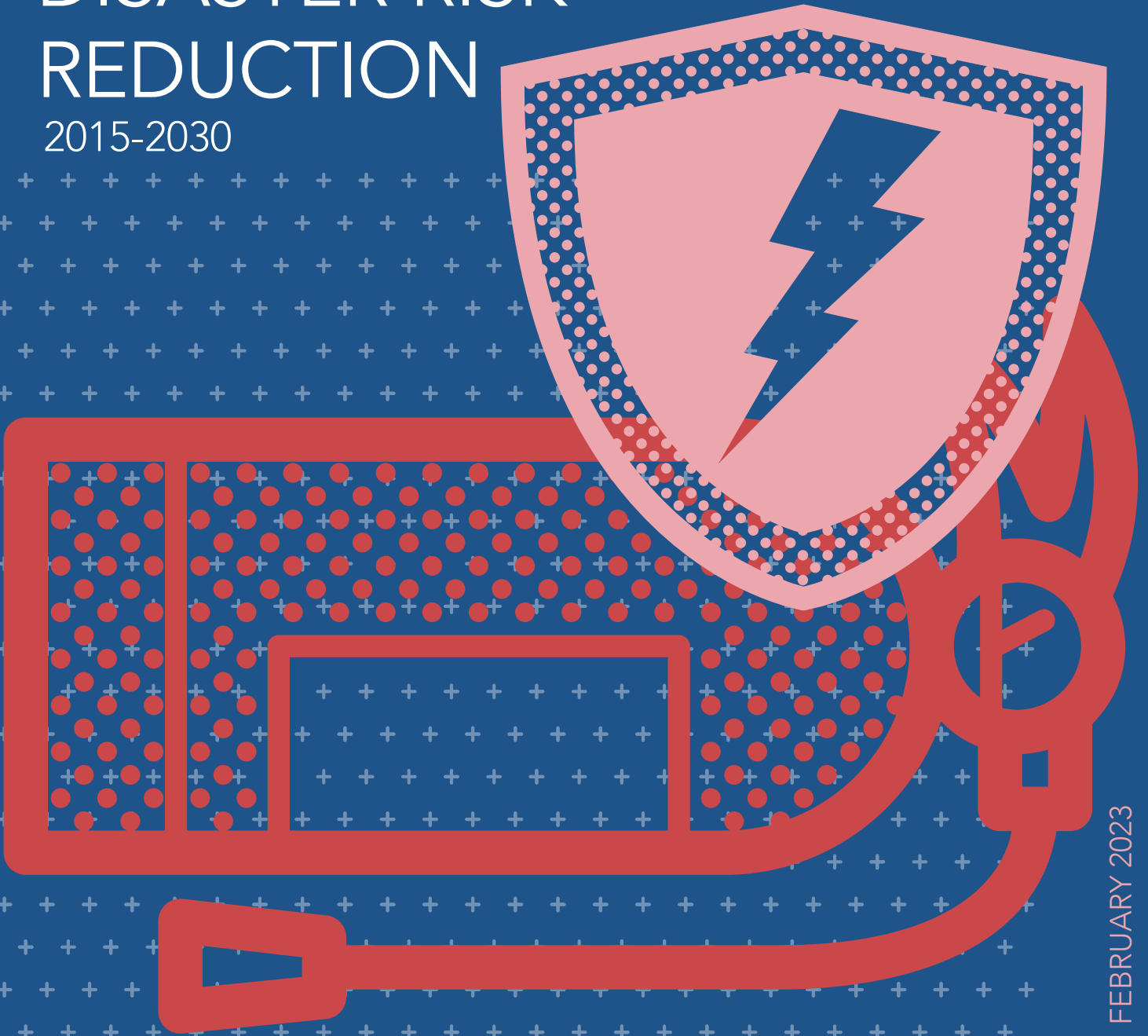Government of Nepal
Ministry of Home Affairs

MID-TERM REVIEW

IMPLEMENTATION OF THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION

2015-2030

Mid-Term Review of the Implementation of the Sendai Framework for Disaster Risk Reduction (2015—2030)

Nepal National Voluntary Report

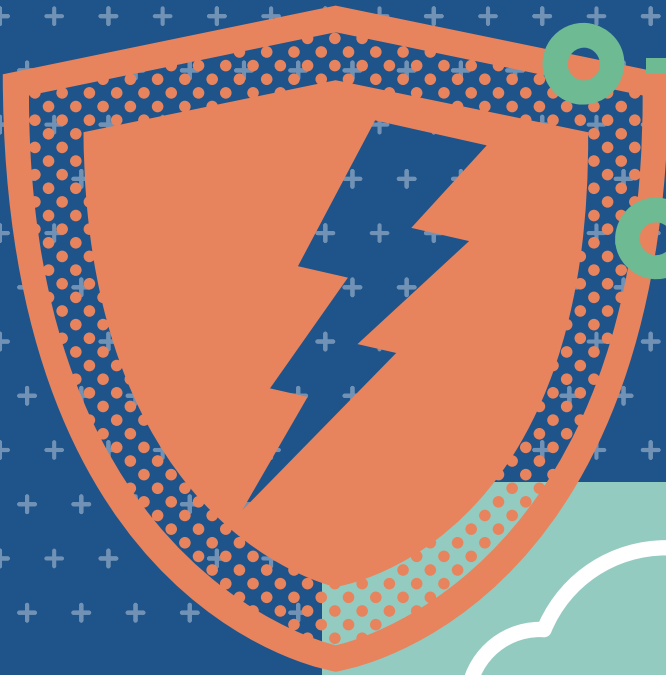Ministry of Home Affairs (MoHA)
Singha Durbar, Kathmandu, Nepal

DISASTER RISK REDUCTION

DROUGHT

NATURAL HAZARDS

EARTHQUAKE

LANDSLIDE

LIGHTNING

FLOOD

Executive Summary

Nepal has achieved remarkable progress in disaster risk planning and implementation, primarily in terms of reducing the risk of disasters and natural hazards, such as floods, landslides, droughts, earthquakes, and lightning. The Government of Nepal (GoN) has prioritized mainstreaming disaster risk reduction (DRR) into Nepal's development, setting an agenda for action in the Disaster Risk Reduction National Strategic Plan of Action (DRRNSPA) (2018—2030) based on priorities set by the Sendai Framework for Disaster Risk Reduction (SFDRR) –specific to Nepal's disaster context.

Since the landmark Disaster Risk Reduction and Management Act, 2017 came into effect, the GoN established the National Disaster Risk Reduction and Management Authority (NDRRMA). The GoN further formulated policies, guidelines, and regulations, and implemented programs, projects, and activities to ensure the effective implementation of the law. The GoN continues to work towards the goal of "preventing new and reducing existing disaster risks" by significantly valuing the role of strong institutions as a foundation to implement the DRRNSPA.

This Mid-Term Review report is the assessment of Nepal's contribution to its commitments made on the Sendai Framework. It provides an overview of the current state of risk governance, risk context, implementation, and progress achieved in the context of the Sendai Framework in Nepal. The report describes Nepal's progress with DRRM during the period of 2015–2022 and also highlights some challenges Nepal faces in its work with DRRM.

Nepal remains a strong advocate of the United Nations Office of Disaster Risk Reduction (UNDRR)'s work in general, and for the Sendai Framework in particular. Recent events, such as Nepal's massive 2015 earthquake, the global COVID-19 pandemic, and recurrent floods and landslides, have again instilled the urgency to understand and reduce risks in Nepal and globally. The Mid–Term Review takes a retrospective examination of the country's disaster context and actions from 2015 to 2022, which will inform continued implementation through 2030, while also incorporating pre–2015 initiatives and programs, which contributed to DRRM in Nepal.

This first chapter introduces the report, provides an overview of Nepal's hazard and risk context, and describes the methodology of the report. The second chapter elucidates progress to date after the implementation of SFDRR since 2015, describing

> **Nepal remains a strong advocate of the United Nations Office of Disaster Risk Reduction (UNDRR)'s work in general, and for the Sendai Framework in particular.**

achievements made in four priority areas, namely, understanding disaster risk; strengthening disaster risk governance at the federal, provincial, and local levels; promoting comprehensive risk-informed investments in DRR for resilience; and enhancing disaster preparedness for effective response to "build back better."

The third chapter is forward-looking and describes how Nepal aims to continue implementation of the SFDRR in the remaining half, and how recent changes in Nepal's DRRM governance context may impact future efforts. Several of the contextual shifts outlined here (e.g. the pandemic and recent developments in preparedness and response, and disaster risk financing,) provide a background to ongoing DRRM initiatives.

In the fourth chapter, key challenges and priority issues are explained. It delves into how Nepal can effectively deliver its DRRM strategic plan of action and meet targets within the stipulated timeline. This chapter urges the need to develop synergies from the national to local levels to ensure coordinated action on DRR across different sectors of government.

Chapter five calls for translating existing policies into practice across the three tiers of government and among stakeholders based on national priorities and regional and global commitments. It also highlights certain areas where Nepal needs to continue to improve alongside ongoing DRRM governance practices.

Kathmandu, Nepal
February 2023

FOREWORD

The Mid-Term Review (MTR) of the Sendai Framework for Disaster Risk Reduction (SFDRR) has been a critical step in strengthening our disaster risk reduction and management efforts, in generating the momentum necessary to ensure that disaster risk reduction be used as foundation for sound national development agenda. Since 2015, Nepal has made great stride in the implementation of the SFDRR. This report is expected to be a baseline document on assessing Nepal's present context and achievements on SFDRR for United Nations Office for Disaster Risk Reduction (UNDRR) and international communities and can provide feedback when necessary to our context.

I am pleased to see that this review report has been prepared on the solid foundation of the Disaster Risk Reduction National Strategic Plan of Action (DRRNSPA (2018—2030), localized instrument for SFDRR, focusing on risk reduction and resilience. This national report provides a snapshot of what Nepal has achieved in terms of four priority action areas, namely, understanding disaster risk, disaster risk governance, investing in disaster risk reduction and enhancing preparedness and build back better. It provides an opportunity to take stock of progress and challenges, and to identify good practices to accelerate the implementation of the Sendai Framework at federal, provincial and local levels.

This report provides an opportunity for policymakers, decision-makers and practitioners to make informed decisions about what we have achieved so far in implementing the SFDRR mainly in areas of DRRM, preparedness and culture of safety, disaster risk financing, transferring disaster risks and coherence for resilience to build a resilient society and reduce the impacts of disasters at the federal, provincial and local levels.

Finally, the Government of Nepal, Ministry of Home Affairs takes this opportunity to call upon all stakeholders to work together in implementing remaining half of SFDRR and DRRNSPA along with incorporating the recommendations of this Mid Term Review Report for advancing towards disaster resilience Nepal.

Binod Prakash Singh
Secretary

GOVERNMENT OF NEPAL
MINISTRY OF HOME AFFAIRS

Singhadurbar
Kathmandu, Nepal

Ref No.:

Date: February 16, 2023

ACKNOWLEDGEMENTS

I am pleased to present the Mid-Term Review (MTR) of the Sendai Framework for Disaster Risk Reduction (SFDRR) in Nepal. As a party to the SFDRR, Nepal is committed to adapting and localizing it through the Disaster Risk Reduction National Strategic Plan of Action (2018-2030). This report is the result of a participatory approach involving various stakeholders, under the guidance of the Disaster and Conflict Management Division of the Ministry of Home Affairs. The information collected, both qualitative and quantitative, is based on the target vs. achievements against the Disaster Risk Reduction National Strategic Plan of Action (2018-2030), and was complemented through the SFDRR monitor reporting mechanism.

I would like to express my sincere gratitude to MoHA Secretary, Mr. Binod Prakash Singh, for his valuable guidance in preparing this report. I would also like to thank my colleagues Under Secretary, Mr. Tulsi Prasad Dahal, Ms. Rama Acharya Subedi, Section Officers, Mr. Deepak Prasad Neupane. Ms. Saraswati Sapkota, Ms. Ranjana Rai, Mr. Jeetendra Adhikari, and Mr. Sushil Kumar Bhandari, for their contributions and efforts that substantially enriched the report. Furthermore, I extend my appreciation to Dr. Deependra Joshi for demonstrating high professionalism and technical standards in writing this report, and the USAID Tayar Nepal team for their support in preparing and publishing it.

This report would not have been possible without the information, inputs and feedback of Mr. Anil Pokhrel, Chief Executive of National Disaster Risk Reduction and Management Authority (NDRRMA) and his team. There was significant contribtion of other federal and provincial government agencies, including DRR stakeholders, especially the DRR Focal persons of the Ministries and Departments to prepare this report. I would also like to express my gratitude to DRR experts of DPNet Nepal, AINTDGM, and NCDM team for their valued support and inputs in preparing this report.

I am confident that this report will be highly beneficial for policy makers, government agencies, non-government and humanitarian partners, private sector, academia, students, and other relevant stakeholders. Thank you very much.

Pradip Kumar Koirala
Joint Secretary
Disaster and Conflict Management Division

Acronyms and Abbreviations

APMCDRR	Asia-Pacific Ministerial Conference on Disaster Risk Reduction
APF	Armed Police Force, Nepal
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BBB	Build Back Better
CBS	Central Bureau of Statistics
CCA	Climate Change Adaptation
CDO	Chief District Officer
CNI	Confederation of Nepali Industries
DEOC	District Emergency Operation Centre
DDMC	District Disaster Management Committee
DHM	Department of Hydrology and Meteorology
DIMS	Disaster Information Management System
DPRP	Disaster Preparedness and Response Plan
DRR	Disaster Risk Reduction
DRRM	Disaster Risk Reduction and Management
DRRNSPA	Disaster Risk Reduction National Strategic Plan of Action
DRRM	Disaster Risk Reduction and Management
DoHS	Department of Health Services
DoMG	Department of Mines and Geology
EC	Executive Committee
EOC	Emergency Operation Center
FNCCI	Federation of Nepali Chambers of Commerce and Industries
GDP	Gross Domestic Product
GEDSI	Gender Equality, Disability and Social Inclusion
GIS	Geographic Information System
GLOF	Glacial Lake Outburst Floods
GoN	Government of Nepal
GPDRR	Global Platform for Disaster Risk Reduction
ICIMOD	International Centre for Integrated Mountain Development
IFRC	International Federation of Red Cross and Red Crescent Societies
LDRC	Local Disaster Relief Committee
LDPRP	Local Disaster and Climate Resilience Plan
LDMC	Local Disaster Management Committee
LEOC	Local Emergency Operation Centre
LISA	Local Government Institutional Capacity Self-Assessment

MoF	Ministry of Finance
MoALD	Ministry of Agriculture and Livestock Development
MoFE	Ministry of Forest and Environment
MoEST	Ministry of Education, Science and Technology
MoHA	Ministry of Home Affairs
MoFA	Ministry of Foreign Affairs
MoFAGA	Ministry Federal Affairs and General Administration
MoHP	Ministry of Health and Population
MoPIT	Ministry of Physical Infrastructure and Transport
MoUD	Ministry of Urban Development
MoEWRI	Ministry of Energy, Water Resources and Irrigation
MoCIT	Ministry of Communication and Information Technology
MTR	Mid-Term Review of SFDRR
NA	Nepali Army
NBC	National Building Code
NDRRMA	National Disaster Risk Reduction and Management Authority
NEOC	National Emergency Operation Center
NGO	Non-Government Organization
NPC	National Planning Commission
NRA	National Reconstruction Authority
NRCS	Nepal Red Cross Society
NSDRM	National Strategy for Disaster Risk Management
PEOC	Provincial Emergency Operation Centre
SAARC	South Asian Association for Regional Cooperation
SAR	Search and Rescue
SDG	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction 2030
SRSP	Shock Responsive Social Protection
WASH	Water, Sanitation and Hygiene
WB	World Bank

Table of Contents

EARTHQUAKE

LANDSLIDE

DROUGHT

LIGHTNING

INTRODUCTION

1.1 Background

The Sendai Framework for Disaster Risk Reduction (SFDRR) (2015—2030) was adopted at the Third UN World Conference in Sendai, Japan, on March 18, 2015. The SFDRR is the successor instrument to the Hyogo Framework for Action (2005—2015), and it is built on elements to ensure continuity with the work of the Hyogo Framework, with a strong emphasis on DRRM as opposed to disaster management. It demonstrates a paradigm shift from an understanding of disaster risk to an approach of risk management as an inherent part of economic, social, and environmental activity.

The SFDRR sets out seven global targets for the prevention and reduction of disaster-related losses and is an instrument of pivotal importance for the achievement of the Sustainable Development Goals (SDGs). Its seven global targets are paired with a long list of guiding principles for reducing the impact of disasters while addressing underlying disaster risk factors (hazards and vulnerabilities) to safeguard current and future generations. Within this context, the transition to resilient, sustainable societies depends on responsible DRRM.

The SDGs and SFDRR are not only international instruments for adopting an integrated approach to risk reduction and development, but they are also part of a series of internationally negotiated agreements concluded in 2015–2016. These instruments also include the Paris Agreement, which serves as a cornerstone for sustainable, low-carbon, resilient development within the context of climate change; and the New Urban Agenda adopted by the United Nations Conference on Housing and Sustainable Urban Development (Habitat III), which incorporates a new urban development model designed to foster equity, well-being, and prosperity.

