



Unofficial translation

**Government of Nepal  
Ministry of Home Affairs**

# **National Strategy for Disaster Risk Management, 2009**



**(Approved on 11 October 2009)**



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## ACRONYMS

|         |   |
|---------|---|
| BCPR    | Bureau of Crisis Prevention and Recovery                  |
| CBDRM   | Community Based Disaster Risk Management                  |
| CBO     | Community Based Organization                              |
| CDO     | Chief District Officer                                    |
| CDRC    | Central Disaster Relief Committee                         |
| CEO     | Chief Executive Officer                                   |
| CFT     | Cash for Training   |
| CFW     | Cash for Work   |
| DDMA    | District Disaster Management Authority                    |
| DANA    | Damage Assessment and Needs Analysis                      |
| DDC     | District Development Committee                            |
| DDMC    | District Disaster Management Committee                    |
| DEOC    | District Emergency Operations Centre                      |
| DIA     | Disaster Impact Assessment                                |
| DIMS    | Disaster Information Management System                    |
| DMC     | Disaster Management Cycle                                 |
| DoLIDAR | Department of Local Infrastructure and Agricultural Roads |
| DRM     | Disaster Risk Management                                  |
| DRMMP   | Disaster Risk Management Master Plan                      |
| DRR     | Disaster Risk Reduction                                   |
| DWIDP   | Department of Water Induced Disaster Prevention           |
| EDCD    | Epidemiology and Disease Control Division                 |
| EIA     | Environmental Impact Assessment                           |
| EOC     | Emergency Operations Centre                               |
| EPP     | Emergency Preparedness Plan                               |
| FAO     | Food and Agriculture Organization                         |
| GHG     | Green House Gases   |
| GIS     | Geographic Information System                             |
| GLOF    | Glacier Lake Outburst Flood                               |
| GO      | Government Organization                                   |
| GoN     | Government of Nepal                                       |
| GSHAP   | Global Seismic Hazard Assessment Program                  |
| HDI     | Human Development Index                                   |
| HDR     | Human Development Report                                  |
| HFA     | Hyogo Framework for Action 2005-2015                      |
| HCFC    | Hydro chlorofluorocarbons                                 |
| HOPE    | Hospital Preparedness in Emergency                        |
| IASC    | Inter Agency Standing Committee                           |
| IED     | Improvised Explosive Device                               |
| INGO    | International Non-Government Organization                 |
| INSARAG | International Search and Rescue Advisory Group            |
| IOM     | International Organization for Migration                  |

|         |   |
|---------|---|
| IRP     | International Recovery Platform                     |
| ISDR    | International Strategy for Disaster Reduction       |
| LSGA    | Local Self-Governance Act                           |
| MoCTCA  | Ministry of Culture Tourism and Civil Aviation      |
| MDG     | Millennium Development Goal                         |
| MoAC    | Ministry of Agriculture and Cooperatives            |
| MEOC    | Municipal Emergency Operations Centre               |
| MoE     | Ministry of Education                               |
| MoEn    | Ministry of Environment                             |
| MoHA    | Ministry of Home Affairs                            |
| MoHP    | Ministry of Health and Population                   |
| MoIC    | Ministry of Information and Communication           |
| NCDM    | National Council for Disaster Management            |
| NDMA    | National Disaster Management Authority              |
| NEOC    | National Emergency Operations Centre                |
| NGO     | Non-Governmental Organization                       |
| NIDRS   | National Integrated Disaster Response System        |
| NPC     | National Planning Commission                        |
| NRCS    | Nepal Red Cross Society                             |
| NSDRM   | National Strategy for Disaster Risk Management      |
| NSET    | National Society for Earthquake Technology – Nepal  |
| OCHA    | Office for the Coordination of Humanitarian Affairs |
| OFDA    | Office of Foreign Disaster Assistance               |
| OSSOC   | On-Site Safety and Security Operations Centre       |
| PAHO    | Pan American Health Organization                    |
| PRSP    | Poverty Reduction Strategy Paper                    |
| RNCRC   | Regional Natural Calamities Relief Committee        |
| RRT     | Rapid Response Team                                 |
| SAARC   | South Asian Association for Regional Cooperation    |
| SAR     | Search and Rescue                                   |
| SOP     | Standard Operating Procedure                        |
| TA      | Technical Assistance                                |
| TC      | Technical Committee                                 |
| TDRM    | Total Disaster Risk Management                      |
| UNDAC   | United Nations Disaster Assessment and Coordination |
| UNDP    | United Nations Development Programme                |
| UNEP    | United Nations Environment Protection Agency        |
| UNICEF  | United Nations Children’s Fund                      |
| USAID   | United States Agency for International Development  |
| VDC     | Village Development Committee                       |
| WAT/SAN | Water and Sanitation                                |
| WCDR    | World Conference on Disaster Reduction              |
| WECS    | Water & Energy Commission Secretariat               |
| WFP     | World Food Programme                                |
| WHO     | World Health Organization                           |

## EXECUTIVE SUMMARY

### Introduction

National Strategy for Disaster Risk Management is a National Framework with commitment of the Government of Nepal for protection, growth, and promotion of national heritages and physical infrastructures. Absence of mainstreaming disaster reduction in the development process in the past resulted not only in the loss of physical properties and human lives, but also destructions of basic infrastructures. Thousands of people face tragic consequence of annual recurrence of disasters such as floods, landslides, fires etc. The fact that beside the important role of the government in disaster risk reduction, every person and community has equally important role to play is obvious from instances of disasters caused due to haphazard construction of buildings and other structures.

In a situation whereby natural resources are not being utilized scientifically and optimally, reducing disaster risks to acceptable and possible minimum level for the protection of highly valuable natural resources and heritages is necessary. Besides, it is also necessary to take mitigation, preparedness, and response measures for reduction of the effect on the environment resulting from natural and non-natural disasters.

Objectively, this Strategy Paper is an integrated effort on reducing disaster risk in the days ahead through materialization of spirit of participation. In the process, sincere effort is made by defining five main priorities and associated activities by assigning responsibilities to each sector line agency.

Disasters do not remain contained within any national boundary, but they leave geographical and natural imprint at bilateral, multilateral and international levels. This document is the result of the necessity felt for a concrete, meaningful and integrated document based on Hyogo Framework of Action (HFA 2005-2015) reflecting the global common concept, which the United Nations declared in 2005 in participation of 168 nations including Nepal. As such, this document is prepared and issued with the realization of the necessity of a meaningful, and integrated document based on studies of internationally and regionally recognized standards for translating the national responsibility into action.

National Strategy on Disaster Risk Reduction is an inseparable component of all other sector strategies contributing as a supplement document for developing Aggregate National Plans. Inherent objective of this Strategy shall be to guide towards reducing disasters in the process of execution of development programs for national development.

### 2. Strategy Preparation Process

With realization of the fact that the task of Disaster Management is not possible through the sole effort of the government, governmental and non-governmental agencies, local bodies, academic institutions, private sector, UN Agencies, International Development Partners, civil society, and Communities have been involved right from the beginning of development stage of this Strategy Paper. Ministry of Home Affairs (MoHA), after intensive improvisation based on a number of deliberations/workshop seminars, and stakeholder consultations gave final shape to the Strategy.

### 3. Situation of Disaster in Nepal

Nepal is highly vulnerable to various types of disasters like floods, landslides, earthquake, fire, epidemics, and effects of climate change. In addition, the country also has encountered new types of disasters like 'avian influenza' (bird flu) pandemics, industrial accidents, explosions of improvised

explosive devices, road accidents, and poisoning related cases. Nepal, in this way, has been facing different types of natural and non-natural disasters annually.

Based on facts and statistics, Nepal is placed in 20th place in the global hazard map while the country is ranked 30th in terms of water-induced hazards such as landslides and floods. In seismic vulnerability ranking, Kathmandu valley is placed in the first place. The whole country is vulnerable to earthquake as it lies in high MMI IX and XI vulnerability scale, with especially the middle belt of the country sitting on high earthquake intensity zone. According to the Disaster Vulnerability and Risk Assessment Study Report (UNDP/BCP 2004), Nepal ranks 11th globally most vulnerable countries to earthquake. Similarly, as per the joint ICIMOD UNEP prepared detail, out of 2,315 glacial lakes of Nepal, 22 are in imminent danger of outburst (ICIMOD/UNEP, 2000). Fire breakouts in rural Terai remain major problem during the summer season when temperature soars up to 45 degree Celsius. Forest fires have been on increase as additional disaster in recent years. Despite such high rate of disaster vulnerability, concrete measures remained yet to be taken like capacity building and preparedness in a meaningful way. This Strategy is conceptualized as institutional and policy link to fill up such void.

#### **4. Assessment of Losses due to Disasters and Interlinked Issues:**

Some technical analyses with the assessment of the status of disaster risk and vulnerabilities also form part of this Strategy Paper. Similarly, emphasis is also given to the necessity of paying attention to loss assessment of past disasters, and taking into consideration interrelationships between disaster, poverty, and environment in policy design and implementation. This Strategy also emphasizes on materialization of the spirit of Total Disaster Risk Management (TDRM).

#### **5. Policy, Legal and Institutional Framework:**

This National Strategy analyzes policy framework, legal provisions, and institutional structures Nepal has adopted in relation to disaster management. Institutional journey on Disaster Management in Nepal began with the promulgation of Natural Calamities (Relief) Act, 1982. MoHA, instead of moving ahead alone, tried to take along sector line agencies including the (present) Ministries of Energy, Irrigation, Physical Planning and Works, Local Development, Health and Population, and other central entities like the National Planning Commission (NPC) in a coordinated manner. Such efforts and arrangements in the past, however, could not be effective from qualitative and quantitative aspects of DRR as they used to focus mainly on responding to post-disaster situations. As a result, the trend of annual losses of lives and properties continued. Upon realization of these realities, a brief review of existing legal and institutional arrangements from central to local levels, their capabilities to cope with different natures of disasters, and their technical capacities have been included in chapter 2 of this Strategy Paper to facilitate preparation of Action Plans (on disaster risk reduction).

#### **6. Long-term Vision**

The Long-term Vision of this Strategy is to establish Nepal as a Disaster-resilient community.

#### **7. Long-term Mission**

Long-term Mission of the Strategy is to provide guidance and ensure effective disaster management through development, and implementation of the concept of effective preparedness for mitigation, disaster risks reduction, and incidence of calamities. Following are the sub-missions to materialize the long-term mission of the Strategy:

- Development and restructuring of institutional structures;

- Strengthen policy-wide and legal arrangements to ensure stakeholders' participation while adhering to integrated policy and decentralized implementation process.
- Create enabling environment from the central to household level within the State to prepare and implement disaster risk reduction and preparedness plans.
- Ensure Mainstreaming disaster reduction into overall development process along with sectoral development and poverty reduction plans.

## **8. Directive Principles of DRM Planning:**

The following Directive Principles will be adopted while deciding on various phases, processes, techniques or procedures of DRM:

- Mainstream DRM concept into development plans;
- Ensure life safety and social security;
- Give emphasis to gender and social inclusion;
- Adopt decentralized process of implementation;
- Follow the holistic approach;
- Give priority to staff safety and security;
- Follow one-window policy and cluster approach in implementation of DRM; and
- Work in the spirit of participation, interaction, and coordination;

## **9. Major Strategic Priorities**

Nepal faces number of challenges of different natures for reduction of disaster risks. For addressing those challenges, it is necessary to set up priorities based on sector-wide activities by assessing the nature of potential disaster. For this, it is also necessary to carry on Nepal's need-based development agenda with HFA 2005-2015 as a guiding document. The following major objectives set by HFA will also be inseparable component of this Strategy.

- Integrate Disaster Risk Reduction in Sustainable Development Strategies, and Plan preparation;
- Strengthen institutions, mechanism, and capacities for developing resilience to disaster; and
- Incorporate DRR concepts in Preparedness, Response, and Recovery programs in an organized way.

The following five priorities, in the implementation process, are recommended for achieving the above-mentioned objectives:

1. Put a vibrant institutional framework in place for its implementation by prioritizing DRR at both the national and local levels.
2. Strengthen assessment, identification, monitoring, and early warning system on potential disaster;
3. Make use of knowledge, new ideas, and education for the development of safety and disaster resilient culture at all levels;
4. Minimize existing risk factors; and

5. Make Disaster Preparedness strong enough for effective response.

While setting up these five priorities, effort is made to penetrate the root causes of the problem through identification of existing challenges in Nepal's context. Strategic activities, indicative activities and outcomes, and responsible agencies have been identified to the extent possible by focusing on these challenging issues. The following priority actions and strategic activities are defined for the purpose:

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

Strategic Activity 1: Establish and strengthen institutional system for DRM.

Strategic Activity 2: Formulate/amend and enact policies and legislations for incorporation of extensive disaster risk management concepts

Strategic Activity 3: Mainstream DRR into national development

Strategic Activity 4: Integrate DRR and preparedness in development plans, programmes and regular activities of local development institutions for effective response to disasters.

Strategic Activity 5: Prepare and gradually implement various policies and protocols, standards, guidelines, Standard Operating Procedures (SOPs), and special national programmes for DRR

Strategic Activity 6: Establish a network of Emergency Operation Centers (EOCs) – one at the central level and additional other centers at district and municipality levels

Strategic Activity 7: Develop One-window mechanism for collection of resources, allocations, and sustainable financial resource management.

**Priority Action 2: Identify, assess and monitor disaster risks and strengthen early warning system**

Strategic Activity 8: Assess disaster vulnerabilities of different scales at different levels; develop a system of periodic updating; and disseminate such information publicly.

Strategic Activity 9: Establish and institutionalize authentic, and open GIS-based Disaster Information Management System (DIMS) at the central, district and municipal levels that encompass all disaster-related information

Strategic Activity 10: Establish a national system for hazard/risk monitoring and early warning to potential hazards

Strategic Activity 11: Prepare land-use mapping of urban and urban-oriented areas, update them periodically, and ensure institutional system for making use of such maps for land-use planning.

**Priority Action 3: Better knowledge management for building a culture of Safety, and Resilience**

Strategic Activity 12: Amend/improvise National Education Policy, and strengthen its implementation aimed at making schools important centres for raising disaster awareness.

Strategic Activity 13: Make arrangement for imparting disaster education

- Strategic Activity 14: Develop DRR training curricula for different target groups and conduct training programmes for all stakeholders
- Strategic Activity 15: Develop and implement a comprehensive national programme for disaster related awareness raising and training.
- Strategic Activity 16: Develop plans, programmes and facilitate the use of mass media for dissemination of information on disaster risk and risk reduction
- Strategic Activity 17: Develop/strengthen/encourage awareness raising programmes on DRM at the local level
- Strategic Activity 18: Encourage and support NGOs, CBOs and other stakeholders for development and execution of awareness-raising programmes on disaster risk reduction and preparedness.

**Priority Action 4: Reducing the underlying risk factors**

- Strategic Activity 19: Integrate DRR concept into infrastructure development planning, and execution processes.
- Strategic Activity 20: Assess, protect, and strengthen critical public services, life supporting structures, and physical infrastructures.
- Strategic Activity 21: Develop and implement, on a priority basis, special DRR programmes for the most vulnerable groups of the society, the marginalized and *Dalit* groups, women, handicapped, disadvantaged groups, children, and elderly people.
- Strategic Activity 22: Incorporate DRR measures into post-disaster recovery and rehabilitation processes.
- Strategic Activity 23: Develop and promote alternative and innovative financial instruments for addressing disaster risk reduction.

**Priority Action 5: Enhance preparedness for effective response**

- Strategic Activity 24: Develop and execute National Integrated Disaster Response System (NIDRS).
- Strategic Activity 25: Develop and implement Emergency Response and Preparedness Plan including gradually setting up Emergency Operation Centres (EOCs) throughout the country.
- Strategic Activity 26: Establish and/or strengthen storage and pre-positioning capacities at strategic locations (centre, district, municipality and villages) for storing food, medicines, other relief supplies and rescue tools and equipment.
- Strategic Activity 27: Establish a robust communication system that can be used during emergency situations as well as during preparedness phase
- Strategic Activity 28: Establish an efficient transport and logistics management mechanism
- Strategic Activity 29: Enhance emergency response capacities of communities at the VDC level. Besides, identify volunteers for the purpose and mobilize schools and communities for imparting them necessary training.

**10. Sectoral Strategies for DRR**

Disaster Risk Management being a dynamic and multi-sectoral task, assignments of sector responsibilities to concerned sectors becomes imperative based on natures of tasks of those sectors for preparedness, mitigation, or response arrangements in situations of disasters, and emergencies. Hence, inclusion of implementation oriented following sector activities based on the above-mentioned five strategies is another salient feature of this Strategy Paper.

- Agriculture and Food security
- Health
- Education
- Shelter, Infrastructure and Physical Planning
- Livelihood Protection
- Water and Sanitation
- Information, Communication, Coordination and Logistics
- Search and Rescue, and Damage and Needs Assessment

### **11. The Proposed Organization Structure for DRM in Nepal**

The existing institutional arrangement focuses only on the single (disaster response) phase of Disaster Management Cycle (DMC). New organizational structures, based on regional and global experience, are recommended with the necessity felt for giving (the institution) a full shape through a robust, efficient, and dependable institutional arrangement at different levels.

#### **❖ National Council for Disaster Management (NCDM)**

Upon review of existing institutional capacity of the country, and in consideration of the reality that strategic provisions themselves cannot be self-fulfilling, a new organizational structure is proposed by focusing on long-term vision and mission to establish Nepal as a Disaster Resilient Community. Rising above the existing rescue and relief oriented structure, a National Council for Disaster Management (NCDM), Chaired by the Prime Minister - the Chief Executive of the State - shall be formed, and who can give a broader look to mainstreaming DRR while giving high priority to risks reduction in development activities. The Council shall comprise the Minister for Home Affairs as Vice-Chair with Ministers and Secretaries of Ministries of Local Development, Communications, Defense, Finance, Education, and Social Welfare together with Chief of Army Staff, Inspector Generals of Police, and Armed Police Force, Director Generals of concerned Departments, and experts from Civil Society as other members. Tasks and duties of the NCDM will be as follows:

- Endorse DRM related policies;
- Approve DRM National and Sectoral Plans;
- Take policy decisions, arrange financial resources and supervise for Risk Reduction/Mitigation, Preparedness, Response and Recovery, Rehabilitation, and Reconstruction activities; and
- Take policy decisions for bilateral, sub-regional, regional and international cooperation in the areas of DRM.

National Disaster Management Authority will be the Secretariat of this Council.

#### **❖ National Disaster Management Authority (NDMA)**

A National Disaster Management Authority shall be established as a National Focal Point for implementation, facilitation, coordination, and monitoring of Disaster Management Strategies. The Authority shall work in direct contact with sector ministries or central agencies, departments, district

level entities, and other stakeholders in planning and implementation of disaster management related matters. Besides, the Authority will also take charge of managing Response, Recovery, Reconstruction, and Rehabilitation works at times of disasters.

Arrangement of the following three high level Committees is made with assignment of intensive, accountable, and clear-cut responsibilities for carrying out different natures of activities in three major (pre/during/post) phases of disaster.

- Preparedness Management Committee.
- Rescue and Relief Management Committee.
- Rehabilitation and Reconstruction Committee.

❖ **Regional, District, and Local Disaster Management Committees**

This Strategy Paper has incorporated the provision of Regional, District, and Local level Disaster Management Committees. This Strategy Paper is directed towards avoiding any confusion at working levels of Regional, District, and Local level Disaster Management Committees for facilitating effective performance by clearly delineating their scope of work, and rights and responsibilities.

The Paper reflects full realization that disaster management is possible only through integrated participatory, and collaborative involvement of all partners. As such, due importance and recognition is given to UN Agencies, donor community, inter-governmental agencies, NGOs (national and international), CBOs, Civil Society, Media, Experts, and the people through appropriate representation arrangements.

## **12. Implementation and Monitoring**

Priorities of this Strategy are quite broad and related to sustainable development. As such, implementation process of this Strategy is aimed at giving continuity to conceptual target for mainstreaming disaster management than achieving time bound quantitative target. As this Strategy is only an instrument for disaster risk reduction, effort is made to clearly identify bases, and approaches for its successful implementation, monitoring and evaluation. Effort is also made in final chapter of this Strategy Paper that responsibility and operational linkages between all governmental or non-governmental organizations and communities engaged in managing disaster are defined in a transparent and coordinated manner.

The fundamental aspect of this Strategy is to delineate tasks, and rights and responsibilities of each agency, institution, community or a person from the central to local levels. The Strategy envisages Disaster Management work to be result oriented as it has made Ministry of Home Affairs, NDMA, Regional and District Disaster Management Committees responsible under the one-window policy for effective collaboration, consensus-based, and participatory coordination process.

❖ **Implementation Strategy**

The following attributes will be used from central to local levels for effective and efficient execution of this Strategy with sequenced arrangement of activities as necessary.

- Prepare and carry on Plans and Sectoral Action Plans for DRM;
- Use the transparent and inclusive process;
- Take coordinated initiative;

- Make use of technical assistance;
- Assess the resource need and demand, and garner external financial resources when domestic resources fall short of requirement;
- Arrange Public Hearings on a regular basis;
- Publish and publicize successful initiatives; and
- Conduct peer review of initiatives.

#### ❖ **Monitoring and Evaluation**

Monitoring and Evaluation of implementation of this Strategy will be conducted annually for continuation of DRM activities and evaluating progress made towards achieving its objectives. The Authority will publish detailed progress report annually. The Ministry of Home Affairs will monitor, evaluate, and guide activities of the Authority. The Ministry will also conduct performance evaluation of regional, district, and local level Committees through the Authority. The Authority, in participation of its partners, will develop indicators necessary for the purpose.

In summary, if all partners at all levels of socio-economic development join hands for effective operation of this Strategy by accepting development as their lifestyle, it is expected to contribute to gradual advancement toward the culture of safety; positive effect on poverty reduction; and transformation of Nepal into a disaster resilient community.

# National Strategy for Disaster Management, 2009

## 1. Existing Situation of disaster risk in Nepal

### 1.1 Natural Disasters

Nepal is in a troubled situation emanating from series of disasters caused by floods, landslides, earthquake, fires, hailstorm, cloudbursts generated by the oceanic typhoon, drought, and famine. In addition, epidemics, industrial accidents, explosions, road accidents, and poison related incidents also are common in Nepal. In this way, every year the country has been facing natural or human induced disasters.

#### 1.1.1. Flood

Flood is considered a major abrupt disaster in Nepal from natural, physical, social, and economic impact, and the degree of social and economic impact and quantitative destructions it causes. The Terai plains in the South, mid-hills, and high mountains are the area most vulnerable to floods. Erosion of natural dams that used to check the flow of Himalayan water, melt down of ice blocks formed glacial lakes, soil and rocks swept by glaciers, and embankment bursts due to upstream water pressure resulting in Glacial Lakes Outburst Floods (GLOF) are the major attributes to flooding. Frequent floods are also caused by quick succession of glacial lakes outbursts formed through rapid meltdown of glaciers heads due to climate change and successive breakdown of natural dams. As per the ICIMOD and UNEP prepared details, 3,252 snow land area covers 5,323 square kilometer area. Similarly, out of 2,315 glacial lakes, 22 are in imminent danger of outburst (ICIMOD/UNEP, 2000).

Excessive deposition of debris in riverbeds on the one hand, and construction of dams along rivers bordering India on the other, has aggravated the problem of flooding in recent years.

#### 1.1.2. Landslide

Landslide is also one of the major disasters in Nepal. Geophysical surface of Nepal is very weak. Frequent landslides are common in mountain areas due to steep terrain, rapid deforestation, slash and burn cultivation practice on steep slopes, rudimentary farming practice, and torrential monsoon rains followed by high temperature. In addition, the practice of carrying out construction of infrastructures, like roads, building, irrigation channels without proper safeguard measures also contribute to frequent landslides in mountain areas.

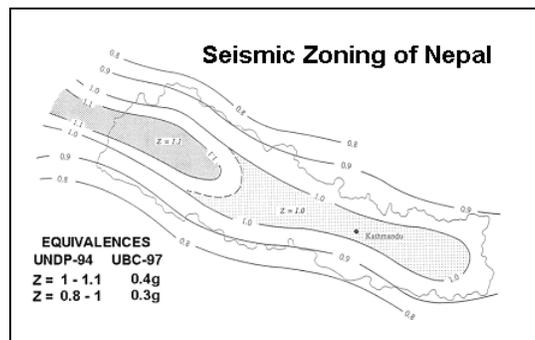
#### 1.1.3. Fire Breakout

The problem of fire breakouts is common in all settlements of Nepal. Significant number of fire breakouts are common in rural settlements due to careless use of fire for household purpose, and negligence in handling/managing it. Fire has been a major problem in rural and urban settlements especially of Terai area when temperature rises up to 45 degree Celsius during the (dry) summer season. Forest fire, a major recent phenomenon, has also emerged as an additional problem.

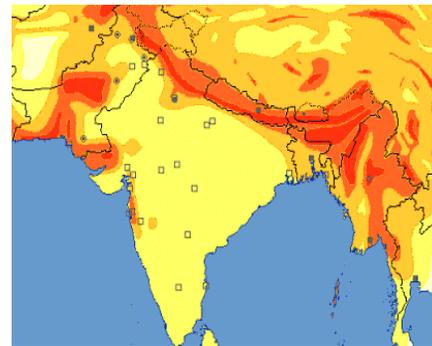
### 1.1.4. Earthquake

The entire country lies in a high earthquake intensity belt. Almost the whole of Nepal falls in high seismic risk scale of MMI IX and X<sup>i</sup> for the generally accepted recurrence period. The seismic zoning map of Nepal divides the country into three zones. As per the map, these parts are extended from north towards (a) west-south, and (b) south-west directions. The middle part of the country is estimated to be more susceptible to earthquake hazard than northern and southern parts.

