

NEPAL

To prepare the Country DRM Note, consultations were undertaken with members of the World Bank's Nepal Country team. Meetings were held with the Ministry of Home Affairs (MoHA) and other key ministries and departments involved in Nepal's disaster management system including Ministry of Water Resources, Ministry of Finance, Ministry of Local Development, Ministry of Public Works, the Department of Water-Induced Disaster, Ministry of Environment, Science and Technology, Ministry of Education, Ministry of Health, the Department of Hydrology and Meteorology, and the Kathmandu Fire Brigade. Additionally, meetings were held with selected NGOs, including the National Society of Earthquake Technology, Nepal and the Nepal Centre for Disaster Management. The World Bank Kathmandu office convened a roundtable meeting of a broad segment of the Donor Community—ADB, FAO, UN OCHA, European Union, and the Nepal Red Cross Society.

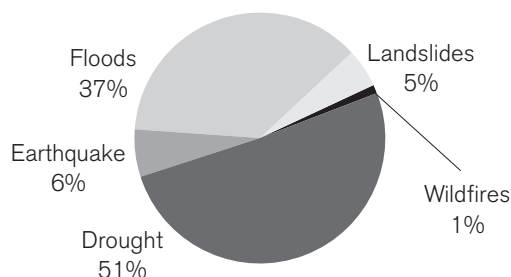
There is strong support and ownership for the matrix of priority areas and actions from the MoHA and other key ministries and departments engaged in disaster management.

1. DISASTER RISK PROFILE

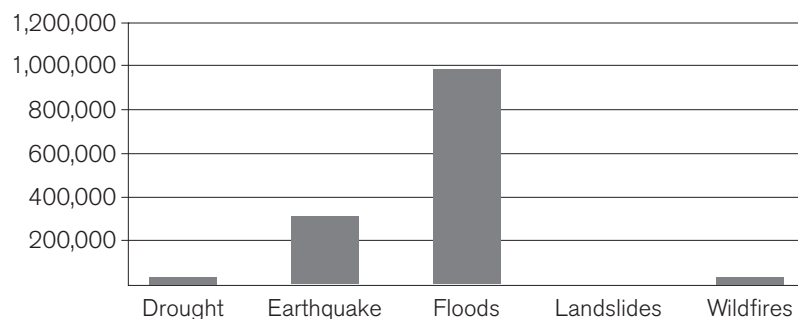
Nepal is a landlocked country lying between India and China. It is divided into three ecological zones, the "Terai" low-lying plains and marshy area in the south, the "Hills" in the middle and the "Mountains" in the north. Nepal's landscape is predominantly composed of hills and mountains covering about 83 % of the total area of the country.

Nepal faces several types of natural disasters every year, the most prominent being floods including glacial lake outburst flooding (GLOFs), drought, landslides, wildfires and earthquakes. Nepal ranks 11th in the world in terms of vulnerability to earthquakes and 30th in terms of flood risks.¹ A combination of rough topography, steep slopes, active seismic zone and intense impact of monsoon rains makes Nepal extremely vulnerable to disaster impacts.

% Population Affected (1900-2007)



Damage in USD '000 (1900-2007)²



There are more than 6,000 rivers and streams in Nepal. On reaching the plains, these fast-flowing rivers often overflow causing widespread flooding across the Terai region as well as flooding areas in India further downstream. Another potential hazard is Glacial lake Outburst Flooding (GLOF). In Nepal, a total of 159 glacial lakes have been found in the