The SDGs and SFDRR provide guidance for countries' efforts to strengthen their planning processes so that they can find ways of reducing their exposure and vulnerability to disasters and thus, find a way forward towards sustainable development. The attainment of the SDGs will, in large part, hinge on making headway in the implementation of strategies to reduce disaster risk. In addition, the scope of DRR has been broadened significantly to focus on both natural and man-made hazards and related environmental, technological, and biological hazards and risks.

1.2 Overview of disasters in Nepal

Nepal is susceptible to a range of multiple hazards, including earthquakes, floods, landslides, debris flow, drought, lightning, heat and cold waves, avalanches, hailstorms, snow, and windstorms. The country's active seismic faults generate high magnitude earthquakes, like the Gorkha earthquake in April 2015. More than 80 percent of Nepal's total hazards are of hydro-meteorological origin. The intensity and frequency of these disasters

REDUCE IMPACT

SAFEGUARD

Nepal's highest recurring hazards from 2015 to 2022

2,900 fire casualities

2,227 landslides casualities

2,849 lightning casualities

824 floods casualities

1,568 windstorms casualities
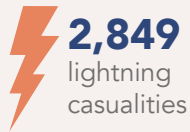
Note: Casualties includes death, injured, and missing

Source: drrportal.gov.np

are increasing rapidly. Hydro-climatic/hydro-meteorological hazards are seasonally confined, but in recent years, these hazards are unexpectedly becoming unseasonal, resulting in untimely extreme weather events, leading to unprecedented impacts on peoples' lives and livelihoods by damaging crops and other belongings. Hydrological and meteorological hazards in Nepal are influenced or linked with regional weather and hydrological systems across the border.

Disasters affect men and women differently. Women, children, sick and elderly people, persons with disabilities, lactating mothers, marginalized communities, and/or people from hard-to-reach remote areas, among others with limited assets and capacity suffer more than others, even within the same level of exposure. Nature-based livelihoods, especially agriculture and natural resource dependent populations, have high exposure and sensitivity to different hazards. Exposure to hazards increase by encroachment along rivers, when settlements are in risk-prone areas due to poverty and exclusion, and with rapid urbanization and internal migration to hazard-exposed areas.

Some factors worsening the country's vulnerability to disasters include resource constraints to comply with national building codes, constraints to risk-informed infrastructure development, and constraints to mainstreaming DRRM governance.

Impacts from the COVID-19 pandemic have revealed that livelihoods based in the service sector, which were assumed to be relatively resilient, are also highly vulnerable to disasters. It has exemplified how the whole-of-system, including health and economy, are inter-connected and can be exposed to unexpected risks.

On average, Nepal faces more than 3,000 disaster events annually (Table 1) that range from small to large scale,[1] resulting in the loss of physical infrastructure and human lives. Recently, Nepal faced a massive earthquake in 2015, a major flood in 2017, severe landslides in 2020 and 2021, and post-monsoon rainfall in 2021 and 2022. Between 2015 and 2022, Nepal lost 12,732 lives (53% female) due to various disasters (Table 1)[2]. The 2015 earthquake had the highest number of death (8,790), one-third of whom were children, in addition to more than 22,300 injuries, as well as earthquake-induced landslides in the following years. In the 2015 earthquake in Nepal[3] more women died (55 percent) than men (45 percent).

Between 2019 and 2022, landslides killed 567 people with 106 others missing. Annual casualties from other disasters include: lightning (231), fires in building and homes (234), floods (178, with 98 missing), and animal encounters/incidences (116).

1   NPC 2019, Fifteenth Five Year Plan (2019/2020-2023/2024), National Planning Commission, Nepal

2   MoHA, NEOC, DRR portal accessed on 31December 2022

3   GoN (2015). Nepal Earthquake 2015: Post Disaster Needs Assessment Vol. B: sector reports. Government of Nepal, National Planning Commission, Singha Durbar, Kathmandu, Nepal

Table 1: Disaster incidents and impact (2015—2022)

Year	No. of incidents	Dead	Injured	Affected family	Private house destroyed		Estimated loss (USD)
					Partial	Complete	
2015	978	9,304	22,661	10,73,914	299,378	773,936	78,71,579[4]
2016	2,370	486	764	13,241	1,222	3,428	2,34,36,490
2017	2,460	490	737	19,073	14,427	1,927	2,08,06,545
2018	3,919	478	2,902	8,180	1,880	2,505	3,61,82,433
2019	4,538	489	2,452	25,264	6,873	4,939	3,92,45,919
2020	3,770	559	1,175	11,314	3,330	1,959	1,46,76,841
2021	4,215	509	1,773	6,583	1,580	2,044	2,11,90,103
2022	3,934	417	983	6,746	2,368	1,952	2,14,01,089
Total	26,184	12,732	33,447	11,64,315	331,058	792,690	18,48,10,999

Source: http://drrportal.gov.np/ accessed on December 31, 2022

The National Disaster Database maintained in the GoN's DRR web portal[5] focuses on loss and damage reported from local administration. It reveals that Nepal's highest recurring hazard between 2015 and 2022 was fire (15,550), followed by landslides (2,251), lightning (1,901), heavy rainfall (1,387), floods (1,159), and windstorms (724). Incidents of fire (forest as well household) are in increasing trend. Road accidents have the highest fatality and injury rates at more than 2,500 deaths per year—a figure that is increasing with the expansion of the country's national road network. Snake bites, as well as cold and heat waves are other major incidents occurring that affect people annually. Meanwhile, COVID-19 has claimed 12,019 lives in Nepal, as of December 31, 2022[6].

Disasters have varying impacts on different social groups. Those who are highly susceptible to disasters include women, children, elderly citizens, people with disabilities, and marginalized communities. Heavy rain and floods affect mud and mortar houses more than concrete homes[7]. Similarly, fire is more susceptible at houses made with wood and thatch (cheaper to construct), which makes poorer populations more vulnerable.

Disasters have slowed down the development process, impacting millions of dollars to Nepal's economy each year. The Gross Domestic Product (GDP) growth rate dropped to two percent in 2015 from six percent in 2014, and further dropped down to 0.4 percent in 2016 after the devastating 2015 earthquake. Similarly, the GDP growth rate dropped down to -2.12 percent in fiscal year 2019/20 due to COVID-19[8]. This is the lowest rate in the last two decades, which is more severe than the decreased GDP following the devastating earthquake of 2015. Before COVID-19, growth rates had been gaining momentum after the earthquake, at 7.6 percent in 2018 and then nine percent in 2017[9], but this upward trend came to a halt with the global pandemic.

1.3 Country context

The GoN enacted the DRRM Act in 2017, which replaces Natural Calamity (Relief) Act (1982). The DRRM Act adheres to Nepal's international

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4   The economic impact excludes losses incurred during 2015 earthquake, which was estimated at US$14.3 billion (NPC/PDNA)

5   drrportal.gov.np

6   MoHP SitRep

7   GoN (2017). Nepal Flood 2017: Post Flood Recovery Needs Assessment. Government of Nepal, National Planning Commission, Singha Durbar, Kathmandu, Nepal

8   Government of Nepal, Ministry of Finance, Singh Durbar, Kathmandu, Economic Survey 2020/21

9   International Monetary Fund, April 2021 as quoted in Government of Nepal, Ministry of Finance, Singh Durbar, Kathmandu, Economic Survey 2020/21

commitments, such as the SFDRR, the SDGs, and the Paris Agreement (2015). The Act calls for the establishment of disaster management committees at the provincial, district, and local levels and reinforces the GoN's effort to accelerate DRRM initiatives. The Act further emphasizes risk reduction over response and makes the provision of creating a DRRM Council the highest policymaking body in the country. This Council is chaired by the Prime Minister at the federal level and by the Chief Minister at the provincial level, with mayors or chairpersons of local levels leading local disaster management committees and district disaster management committee lead by CDO.

The Constituent Assembly of Nepal promulgated the new constitution in 2015. It led the country towards the implementation of three tiers of governance. There are seven provinces, each with a legislature, council of ministries, and chief ministers. Nepal has 753 local governments (rural municipalities, municipalities, and sub/metropolitan cities). These governments have been formulating different legal frameworks and establishing institutional arrangements to exercise power and fulfill their roles and responsibilities. For the first time, Nepal's constitution mentions a DRRM provision. The Constitution's Article 51 clearly assigned DRRM as a concurrent responsibility of

the three tiers of government. Annex 7 has kept shared responsibilities of federal and provincial governments in disaster management. Annex 8 has entrusted sole responsibility of disaster management to local governments.

Under the constitutional provisions, the GoN has prepared a new DRRM Act, which also adheres to Nepal's international commitments, such as the SFDRR, the SDGs, and the Paris Agreement. The DRRM Act is a binding instrument that guides multi-tier policies and programs, institutional structures, and resource allocation for DRRM at all three tiers of government. To do so, this Act has provisioned a DRRM National Council as well as the Executive Committee under the chair of the Minister of Home Affairs (MoHA).

The National Disaster Risk Reduction and Management Authority (NDRRMA) was established as a designated federal institution to carry out all DRRM initiatives. NDRRMA works as the secretariat for the DRRM National Council and Executive Committee. The authority has the responsibility to implement, monitor, and evaluate policies and programs formulated by the council. It also oversees coordination and collaboration among government agencies, civil society, and private sector and provides support to provincial and

local governments. The authority centralizes DRRM resources, manages the Disaster Information Management System (DIMS), and facilitates technological innovations, capacity development, and required financing at the three tiers of government.

The DRRM Act also sets out formal structures, roles, and responsibilities at the federal, provincial, district,[10] and local levels. The first amendment of the DRRM Act (2019) also includes a provision for a Province Disaster Management Council (Chapter 6, Clause *13Ka*) and further specifies the structure and functions of the Province Disaster Management Executive Committee. The Act stipulates a structure (Disaster Management Committee) and DRRM functions for each local government. Local governments are guided by the Local Government Operation Act (2017), which establishes disaster management structures and functions for each local government and its ward units.

The DRRM Regulations (2019) further elaborates functions of different government decision-making mechanisms in line with the provisions of the DRRM Act. The GoN has been implementing the National DRR Policy (2018) and Disaster Risk Reduction National Strategic Plan of Action (2018—2030) (DRRNSPA), which provides a comprehensive planning framework for DRRM in Nepal encompassing priority areas and guiding government actors and stakeholders to achieve DRRM targets.

1.4 Scope of the report

The main objective of the Mid–Term Review (MTR) is to provide a critical analysis of Nepal's implementation of SFDRR since its adoption in 2015. The MTR takes a retrospective examination of DRRM actions and incidences from 2015 to 2022, which will inform continued implementation through 2030, while also incorporating pre–2015

initiatives and programs, which were important to the development of DRRM in Nepal.

This MTR analysis:

• Evaluated important factors for any progress made and successes achieved, including institutional, technical and financial considerations;
• Documented where challenges and obstacles were encountered, identified the nature of these challenges/obstacles, and evaluated efforts to overcome them;
• Identified examples of horizontal technical cooperation/skill transfers; and
• Based on findings, lessons identified, provided recommendations to inform the implementation of the SFDRR during the remaining period.

The MTR will help answer questions being posed by the wider SFDRR MTR and will help harness lessons learned for implementation of remaining actions under SFDRR.

1.5 Structure of the report

The review report assesses the status of progress of all four SFDRR priorities to enhance its effective implementation for speeding up progress. The report starts with background information, an overview of disasters in Nepal, country context, and MTR methodology and process. The second chapter covers progress made since the implementation of SFDRR began in 2015, describing achievements made in four priority areas: understanding disaster risk; strengthening disaster risk governance at federal, provincial, and local levels; promoting comprehensive risk-informed investments in DRR for resilience; and enhancing disaster preparedness for effective response to "Build Back Better."

The third chapter provides a critical analysis of missed opportunities in implementing SFDRR, primarily focusing on DRRM governance,

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10 District Disaster Management Committee (DDMC) is headed by a Chief District Officer (CDO). The Chairs/Mayors of local governments (and some federal government agencies), depending on the districts, serve as members of the Committee. The Committee's main role is to lead and support disaster preparedness and response in the district. For details, see: DRRM Act 2074 & DRRM Regulation 2076.

preparedness and response, disaster risk financing, and transferring risks and gaps to ensure coherence for resilience. Chapters 4 and 5 outline key challenges faced during seven years of SFDRR implementation and priority issues, including the way forward towards 2030.

1.6 MTR methodology and process

The MTR was conducted through a participatory approach involving federal agencies, DRR stakeholders, relevant government agencies, development partners, UN agencies, the Nepal Red Cross Society, Disaster Preparedness Network-Nepal (DPNet-Nepal), and other I/NGOs. It was guided by DRRNSPA. In accordance with the SFDRR guidance, the MTR became a broad strategic review of the Sendai Framework as an instrument; it was not meant to be an evaluation of the state of DRR in Nepal, nor a quantitative evaluation of the implementation of SFDRR to date. The information collected is, therefore, primarily of a qualitative nature, based on self-assessments and perceptions of the stakeholders involved.

A technical team under the chair of the MoHA Joint Secretary was constituted to provide technical and strategic advice throughout the MTR process. Based on the guidance received, a set of key questions and sub-questions was formulated to help the reviewers understand which elements were obstacles to success and which encouraged success, as well as to identify ways in which the country could best ensure the "substantial reduction of losses" in the evolving DRR context.

MoHA facilitated the review process through an inclusive, multi-stakeholder-led review, consistent with the Sendai Framework requirements. The MTR methodology included a literature review, discussion with relevant stakeholders, and key informant interviews by adopting an open and

participatory approach. Five analytical tools were employed to address the MTR questions:

Literature review;

- Outcomes of structured workshops held at the national level;
- Selected in-depth studies;
- One-on-one interviews with key policymakers, and
- Online/virtual consultations.
- Specifically, the methodology used included the following elements:

1.6.1 Literature review

A literature review was conducted to generate a stand-alone report, which provided a broad overview of the available information on SFDRR implementation. The review included desk reviews of SFDRR implementation using Nepal Disaster Reports as a key reference, including the National Council and Executive Committees' decisions. A review of relevant literature on the implementation of the SFDRR was carried out—for example, citing the DRR handbook, national position papers, reports, and proceedings to prepare the MTR report. Medium and long-term plans and strategies were reviewed to establish their alignment with the SDGs. This included a review of Nepal's Fifteenth Plan (FY 2019/20—2023/24), Economic Survey, and periodic plan documents of the provinces. The review team also referenced sectoral strategies, plans, and policies, such as the Agriculture Development Strategy (2015—2035), Nepal Health Sector Strategy, Energy Sector Strategy, and Nepal National Adaptation Plan (2021—2050).

Some of the relevant publications and recommendations of the civil society, youth, women, *Dalit*, indigenous communities, Nepal SDGs Forum and development partners were also considered. Country reports submitted to the international bodies, including reports related to disaster

preparedness, search and rescue, and reports on DRR and climate action were also reviewed.

1.6.2 Key Informant Interview (KII)

Key informant interviews were conducted focusing on specific goals and the progress that Nepal has made in each priority area. Policymakers from the National Planning Commission (NPC), MoHA, Ministry of Federal Affairs and General Administration (MoFAGA), Ministry of Agriculture and Livestock Development (MoALD), Ministry of Health and Population (MoHP), Ministry of Energy, Water Resources and Irrigation (MoEWRI), Ministry of Forests and Environment (MoFE), Ministry of Urban Development (MoUD), NDRRMA, Department of Hydrology and Meteorology (DHM),

DRRM experts and other related stakeholders were also interviewed.