**Seismic Hazard Map of Nepal**

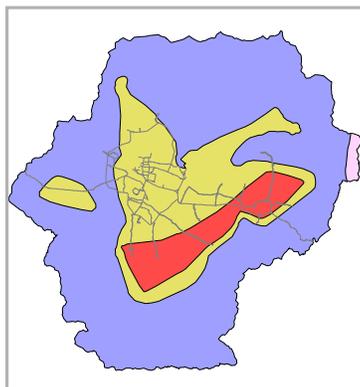


Source: Building Code of Nepal



| Seismic Zone | Modified Mercalli Intensity | Peak ground acceleration (%g) |
|--------------|-----------------------------|-------------------------------|
| Zone = 0     | MMI = V                     | < 3                           |
| Zone = 1     | MMI = VI                    | 3 - 10                        |
| Zone = 2     | MMI = VII                   | 10 - 20                       |
| Zone = 3     | MMI = VIII                  | 20 - 35                       |
| Zone = 4     | MMI = IX                    | > 35                          |

Source: Munich re, 2001



**Intensity of 1934 Earthquake in Kathmandu Valley**

|                |
|----------------|
| Intensity VII  |
| Intensity VIII |
| Intensity IX   |
| Intensity X    |

### 1.1.5. Drought

According to the Intergovernmental Group of UNDP published Report "Climate Change 2007: Effect Adjustments and Heading towards Disaster" published by International Governmental Group of UNDP, the atmospheric temperature rising day by day is playing a role in making the

<sup>i</sup> Source: Global Seismicity Hazard Assessment Program (GSHAP)

phenomenon of disaster like drought and atmospheric dryness more destructive. Rise in global temperature has been adversely affecting the periodic cycle of food crops production and their productivity growth due to heavy rainfall somewhere, patchy or no rainfall somewhere, and longer dry period somewhere. The longer dry spell and uncertain rainfall has been affecting Nepal's agriculture sector. As the capacity enhancement of communities for facing drought or dry spell situations is complex, they are heading towards numerous crises. Agriculture sector is highly affected in absence of the culture for enhancing capacity of communities for reduction of disaster emanating from dry seasons and droughts.

#### 1.1.6. Epidemic

A situation whereby a disease, which unexpectedly and quickly spreads among the people causing deaths due to environmental pollution, lack of pure drinking water and sanitation, is an epidemic. According to World Bank conducted study on Environment and Health, Nepal leads the poor and least developed countries on disease borne epidemics. Thousands people, particularly children die annually from Diarrhea, cholera, hepatitis, and respiratory diseases.

### 1.2 Disaster Risks, Loss, and Interlinked Issues

#### 1.2.1. Disaster Risks and Vulnerabilities

According to the Disaster Vulnerability and Risk Assessment Study Report (UNDP/BCP 2004), Nepal ranks 11th in the world from earthquake vulnerability standpoint. Likewise, the country is placed in 30th place from floods aspect. In another similar report (World Bank, 2005) Nepal is classified as one of the frequently natural disaster recurrence country.

There are natural and non-natural causes of disasters, risks, and vulnerabilities. Under this classification, occurrences of earthquake, volcano, flood, landslide, cyclonic storm, excessive and scant rainfall, cloudburst, drought, GLOF, snow avalanche, and soil erosion fall under the category of natural disasters. Similarly, deaths or injuries caused due to transport, chemical and industrial accidents, and social conflict or warfare falls under the human induced disasters. Both nature and human being can be responsible for incidents like flooding inundation, fire breakouts, and epidemics.

Nepal's physical infrastructures are vulnerable to disasters due to various reasons, like negligence towards traditional knowledge and skills on the utilization of natural resources on the one hand, and lack of comprehensive knowledge of modern construction techniques on the other. Gradual deterioration in the social system of working for common interest of communities, which has made social trusts (*Guthis*) dysfunctional, is also responsible for making the society susceptible to natural disasters. Rapid population growth in urban areas, cities, towns, and suburbs of the country including Kathmandu; centralization of economic potentials and opportunities for livelihood; environmental deterioration; and increased level of pollution in air and water are the additional factors helping raise the level of disaster vulnerability year by year.

Use of weak techniques and low quality construction materials in the construction of buildings and infrastructure are the additional structure related vulnerabilities. Not only construction works become weak, but also disaster vulnerabilities are aggravated due to construction of physical infrastructures without technical supervision of Engineers and their support, and compromised construction process. Situation is such that disaster vulnerabilities could not be reduced as awareness, knowledge, and skills are concentrated in and around academic centers. Expansion of unmanaged housing building and related services in disaster-prone and marginal land in absence of

prudent land-use practice, and execution of land-use policy has helped further aggravation of disaster vulnerability.

Disaster risk and vulnerability has increased due also to security issues and decreased livelihood opportunities, migration, displacement, limited access to and weak flow of information to the population displaced internally due to more than a decade-long conflict in the country.

### **1.2.2. Losses due to disasters**

Nepal annually faces huge human and property losses due to disasters. Statistics on disaster shows that the magnitude of losses of human lives between 1971 and 2006 has been highest due to epidemics. Similarly, out of about 1,000 lives lost every year due to various natures of disasters, around 300 people died from floods and landslides. Another statistics reveal that during the last decade, on an average 211 people lost their lives due to floods and landslides annually. Besides, fire breakouts and thunderbolts (lightning strikes) are other causes for the loss of human lives in Nepal. Outcome of a study conducted in Nepal between 1976 and 2006 showed that every day two lives are lost on average in Nepal due to some type of disaster.

Earthquake is the most destructive among disasters. There is no reflection of earthquake destructions for the last 30 - 40 years in absence of recurrence of highly destructive earthquakes. The earthquake of 1988 (of 6.6 Richter scale, Epicenter intensity of tremor of VIII MMI) with Udaipur as epicenter caused death of 721 persons. According to one estimate, if a major earthquake occurs in the Kathmandu valley, 40,000 people will die, 90,000 injured, and destroy about 50 percent of infrastructure facilities like hospitals that are necessary for saving lives.

As compared to other types of hazards, earthquake can cause huge physical losses. A single incidence of earthquake in 1988 is estimated to have caused the physical loss worth over Rs. five billion, more than the annual GDP for that year. On an average, Nepal has been facing the direct loss of properties amounting to Rs. 1,208 million annually. When opportunities lost, and service breakdowns are accounted for, the resultant potential indirect losses could be of far greater magnitude than estimated above with horrible and long term impacts.

Based on human and physical losses occurred in five sample districts in a normal (no major disaster) year, direct loss to the nation is estimated at close to 0.01 percent of GDP. In case of occurrence of a natural disaster of greater magnitude, effect of such loss has gone up to 4.5 percent of GDP. Direct and indirect losses caused by floods in Koshi area, mid-West, and far-West regions in 2008 are estimated at Rs. 29,130 million and 56,600 million respectively totaling to Rs. 87,730 million. Calculation of losses in various years shows 0.01 percent direct loss in normal years, and up to 4 percent loss in the event of disaster of greater magnitude.

### **Interrelationship between Disaster and Poverty**

Nepal is a developing country placed in 142nd in the Human Development Index (HDI 2007/08). Disaster together with other factors is the sign of poverty. The poor individual, family and community possess negligible capacity to face a disaster. While disaster creates immediate poverty by causing deaths and destructions of productive resources, people's encroachment exacerbated poverty situation in highly vulnerable areas further speeds up the pace of potential hazards. Disaster displaced poor people are constrained to return to the same place making them more vulnerable. Hence, poverty is both the cause and effect of hazards in highly disaster vulnerable countries. Nepal is moving towards meeting the Millennium Development Goals (MDG) with

notable progress achieved in that direction in the first five years. Disaster risk reduction has been imperative to sustain the achievements made towards meeting the MDG so far.

Institutions and communities engaged in development activities are lacking awareness and knowledge related to disaster. Hazards recurring due to interrelationship between disasters and vulnerability have been inflicting damages to development outcomes achieved through hard work while weakening the economic capacities of the affected areas and communities. The main objective of this Strategy is to achieve sustainable development by mainstreaming Disaster Risks Reduction into development efforts. For this, infrastructural and non-infrastructural vulnerability to disasters requires to be addressed by bringing change in the perception and understanding (of disasters) among all institutions and communities engaged in the development process.

### **1.2.3. Natural Disasters and Environment:**

There is a strong link between natural hazards, environment, natural system, and biodiversity, as natural disasters are normally caused by sudden or systematic changes in the state of environment. Such changes primarily start as natural phenomenon through multiple geophysical and climatic processes. Besides, human activities also induce environmental changes, which sometimes produce characteristics of unforeseen nature. For example, a state of sorry leading towards destruction exists amidst symbols of development like unscrupulous use of natural resources or excessive burning (consumption) of fossil fuel emitting Green House Gas (GHG); negligence to resource renewable capacity; and unplanned urbanization.

As the current situation stands, temperature is rising globally extending beyond geographical borders thereby bringing changes in climate and the weather patterns. It has been statistically proven that such changes have increased instances of vulnerabilities like excessive and scanty rainfall, unseasonal floods, drought, forest fires, fire breakouts etc. Likewise, degradation of fertile land leads people to encroach forests for the expansion of agriculture. Such kind of agricultural expansion delinks the existing relationship with settlements thereby endangering the biodiversity. The situation poses serious challenges pertaining to disease and insect borne calamities, safety and health of livestock and plants, and sustainability of environmental processes. Such a situation creates both short and long- term environmental and ecological effects.

In addition, rapid environmental damage is being caused with the tendency of natural disaster displaced communities getting resettled close to natural forests, riverbanks, and slopes vulnerable to landslides. Dimension of the problem has become more serious as such resettled communities most often depend on natural resources for their livelihood. It has made particularly the poor communities more susceptible to hazards.

Possible location, time and potential impact of disaster is difficult to predict due to lack of capacity to make maximum utilization of available technology. From this perspective, it is necessary to take preventive measures including sustainable use of natural resources for safeguarding against potential disasters and sustaining ecological processes to the extent possible for restoration of natural settings to pre-disaster status. For this, adoption of appropriate farming technologies in the Hills, Mountains, and Terai regions; watershed management; agro-forestry; soil conservation; wetlands management; and use of technology for checking fire breakouts is necessary. Besides, integrated execution of the concept of sustainable development with focus on community participation in the sustainable use of natural resources, and biodiversity conservation is also necessary. In aggregate, any artificial pressure or change brought in environment is generally of irreversible nature. Such change not only causes destruction of lives, properties, and

infrastructures, but also endangers the human communities. It is necessary to internalize the concept of disaster reduction or mitigation by all at all levels of development planning exercise while paying sufficient attention to environmental priorities for safeguarding against such hazards.

## **2. Disaster Risk Management in Nepal: Existing Policy, Legal and Institutional Framework**

## **2.1. Policy Measures**

There has been a change in the traditional practice of availing demand and requirement based rescue and relief measure upon occurrence of disaster. After promulgation of Natural Calamities (Relief) Act, 1982, emphasis is also given to preparation and mitigation measures besides relief and rescue operations. Special importance started being given to preparedness activities for disaster management upon declaration of International Decade for Natural Disaster Reduction in 1991.

Efforts were initiated for adoption of various measures towards addressing different types of natural disasters with the introduction of National Action Plan for managing disaster in Nepal in 1996. Expected results could not be achieved as envisaged in the Action Plan due to lack of resources on the one hand, and lack of coordination between the concerned agencies and stakeholders on the other. Major reasons for such inability to achieve the expected result in the areas of preparedness, reduction, and mitigation as envisaged (in the Action Plan) can be attributed to absence of appropriate institutional arrangement equipped with technical capability.

Apart from the National Action Plan, the National Planning Commission developed Tenth Five Year Plan (2002 - 2007), and the Interim Three Year Plan (2007 - 2010) are the other important policies towards reduction of hazards. The Guidelines implemented for distribution of relief to disaster affected people is another policy measure in that direction. Sector policies on water resources, agriculture, housing building, mines and geology, and health have also been playing major roles in managing disaster risks.

## **2.2. Existing Legal Framework**

### **a) Natural Calamities (Relief) Act, 1982**

Natural Calamities (Relief) Act, 1982 was promulgated for the first time in 1982 with the objective of smooth execution of pre and post-disaster relief and rescue works by bringing the work of disaster management under the scope and responsibility of the government. The Act has also made provision of institutional framework necessary for managing disasters. Despite two consecutive amendments in the Act, it missed out the provision of proactive mitigation measures like preparedness, and mainstreaming of hazards reduction in development process making it imperative for drafting a new Act that internalizes the paradigm shift in technology and development initiatives.

### **b) Local Self Governance Act, 1999**

The Local Self Governance Act, 1999 has promoted the concept of local-self governance within the decentralization framework for managing the environment-friendly development. The Act has given due emphasis to interrelationship between development process, environment, and disaster explicitly and inexplicitly. The Act encourages local entities, i.e., District Development Committees (DDCs), Municipalities, and Village Development Committees (VDCs) for finding solutions to problems by themselves. Although, the Act has made local entities responsible, as the situation stands, integrated execution of concepts introduced through the Act has stalled due to absence of necessary rules and budgetary allocation for the purpose.

## **2.3 Central Institutions involved in Disaster Management**

Nepal has two national entities at the policy-making level namely, the Constituent Assembly and the Council of Ministers. Likewise, institutions/organizations of three different natures exist for execution of policies introduced by the above-mentioned national entities. Of these institutions /organizations, Various Commissions play advisory role in framing policies and plans; Sector Ministries are responsible for policy-making and executing plans; and Departments, Regional and Local entities execute policies and plans, and offer advice and feedback to their higher-level entities. The following entities are responsible for policy-making, execution, and coordination pertaining to disaster management:

a). Office of the Prime Minister and Council of Ministers

The Office of the Prime Minister and Council of Ministers has been performing the task of directing, coordinating, and facilitating the preparation of national policy and strategy for reduction of natural and non-natural disasters. Besides, the office has been facilitating the rescue, relief, reconstruction, and rehabilitation works by operating the Prime Minister's Relief Fund.

b). National Planning Commission

National Planning Commission has been playing the lead role in formulations of long-term, periodic, and annual disaster management plans. The Commission has also been garnering resources from bilateral, multilateral and international sources for reconstruction of disaster damaged infrastructures and rehabilitation of the affected. In the meantime, NPC has been engaged in preparing projects, their execution, and monitoring and evaluation at the policy level.

c). Water and Energy Commission (WECS)

Water and Energy Commission is engaged in conducting studies on rivers and streams for the development of water resources in the country through its rational utilization. In addition, the Commission has been making necessary recommendations for hazard reduction by identifying disaster prone rivers and streams. It has been playing important role in controlling water induced disaster by bringing out a long-term water resource policy.

d). Central Disaster Relief Committee (CDRC)

A 27 member Central Disaster Relief Committee is formed under the Chairpersonship of the Minister for Home Affairs for making relief arrangement and coordination as provisioned in the Natural Calamities (Relief) Act, 1982. The Committee holds at least two meetings annually or as necessary for making pre-monsoon preparation and to address any natural or non-natural disaster possible at any time.

e). Ministry of Home Affairs

Ministry of Home Affairs has been working as the coordinating ministry for management of disasters. The Ministry has been carrying out the responsibility of effective rescue and relief measures through the arrangements of Disaster Relief Committees at central, regional, and district levels. The Ministry has gained technical and managerial experience in preparedness, rescue and relief, operation of reconstruction and rehabilitation works, and coordination in relation to disaster. The Ministry, in addition to drafting the Bill and regulations on Disaster Management, and their execution, has been conducting national and international meetings and conferences on the subject.

f). Ministry of Irrigation (Mol)

Ministry of Irrigation has been performing the task of formulating and execution of the policy on water induced disasters control, and floods and river training. Besides, the Ministry also works for minimization of risk on construction and operation of irrigation projects, and carry out repair and maintenance of catastrophe-damaged projects.

g). Ministry of Forests and Soil Conservation (MoFSC)

Mitigation of natural disasters like floods and landslides through formulation of policies on National Forestry Policy, and Soil Conservation fall under the domain of the Ministry of Forests and Soil Conservation. Besides, responsibility of the Ministry includes hazards control through Environmental Impact Assessment (EIA) of development projects. The Ministry has been performing various activities including works on reduction of natural disaster through environmental conservation and other balancing activities, and carrying out reforestation and soil conservation works in natural disaster vulnerable areas.

h). Ministry of Environment (MoEn)

This Ministry functioning as a focal point of United Nations Environmental Program (UNEP), formulates, executes, and monitors national policies on climate change and meteorology. The Ministry plays important role in disseminating information on potential Glacial Lakes Outburst Floods (GLOF) based on disaster risk analysis upon conducting scientific studies and research on glaciers and glacial lakes. In addition, it has been making significant contribution in the mitigation of natural disaster by making seasonal estimation about heavy or rare rainfall, and drought by using weather forecast techniques. In addition to environmental protection, pollution control, and maintenance of environmental balance, issues related to climate change fall under the purview of this ministry. Besides, early warning systems are in operation through installations of flood forecasting centers, and hydrological measurement centers at various rivers of the country.

i). Ministry of Science and Technology (MoST)

The Ministry is responsible for the development of geographical, social and environment friendly science and technology as per the necessity of the country.

j). Ministry of Health and Population (MoHP)

The Ministry imparts necessary training to health personnel as preparedness on disaster, and makes arrangement of medicines, equipment, and treatment to the people hurt and wounded in the post-disaster the rescue operation. The Ministry also makes a diagnosis of epidemics and applies as necessary the preventive and curative measures for their containment.

k). Ministry of Local Development (MoLD)

Raising awareness on disaster through local entities, and mobilization of such entities in emergency rescue operations in the disaster situation are some major works of the Ministry of Local Development. The Ministry has also initiated work on enhancing public awareness and people's participation in environmental protection for safeguarding against disasters. In addition, the Ministry has started encouraging local entities for mainstreaming disaster mitigation measures while executing development activities.

l). Ministry of Physical Planning and Works (MoPPW)

This Ministry has been paying attention to environmental aspect by conducting hazard risk analysis prior to implementation of any development project; circulate and implement the seismic resistant buildings construction guidelines; and raise people's awareness for following the guidelines. The Ministry has also been following the practice of starting development, construction/rehabilitation works only after carrying out the risk mapping exercise for the mitigation of natural disaster; and housing building constructions are being carried out on the basis of building codes the Ministry has developed and circulated.

m). Ministry of Industries (Mol)

The Ministry has been working in the area of disaster control by conducting Geo-hazards Mapping Study in view of the fragile geo-surface of the country; conducting study, and preparing seismic zone maps; and working in the area of controlling pollution generated in the industrial areas. In addition, the industry sector has been making significant contribution in managing relief activities.

n). Ministry of Education (MoE)

Development of curriculum providing knowledge and information on disaster, mitigation preparedness, rescue and relief and their application falls in the domain of Education Ministry. The Ministry has also been carrying out construction of earthquake resistant school buildings, and raising awareness programs through teachers and students.

o). Ministry of Agriculture and Cooperatives (MoAC)

The Ministry performs a number of tasks including necessary policy preparation and implementation so that agricultural production does not decline due to high or inadequate rainfall, and onset of drought; checking hazards in agricultural production emanating from the use of poisonous insecticides; and treatment and control of epidemics in livestock. Besides, animal and plant quarantine check posts are established at international borders for the control of agricultural and animal related epidemics. This entity is responsible also for food security.

p). The Ministry of Energy

This Ministry, which is responsible for the use, safekeeping, promotion, electricity development, and other sources of energy, is directly and indirectly active in managing the disaster risk by bringing together mechanisms, conducting dialogues, and entering into international bilateral and multilateral treaties and agreements.

q). Regional Natural Calamities Relief Committee (RNCRC)

The Natural Calamities (Relief) Act, 1982 has the provision of forming regional level committee as necessary. Regional service centers were established in Biratnagar and Simara respectively for relief operations when earthquake hit Eastern part of the country in 1989, and flooding occurred in Southern part of the country in 1994. Regional committees are proven their usefulness for carrying out rescue and relief operations and coordination in more than one district. At present, Regional Natural Disaster Relief Committees are functional in all regions.

#### **2.4. Departments/Agencies involved in Disaster Management**

a) Department of Hydrology and Meteorology

Major tasks this department is performing are collection and dissemination of information related to hydrology and meteorology, and monitoring, analysis and forecasting of weather.

b) Department of Water Induced Disaster Prevention (DWIDP)

In the context of Nepal placed at 30th place among the water induced disaster prone countries, this department under the Ministry of Irrigation is responsible for taking effective prevention measures (against water induced disasters), and conducting studies and research on floods, landslides, and earthquake.

c) Department of Mines and Geology

This Department under the Ministry of Industry has been performing tasks like geological research; collection and dissemination of geo-science related information; taking geological calamities mitigation measures; operation of seismic measurement stations; collection of earthquake data; and preparation of geo-hazard mapping.

d) Department of Health Services

Major functions of this department have been to avail preventive, promotive, and curative health services to the people. In addition to general medical services, the Department has also the responsibilities of making necessary arrangement for controlling epidemics; providing health services in emergencies; and providing first aid medical services in the event of disasters. Besides, it has been performing tasks of collection, analysis, and dissemination of information on public health. Apart from the above, this Department has been implementing Hospital Preparedness in Emergency (HOPE) program.

e) Department of Local Infrastructure and Agricultural Roads (DoLIDAR)

This Department has been performing a number of tasks such as making local entities technically capable and strong; involving them in local infrastructure development; and carrying out sector programs like housing building and urban development, drinking water, sewerage and sanitation, irrigation and river control in cooperation of local entities. In relation to disaster mitigation, the Department has been facilitating implementation of infrastructure development program by avoiding environmental degradation as the local level.

f) Department of Soil Conservation and Watershed Management

This Department has been taking mitigation measures against natural disasters by maintaining ecological balance, and checking soil erosion through conservation and development of important watersheds.

g) Department of Urban Development and Building Construction

This Department formed under the Ministry of Physical Planning and Works for attaining institutional objective of sustainable urban development, organized settlements, and safe building construction is actively engaged in its works. The Department has been gradually implementing the Building Code.

h) District Natural Disaster Rescue Committees

District Natural Disaster Committees are active in all 75 districts of the country in the leadership of the Chief District Officer. These Committees responsible for rescue, relief, and rehabilitation at the local level are represented by officials of district level (drinking) water supply, health, and

education offices with the Local Development Officer functioning as the Member Secretary. Organization structures of central, regional, and district level Natural Disaster Rescue Committees are given in Annex 1.

i) District Development Committees (DDCs), Municipalities, and Village Development Committees (VDCs)

As per the Guidelines of the Local Self Governance Act, 1999 and as prescribed by other prevalent laws of the nation, 75 DDCs, 58 Municipalities, and 3915 VDCs have been performing the job of mainstreaming disasters risk reduction, management of district level periodic plans and information on disasters. In addition, they are also performing the role of the First Responder to disasters.

j) National Non-government Organizations (NGOs)

The role and activeness of national NGOs in disaster risk management in Nepal has been appreciative. These organizations are active especially in mitigation, reduction, preparedness, and countering disaster. In addition, these organizations have been playing valuable roles in the operation of new policies, plans, and programs; community-based risk management; and raising public awareness. Their contribution to joint participatory work has been result oriented.

Nepal Red Cross Society, an organization oriented to services of humanity with its wide Network from the center to villages, is also a member of the Central Disaster Rescue Committee. The institution has been actively working while remaining close to communities in liberal, transparent, and participatory manner for immediate search, rescue, and relief in the disaster-hit area/s. It also works actively in the distribution of relief materials, disaster risk reduction, and preparedness.

k) UN Agencies and International Organizations

United Nations agencies and international organizations have been working for disaster risk reduction, preparedness, and prevention in the area of humanitarian services. United Nations Development Program (UNDP) has been providing assistance in the policy reform area whereas Agreement pertaining to facilitation of customs procedures for making international assistance simple, smooth, and effective in the situation of emergencies has been signed with UN Office for the Coordination of Humanitarian Affairs (UNOCHA). Besides, other intergovernmental, and Non-Government Organization (INGOs) like UN International Strategy on Disaster Reduction (UNISDR), Asian Disaster Reduction Center, Asian Disaster Preparedness Center, SAARC Disaster Management Center have been providing their support to the Government of Nepal in the area of disaster risk reduction.