¹ UNDP, A Global Report: Reducing Disaster Risk, 2004

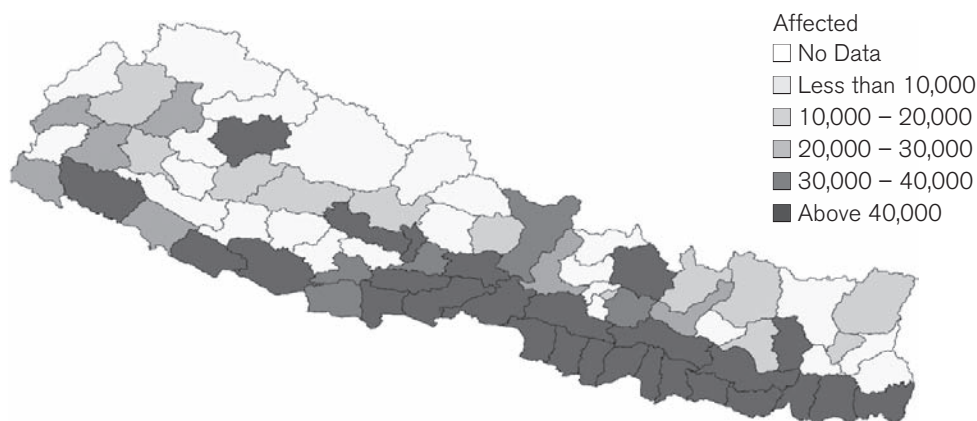
² EM-DAT: OFDA/CRED International Disaster Database, Catholic University of Louvain, Brussels, Belgium, www.emdat.net (disclaimer from EM-DAT regarding the reliability of the economic damage data)

Koshi basin and 229 in the Tibetan Arun basin. Of these, 24 have been identified as potentially dangerous and could trigger a GLOF event. In the period from 1935-1991, Nepal has experienced 14 GLOF events.³ Seismic records for Nepal date back to 1255. In 1934, Nepal experienced a major earthquake which claimed more than 8,500 lives. There followed other earthquakes in 1980 and 1988 further highlighting the extreme vulnerability that Nepal faces regarding earthquakes.⁴

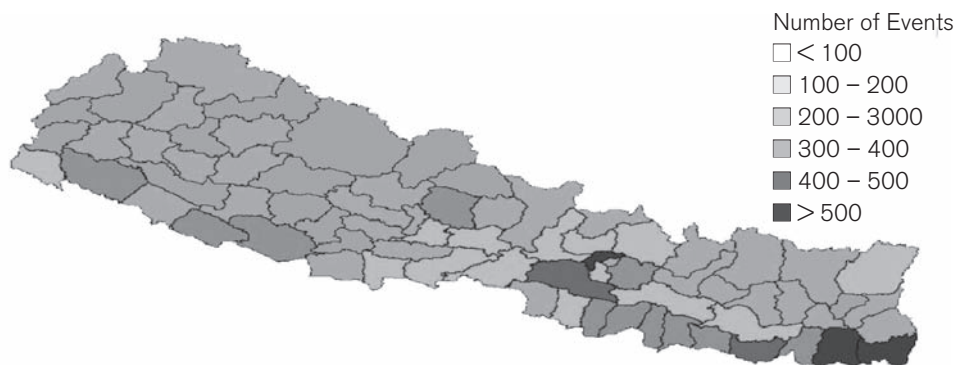
Exposure and Vulnerability

Out of 21 cities around the world that lie in similar seismic hazard zones, Kathmandu city is at the highest risk in terms of impact on people. Studies conducted⁵ indicate that the next big earthquake is estimated to cause at least 40,000 deaths, 95,000 injuries and would leave approximately 600,000 – 900,000 people homeless in Kathmandu. Haphazard urban growth, poor construction quality and non-enforcement of building codes further add to the vulnerability faced by the people regarding earthquake risk.

People affected by disasters per District (1971-2007)



Frequency of Disaster Events by District (1971-2007)



3 ICIMOD, Impact of Climate Change on Himalayan Glaciers and Glacial lakes, 2007

4 NSET, Global Assessment of Risk: Nepal Country Report, 2008

5 Nepal's hazard profile, Sumesh Kumar Bhattarai, The Kathmandu Valley Earthquake Risk Management Action Plan, National Society for Earthquake Technology [NSET]-Nepal and GeoHazards International, 1999

Nepal has a population of over 27 million people, of which 84 % live in rural areas. Almost 31% of the population is below the poverty line and Nepal ranks at 142⁶ in the Human Development Index country ranking, the lowest in South Asia. Poverty and a large reliance on agriculture for livelihoods increase the vulnerability of rural communities in getting impacted by disasters and in being able to recover socially and economically from disaster events.

