emergency assistance for the restoration of earthquake affected agriculture system	3,000,000	3,000,000	
IOM	Preparedness and management of open spaces for effective humanitarian response	39,919	56,825	5,912,631
	Support of the earthquake affected population	4,519,470	1296417	
UNFPA	Disaster risk reduction, preparedness and response	125,963	157,405	5,310,511
	Disaster response and recovery	4,011,185	1,015,958	
WFP	Emergency preparedness, food & nutrition security	1,001,193	3,734,733	71,621,100
	Emergency food assistance and logistic, telecommunication & coordination support to earthquake response and Humanitarian air services	54,685,533	12199641	
	Total	80,311,698	41,415,809	121,727,507

Source: Respective UN agencies through CDRMP, 2017.

Annex 5: Contribution of INGOs in DRM, 2015 and 2016

Name of INGO	Expenditure (2015 and 2016 combined, in NRs.)
Nepal Red Cross Society	2,468,513,456
ActionAid Nepal	676,600,758
ADRA Nepal	443,196,631
CBM International	78,152,501
World Vision International Nepal	60,882,882
Christian Aid	22,315,000

Source: Reports from respective INGOs through DPNet-Nepal, 2017.

Abbreviations and Acronyms

AAAA	The Addis Ababa Action Agenda
AIN	Association of International Non Governmental Organization
AMSDRR	Asian Ministerial Conference for Disaster Risk Reduction
APF	Armed Police Force
CBS	Central Bureau of Statistics
CCA	Climate Change Adaptation
CEO	Chief Executive Officer
CNDRC	Central Natural Disaster Relief Committee
CNDRC	Central Natural Disaster Relief Committee
CRM	Climate risk management
CSCDM	Citizen Support Committee for Disaster Management
DDC	District Development Committee
DDRC	District Disaster Relief Committee
DEOC	District Emergency Operation Centre
DHM	Department of Hydrology and Meteorology
DHS	Department of Health Services
DIMS	Disaster Information Management System
DLSA	district lead support agency
DMG	Department of Mines and Geology
DoS	Department of Survey
DPNet-Nepal	Disaster Preparedness Network Nepal
DRM	Disaster risk management
DRR	Disaster risk reduction
DRR Portal	Nepal Disaster Risk Reduction Portal
DSCWM	Department of Soil Conservation and Watershed Management
DWIDM	Department of Water Induced Disaster Management
EDCD	Epidemiology and Disease Control Division
EFLG	Environment-Friendly Local Governance
FEAT	Field Environment Assessment Tool
GDP	Gross domestic product
GLOF	Glacial Lake Outburst Floods
GoN	Government of Nepal
HEOC	Health Emergency Operation Centre
HFA	Hyogo Framework for Action

ICIMOD	International Centre for Integrated Mountain Development
INSARAG	International Search and Rescue Advisory Group
LAPA	Local Adaptation Plan of Action
LDC	Least Developed Country
MoAD	Ministry of Agriculture Development
MoE	Ministry of Education
MoFALD	Ministry of Federal Affairs and Local Development
MoHA	Ministry of Home Affairs
MoSTE	Ministry of Science, Technology and Environment
MOUD	Ministry of Urban Development
NA	Nepal Army
NAP	National Adaptation Plan
NAPA	National Adaptation Plan of Action
NASA	National Aeronautics and Space Administration
NDCs	Nationally Determined Contributions
NDR	Nepal Disaster Report
NDRRMC	National Disaster Risk Reduction and Management Council
NDRRMA	National Disaster Risk Reduction and Management Authority
NRRP	National Reconstruction and Rehabilitation Policy
NEOC	National Emergency Operation Centre
NGO	Non-governmental organization
NP	Nepal Police
NPC	National Planning Commission
NRA	National Reconstruction Authority
NRRC	National Risk Reduction Consortium
NSDRM	National Strategy on Disaster Risk Management, 2009
PDNA	Post Disaster Needs Assessment
PDRF	Post Disaster Response Framework
NRs.	Nepali rupees
SFDRR	Sendai Framework for Disaster Risk Reduction
SOP	Standard operation procedure
UNDP	United Nations Development Programme
UNFCCC	UN Framework Convention on Climate Change
VDC	Village Development Committee
WECS	Water and Energy Commission
YVCsc	Youth Volunteers Coordination Sub-Committee