**2.5. Existing Technical Capability**

Nepal has experienced significant growth of expertise in the area of disaster reduction and mitigation commensurate with development of science and technology. Mapping of appropriate scales on various natural hazards are being prepared. Also, physical capacity is developed for the publicity of information appropriate for the purpose of monitoring and analysis, and for general users. Some representative examples of such capacities are given below:

| Institution           | Capabilities   |
|-----------------------|--|
| Department of Mines & | Geological mapping of entire country at 1:50,000 scale; engineering geological maps at 1:10,000 scale for majority |

|  |  |
|--|--|
| Geology  | of towns and cities; and a network of 21 short-period seismic stations capable for monitoring uniformly any Magnitude 2 Richter earthquake.  |
| Survey Department  | Mapping of entire country at 1:25,000, and 1:50,000 scales; digital maps of VDCs, Municipalities; aerial photographs at various scales; real-time continuous operation of GPS stations; regular access to satellite mapping and interpretation capacity.                               |
| Department of Hydrology & Meteorology  | Country-wide hydro-meteorological stations; weather monitoring, analysis, and forecasts; and information dissemination for public use.   |
| Department of Water Induced Disaster Prevention  | Capacity for research and river/hydraulic modeling; field research stations for erosion/landslides studies; flood control researches; and implementation of mitigation measures for floods, and landslides/ erosion.   |
| Department of Urban Development and Building Construction (DUDBC)                                      | Building research; disaster-resistant building design; construction training directorate; curricula and training centers; and training program for engineers, architects, and masons.  |
| Ministry of Local Development and District Development Committees (DDCs)                               | Focal point for disaster risk management in each DDC; information management networked with 75 districts; ; integration of disaster reduction concerns ; periodic plans for many districts.  |
| Academic Institutions (public and private)   | Capacities for conducting studies, research, teaching, and risk reduction training on various aspects of natural and human induced disasters.  |
| Emergency Responders (Nepal Army, Nepal Police, Nepal Armed Police Force, Nepal Red Cross Society etc. | A cadre of >150 Medical First Responders and Collapsed Structure Search and Rescue personnel including >25 of international standard; training equipment for search and rescue operation; country-wide networks; logistics including warehouses, surface and air transports available. |
| Hospitals (Government and Private)   | A cadre of trained personnel, and Trainers for Hospital Preparedness for Emergencies; Hospital preparedness plans; and experience of regular mock drills.  |
| Municipalities   | Cadres of trained personnel, trained masons; disaster management committees in some wards; pre-positioned emergency warehouses at many locations.  |
| Ministry of Home Affairs,  | Sufficient experience in responding to disasters including   |

|  |  |
|--|--|
| Disaster Rescue Committees from Central to Districts level | establishment of a coordination mechanism; cadres of professionals trained in UNDAC and INSARAG.   |
| Ministry of Health and Department of Health Services       | Rapid Response Teams to tackle epidemic outbreaks; Working Group on Avian Influenza; emergency health profile of the country; Disaster Health Working Group. |
| Ministry of Agriculture and Cooperatives                   | Damage assessment capacity; experience on responding to fast onset (debris flow as well as slow-onset hazard (drought)).                                     |

In addition to the above, programs like Save Schools from Earthquake and Emergency Help Enhancement have been successfully implemented.

### **3. National Strategy for Disaster Management**

### 3. 1. Introduction

National Strategy for Disaster Risk Management is a National Framework with the commitment of the Government of Nepal for protection, growth, and promotion of national heritages and physical infrastructures. Absence of mainstreaming disaster reduction in the development process in the past resulted not only in the loss of physical properties and human lives, but also destructions of basic infrastructures. Thousands of people have to face tragic consequence of annual occurrences of disasters such as floods, landslides, fires etc. The fact that beside the important role of the government in disaster risk reduction, every person and community has equally important role to play is obvious from instances of disasters caused due to unplanned construction of buildings and other structures.

In a situation whereby natural resources are not being utilized scientifically and optimally, reducing disaster risks to acceptable and possible minimum level for the protection of highly valuable natural resources and heritages is necessary. Besides, it is also necessary taking mitigation, preparedness, and response measures for reduction of the effect on the environment emanating from natural and non-natural disasters. With realization of the fact that taking such measures would not be possible through the government effort alone, this Strategy Paper has been developed in participation and involvement of the governmental and non-governmental agencies, local bodies, academic institutions, private sector, international development partners, civil society, and communities. Ministry of Home Affairs prepared this Strategy Paper after intensive improvisation based on a number of deliberations /workshop seminars, and stakeholder consultations. Objectively, this Strategy Paper is an integrated effort felt necessary for disaster risk reduction in the days ahead through materialization of the spirit of participation. In the process, sincere effort is made towards defining main priorities and associated activities by assigning responsibilities to each sector line agency.

Objectives of this Strategy, i.e., gradually developing the culture of safety, having positive impact on poverty reduction, and transforming Nepal into a Disaster resilient community, will be achieved if all partners at all levels of socio-economic development effectively apply this Strategy by accepting development as their lifestyle. This Strategy Paper is prepared and issued with the fact in mind that disasters are not contained within any national boundaries, but they leave geographical and natural imprint at bilateral, multilateral and international levels. This Paper is the result of the necessity felt for a concrete, meaningful and integrated document based on Hyogo Framework of Action (HFA 2005-2015) reflecting the global common concept, which the United Nations declared in 2005 in participation of 168 nations including Nepal. This document is based on the study of international and regional recognition and standards for translating the national responsibility committed through HFA.

This e National Strategy will be an inseparable component of all other sector strategies contributing as a supplement document for developing Aggregate National Plans. Major objective of this Strategy shall be to guide towards reducing disasters in the process of execution of development programs for national development. This Strategy has adopted the following rules pertaining to the Process of DRM:-

- Help towards achieving national goal of sustainable development and poverty reduction through arrangements for institutional, policy-wide, and legal instruments for disaster

management by ensuring stakeholders' participation for security of lives and livelihoods, and safeguard of properties.

- The government and the communities are equally responsible for ensuring safety from potential disasters that could pose threat to security of citizens' life, and right to livelihoods. A concrete Action Plan on preparedness, rescue and relief, recovery/rehabilitation process will be developed for avoiding potential disasters as it is not always possible to have control over incidence of disasters.
- Sensitivity will be practiced on issues like social equality, justice and inclusiveness, and gender and caste equality while managing disaster risk for vulnerable communities and structures. Special arrangement will be made for marginalized groups, *Dalits*, deprived, and physically and mentally challenged people.

### 3. 2. **Long-term Vision**

Establish Nepal as a Disaster-resilient community is the long-term vision of this Strategy.

### 3. 3. **Long-term Mission**

Long-term Mission of the Strategy is to provide guidance and ensure effective management of development initiatives and implementation of the concept of effective preparedness on mitigation and disaster risks reduction, and incidence of calamities. Following are the submissions to materialize the long-term mission of the Strategy:

- Develop institutional structures;
- Strengthen policy-wide and legal arrangements to ensure stakeholders' participation while adhering to integrated policy and decentralized implementation process.
- Create enabling environment from the central to household level within the State to prepare and implement disaster risk reduction and preparedness plans.
- Ensure Mainstreaming disaster reduction into overall development process along with sectoral development and poverty reduction plans.

### 3. 4. **Directive Principles of DRM Planning**

As preparation, implementation, monitoring & evaluation of DRM plans are based on multifaceted, multisectoral, and multilateral concepts, directive principles of DRM also have to be multidimensional. DRM being associated with development process, some universal principles require to be followed at different stages of activities like management, planning, and implementation of National Policy on DRM and the Agenda on DRR. Basically, following are the Principles of DRM:

#### 3.4.1. **Mainstreaming DRR Concept into Development**

As cross-cutting issues of DRM are integral part of development plans, intensive issues related to disaster reduction will be addressed by incorporating all DRM agenda into overall

development process.. Disaster component will be mainstreamed into development plans right from planning stage to post-completion of projects for awareness raising towards containment, mitigation, and preparedness against potential disaster as a measure for further intensification of DRM. The mainstreaming process will be institutionalized in existing national policies, strategies, working policies, plans, and programs so that development activities do not invite disaster for destruction.

In every program from small to larger scale, priorities will be given for establishment of appropriate mechanism and its development for implementation of measures such as disaster/vulnerability mapping, hazard risk assessment, vulnerability and capacity assessment of communities to cater to major disasters like, floods, landslides, earthquake, fire etc. Besides, priority will be given for establishment of appropriate mechanism at all levels for measures such as implementation of building codes, awareness raising among the people, and strengthening of institutional system in an organized way.

### **Vision, Objective and Working Policy**

The following Vision, Objective, and Working Policy have been set for mainstreaming the DRM concept into development projects:

- **Vision:** Gradually reduce possible social and economic losses emanating from disaster
- **Objective:** Development process will be made sustainable, environment-friendly, and high dividend paying by making the DRM work capable, firm, and effective.
- **Working Policy:** Based on program priorities, associated programs and activities will be carried out by covering all phases of DRM ranging from risk reduction, mitigation, preparedness, and collaboration, and capacity building to reconstruction and rehabilitation. While carrying out such activities, adequate emphasis will be given to establishment of appropriate mechanisms, institutional development, and technical and managerial capacity building at different levels in line with the National Strategy.

In the process of disaster risks reduction and preparedness, initiatives will be taken with priority, inter alia, participation and contribution of local communities; roles of local institutions and authorities; possible contribution of the NGOs and the private sector, and continuity of their participation; and enhancing collaboration and coordination among the agencies and institutions engaged in various sectors of the economy.

### **3.4.2. Assurance of Life Safety and Social Security**

As per the national and international laws, and precedents on Human Rights, the State must provide assurance to the disaster affected people life safety and social security equal to that of disaster unaffected people. No discrepancy should be allowed in the provision of humanitarian assistance, rescue and relief, rehabilitation and social integration of disaster victims. For this, everyone should follow and guard the following social, economic, and cultural rights:

- Rights related to human dignity and physical safety of a person;
- Rights related to basic needs of life;
- Rights related to social, economic, and cultural protection; and

- Other rights related to protection and human needs.

### **3.4.3. Gender and Social Inclusion**

All those involved in DRM will have the following responsibilities to ensure the State's basic policy on Gender and social inclusion:

- All issues on gender and social inclusion will be mainstreamed into all phases of DRM.
- As all DRR programs including emergency and relief operations tend to be situational complexity sensitive, remaining alert of the possibility of complicating the situation by specific class, caste or caste group would be necessary. All three stages i.e., Pre-During-Post disaster scenarios will be identified, and analyzed on priority basis while carrying out response operations.
- Arrangement will be made for informing children, women, senior citizens, and frail persons of all communities and that of minority communities to ensure against any obstacle in the uninterrupted operations of life sustaining structures and systems in the community even during obstructions created on public services due to disaster.
- Vulnerable groups, will be enabled to understand the nature and decide what to do, when to do, and how to do in the event of disaster. For this, activities will be carried out for enhancing their self-confidence by raising their awareness for making use of their knowledge, capacity, opportunity, and rights.
- Prior identification of families vulnerable to disaster, especially women, children, single men/women, frail and sick persons will be made, and rescue, relief and rehabilitation targeted programs will be carried out accordingly.
- During preparedness, risk reduction, rescue and relief, response, and recovery programs, special attention will be paid to the people, who are excluded from social and economic rights, and living in families and communities in marginal living condition, as these groups need special attention and protection in such circumstances.

### **3.4.4. Decentralized Working Process**

As DDCs, Municipalities, and VDCs are active local entities of the State, it is their responsibility of enhancing security and reducing disaster risks and helping communities to address incidence of chaos bringing disasters. With this fact in view, the following provisions (in respect of local entities) will be incorporated in the implementation process of the National Strategy.

- DDCs, Municipalities, and VDCs to integrate DRM in project preparation process; prepare DRM plan at all levels; and encourage communities in preparing DRM plan at that y level;
- Local entities to prepare periodic plans and strengthen institutions by availing necessary human, economic, and physical resources, goods, equipment, and communication facilities;
- Empower local entities for developing their capacity to cope with the disaster risk;

- Introduce crop and livestock insurance system against damages to crops, livestock, and physical properties in urban and rural areas with special arrangement especially for ultra poor; and
- Strengthen monitoring and evaluation system to ensure effectiveness and skill on the preparation and implementation process of DRM plan and its preparedness.

#### 3.4.5. Personnel Safety and Security

Safety of DRM personnel, volunteers, and other people assigned to the field will be the first priority, so that they could safely engage themselves in full of risks rescue and search operations. The following measures will be taken for the safety of technical and non-technical personnel assigned in preparedness, rescue, or rehabilitation works:

- Make arrangement for basic necessities of life (drinking water, sanitation, toilets, electricity, and telephones);
- Make necessary arrangements for uninterrupted essential services , commercial productions , and goods and services necessary for post disaster situations (industrial and commercial organizations);
- Arrange necessary personnel for engaging in Emergency Response System and Response Staff (personnel to work in rescue and response team, and Medical First Responders for example);
- Arrange teams of Security personnel to be engaged (for the security of personnel assigned) in Emergency Response System in the disaster-hit area; and
- Follow the "Safety First" principle.

All agreed principles, in relation to personnel safety, will be important for effective emergency response, help, and rescue operations. In this context, the following preparations will be made for making personnel staff safety reliable, trustworthy, and effective.

- **Personnel:** all agencies will assign their personnel emergency services. The National Security Team will comprise of experienced National Emergency Manager and staff identified by the government for emergency response. Besides, all those team members will be well-trained for the purpose, and equipped with necessary resources (and tools) to respond to the assigned work.
- **Methodology:** Information management rules will be set for arranging security and safety measures with situational assessments of pre-disaster security, geography and region, and suddenly emerging disaster, or emergency.
- **Procedures:** Standard Operating Procedures (SOP) will be pre-defined for all agencies involved in recovery operations. A proven system will be in place for ensuring arrival of personnel for security provision, and make reliable security arrangement within 24 hours of the receipt of information of emergency.

- **Equipment:** All equipment mentioned in Emergency Response Plan will be stored in designated places or institutions. Equipment necessary for personal use of individually assigned teams will form the part of equipment set aside for use in emergency by the National Team.
- The Security Team assigned to emergency rescue and relief operation will be supplied with equipment enough for the first three weeks.

#### **3.4.6. Operations to be based on One-window policy and Cluster Approach:**

It is utmost necessary to achieve expected result through coordinated approach at the working level for concrete shaping of collaborative working spirit among all agencies engaged in DRM. Responsibility of performing sector specific expertise required task remains with the concerned sector agency. Arrangement for integrating various sector efforts from central to local level through a single entity such as Disaster Management Authority or Disaster Management Committee, however, is a One-window Policy. Government, NGOs, Organizations/Institutions, Community Organizations, Civil Society, and Communities working under such policy is expected to help in avoiding duplication, misuse, or misappropriation of resources, and improve overall performance effectiveness.

Sector working group is conceptualized as supplement to One-window Policy. The Cluster Approach UN Inter-Agency Standing Committee introduced in 2005 is considered an effective mechanism. This mechanism helps sector-experts in taking leadership in areas of their expertise, and creation of a network of specialized agencies, while helping effective response and recovery through joint effort. It will also strengthen partnership between national NGOs, INGOs and UN Agencies.

Objective of the Cluster Approach at the national level is to assure humanitarian cooperation through enhancement of the spirit of potentiality, accountability, and partnership among all sector-wide activities of DRM. Work divisions of the government, NGO, and other entities will be clarified based on this concept,. In addition, roles and accountabilities of humanitarian organizations in various sectors will also be clearly defined.

#### **3.4.7. Holistic Approach**

Disaster Management in Nepal is not dealt in a coordinated manner by applying holistic approach to the development process. Hence, in aggregate DRM will be addressed in Holistic Approach at different stages of sustainable development processes.

#### **3.5. Strategic Priorities**

Nepal faces number of challenges of different nature for the reduction of disaster risks. For addressing those challenges, it is necessary to set up priorities based on sector-wide activities by the assessing the nature of potential disaster. For this, it is also necessary to carry on Nepal's necessity-based development agenda with HFA 2005-2015 as a guiding document. The following major objectives set by HFA will also be inseparable component of this Strategy.

- Integrate Disaster Risk Reduction in Sustainable Development Strategies, and Plan preparation;
- Strengthen institutions, mechanism, and capacities for developing disaster resilience; and

- Incorporate DRR concepts in Preparedness, Response, and Recovery programs in an organized way.

The following five priorities, in the implementation process, are recommended for achieving the above-mentioned objectives:

- DRR to be the national and local priorities. A vibrant institutional framework to be in place for its implementation.
- Strengthen assessment, identification, monitoring, and early warning system on potential disaster;
- Make use of knowledge, new ideas, and education for the development of safety culture, and resilience at all levels;
- Minimization of factors of existing risks; and
- Make Disaster Preparedness strong for effective response.

Based on the above priorities, Sector-wide, institution-wide, and phase-wise arrangements are made for DRR. Following are the agreed principles for implementation arrangements made in the process:

- Garner active and collective participation of vulnerable people and communities;
- Empower communities through awareness raising activities with full knowledge of risk potentials, and firm belief and commitment towards necessary measures;
- Promote necessary knowledge, skill, and processes for risk reduction;
- Maintain sustainability through community and institutional capacity development for targeting factors of disaster; and

Make appropriate legal, policy, and institutional arrangement for disaster preparedness, mitigation, and reduction and recovery.

Following are the DRM activities based on the above-mentioned five strategic priorities.

**Priority Activity 1:-**

DRR will be the national and local priority, and ensure a strong institutional arrangement for its implementation.

**Challenges:**

1. There is a need of an integrated DRM to address disaster reduction, preparedness, and response. It requires a system in place to persuade preparation of national programs, and guide stakeholders for protecting the country through reduction of natural and non-natural

disasters. For this, there is the necessity to establish and strengthen institutions responsible for addressing disasters from the central to local level.

2. There is the glaring absence of appropriate legal and policy mechanism for the preparation, and execution of disaster risk reduction and emergency response plans. The existing Natural Disaster Rescue Act, 1982 and other prevailing laws fall short of addressing multiple dimensions of DRM in the changed context. Hence, there is a need of making DRM related Act and policy opportune.
3. Promoting institutional approach among all entities, sectors, and people in viewing disaster in an integrated way is also necessary for mainstreaming DRM related issues in development programs. In addition, there is necessity of expanding the thought of disaster related issues to the poverty reduction program, and MDG.
4. Capacity enhancement at all levels for the preparing disaster response plan is necessary.
5. There is absence of one-window mechanism for managing financial resources for the execution of DRR program.

## Strategies

Followings are the priority activities proposed for addressing the above-mentioned challenges:

| CHALLENGES   | STRATEGIC ACTIVITY   | INDICATIVES AND OUTCOMES  | RESPONSIBLE AGENCY  |
|--|--|---|---|
| <p>1. Integrated Disaster Risk Management System is necessary to address disaster reduction, preparedness, and response. It is felt necessary to establish and strengthen responsible bodies that address disaster from the central to local levels thereby establishing a mechanism to encourage and guide stakeholders in order to safeguard the country from both natural and non-natural calamities and for reduction of risks resulting from such calamities.</p> | <p>1. Establish and strengthen institutional mechanism for Disaster Risk Management</p>  | <ul style="list-style-type: none"> <li>• National Council for Disaster Management, and National Disaster Management Authority at National Level; Regional Disaster Management Committees at Regional Level, District Disaster Management Committee at District Level and Local Disaster Management Committees at Municipality and VDC levels are established.</li> <li>• National Platform for Disaster Risk Reduction is established.</li> </ul> | <ul style="list-style-type: none"> <li>• Council of Ministers, MoHA, MoF, MoGA</li> <li>• Council of Ministers, MoHA</li> </ul> |
| <p>2. There is lack of comprehensive legal and policy instruments for planning and implementation of disaster risk reduction and mitigation. As the existing Disaster Rescue Act, 2039 and other prevailing laws have not been able to address the multidimensional aspect of disaster related issues, it is necessary to revise the Disaster Risk Management related law and policies to make them time relevant.</p>   | <p>2. Formulation/modification of policies and laws in order to include comprehensive disaster risk management related concepts.</p> | <ul style="list-style-type: none"> <li>• DRM related new policy and Acts formulated and implemented.</li> <li>• Policies, programs, and laws amended appropriate in order to include DRM related comprehensive concepts.</li> </ul>   | <ul style="list-style-type: none"> <li>• Legislative Parliament, Council of Ministers, MoHA, MoLJP</li> </ul>                   |
| <p>3. Enhancement of the spirit of integrated outlook among all agencies, sectors, and individuals is necessary</p>  | <p>3. Mainstream DRM into National Development</p>   | <ul style="list-style-type: none"> <li>• DRM mainstreamed in existing National Development Strategy and policies</li> </ul>   | <ul style="list-style-type: none"> <li>• All concerned ministries, NPC, and NDMA</li> </ul>                                     |

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| for mainstreaming development programs into DRR related issues. It is also necessary to give thought to link disaster related issues with poverty reduction program and MDG. |   | including PRSP, MDG and Periodic Development Plans. <ul style="list-style-type: none"> <li>• Arrangement made for mandatory disaster risk assessment of large infrastructure development projects.</li> <li>• A contact point at all ministry with prescribed roles and responsibilities established for the formulation and implementation of disaster risk mitigation and preparedness program</li> </ul> | (proposed). <ul style="list-style-type: none"> <li>• NPC, Concerned Ministries, and NDMA.</li> <li>• Concerned Ministries</li> </ul> |
| 4. There is an urgent need to formulate Emergency Response Plan and enhance capacity at all levels   | 4. Local bodies to integrate DRR and preparedness program in plans, programs and regular developmental activities for effective response. | <ul style="list-style-type: none"> <li>• DDC, Municipality and VDC incorporate DRR and preparedness in their own development plans, programs and regular activities.</li> </ul>   | <ul style="list-style-type: none"> <li>• MoLD, NDMA, and local bodies.</li> </ul>  |
| 5. There is a lack of One-window mechanism to make financial arrangement for the implementation of DRR program   | 5. Preparation and subsequent execution of policies, standards, guidelines, SOPs, and special National Programs for DRM.                  | <ul style="list-style-type: none"> <li>• Specific policies, rules, standards and guidelines formulated.</li> <li>• Standard Operating Procedures (SOPs) developed</li> <li>• Disaster risk related national programs developed and implemented</li> </ul>   | <ul style="list-style-type: none"> <li>• Concerned Ministries, NDMA, and Departments</li> </ul>                                      |
|  | 6. Establishment and operation of EOCs (one at the central level and others at District and Municipal levels)                             | <ul style="list-style-type: none"> <li>• NEOC established and operational at the centre.</li> <li>• EOCs established and operational at District, Municipality and VDC levels.</li> </ul>   | <ul style="list-style-type: none"> <li>• MoHA, NDMA, and LDRMC</li> </ul>  |
|  | 7. Develop One-window mechanism for collection, disbursement and sustainable financial resource   | <ul style="list-style-type: none"> <li>• Necessary financial resource arranged as per the team of experts' recommendation.</li> <li>• Resources mobilized at all levels for identified priority-based DRM policy and</li> </ul>   | <ul style="list-style-type: none"> <li>• NPC, MoHA, NDMA</li> </ul>  |

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|  | management | <p>programs.</p> <ul style="list-style-type: none"> <li>• Mechanism under One-window policy developed for maintaining the details of DRR and related expenses.</li> <li>• A separate fund required for DRM established, and collection and expenditure of such fund based on One- window principle.</li> <li>• Stakeholders, on the behest of the government, provide financial assistance in raising such fund and reimbursing expenses.</li> <li>• A separate mechanism (e.g, basket fund) established for raising financial resources from donors, private sectors and through donations, and arrangements made for funding of affected sectors and communities from that fund.</li> </ul> |  |
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**Notes:**

1. All the responsibilities assigned NDMA, RDMC, DDMC, LDMC shall be abided by or implemented through MOHA and its authorities until these bodies are formed.

**Priority activities 2:**

Improve the system for potential risk assessment, identification, monitoring, and preparedness.

**Challenges**

1. It is necessary to define all types of potential disaster risks in Nepal by their nature incorporating vulnerability and capacity, social, economic, and demographic information.
2. A comprehensive national and district-level database system on disasters, vulnerability, and coping capacity in Nepal is yet to be developed. In addition, there is the lack of capacity to use the media and modern communications technology for information dissemination judiciously.
3. There is the necessity of immediately addressing issues pertaining to installation /strengthening of early warning system, changes brought through the climate change process, and interrelationship between disaster and environment especially at local levels.