As effects of climate change become more pronounced through increased seasonal variability, extreme weather events and glacial melt, Nepal is amongst those countries that will be most severely affected by the impacts of climate change.

2. DISASTER RISK MANAGEMENT FRAMEWORK

The current institutional framework of the Government of Nepal is more oriented towards disaster response and relief. The government organization responsible for disaster management is the Disaster Management section within the Ministry of Home Affairs. The Ministry collaborates with Nepal Police and the Royal Nepalese Army. Through Chief District Officers, the Ministry has a network throughout the country that extends to the district level. Although the Ministry of Home Affairs holds the overall responsibility of emergency preparedness and disaster management, it is still primarily concerned with the provision and distribution of emergency relief to disaster victims.

The Central Disaster Relief Committee (CDRC) is the apex body of the disaster response system in Nepal. The Central Disaster Relief Committee is headed by the Minister of Home Affairs, consists of the Minister of Health, the Minister of Physical Planning & Works, Secretaries of other ministries, representatives from the Royal Nepalese Army and the Nepal Police, the Director Generals from the Department of Mines & Geology and from the Department of Hydrology & Meteorology, as well as representatives from the Social Welfare Council, the Nepal Red Cross Society and the Nepal Scouts. Following a disaster, the CDRC meets as required to address the needs of the affected population. The committee controls a Central Disaster Relief Fund (CDRF), which is occasionally supplemented by the Prime Minister's fund.

At the district level, the District Disaster Relief Committee (DDRC) is the nodal body for coordinating relief efforts. The District Disaster Relief Committee is chaired by the Chief District Officer, consists of representatives from public sector organizations such as the District Health Office and the Nepal Red Cross Society. The Natural Calamity (Relief) Act, 1982 also accommodates the provision for the establishment of regional and local disaster relief committees as required.⁷

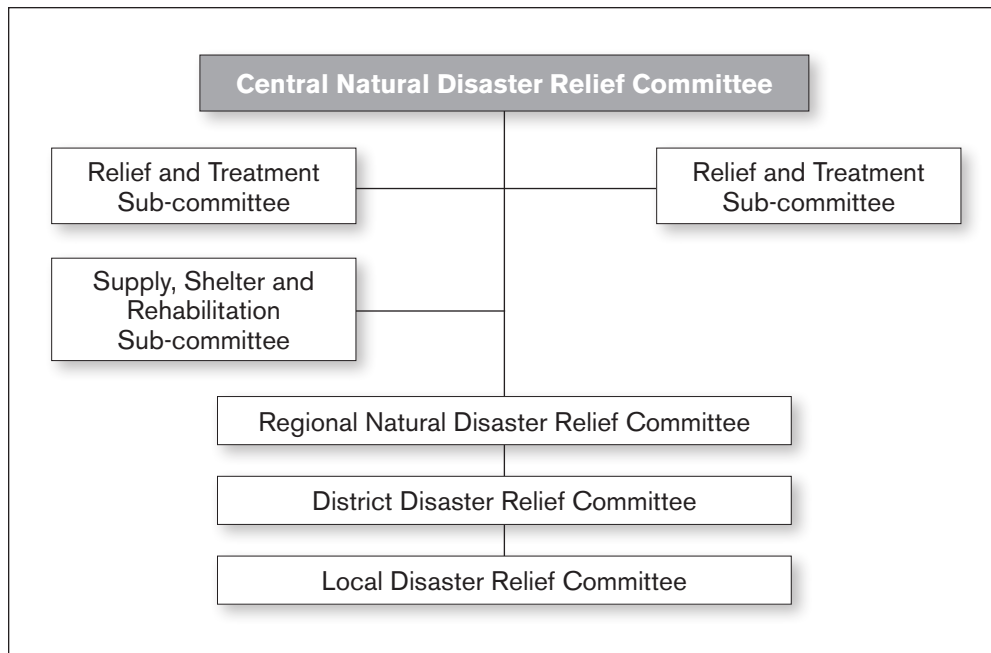
3. PROGRESS TOWARDS HYOGO FRAMEWORK FOR ACTION