1.6.3 Stakeholder consultation

A national stakeholder consultation was organized in November 2022 in Kathmandu to solicit inputs on SFDRR implementation to date. Key government officials from the concerned federal agencies were consulted on the GoN's efforts to implement the SFDRR. Discussions were also held with representatives of the private sector. Participants included officials from the Federation of Nepali Chambers of Commerce and Industry (FNCCI), Confederation of Nepali Industries (CNI), Nepal Chamber of Commerce (NCC), academia, and the larger DRR community.
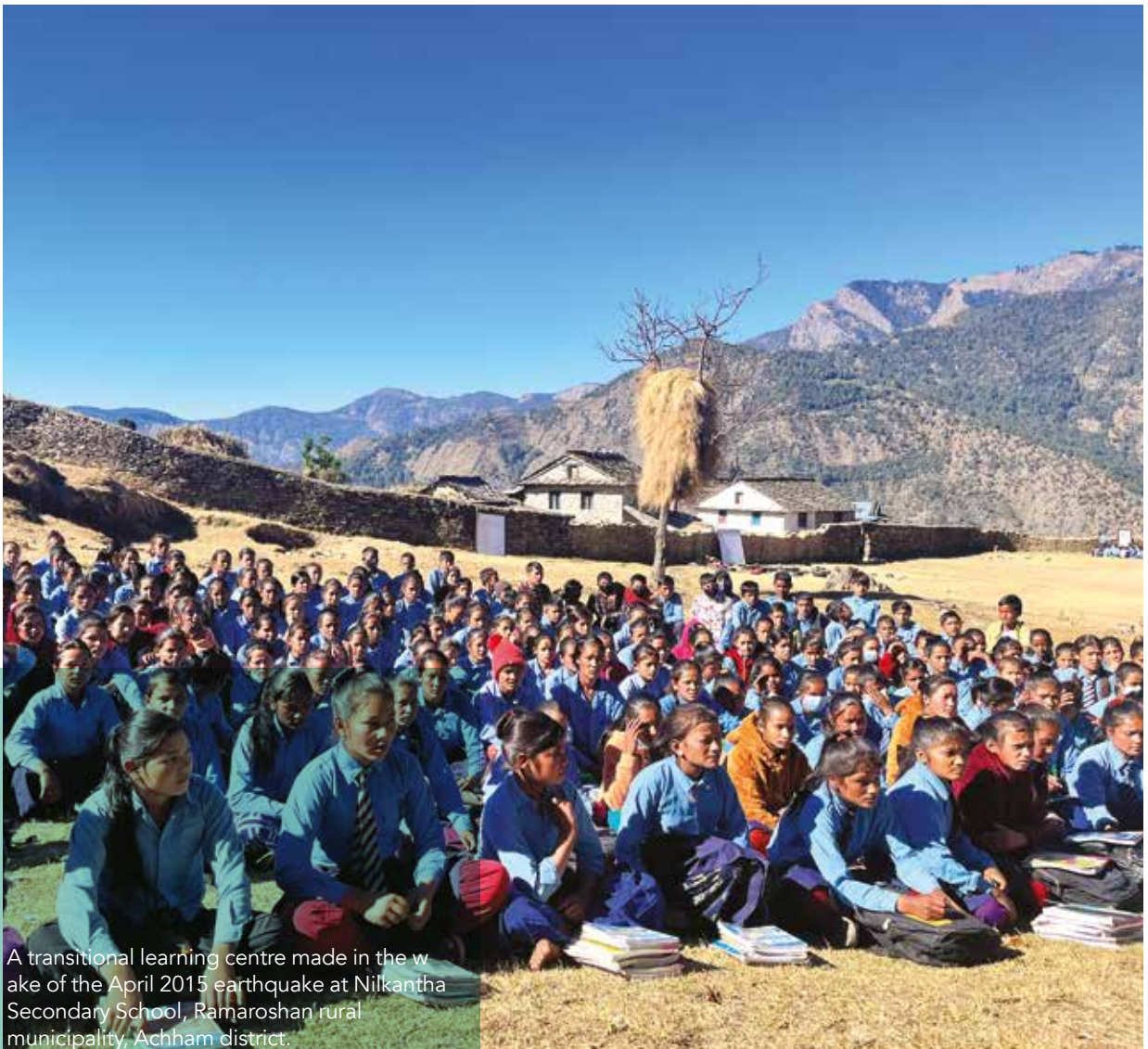
A transitional learning centre made in the wake of the April 2015 earthquake at Nilkantha Secondary School, Ramaroshan rural municipality, Achham district.
© Deependra Joshi

EARTHQUAKE

LANDSLIDE

FLOOD

LIGHTNING

SFDRR + 7—PROGRESS TO DATE

2.1 Status of SFDRR implementation

Following Nepal's 2015 earthquake and impacts from the COVID-19 pandemic the year 2022 provided a unique opportunity for critical reflection on progress achieved implementing SFDRR. Efforts to build better coherence across national and international policy framework resulted in a greater alignment of policy objectives and led to improved coordination in the implementation of common goals and targets. Nepal's commitment to build a safer, more adaptive and resilient nation from disaster risk for sustainable development is a shared priority that runs across the national policy and regulatory instruments. Furthermore, the inclusion of specific targets for 2030 demonstrate explicit linkages to DRR, such as those under SDGs 2 and 11, exhibiting the need for continued action to reduce existing natural and non-natural disaster risks and losses essential to sustain country's prosperity.

The SFDRR 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 is monitored through indicators against seven targets, which 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 (EWS) and disaster risk information. A summary of progress for the seven-year review period against its four priority areas is provided for each context, below:

Table 2: Summary of SFDRR progress in each priority area

SFDRR priorities	DRRNSPA priorities	Current status (2022)
Understanding disaster risk	• Hazard-wise risk assessment • Inter-agency coordination of multi-hazard risk assessment • Development of effective DIMS • Capacity building for understanding risk • Strengthening capacity of community disaster management committees	• DRR portal and database • BIPAD portal as a national repository on DRRM database • Online database system (KoboCollect), RMIS MDSA, Volunteer Management System, Resource Mapping System, e-learning platform, etc. • Assessment of schools and public facilities • Revision of national probabilistic seismic hazard map of Nepal • Landslide risk mapping of 14 out of 77 districts • Geological studies in 35 sites affected by landslides and risk zones delineated • Emergency preparedness and response capacity assessment at federal, provincial and local levels • Regular TV program, bulletins, PSAs and audio-visuals via social media.

| Strengthening disaster risk governance to manage disaster risk | • Establishing and strengthening organizational structures
• Developing legal and regulatory frameworks
• Collaboration and partnership for disaster risk governance
• Ensuring inclusiveness in disaster risk reduction
• Guidelines for DRRM operationalization at federal, provincial and local levels
• Guidelines for DRRM integration into different development sectors
• Guidelines for different aspects of disaster response, recovery, rehabilitation and reconstruction
• Setting up of institutional structures and policies of provincial and local governments
• Formation and strengthening of local disaster risk reduction and management committees | • Establishment of NDRRMA
• DRRM organizational structure at province and local levels
• National DRR Policy 2018
• DRRNSPA (2018—2030)
• DRM localization manual
• LDCRP guideline
• Local Development Planning Guideline
• Guideline for landslide risk assessment
• Volunteer Bureau Formation and Mobilization Guideline
• Disaster Management Fund Mobilization Guideline
• Monsoon and Fire Induced Disaster Affected Private House Reconstruction and Rehabilitation Guideline
• Technical Guidelines to Conduct Field Investigation of Settlements Affected by Landslides (2021)
• 33 municipalities developed Local Disaster Resilience Framework
• Guideline for landslide risk assessment
• Relief and Rescue Guideline for Disaster Victims (7th Amendment), 2077
• Operational Guideline for National Platform for Disaster Risk Reduction
• Volunteer Mobilization for Disaster Damage Prevention Guideline (2078)
• Fund Disbursement Guideline for Reconstruction of Houses Damaged due to Fire and Forest Fire (2078)
• Guidelines for civil society organizations and volunteer mobilizations to DRRM
• Number of model act/guidelines developed for local levels. |
| Investing in disaster risk reduction for resilience | • Promoting investment for building resilience
• Promoting public investment in DRR
• Increasing public reach and access to flood risk SMS system
• Promoting private investment in DRR
• Increasing disaster resilience through risk transfer, insurance and social security | • Disaster Risk Financing Strategy
• Crop Insurance, livestock, Health Insurance, Group Life Insurance
• COVID-19 Insurance
• Sectoral Budget
• Central Disaster Management Fund, and DM Fund established at province (7), district (77) and local levels (753).
• National System for Volunteer Information Management |

Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction	• Strengthening disaster preparedness for effective disaster response • Development of multi-hazard EWS for disaster preparedness • Promoting Community Based DRR • Strengthening early warning system and flood resilience measurement for communities (FRMC) approach • Implementing Multi-hazard EWS Strategic Action Plan and Disaster Finance Strategy • Strengthening communication and dissemination system for disaster preparedness • Capacity building for search and rescue • Promoting "Build Back Better" approach in recovery, rehabilitation and reconstruction	• Reconstruction completed by NRA (704,341 private houses; 6,647 school buildings; 1,197 health facilities; 920 cultural heritage sites; 415 government buildings; 216 security agencies buildings) • 598 national level responders are trained (MFR, CSSR, HOPE and CADRE) • Earthquake Affected Private House Reconstruction Grant Distribution (1stAmendment) Working Procedure (2016) • Guideline for Conservation and Reconstruction of Heritages Damaged by Earthquake (2016) • Procedure for Relocation and Restoration of Vulnerable Settlements (2073) • National Resource Mapping System for Disaster Preparedness and Response • Integrated Settlement Development Procedure (2018) • Guidelines of Initial Rapid Assessment (IRA) • Annual Monsoon Preparedness and Response Plan • Mass casualty ambulances and "A" grade ambulances in Kathmandu and all seven provinces • Masons training for safer construction • Water rescue divers training

2.2 PRIORITY AREA 1

Understanding disaster risk

Nepal has aligned DRR-related legal instruments with the SFDRR. The government has given emphasis to the following: (i) promoting policy coherence among DRR and development in-country; (ii) making DRR a development practice to achieve resilient public investment and the SDGs (iii) encouraging private sector engagement towards risk sensitive investments; and (iv) building capacity and leadership to implement the Sendai Framework at the federal, provincial, and local levels. These focus areas were supported by providing adequate capacity and resources at the local level; knowledge and information from the scientific and academic community; and practical guidance and tools.

The Executive Committee—the apex body responsible for the execution of plans, policies and programs approved by the National Council—has formulated, amongst others, necessary plans and policies, working procedures, and standards for risk-sensitive development and land use plans, hazard modelling, and made provisions for emergency treatment to disaster victims through adequate infrastructure and services in public and private health institutions.

NDRRMA, along with various development partners and UN agencies, is working collectively to localize the Building Information Platform Against Disaster (BIPAD) portal[11]—an integrated national digital platform for disaster risk information—by means of training local governments in the use of the portal and in ways to input data for their respective municipalities. Nepal has made good progress on risk assessment, and understanding all dimensions of disaster risks by developing and implementing specific projects aimed at strengthening the
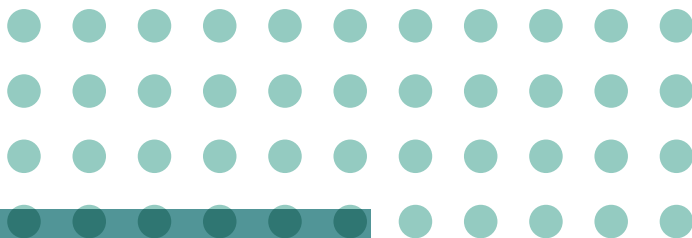
Devastation by Melamchi river flood in Sindhupalchowk District.
© NDRRMA

understanding of disaster risks at the federal, provincial, and local levels.

On disaster information development and sharing, Nepal has made progress by establishing systems for tracking, monitoring, analyzing, and sharing disaster information to people. Real-time hazard risk monitoring systems are being developed and continue to emerge, such as seismic stations, hydro-metrological stations, and lightning detection centers. Learning, sharing, and knowledge management programs are regularly organized at the federal, provincial, and local levels. Multiple bilateral and multilateral discussions have provided avenues for sharing learning and experience on DRRM. Key messages about DRRM, dialogue on contextual issues through information education and communication materials, documentary and media partnership have helped sensitize wider stakeholders and promoted a common understanding of DRRM.

Various initiatives have been implemented to raise public awareness on hazard preparedness and response through informative videos, public service announcements (PSAs), jingles, songs, and social media outreach in both national and local ethnic languages to reach wider audiences. The content was widely shared through social media platforms, including NDRRMA's own social media handles. The media has been mobilized across all seven provinces to support integration of DRRM policies and programs and to contribute to safer and more resilient communities.

The celebration of national and international days, such as National Earthquake Safety Day and International Day for Disaster Reduction were observed at the national and local levels to further raise awareness, knowledge, and develop a common understanding on DRRM.

Nepal is committed to mainstreaming DRR and climate change adaptation (CCA) into development planning, policies, strategies, and programs at all levels by 2030. However, a national capacity building mechanism requires more funding to mitigate climate-induced disasters in Nepal. The government recognizes the importance of effective integration of DRR into national policies, strategies, and plans and emphasizes the need for the convergence of DRR, CCA, and sustainable development to achieve community resilience. It also emphasizes the need for a strong urban risk management program combined with an urban growth plan. This includes all development programs funded through the national budget as well as multilateral and bilateral cooperation and donor-supported projects. However, effective implementation requires strengthening of institutional capacity and adequate resource allocation. This has become an important step to ensure that development projects or program outcomes are disaster-resilient and that do not increase and/or add any new risks to communities.

2.3 PRIORITY AREA 2

Strengthening disaster risk governance at federal, provincial, and local levels

2.3.1 Policy environment and coherence

The implementation of SFDRR in 2015 coincided with the promulgation of Nepal's constitution in 2015. The constitution was adopted to institutionalize the far-reaching political, social, and economic changes in the country. Nepal's whole-of-society approach to reduce risk and build resilience resonates with the new constitution, which defines roles and responsibilities for the three tiers of government—federal, provincial, and local. The DRRM Act is considered more progressive than the previous Natural Calamity Relief Act of 1982 in many respects. Its approach to disasters is more comprehensive and recognizes both risk reduction and management as integral parts of DRRM. Instead of committee-based coordination mechanisms, the Act proposes a clear multi-tier institutional structure of DRRM at the federal, provincial, and local levels.

Plans and policies were prepared based on improved local risk assessment and capacity to monitor hazards, exposure, and vulnerabilities. Strengthening leadership and capacity of local authorities, communities, civil society, volunteers, and community-based organizations was achieved through an inclusive approach. Peer learning and cooperation between provincial and local governments has played an important role in this regard.

Disaster incidents in Nepal have triggered improvements in Nepal's policy and regulatory frameworks. Both the DRRM Act (2017) and Local Government Operations Act (2017) have established DRRM institutional structures and provided them with mandates to services at various levels. Federal government agencies, such as Ministry of Federal Affairs and General Administration (MoFAGA), National Planning Commission (NPC), and NDRRMA support local governments by providing guidelines and model policy frameworks to enhance local DRRM. Documents, such as local DRR Strategic Action Plan Guidelines (2021) and Guidelines for Local Level Planning (2021) inform local plans and actions initiated by local governments.

Disaster governance has improved in all three tiers of governance—from national to local levels. The constitution devolves legislative, executive, and judiciary powers to the provinces and local levels, giving them the authority to plan and implement disaster management programs. As of now, all local governments have prepared legal policy frameworks and are implementing them. There are several documents to support local governments and stakeholders about disaster preparedness, response, recovery, and reconstruction. These include guidelines and templates to prepare local DRRM Act, local DRRM Strategic Plan, local Disaster Preparedness and Response Plan (DPRP), Local Emergency Operation Guideline, Local Disaster and Climate Resilient Plan (LDCRP), and Local Environment and Natural Resource Protection Act. The GoN has endorsed a strategic approach to

promote green, resilient, and inclusive development (GRID), as the central development strategy of the country to overcome this challenge. This approach centers around sustainability, green growth, jobs, resilient infrastructure, and on addressing exclusion and vulnerability.

2.3.2 Institutional structures

Nepal established NDRRMA in December 2019 to coordinate, facilitate, operate, and manage the country's DRRM activities. The DRRM National Council, the apex disaster risk management body, is chaired by the Rt. Honorable Prime Minister. The council provides strategic direction and approves disaster related policies and formulates strategies. The disaster body's Executive Committee (EC) looks after operational affairs, including guidelines, plans, and executive decisions related to DRRM. The Honorable Home Minister chairs the EC, which then coordinates with line ministries to formulate DRRM policies and strategies. NDRRMA is the secretariat to both the National Council and the EC. Provincial and local government have their own disaster risk reduction management authorities to handle disasters and carry out disaster preparedness related activities at respective levels.

After the devastating April 2015 earthquake, the GoN established the National Reconstruction Authority (NRA) with the main objective of rapid reconstruction of the physical damage caused by the earthquake in 32 districts of Nepal (including 14 highly affected districts). NRA set an example of planned and systematic reconstruction within a tight deadline and was able to implement actions despite the COVID-19 crisis that followed. Seven years after its formation, the 21st meeting of the NRA steering committee handed over remaining work to NDRRMA in December 2021.

The EC has endorsed more than two dozen guidelines to date. NDRRMA has developed various digital e-learning platforms to enhance knowledge and skills on disaster risk understanding, and to strengthen governance, disaster preparedness,

Underground water boring tap installed above the ground level to ensure its continuous use even after flood and inundation in Bardiya District.
©MoHA

response, recovery, and Gender Equality, Disability and Social Inclusion (GEDSI) in coordination with NDRRMA and concerned sectoral agencies. The Department of Mines and Geology (DMG) leads the preparation of nationwide earthquake hazard maps. It further supports the preparation of a landslide inventory and landslide susceptibility maps.

To mainstream risk reduction, a coordination mechanism among concerned government agencies was established to support unified action across the country. A key action towards this goal includes the development of DRR focal points in line ministries and provincial agencies responsible for coordinating the implementation of DRM plans and supporting the mainstreaming of DRRM into sectoral interventions (UNDRR, 2020). This is a significant step towards achieving the whole-of-society integration of DRRM as envisaged under the SFDRR. These initiatives not only provide cross-

agency support, but also an opportunity to identify synergies among sectoral interventions through collaboration of relevant authorities.

To coordinate disaster preparedness and response activities, the GoN and respective agencies have built a network of Emergency Operation Centers (EOCs), including a national EOC and district EOCs exist in all 77 districts. The provincial governments have provincial EOCs and operate in coordination with national and district EOCs. Some municipalities have also established their local EOCs, but these EOCs need to be equipped with essential human resources and equipment. The Ministry of Health and Population has Health EOCs (HEOCs) across the country have played a crucial role containing the COVID-19 pandemic. The GoN has established eleven humanitarian staging areas (HSA) in major air and land ports, and four humanitarian support base stations in strategic locations considering their

geographic coverage. The GoN plans to expand these facilities across the country.

In addition, the National Environment Protection and Climate Change Management Council has been operationalized to provide strategic leadership and guidance on integrating national targets at all levels of government. This high-level council, chaired by the Hon. Prime Minister, provides increased political support to integrate climate change risks into the disaster risk management agenda and to operationalize it at the provincial and local levels.