## Strategy

Followings are the priority activities proposed for addressing the above-mentioned challenges:

| Challenges  | Strategic Activities   | Indicatives and Outcomes  | Responsible Agency  |
|---|--|---|---|
| 1. It is necessary to define all types of potential disaster risks in Nepal by their nature incorporating vulnerability and coping capacity, social, economic, and demographic information. | 1. Determine natural hazards and vulnerability of various levels and scales, develop a system to update them periodically and make them publicly available | <ul style="list-style-type: none"> <li>• National mapping developed for vulnerability and risks for every type of disaster</li> <li>• National profile (infrastructural, non-infrastructural, social, economic and cultural vulnerability) prepared</li> <li>• Appropriate system developed in order to use vulnerability profiles at DRM and development initiatives at all levels</li> <li>• Disaster related risks and system concerning vulnerability indicators developed</li> <li>• System developed in order to use such indicators for the formulation of Planning /budgeting exercises.</li> <li>• Necessary methods for the risk assessment developed and adopted. Approved methods and standards continued, consensus enhanced and guidelines published</li> </ul> | <ul style="list-style-type: none"> <li>• Concerned Ministries, Departments, NDMA, Professional Organizations</li> </ul> |
| 2. A comprehensive national and district-level database   | 2. Establish and institutionalize DIMS based on authentic and  | <ul style="list-style-type: none"> <li>• DIS developed.</li> <li>• Statistics on disaster</li> </ul>  | NPC, MOHA, NDMA   |

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| <p>system on disasters, , vulnerability, and coping capacity in Nepal is yet to be developed. In addition, there is the lack of capacity to make judicious use of media and modern communications technology for information dissemination.</p>                               | <p>open GIS by incorporating all disaster related information at central, district and municipal levels.</p>       | <p>incidents, impacts, and damages recorded, analyzed, summarized, and publicized on a regular basis.</p> <ul style="list-style-type: none"> <li>• All sectors and stakeholders engaged in disaster information system encouraged to use it.</li> </ul>   |  |
| <p>3. There is the necessity of immediately addressing issues pertaining to installation/strengthening of early warning system, changes brought through the climate change process, and interrelationship between disaster and environment especially at the local level.</p> | <p>1. Establish a national system to provide early warning for disaster/risks monitoring and potential hazards</p> | <ul style="list-style-type: none"> <li>• Appropriate system formulated and developed for the monitoring of potential hazards</li> <li>• Cooperation, coordination ensured among the donor community through institutional coordination mechanism of data-base management for strengthening early warning system.</li> <li>• Early warning system established with the aim of disseminating extensive information among the vulnerable communities and institutions.</li> <li>• Capacity enhanced for information dissemination and a system developed for prudent use of the media and</li> </ul> |  |

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|  |  | <p>information technology.</p> <ul style="list-style-type: none"><li>• Local communities encouraged in the use of early warning system against potential hazards.</li><li>• GIS Maps prepared for urban and urban-oriented areas.</li><li>• Mechanism to use the GIS Maps while formulating GIS plans developed at all levels</li></ul> <p>Researches, impact assessment, and monitoring provisions made for regular update of the system.</p> |  |
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**Priority activities 3:**

Make use of knowledge, new ideas, and education for the development of safety culture and resilience at all levels

**Major Challenges**

1. The level of awareness and knowledge on DRM remains weak at all levels. It is thus imperative to amend and revise education programs for inclusion of disaster related education at all levels in both the formal and non-formal continuing education programs.
2. There remains a challenge of enhancing technical capacity of key stakeholders through education, training, and encouragement to address lack of institutional capacity to formulate, and implement plans for disaster mitigation. The major agencies also lack knowledge of building code, land-use planning, and meteorological hazards management. Consequently, development itself is inviting destruction due to increased vulnerabilities of residential buildings, essential services, and infrastructures.
3. There is a need for introducing Disaster Risk Mitigation/ Management related non-formal education and training.
4. There is a lack of national program for institutionalization of disaster awareness and community education.

## Strategy

Followings are the priority activities proposed for addressing the above-mentioned challenges:

| CHALLENGES   | STRATEGIC ACTIVITY   | INDICATORS AND OUTCOMES  | RESPONSIBLE AGENCY |
|--|--|--|--------------------|
| 1. The level of awareness and knowledge on DRM remains weak at all levels. It is thus imperative to amend and revise education programs for inclusion of disaster related education at all levels in both the formal and non-formal continuing education programs.   | 1. Amend and revise National Education Policy and make its implementation part strong with a view to make school as a central body for awareness raising | <ul style="list-style-type: none"> <li>The disaster risk mitigation and effective preparedness skills integrated in the curricula of each level of primary, secondary, higher secondary, and higher education.</li> <li>Cooperation extended for development of necessary programs to enhance DRM capacity of all schools.</li> <li>The minimum standards for private, community and government schools set for disaster preparedness</li> </ul>   | MoE, MoHA, NDMA    |
| 2. There is a challenge of enhancing technical capacity of key stakeholders through education, training, and encouragement to address lack of institutional capacity to formulate, and implement plans for disaster mitigation. The major agencies also lack knowledge of Building Code, land-use planning, and meteorological hazards management. Consequently, | 2. Make necessary arrangement for the provision of disaster related education.   | <ul style="list-style-type: none"> <li>Arrangements made for compulsory incorporation of disaster risk reduction (including national building code) in the curricula of engineering and other technical and vocational educations below the Bachelor education level.</li> <li>Disaster Risk Management related education incorporated in the curricula of civil society and various training organizations such as Nepal Administrative Staff College, and Police and Nepal Army Training Academies.</li> </ul> |                    |

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| <p>development itself is inviting destruction due to increased vulnerabilities of residential buildings, essential services, and infrastructures.</p> |  |   |   |
| <p>3. There is a need for introducing Disaster Risk Mitigation/Management related non-formal education and training.</p>                              | <p>3. Develop DRRrelated curricula for various target groups and conduct training programs for entire stakeholders</p> | <ul style="list-style-type: none"> <li>• Programs developed to provide non-formal education on Disaster Risk Mitigation and preparedness for all key sectors ranging from individual, family to policymaking levels as necessary.</li> <li>• Web-based training programs promoted for various target groups as appropriate.</li> </ul>  | <ul style="list-style-type: none"> <li>• MoE, MoHA, NDMA, and NGOs</li> </ul>         |
| <p>4. There is a lack of national program for institutionalization of disaster awareness and community education</p>                                  | <p>4. Develop and implement comprehensive national programs for awareness raising and training.</p>                    | <ul style="list-style-type: none"> <li>• Assistance provided to personnel/ persons for the development of special programs and operations, and carry out DRR related activities at DDC, Municipality, VDC, and Ward levels by promoting group of practical users, and professionals.</li> <li>• Awareness raising materials (posters, books, and videos) prepared and published/distributed for raising people's awareness by targeting various groups including Members of Parliament, political activists, and civil servants.</li> </ul> | <ul style="list-style-type: none"> <li>• MoE, MoHA, NDMA, and Local Bodies</li> </ul> |
|   | <p>5. Develop and facilitate plans and programs and use all the means of communication for</p>                         | <ul style="list-style-type: none"> <li>• The role of mass media systematically established and fully oriented for DRM and promoting disaster preparedness in communities.</li> <li>• Use of mass media (FM Radios, print,</li> </ul>  |   |

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|  | information dissemination on DRR and mitigation.  | electronic) for awareness raising encouraged.  |  |
|  | 6. Develop, improve and encourage programs that create awareness on DRM at the local level  | <ul style="list-style-type: none"> <li>• Awareness raising at the local level, and formulating plans and programs encouraged.</li> <li>• Use of radio, television, print, booklets, pamphlets, and other means of communication encouraged.</li> <li>• Use of local skill and knowledge encouraged.</li> <li>• The flow of information through local media ensured to provide information to disaster prone communities.</li> </ul>  | MoIC, NDMA, LDMC, Local Bodies, NGOs and Civil Society   |
|  | 7. Encourage and provide assistance to CBOs, NGO Federations, and other stakeholders for the development and operation of awareness raising programs on Disaster Risk Mitigation and preparedness | <ul style="list-style-type: none"> <li>• Policy environment created to provide assistance required for awareness raising, and implementation (of those policies) encouraged.</li> <li>• Awareness raising related comprehensive plans and programs developed and implemented periodically.</li> <li>• A system put in place for monitoring stakeholders' performance in DRR, and rewarding the best performer; and objective indicators set for such performance evaluations.</li> </ul> | <ul style="list-style-type: none"> <li>• MoHA, NDMA, LDMC, Local Bodies and NGOs</li> <li>• MoHA, NDMA, LDMC,</li> </ul> |

#### **Priority activities 4:**

Minimize major risk factors.

#### **Major Challenges**

1. Issues interrelated to disaster and risk mitigation remains detached from the concept of integrated environmental, and natural resource management and its development. Consequently, opportunities are wasted and vulnerabilities have increased.
  - Poverty Reduction Programs have not been able to adopt the concept of Disaster Risk Mitigation.
  - The existing land-use planning and regulations have not been fully implemented in absence of a concrete mechanism.
  - Adequate attention is not given towards the issue of climate change, managing climate change risks, and adapting climate change to local situations. These issues are not integrated in national policies, plans, and programs.
  - Bottom-up, community-led disaster identification and mitigation programs approach is yet to gain importance being used to the top-down approach to DRR program also.
2. Life sustaining infrastructures, and essential goods and services required for human lives are not fully secured from potential disaster.
3. 'Building Back Better After a Disaster' Plan is essential to make the post-disaster reconstruction works much better.
4. There is absence of a system of conducting fact-based assessment of the nature of potential hazards that could affect most vulnerable groups of the people living marginally in the society. Roles and opportunities for the private sector, NGOs, and CBOs is not yet fully opened for reducing risks to such vulnerable groups and emergency response.
5. There is neither adequate involvement of the private sector entrepreneurs or insurance companies in DRR, nor are they attracted to it. It is necessary to promote the private sector towards making use of innovative financial instruments and DRM.

## Strategy

Followings are the priority activities proposed for addressing the above-mentioned challenges:

| CHALLENGES  | STRATEGIC ACTIVITY   | INDICATORS AND OUTCOMES  | RESPONSIBLE AGENCY  |
|---|--|--|---|
| 1. Issues interrelated to disaster and risk mitigation remains detached from the concept of integrated environmental, and natural resource management and its development. Consequently, opportunities are wasted and vulnerabilities have increased. | 1. Integrate the DRR concept in formulation and implementation of infrastructure development plans | <ul style="list-style-type: none"> <li>• Necessary institutional mechanism developed to include works required to carry out EIA and DIA in all major projects. Likewise, consideration of disaster related issues made mandatory in environment and NRM related programs.</li> <li>• Methods developed for inclusion of guidelines, standard codes (including Building Codes) and other methods inclusion in DRR, their standards enhanced, and their use encouraged.</li> </ul> | <ul style="list-style-type: none"> <li>• NPC, concerned Ministries, Departments, NDMA, Professional Organization and Academic institutions</li> </ul> |
| 2. Life sustaining infrastructures, and essential goods and services required for human lives are not fully secured from potential disaster.  | 2. Assess, protect and strengthen essential public services, and life sustaining infrastructures   | <ul style="list-style-type: none"> <li>• System developed for improvisation of essential public services and early warning systems and management centers (e.g. EOCs) in essential public infrastructures like schools, hospitals or health centers, drinking water, electricity, transport and communications, and made disaster resistant.</li> </ul>  | <ul style="list-style-type: none"> <li>• NPC, concerned Ministries, NDMA and other concerned agencies</li> </ul>                                      |
| 3. There is absence of a system of conducting fact-based assessment of the nature of potential hazards that could affect most the vulnerable groups of the people living marginally in the society.   | 3. Develop and implement special DRR programs on priority basis targeting such marginalized and    | <ul style="list-style-type: none"> <li>• Special DRR programs developed and implemented targeting the most vulnerable groups through need assessment of each such group and prioritization of the following</li> </ul>   |   |

|   |   |   |  |
|---|---|---|--|
| <p>Roles and opportunities for the private sector, NGOs, and CBOs is not yet opened up for reducing risks to such vulnerable groups and emergency response.</p> | <p>most vulnerable groups such as Dalits, women, disabled and deprived groups, children, and elderly.</p> | <p>elements:</p> <ul style="list-style-type: none"> <li>• Awareness and Training</li> <li>• Security of individuals and families</li> <li>• Social security</li> <li>• Training of Trainers (ToT) and curriculum development for such trainers</li> <li>• Special training for various target groups</li> </ul> <p>• The coordinated role of the private sector, NGOs and CBOs in the aforesaid programs improved further and made effective on the basis of One-window policy and sector-wide taskforce principle.</p>                   |  |
| <p>4. 'Building Back Better After a Disaster' Plan is essential to make the post-disaster reconstruction works much better</p>                                  | <p>4. Include DRR initiatives in post-disaster recovery and rehabilitation programs.</p>                  | <ul style="list-style-type: none"> <li>• Institutional process for inclusion of DRR initiatives in post disaster recovery and rehabilitation programs established and developed. Emphasis given to 'Building Back Better After a Disaster'.</li> <li>• Necessary policy, standards and guidelines developed</li> <li>• System developed for implementation of recovery related programs, mechanism to utilize opportunities ensured, expertise, knowledge, and lessons learnt shared for sustainable DRR capacity development.</li> </ul> | <ul style="list-style-type: none"> <li>• MPPW, concerned government agencies of various levels, NDMA.</li> </ul> |
| <p>5. There is a need to promote the private sector to make use of new</p>  | <p>5. Develop and</p>   | <ul style="list-style-type: none"> <li>• Involvement of the private sectors in DRR enhanced to make use of financial</li> </ul>   | <ul style="list-style-type: none"> <li>• Concerned government</li> </ul>   |

|                                |   |   |   |
|--------------------------------|---|---|---|
| financial instruments and DRM. | promote alternative and innovative financial instruments to address DRR | instruments (small investments, micro credit, insurance etc)<br><ul style="list-style-type: none"> <li>• Disaster related financial risk sharing mechanism developed and insurance and reinsurance promoted.</li> </ul> | agencies, NDMA, Private Sector, FNCCI, Businessmen, Ebtreneurs etc. |
|--------------------------------|---|---|---|

## **Priority activities 5**

Make disaster preparedness vibrant for effective response

### **Major Challenges:**

1. Emergency Response Plan formulation and capacity enhancement are not institutionalized at central, district and community levels. Besides, limited capacity exists to provide support post-disaster response activities. Such limited capacity is adequate only for catastrophes of small nature. Hence, there is a need to enhance the capability to cope with disasters of medium and large scales.
2. Well-equipped EOCs could not be established at central and district levels.
3. There is absence of concrete plan for emergency preparedness or disaster response to re-operate the most essential services like telephone, electricity, health, drinking water supply when obstructed due to disaster. For instance, concerned Ministries, Departments, and industrial enterprises do not have emergency response and contingency plans as required. The country also lacks integrated institutional arrangement of Fire Brigade and ad hoc-ism exists in its coordination
4. Emergency response lacks standards. Adequate information on the existing relief policy cannot be disseminated to the people due to absence of an effective mechanism.
5. Adequate and effective arrangements are not available for volunteer mobilization. The community could not be established as a first response agency to provide post-disaster support, whereas no support is provided through any organized program of national level.
6. Institutionalization of the system to update, monitor and carryout periodic evaluation of the capacity to provide support at the time of disaster has not been fully developed. Negligible number of disaster related mock-drills are carried out.

## Strategy

Followings are the priority activities proposed for addressing the above-mentioned challenges:

| CHALLENGES   | STRATEGIC ACTIVITY  | INDICATORS AND OUTCOMES  | RESPONSIBLE AGENCY   |
|--|---|--|--|
| 1. Emergency Response Plan formulation and capacity enhancement are not institutionalized at central, district and community levels. Besides, limited capacity exists to provide support post-disaster response activities. Such limited capacity is adequate only for catastrophes of small nature. Hence, there is a need to enhance the capability to cope with disasters of medium and large scales. | 1. Develop and implement Integrated NDRS  | <ul style="list-style-type: none"> <li>• Integrated response system developed to supports at the time of disaster. In this system, roles and responsibilities of every agency ought to actively work at national, district, municipality/village and ward levels made clear based on their working areas, and arrangement made for reporting through an inter-agency coordination mechanism.</li> <li>• Mechanism developed for mobilization of human as well as institutional resources of Nepal Army, Nepal Police, Armed Police Force to cooperate in emergencies.</li> </ul> | <ul style="list-style-type: none"> <li>• MoHA, MoD, Nepal Army, Nepal Police, APF, NDMA</li> </ul> |
| 2. Well-equipped EOCs could not be established at central and district levels.   | 2. Make arrangements of EOCs gradually across the country, and develop and implement emergency response and preparedness plans. | <ul style="list-style-type: none"> <li>• Integrated emergency response and preparedness plans prepared and implemented at all levels of Ministries, Departments, District level offices, DDC, Municipalities, VDCs, industrial enterprises, schools, and hospitals.</li> <li>• Periodic assessment and monitoring of Disaster preparedness capacity carried out at the central level</li> <li>• EOCs established and operated at central, district, Municipality and village levels</li> </ul>   | <ul style="list-style-type: none"> <li>• NDMA District and local level Committees</li> </ul>       |

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| <p>3. There is absence of any concrete plan for emergency preparedness or disaster response to re operate most essential services like telephone, electricity, health, drinking water supply when obstructed due to disaster. For instance, concerned Ministries, Departments, and industrial enterprises do not have emergency response and contingency plans as required. The country also lacks integrated institutional arrangement of Fire Brigade and ad hoc-ism exists in its coordination</p> | <p>3. Build and improve warehouse/storage capacity store foods, medicines, other rescue materials, and rescue tools and instruments at important places at the ready-to-us condition (central, district, municipality and village levels).</p> | <ul style="list-style-type: none"> <li>• Warehouse/stores made ready at various important places for storing goods and equipment.</li> <li>• Emphasis given on food security (facility to store food at disaster prone areas), seed-bank, (species to use at the time of drought and flooding)</li> </ul>  | <ul style="list-style-type: none"> <li>• MoIC, Nepal Army, Nepal Police, APF, NDMA, District and Local Level DMCs.</li> </ul> |
|   | <p>4. Establish reliable communication system for use in emergency and preparedness phase.</p>   | <ul style="list-style-type: none"> <li>• Wireless Communication Network of security Agencies made reliable with its extension</li> <li>• Arrangements made for regular communication with EOCs established at national and district levels with reliable network in place.</li> <li>• System and mechanism essential for dependable rural telephone services in emergencies developed</li> <li>• Disaster concerned agencies, offices, and EOCs gradually equipped with</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul>   |

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|  |   | <p>satellite phone, radio communication system and other modern means of communications.</p> <ul style="list-style-type: none"> <li>• Fire Brigade service gradually extended from central to district levels based on levels of vulnerability.</li> </ul>   |   |
|  | 5. Make reliable arrangements of transport and logistics.   | <ul style="list-style-type: none"> <li>• Transport service and facility improved in disaster prone areas and airport efficiency enhanced</li> <li>• Government of Nepal specifies alternative International Airports to use when needed. These alternative international airports could be Bhairahawa, Bharatpur, Pokhara, Nepalgunj or Biratnagar. The existing infrastructure improved in the selected airports as per the formulated standards and plans to achieve desired objectives</li> <li>• The necessary consensus arrived with neighboring country India to use airport close to the international border to provide assistance in logistic management when required</li> <li>• Mechanism developed to use CBOs, NGOs and other stakeholders to manage and distribute rescue materials at local levels</li> </ul> | <ul style="list-style-type: none"> <li>• MPPW, MoTCA, NDMA, and LDMCs.</li> </ul>   |
| 4. Institutionalization of the system to update, monitor. and carryout periodic evaluation of the capacity to provide support at the time of disaster has not been fully | 6. Enhance response capacity of the communities at village level to cope with emergency situation | <ul style="list-style-type: none"> <li>• Need of resources to cope with disaster and available capacity assessed.</li> <li>• Capacity of communities with respect to primary treatment, light Search and</li> </ul>  | <ul style="list-style-type: none"> <li>• MOIC</li> <li>• Local Bodies MoLD, MoHA, NDMA, District and Local DMCs.</li> </ul> |

|  |  |  |  |
|--|--|--|--|
| <p>developed. Negligible number of disaster related mock-drills are carried out.</p> | <p>and mobilize schools and communities to provide training by identifying volunteers for such works</p> | <p>Rescue (SAR) enhanced. Arrangements made to store equipment required for light search and rescue works.</p> <ul style="list-style-type: none"> <li>• Arrangements ensured for the immediate mobilization of Red Cross, local clubs and other rescue concerned organizations in social service sector.</li> <li>• HAM Radio networks encouraged for their extension in the rural areas of Nepal</li> <li>• Trainings provided to available volunteers</li> <li>• Inventory of the people with specific qualification readily available at local levels prepared and training imparted to them.</li> <li>• Leadership quality among the organized group of volunteers developed to enable the community to respond the disaster effectively by themselves</li> <li>• Local Bodies and other government and non-government resources arranged for this program</li> <li>• Emphasis NGO support in this effort</li> </ul> |  |
|--|--|--|--|



### **3.6. Sectoral Strategies for DRR**

The task of DRR being Multi-Dynamic and Multi-Sectoral makes it necessary to define sector activities depending upon the nature of that particular sector while making necessary preparations for preparedness, mitigation, and response for DRR and emergency. Hence, the following strategies are recommended for different sectoral activities:

#### **3.6.1. Sectoral Strategy for Agriculture and Food Security**

##### **Challenges**

- There is a need of incorporating DRM in Agriculture Plans and Programs.
- There is a lack of emergency assistance network in production and supply of foods combined with weaknesses in availability of seeds, and food grain warehousing facilities.
- There is a need to develop institutional mechanism within the Ministry of Agriculture and Cooperatives and its agencies to address the issues of disasters into sectoral plans and programs; and an emergency preparedness plan needs to be drawn/updated for the sector
- Necessary assistance for effective response to floods and droughts could not be availed due to lack of early warning system with institutional mechanism for instant flow of information on such instances.
- There is a need to enhance DRM capacity among professionals within the sector in both government and private sectors.
- There is the need to look into materializing the abundant opportunity for engaging the private sector in crop and livestock insurance through due procedures.
- Raise awareness and take necessary steps for food security.

| <b>The following five Strategic Activities are presented below for DRM in Agriculture and Food Security</b>   |  |  |   |   |
|---|--|--|---|---|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>  | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>  | <b>Reduce Risk Factors (5)</b>  | <b>Enhance Preparedness for Effective Response (5)</b>  |
| <ul style="list-style-type: none"> <li>o MoAC to develop a national plan for Disaster Preparedness and Emergency response for the Agricultural sector, with templates for district and community level plans included for areas highly exposed to recurrent hazard risk. The plans will be prepared in a participatory dialogue with all stakeholders and be available on the website.</li> <li>o The MoAC ensures that DRM issues are integrated into district agriculture and village agriculture plans</li> <li>o Enhance under the leadership of MoHA DRM related coordination between MoAC and its departments and offices at the district levels as well as with other line agencies at all levels</li> <li>o Enhance DRM related operational and technical capacities of agriculture offices operating at district and local level.</li> <li>o Mandate the Agricultural departments and offices at decentralized levels to participate as key partners in DRM committees at all levels, and as implementing partners of actions jointly decided by the committees at different levels</li> </ul> | <ul style="list-style-type: none"> <li>o Conduct and coordinate with other sectors hazard risk and vulnerability assessment studies and mapping exercises in the agricultural sector;</li> <li>o Establish a simple crop and livestock monitoring system and database in high risk areas to establish a basis for better emergency needs assessment and response</li> <li>o Translate weather and climate forecast products (from Department of Hydrology and Meteorology) into agricultural impact forecast products and strategic decision support tools for farmers in (slow on-setting) drought prone areas</li> <li>o Establish floods and landslides related early warning system for local level in collaboration with Department of Water Induced Disaster Prevention (DWIDP).</li> <li>o Develop a DRM related Agriculture Communication Strategy to ensure timely dissemination of early warning and strategic decision support information to farmers.</li> <li>o promote economic assessment studies to monitor the costs of mitigation and adaptation to risks (as compared to losses)</li> </ul> | <ul style="list-style-type: none"> <li>o Identify and document good practices for DRM in agriculture, including existing coping practices and indigenous technologies.</li> <li>o Strengthen agricultural research institutions to conduct strategic, applied research to identify and promote on farmers fields the testing of new technologies for DRM in agriculture</li> <li>o Promote through the existing extension systems the establishment of national platforms for applied action research and demonstration to introduce, test and disseminate good practices for DRM in Agriculture; this includes the promotion of Local Farmers Organizations and CBOs in implementing community based disaster risk management approaches and initiatives within the AG sector</li> <li>o Promote insurance practices for crops, and livestock in participation of private sector</li> <li>o Include DRM issues into the curricula of agricultural campuses, and at school levels</li> </ul> | <ul style="list-style-type: none"> <li>o Improve local storage practice (farm level food, animal feed, local seeds storage systems) through introduction of storage standards</li> <li>o Develop the seed bank and seed storage system at the national level with strategic importance.</li> <li>o Encourage to convert landslide areas into plantations, and discourage settlements in flood prone areas</li> <li>o Coordinate with concerned agencies for to maintain river course for protecting crops, and invest for risk reduction (on crops).</li> <li>o Increase irrigation coverage where water resources are available without negative impacts on ground water</li> <li>o Encourage the use of natural hazards risks and disease resistant crops, and livestock species and of integrated production systems.</li> <li>o Improve construction standards for animal shelters and hen pens including spatial locations guidelines</li> <li>o Discourage agricultural practices that lead to disaster.</li> </ul> | <ul style="list-style-type: none"> <li>o Promote regular contingency planning at all levels from agricultural development and security perspective and update regularly.</li> <li>o Ensure adequate emergency supply of food/ seeds in the disaster prone areas in time of need.</li> <li>o Standardize the content/ format of information collection on disaster impacts</li> <li>o Ensure faster damage assessment and mobilization of resources</li> <li>o Develop emergency strategic plan to ensure regional seeds storage</li> <li>o Maintain strategic buffer stock of seeds, foods, and agricultural inputs at the regional level or district agriculture office in coordination with MOHA.</li> <li>o Ensure post-disaster effective supply system.</li> <li>o Develop capacity at all levels to collect information on potential disaster.</li> <li>o Formulate, and put on website definitions and indicators in stakeholders' participation for deciding the level of response and making emergency declaration relating to agriculture and food security.</li> </ul> |

### 3.6.2. Sectoral Strategy on Health and Nutrition

#### Challenges

- Despite the presence of effective program of health and nutritional surveillance and preparedness for response to epidemics, the existing health infrastructure has not been used for delivery of preventive measures against other hazards
- Health sector personnel, especially in remote areas and those outside the government system lack knowledge and awareness on DRM
- The health-sector emergency preparedness and response plan has not been fully implemented. Vulnerabilities identified in the major hospitals systems have not been addressed while majority of health facilities, including major hospitals, have not prepared any emergency preparedness and response plans
- Despite the fact that almost all major hospitals, excluding a few ones, have been assessed as having high to very high level of vulnerabilities to earthquake, no efforts have been made to enhance seismic performance of these facilities.
- There is no mechanism for networking and resources sharing among the hospitals even in public hospitals of Kathmandu Valley.