HFA Priority # 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation

The Natural Disaster Relief Act enacted in 1982 (though having been revised twice) is primarily focused on post disaster relief and recovery. The Ministry of Home Affairs (MoHA) has recently taken up revision of the 1982 Disaster Relief Act towards formulation of a Disaster Management Act. The MoHA has also initiated the development of a National Strategy for Disaster Risk Management covering all aspects of DRM. However the strategy is still not approved by the final authorities in the government and thus still remains a conceptual document.

6 Human Development Report, Human Development Index, Nepal ranked 142 out of 177

7 NSET, National Strategy for Disaster Risk Management in Nepal, 2008; www.drrgon.gov.np



The Government of Nepal allocates 2.5 billion Nepal rupees (US\$ 36 million, which is approximately 1.5 percent of the total annual budget) every year in the annual budget for disaster management. There is also a provision of Prime Minister Relief Fund and Central Disaster Assistance Fund for Disaster Management. However these are primarily for relief and rescue activities. Resources for disaster risk reduction are not allocated on a priority basis.

The Local Self-Governance Act (1999) has given the authority and responsibility to the local government authorities (District Development Committees (DDC), Municipalities and Village Development Committees (VDC)) to design and implement DRR activities at the local level. However, there is no systematic and assured mechanism of resource allocation to the local authorities from the center.

The Ministry of Home Affairs has already initiated a process to establish a multi-sectoral national platform with representatives from concerned government agencies, UN agencies, donors, INGOs, NGOs, media, academic institutions, private sector and CBOs.

HFA Priority # 2: Identify, assess, and monitor disaster risks – and enhance early warning

There has been some effort in hazard mapping by UNHABITAT and Department of Mines and Geology in 1993. There is no national level multi-hazard risk assessment covering regularly occurring disasters. However, there is a historical record of disaster occurrence and their impact for 37 years available in Nepal. This database based on the “DesInventar” system is managed by NSET and UNDP. International organizations such as International Centre for Integrated Mountain Development (ICIMOD) have initiated a process to assess the socio-economic impacts of GLOFs and flash floods through case studies.

The Government of Nepal has also established a seismic monitoring system within the Dept. of mines and geology. Few localized single hazard-oriented early warning systems managed by Department of Hydrology and Meteorology and some I/NGOs are in existence in a few places. However, there is no early warning system in place for major hazards with outreach to disaster-prone communities.

National and local level risk assessment is still a new phenomenon in the country. The need for regional cooperation and especially real-time data sharing has been recognized by most stakeholders in different forums. With the support from UNISDR, the Government of Nepal is undertaking the disaster-poverty interface study.

HFA Priority # 3: Use of knowledge, innovation, and education to build a culture of safety and resilience at all levels

The Department of Water Induced Disaster Prevention, Nepal Red Cross Society and other I/NGOs have been collecting and disseminating national level information. However, as of now there is no designated and fully functional central and district-level data clearing house. Similarly, there is no established mechanism to share such available information.

The current school curricula have a limited amount of information on disaster management. In 2008, the secondary level of education curriculum has recently incorporated the disaster management component with the support of WWF and other institutions. Several I/NGOs have been supporting the MoE to incorporate DRR in to school curricula, teachers training on DRR, awareness building classes, publication of various IEC (Information, Education and Communication) materials on DRR.