2.3.3 Risk integration and mainstreaming

Nepal's 15th periodic plan (2019—2024) has recognized the need for multi-hazard risk information and integration and mainstreaming of DRRM across all sectors at the federal, provincial, and local levels. The Land Use Policy (2015) was implemented with a key objective to reduce and manage disaster risks that arise due to unplanned land use practices. The GoN is in the process of developing a framework for risk sensitive land use planning (RSLUP) as a guiding document for local governments to develop and deliver risk sensitive municipal development plans. The National DRR Policy and Strategic Action Plan also stresses risk-informed development.

NDRRMA has been working with various ministries and departments to collate information on multiple hazards, exposure, and vulnerability. The BIPAD portal consolidates information from multi-hazard risk assessments, such as landslide and flood hazard mapping, while the identification of risk exposed vulnerable settlements and social groups for relocation remains ongoing. Sectoral assessments, including GEDSI, and a vulnerability and risk assessment framework for climate change were developed that provide guidance to practitioners to manage risks due to climate-induced hazards. The GoN has made use of advanced technology, such as satellite imagery, remote sensing, and geographic information systems (GIS) data in risk assessment. Another potential technology for risk

assessment and disaster response is the use of drones in DRRM.

2.3.4 Localization and inclusion

DRR and other initiatives to build resilient communities are only successful when plans and actions are owned by local communities, led by local governments, and informed by local knowledge and expertise. Nepal has adopted an inclusive and bottom-up approach in DRR, preparedness, and reconstruction through policy, structures, and capacity building measures. The constitution has delineated local governments with the sole responsibility to implement DRRM as well as shared roles and responsibilities between federal, provincial, and local levels. The participation of vulnerable groups, including children, persons with disabilities, elderly, and women to help identify and mitigate disaster risks will further ensure community resilience. These groups, especially children, young people, and women have served as agents of change to better prepare communities to address disaster and climate risks.

MoHA has been initiating a policy process to unpack these provisions and bring clarity in the delineation of roles, responsibilities, and accountabilities between the three levels of government, along with coordination between them for DRR, response, and reconstruction. The NPC has issued guidelines to integrate DRRM into local governments' annual development plans and MoFAGA has prepared Local DRR Strategic Action Planning Guidelines (2021) to localize SFDRR at the local level.

The GoN has been working with UN organizations, I/NGOs, and DRR experts to help local governments rapidly take up their roles and mandates provided by the constitution and Local Government Operations Act (2017). MoFAGA has been supporting local governments with model policy documents, which have helped them prepare their own policies.

753
local governments have their own local laws and policies on DRRM

US$16 Million
Disaster Management Funds for disaster preparedness, response, reconstruction, and resettlement administered

319
local governments have prepared Local Disaster and Climate Resilience Plans

116
local governments openrating local EOCs

Consequently,

- All 753 local governments have their own local laws and policies on DRRM.
- All local governments have been administering Disaster Management Funds for disaster preparedness, response, reconstruction, and resettlement. The estimated total funds mobilized by local governments is about US$ 16 million. During COVID-19, the local government effectively utilized these funds to overcome the pandemic.
- Local EOCs are being operated by 116 local governments.
- 319 local governments have prepared Local Disaster and Climate Resilience Plans.
- The humanitarian cluster approach is in the process of localization through appropriate guidelines and institutional structures.

MoFAGA has been leading the process to coordinate and facilitate nationwide DRRM orientation programs with local government entities. Newly elected leaders from 753 local governments were provided orientations by the end of December 2022.

Governments and civil society actors, including private sector and international organizations, have worked together in the planning and execution of DRR actions through formal committees, humanitarian clusters, and task groups. The emphasis is placed on showcasing how local and indigenous knowledge in DRRM planning can improve outcomes and build inclusive resilience.

2.3.5 Scaling up disaster understanding through LISA

MoFAGA has introduced the web-based Local Government Institutional Capacity Self-Assessment (LISA) system as an innovative tool to track the performance of local governments in Nepal. As LISA is still evolving, it intends to improve local governance by creating opportunities for local governments to self-assess their work and recognize gaps that they can address for better service delivery. The "LISA Guideline 2020" envisages a continuous assessment mechanism to improve the overall performance of local governments.

Amongst 100 indicators from 10 thematic areas, disaster management was mainstreamed in the local governance system to help increase disaster-related knowledge and awareness for locally elected representatives and administrative staff. Currently, disaster management institutional set up is in place and being effectively implemented. Most local governments have prepared disaster related Acts, preparedness and response plans, policies, fund mobilization guidelines, and working procedures.

Although the function of DRRM was incorporated in the organizational structure of local governments, the assessment of LISA indicators for disaster management requires institutional readiness and capacity building—a crucial component to internalize disaster management into local governance. Local EOCs are yet to be made

functional for improved disaster risk governance at the local level, even though most local governments have allocated budget for disaster management, developed DRR plans, initiated emergency preparedness measures, and completed RSLUPs and multi-hazard risk assessments.

2.3.6 Capacity development

Nepal aims to reduce disaster-related deaths and injuries, and increase its resilience from local to national levels through a pool of well trained and motivated human resources at all levels. The country has made headway to mainstream DRR, preparedness, response, recovery, and CCA. This will be achieved by promoting stronger coordination, collaboration, and capacity building initiatives to increase the level of understanding and risk-informed programming between federal, provincial, and local governments.

Nepal is currently focusing on the capacity development of federal, provincial and local governments on DRRM that includes the formulation of relevant policy and legal documents and mainstreaming/ integrating DRRM into development plans and programs. Innovative approaches, like e-learning platforms are also being promoted. Some specific training and capacity building activities include climate change risk assessments, protection against lightning, initiatives such as Community Action for Disaster Response (CADRE) and hospital preparedness for emergencies (HOPE), training of rescue divers, drills, and simulation training to district EOCs and local EOCs, as well as impact-based multi-hazard EWS.

The GoN initiated several actions to strengthen the understanding and capacity of both communities and stakeholders, as outlined below:

- Technology for multi-hazard risk mapping, monitoring, early warning, and disaster response;
- Building local government capacity on DRRM;

- Building the capacity of women, youth and adolescents, the elderly, persons with disabilities, and local communities to plan, prepare, and respond to disasters, including climate change and unforeseen pandemics, like COVID-19;
- Strengthening the national DRRM database and including DRRM in different levels of school curricula;
- Mock-drills and simulation exercises for hazard-induced disaster response;
- Development of search and rescue (SAR) teams, as per the International Search and Rescue Advisory Group (INSARAG) standard;
- Fire brigades with advanced technologies, including robotic fire-fighting tools;
- Development of Community Emergency Response Team (CERT) volunteers;
- Emergency logistics capacity, including infrastructure, technology, equipment, and human resources;
- Sensitization on Core Humanitarian Standard, and rights-based and inclusive DRRM;
- Awareness on protection against lightning and electrical fire safety;
- Training and planning as per HOPE;
- CADRE training;
- Disaster risk financing, including effective and efficient risk sharing and risk transfer with innovative schemes, such as index-based insurance; and
- Strengthening indicator-based disaster resilience measurement tools, such as Flood Resilience Measurement for Communities (FRMC).

National capacity on DRRM must adhere to international standards. For example, the U.N. accredits SAR skills that meet its global standards. For such skills, the government must collaborate with international partners, such as INSARAG. Recently, the GoN initiated the accreditation process for INSARAG Medium SAR Team of Nepal Army's disaster management unit. However, the DRRM research and training program needs strengthening for effective delivery of DRRM objectives, as envisioned by DRRM policies and strategies.

2.3.7 Stakeholder engagement

A multi-sectoral National Platform for DRR (NPDRR) was established with operational guidelines to enhance coordination among all DRRM stakeholders. The Chief Executive of NDRRMA chairs the National Platform, which has nine thematic groups involving various stakeholders— from government, semi-government, UN and bilateral partners, to international NGOs, national and local NGOs, media, disaster affected communities, academia, and the private sector.

The initiation of NPDRR brought together relevant public, private, and civil society groups and ensured the representation of various groups. It provided an opportunity for multi-stakeholders to work together, enforced through the implementation of the Disaster Risk Reduction and Management Rules (2019). Civil society organizations (CSOs) are also working with local level bodies to strengthen the multi-sectoral DRR platform. NGOs are playing a key role to mobilize local level Disaster Management Committees, comprised of stakeholders from agriculture, education, fisheries, forests, and health-related government entities.

These committees have a strong relationship with government ministries and departments, such as MoFAGA, MoFE, Ministry of Education, Science and Technology (MoEST), provincial Ministry of Internal Affairs and Law, Ministry of Social Development, Department of Agriculture, Department of Health Services, Department of Forests and Soil Conservation, and the Department of Urban Development and Building Construction.

DRR stakeholders in Nepal have played a crucial role in driving DRR momentum and people-centered development. The humanitarian coordination architecture is led via 11 clusters as well as formal inter-cluster working groups on information management, community engagement, and gender in humanitarian action. The thematic cluster-based approach has enabled the integration of DRR into other policy areas overseen by government

> One of the key messages to emerge from the implementation of SFDRR in Nepal is the importance for women and girls to understand disaster impacts, and their inclusion and leadership in decision-making around risk reduction.

ministries, facilitating collaboration with internal and external bodies at all levels—from donors, humanitarian partners, and civil society actors, to national and international NGOs.

Nepal has strengthened its preparedness and reviewed contingency plans, programs, and policies for emergency preparedness and response in consultation with relevant stakeholders. Collaboration and partnership exists between state and non-state actors, such as donors, development partners, bilateral and multilateral agencies, UN agencies, Association of International Non-Governmental Organizations in Nepal (AIN), community-based organizations, and NGOs.

As the leading policy instrument on disaster risk reduction, the DRRNSPA (2018—2030) and its supporting documents promote an understanding of gender-specific vulnerabilities and opportunities in the disaster context. The action plan references different modalities in which women experience disasters and highlights the existence of increased

female vulnerability in specific disaster contexts. One of the key messages to emerge from the implementation of SFDRR in Nepal is the importance for women and girls to understand disaster impacts, and their inclusion and leadership in decision-making around risk reduction.

Realizing the significance of the private sector's role in implementing the SFDRR, collaboration with this group was enhanced to integrate DRRM goals into their activities and to support disaster risk management business practices. The cooperative sector is one of the three pillars of economy (public, private and cooperative), and, as such, the GoN has been collaborating with them to build resilience and reduce disaster losses and damage. Civil society is another important partner for realizing the SFDRR. The GoN encourages their commitment and contributions to promote and achieve SFDRR commitments.

The GoN has been conducting regular stakeholder consultations and analyses with DRR stakeholders to understand the overall disaster risk management process with the aim of reviewing and analyzing the institutional setup, specific mandates in disaster risk management, and future engagement with key stakeholders. These consultations have maximized the accessibility, inclusion, and meaningful engagement of diverse groups relevant to addressing risks and building resilience.

The Disaster Preparedness Network—Nepal (DPNet Nepal) has been working with government agencies and relevant stakeholders in the field of disaster management focusing on knowledge management, capacity building, policy advocacy, coordination, and networking. DPNet Nepal also serves as secretariat of the National Platform for Disaster Risk Reduction (NPDRR) and coordinates regional and international events. The National Disaster Management Network of Nepal (DiMaNN) is a non-governmental national network of Nepali NGOs working in DRRM. DiMaNN is contributing to DRRM to establish a safer and more resilient community. The National Disaster Resilient (NDR)

Network, a national network of local humanitarian organizations, has been functional at the local level coordinating with provincial and local governments, private sector, and self-help groups on humanitarian issues.

Apart from this, academia and research institutions, such as Tribhuvan University, Kathmandu University, Pokhara University, Institute of Forestry, Institute of Engineering, Nepal Academy of Science and Technology (NAST), and the International Centre for Integrated Mountain Development (ICIMOD) have been promoting, prioritizing, and advancing research on natural, social, engineering, and technological aspects of disaster risks. These research institutes have promoted the adoption of hazard, vulnerability and risk profiles into disaster-resilient development and sectoral planning.

2.3.8 Sustainable Development Goals (SDGs) and Climate Action

As a signatory to several global and regional conventions and commitments on DRR and CCA, Nepal has been working towards realizing these commitments and contributing to a sustainable and resilient country. The global and regional collaboration have enhanced coherence across policies, institutions, goals, indicators, and monitoring systems to implement key global frameworks for DRM and sustainable development. Nepal has developed its road map to achieve these targets by endorsing a strategic time-bound action plan, and the country has made steady headway towards achieving it.

Disaster risk management, climate change, and ecosystem-based adaptation and sustainable development share similar characteristics, overlapping strategic objectives, and synergies that should be harmonized across policies for maximum efficacy. Nepal's existing DRM framework was designed in accordance with the post-2015 development agenda that identifies mechanisms to prioritize and synchronize DRRM efforts vis-à-vis ongoing projects, available funding, risks, and

vulnerabilities to utilize the highest potential for holistic disaster risk management.

The GoN has built synergies between DRR, CCA, and SDGs by incorporating environmental and sustainability concerns into DRRM. The government's solid understanding of these complexities is well illustrated in DRRNSPA, wherein disaster risk management encompassed an understanding of risks to enhance disaster preparedness in recovery, rehabilitation, and reconstruction. Against this backdrop, the SFDRR, SDGs, and climate change considerations were integrated into national development priorities and disaster management infrastructure to support resilient, sustainable, and risk-informed development leading up to 2030.

The National Policy for DRR (2018) aims to build a safer, more adaptive and resilient nation by reducing the existing risks and preventing new and potential risks. The policy considers the national needs as well as international agreements and obligations, which is more focused on achieving the targets and commitments made in the SFDRR, SDGs, and the Paris Agreement. It identified 59 activities to cover all sectors and delineated roles and responsibilities to ministries to carry out sectoral activities.

The Climate Change Policy (2019) has eight sectoral focuses and four cross-cutting focuses, of which DRRM is one. The National Adaptation Plan (NAP) was formulated in line with the policy to help integrate CCA and DRRM in practice. At the action level, NAP promotes shock responsive practices, multi-hazards EWS, development of federal and provincial strategies and action plans on mitigation of climate induced disasters, development of regulatory framework for domestic and industrial fire control and mitigation and promote culture of safety and build climate resilience through risk-

sensitive land use planning[12]. One of priorities of adaptation component of Nepal's Nationally Determined Contributions (NDC) 2020 is to establish multi-hazard monitoring and EWS covering all provinces by 2030[13].

At the local level, local governments prepare integrated DRRM and climate change plans by using the Local DRR and Climate Resilience Planning Guideline. Their subsequent Local Disaster Preparedness and Response Plans (LDPRP) address the issue of climate change in DRRM. Application of climate change risk assessment tools, methodologies, and guidelines informs the climate risk to development programs from the local to federal levels.

SDG 5 is focused on gender equality. Nepal's SDG targets for climate action are gender sensitive and focus on climate smart villages, climate smart farming, climate change education, and green house gases (GHG) mitigation.[14] It intends to integrate climate change measures into policies, strategies, and planning to strengthen the resilience and adaptive capacity of people and stakeholders to natural and climate-related disasters.

Nepal's SDG target for poverty reduction witnessed significant achievement, but was then challenged by disasters, such as COVID 19[15] and the 2015 earthquake. Without addressing disaster and climate risk in all targets, SDG achievement will be strenuous at best. The federal government has prepared a resource book to localize SDGs, 2020[16] that helps local governments assess the potential while they deliver SDG targets.

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12 GoN, National Adaptation Plan (NAP) 2021-2050, Summary for Policymakers
13 GoN, 2020. Second Nationally Determined Contributions (NDC). Ministry of Forests and Environment, Kathmandu
14 NPC, 2017. Nepal Sustainable Development Goals, Status and Roadmap: 2016-2030. National Planning Commission, Nepal
15 NPC (2020). Nepal's Sustainable Development Goals Progress Assessment Report 2016–2019, National Planning Commission
16 NPC 2077 (2020). Resource book for localizing SDGs, National Planning Commission, Nepal

2.4 PRIORITY AREA 3

Promoting comprehensive risk-informed public and private investments in DRR for resilience.

Long-term planning and preparedness for DRR is part of Nepal's process for development planning. Such plans are grounded in science and technology inputs through forecasting and warning systems, disaster resistant construction technologies, and appropriate cropping systems. Over the years, Nepal has developed, upgraded, and modernized monitoring, forecasting, and multi-hazard warning systems to deal with various disasters. The country uses VHF/HF wireless communication system for data collection with micro-computers at the forecasting centers. Hydrological models are increasingly used for inflow and flood forecasting; the forecasts are then communicated to the administrative and engineering departments for dissemination.

In terms of social security, the GoN has been implementing a national social protection framework, which defines social protection in Nepal and identifies the government's priority areas for the next ten years. The framework defines social protection as a set of benefits available to targeted vulnerable groups aimed at reducing multi-dimensional deprivations and providing people with basic minimum livelihoods. A task force was formed, comprised of ministries and departments, to draft the national guideline for Shock Responsive Social Protection.

Open spaces have been identified and mapped within Kathmandu Valley and elsewhere as safe places for displaced populations in post-disaster scenarios, assuring them available basic facilities required in the aftermath of disasters. These open spaces have been mapped in the BIPAD portal and can be updated by municipal governments. Disaster management funds have been allocated at all tiers of government for effective and immediate response and relief after any major events.