| <b>The following five Strategic Activities are presented below for DRM in Health and Nutrition Sector</b>  |   |   |   |   |
|--|---|---|---|---|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>   | <b>Reduce Risk Factors (4)</b>  | <b>Enhance Preparedness for Effective Response (5)</b>  |
| <ul style="list-style-type: none"> <li>○ Formulate district, municipal and village level health and nutrition- related disaster reduction and emergency response plan for each district and for each health facility of the country.</li> <li>○ Ensure participation of private sector, civil society, community-based organizations and NGOs in the plan implementation, and develop a properly functioning primary health care system, public health plans and interventions at community level.</li> <li>○ Monitor continuously the capacity of health institutions and flag the critical vulnerabilities.</li> <li>○ Provide funds and stocks needed for rescue and relief work</li> <li>○ Ensure proper drug management and the availability of drugs at all levels, especially at the community level</li> </ul> | <ul style="list-style-type: none"> <li>○ Clearly delineate roles and responsibilities of the National Health System and essential Health Care Services for the implementation of integrated DRM system.</li> <li>○ Effective operationalization of the 2003 Health Sector DRM Emergency Plan</li> </ul> | <ul style="list-style-type: none"> <li>○ Extend emergency planning, triage training and simulation exercises with good trainers and adequate budgets to all health facilities in the country; develop a health and nutrition-related DRR plan to this effect</li> <li>○ Disseminate information through media, street theatre and simple pictorial messages to improve public knowledge of risks at all levels</li> <li>○ Channel resources for integrated disaster reduction programs to improve skills, behaviors, awareness and readiness of health and nutrition personnel and communities</li> <li>○ Disseminate information even in local languages to the public through local media.</li> </ul> | <ul style="list-style-type: none"> <li>○ Extend epidemiological surveys and improve quality control</li> <li>○ Upgrade or retrofit health services, facilities and casualty wards and infrastructure at all levels</li> <li>○ Complete risk assessments of health facilities, wards and services and medical infrastructure at district and sub district levels. Develop and identified vulnerabilities by structural (retrofitting) and on a priority basis the non-structural vulnerabilities.</li> <li>○ Strengthen Rapid Response (medical) Teams (RRTs) with continuous training, logistics and budgeting.</li> <li>○ Establish an enhanced and reliable communication system nationwide to disseminate disaster- related information</li> </ul> | <ul style="list-style-type: none"> <li>○ Assess the disaster preparedness and response of health institutions to identify and fill in gaps. Periodically update the disaster /vulnerability and capacity assessment (EHA Profile) of the country. Updated information disseminated publicly.</li> <li>○ Develop a properly functioning Primary Health Care system, public health and nutrition plans and interventions at community levels and sanction health posts to minimize inadequate allocation and utilization of resources</li> <li>○ Properly stock medical supplies and supervise the health sector program, and ensure effective distribution mechanism.</li> <li>○ Maintain emergency stock of drugs at suitable places and make proper distribution system in emergencies.</li> </ul> |

### 3.6.3. Sectoral Strategy for Education

#### Challenges

- DRR is not included in the formal education curricula at any level from class 1 to the university level (excepting a few initiatives). Existing lessons of natural hazards in the textbooks of science and other subjects do teach about the physics of the hazards, but negligible teaching is carried out as how to reduce disasters and how to make one safe from hazards.
- Schools are the entry point for enhancing disaster awareness and safety into the families and ultimately to the community. Students and the teachers could be used as important change-agents for disseminating disaster knowledge to the community. A formal mechanism to guide the process is yet to be established.
- Most of the public school buildings are structurally vulnerable (to earthquake) and hence pose a risk to the occupants especially during teaching hours. Because of the same reason, the schools cannot be used as temporary shelters or warehouse/field hospitals during a disaster.
- A firm national policy on non-formal education on DRR and emergency response including their mode of implementation could enhance the wider use of the proven potential.
- A time-bound national effort is necessary to analyse human resource development needs by assessing the people educated, trained, and oriented on different aspects of DRM.
- Working level collaboration among disaster risk managers and emergency response institutions within the country is still not effective because of the lack of such mechanism at various levels. Existing disaster preparedness network lacks clarity of vision and modus operandi. There is the necessity of a concrete policy to guide, direct, or utilize such networks.
- Preparation and effective implementation of emergency preparedness plan including drills and pre-positioning of emergency supplies in educational establishments, public or private is another challenge.
- There is a tremendous need to enhance disaster awareness even among the teachers and educators. The level of public awareness is very low demanding massive public campaign
- There is a need to establish a proper mechanism to combat rumors and propaganda especially during disasters.

| <b>The following five Strategic Activities are presented below for DRM in Education Sector</b>   |   |  |  |   |
|--|---|--|--|---|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>  | <b>Reduce Risk Factors (4)</b>   | <b>Enhance Preparedness for Effective Response (5)</b>  |
| <ul style="list-style-type: none"> <li>○ Formulate educational policies for providing adequate knowledge and skills for reducing disaster related risks</li> <li>○ The Ministry of Education, Culture and Sports will direct the curriculum development Center to improve and strengthen the DRM curriculum during the next curriculum revision.</li> <li>○ Establish a mechanism to recognize schools-teachers, students, and parents as change-agents for raising awareness in communities.</li> <li>○ MoE to take advantage of its existing communication network from central to village level for dissemination of DRM messages</li> <li>○ Ensure that communities are one of the main target groups for imparting knowledge on DRR and preparedness knowledge and create a condition for DRM educators and trainers to work in the remote areas of the country as well</li> <li>○ Encourage and promote School Disaster Safety Programs including School Earthquake Safety Programs (SESP) in all districts. Recognize the role of school management committee to play a catalytic role in the implementation of DRM education and awareness programs</li> </ul> | <ul style="list-style-type: none"> <li>○ Make necessary financial resources available to all community managed schools within next 15 years to impart DRM knowledge and skill.</li> <li>○ Assess disaster vulnerability of all public schools. Similar assessment of disaster risks will be made mandatory for all private schools of all levels including colleges and other educational institutes.</li> <li>○ Promote education on “hazard hunt” and use of simple kits such as a rain gauge, and locally manufactured seismographs etc in schools through informal education system.</li> </ul> | <ul style="list-style-type: none"> <li>○ Formulate extensive and special plans to publicize DRM education</li> <li>○ Organize programs to raise concern about and organize DRR related programs in educational institutions.</li> <li>○ Broaden the coverage of DRM in school level curriculum and integrate DRM concept and issues at all levels of formal and non-formal education programs.</li> <li>○ Provide DRM related training to schools teachers to enhance their capability for effective service delivery.</li> <li>○ Strengthen DRM curriculum base by integrating relevant learning experiences among the government agencies, NGOs/INGOs, CBOs and donors in carrying out DRM related activities</li> <li>○ Design community level disaster preparedness course and training programs</li> <li>○ Carry out school mapping exercises for DRM purposes</li> <li>○ Impart knowledge and skill and disseminate information on DRM to school level students</li> <li>○ Arrange for detailed curricula with illustrations so that the students have a clear understanding of hazards and risks</li> </ul> | <ul style="list-style-type: none"> <li>○ Arrange for safe, and flood and landslides free land available for construction of school buildings</li> <li>○ Ensure that all new school buildings are constructed in compliance of the building code and improved with appropriate seismic resistance system where works can be continued with confidence even during earthquake..</li> <li>○ Encourage seismic retrofitting of public school on a priority basis involving the concerned communities.</li> <li>○ Involve youth groups in dissemination of DRM information and awareness raising programs .Have students educate their parents on DRM issues</li> <li>○ Develop guidelines for organizing disaster awareness programs and encourage student\teacher\parents to implement those. Such programs could be mass rally, drills, essay competitions, disaster mitigation and preparedness games, quiz contests, street drams, etc</li> <li>○ Train local masons on disaster risks reduction techniques. Such trainings include construction of earthquake-resistant school buildings or retrofitting the existing one.</li> </ul> | <ul style="list-style-type: none"> <li>○ Have all schools consider DRM issues in preparing their school improvement plans (SIPs)</li> <li>○ Ensure that all schools have disaster preparedness and evacuation plans, and they conduct regular disaster drills</li> <li>○ Mandate monitoring and supervision to ensure that construction of school physical facilities complied the building code</li> <li>○ Incorporate DRM issues into teacher training packages</li> <li>○ Engage students in practical experience relating to disaster preparedness</li> <li>○ Encourage and gradually make it mandatory for all schools to pre position emergency supplies in each school. Make it a part of the school disaster preparedness plan.</li> <li>○ Prepare disaster kits and other promotional materials to suit local needs</li> <li>○ Conduct R &amp; D programs on DRM for better disaster preparedness, especially for</li> </ul> |

| The following five Strategic Activities are presented below for DRM in Education Sector   |  |   |                         |  |
|---|--|---|-------------------------|--|
| Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)  | Identify, assess and monitor disaster risks and enhance early warning system (2) | Better Knowledge Management for Building a culture of Safety at all levels (3)  | Reduce Risk Factors (4) | Enhance Preparedness for Effective Response (5)            |
| <p>and promote it.</p> <ul style="list-style-type: none"> <li>o Ensure that implications of DRR initiatives are included in the existing system of monitoring and supervision of education programs.</li> </ul> |  | <ul style="list-style-type: none"> <li>o Transfer knowledge on DRM to communities</li> <li>o Learn lessons from traditional knowledge and values on DRM for knowledge dissemination</li> <li>o Provide opportunities to students for gaining DRM related practical experience.</li> <li>o Conduct orientation programs for teachers and parents about disaster risks and their mitigation measures</li> <li>o Organize programs to sensitize school management committees and parents on disaster risk reduction</li> </ul> |                         | <p>adapting the existing methods to the local context.</p> |

### **3.6.4. Sector Strategy for Housing (including Shelter, Infrastructural) and Physical Planning**

#### **Challenges**

- Despite enactment of the Building Act, enforcement of Building Code is hindered by lack of adequate resources in terms of trained human resources and proper institutional / organizational structure in municipalities. Even the “Mandatory rules of Thumb” which is augmented by pre-engineering of earthquake-resistant design, is not being implemented properly.
- There is a lack of trained human resources also in the central government department responsible for urban planning and development. Urban plans continue not to consider the potential pre and post disaster hazards.
- National Seismic Standard is yet to be developed which is important for construction of lifeline structures, such as bridges and hospitals. DIA is seldom carried out during the infrastructure design phase.
- Many public buildings and facilities, physical infrastructures and cultural heritages suffer from structural and non-structural vulnerabilities requiring urgent attention for vulnerability assessment and proper interventions for improving their seismic performance and resilience. There is no system of mapping vulnerable structures even in urban areas including Kathmandu Valley.
- No capacity exists for building damage assessment and building triage, which is vital after a disastrous event. There is no plan or policy for ensuring integration of vulnerability reduction in a post-disaster scenario.
- All urban settlements are growing very fast resulting in development in slopes and hazardous lands, and plains vulnerable to floods. Realtors and developers lack knowledge in disaster-resistant design and technologies. In the lack of proper planning bylaws with consideration of possible hazards, the result is tremendous build-up of additional urban vulnerabilities.
- There is a rapid depletion of open spaces in urban and urbanizing settlements. Pertinent land use planning policies and guidelines need serious upgrading to include DRR.

| <b>The following five Strategic Activities are presented below for DRM in Education Sector</b>   |  |  |  |  |
|--|--|--|--|--|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>  | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>  | <b>Reduce Risk Factors (4)</b>   | <b>Enhance Preparedness for Effective Response (5)</b>   |
| <ul style="list-style-type: none"> <li>○ Update the Building Code in consultation with Municipalities for making the National Strategy present-day relevant for its implementation. Subsequently, implement it effectively by developing Strategic Action Plan in collaboration with stakeholders. Ensure that such execution plan contains major indicative process, the minimum human resources, and a recommendation on organizational structure and capacity enhancement needs of municipalities.</li> <li>○ Implement the Building Code with recognition and practicing the principle that it involves strict enforcement, as well as encouragement to code-compliant house-owners with a system for penalizing the Code violators.</li> <li>○ Formulate district, municipal, and village level disaster mitigation and adaptation plans for shelter, infrastructure, and physical planning.</li> <li>○ Strengthen capacity of local government for disaster reduction through increased use of disaster risk and vulnerability maps at the local level.</li> <li>○ Improve capacity and secure continued functionality of central and regional airports and transportation infrastructure.</li> <li>○ Empower local governments with authority, resources, and enhanced capacities to implement DRM within their functional areas.</li> <li>○ Encourage insurance industry to increase building insurance outreach and penetration,</li> </ul> | <ul style="list-style-type: none"> <li>○ Prepare an inventory of important buildings in cities using GIS and other database. Conduct vulnerability assessment on a priority basis, and implement program (for vulnerability) reduction as necessary.</li> <li>○ Ensure that vulnerability assessment is carried out for all (structural, non-structural) important public service building and system. Category of the system for such confirmation include electricity, water supply and sanitation, and road &amp; bridge.</li> <li>○ Promote researches for developing suitable methods of vulnerability assessment and risk reduction including applicability of modern methods such as base-isolation, fire-resistance etc. Promote participation of Nepalese institution/professional in ongoing international program focused on such initiatives.</li> </ul> | <ul style="list-style-type: none"> <li>○ Develop and implement a system of training to: <ul style="list-style-type: none"> <li>➢ Ensure that all civil engineers have understanding of the disaster risk of the country, knowledge of the Building Code, and capability to design earthquake-resistant buildings and other infrastructures.</li> <li>➢ Ensure that all civil engineers of the country are trained in assessing technical aspect of infrastructures like buildings, bridges, infrastructures, and other structures; conduct "damage assessment"; and knowledgeable about post-disaster reconstructions.</li> <li>➢ Ensure that all construction technicians including petty contractors and laborers are trained on earthquake-resistant construction techniques including proper bar-bending, concrete mixing etc.</li> <li>➢ Ensure that all masons involved in buildings construction received free of cost training on earthquake-resistant construction skills. Establish networks of trained masons in every municipality by making such training compulsory as a part of minimum qualification.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>○ Improve building permitting process in all municipalities to ensure compliance of the Building Code.</li> <li>○ Amend related laws for the enforcement of Building Code, and improve the standard of plan preparations and building constructions.</li> <li>○ Promote the use of cost effective construction materials.</li> <li>○ Conduct DIA on buildings and infrastructures.</li> <li>○ Promote researches related to structural assessments of historical monuments and buildings proven as disaster-resilience. For example, there are many historical monuments in Kathmandu Valley, which withstood at least two episodes of MMI IX level earthquake tremors. Studies of these buildings could reveal the indigenous methods for enhancing disaster resilience.</li> <li>○ Enforce Building Code by enacting laws at local levels, and build technical capacity for planning and building construction.</li> <li>○ Educate and involve consumers in monitoring and follow up on quality of building materials</li> <li>○ Upgrade or retrofit buildings of historical importance and infrastructure facilities.</li> </ul> | <ul style="list-style-type: none"> <li>○ Prepare sector preparedness plan at all levels.</li> <li>○ Prepare inventory of (physical) capacity of the sector including heavy machines, earth moving equipment, cranes etc. to respond to disasters, and a plan to mobilize these resources during disasters.</li> <li>○ Build up disaster preparedness capacity of the housing, infrastructure, and physical planning sector for effective response at all levels.</li> <li>○ Improve institutional capacity for developing technical capability for damage assessment and need analysis in disasters.</li> <li>○ Encourage the use of traditional knowledge and skills of construction proven effective. Prepare roster of skilled people who have gained the knowledge in this field. Besides, encourage the skill of preparing good homes from local materials.</li> <li>○ Ensure smooth operations of central and regional airports, their capacities, and ancillary infrastructures with recognition</li> </ul> |

| <b>The following five Strategic Activities are presented below for DRM in Education Sector</b>   |   |   |                                |  |
|--|---|---|--------------------------------|--|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b> | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b> | <b>Reduce Risk Factors (4)</b> | <b>Enhance Preparedness for Effective Response (5)</b>                       |
| <p>especially targeting schools, community centers, community health facilities etc.</p> <ul style="list-style-type: none"> <li>○ Update the Shelter Strategy with due consideration to the Building Code and knowledge on the hazard risk of the country.</li> <li>○ Encourage preparation and implementation of seismic codes or minimum standards for infrastructures and public services.</li> <li>○ Enhance multi-stakeholder partnership for enhancing urban safety against hazards and for risk reduction by developing suitable mechanisms such as annual workshops and public hearing to engage all key players in building production, notably, the engineering consultants, contractors, developers, construction materials manufacturers, and suppliers. Recognize the important roles NGO, CBO, other community organizations such as Guthis (Trusts) and students clubs play, and involve them in enhancing awareness for building code compliance in the communities</li> <li>○ Establish suitable mechanism for planned urban development in the private sector. Prepare minimum standards for urban development especially on agricultural lands.</li> <li>○ Ensure DIA process for the construction of all new infrastructures.</li> </ul> |   |   |                                | <p>of the importance of air transport services in the event of disaster.</p> |

### 3.6.5. Sector Strategy for Livelihood Protection

#### Challenges

- Efforts on enhancing and diversification of livelihood options are still in infancy. There is still the necessity of making good and successful cases nationwide. In addition, there is a need of factoring such programs into the existing disaster preparedness programs.
- Disasters could physically destroy livelihood infrastructures. Hence, there is the need of paying attention towards preparing unbroken infrastructure services plan.
- Quick restoration of livelihood becomes very important in a post-disaster scenario. Programs such as Cash-for-Work (CFW), and Cash-for-Training (CFT) facilitate rehabilitation works in such circumstances. Success of such programs depends much on whether the concepts and program planning incorporate such issues as gender sensitivity (women-headed households in a post-disaster situation), rehabilitation of handicapped, old-age people, orphans, maimed by the hazard events, the *Dalits* and disadvantaged groups etc.
- Although a cross-sectoral issue, its protection and strengthening is not yet an important agenda for overall post-disaster recovery program.

| <b>The following five Strategic Activities are presented below for DRM in the Livelihood Sector</b>  |   |  |  |  |
|--|---|--|--|--|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>  | <b>Reduce Risk Factors (4)</b>   | <b>Enhance Preparedness for Effective Response (5)</b>   |
| <ul style="list-style-type: none"> <li>○ Promulgate new or amend existing legislations, Acts and policies with special attention paid to bring improvement in diversifying livelihood options, and opportunities and choices for poor and excluded groups with consideration of a post-disaster scenario.</li> <li>○ Strengthen institutional mechanisms across all sectors to incorporate livelihood protection issues with due consideration of the impact of disaster event on livelihood.</li> <li>○ Improve physical as well as social infrastructure in the rural areas with access to poor and disadvantaged groups.</li> <li>○ Develop a livelihood protection package for people at high risks.</li> <li>○ Establish adequate and appropriate warning systems and post-disaster response plans at the community level to reduce risks and vulnerability, particularly to reduce loss of livelihood assets.</li> </ul> | <ul style="list-style-type: none"> <li>○ Formulate special packages for livelihood protection. Such packages clearly identify roles and responsibilities of each sector for the protection of the people, areas, and livelihood at risks.</li> <li>○ Develop and deliver livelihood protection package programs for poor &amp; excluded groups</li> </ul> | <ul style="list-style-type: none"> <li>○ Deliver needs assessment training programs focusing on livelihood Issues. Such programs to cover all aspects of DRM, with built-in extension characteristics</li> <li>○ Encourage use of local languages for mass communication media to raise awareness as well as to educate people in DRM and livelihood protection issues.</li> <li>○ Impart training on livelihood management focusing on managing enterprise.</li> <li>○ Improve and expand communication systems in rural areas</li> </ul> | <ul style="list-style-type: none"> <li>○ Expand saving &amp; credit cooperatives and financial institutions to create more livelihood options, choices, and opportunities. Explore the feasibility of insurance schemes and expand them.</li> <li>○ Create employment and income opportunities along with the promotion of farm-based or off-farm enterprises.</li> <li>○ Develop and implement programs that contribute to the local livelihood diversifications, and prepare and practice CFW and CFT programs</li> <li>○ Establish and promote a tax system that encourage personal and property insurances by providing rebate to those who pay premium for disaster insurance like earthquake, flood, and other natural hazards.</li> <li>○ Allocate adequate resources and develop adequate systems to mobilize resources for emergency preparedness as well responses from the central to local levels.</li> <li>○ Establish beneficiaries participating M &amp; E system.</li> </ul> | <ul style="list-style-type: none"> <li>○ Promote decentralized public service delivery system</li> <li>○ Scale up programs that promote farm based or off farm enterprises to create employment and income opportunities.</li> <li>○ Develop local emergency preparedness plans and implement them.</li> <li>○ Develop a joint program and planning systems and empower the local authority to implement livelihood protection programs.</li> <li>○</li> </ul> |

### **3.6.6. Sectoral Strategy for Water and Sanitation (WAT/SAN)**

#### **Challenges**

- The entire water and sanitation sector is not disaster-sensitive so far, excepting a few cases, resulting in a highly vulnerable situation. The likelihood of the WAT/SAN services being impacted by disaster is very high with restoration of services expected to be time-consuming and difficult.
- The fact that drinking water is a lifeline infrastructure is not recognized. Consequently, failure of the water supply system in the post-disaster scenario could produce devastating result. For example, lack of water will seriously impair the service performance of hospitals and health institutions apart from the possible triggering of water-borne diseases following a disaster.
- This sector lacks a dependable contingency plan mainly in the urban environment.
- No reliable plan exists for water supply in vulnerable urban areas in the event of a disaster. Successful cases of WAT/SAN preparedness as done by LSMC should be replicated by the municipalities, DADRM, MADRM and NADRM.

| <b>The following five Strategic Activities are presented below for DRM in the Water and Sanitation Sector</b>   |   |  |  |  |
|---|---|--|--|--|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>  | <b>Reduce Risk Factors (4)</b>   | <b>Enhance Preparedness for Effective Response (5)</b>   |
| <ul style="list-style-type: none"> <li>○ Clearly specify the necessity and importance of DRM with clear delineation of roles and responsibilities of concerned government agencies. Amend and improvise the existing government policies and strategies in WAT/SAN sector that reflect the urgency and importance of DRM by orienting them towards addressing such situation.</li> <li>○ Priority given to dissemination and integration of existing or the amended policies into practice, especially by supporting the local governments in establishing such programs.</li> <li>○ Incorporate DRR and emergency response arrangement for the WAT/SAN sector in district development plans. Such an arrangement include identification of a convenient and safe location for water storage in emergency, and WAT/SAN emergency preparedness plan for post-disaster situation.</li> <li>○ Improvise WAT/SAN management policies in line with this Strategy.</li> </ul> | <ul style="list-style-type: none"> <li>○ Ensure that disaster risk assessment of water and sanitation systems is carried out. Also, ensure that contingency plans are drawn and mitigation programs are developed for uninterrupted water/sanitation services.</li> <li>○ Identify potential disaster risk to the sanitation system in all urban areas, and prepare contingency plans especially for post-disaster emergency period.</li> <li>○ Prepare disaster preparedness and emergency response plan for each municipality.</li> <li>○ DDC to ensure that emergency response plan for each VDC includes the provision for uninterrupted water supply, and arrangement for sanitation system.</li> <li>○ Disseminate information to all stakeholders on DRR, and response Action plan.</li> </ul> | <ul style="list-style-type: none"> <li>○ Conserve the water sources (intake of drinking water, lakes etc).</li> <li>○ Monitor water quality (national or WHO standards) and take necessary measures for improvement.</li> <li>○ Promote water treatment procedures (like screening, sand &amp; coal methods, sun bathe) at the household level or point-of-use.</li> <li>○ Disseminate information to the general public on water and sanitation, and enhance existing local knowledge on water and sanitation.</li> <li>○ Train people, community, and local people on the provision of emergency water and sanitation facilities.</li> <li>○ Raise awareness among the community to the conservation of water sources and effective sanitation systems.</li> </ul> | <ul style="list-style-type: none"> <li>○ Accord priority to drinking water, and management of solid waste. Enhance storage capacity of drinking water in cities and rural areas.</li> <li>○ Promote local water treatment procedures at the household level and use of low cost technology for water treatment at point-of-use and sanitation facilities.</li> <li>○ Adopt water resources mapping and blanket water quality monitoring.</li> <li>○ Protect and conserve water sources and have in-built system to repair damaged pipes, wells, tube wells etc.</li> <li>○ Monitor water quality according to set standards.</li> <li>○ Make budgetary allocation, allocation of human - and other resources for DRM at all levels as an inseparable component of the contingency plan prepared to address disaster scenario.</li> </ul> | <ul style="list-style-type: none"> <li>○ Utilize and conserve water flowing away from traditional sources as stone spouts.</li> <li>○ MOLD to ensure that all DDCs integrate WAT/SAN issues in the District level DRM plans, as part of the district periodic plan.</li> <li>○ Establish Disaster Risk Mitigation warehouses at central and regional levels so that a minimal provisioning of life saving WAT/SAN provisions at district/municipal levels are pre-positioned.</li> </ul> |