Science based disaster risk reduction/ management is a new phenomenon in Nepal. Organizations such as The World Bank, Asian Development Bank and ICIMOD have initiated empirical research on cost-benefit analysis and mitigation practices in Nepal. The World Bank is carrying out four different studies⁸ in the area of risk reduction in the country. With support from UNISDR, Nepal is undertaking a national level study on the relationship between poverty and disaster. Nepal is practicing some internationally accepted and practiced tools for retrofitting of buildings and vulnerability assessment.

HFA Priority # 4: Reduction of the underlying risk factors

The existing natural resources management Acts and Acts related to climate change does not include disaster management as an integral part of it. However, the National Disaster Management Plan developed in 1993 and endorsed by the Government in 1996 emphasized that the need to bring the natural resources management, climate change and development together with disaster management. It is anticipated that the forth coming National Strategy for Disaster Risk Management will bring synergy to integrate natural resources management (NRM) and climate change along with sustainable disaster management.

The Ministry of Health with technical and financial support from WHO and NSET has initiated the non-structural vulnerability assessment of hospitals. However, this initiative has covered only few hospitals. The Ministry of Agriculture has been involved in vulnerability reduction activities such as drought risk reduction, food security, etc. Insurance in the agriculture sector is still under developed.

Implementation and monitoring of Land-use is extremely weak. Building Codes have been made compulsory in municipal areas. The National Shelter Policy, 1996 and the National Urban Policy 2007 have incorporated disaster risk reduction to some extent. However there is a serious lack of enforcement of the codes. Unplanned urbanization and construction of unsafe houses can be clearly seen in the Katmandu Valley. The absence of land-use planning and management of human settlement in the valley has increased the vulnerability of people to earthquakes by many folds.

As of now there is no systematic Disaster Impact Assessment carried out in any major development projects, even in most of the key infrastructure projects. However, there is a strong recommendation in the proposed National Strategy for Disaster Risk Management in making Disaster Impact Assessment a practice.

8 1) Study of glacial lakes for potential GLOFs with ICIMOD, 2) a study on school earthquake safety with NSET, 3) Hazard risk assessment of Nepal and 4) Emergency response system in Nepal.

HFA Priority # 5: Strengthen disaster preparedness for effective response at all levels

The Disaster Management Act (1982) focuses primarily on post disaster activities. The proposed new DRM act and the strategy encompass all elements of disaster management, long term and sustainable disaster risk reduction and linking disaster with development. The proposed Act and the strategy also strongly emphasize the establishment of a national framework for disaster risk management that includes establishment of autonomous DRM authorities from the central level (NADRM as an apex body) through all levels. Institutional commitment is required for the effective implementation of the plans and policy.

Few districts of Nepal had developed District Disaster Management Plans (DDMP) based on GIS information during the early 2000s. However, due to lack of coordination and technical capacity these plans were not fully implemented and monitored. On an ad hoc basis, several organizations organize lessons learnt sessions after the occurrence of any disaster in the country. There is no any concrete and well established forum for sharing such knowledge and experiences.

4. KEY DONOR ENGAGEMENTS

Some of the ongoing DRM initiatives are supported by multilateral assistance. These initiatives are listed below:

UNDP: In relation to disaster risk management, UNDP Nepal is actively assisting in the development of a legal and institutional framework on disaster risk management; incorporating DRM into national development planning and assisting through emergency grants for flood and landslide response projects.

UNICEF: Mainly engaged in preparedness and risk assessment in the water & sanitation and emergency health & nutrition sectors.

FAO: Engaged in food security and the livelihoods sector, especially post-disaster.

UN OCHA: Engaged in disaster preparedness, response preparedness and emergency coordination.

WHO: engaged in DRM in the health sector through its Emergency and Humanitarian Action (EHA) Programme. WHO Nepal has been an active partner in the health sector emergency planning and preparedness activities. WHO along with NSET is leading the Safe Hospitals campaign in Nepal.