Support from the private sector, especially from the Federation of Nepali Chambers of Commerce and Industry (FNCCI), Confederation of Nepali Industries (CNI), and Non-Nepali Residents has been increasing during the country's response and recovery phases. MoHA has initiated discussions with wider stakeholders to establish risk transfer mechanisms. The GoN is facilitating a way to integrate the risk transfer mechanism from the existing insurance system, such as health and livestock insurance, into other social security provisions. The government has been providing cash support as immediate relief to enable vulnerable shock-affected households to meet their basic needs while improving their living standards.

2.4.1 Early warning system (EWS)

The establishment of EWS has been an important contributor to the reduction in deaths from disasters over the last decade. The Department of Hydrology and Meteorology (DHM) has the mandate to issue flood forecasts and flood warnings to the general public and relevant agencies. DHM is responsible for a range of manual and automated rain and stream gauges across the country, and for the production of national and sub-national forecasts (including probabilistic forecasts) and for incorporating regional and global forecasts (e.g., the Global Flood Awareness System [GLoFAS]). DHM has prepared Standard Operating Procedures (SOP) for flood EWS with defined roles and responsibilities of major stakeholders, from national to local authorities and affected communities. The SOP provides simplified procedures that are applicable in Nepal's flood-prone areas with the least amount of intervention required from involved parties.

Monitoring stations in each river basin have predetermined warning and danger levels for 'watch,' 'warning,' and 'evacuation' (or 'normal', 'alert' and 'danger'), based on flood hazard mapping in that location. When the water level exceeds a certain mark, alerts are sent to DHM. During monsoon season, DHM monitors the alert system 24 hours per day, and bulletins are

Siren installed at Melamchi, Sindhupalchowk District
@Melamchi Municipality

constantly displayed. An alarm signals the office if the water level reaches "warning" and "danger" levels. At the district level, the DEOC is responsible to monitor the flood situation based on DHM's water level, rainfall, and discharge information. The DEOC plays a pivotal role in communicating early warnings at the local level. EWS linkages were made to newly established LEOCs as well.

Nepal has successfully practiced community-based landslide EWS (LEWS) through real-time monitoring and sediment sampling that can help reduce the exposure and impacts of hazards. The country has also established hydro-meteorological stations above 3,000 meters to better understand the effects of climate change with more accuracy.

The government has initiated multi-hazard risk assessments and zoning through GIS, which has enhanced the decision-making process with better illustrations and mapping capabilities to facilitate the development of hazard maps. These outputs can help the country take effective action to reduce disaster and environmental risks.

The National Disaster Response Framework (NDRF) has assigned responsibilities to 10 ministries with 11 clusters to guide more effective and coordinated national response in case of a large-scale disaster. The formation of a cluster approach is led by respective line ministries and co-led by relevant development partner(s). Clusters (such as camp coordination and management, emergency communication, logistics, early recovery, food security, nutrition, health, education, protection and shelter) are mobilized in disaster preparedness and also activated during response and recovery phases. Similarly, the Humanitarian Country Team (HCT), along with the Executive Committee on Humanitarian Affairs, assists with strategic coordination and consultation among key humanitarian actors. It is a unique inter-agency forum for coordination, policy development, and decision-making involving key UN and non-UN humanitarian partners.
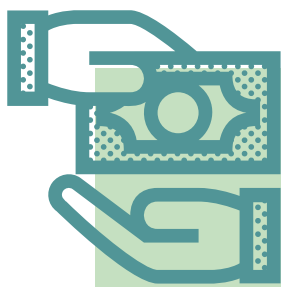
Nepal has introduced and adopted risk transfer mechanisms, such as risk financing. More than three dozen micro-insurance policies exist in the sectors of agriculture, livestock, and health, which cover losses from disasters.

2.4.2 Disaster risk financing

The 15th National Development Plan (2019/20—2023/24) provisions for creating a budget line for DRRM. In accordance with the 15th Plan, a National Strategy for Management of Disaster Risk Financing 2078 (2021) was produced that aims at mobilizing funds for overall DRRM based on 15 strategic areas and actions.

The National Policy for Disaster Risk Reduction (2018) allocates a certain percentage of annual budgets of federal, provincial, and local governments to DRRM. It also lays the foundation for establishing disaster management funds at all three tiers of government. In line with the DRR Policy, the federal government has established a Disaster Management Fund of NPR 1 billion (USD 8 million).

Nepal has introduced and adopted risk transfer mechanisms, such as risk financing. More than three dozen micro-insurance policies exist in the sectors of agriculture, livestock, and health, which cover losses from disasters. Nepal responded to COVID-19 by introducing insurance policy schemes. Private resources from corporate social responsibility (CSR) budgets were mobilized to reduce and manage disaster risks and increase public-private finance in DRRM.

Nepal's two telecommunication companies, Nepal Telecom and Ncell, are providing hydro-meteorological warning messages for free. They have been supporting DHM to disseminate the alerts and warnings of hydro-meteorological hazards to subscribers in specified geographic areas when there is a high risk of disaster.

2.4.3 Knowledge, innovation, and technology

Nepal has put efforts towards enhancing science and technology, and towards harnessing indigenous knowledge. DRR was included in school and university curricula, and in the last decade, university graduates and researchers have contributed to risk-informed DRRM planning across sectors, including CCA.

The GoN has started using the latest technologies and devices, such as Unmanned Aerial Vehicles (UAV) for multi-hazard risk assessments, communication, and response. The use of UAVs (commonly known as drones) and computer aided technologies are being introduced in hazard risk mapping, analysis, modeling, and database management. There is an increased understanding on the use of satellite images to map and analyze hazards, such as landslides, floods, earthquakes, and fires, but such initiatives need to expand to all parts of the country and demand technical competencies and resources. Similarly, there is now increased access to weather forecasting technologies through regional and international cooperation. DHM and NDRRMA have jointly implemented Impact Based Forecasting (IBF) in selected pilot municipalities with plans to expand its coverage.

Nepal has seen been significant improvement in the use of information technology for DRRM. Real-time communication technologies have improved flood EWS and disaster response, which has contributed to reducing the loss of life, property, and livelihoods in a few major river systems. Agencies have been implementing forecast-based anticipatory actions enabling vulnerable communities to take precautions before a disaster hits the area.

However, conducting multi-hazard risk and vulnerability assessments using current data, including evolving climate risk information, warrants an investment in science and technology. There is a huge gap between resource need and existing country capacity, with an ongoing need for a strong technological and financial support for research and development in the field of DRR and resilience, including assessing the impacts of climate change.

2.5 PRIORITY AREA 4
Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation, and reconstruction.

The Nepali Army, Nepal Police, and Armed Police Force have improved their response capabilities with enhanced SAR technologies, equipment, and training. Nepal's security agencies provide a 10-week-long training course on disaster management focusing on Medical First Responder (MFR), Collapse Structure Search and Rescue (CSSR), Dead Body Management (DBM) after disasters, water and fire-fighting rescue, and Practice in Emergency Logistic Training (PELT), through simulation exercises to acquire need-based experience and to become familiar with techniques required at a real disaster scene. Focus is given to preparing for persisting hazards, such as earthquakes, floods, landslides, and accidents as well as pandemics, like COVID-19.

The health sector has improved its COVID-19 surveillance and response capacity by using advanced technologies. Tribhuwan University and other private educational institutes run MSc programs in disaster risk management, while public and private educational institutes provide education and research grants to Disaster Management postgraduate students.

In Nepal, the imperative to "Build Back Better" has received widespread attention, including in the context of the 2015 earthquake and COVID-19 pandemic. The concept gained momentum in policy discussions as important areas of action. The government promotes integrated action and alignment between recovery priorities, long-term resilience, and development plans aimed at providing opportunities to catalyze co-benefits. Nepal has also formulated and implemented disaster preparedness programs to reduce the impact of disasters and to reduce people's socio-economic vulnerabilities. The post-2015 earthquake reconstruction programs were aimed at building disaster resistant structures to withstand the impact of natural hazards in the future.

2.5.1 Reducing underlying risk factors

The GoN has prioritized its support to build the capacity of provincial and local governments for DRR and emergency response through budget allocation in the government's annual plans to ensure future sustainability. It has been working with multiple stakeholders in the provincial and local government levels, such as the community, private sector, academia, international institutions, UN agencies, Red Cross, I/NGO, etc.

Nepal has made steady headway improving its understanding of disaster risks at community and municipal levels and in high-risk urban areas. It has been establishing and strengthening systems at all levels for effective emergency response and management through disaster preparedness at the community and municipal levels for effective emergency response and risk reduction.

NDRRMA has been carrying out multi-hazard

Red Cross volunteers providing psychological counselling to the earthquake survivors in Dhading district.
© Deependra Joshi

geological risk assessments by undertaking detailed landslide cum watershed surveys to identify the suitability of land for safe reconstruction. Assessments for sites impacted by disasters and for those proposed for resettlement has been undertaken in accordance with NDRRMA's Multi-Hazard Risk Assessment methodology to guide the development of risk sensitive land use maps and to ensure a consistent approach.

Initiatives, such as the construction of embankment improvements, machans (small local bridge/tent), culverts, drainage, dikes, embankments, bridges, shelters, public water supply taps, irrigation facilities, and toilets in the communities, have created a better living environment along with reduced underlying risks due to floods, drought, wildlife intrusion, water induced epidemics, and health related hazards, including the impacts of climate change.

Response measures are coordinated by the District Disaster Management Committee (DDMC) at the local level, with support from security forces, communities, and other local partners. The Nepal Red Cross Society (NRCS) and (I)NGOs have provided training, drills, and awareness-raising events, developed preparedness plans, and identified evacuation routes across the country. Community Disaster Management Committees (CDMCs) and taskforce committees carry out first aid, early warnings, and SAR operations in communities where (I)NGO and/or NRCS projects have been implemented.

At the local level, women's groups across seven provinces have been creating innovative solutions that address climate and disaster risks, thereby demonstrating resilient practices to local authorities, while also building partnerships to strengthen and scale their local actions by gaining access to formal resources. These interventions have supported grassroots-led actions to enhance food and income security through climate-smart agricultural practices, diversifying and enhancing livelihoods, building community infrastructure, adopting nature-based solutions, and ensuring environment protection as well as helping to secure land ownership for enhanced access, control, and use of assets.

From smaller to larger development projects, Initial Environmental Examinations (IEE) and Environmental Impact Assessments (EIA) have been made mandatory. Several studies on seismic risk, CCA, and its impacts on the environment are being undertaken as a regular program to ensure disaster resilient infrastructure. A similar integrated approach as environmental management, disaster risk management, has been instrumental in helping to improve and secure livelihoods for vulnerable people. To further promote such approaches, many government officials/planners from different ministries received orientations on environmentally friendly local governance, disaster risk management, and climate change.

Social institutions, like *Dharma Bhakari*, *Guthi*[17], are functional in Nepal as the safety nets facilitating livelihood issues and promoting DRR, climate change, and environmental management. Micro-financing is practiced at the community level through cooperatives, cultural organizations, and rural development banks. The government, in collaboration with I/NGOs, is imparting training on agriculture and distributing seeds to flood affected communities.

2.5.2 Strengthening preparedness for effective response

Nepal has intensified its efforts to build the capacity of all levels of government to reduce and mitigate disaster risks, and to be better prepared for and better able to respond to disasters. Institutional structures, policies, and strategies are designed for the federal, provincial, and local levels to facilitate DRRM. While response to mega and wider disasters

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17 The Guthi system was established partly to maintain sites with significant cultural and religious heritage and to continue intangible heritage practices such as festivals and funeral rites. (https://digitalcollections.sit.edu/cgi/viewcontent.cgi?article=4205&context=isp_collection)

is led by the federal and provincial governments, local governments have the role and responsibility of first responders and as a single-door mechanism to channel post-disaster response, recovery, and reconstruction mechanisms.

Nepal has initiated preparedness efforts in airports for disasters. Regular simulations based on the plan are carried out at Tribhuvan International Airport by the Civil Aviation Authority of Nepal (CAAN). Domestic airports have also developed contingency plans, and regular simulations have been carried out jointly with the engagement of both civil, security agencies and the public. For emergency response, emergency items are stockpiled in strategic locations. A Humanitarian Staging Area at Tribhuvan International Airport and HSA are being constructed at the provincial level. SAR items are being upgraded and expanded to cover more areas, with the intention of reaching the community level. Regular updates of heavy equipment located in strategic locations are ready for deployment in emergencies, while the capacity and resources of trauma centers are being regularly enhanced.

The Nepali Army has been implementing the Disaster Management Guideline (2077 BS) and Search and Rescue Working Procedure (2079 BS). The Directorate of Disaster Management was established, which constitutes two disaster management battalions and one National Disaster Management Training School. The Nepal Army has developed a robust mechanism to institute a culture of safety to assess disaster resilience and contributed toward the disaster resilience of the communities by training more than 25,000 community members for disaster preparedness and SAR operations.

2.5.3 Risk communication and dissemination

Nepal has institutionalized the BIPAD portal, which provides real-time information about hazards and disaster events, affected populations, and casualties. The BIPAD portal has set an excellent example of how an integrated disaster data repository can help guide informed decision-making at the federal, provincial, and local level. Similarly, a centralized web-based Monitor for Disaster Strategic Action plans (MSDA) mechanism is in place to log and monitor projects being implemented in Nepal that deliver against the National Disaster Risk Reduction Strategic Action Plan (2018-2030). The MSDA is linked with the BIPAD system for cross-linking information on disasters.

The BIPAD portal has developed a disaster data/information management system by pooling credible digital and spatial data are available within different government bodies, NGOs, academic institutions, and research organizations into a single platform. The portal aims to provide crucial information on capacity and resources, such as health institutions, financial institutions, schools, banks, stockpiles, road network, inventories, NGOs, and government agencies, in relation to incidents.

Various sectoral nodal agencies have operated sector-specific database systems, such as Integrated Health Information Management System[18] and Integrated Education Management Information System,[19] which integrate sector-specific data and disaster management information. These data management systems support all three tiers of government and stakeholders in sharing early warning information, risk mapping, response, and emergency operations that help agencies coordinate and carry out timely disaster management actions[20].

Nepal has established a good practice of communicating hydro-meteorological hazards.[21] The systems provide real-time and three-day rolling information and risk warnings due to hydro-met hazards, like rainfall and flood.

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18 http://dohs.gov.np/information-systems/health-management-information-section/and http://hmis.gov.np/. Accessed on 26December 2022.

19 http://iemis.cehrd.gov.np. Visited on 30 December 2022

20 UNESCO and UNICEF (2021). Nepal Case Study: Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia. Page 48/68. https://www.unicef.org/rosa/media/16616/file/Nepal%20Case%20Study%20.pdf

21 http://hydrology.gov.np/ and http://mfd.gov.np/

> The program adopted a people-centered and owner-driven approach led by the NRA. Based on learning from the 2015 earthquake damage reconstruction and recovery program, Nepal produced frameworks, manuals, and guidelines, including guidelines for multiple hazards, for the reconstruction of private houses.
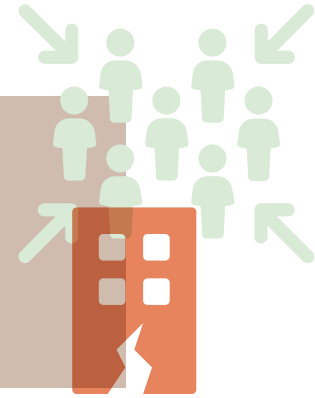
Nepal is promoting an impact-based Multi-Hazard Early Warning System (MHEWS) to cover all hazards and to simplify risk communication to all media and stakeholders. The country is preparing to adopt Common Alert Protocol (CAP) aimed at increasing lead-time for MHEWS. The EWS is supported by enforcement of real-time hazard monitoring mechanism through seismic stations, hydro-metrological stations, lightning detection centers, and regular monitoring of all the major glacier lakes. The EOCs play vital roles in disseminating emergency information for rescue and response during the time of disaster events.

Nepal is developing a risk communication strategy that integrates DIMS (BIPAD portal) to further enhance the country's disaster management communication system. The expanded mass media outreach, especially radio, television, and online news portals have contributed to produce and disseminate DRR content. The media's attention and investment is increasing to produce content on DRR while paying attention to GEDSI considerations. A recent study indicates that there are 8,953 mass media outlets in Nepal, of which, 4,789 are print media outlets, 3,120 are online portals22, 880 are FM radio stations, and 164 are television channels. This shows that there is a huge opportunity to increase the media's role to produce and disseminate quality and comprehensive DRRM information. NDRRMA implements enhanced risk communication through the BIPAD portal, through social media and regular television programs, and by facilitating interactions among stakeholders on a regular basis.

2.5.4 Disaster response and "Build Back Better" for resilient settlements

Nepal implemented an earthquake reconstruction program by following "Build Back Better" principles. The program adopted a people-centered and owner-driven approach led by the NRA. Based on learning from the 2015 earthquake damage reconstruction and recovery program, Nepal produced frameworks, manuals, and guidelines, including guidelines for multiple hazards, for the reconstruction of private houses. Nepal shared its experiences and learning on earthquake reconstruction and rehabilitation by organizing the "International Conference on Nepal's Reconstruction (ICNR)" in December 2021, which concluded with a declaration to strengthen local governments, conserve heritage monuments and sites, strengthen vertical linkages among all tiers of governments, and adopt earthquake-resilient technology, among others. The institutional set-up of NRA enabled partnerships, collaboration, and coordination mechanisms which contributed to the success of the 2015 earthquake reconstruction and realization of the outcomes and goal of the SFDRR.