### **3.6.7. Sectoral Strategy for Forests and Soil Conservation**

#### **Challenges**

- System yet to be developed to address DRM in the aggregate plans and programs of the Forestry sector in an integrated manner.
- There is still an abundant opportunity for mainstreaming the forestry sector annual planning cycle and program budget.
- There is lack of proper storage facility for timber and fuel wood for use in emergencies
- There is ample opportunity to utilize services of 8,000 strong human resource in the forestry sector to develop forestry generated disaster resilient community.
- There is opportunity for sufficiently engaging technical work force in mitigation, preparedness, and recovery phases.

| <b>The following five Strategic Activities are presented below for DRM in the forestry and Soil Conservation</b>  |   |   |   |   |
|---|---|---|---|---|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>   | <b>Reduce Risk Factors (4)</b>  | <b>Enhance Preparedness for Effective Response (5)</b>  |
| <ul style="list-style-type: none"> <li>○ Mainstream DRM into periodic, and annual development programs of the Forests and Soil Conservation Sector.</li> <li>○ Prepare separate mitigation measures and preparedness plan for the Forests and Soil Conservation Sector.</li> <li>○ Develop working policy for combating forest fires.</li> <li>○ Focus on community participation through enhancement of performance and technical capabilities of field-assigned human resource.</li> <li>○ Enhance collaboration and partnership with national and international partner institutions for effective mobilization of resources.</li> </ul> | <ul style="list-style-type: none"> <li>○ Prepare mapping of disaster risk in the forests and soil conservation sector, and conduct analysis of vulnerability. For this, coordinate with other related sectors.</li> <li>○ Establish a forest fire control and monitoring unit, effectively institutionalize it at the central, regional and district levels, and integrate it in the existing structure.</li> </ul> | <ul style="list-style-type: none"> <li>○ Document DRM related good practices and local experiments in the forestry and soil conservation sector. Conduct extensive publicity campaign for new experiments.</li> <li>○ Introduce the concept of mainstreaming at the central, regional and district level policy and program activities for its integrated incorporation in regular training programs.</li> <li>○ Promote the notion that safe and effective forest management helps in safeguarding human lives, forests, and property.</li> <li>○ Prepare appropriate educational materials for different levels of academic activities of the sector and integrate it also in the education sector in coordination with MoE.</li> </ul> | <ul style="list-style-type: none"> <li>○ Discourage resettlement and encroachment of national forest lands.</li> <li>○ Improvise and strengthen punishment provisions in the existing forestry legislations against forest fire hazards.</li> <li>○ Give emphasis to mobilization of all types of local Users' Groups for rehabilitation of community level basic infrastructures like water resource, irrigation and dug channels etc.</li> <li>○ Discourage settlements on steep slopes, and watershed areas.</li> <li>○ Encourage plantations in landslide prone areas, and discourage settlements in flood prone areas.</li> <li>○ Invest on river training for reducing flood-generated disasters.</li> <li>○ Encourage soil and water conservation in the farmers' fields.</li> <li>○ Conduct forest fire related awareness raising program targeting forestry sector personnel and all consumers.</li> </ul> | <ul style="list-style-type: none"> <li>○ Keep communities informed of forestry through information dissemination about forests or watershed-generated disasters.</li> <li>○ Maintain minimum stock of timbers and fuel woods and gabion wires in Soil and Watershed Conservation Districts for hazard vulnerable districts.</li> <li>○ Impart training to local staff and community for effective response.</li> <li>○ Set up a mechanism for coordination between central, regional, district, and various levels of DRM Committees for combating forest fires.</li> </ul> |

### **3.6.8. Sector Strategy for Information Communication, Coordination & Logistics Capacity**

#### **Challenges**

- Main problem of the sector are low awareness level, lack of commitment, suspicion, confusing responsibilities, weak coordination, weak Laws and Acts, poor implementation, lack of trained personnel, economic constraints, weak infrastructure, inadequate human resource, and expanding settlements.
- Assessment of the degree of vulnerability or safety of communication systems especially telephone services from disaster is necessary. Continued functionality of cellular phones during a large earthquake is questionable because of the location of cellular antennae in high buildings without known resistance to earthquake tremors.
- Diverse and rugged mountain topography, lack of all-weather road network has created obstructions for effective communication, coordination, and logistics management during disasters in the past. Absence of preparedness planning further complicates the problem.
- There is the absence of mechanism for effective exchange of information and communication between government agencies, NGOs, and civil society.
- There is lack of awareness and knowledge as well as institutional capacity for collection of statistics on disaster damages.
- Initiative is necessary to ensure stakeholders' participation including government agencies in the OCHA initiated "Cluster approach" for the promotion of information and coordination approach.
- There is a lack of coordination among the donors. The lack of reliable system and capacity for post-disaster damage assessment and need analysis including identification of the requirements of food and logistics has made this challenge further complex.

| <b>The following five Strategic Activities are presented below for DRM in Information, Communication, Coordination and Logistics</b>  |   |  |   |   |
|---|---|--|---|---|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place(1)</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>  | <b>Reduce Risk Factors (4)</b>  | <b>Enhance Preparedness for Effective Response (5)</b>  |
| <ul style="list-style-type: none"> <li>○ Ministry of Communication (MoC) enunciates liberal policy on establishment of local and community radio stations, and levy minimal import duties and taxes on importation of equipment for communication system.</li> <li>○ Enable information system through promoting technical capacities in communication among partners.</li> <li>○ Strengthen co-ordination among government agencies and develop required software for reporting and collecting information. Develop quality software and protocols for damage assessment, reporting, and executive management. Encourage and support local FM stations to air DRR programs, and to broadcast disaster related information during emergencies.</li> <li>○ Maximize the use of Information Technology (IT) for public disaster awareness in collaboration with the private sector.</li> <li>○ Establish an enhanced and reliable communication system nationwide to disseminate disaster related existing information at all levels by overcoming rumors.</li> <li>○ DDCs at the district level and NDMA at the central level to assign clear-cut communication responsibilities to all the concerned stakeholders, and monitor their work especially during disaster. These agencies will serve as sole sources of disaster impact information to the print and electronic media respectively at the</li> </ul> | <ul style="list-style-type: none"> <li>○ MoC will review its communication strategy for incorporation of DRR aspects.</li> <li>○ MoC will make it mandatory for all communication agencies, telephone service providers, and internet service providers to conduct vulnerability assessment of their system to various hazards, and implement proper vulnerability reduction measure to ensure uninterrupted communications function and service delivery during disasters. Such a measure will ensure speedy recovery of services in the impacted areas.</li> <li>○ Provide technical support for the vulnerability reduction and preparation of disaster response action plans.</li> <li>○ Ensure that cellular telephone antennae are placed on earthquake-resistant buildings.</li> <li>○ Ensure that there is a regular assessment of structural vulnerability of lifelines (bridges, airstrips, and roads) with respect to landslides, floods and earthquake hazards, and that the concerned agencies have developed early</li> </ul> | <ul style="list-style-type: none"> <li>○ Stakeholders made available of details of the national capacity on DRM including capacities of roads, bridges, airports, and existing warehouses etc. Ensure that all information is uploaded on website, and periodically updated with the government and other agencies working collaboratively on early warning system.</li> <li>○ Organize training for skill development as well as institutional strengthening for government, local government, NGOs and volunteers. Such training program should emphasize on the use of computer software systems of inventorying the relief/recovery supplies, tracking relief distribution, and other aspects of logistics management, monitoring, and evaluation.</li> <li>○ Capacity development program will progressively be continued at VDC levels. Some programs will be piloted in sample VDCs to understand the potentials of the involvement of local resources including local champions and volunteers and schools systems for logistics management and coordination to support the district efforts. The trained volunteers and the VDC members will be assigned with the task of managing disaster awareness in the normal times.</li> </ul> | <ul style="list-style-type: none"> <li>○ Conduct test on existing level of disaster preparedness with such tests to continue progressively in every district. Based on test findings, indentify and remove weaknesses on priority basis.</li> <li>○ Arrange mock drills and other exercises on disaster assistance operations. Objectives of such exercises will be to assess existing logistics management capacity to provide assistance pertaining to communication /coordination in the events of disaster.</li> <li>○ Based on weaknesses identified, develop programs for enhancement of communications (satellite, phones, HF network, VHF sets etc.) coordination capacity in disaster situation. This entails capacity development of logistics support providers (airlines services, cargo, truck transports, warehousing, logistics, external or cooperation on international rescue etc.), and other service providers in emergencies.</li> <li>○ Make pre-arrangement of spare parts and communication equipment for quick restoration of post-disaster communications services. Besides,</li> </ul> | <ul style="list-style-type: none"> <li>○ Audit the current level of disaster preparedness at the central level. Establish similar audit progressively in each district. The audit should be able to identify the gaps that need to be bridged on a priority basis.</li> <li>○ Establish a system of mock drill and exercise on disaster response for various disaster scenarios with the purpose of testing the current capacities to respond to different hazard events for the purpose of logistics management and communication/coordination</li> <li>○ Based on the identified gaps, develop programs for enhancing capacities in emergency communication (institutional capacity development in the use and maintenance of SAT phones, HF networks, VHF sets etc.) and coordination. This could include development of institutional capacities to provide logistics support ((air services, cargo, trucking, warehouse management, coordination of outside or international relief</li> </ul> |

| <b>The following five Strategic Activities are presented below for DRM in Information, Communication, Coordination and Logistics</b>   |   |   |  |   |
|--|---|---|--|---|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place(1)</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>   | <b>Reduce Risk Factors (4)</b>   | <b>Enhance Preparedness for Effective Response (5)</b>  |
| <p>central and district levels to ensure uniformity of information.</p> <ul style="list-style-type: none"> <li>○ Establish a mechanism to ensure expeditious receipt of external support from the UN system, bilateral, and multi-lateral agencies subsequent to the call for external assistance. Such arrangement entails establishing mechanisms for smooth granting of visa to foreign rescuers, emergency responders, and import of relief materials etc.</li> <li>○ Prepare inventory of national and international NGOs working and/or interested to work in disaster response (assist in distribution of relief supplies, take up responsibilities of early recovery, reconstruction and rehabilitation). Assess and assist their capacity development.</li> </ul> | <p>warning and recovery plans.</p> <ul style="list-style-type: none"> <li>○ Establish One-window communication system at district and regional levels to avoid duplication and enhance the level of people’s participation</li> <li>○ Develop communication system at central and local levels for proper coordination and collaboration among the government and non-government agencies through the national and district level DRR platforms. This requires conducting a review of existing communication systems, both upstream to the centre and downstream to the VDCs in each district, assessment of their vulnerability to different hazards, and based on that development of the communication system with due consideration of the traditional information dissemination mechanisms that could be enlarged and strengthened. This information system will also be used for wide dissemination of information on disaster reduction and response.</li> </ul> | <ul style="list-style-type: none"> <li>○ Information on baseline on hazard and risks, disaster hot spots, cultural practices and sensitivities, available capacities including that of the public school systems, Chapters of Nepal Red Cross Society, other CBOs and charities will be collected and fed into the district level Disaster Information Management System (DIMS) and made available to pertinent stakeholders</li> </ul> | <p>maintain stock of necessary goods (supplies) for assistance in the event of disaster in high mountains and Himalayan areas.</p> <ul style="list-style-type: none"> <li>○ Existing Strategy based Standard Operating Guidelines will be developed for relief operations. Software standard will be modified to suit Nepalese condition.</li> </ul> | <p>etc.) and capacity-building programs for the emergency services providers.</p> <ul style="list-style-type: none"> <li>○ Ensure propositioning of spare-parts and other communication equipment for speedy recovery of the communication system following a disaster, and pre-positioning of winter logistics for Emergency Response in high altitude areas and areas above the snowline.</li> <li>○ Develop strategy and standards for providing relief. The SPHERE standards should be adapted to the local conditions in Nepal.</li> </ul> |

### **3.6.9. Sector Strategy for Search and Rescue - (SAR) - and Damage Assessment and Need Assessment - DANA**

#### **Challenges**

- Search and Rescue (SAR) operation, and Damage Assessments and Needs Assessments (DANA) could not be effective due to lack of an effective institutional structure for addressing emergencies. Formation and mobilization of SAR teams are done on ad-hoc basis.
- Limited professional SAR capability exists within the Nepal police, Armed Police Force, and the Nepal Red Cross for disasters with collapsed structures and medical first response. There is a chronic lack of equipment for rescuers for other types of hazards, such as flood, or snow avalanche. SAR capabilities lack against such hazards.
- There are no stand-by teams to mobilize for SAR and DANA. There is no system of community volunteer for assisting professional responders at site, missing the opportunity to mobilize local resources for SAR and DANA.
- Nepal lacks the knowledge and experience in Incident Command System to deal with disasters of larger scale. The command system, if any, is used after the disaster and that also by following bureaucratic hierarchy rather than skills. Lack of pre-determined mechanism hinders coordination and optimal mobilization of human and institutional resources.
- The local norms for nutrition, shelter, health, and cultural sensitivity are not well known to the possible external responders and disaster managers.
- It is necessary to develop Manual/Standard Operating Procedures (SOPS) for guiding the SAR or damage assessment for providing SAR or relief.

| <b>The following five Strategic Activities are presented below for DRM in Search &amp; Rescue - (SAR), Damage Assessment and Need Analysis - DANA</b>   |  |   |   |  |
|---|--|---|---|--|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>  | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>   | <b>Reduce Risk Factors (4)</b>  | <b>Enhance Preparedness for Effective Response (5)</b>   |
| <ul style="list-style-type: none"> <li>○ Institutionalize SAR and DANA process in the central and local governance.</li> <li>○ Define roles of government, NGOs local bodies, private sector and Community Based Organizations (CBOs) in SAR and DANA. Identify agencies accountable for SAR and DANA including focal persons and formally assign responsibilities to the identified agencies.</li> <li>○ Create at least 3 Rapid Response Teams (RRT) in each districts</li> <li>○ Establish a system of immediate action to rescue and save life from natural disaster like flood, landslide, avalanche, debris flow, fire etc</li> <li>○ Promote involvement of local community, CBOs, NGOs, and security personnel in search and rescue and damage need assessment. Ensure participation of all stakeholders including women and disadvantaged groups in the SAR and DANA policy formulation and implementation process.</li> <li>○ Ensure budgetary allocation for SAR and DANA including defined process and guidelines for local participation and local resource mobilization.</li> <li>○ Extend emergency planning and training and mock drills with good trainers and adequate budget. Train, practice and organize more frequent disaster drills in Kathmandu and other districts</li> <li>○ Encourage pre-positioning of emergency supplies and light SAR equipment for home, tole, ward, municipality and at district levels.</li> </ul> | <ul style="list-style-type: none"> <li>○ Prepare SAR and DANA guidelines for preventive and promotional approaches. Prepare necessary formats and forms for SAR and DANA.</li> <li>○ Prepare separate lists of equipment for local procurement and for import. Identify agencies responsible for storing and maintaining the equipment.</li> <li>○ Prepare inventory of buildings of critical importance, vulnerable and huge accommodation capacity. Include potential responders including the local volunteers in the inventory.</li> <li>○ Prepare coordination mechanism to ensure involvement of all stakeholders in the SAR and DANA.</li> <li>○ Promote hazard hunting and development of emergency preparedness plans for schools, community centers, and homes. Promote community watch and conduction of vulnerability study tours in all settlements, especially in urban areas</li> </ul> | <ul style="list-style-type: none"> <li>○ Develop capacity-building programs and impart training to build understanding and raise awareness on SAR and DANA.</li> <li>○ Emphasize on the promotion of the role of community as the first responding entity in SAR and DANA.</li> <li>○ Develop Trainers and Trainers of Trainers (ToT) for community level capacity building and community based SAR and DANA. Develop pool of human resources at local level that can support SAR and DANA during different types of disaster.</li> <li>○ Establish well equipped SAR and DANA training centre at central and regional levels. Organize training programs regularly. Enhance technical and managerial skills of the SAR and DANA RRTs including in GIS applications.</li> <li>○ Conduct specific programs to enhance professional capacity of disaster first responders such as Nepal Army, Nepal Police, Armed Police, NGOs, local bodies etc. Develop communication system at central and local levels for proper coordination and collaboration among the government and non-</li> </ul> | <ul style="list-style-type: none"> <li>○ Assign functional responsibilities to the local government bodies for SAR and DANA preparedness programs. Make coordination with other related agencies mandatory.</li> <li>○ Designate focal person on disaster responses and inform the concerned stakeholders of such designation.</li> <li>○ Maintain full time liaison with humanities organizations.</li> <li>○ Organize meetings/participatory interactions with the stakeholders.</li> <li>○ Prepare policy for sharing of equipment and tools available with different organizations to make SAR and DANA effective and identify responsible agency for implementation and follow-up.</li> <li>○ Prepare roster of existing rescue teams/groups and make the information available on the website.</li> <li>○ Prepare capacity-building packages for SAR and DNA including establishment of training centre.</li> </ul> | <ul style="list-style-type: none"> <li>○ Form formal SAR and DANA teams at central and district levels by drawing in members from the army, police, armed police, and the Red Cross. Keep all teams ready for conducting SAR and DANA with adequate and complete kits including communication tools such as satellite phone and other modern equipment such as a solar-powered laptop capable to connect to satellite, to make each team self-sufficient in terms of equipment.</li> <li>○ Establish a well-coordinated relationship between formal SAR/DANA teams and central and district level EOCs</li> <li>○ Prepare format to document SAR for effective sharing and lesson learning Collect information on rescue, relief, rehabilitation works and share with all stakeholders by making the information available on the website.</li> <li>○ Ensure easy access of the SAR team to maps of areas, buildings structures, concentration of population, factories etc. of the Kathmandu valley and other large settlements.</li> <li>○ Develop guidelines for mobilization and utilization of necessary heavy equipment and tools for SAR. Allocate and release necessary budget to the SAR</li> </ul> |

| <b>The following five Strategic Activities are presented below for DRM in Search &amp; Rescue - (SAR), Damage Assessment and Need Analysis - DANA</b>   |   |  |  |  |
|---|---|--|--|--|
| <b>Ensure that disaster risk reduction is a national and local priority with a robust institutional arrangement for implementation in place (1)</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning system (2)</b>   | <b>Better Knowledge Management for Building a culture of Safety at all levels (3)</b>  | <b>Reduce Risk Factors (4)</b>   | <b>Enhance Preparedness for Effective Response (5)</b>   |
| <ul style="list-style-type: none"> <li>○ Promote volunteerism for light SAR and for assisting the external responders in SAR and DANA.</li> <li>○ Establish a mechanism to ensure expeditious receipt of external support from the UN system, bilateral, and multi-lateral agencies subsequent to the call for external assistance. Such arrangement entails establishing mechanisms for smooth granting of visa to foreign rescuers, emergency responders, and import of relief materials etc.</li> <li>○ Prepare inventory of national and international NGOs working and/or interested to work in disaster response (assist in distribution of relief supplies, take up responsibilities of early recovery, reconstruction and rehabilitation). Assess and assist their capacity development.</li> </ul> | <ul style="list-style-type: none"> <li>○ Develop communication system at central and local levels for proper coordination and collaboration among the government and non-government agencies through the national and district platform for DRR. For this, conduct review of existing communication systems, both upstream to the centre and downstream to the VDCs in each district, assessment of their vulnerability to different hazards, and based on that development of the communication system with due consideration of the traditional information dissemination mechanisms that could be enlarged and strengthened. This information system should also be used for extensive dissemination of information on disaster reduction and response.</li> </ul> | <p>government agencies through the national and district platform for DRR. Conduct review of existing communication systems, both upstream to the centre and downstream to the VDCs in each district, assessment of their vulnerability to different hazards, and based on that development of the communication system with due consideration of the traditional information dissemination mechanisms with opportunity for enlargement and strengthening. This information system will also be used for wide dissemination of information on disaster reduction and assistance.</p> | <ul style="list-style-type: none"> <li>○ Provide SAR equipment and materials to local level and training to local community.</li> <li>○ Ensure budget allocation for disaster emergency works as requested.</li> </ul> | <ul style="list-style-type: none"> <li>teams.</li> <li>○ Organize simulation exercises in different locations to increase awareness and promote people's participation on SAR and DANA</li> <li>○ Liaise with and organize joint simulation sessions with Nepal Red Cross, Nepal Scouts and other community members who will be involved in SAR</li> <li>○ Create networks for SAR and DANA professionals and disseminate information of disasters at least in SAARC countries through the networks.</li> <li>○ Form permanent damage and needs assessment teams, medical assistance teams, bilingual support teams etc. at central and district levels. .</li> <li>○ Identify and keep open spaces for temporary settlements at risk areas. Prepare and maintain inventory of facilities for water, food, and medicine storage facility at temporary settlement locations.</li> <li>○ Prepare, maintain, and share with others, e.g. the UN, the inventory of assets for SAR that are available locally and those that will require to be sourced from outside the country</li> </ul> |

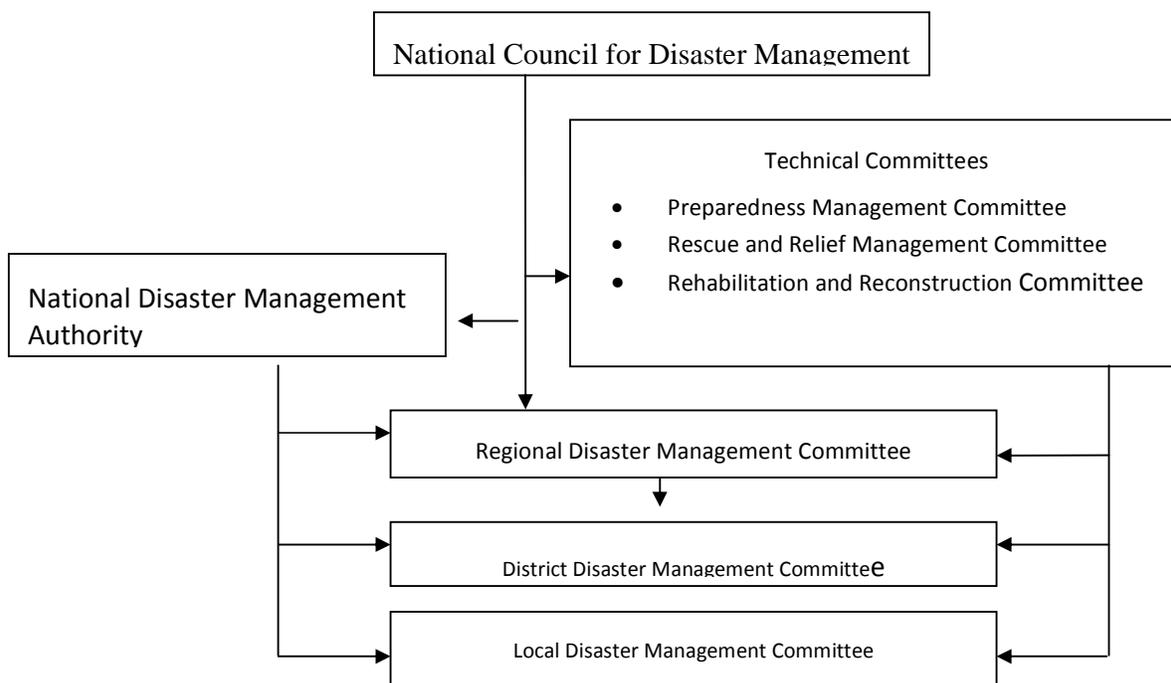
## 4. Proposed Organizational Structure and Approaches for DRM

### 4.1. Introduction

Natural Calamities (Relief) Act, 1982 has made the provision for institutional structures at central and district levels to fulfill the government liability to access rescue and relief related initiatives to the disaster affected people, and coordinate with other line agencies in the process. Experience of the last three decades has proven the capability of such structures in coordinating rescue and relief activities of smaller and medium scales. Such institutional provisions in the Act, however, do not seem sufficient for shifting the emphasis from relief to preparedness and mitigation and mainstreaming DRR into development efforts of the country. There is a need to bring qualitative change in the national structure for DRM. Such structure should be able to expeditiously promote national capacity on the one hand, while preparing the nation for effective response to DRR. Hence, such national institutional structure should be able to initiate the DRR process and provide support to such process, decentralize responsibilities, ensure that all stakeholders participate in the process, and coordinate entire activities from the community to the central level. Besides, the new structures must possess both the right and capacity to integrate DRR into development activities, create synergy at the program level, and facilitate coordination.

Due attention is paid to the necessity of developing appropriate structure for enabling the country to play active role at the regional level through arrangement of an effective agency by focusing on the national requirement while giving due consideration to initiatives of other member countries of the SAARC. The institutional structure proposed in context of Nepal is as follows:

#### **PROPOSED STRUCTURE**



The Government of Nepal will build up on existing structures and gradually transform them into new structures as necessary. In this context, the government will initiate the following process for the development of new structures.

#### **4.2. National Council for Disaster Management - NCDM**

National Council for Disaster Management, as an apex body for Disaster Management, will be formed under the Chairmanship the Prime Minister. Minister for Home Affairs will be the Vice -Chairman, and Ministers for Local Development, Communications, Defense, Foreign Affairs, Finance, Education, Women and Social Welfare, Environment, Science and Technology, Irrigation, and Energy will be the members. Other members of the Council will be Chief of Army Staff, Inspector Generals of Nepal Police and Armed Police Force, and experts of related field (see Annex II).

Tasks and responsibilities of the Council will be to:

- Endorse DRR related policies;
- Approve National level DRR related Plans and Sectoral policies;
- Garner and monitor financial resources for DRR, preparedness, assistance, and recovery; and
- Provide policy guidance for bilateral, sub-regional, and international assistance in the areas of DRM.