DIPECO: Supporting different organizations of whom, Practical Action, an I/NGO, has developed community based early warning systems that can be managed by local communities and have long-term sustainability as a key consideration in their design and operation.

NSET: Focusing on Earthquake Risk Management. NSET is substantively engaged in the area of Earthquake Engineering & Research, School Earthquake Safety Program, Urban & Community Based Disaster Risk Management Preparedness & Emergency Response, Program for Enhancement of Emergency Response.

Action Aid: Working on hazards and vulnerability reduction through community awareness and capacity building programs. They have been active in developing school curriculums with disaster risk management elements.

Oxfam: Mainly engaged in humanitarian response post-disaster.

Nepal Red Cross Society (NRCS): NRCS is the largest humanitarian organization in Nepal with a nationwide network of volunteers. Main focus is on disaster risk reduction as well as response (relief) and recovery.

5. GLOBAL FACILITY FOR DISASTER REDUCTION AND RECOVERY (GFDRR): ACTION PLAN

Ongoing GFDRR Funded Activities

Ongoing GFDRR funded activities	Partnerships	Budget	HFA priority area(s)
Disaster Risk management Program, Nepal TA and analytical work on GLOFs, earthquake safety and emergency response capacity amongst others	MoHA, NSET, ICIMOD	\$ 914,000	HFA Priority 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation
Nepal: Agricultural Insurance Feasibility Study	Insurance Board, MoHA, Min. of Agriculture	\$159,400	HFA Priority 4: Reduction of the underlying risk factors

Indicative New Program Areas and Projects for GFDRR Funding

INSTITUTIONAL STRENGTHENING AND BUILDING TECHNICAL EXPERTISE

The Ministry of Home Affairs needs a lot of support towards building technical expertise of staff involved in DRM activities. Needs range from foundational training in Incident Command, Emergency Operations systems, Resource Management, Search and Rescue, Building Code Enforcement, Fire Management, and Structural Retrofitting. Training programs organized in-house and in foreign institutions will allow knowledge sharing and capacity strengthening of some key personnel.

FLOOD MANAGEMENT PROJECT - RAPTI RIVER BASIN

Given the annual flooding issues faced by Nepal, the project will focus on a pilot river basin towards developing a comprehensive flood management project. The project will focus on the hardware aspect of installation of better equipment towards collection of real-time precipitation data and assisting the ability of climate scientists in the Department of Hydrology and Meteorology towards improved 3-5 day weather forecasts. The project will also focus on the softer aspects of awareness, mobilization, preparedness and risk reduction for floods and other disasters for targeted communities living in the Rapti basin. The project will develop a pilot flood early warning system to focus on effective and efficient information dissemination down to the community level.

ENHANCING EMERGENCY RESPONSE CAPACITY

Majority of Nepal's population is rural while more than 80% of the country is hilly and mountainous. A disaster emergency at times makes it very difficult to access the affected areas from Kathmandu, the capital, where most of the resources are located. This entails a strong network of emergency search and rescue and relief supplies to be strategically located across the country. This also entails developing a strong logistical and distribution system in case of a calamity. The project will support the MoHA and the Nepal Red Cross Society in strengthening the emergency relief supplies network through strategically located warehouses across the country.

Deployment of a more robust emergency communications network, or construction of a national emergency operations center, will prove effective if there is an enhanced understanding of Incident Management and Emergency Operations processes and procedures. The UNDP has been working towards establishment of an Emergency Operations Centre. The proposed funding will complement activities planned by the UNDP in helping strengthen communication linkages between the center and districts.

ENHANCING WEATHER FORECAST FOR DISASTER PREPAREDNESS

Extreme weather events and severe weather conditions often wreak havoc and impact peoples' livelihoods across Nepal.