Nepal is one of the fastest urbanizing countries in South Asia[23]. Urbanization must ensure that risk reduction and resilience is paid due consideration, but seeing this in practice remains challenging. The GoN has planned to set up 10 model cities across the country to increase resilient settlements. MoUD has taken several initiatives that include the preparation of a National Plan of Action for Safer

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22 Center for Media Research Nepal (2022). Media in Provinces in Nepal 2022. Center for Media Research Nepal

23 Various sources of which 2 are cited here. https://twocircles.net/2012may09/nepal_fastest_urbanizing_country_south_asia_world_bank.html and https://gsdrc.org/wp-content/uploads/2015/11/HDQ1294.pdf

Buildings, Guidelines and Procedures for Safe Settlements and Integrated Settlements, following learnings from the reconstruction program.

MoUD developed 185 Integrated Urban Development Plans (IUDP) to address multi-hazard risks and also prepared the National Urban Development Strategy (NUDS 2017), Safer Building Code and Guidelines along with necessary modifications in line with "Build Back Better" principles. The Safer Settlement Implementation Procedure (2019) was implemented in 73 out of 77 districts, which has replaced 170,000 thatched roof houses. The National Building Code (Seismic Design NBC 105:2020) has been revised after 2015 Gorkha Earthquake[24].

Given the growing importance and consequential nature of urbanization and its inevitable intersection with cascading risks and hazards, several multi-stakeholder initiatives addressing these issues have emerged. While the Nepal National Building Code was revised in 2020, strict compliance has been enforced in seismic design of new buildings to reduce risks against future earthquake damages in Nepal. The new National Building Code aims to ensure that cities become inclusive, safe, resilient, and sustainable by 2030, contributing directly to the achievement of SDG11.

For effective response to "Build Back Better," Nepal has developed and implemented relevant programs and policies, including Integrated Procedure for Grant to Disaster Affected Private Houses and Building Code Enforcement. NDRRMA coordinates reconstruction activities by managing multi-donor funded projects and programs.

2.5.5 COVID-19 risk recovery

A key lesson from the COVID-19 pandemic is that development that is not risk-informed is neither inclusive nor sustainable. COVID-19 demonstrated how the effects of shocks in one area can be transmitted throughout value chains, across geographies and communities, and throughout the wider macro-economic system. What started as a global public health concern created economic and social shocks in the country. The GoN strategically responded to COVID-19, maintaining three key strategies:

- Focus on the 10 pillars of response to COVID-19.[25]
- Adopt a cluster approach to respond to COVID-19 with support from the UN[26]. While all the clusters for humanitarian response were activated to the level needed, the health cluster had additional nine sub-clusters.
- Respond through a budgetary mechanism. The GoN increased the health sector budget from 5.11% in fiscal year 2019/2020[27] to 7.8% in 2020/2021.[28] However, the total budget was reduced by 3.8% in 2020/2021. The GoN also coordinated internationally to access international financial and technical support.

With these actions, the government competently performed disaster response with 98.8 percent recovery, limiting casualties to just 1.2 percent (as of December 31, 2022). Nepal administered Covishield, Vero Cell, Moderna, J&J, and Pfizer vaccines, and as of December 31, 2022, doses of 45,533,416 vaccines and additional (booster) 7,972,791 doses were administered.

2.5.6 Learning from COVID-19

The following are Nepal's key learnings from the COVID-19[29] pandemic:

- The country's health sector preparedness was lacking for a pandemic, like COVID-19. Disaster Preparedness and Response Plans (DPRP) prepared at the national and sub-national levels

24 DPNet (2022). Proceedings: Learning and Sharing National Conference on Disaster Risk Reduction (NCDRR)
25 MoHP. (2021). Responding to COVID-19: Health sector preparedness, response and lessons learnt. Ministry of Health and Population, Kathmandu
26 COVID-19 Nepal: Preparedness and Response Plan (CPRP), United Nations in Nepal, January 2021
27 Budget Speech of Fiscal Year 2019/2020, Government of Nepal, Ministry of Finance, 2019
28 Budget Speech of Fiscal Year 2020/2021, Government of Nepal, Ministry of Finance, 2020
29 MoHP. (2021). Responding to COVID-19: Health sector preparedness, response and lessons learnt. Ministry of Health and Population, Kathmandu

focused primarily on recurrent health problems. The capacity to anticipate a pandemic, like COVID-19 was inadequate. It is imperative to build a sustainable health emergency preparedness system to deal with future pandemics.

- The current investment for health facilities and capacity was inadequate to respond to the pandemic, which had more severe financial impacts than the initial investments would have been. It is essential to invest in national health and research systems to enhance laboratory capacity and boost workforce morale.
- Joining hands with the private sector is vital for their potential roles in finance, technology, and supplies, among others.
- The use of uniform and integrated data and reporting systems played crucial roles. Management and sharing of real-time and correct risk information to the right people through the use of advanced technology was of the utmost importance to earn community confidence.
- Strong coordination among three tiers of government and community engagements are important and essential. Despite the existence of institutions at all levels, there is a need to develop a clear coordination mechanism. Local governments played crucial roles to manage their holding centers and isolation camps to respond to COVID-19.
- International support for skills, technology, and funding is vital. Social participation and collaborative approaches helped the country tackle the pandemic.
- Changes in personal behavior, such as hand washing, wearing face masks, isolation, and sanitization helped stem the tide of infections.
- Initially, Nepal considered COVID-19 as a common health issue. As a result, Nepal missed an opportunity to address the pandemic with a comprehensive disaster response approach right from the beginning.

2.5.7 Partnership for resilience

Although Nepal witnessed increasing partnerships during responses to recent events, there is much work to be done to ensure these partnerships are present in all stages of emergency management: before, during, and after events. MoHA recognizes that the federal government has the primary responsibility to reduce disaster risk, but it also recognizes the shared responsibility of other stakeholders. The GoN has increasingly engaged a range of stakeholders, including, *inter alia*, the UN system, governments—provincial and local, multilateral and inter-governmental organizations, civil society, private sector, the scientific community, academic and research institutions, grassroots groups, local communities, including women and youth and key population/social groups at all levels.

A wide range of development partners, especially USAID, AusAid, FCDO, JICA, UN agencies, I/NGOs, World Bank, ADB, Red Cross, as well as many others, including the private sectors, have joined together on GoN initiatives for DRR, humanitarian assistance, recovery, and resilience.

In building partnerships, the government is helping communities respond to disasters and build resilience to recurrent shocks by engaging marginalized and vulnerable people in all stages of project design and management, while also ensuring inclusive development and investing to improve disaster management capacities and systems.

However, government agencies, the private sector, and civil society needs well-established structures for cooperation and clear mandates for effective command during crises. This work will strengthen risk governance and risk understanding across all levels.

DROUGHT

LANDSLIDE

FLOOD

LIGHTNING
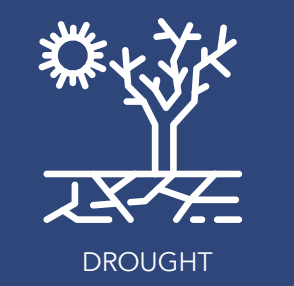
ANALYSIS FOR IMPLEMENTING THE REMAINING HALF OF SFDRR

Building on past experience, the GoN has emphasized proactive DRRM to reduce losses and damage and to build resilience. Regulatory, policy, and institutional frameworks are designed to protect people from disasters. These are reflected in the Disaster Management Act, policies, and plans for reducing disaster risks through a whole of society approach and by enhancing public and private investments in DRRM.

Nepal has aligned the guiding principles of SFDRR into its national plans and programs, complementing it with national indicators to better reflect the country-specific needs and contexts. It has been collaborating with all stakeholders and making necessary institutional arrangements to prevent and reduce disaster risks at all levels. The government is committed to strengthening disaster risk governance, increasing investments, fostering national and international partnerships, supporting risk financing to build a disaster resilient nation, and implementing global and regional frameworks for DRR. Previous experiences from the 2015 earthquake and COVID-19 will pave the way towards achieving SFDRR targets to build a disaster resilient Nepal.

Since it is not possible to analyze progress against all 32 indicators of the DRRNSPA (2018—2030) due to the limitation of disaggregated data, to the assessment highlights major indicators.

3.1 DRR governance

Nepal's DRRM governance is driven by the 2017 DRRM Act and the decisions of the National Council and the National Executive Committee. The Act marks a major progressive shift towards holistic risk reduction and management and provides for resilience-building by updating institutions, methods, and attitudes, supporting local partnerships between government agencies and other actors. Hazards and disasters have high priority in national policy, reflected in the government's budget allocation for DRRM. The shift in power from federal to local governance has given full responsibility for DRRM policy and planning to the 753 newly formed municipalities. Communities and local authorities have welcomed the opportunity to have greater decision-making, but many felt overwhelmed by complex portfolios, including how to ensure a functioning governance system.

One of the biggest achievements of Nepal during the first half of the Sendai period is Nepal's reconstruction experience. The NRA led the preparation of Post-Disaster Recovery Framework, which laid the foundation for the development of reconstruction programs and financing plans for all sectors. NRA made significant achievements in reconstruction and rehabilitation tasks by adopting the principle of "Build Back Better."

The GoN reaffirmed the need for a decentralized approach for effective disaster response. Since disaster response is a bottom-up, with a local level disaster response mechanism as its fundamental pillar. However, the disaster response competency of local authorities in Nepal is not enough to render effective response. Although the DRRM Act (2017) as mandated local authorities to carry out effective preparedness activities, to arrange and deliver relief materials, and to carry out effective response, the prevailing knowledge, understanding, and institutional capacity of disaster risk at the local level is inadequate to do so.

Similarly, Nepal's capacity to respond to mega disasters is not up to par. Nepal responded to and managed recent mega disasters, like COVID-19, and other major flood and landslide events, but with great effort and support from national and international partners and at the cost of development. Disaster incidents must trigger the improvement of disaster governance, however, every major disaster incident in Nepal has triggered international advocacy and attention, which may hinder the DRRM process in the long run. Nepal will continue to strengthen regional and global coordination with existing mechanisms, such as the South Asian Association for Regional Cooperation (SAARC) and The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), especially with its immediate neighbors, China and India, with whom Nepal shares regional climate change issues that are linked by air and water.

Specifically, the SFDRR can act as a link between other global agendas and national policies when it comes to DRR strategies, plans, laws, and regulations. Breaking down barriers and institutional silos is important for strong governance mechanisms to enable the engagement and participation of relevant stakeholders from CCA, DRR, and development planning, among others.

3.2 DRM, preparedness, and culture of safety

With a priority to engage whole of the government into risk reduction, the GoN has fostered partnerships with non-state actors, the private sector, and international agencies for effective DRR and response and to promote a culture of safety at all levels. However, gathering and developing comprehensive risk information based on technically sound risk assessments remains a challenge in Nepal. Despite available products for hazard assessments and risk mapping, these approaches rely on project-based exercises, or small-scale projects in specific localities. A review

of national disaster data indicates that while the death toll from floods is decreasing, the fatalities caused by landslides are increasing over the years.

Realizing the existing practices for conducting hazard, vulnerability, and capacity assessments are inadequate to support prioritizing investments, the GoN has taken ownership to prioritize disaster preparedness by collecting local-level risk information for urban and rural municipalities by installing EWS, and through hazard mapping and instituting RSLUP.

The government has prepared a working procedure for a new Disaster Management Fund, which has provisioned 70 percent of its resources on DRR and the remaining 30 percent on relief and SAR operations. Although the fund has been utilized for relief distribution to people affected by monsoon-induced disasters to reconstruct houses, unhealthy competition on relief measures has necessitated the allocation of additional investments. There should be sufficient funds available to operate all DRRM activities. Well-equipped local actors, both financially and technically, can play a more active role in implementing DRR. As investment is necessary to develop an effective mechanism to monitor and evaluate the progress and success of national DRR activities, further investment is required to enhance the capacity of local actors.

Nepal has advanced towards multi-hazard impact-based EWS with improved forecasts and networks of EOCs, including systems to organize trained volunteers. However, despite the country's success institutionalizing and localizing DRRM, making communities in Nepal's mountainous terrain and flood plains more resilient to unpredictable disasters will require increased investment and a wide range of solutions. Some solutions include building inclusive and resilient physical and social infrastructure, and adapting innovative tools and technologies with access, representation, and meaningful participation of women, children, senior citizens, persons with disabilities, and people from economically and socially marginalized communities.

A glimpse of bioengineering works conducted
in Lamkichuha Municipality of far-western Nepal
© Tayar Nepal for USAID

BUILD BACK BETTER

As changing climate leads to changes in the frequency, intensity, spatial extent, duration, and timing of weather and climate extremes, natural hazards, like droughts, heatwaves, floods, landslides, and Glacial Lake Outburst Floods (GLOFs) are all projected to intensify, which can place human lives at risk.[30]

Managing trade-offs between sustainable development and economic growth in a context characterized by numerous hazards and severe impacts of climate change is increasingly important and necessary to consider in development planning. Developing hydropower facilities in regions highly prone to GLOF events and seismic activity is not only endangering the settlements along the downstream river basins, but it also threatens the continuity of electricity output and industry. Ensuring their seismic resistance and considering the future effects of glacier melt and changes in river flow volumes is necessary before starting the construction phase. Hydropower facilities may also impact the fish stocks and ecological systems in adverse ways, further necessitating that environmental impact assessments be strictly enforced and monitored—not just for dams, but for all development taking place in a fragile setting.

In the next eight years, the GoN will extend comprehensive resilience building programs at the provincial and local levels to address disaster and climate risks facing Nepal's urban areas. More efforts will be made to improve the understanding of disaster risk in all dimensions of exposure, vulnerability, and hazard characteristics, including: post-disaster recovery and reconstruction, strengthening of disaster risk governance; accountability for disaster risk management; preparedness to "Build Back Better;" recognition of stakeholders and their roles; mobilization of risk-sensitive investments to avoid creating new risks; resilience of health infrastructure; and strengthening of international cooperation and global partnership.

Lessons from the 2015 earthquake and COVID-19 pandemic have underscored the need to mainstream GEDSI at different stages of DRRM—from pre-disaster phase to during disaster and post-disaster phase. The government will continue to carry out GEDSI-responsive risk assessments and vulnerability analyses, EWS and indicators at federal, provincial, and local levels. Targeted interventions in labor-intensive DRR activities will also provide much-needed jobs and economic

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30 World Bank Group and Asian Development Bank 2021; NASA. 2020. "Climate Change Could Trigger More Landslides in High Mountain Asia." February 11, 2020. https://www.nasa.gov/feature/goddard/2020/climate-change-could-trigger-more-landslides-in-high-mountain-asia; Bajracharya, S. R., S.B. Maharjan, F. Shrestha, T.C. Sherpa, N. Wagle, A.B. Shrestha. 2020. Inventory of Glacial Lakes and Identification of Potentially Dangerous Glacial Lakes in the Koshi, Gandaki, and Karnali River Basins of Nepal, the Tibet Autonomous Region of China, and India. Research Report. ICIMOD and UNDP.

recovery opportunities in the short to medium-term, while reducing disaster risks through structural and non-structural measures.

The devolution of DRR, preparedness and response, decision-making and financing is important due to the remoteness and isolation of many rural communities. Rural communities bear the brunt of disasters with a time lag between disaster occurrence and assistance due to accessibility limitations. As local governments are relatively newly formed entities, it is essential that the federalization of the DRM agenda is supported to enable communities to enhance resilience—particularly through capacity building of local governments.

Strengthening disaster information and EWS is pivotal to enable risk-informed decision-making. Hydrometeorological services are a basic decision-making, early warning, and planning tool to enhance resilience in sectors important for jobs, climate resilience and growth, including energy, agriculture, water, tourism and aviation. The government will scale up investments in hydrometeorological observation networks that will lead to improved weather and climate information services which are critical for long-term adaptation and resilience planning and investments. Improved EWSs, with timely and accurate weather alerts, will also boost the disaster preparedness and response capacity of federal, provincial and local governments.

3.3 Risk-informed decision-making and investment

Nepal has made substantial progress in endorsing Acts, policies, and procedures for DRM governance at the federal, provincial, and local levels. Under the federal system, local governments are mandated to manage local services and develop plans and projects, including disaster management. Support for provincial and local governments in fulfilling their DRR legal mandate and to manage local to mid-scale disasters is a key priority for the resilient development of Nepal.

As provincial and local governments are a comparatively new institutional set-up, they require huge technical and human resources to take over DRRM responsibilities. Thus, they require better understanding in mainstreaming and integrating DRRM into local development plans and programs, as well as more investments at the local level.

To implement the SFDRR, its Target E aims to "substantially increase the number of countries with national and local disaster risk reduction strategies by 2020." This is the crucial process where the global agenda for DRR is translated into national and local policies (strategies, plans, laws, and regulations). The existence of national and local DRR strategies is important because the execution and enforcement of these policies can allow us to move from words into action. To achieve this target, efforts must focus not only on the creation of national and local DRR strategies, but also on how these strategies demonstrate coherence with global agendas as well as with specific local contexts, priorities, and needs. GoN encouraged to invest in DRR and strategies that go beyond 2022 must be present in these national and local public policies.