National Disaster Management Authority (NDMA) shall be the Secretariat for operation of this National Council.

#### **4.3. National Disaster Management Authority**

A National Disaster Management Authority shall be formed under the NCDM to function as a focal point for execution, facilitation, monitoring, and coordination of DRM in Nepal. NDMA will work in direct cooperation and coordination of ministries, departments, district level agencies, and other stakeholders pertaining to planning and implementation of DRM. In addition, NDMA will be responsible for rapid response, quick recovery, reconstruction, and rehabilitation in the event of disaster.

Tasks and responsibilities of NDMA will be to:

- a) Execute DRM related approved policies, plans, and programs;
- b) Receive, scrutinize as necessary and approve district-level programs incorporating local level programs, and assist in their implementation with financial and technical support;
- c) Recommend to GoN for Declaration of disaster potential area on the basis of report received from the concerned CDO,;
- d) Recommend to GoN for declaration of "Emergency" in extensively disaster affected area;
- e) Collect all disaster-relevant details, conduct or sponsor studies and research in areas of river training, floods, landslides, earth quake, global temperature rise, climate change, land-use, and function as a central resource agency for disaster;
- f) Arrange for Early Warning System for reduction of potential destruction of lives and properties form any kind of disaster;
- g) Carry out tasks at different levels of disaster management through formation of Task-Forces as necessary;
- h) Develop and execute disaster risk mitigation action-plans, and monitor and supervise coordination and collaboration among all concerned agencies;
- i) Provide rescue and relief to disaster affected people through practical and timely policy arrangement;
- j) Carry out DRM related activities including formal and informal education, training, information dissemination, publication, awareness raising, and disaster preparedness mock-drills etc.
- k) Form Rescue Teams for Rescue and Relief Operations, prepare and involve Community Volunteers in those teams;

- l) Carry out tasks as necessary for promoting contact, coordination and collaboration with international bilateral, multilateral, governmental and non-governmental agencies for effective execution of DRM activities;
- m) Receive and mobilize as per rules and regulations cash or in-kind assistance meant for DRM from domestic or international governmental and non-governmental organizations or persons;
- n) Open and operate a separate NDMA Bank account;
- o) In addition to make information instantly available to the public on disasters of extensive consequences, publish annual reports covering the whole-year performance, and financial statement of audit for public information;
- p) Issue directives to the Committee, Executive Director, and DDRMCs and LDRMCs to carry out necessary DRR activities;
- q) Ensure Emergency Preparedness Plans preparation through District, Municipality and local level agencies for coping with potential disaster;
- r) Establish Emergency Management Centers and encourage other entities to do so accordingly;
- s) Annually award exemplary DRM performing persons or agencies with recognition certificates and rewards, and sponsor such awards.
- t) Accomplish tasks through forming Experts Committees as necessary;
- u) Advise the Government as necessary;
- v) Perform activities including preparedness, reduction, rescue and relief, recovery, rehabilitation, and reconstruction activities pertaining to DRM, and perform all other tasks as assigned by GoN.
- w) MoHA to function as a contact agency between the Government and NDMA.

GoN shall make provision of necessary staff including the Executive Director to work in NDMA. Besides, the government can depute necessary administrative and technical personnel to NDMA from its Ministries, Departments and offices until positions are fulfilled through due recruitment process.

#### **4.4. Establishment of Committees**

The following separate Committees will be formed for effectively carrying out DRM activities, and also for performing preparedness, rescue and relief, reconstruction and rehabilitation tasks.

##### **(a) Preparedness Management Committee**

A Preparedness Management Committee will be formed in stewardship of the Minister for Local Development with representations from NPC, various Ministries and Departments, government and NGO sector (see Annex III). Tasks, responsibilities, and rights of the Committee will be as follows:

- Identify vulnerable areas to reduce potential impact of disaster, and prepare mapping of such areas;
- Establish and cause establishment of mechanism for awareness raising, risk evaluation, and preparedness;
- Promote and cause to promote local capability and skill, information flow, and development of integrated network for coping disaster;
- Develop and cause to develop adequate treatment facilities in hospitals and health posts in emergencies;
- Incorporate and cause incorporation of disaster related subject in different levels of formal and informal level education curricula;

- Plan, coordinate, execute and cause to do so relating to disaster management plan, disaster adjusted development plan, land-use plan, fire code, and building code;
- Prepare and cause of to so necessary plan to cope with disaster, keep resistance mechanism and equipment in public agencies at ready-to-use stage as necessary, and take initiative to designate a focal point;
- Make study on the effect of disaster mandatory for all development projects and structures to be executed in the country;
- Prepare and execute a joint plan for multiple districts if impact of disaster is expected to extend beyond one district;
- In coordination with local entities, adopt disaster resistant technique in the construction of public buildings and other physical infrastructures. Take initiative and cause to do so for retrofitting of already completed structures;
- Check settlements from expanding in unsafe areas; ensure safety of such settlements, relocate as necessary and cause to do so. Make sure of giving priority to poor, women, senior citizens and backward class of people while relocating settlements;
- Arrange for conducting DRM training program in the areas of emergency health service, rescue and relief work, and local capacity building with priority accorded to poor, women, and backward class of people;
- Make arrangement of emergency shelters and other services at the community level, and cause to do so;
- Make necessary provision of legislations and Acts, Rules, and Manuals, and recommend for update/amend as necessary. Keep up administrative procedures updated for use in emergencies, and cause to do so;
- Ensure necessary arrangement of adequate resources and budget for DRM;
- Construct warehouses at appropriate locations and maintain adequate stocks of foods, medicines, and rescue and relief materials, and cause to do so;
- Prepare plan for rehearsal on avoiding disaster and execute it;
- Promote coordination and collaboration among stakeholders on combating disaster; and
- Take all necessary precautionary measures for reducing loss to lives and properties from disasters, and so on.

(b) Rescue and Relief Management Committee

A Rescue and Relief Management Committee will be formed in stewardship of the Minister for Home Affairs with representations from MoHP, various Ministries and Departments, government and NGO sector (see Annex IV). Tasks, responsibilities, and rights of the Committee shall be as follows:

- Collect initial report on disaster and disseminate necessary information;
- Immediately Mobilize, and cause to mobilize SAR Team comprising of security agency, NRCS, volunteers, disaster rescue group, technicians, civil society, and other stakeholders for the disaster affected people;
- Establish and cause to establish temporary DRM cell for systematically managing necessary tasks including emergency search, rescue, and information flow, and help the disaster affected community;

- Arrange and cause to arrange instant distribution of food, baby food, drinking water, cloths, utensils, and financial help to the affected people;
- Make arrangement of temporary shelter, health service, drinking water, sanitation, toilets, and security and cause to do so for the disaster affected people;
- Make special arrangement for rescue and relief of children, women, elderly and physically challenged people and cause to do so;
- Ensure smooth operation of communication facilities like radio, television, telephone, fax, email;
- Systematically manage all national and international mediums of information dissemination, and cause to do so;
- Make necessary arrangement for treatment facility locally, and immediately transfer seriously wounded persons to better facility hospitals;
- Assist in reopening of blocked roads transport, and airport/s for accessing the affected area, make necessary arrangement for rescue activity operations and means of transports for transporting relief materials and affected communities or persons, and cause to do so;
- Work collaboratively in coordination with all stakeholders involved, and cause to do so to effectively carry out search and rescue work, and arrange necessary tools, equipment, resources, and adequate budget;
- Facilitate other unaffected districts to come forward to help in rescue, relief and all other measures;
- Work to facilitate normalization of psych-social condition and livelihood of disaster affected people;
- Make maximum utilization of resources, instruments, and skills available in the disaster affected area and extensively involve local people in managing those resources, and cause to do so;
- Rescue and cause to rescue communities downstream immediately after disaster upstream for mitigation of the potential effect of upstream disaster;
- Coordinate with stakeholders about the process for maintenance of buffer stock of foods and other goods necessary during disaster;
- Provide, on behalf of GoN, reliable security to lives and properties of disaster affected people; and
- Perform, and cause to perform any other tasks during rescue and relief operations.

(c) Rehabilitation and Reconstruction Management Committee

A Rehabilitation and Reconstruction Management Committee will be formed in stewardship of the Minister for Physical Planning and Works from NPC, various Ministries and Departments, government and NGO sector (see Annex V). Tasks, responsibilities, and rights of the Committee shall be as follows:

- Assess, and cause to assess damages caused due to disaster;
- Assist and cause to assist in repair and maintenance and new construction of agriculture, land, and buildings; and other infrastructures like drinking water, irrigation, bridges, roads, electricity, and communications by developing such plan;
- Carry out and cause to do so, rehabilitation of economic activities, creation of employment opportunities, and economic activities for livelihood in the disaster affected area;
- Carry out and cause to carry out rehabilitation and reconstruction activities, and make use of disaster mitigation and reduction technologies;
- Develop a mechanism for coordination of rehabilitation, reconstruction, and resilience works carried out by different agencies, and cause to do so;

- As appropriate, involve NGOs, private sector and communities, and cause to do so while carrying out rehabilitation and reconstruction activities to the extent possible by giving priority to the community approach;
- Make arrangement for concessional loans, grants, and other assistance (to disaster victims), and cause to do so. In doing so, give priority to poor, women, senior citizens, and backward classes of people;
- Avail agricultural inputs like fertilizers and seeds etc. at concessional price;
- Arrange, and cause to arrange adequate budget and other inputs and resources;
- Perform, and cause to perform other necessary tasks including psycho-social counseling to disaster victims; and
- Carry out all rehabilitation, reconstruction, and resilience related tasks.

In addition to the above-mentioned Committees other specific working Committees can be formed for coping with specific hazard. Such (specific purpose) Committee will provide necessary support to the operation of NDMA.

#### **4.5. Regional Disaster Management Committee (RDMC)**

Regional Disaster Management Committees will be formed in each Region with Regional Administrator functioning as a Coordinator (see Annex VI). The Committee will have representatives from the Government and NGO sector. Tasks, duties and responsibilities of the Committee shall be as follows:

- Advise, recommend, and perform monitoring and evaluation functions to bring operating effectiveness by maintaining coordination among DDRMCs in preparedness task;
- Provide necessary support by maintaining coordination among the stakeholders for effective rescue and rehabilitation management works;
- Conduct monitoring and evaluation of district-level rehabilitation, reconstruction, and resilience works. In addition, issue directives for repair and maintenance of essential infrastructures by maintaining coordination among the districts within the region.
- Remain active in the monitoring of whole disaster management related works within the region in consultation with NDMA, and forward those evaluation reports to the Authority on a regular basis.
- Use the authority as divested by NDMA.

#### **4.6. District Disaster Management Committee (DDMC)**

District Disaster Management Committees will be formed in each District chaired by the Chief District Officer (CDO) of the concerned district (see Annex VII) The Committee will have representatives from the Government and NGO sector. Tasks, duties and responsibilities of the Committee shall be as follows:

- Prepare district-level Disaster Management Plan by involving the district level NGOs, CBOs, disaster affected or vulnerable community, district-based experts, social workers and the people. Engage all parties in the implementation of the Plan;
- Execute all activities including disaster preparedness, mitigation, reduction, rescue and relief, rehabilitation, and reconstruction;
- Apprise the Council on the status of various aspects of disaster reduction in the district including early warning system and preparedness arrangements etc;
- Submit to the Council the annual status report on disaster reduction;
- Develop appropriate preparedness, reduction, rescue and relief, rehabilitation, reconstruction, and execution strategies in consultation with NDMA and RDMC as appropriate by taking physical condition, institutional capability, and resources available in the district into consideration;

- Develop the district level Emergency Operation Manual, conduct periodic reviews and update;
- Conduct periodic reviews of Disaster Risk Evaluation Plan and submit it to the Council;
- Conduct Disaster Management Training periodically;
- Keep the medium of communication active by involving them in all conditions of DRM;
- Make use of the authority delegated by NDMA;
- GoN can make immediate consume/use moveable properties like food, cloths, medicine, construction materials, and fixed assets like land and buildings/s if it finds necessary to do so by paying rent or price against such use or consumption;
- Provide financial and technical help for the preparation of local level disaster management plan;
- Fine-tune the local disaster management plan and submit to GoN, Council, and other concerned agencies with request for financial assistance;
- Supervise implementation of approved projects; and
- Comply with directives/instructions received from GoN and the Council, and cause to do so.

#### **4.7. Establishment of Sub-committee**

Several Sub-committees will be formed namely, Preparedness Sub-committee with DDC Chairperson or a DDC member as designated by the DDC as a Convener, a Rescue and Relief Sub-committee by the CDO as a Convener, and Rehabilitation and Reconstruction Committee with the Head of the Office of the construction related activities.

#### **4.8. Local Disaster Management Committee (LDMC)**

Local Disaster Management Committees will be formed in each Municipality and VDC with Chief and Chairperson of the concerned Municipality, and Chairperson of the VDC respectively as Conveners (Annex VIII). These Sub-committees will comprise representatives from the government agencies and non-government institutions. Following will be the tasks, duties, and responsibilities of the LDMC:

- Prepare, implement, and monitor disaster management plan for the concerned Municipal or VDC area;
- Extend necessary assistance to the NDMA, DDMC and the CDO in relation to disaster management;
- Impart training to all staff working in local entities, and cause to do so;
- Update disaster-related training and orientation on a set time-frame;
- Allocate budget for disaster management upon approval from the Municipality/VDC;
- Keep all disaster related financial resources in ready-to-use condition;
- Carry out construction of physical structures by following the government and local entities prepared and executed guideline/Manual;
- Arrange for rescue and relief in the affected area;
- Carry out rehabilitation, reconstruction, and resilience works abiding by NDMA directive;
- Prepare and execute the local disaster management plan in collaboration of local NGOs, community, social workers, persons, and disaster affected or potentially affected communities by encompassing the following approach:
  - Local concept and principles on disaster risks;
  - Reflect roles and responsibilities of local officials in DRR;

- Incorporate capability enhancement program necessary for fulfilling role and responsibilities of the local authority;
- Prepare clear-cut disaster risk mitigation strategies;
- Prepare strategy with close to precise estimates for execution of rehabilitation and reconstruction works;
- Prepare and implement Disaster Management Plan in coordination with all stakeholders and the district level government and non-government agencies, and cause to do so.
- Maintain DRR Plan up to date by conducting regular reviews;
- Inform NDMA and DDMC about the locally developed disaster reduction plan;
- Adjust the local disaster reduction plan to the district level plan as directed by the DDC;
- Play the role of a facilitator in the preparation for emergency;
- Prepare and execute emergency plan and procedure, and cause to do so;
- Prepare and cause to prepare local hazards mapping; and
- Request GoN, NDMA, DDC, and concerned stakeholders for financial and technical assistance for completion of the above-mentioned action-plans.

#### **4.9. Community-based Organizations**

District/Municipal/VDC level DRM Committees will develop and enhance performance capabilities of COs to carry out DRM activities at community levels. COs will be imparted training on local early warning system, relocation to safe places, first-aid, search and rescue, and put out fire. Linkages will be developed between COs and related local entities such as: Agricultural Development Bank, health and livestock services for the promotion of disaster preparedness. Skills and capacities of CO leaders in financial and human resource management, resource mobilization, interpersonal communication and presentations, and conversations will be enhanced.

#### **4.10. Arrangement for Disaster Management Authority at the Local Level**

Subsequent to establishment and functioning of NDMA by GoN, District Disaster Risk Management Authority (DDRMA), and Municipal Disaster Risk Management Authority (MDRMA) will be established gradually as per the necessity. Tasks performed by local disaster management committees and sub-committees will be transferred to DDRMA and RDRMA and performed by these respective entities.

## **5. Implementation and monitoring**

Primary responsibility for implementation and monitoring of this National Strategy shall lie with the Government of Nepal. The traditional concept that sole responsibility to “provide relief and security” to the people lie with the government will be changed by adopting the Participatory Multi Sectoral approach. For this, DRM focal points shall be established and managed in all entities responsible for development tasks, i.e. ministries, departments, DDCs. Municipalities, and VDCs, by developing horizontal linkages within the government system. Strong operational linkages will be developed among these entities for them to function as a national network for DRR. Such network will also include the National Platform, NGOs, and stakeholders. This network will facilitate promotion of sectoral approach in DRM, and function as an entity to help the government by monitoring achievements and offering advisory service.

The government will enact necessary legislation, establish a mechanism for garnering financial resource, and make budgetary allocations that reflect/incorporate DRR activities in development programs meant for execution through sectoral agencies of the government, and the private sector. As human resource would be necessary for successful execution of this Strategy, NDMA will conduct need assessment and frame a national program with the target and approach for human resource development. All stakeholders including central and local entities of the government, NGOs, and community-based private sector will be engaged in capacity building and training programs.

Organizations, government or non-government, national or local levels, will be encouraged to develop their programs for DRM in their respective fields of activities or expertise based on the crosscutting issues or sector-specific strategies spelt out in the National Strategy. This Strategy could be used as a “Guide” for organizations or agencies for garnering financial resource for the implementation of DRM programs.

The HFA and other related International Conventions have emphasized for special support to the disaster vulnerable and developing countries like Nepal with ample opportunities for assistance from international organizations such as UNDAC, INSARAG. SAARC Agenda also has paid attention to DRR. Thus, Nepal is in a good position to use opportunity to garner international support towards implementation of this Strategy by adopting suitable policy and legislation, and developing institutional structures and mechanism. Towards this, NDMA will utilize the “Development Forum” for chalking out strategy for international cooperation in DRR and emergency response planning for Nepal.

The proposed NDMA will be the agency primarily responsible for implementing provisions of this Strategy and facilitating the implementation by other stakeholders, and monitoring the implementation of overall national strategy. Likewise, NPC will be responsible to monitor integration of DRR into the development programs. In addition, stakeholders and civil society responsibility of monitoring DRR will form an inseparable part of the overall monitoring process. Necessary indicators will be developed for such monitoring of vulnerability and disaster risks. Besides, assignment will be made as follows for the execution of the responsibilities given in the table below:

| Implementation of the Strategy: Responsibility and Use by Different Stakeholders  |   |
|---|---|
| Activities  | Responsibility                          |
| <ul style="list-style-type: none"> <li>Establish NDMA</li> </ul>  | CA, GoN                                 |
| <ul style="list-style-type: none"> <li>Establish and direct NDMA,</li> </ul>  | CA, GoN, NCDM                           |
| <ul style="list-style-type: none"> <li>Bear overall responsibility and accountability for implementation of this Strategy including establishment of funding mechanisms for DRM implementation</li> </ul>   | Concerned Government Agencies           |
| <ul style="list-style-type: none"> <li>Regulate effective service delivery including disaster response and mitigation, risk free infrastructure construction and other disaster reduction works in the country</li> <li>A guide for incorporation of DRR in all their policies, legislations and priority programs</li> </ul> | All concerned government agencies, NCDM |
| <ul style="list-style-type: none"> <li>Guide in planning, programming and implementing for mainstreaming DRM at district, municipal/VDC, and community levels.</li> <li>Encourage decentralization of DRM initiatives up to the community and household levels</li> </ul>   | MoLD, local bodies, and NGOs            |
| <ul style="list-style-type: none"> <li>Strategy to help safeguard from losses emanating from the impact of disaster to the business sector</li> <li>Provide better avenues for the organized sector towards</li> </ul>  | Organized Sector                        |

|   |                                    |
|---|------------------------------------|
| <ul style="list-style-type: none"> <li>their corporate social responsibilities</li> <li>Higher knowledge and disaster awareness to generate greater business opportunities</li> </ul>   |                                    |
| <ul style="list-style-type: none"> <li>Help to achieve higher security for development initiatives against natural hazards</li> <li>Enhanced opportunity for resource mobilization for DRR works in respective areas of competence</li> </ul> | I/NGOs, NGOs. CBOs.                |
| <ul style="list-style-type: none"> <li>Guide for investment in DRM sector in Nepal</li> <li>Enhanced protection of resources committed for long term development of Nepal</li> </ul>  | International Development Partners |

Sectoral ministries shall bear the responsibility to develop and implement the respective sector-specific strategies through: (a) initiation dialogue among all key stakeholders; (b) develop DRR Action Plan for the concerned sector in a participatory approach with involvement of all key stakeholders; (c) and implement the Action Plan including its periodic monitoring, evaluation and updating. The NDMA, and Regional and District Management Committees should be involved in the Action plan development process. In return, the components of the sectoral Action Plans will be reflected in the annual programs at the central, district, municipal or VDC levels. NDMA shall have the responsibility to ensure the following:

- Sectoral action plans and programs conform to this NSDRM;
- Adequate budgetary allocation is made for their implementation;
- The program allows for resources mobilization from outside the government funds, and it has adequate system of monitoring and evaluation of plan implementation.

#### 5.1. Working Strategy of NDMA

DRR is a multifaceted task. Since the proposed NDMA is the central agency responsible for execution of NSDRM, it needs to implement the following three additional tasks in addition to the tasks that have been mentioned above.

##### 5.1.1. Building Support for the Plan and Sector-specific Action Plans for DRR

Any activity that enhances stakeholders' motivation to address disaster risk, or which raise trust in the strategy or in the government mechanisms and the implementing agencies, will help the strategy of the plan to achieve its objectives. Therefore, part of the strategy is to build support in these areas. The following are the approaches for this.

- Using Transparent and Inclusive Processes

The decision-making for implementing the strategy or formulation of new action plans based on this Strategy by other agencies should be done in an open, public manner, not behind closed doors. NDMA must ensure that the process remains open to build the understanding and trust of the stakeholders in this Strategy. Efforts should be made to inform and involve all “major active agencies”, in particular the beneficiaries and those people, who will be responsible for implementation of the initiatives, and experts from relevant professions and agencies. All interested parties, including the press, should be welcome to observe the decision making process and comments from all parties need to be valued.

- Building Relationships with Other Groups

NDMA will build relationships with a variety of groups in Nepal, such as businesses, government organizations, other NGOs, professional societies, and international groups. These relationships will focus on building the ability to work together and building mutual trust. It is expected that these relationships will help strengthen the NSDRM.

- Conducting Regular Public Hearings

NDMA will hold regular public hearings to allow parties responsible for implementation of the Strategy, interventions to report on progress, to investigate interesting topics and to educate the NDMA staff. These meetings will provide an opportunity for NDMA to keep in touch on a regular basis, as well as providing it an opportunity to share information with others. The press will be encouraged to report on these hearings.

### **5.1.2. Supporting all Initiatives**

The individual strategies are important for DRR. For the strategy to be successful, the initiatives need to be successful. To that end, NDMA must assist implementation of each strategic activity in a variety of ways, which are explained below.

- Coordinating Initiatives

There needs to be a great amount of coordination to make sure that duplication is avoided, knowledge is shared, and that activities of various different institutions fit together smoothly. NDMA will act as a link, as needed, between these organizations and a catalyst to get them working together.

- Planning Initiatives

Upon request, NDMA will work with organizations to help them determine which initiatives are most urgent, ensure high return, and feasible for them to implement. NDMA will help organizations to analyze the costs and the benefits of the various DRR options they face. NDMA will collaborate with institutions to define a realistic scope of work, milestones, and schedule for initiatives that they will undertake.

- Arranging Technical Support

NDMA will arrange technical support to institutions in the form of publications, SOPs, Guidelines, standards, or even consultants.

- Conducting Peer Review of Initiatives

In some situations, expert guidance and support can increase an initiative's effectiveness and efficiency. Peer review is a process where expert professionals not interested to any specific project are asked to review the approaches and methods at various critical stages of implementation, and to discuss their observations with the professionals responsible for implementing the project. This process adds expertise to the project, builds the skills and confidence of professionals, and helps to assure that goals will be met. Peer review is a voluntary, structured approach to including expert technical input in a project. NDMA will arrange for peer review by Nepalese and foreign experts for selected initiatives based on needs and priority.

- Seeking External Funding for Respective Agencies

NDMA will present the Strategy to a whole to a variety of groups interested in funding DRR in Nepal.

- Publishing Successful Initiatives

NDMA will publish successful initiatives and the responsible organizations to public groups and the press. Such details will be made public through workshops, lectures, and press conferences.

## **5.2. Monitoring and Evaluation**

Implementation of the Strategy needs to be monitored and evaluated annually for measuring the progress and for understanding the impact or the influence it has made in furthering the cause of DRR and towards achieving the objectives. NDMA will publish its annual progress report and made it public. MoHA shall monitor, evaluation, and regulate the tasks of NDMA. MoHA will also conduct performance evaluation of

all regional, district, and local level Disaster Management Committees through NDMA. NDMA will develop Indicators necessary for this task.

## **6. Improvisation of English Nepal Terminology on Disaster**

Vocabularies defining the disaster related terminology are given in Annex 9, that are prepared in wide consultation among linguists, professors, technicians, administrators, civil society for uniform use of disaster related vocabularies. In addition, the "Natural Calamity Management Section" will be renamed "Disaster Management Section".