Presently, the Nepal Department of Hydrology and Meteorology has limited capabilities in making weather forecasts beyond 24 hours with acceptable accuracy. Improving the capacity of the department in being able to make reliable 1-5 day weather forecasts would greatly enhance the capacity of the MoHA and the district level government officials in being better prepared against extreme events. Advanced information dissemination to communities can also greatly benefit their coping strategies against disaster impacts. The project will undertake a study to identify existing gaps and needs within the Department of Hydrology and Meteorology and will provide technical assistance through a partner international climate forecast organization in building the technical expertise of Nepal's climate scientists. In addition, this component includes the purchase of equipment.

SCHOOL AND HOSPITAL EMERGENCY PLANNING AND SAFETY INITIATIVE

The Department of Education (DoE) expressed the need for development of a comprehensive plan covering all aspects of safe schools, including capacity building towards retro-fitting including training of masons, training of technical personnel, development of safe schools guidelines and creating community awareness. The DoE also needs support in the elaboration of a National Action Plan on Safe Schools.

The WHO in collaboration with the Ministry of Health has developed a project towards Strengthening Initiatives for Safe Health Facilities in Nepal. The project will focus on assessing the safety of primary health care centers; develop checklists similar to the existing Safe Hospital Checklist and pilot test in one health care center in each health region. The Safe Hospital Checklist will be applied in all public hospitals. Safety improvement plans will be developed for health facilities. The project will also support the development of a GIS to facilitate the use and application of space-based technologies and related services for DRM activities in the health sector, including the national safe hospitals program. In addition, this component would include structural strengthening measures of selected health facilities.

Indicative new program areas and projects for GFDRR funding	Partnerships	Indicative Budget or GFDRR funding	HFA priority area(s)
Institutional Strengthening and Building Technical Expertise <ul style="list-style-type: none"> - DRM skill training for MoHA staff - Damage & needs assessment methodology training - Specialized training for Incident Command, emergency operation system, Building Code enforcement, Resource management, Fire Management, Search & Rescue 	MoHA, UNDP, relevant national & international training institutions	\$ 750,000 (3 years)	HFA Priority 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation HFA Priority 3: Use of knowledge, innovation, and education to build a culture of safety and resilience at all levels
Flood Management Project – Rapti River Basin <ul style="list-style-type: none"> - Real-time collection of precipitation data - Improved and reliable 1-5 day weather forecast capability - Community preparedness and pilot flood early warning system 	Dept. of Hydrology & Meteorology, other relevant international organizations	\$ 1,250,000 (3 years)	HFA Priority 2: Identify, assess, monitor disaster risks, enhance early warning HFA Priority 5: Strengthen disaster preparedness for effective response

(Cont.)

Indicative new program areas and projects for GFDRR funding	Partnerships	Indicative Budget or GFDRR funding	HFA priority area(s)
Enhancing Emergency Response Capacity <ul style="list-style-type: none"> – Strengthening network of emergency relief supplies and distribution system across the country – Support development of emergency communications system and an Emergency Operations Centre 	MoHA, UNDP, Nepal Red Cross Society	\$ 3,500,000 (3 years)	HFA Priority 2: Identify, assess, monitor disaster risks, enhance early warning HFA Priority 5: Strengthen disaster preparedness for effective response
Enhancing Weather Forecast for Disaster Preparedness <ul style="list-style-type: none"> – Technical assistance for building expertise of Nepal's climate scientists towards development of reliable 1-5 day forecasts – Purchase of equipment 	Dept. of Hydro & Met, WMO, relevant international climate institution,	\$ 2,500,000 (3 years)	HFA Priority 2: Identify, assess, monitor disaster risks, enhance early warning HFA Priority 3: Use of knowledge, innovation, and education
School & Hospital Emergency Planning and Safety Initiative <ul style="list-style-type: none"> – Developing a comprehensive safe schools program and piloting specific activities – Strengthening initiatives for Safe Health Facilities in Nepal 	Department of Education, NSET, Ministry of Health, WHO	\$ 2,400,000 (3 years)	HFA Priority 3: Use of knowledge, innovation, and education to build a culture of safety and resilience at all levels
TOTAL		\$ 10,400,000	