One argument in support of the establishment of national and local policies is that tackling risk factors through disaster risk-informed public policies and investment is more cost effective than relying mainly on post disaster response and recovery. Previous disaster experiences have indicated that plans for recovery, rehabilitation, and reconstruction need to be prepared in anticipation and before the potential occurrence of a disaster. Effective public policies consider existing and potential hazards and disaster risks. This is one clear way for allowing development and economic growth to be sustainable.

3.4. Disaster risk financing

The GoN has endorsed the Disaster Management Fund Mobilization Procedure (2079). NDRRMA is mandated to mobilize the fund, which is functional at the federal, provincial, and local levels to meet

expenses related to disaster management activities and relief operations. A substantial portion of the central disaster management funds are expected to be mobilized on immediate risk reduction and preparedness activities. Although few initiatives have been taken targeting this area, few aspects are yet to be addressed. Disaster risk financing (DRF) mechanisms and instruments must be implemented to realize a climate and disaster-resilient society. The government currently has few *ex-ante* DRF instruments in place compared to emergency response, recovery, and reconstruction requirements after major disasters *(ex-post)*[31]. The Prime Minister's Disaster Relief Fund is the major source of funding for disaster relief in Nepal.

The implementation of the National Strategy for Disaster Risk Financing to manage financial resources to reduce disaster losses and enhance the resilience of individuals, societies, and the nation will go a long way to create an enabling mechanism, such as tax levies to generate financial sources for DRM funds at all levels of government. It will adopt a risk-layered approach to support both *ex-ante* and *ex-post* DRF, which is expected to contribute to reduce financial risk from disaster events by enabling disaster risk-informed budgetary allocation.

3.5 Transferring disaster risk

Social security can help build the resilience of poor and vulnerable households to prepare for, cope with, and adapt to climate shocks. Current social security systems in Nepal have limited adequacy and coverage for the poor and vulnerable. Only about 55 percent of households in the bottom quintile receive any social transfer in Nepal compared to the South Asia average of 80.7 percent.[32] Crucially, the current social protection system is not shock responsive. Delivery of relief to affected households is often ad hoc and fails to

use the existing reach of programs and delivery systems. Social security and DRM systems as well as humanitarian assistance operate largely in parallel. The vulnerable are often identified post-disaster following needs assessments. This means that disaster response is often delayed, beneficiary identification is contested, and not all who need assistance receive it.

The existing risk transfer and social security system in Nepal will be mobilized for more efficient delivery of relief and recovery. Given the coverage gaps, simply delivering additional assistance to those already covered by social security programs is not sufficient. Existing delivery systems will be leveraged and comprise information systems, outreach mechanisms, enrollment processes, payment systems, monitoring and evaluation, grievance redressal systems, and the institutional and human resource capacities of the programs.

3.6 Coherence for resilience

Reducing vulnerability and enhancing resilience is a key desired outcome shared across the SDGs, Paris Agreement, and SFDRR. Progress to create less vulnerable and more resilient societies can also be instrumental to achieve progress in other international efforts, such as the Agenda for Humanity, the New Urban Agenda, and the Addis Ababa Action Agenda, among others. The almost simultaneous adoption of these agendas presents an opportunity to work on mutually reinforcing policy areas.

For example, reducing exposure and vulnerability of poor people to disasters or building resilient infrastructure can make specific contributions that help achieve the overarching aim of the SDGs to eradicate poverty in all of its forms and dimensions. Considering direct and indirect references, 25 targets in 10 out of the 17 SDGs are related to DRR.[33]

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31 ADB. 2019. The Enabling Environment for Disaster Risk Financing In Nepal - Country Diagnostics Assessment. https://www.adb.org/sites/default/files/publication/521681/environment-disaster-risk-financing-nepal.pdf

32 Central Bureau of Statistics. 2020. Nepal Multiple Indicator Cluster Survey 2019, Survey Findings Report. Kathmandu, Nepal: Central Bureau of Statistics and UNICEF Nepal.

33 UNDRR, "Disaster Risk Reduction and Resilience in the 2030 Agenda for Sustainable Development" (Geneva, 2015).

Earthquake hit children after receiving learning materials and recreational kits in Dhading district.
© Deependra Joshi

In responding to the COVID-19 crisis, the government established a COVID-19 Crisis Management Coordination Center (CCMC). The main objective of the CCMC was to carry out response in an integrated manner through a unified group of representatives from the federal, provincial and local levels of government, as well as the security departments and all other stakeholders.

3.7 Institutionalizing SRSP

Improving the resilience of the poor and vulnerable as well as the delivery of relief and recovery in response to shocks requires further strengthening of social protection delivery systems and mobilizing the systems by institutionalizing Shock Responsive Social Protection (SRSP). It also includes the establishment of an integrated social registry, improvement of payment systems, and expansion of coverage to the poor by operationalizing social security allowances for the economically poor. The Prime Minister's Employment Program, while supporting resilience through transfers, also promoted improvement of small-scale adaptive infrastructure, such as water conservation and landslide erosion control.

The government will provide a robust framework for the integrated social registry through operational guidelines. In addition to cash transfers and cash-for-work schemes, investments in climate-smart agriculture have the potential to improve the resilience of the rural poor and vulnerable, who depend on agriculture for their livelihoods and for many multi-local households, for whom food production provides a safety net. Applying a disaster lens to social protection will create an enabling environment for more small-scale infrastructure programs to support climate resilience (including irrigation, drainage and water harvesting). The Prime Minister's Employment Program could similarly focus on climate resilient infrastructure.

In addition to social assistance, expanding the coverage of insurance products can help promote household resilience post-disaster. Nepal's insurance market is still nascent and insurance penetration remains low due to a lack of suitable products and limited awareness about insurance.[34] Crop and livestock insurance is available and subsidized at an 80 percent premium rate; however, uptake remains low. A comprehensive strategy to combine social assistance and insurance schemes, including micro-insurance products for the poor, is

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34 World Bank. 2022. Assessment of Contingent Liabilities from Natural Disasters in Nepal.

essential. This could include a customized insurance awareness program for disaster insurance, or micro-insurance and digital financial services to prevent, reduce, and manage disaster risks.

Institutionalizing SRSP entails establishing a policy framework to enable the mobilization of existing systems for relief and recovery, the amendment of existing program guidelines to enable their flexibility to respond to shocks, and the availability of contingent financing. While there has been progress at the policy level, more remains to be done to implement an SRSP framework. The government will continue to work through inter-ministerial and inter-governmental coordination to address underlying disaster risk factors and to contribute to sustainable development.

3.8 Being prepared and "Building Back Better"

Nepal implemented an earthquake reconstruction program by following the principles of "Build Back Better," (BBB) adopting a people-centered and owner-driven approach. Based on learnings from the 2015 Earthquake Damages Reconstruction Program, Nepal produced frameworks, manuals, and guidelines related to BBB and reconstruction of private houses and conducted a series of landslide risk assessments, categorized households and designed support system accordingly. The "Build Back Better" approach would have been more meaningful if it had integrated hazard, vulnerability, risk, and capacity information into the conventional land use planning to incorporate a risk-sensitive element.

The steady growth of disaster risk and loss due to increased risk exposure, combined with lessons learned from past disasters indicates the needs to further strengthen disaster preparedness for response and recovery at all levels. It is increasingly clear that investing in DRR leads to a faster recovery. Establishing and integrating the desired recovery outcomes early in a disaster event

can go a long way to realize desired outcomes sooner. Nepal's experience indicates that disaster preparedness needs to be strengthened for more effective response and ensure capacities are in place for effective recovery. Disasters have also demonstrated that the recovery, rehabilitation, and reconstruction phase is an opportunity to "Build Back Better" through integrating DRR measures.

The GoN will continue to enhance disaster preparedness and "Build Back Better" in recovery, rehabilitation, and reconstruction by strengthening disaster preparedness for effective disaster response, development of multi-hazard EWS for disaster preparedness, promotion of community-based DRR, strengthening of risk communication, and capacity building for SAR, to increase interest around a better understanding of the challenges, enablers, and barriers to "Build Back Better."

3.9 Disaster data, monitoring, and accountability

Nepal introduced a comprehensive and integrated Disaster Information Management System (DIMS) known as the BIPAD portal to strengthen risk information-base, which is currently being localized. The portal is built on the concept of creating a national portal embedded with independent platforms for national, provincial, and municipal governments with a bottom-up approach for a disaster data partnership.

The data integrated in the system facilitates disaster communication and post-disaster event coordination, in line with the recent prioritization of disaster monitoring and data acquisition. This is expected to further promote quality, timely, and disaggregated data collection.

Although a strong linkage was established among the institutions and agencies involved in forecasting, managing, and assessing risks and responses, the process of collecting data to monitor 32 indicators under four priority areas is challenging, as it requires

fostering data partnerships at multiple tiers of government and with other relevant stakeholders.

While Nepal is committed to enhancing the means of implementation with stronger national commitment, there is a need for equally vigorous and enhanced levels of partnerships in all dimensions to accelerate the implementation of the SFDRR. Transformative actions must be taken by all stakeholders to speed up and scale up activities to achieve the successful implementation of SFDRR in the years ahead.

3.10 Beyond MTR

Since its adoption, the SFDRR has guided a wide range of measures that the government and stakeholders pursued to prevent new and reduce existing disaster risks through the implementation of the DRRNSPA. Based on learnings from the April 2015 earthquake and Karnali floods and landslides, the GoN stands committed to capture the need for integrating disaster and climate change risks by articulating the need for an improved understanding of disaster risk in all its dimensions of exposure, vulnerability, and hazard characteristics; while also strengthening disaster risk governance, improving accountability for disaster risk management; and strengthening international cooperation and global partnerships.

While the government has always expressed its commitment towards the effective implementation of the SFDRR, it has also realized that the goals will not be achieved without the same level of commitment and integration at the provincial and local levels. Dedication and coordination among the three tiers of government and strengthening partnerships with all is necessary to meet the core commitments of the SFDRRR.

Nepal will continue to prioritize mainstreaming DRRM in the periodic, sectoral plans, annual program, budget allocation, implementation, and monitoring to comprehensively address the issues of DRRM.
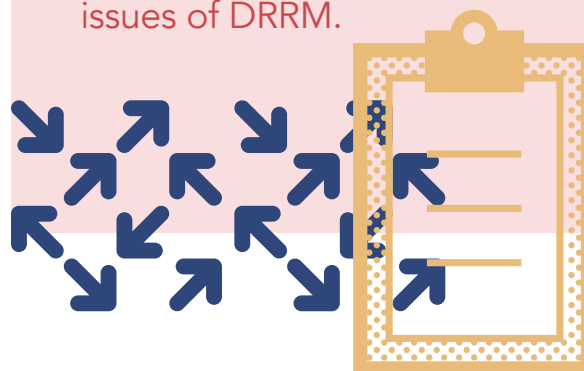
Nepal will continue to prioritize mainstreaming DRRM in the periodic, sectoral plans, annual program, budget allocation, implementation, and monitoring to comprehensively address the issues of DRRM. It will also spearhead actions to localize DRR and enable leadership of local actors in institutionalizing and implementing acts, plans, and policies. Since the provincial and local structures were created during the SFDRR enforcement period, efforts to develop and consolidate their legal and institutional rules and regulations and to develop plans and program were carried out. During the past seven years, they have steadily built the necessary foundations to build a safer, more adaptive and resilient nation from disaster risk for sustainable development. The federal government has initiated capacity building programs at the provincial and local levels to help internalize and mainstream the DRRM agenda.

DROUGHT

LANDSLIDE

FLOOD

LIGHTNING
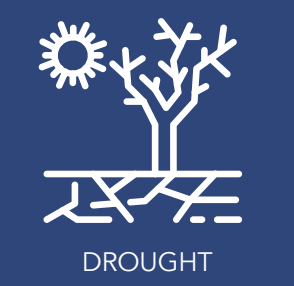
KEY CHALLENGES AND PRIORITY ISSUES

Nepal has made commendable progress achieving the targets laid out in the DRRNSPA that have ensured policy coherence among global and national frameworks on DRR, CCA, and the SDGs. The process of crafting the plan involved a wide range of stakeholders that shared a common vision of reducing risks and enhancing disaster resilience.

Seven years into the implementation of SFDRR, there is a need to identify and develop synergies from national to local levels to ensure coordinated and coherent action on DRR across different sectors of government. This would help clarify who oversees driving processes, such as mainstreaming for sustainable development, strategic advice, monitoring of implementation, and reporting on impacts, setting policies, or seeking budget allocations. This is also related to the accountability of different tiers of government. It includes the building and reinforcing of a strong sense of ownership of DRRM and the shaping of local governments' capacities. It equally includes conceiving mechanisms that allow bottom-up DRR initiatives, originating at the community level and contributing to shaping DRR policy and programs at all levels.

This review of progress against the SFDRR highlighted that Nepal has made good progress in life saving activities, such as disaster preparedness and response and early warning. However, disaster risk is yet to be adequately factored into investment and development decisions with delays in effectively implementing policies and legislations to bear on the ground. Nepal has developed policies, legislative and institutional systems for disaster risk reduction, but they are challenged to address risk accumulation on the ground due to inadequate capacity for disaster risk governance.

Despite some good practices and DRR initiatives, the frequency and intensity of disasters are increasing. This is compounded by inadequate priority to DRR, resulting in increased vulnerability to disasters, particularly among the poor and the extremely vulnerable groups. The risk is deepened by changing demographics, technological and socio-economic conditions, development within high-risk zones, environmental degradation, climate change, competition for scarce resources, disability, and the impact of epidemics. There has been more emphasis given towards disaster relief rather than holistic approaches including planning, preparedness, response, and recovery.

4.1 Key challenges

Nepal's key challenges to deliver DRRM objectives include the following:

1. The overall challenge for Nepal is to effectively deliver its DRRM strategic action plan and meet the targets within the stipulated timeline. Despite the adoption of a significant number of policies and strategies for DRRM, achieving targets is challenging. Local and provincial governments are comparatively new and they require huge technical and human resources to take over DRRM responsibilities.
2. National capacity to respond to mega disasters is not up to the international standard. Nepal responded and managed to recent mega disasters, like the 2015 earthquake and COVID-19, but with great effort and support from all levels of national and international partners, and at the cost of development. Nepal requires skills, like SAR operations and others, at par with international standards.
• Financing DRRM is another challenge for Nepal.

Nepal's recent disaster experience has shown that the country's capacity to anticipate mega disasters with high confidence and prepare for them is inadequate. Such mega disasters could be due to economic shocks, biological hazards, climate events, seismic or geological hazards.

A key hurdle is the financing gap and capacities across key federal agencies and multiple sectors, plus at the provincial and local levels. Firstly, the overall resources available to the government from its revenue are limited, and secondly, priority for financing DRRM is always secondary to development programs.

3. Nationwide multi-hazard risk assessment is required to further identify underlying factors and multi-hazard EWS needs to be materialized to further strengthen existing capacity.

4. Disaster trends indicate high risk of fire incidents, (household, urban fire, and forest fire) which are responsible for substantial loss of lives and

properties in Nepal. As per the government arrangements, local levels are responsible for managing fire and many of them are struggling to maintain firefighting capacities. As it demands high range of sophisticated equipment, skills and maintenance, even resourceful local levels are having hard time to manage it. There is neither any backup at federal level nor at the provincial level to support them. In this critical context, it is high time for federal government to develop firefighting capacities at federal level with optimum preparedness response capacity.

5. Disasters in Nepal have regional and international linkages—especially for climate events that include shared weather systems with cross-border impacts. There is a need for regional coordination and collaboration to address the trans-boundary impacts of disaster. Regional weather and trans-border river monitoring and sharing of information are equally challenging.

6. Nepal's recent disaster experience has shown that the country's capacity to anticipate mega disasters with high confidence and prepare for them is inadequate. Such mega disasters could be due to economic shocks, biological hazards, climate events, seismic or geological hazards.

4.2 Priority issues

Nepal has expressed its commitment to resilient development aligned with the SFDRR, SDGs, and the Paris Agreement. DRR and climate resilience issues are incorporated into implementation priorities in the highly relevant targets such as SDGs 11 and SDGs 13. Nepal is also integrating SFDRR into country interventions based on its risk profile, critical gaps, and needs. With the endorsement of the DRRM Act, the government is strengthening institutional arrangements amongst relevant agencies and different levels of authorities under the federal system. Revision of existing laws and regulations pertaining to DRR is envisaged to address the overlap, conflict, or gaps in the legal provisions, and the process remains a high priority in the immediate future.

However, collecting, predicting, analyzing, and managing disaster and climate related data remains inadequate, and it is not accessible to many of the local-level planners nor to the private sector. To support the process of prioritizing investments, and to further the understanding of sectoral impacts of climate change and disasters to vulnerable sectors, data collection and analysis will be reinforced at all levels of government through technical support and capacity building. One remaining need is to collect local-level risk information based on levels of risk for all urban and rural municipalities.

Risk information can be gathered by conducting multi-hazard risk assessments based on detailed sectoral data. Systematic collection, management, and consolidated of data from different sources is considered an essential start with risk analysis, post-disaster needs assessments, and the country's progress monitoring against SFDRR targets. NDRRMA, in conjunction with development partners, is strengthening DIMS in response to this need. Other priorities include setting up end-to-end multi-hazard early warnings, increasing public investment in resilient infrastructure, strengthening emergency response capacity, and improving standards for SAR operations.

Localization of DRR is another area of high priority for the GoN. In a context characterized by limited resources and inadequate local capacity, the ability of provincial and local level disaster authorities to effectively respond to and manage disaster events will be rapidly enforced. Given that local actors are usually the first responders, the success of immediate rescue often correlates largely with their available equipment and capacity to instigate operations. Empowering provincial and local governments to assume effective and efficient roles in leading DRRM activities in their respective localities will be increasingly emphasized in future.

DROUGHT

EARTHQUAKE
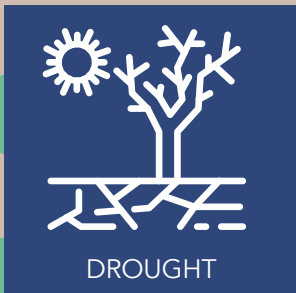
FLOOD

LANDSLIDE

CONCLUSION AND WAY FORWARD TOWARDS 2030

4 CHAPTER

5.1 Conclusion

Nepal has achieved remarkable progress in disaster risk planning and implementation, primarily in terms of reducing the risk of disasters and natural hazards, such as floods, landslides, drought, earthquakes, and lightning. The government has prioritized mainstreaming DRR into Nepal's development, setting an agenda for action in the DRRNSPA that directly links the SFDRR to Nepal's specific context.

Since the passage of the landmark legislation (DRRM Act) and the establishment of NDRRMA, the government issued policies, guidelines, regulations, and implemented program and activities to ensure the effective implementation of the law. The government continues to work towards the goal of "reducing existing disaster risk and prevention of new disasters" by valuing the role of strong institutions as the foundation to implement DRRNSPA. Efforts have been made to formulate policies and plans, enhance systems and procedures, and build capacity from the national to provincial and local levels. While the institutional set-up for DRRM continues to evolve amidst the increasing magnitude and impacts of disasters, government and non-government stakeholders equally recognize the need to work on the effective implementation of formulated plans and programs to better reach the most vulnerable communities.

The process of implementing DRRNSPA supports the development of integrated approaches to adaptation, sustainable development, and DRR in a way that creates an enabling environment to mainstream and upscale gender responsive policies and promotes female participation and empowerment. However, the risk experienced by vulnerable communities during disasters extends beyond the spheres of policy and risk reduction interventions; taking action to protect and harness their knowledge and capacities is also a function of social and cultural norms, access to resources and opportunities (including information and decision-making authority), and the structures of political and economic power.

The capacity and vulnerability of at-risk communities, including women, children, indigenous people, elderly, poor, and persons with disabilities is inextricably linked with larger development issues. In order for the SFDRR to evolve from a technical policy directive on disaster management into a forward-looking, inclusive strategy for DRR, the SFDRR implementation process in the remaining years must take a broader approach to gender inclusion in the current stage of implementation and monitoring.

Nepal's DRRM initiatives are especially notable, with the constitutional provision and enactment of the DRRM Act. The legal and policy provisions have marked a paradigm shift in disaster management in Nepal, towards strengthening legal frameworks, policy and planning, organizational aspects, institutional capacities, and partnerships for DRM. Nepal has been steered by the principles of DRR and allocated tasks to the three-tiers of government with sole and concurrent responsibility for disaster management according to current legislation.

The DRRNSPA, framed within the objectives of the DRRM Act and SFDRR, took forward the strategic priorities and actions that guide DRR initiatives in Nepal. Nepal should now focus its initiatives on the effective implementation of DRRNSPA to

meet the international obligations and to make Nepal resilient to any future disaster. The reported incidences of disasters show water-induced disasters claiming most of the loss and damage in Nepal. Other seasonal disasters, including fires, have occurred significantly higher economic losses and fire incidents are much more concentrated in urban areas. Localization of policies, resources, capacities, and institutions were key priorities during the period under review. There was substantial progress in establishing disaster risk management funds, and remarkable progress towards meeting the agenda of localization of strategies at the sub-national and local levels.

A key learning is to help provincial and local governments understand risk and take appropriate measures to address climate and disaster risks through strong annual monitoring mechanisms. In this whole process, ownership, acceptability, and commitment of provincial and local governments and other stakeholders become very important. The aim is to support national, provincial, and local stakeholders to internalize the severity of risk and urgency of response measures. The ultimate goal is to mainstream a disaster risk agenda within the local development policy and practices and to empower governments towards disaster resilient development pathways.

Disaster management, as delineated by constitution, is a joint responsibility of all spheres of government. Governance towards risk reduction and management approach from traditional response-centric approach and new DRRM Act, policy and strategic action plan is in place. Provisions have been made for institutional arrangements of separate entity and collaboration structures at all levels of government. In backdrop of these policy and institutional arrangements, desired momentum to DRRM in Nepal is yet to be achieved. Hence, it is time to revisit the functioning of policy and institutional instruments and find a holistic approach for better results.
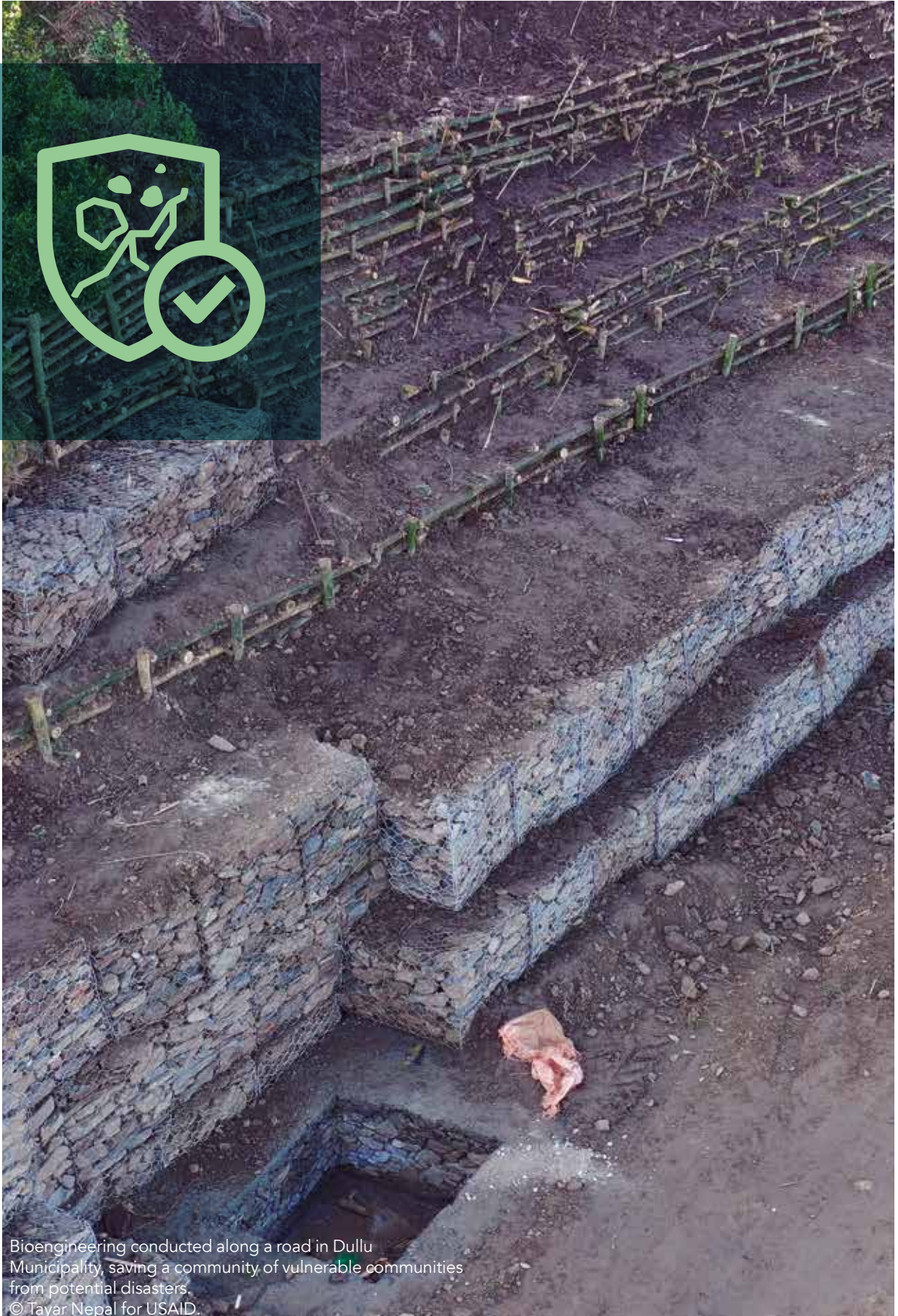
5.2 Way forward

Despite several challenges, Nepal is striving hard to reduce disaster risks and improve its response mechanism. Based on the progress made in the past seven years since the implementation of the SFDRR and lessons learned from past efforts responding to disasters, Nepal enacted the forward looking DRRM Act (2017) and DRRNSPA. For Nepal, the task ahead is to deliver the policies into action across the three tiers of government and among stakeholders. Based on the national priority, regional and global commitments, key areas of focus in the coming years for DRRM should include the following:

1. Nepal should focus on strengthening DRRM governance and technical capacity at federal, provincial, and local levels. Working documents should be developed and adopted, including guidelines for localizing national DRRM strategic action plans, multi-hazard risk assessment tools and methodologies, preparing risk sensitive development plans, and embedding risk in investment decisions.
2. The Disaster Information Management System (DIMS) should be fully strengthened, maintained, systematized, and operationalized in all 753 local levels (nationwide) for real-time data sharing. DIMS will ensure disaggregated information by social groups (gender, age, disadvantaged and marginalized groups, indigenous people, disability, etc.) in addition to hazards and impacts to different sectors at various levels according to geographical location.
3. Further efforts are needed to enhance and strengthen regional and global coordination and collaboration, especially with Nepal's immediate neighbors, China and India, with whom Nepal shares regional climate change issues and disasters that are linked by air and water.
4. Focus on the assessment of multi-hazard disaster risk at the national, provincial, and local levels to provide risk information to development programs.

5. Facilitate greater investment in risk reduction, emergency, response preparedness, and recovery efforts with diversified financing arrangements to ensure adequate resources are available to support long-term recovery. Efforts to "build back better" are too often undermined by a lack of financing, leaving impacted communities with the same or worse disaster risks, and with diminished development prospects. Both national and international financial assistance could be sought for DRRM. Collaboration with the private sector will be promoted for DRR and resilience at different levels, while also creating an enabling environment to build resilience of the investors' own business too.

6. Nepal is one of the most at-risk countries for climate impact, with an unprecedented rise in the nature and scale of climate change-related disasters. Climate funds need to be utilized for risk mitigation and other DRR measures, for which Nepal will enhance increased advocacy and outreach with the international DRR community to agree on a common agenda for a safer world.

7. Continuate to promote and develop inclusive policies in disaster management with a key focus on vulnerable communities at all phases of disaster management.

Security forces and firefighters work together to extinguish a fire at Balaju Industrial Area in Kathmandu. © APF Nepal

Bioengineering conducted along a road in Dullu Municipality, saving a community of vulnerable communities from potential disasters.
© Tayar Nepal for USAID.

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Annex 2: Targets of DRRNSPA

S.N.	Indicator	Baseline (average till 2015)	Short Term (by 2020)	Medium Term (by 2025)	Long Term (by 2030)
1.Substantially reduce national disaster mortality rate					
1.1	Annual average disaster mortality (except roads accident)	900	400	300	225
1.2.	Annual average mortality by roads accident	2,000	1,700	1,200	700
2.Substantially reduce the number of disaster affected people nationally					
2.1	Annual average number of families directly affected by disaster	132,000	110,000	80,000	65,000
2.2	Annual average number of injured people by disaster	1,800	1,600	1,100	900
2.3	Annual average number of people injured by road accident	13,000	11,000	8,000	5,000
2.4	Annual average number of houses damaged by disaster	30,000	25,000	20,000	15,000
3.Significantly reduce the direct disaster economic loss in national GDP					
3.1	Annual average direct disaster economic loss in national GDP	2%	0.5%	0.2%	0.1%
4. Substantially reduce disaster damage to critical infrastructure and disruption of basic services, including through developing their resilience					
4.1	Developing resilience of health facilities by retrofitting		750	900	1200
4.2	Developing resilience of classrooms by maintenance and retrofitting		19,500	25,000	30,000
4.3	Developing resilience of school buildings by retrofitting		750	1,250	1,750
4.4	Developing the model schools for disaster risk reduction among the existing schools		500	1,000	1,500
4.5	Developing resilience of public and Government buildings by retrofitting		2,500	5,000	7,000
4.6	Developing resilience of cultural heritages by retrofitting		130	200	300
4.7	Developing resilience of airports by retrofitting		7	14	21
4.8	Developing resilience of existing powerhouses and dams by retrofitting		21	56	91
4.9	Developing resilience of power sub-stations		42	112	182
4.10	Developing resilience of water supply structures by repairing and renovation		3000	4500	6000

4.11	Percentage of the implementation of Integrated Water Resources Management Plan		25	40	60
4.12	Glacial Lake Outburst Flood risk reduction in high-risk glacial lakes (number)	2	3	5	7
4.13	Protection of riverbank by bio-engineering Technique (KM)	1,675	4,500	7,225	10,000
4.14	Protection of Watersheds (Number)	3,346	3,900	4,448	5,000
4.15	Protection of lakes, Wetlands, and ponds (Number)	1,727	2800	3909	5000
4.16	Developing climate smart villages		50	113	170
4.17	Developing climate smart agriculture		150	333	500
5. Prepare disaster risk reduction strategy and action plan at provincial and locallevels					
5.1	The percentage of province and local levels having DRR strategy and action plan		100	100	100
5.2	Percentage of development of mechanism to increase inter and intra coordination and partnership between federal, provincial and local levels and stakeholders		100	100	100
5.3	Percentage of Government agencies involved in resource management and implementation for recovery, rehabilitation and reconstruction based on "Build Back Better" principle		100	100	100
6.Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments					
6.1	Percentage of the area that has established multi-hazards monitoring and early warning system in proportion to the total area of the country		50	70	100
6.2	Percentage of population receiving early warning via local or national information system in proportion to the population of disaster affected area	20	50	80	100
6.3	Percentage of local levels in disaster risk prone areas having forecast based preparedness plan		100	100	100
6.4	Percentage of local levels capable of disseminating locally useful disaster risks information and assessment to the general people		20	50	100
6.5	Percentage of population evacuated to safe places from disaster Prone areas after receiving early warning	25	50	25	100

Annex 3: List of contributors/organizations in the preparation of MTR report

Names	Organization
Mr Binod Prakash Singh, Secretary	MoHA
Mr Anil Pokhrel, Chief Executive	NDRRMA
Mr. Rameshwor Marttha, Joint Secretary	NDRRMA
Mr. Pradip Kumar Koirala, Joint Secretary	MoHA
Mr. Rudra Singh Tamang, Joint Secretary	MoFAGA
Ms Anita Niroula, Joint Secretary	NDRRMA
Mr. Rameshwor Marahattha, Joint Secretary	NDRRMA
Mr. Tulsi Prasad Dahal, Under Secretary	MoHA
Ms Rama Acharya Sebedi, Under Secretary	MoHA
Mr. Rishi Raj Acharya, Under Secretary	MoFAGA
Ms Hira Devi Poudel, Under Secretary	NDRRMA
Ms. Arati Sah, SDE	MoPIT
Mr. Santosh Gurung, Lt. Col	Nepal Army
Mr. Kuber Kadayat, SSP	Nepal Police
Mr. Shambhu Bikram Shah, DSP	Armed Police Force Nepal
Mr. Dipak Prasad Neupane, Section Officer	MoHA
Mr. Sushil Kumar Bhandari, Section Officer	MoHA
Ms. Ranjana Rai, Section Officer	MoHA
Ms. Narbada Ghimire, Section Officer	MoHA
Mr. Jitendra Adhikari, Section Officer	MoHA
Ms. Saraswati Sapkota, Section Officer	MoHA
Ms. Sumitra Limbu, Section Officer	MoWCSC

Names	Organization
Mr. Santosh Kumar Khatri, Section Officer	MoFAGA
Mr. Aashish Shrestha, Agri-Economist	MoALD
Dr. Raju Thapa, Vice President	DP-Net
Mr. Dina Nath Bhandari, Technical Advisor	DP-Net
Mr. Sujit Kumar Saksena	DP-Net
Mr. Gehendra Gurung, Technical Advisor	DP-Net
Mr. Deepak Paudel	DP-Net
Dr. Dharmaraj Uprety, Technical Advisor	DP-Net
Prof. Dr. Bishal Nath Upreti	NCDM
Mr. Prem Awasthi	UNRCO
Mr. Kedar Babu Dhungana	UNDP
Ms. Sunita Kayastha	Unicef
Mr. Asim Shrestha	Unicef
Mr. Ratindra Khatri	WFP
Mr. Hari Karki	UNFPA
Ms. Tammie Harris, Chief of Party	USAID's Tayar Nepal
Mr. Tirtha Raj Joshi, Dy Chief of Party	USAID's Tayar Nepal
Mr. Krishna Raj Kaphle	USAID's Tayar Nepal
Mr. Santosh Pudasaini, Communications and Outreach Expert	USAID's Tayar Nepal
Mr. Deependra Nath Sharma, Policy Advisor	USAID's Tayar Nepal
Mr. Man Bahadur Thapa	ADPC Nepal
Mr. Krishna Prasad Neupane, Dy Director	DEPROSC
Mr. Banshi Kumar Acharya	Freelancer
Mr. Gopi K Basyal	NSET-Nepal
Mr. Dipendra K Pathak	NDR-Net