## Annex 1

## Officials of Central Disaster Rescue Committee

|     |                                     |                   |   |
|-----|-------------------------------------|-------------------|---|
| 1.  | Chairperson                         | Minister          | Ministry of Home Affairs  |
| 2.  | Member                              | Minister          | Ministry of Physical Planning & Works   |
| 3.  | Member                              | Minister          | Ministry of Health and Population   |
| 4.  | Member                              | Secretary         | Office of the Prime Minister & Council of Ministers   |
| 5.  | Member                              | Secretary         | Ministry of Home Affairs  |
| 6.  | Member                              | Secretary         | Ministry of Finance   |
| 7.  | Member                              | Secretary         | Ministry of Foreign Affairs   |
| 8.  | Member                              | Secretary         | Ministry of Agriculture and Cooperatives  |
| 9.  | Member                              | Secretary         | Ministry of Water Resources (Now, two separate Ministries of Energy, and Irrigation)                        |
| 10. | Member                              | Secretary         | Ministry of Physical Planning & Works   |
| 11. | Member                              | Secretary         | Ministry of Health & Population   |
| 12. | Member                              | Secretary         | Ministry of Education   |
| 13. | Member                              | Secretary         | Ministry of Tourism and Civil Aviation  |
| 14. | Member                              | Secretary         | Ministry of Defense   |
| 15. | Member                              | Secretary         | Ministry of Information and Communication   |
| 16. | Member                              | Secretary         | Ministry of Forests and Soil Conservation   |
| 17. | Member                              | Secretary         | Ministry of Environment, Science & Tech. (Now two separate Ministries of Environment, Science & Technology) |
| 18. | Member                              | Secretary         | Ministry of Women, Children and Social Welfare  |
| 19. | Member                              | Secretary         | Ministry of Industry  |
| 20. | Member                              | Secretary         | Ministry of Commerce and Supplies   |
| 21. | Member                              | Secretary         | National Planning Commission Secretariate   |
| 22. | Member                              | Secretary         | Ministry of Land Reform and Management  |
| 23. | Member                              | Secretary         | Ministry of Local Development   |
| 24. | Member                              | Inspector General | Police Headquarters (Nepal Police)  |
| 25. | Member                              | Inspector General | Headquarters (Nepal Armed Police Force)   |
| 26. | Member                              | Birg. General     | Nepal Army Headquarters   |
| 27. | Member                              | Director General  | Department of Mines & Geology   |
| 28. | Member                              | Director General  | Department of Hydrology and Meteorology   |
| 29. | Member                              | Director General  | Department of Water Induced Disaster Prevention   |
| 30. | Member                              | Member Secretary  | Social Welfare Council  |
| 31. | Member                              | Representative    | Nepal Scout   |
| 32. | Member                              | Representative    | Nepal Red Cross Society   |
| 33. | Member Secretary                    | Joint-Secretary   | Ministry of Home Affairs  |
|     | There is the provision for Invitees |                   |   |

- The Regional Administrator will chair the Regional Disaster Management Committees with regional representatives of agencies/institutions representing the Central Committees as members.
- The Chief District Officer will chair the District Disaster Management Committee with district representatives of agencies/institutions representing the Central Committee as members.

**Annex II**  
**Formation of National Council for Disaster Management (NCDM)**

The National Council for Disaster Management will be the apex body for disaster management. Composition of the Council will be as follows for making it an effective organization:

|     |   |                  |
|-----|---|------------------|
| a.  | Prime Minister  | Chairperson      |
| b.  | Minister, Home Affairs  | Co-Chair         |
| c.  | Minister, Defense   | Member           |
| d.  | Minister, Peace & Reconstruction  | Member           |
| e.  | Minister, Local Development   | Member           |
| f.  | Minister, Finance   | Member           |
| g.  | Minister, Physical Planning & Works   | Member           |
| h.  | Minister, Health & Population   | Member           |
| i.  | Minister, Forests & Soil Conservation   | Member           |
| j.  | Minister, Energy  | Member           |
| k.  | Minister, Irrigation  | Member           |
| l.  | Minister, Foreign Affairs   | Member           |
| m.  | Minister, Land Reform and Management  | Member           |
| n.  | Minister, Education   | Member           |
| o.  | Minister, Women, Children & Social Welfare  | Member           |
| p.  | Minister, Information & Communication   | Member           |
| r.  | Minister, Tourism and Civil Aviation  | Member           |
| s.  | Minister, Labor & Transport Management  | Member           |
| t.  | Minister, Science & Technology  | Member           |
| u.  | Minister, Environment   | Member           |
| v.  | Secretary, Ministry of Home Affairs   | Member           |
| w.  | Secretary, Ministry of Finance  | Member           |
| x.  | Secretary, Ministry of Defense  | Member           |
| y.  | Chief of Army Staff, Nepal Army   | Member           |
| z.  | Inspector General, Nepal Police   | Member           |
| aa. | Inspector General, Armed Police Force   | Member           |
| ab. | Government nominated four members representing NGOs engaged in disaster management with representation of women, backward class and <i>Dalits</i> | Member           |
| ac. | Two government nominated disaster management experts  | Member           |
| ad. | Executive Director  | Member-Secretary |

**The Government of Nepal can make change of members**

**Annex III**  
**Formation of Preparedness Committee**

**Composition of the Preparedness Committee will be as mentioned hereunder:**

|   |                  |
|---|------------------|
| a. Minister, Local Development  | Convener         |
| b. Member, NPC responsible for Disaster Management  | Co-Convener      |
| c. Secretary, Ministry of Local Development   | Member           |
| d. Secretary, Ministry of Physical Planning & Works   | Member           |
| e. Secretary, Ministry of Agriculture & Cooperatives  | Member           |
| f. Secretary, Ministry of Information & Communication   | Member           |
| g. Secretary, Ministry of Science & Technology  | Member           |
| h. Secretary, Ministry of Energy  | Member           |
| i. Brigadier General, Nepal Army  | Member           |
| j. Additional IGP, Nepal Police   | Member           |
| k. Additional IGP, Armed Police Force   | Member           |
| l. Joint Secretary, Ministry of Home Affairs  | Member           |
| j. Director General, Department of Soil Conservation and Watershed Management                         | Member           |
| k. Director General, Department of Mines & Geology  | Member           |
| l. Director General, Department of Hydrology & Meteorology  | Member           |
| m. Director General, Department of Water Induced Disaster Prevention                                  | Member           |
| n. Director General, Department of Urban Development Building Construction                            | Member           |
| o. Director General, Department of Health Services  | Member           |
| p. Chairperson, Nepal Red Cross Society   | Member           |
| q. Member Secretary, Social Welfare Council   | Member           |
| r. Chairperson, Association of District Development Committees (ADDCN)                                | Member           |
| s. Chairperson, Municipality Association of Nepal (MuAN)  | Member           |
| t. Chairperson, Association of Village Development Committees   | Member           |
| u. Three women representatives nominated from among the NGO engaged in disaster management activities | Member           |
| v. Two members each representing <i>Dalits</i> and backward classes                                   | Member           |
| w. Executive Director,  | Member Secretary |

Government of Nepal can make changes in members

**Annex IV**

**Formation of Rescue and Relief Management Committee**

**Composition of the Rescue and Relief Management Committee will be as mentioned hereunder:**

|  |                  |
|--|------------------|
| a. Minister, Home Affairs  | Convener         |
| b. Minister, Health and Population   | Co-Convener      |
| c. Secretary, Ministry of Defense  | Member           |
| d. Secretary, Ministry of Home Affairs   | Member           |
| e. Secretary, Ministry of Finance  | Member           |
| f. Secretary, Ministry of foreign Affairs  | Member           |
| g. Secretary, Ministry of Commerce & Supplies  | Member           |
| h. Secretary, Ministry of Information & Communications   | Member           |
| i. Secretary, Ministry of Agriculture & Cooperatives   | Member           |
| j. Secretary, Ministry of Education  | Member           |
| k. General, Nepal Army   | Member           |
| l. Inspector General, Nepal Police   | Member           |
| m. Inspector General, Armed Police Force   | Member           |
| n. Director General, Department of Hydrology & Meteorology   | Member           |
| o. Director General, Department of Water Induced Disaster Prevention                                     | Member           |
| p. Chairperson, Nepal Red Cross Society  | Member           |
| q. Chairperson, Association of District Development Committees (ADDCN)                                   | Member           |
| r. Chairperson, Municipality Association of Nepal (MuAN)   | Member           |
| s. Chairperson, National Association of Village Institutions of Nepal (NAVIN)                            | Member           |
| t. President, Nepal Chamber of Commerce and Industries   | Member           |
| u. Chief Commissioner, Nepal Scout   | Member           |
| v. Two GoN nominated women representatives nominated from NGOs engaged in disaster management activities | Member           |
| w. Two GoN nominated disaster management experts   | Member           |
| x. Two GoN nominated representatives belonging to <i>Dalits</i> and backward class of people             | Member           |
| y. Executive Director  | Member Secretary |

**Government of Nepal can make changes in members as necessary**

**Annex V**

**Formation of Rehabilitation and Reconstruction Management Committee**

**Composition of the Rehabilitation and Reconstruction Committee will be as mentioned hereunder:**

|     |   |                  |
|-----|---|------------------|
| a.  | Minister, Physical Planning & Works   | Convener         |
| b., | NPC Member Responsible for Disaster Management  | Co-Convener      |
| c.  | Secretary, Ministry of Local Development  | Member           |
| d.  | Secretary, Ministry of Finance  | Member           |
| e.  | Secretary, Ministry of Physical Planning & Works  | Member           |
| f.  | Joint Secretary, Ministry of Home Affairs   | Member           |
| g.  | Director General, Department of Agriculture   | Member           |
| h.  | Director General, Department of Water Induced Disaster Prevention                                     | Member           |
| i.  | Director General, Department of Urban Development & Building Construction                             | Member           |
| j.  | Director General, Department of Irrigation  | Member           |
| k.  | Director General, Department of Forests   | Member           |
| l.  | Representative, Nepal Rastra Bank   | Member           |
| m.  | Representative, Nepal Red Cross Society   | Member           |
| n.  | Two GoN nominated women representatives nominated from NGOs engaged in disaster management activities | Member           |
| o.  | Two GoN nominated disaster management experts   | Member           |
| p.  | Executive Director  | Member Secretary |

**Government of Nepal can make changes in members as necessary**

**Annex VI**

**Formation of Regional Disaster Management Committee**

**Composition of Regional Disaster Management Committee will be as mentioned hereunder:**

- |     |   |                  |
|-----|---|------------------|
| a.  | Regional Administrator  | Chairperson      |
| b., | Regional Office Chiefs of Health, Physical construction, Education, Local Development, Water Resources, Agriculture   | Member           |
| c.  | Regional Chiefs of Security Agencies  | Member           |
| d.  | Nepal Red Cross Society representative for the concerned Region   | Member           |
| n.  | Two Regional Administrator nominated from among the DDC Chairpersons belonging to <i>Dalits</i> and backward class    | Member           |
| o.  | Two regional Administrator nominated women representatives from among those engaged in disaster management activities | Member           |
| p.  | One representative from the Preparedness Committee  | Member           |
| q.  | Deputy Regional Administrator (responsible for disaster management)   | Member Secretary |

**Government of Nepal can make changes in members as necessary**

Annex VII

Formation of District Disaster Management Committee

Composition of the District Management Committee will be as mentioned hereunder:

|    |   |                  |
|----|---|------------------|
| a. | Chief District Officer (CDO)  | Chairperson      |
| b. | DDC Chairperson or one of the DDC member s/he nominates   | Member           |
| c. | District level GoN office chiefs  | Members          |
| d. | District level security chiefs  | Members          |
| e. | District Chief of Nepal Red Cross Society   | Member           |
| f. | District representatives of National Political Parties  | Members          |
| g. | Chairperson, District Industries and Commerce Association   | Member           |
| h. | Chief of the Municipality   | Member           |
| i. | DDC Chairperson nominated three members from among the VDC Chairpersons   | Members          |
| j. | CDO nominated two women members experienced in disaster management  | Members          |
| k. | CDO nominated three members from among the district level I/NGOs, social organizations, and persons recognized in social services | Members          |
| l. | CDO nominated two persons amongst the district disaster management experts in the district  | Members          |
| m. | Local Development Officer (LDO)   | Member Secretary |

Government of Nepal can make changes in members as necessary

**Annex VIII**

**Formation of Local Disaster Management Committee**

|    |   |                  |
|----|---|------------------|
| a. | The concerned Municipality or VDC Chairperson   | Chairperson      |
| b. | Three Municipality/VDC Council nominated Municipality/VDC Ward Chairpersons   | Members          |
| c. | Chairperson of the Disaster-hit Municipality/VDC Ward   | Member           |
| d. | Two Municipality/VDC Council nominated Municipality/VDC Ward Members  | Members          |
| e. | Municipality/VDC level representatives of National level Political Parties  | Members          |
| f. | Municipality/VDC nominated Four persons amongs the local NGOs/CBOs/social organizations or local persons recognized in social service (representation of women and <i>Dalit</i> compulsory) | Members          |
| g. | Two Municipality/VDC nominated persons from among the locally available disaster management experts   | Members          |
| h. | Chief Executive Officer/VDC Secretary of Municipality/VDC   | Member-Secretary |

**Government of Nepal can make changes in members as necessary**

## Annex IX

## GLOSSARY OF DISASTER TERMS

| क्र. सं. | अंग्रेजी शब्द                  | प्राविधिक शब्द निकाल्न गरिएको नेपाली शब्द |
|----------|--------------------------------|---|
| 1        | Hazard                         | प्रकोप                                    |
| 2        | Disaster                       | विपद्                                     |
| 3        | Risk                           | जोखिम                                     |
| 4        | Vulnerability, Vulnerable      | संकटासन्नता, संकटासन्न                    |
| 5        | Exposure                       | सम्मुखता                                  |
| 6        | Capacity                       | क्षमता                                    |
| 7        | Vulnerable Section             | संकटासन्न समूह                            |
| 8        | Resilience / Resilient         | उत्थानशीलता, उत्थानशील                    |
| 9        | Resistant/Resistance           | प्रतिरोधी, प्रतिरोध                       |
| 10       | Fore Shocks/ Pre-shocks        | पूर्वकम्प                                 |
| 11       | After shocks                   | परकम्प                                    |
| 12       | Retrofitting                   | प्रबलीकरण                                 |
| 13       | Reinforcing                    | सबलीकरण                                   |
| 14       | Mitigation                     | अल्पीकरण                                  |
| 15       | Reduction                      | न्यूनीकरण                                 |
| 16       | Social and Economic Disruption | सामाजिक, आर्थिक अपक्रम                    |
| 17       | Environmental Degradation      | वातावरणीय ह्रास                           |
| 18       | Benefit Cost ratio             | लागत-प्रतिफल अनुपात                       |
| 19       | Infrared rays                  | अल्परक्त किरण                             |
| 20       | Building code                  | निर्माण संहिता                            |

| क्र. सं. | अंग्रेजी शब्द                   | प्रविधिक शब्द निकर्वाँल गरिएको नेपाली शब्द |
|----------|---------------------------------|--|
| 21       | Sustainable Development         | प्रिगो विकाश                               |
| 22       | Emergency                       | आपतकाल                                     |
| 23       | Emergency Management            | आपतकालीन व्यवस्थापन                        |
| 24       | Structural                      | संरचनात्मक                                 |
| 25       | Non-structural                  | गैर-रचनात्मक                               |
| 26       | Reinforcement of structures     | संरचनाको पुनःदृढीकरण                       |
| 27       | Need                            | आवश्यकता                                   |
| 28       | Needs Assessment                | आवश्यकताको पहिचान                          |
| 29       | Relief                          | राहत                                       |
| 30       | Recovery                        | पुनर्लाभ                                   |
| 31       | Counter measures                | रोक-थामका तरिका                            |
| 32       | Public awareness                | जन चेतना                                   |
| 33       | Oscillation                     | डोलन                                       |
| 34       | Intensity                       | तीब्रता                                    |
| 35       | Vulnerability/capacity analysis | संकटासन्नता-क्षमताको विश्लेषण              |
| 36       | Forecast                        | पूर्वानुमान                                |
| 37       | Technological hazards           | प्रौद्योगिक प्रकोप                         |
| 38       | Geological hazard               | भौगर्भिक प्रकोप                            |
| 39       | Early warnings                  | पूर्वचेतावनी                               |
| 40       | Desertification                 | मरुभूमीकरण                                 |
| 41       | Land use Planning               | भू-उपयोग योजना                             |
| 42       | Geographic information systems  | भौगोलिक सूचना प्रणाली                      |

| क्र. सं. | अंग्रेजी शब्द                      | प्राविधिक शब्द निकर्वाँल गरिएको नेपाली शब्द |
|----------|------------------------------------|---|
|          | (GIS)                              |   |
| 43       | Risk Mitigation                    | जोखिम न्यूनीकरण                             |
| 44       | Risk Analysis                      | जोखिम विश्लेषण                              |
| 45       | Risk identification and Assessment | जोखिम पहिचान तथा निर्धारण                   |
| 46       | Disaster Risk Reduction            | विपद् जोखिम न्यूनीकरण                       |
| 47       | Capacity Development               | क्षमता अभिवृद्धि                            |
| 48       | Preparedness                       | पूर्व तयारी                                 |
| 49       | Response                           | प्रतिकार्य                                  |
| 50       | Adverse Condition                  | विपरीत अवस्था                               |
| 51       | Coping Capacity                    | सामना क्षमता                                |
| 52       | Disaster Mitigation                | विपद्                                       |
| 53       | Disaster Risk Management           | विपद् जोखिम व्यवस्थापन                      |
| 54       | Hazard Risk                        | प्रकोप जोखिम                                |
| 55       | Acceptable Risk                    | स्वीकार्य जोखिम                             |
| 56       | Danger                             | खतरा  |
| 57       | Degradation                        | ह्रास                                       |
| 58       | Prevention                         | रोकथाम                                      |
| 59       | Prediction                         | भविष्यवाणी                                  |
| 60       | Ecological                         | पारिस्थितिक, पारिस्थितिकी                   |
| 61       | Earthquake "Go Bag"                | "भटपट भोला"                                 |
| 62       | Shaking Table                      | कम्पन मञ्च                                  |
| 63       | Duck, Cover and Hold               | घुंडा टेक गुंडुल्क, ओत लाग समात             |

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**Health Sector Workshop for the Development of National Strategy for  
Disaster Risk Management in Nepal, 11 April 2007, Kathmandu**

**List of Workshop Participants**

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**Education Sector Workshop for the development of National Strategy for  
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**Water and Sanitation Sector Workshop for Development of National Strategy for  
Disaster Risk Management in Nepal, 11-May-07, Kathmandu**

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**Shelter, Infrastructure and Physical Planning Sector Workshop for Development of National Strategy for  
Disaster Risk Management in Nepal, 14-May-07, Kathmandu**

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**Information, Communication, Coordination and Logistics Sector Workshop for Development of National Strategy for Disaster Risk Management in Nepal, 17-May-07, Kathmandu**

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**Search & Rescue and Damage/Need Assessment Sector Workshop for Development of National Strategy for Disaster Risk Management in Nepal, 18-May-07, Kathmandu**

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**Agriculture & Food Security Sector Workshop for Development of National Strategy for  
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**Livelihood Protection Sector Workshop for Development of National Strategy for  
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**Development of a National Strategy for Disaster Risk Management in Nepal  
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| 11   | Mr. Suresh Bhattarai      | UMN                                    | District Management Advisor | 422118     |
| 12   | Mr. B N Tiwari            | SHDI/UNDP                              | NPM                         |            |
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| 15   | Mr. Bhussan Shrestha      | GBC                                    | Advisor                     | 9803014967 |
| 16   | Mr. Kosh Raj Onta         | APF                                    | DIG                         | 4282552    |
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| 18   | Mr. Mukunda K Sharma      | UNCRD                                  | Facilitator                 | 9851016289 |
| 19   | Mr. Kailash Man Pradhan   | EOJ                                    | Program Manager             | 4426680    |
| 20   | Mr. Hendrik Visser        | SNV                                    | Senior Advisor              | 9851029213 |
| 21   | Mr. B N Upreti            | NCDM                                   | VP                          | 5530668    |
| 22   | Mr. J R Pokhrel           | NCDM                                   | President                   | 5530668    |
| 23   | Mr. Kalyan Bista          | NSET                                   | Admin Director              | 4486444    |
| 24   | Mr. Binod Prasad Dhakal   | INLOGOS                                | Director                    | 4102534    |
| 25   | Mr. Sourab Rana           | JICA                                   | Program Officer             | 5552711    |
| 26   | Mr. Fanindra Pokharel     | DAO Taplejung                          | CDO                         | 9841490642 |
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| 29   | Ms. Anjalee Thakali       | Save the Children                      | Team Leader                 | 4412598    |
| 30   | Mr. Madhur Kr. Joshi      | Nepali Paper                           | Admin Officer               | 2180101    |
| 31   | Ms. Krishna Karkee        | INLOGOS                                | Founder Member/Researcher   | 4102534    |
| 32   | Mr. Badri Khanal          | DP Net-Nepal                           | Chairman                    | 4270561    |
| 33   | Mr. Babu Ram Acharya      | Ministry of Land Reform and management | Joint Secretary             | 9851003374 |
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| 35   | Mr. R C Neupane           | ECO-Nepal                              | Chairperson                 | 4445322    |
| 36   | Mr. Mohan Sharma          | Freelance                              | Consultant                  | 9841528910 |
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| 38   | Ms. Tara Shrestha         | REDP                                   | REA                         | 5547609    |
| 39   | Mr. Christopher Anderson  | OHCHR                                  | Head of Administration      | 9851014456 |
| 40   | Mr. Umesh Ranjitar        | Nepal Police                           | Dysp                        | 4411569    |
| 41   | Mr. Shashi Bhusan Sharma  | K L Dugar Group                        | General Manager             | 9851061067 |
| 42   | Mr. Nipuna Shrestha Singh | UNESCO                                 | Cultural Unit               | 5554396    |
| 43   | Mr. Nabin Pradhan         | Plan Nepal                             | WES Coordinator             | 5535580    |

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| 48   | Mr. Ramesh Adhikari          | DDC, Dhading                      | Planning Officer                     | 9841424770 |
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| 69   | Avril Nathalie               | ACF-Nepal                         | Nutrition Officer                    | 5013003    |
| 70   | Mr. Amit Lamsal              | MOLD                              | Programme Monitoring & Admin Officer | 9841274931 |
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| 75   | Mr. Gopal S Maskey           | Vijayadeep Lab Ltd                | Manager                              | 5525515    |
| 76   | Mr. Abhaya Singh             | FAO                               | PA                                   | 9841298567 |
| 77   | Ms. Gayatri Upadhyay         | NDMF-Nepal                        | Member                               | 4465812    |
| 78   | Mr. Lubha Raj Neupane        | NDMF-Nepal                        | Executive Secretary                  | 6635975    |
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| 82   |                              | DFID                              | DRR Advisor                          |            |
| 83   | Mr. Erik Kjaergaard          | WHO                               | Technical Officer                    |            |
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| 85   | Mr. Sarad Chandra Aryal      | ECR                               | Reporter                             | 9841510454 |
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| 95   | Mr. Som Lal Subedi         | MoLD                   | Joint Secretary            |            |
| 96   | Mr. Ishwori Prasad Paudyal | MoPPW                  | Joint Secretary            | 9841297834 |
| 97   | Mr. Pratap Kumar Pathak    | MoHA                   | Joint Secretary            | 4211241    |
| 98   | Mr. Hari Ram Pandey        | DDC Dhanusha           | Planning Officer           | 9841318444 |
| 99   | Mr. Shiva Prasad Nepal     | MoHA                   | CDO                        | 9858021703 |
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| 101  | Mr. Desmond O Hanlon       | DSS                    | DSA                        | 98501847   |
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| 111  | Mr. M K Adhikary           | MoEST                  | Under Secretary            |            |
| 112  | Mr. Rajendra Shayka        | UNICEF                 | Project Officer            | 985117751  |
| 113  | Mr. Bodh Raj Niroula       | MoEST                  | Joint Secretary            | 4418781    |
| 114  | Dr. Rajesh Gurung          | UNFPA                  | RHS                        |            |
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| 116  | Mr. R Joshi                | SWE                    | Director                   | 4415312    |
| 117  | Mr. H K Shrestha           | CDRS/NEC               | Director                   | 9841555318 |
| 118  | Mr. Pragyana Mathema       | UNICEF                 | Project Officer            | 9851038822 |
| 119  | Mr. Ujaya Shakya           | Outreach               | MD                         | 9851034851 |
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| 122  | Mr. Brahma Malakar         | United Trade Syndicate | Senior Project Manager     | 4478302    |
| 123  | Mr. Govinda Adhikari       | UNHCR                  | Senior Programme Assistant | 4414724    |
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| 126  | Mr. Bal Krishna Shrestha   | Hama Iron & Steel      | Chairman/MD                | 4261716    |
| 127  | Ms. Aruna Rana Thapa       | UNIFEM-PON             | NPM                        | 4255110    |
| 128  | Mr. Umesh P Mainali        | MoHA                   | Secretary                  |            |
| 129  | Mr. B K Prasain            | MoEST                  | Retired Secretary of GoN   | 4462323    |

## Clusters and Global “Cluster Leads”

| Global “cluster leads”<br>(As agreed by the IASC Principals in December 2005)   |   |                     |
|---|---|---------------------|
| Sector or Area of Activity  |   | Global Cluster Lead |
| <i>Technical areas</i>  |   |                     |
| Nutrition   |   | UNICEF              |
| Health  |   | WHO                 |
| Water/Sanitation  |   | UNICEF              |
| Emergency Shelter   | <i>IDPs (from conflict)</i>   | UNHCR               |
|   | <i>Disaster situation</i>   | IFRC (Convener)*    |
| <i>Cross-cutting areas</i>  |   |                     |
| Camp Coordination /<br>Management:  | <i>IDPs (from conflict)</i>   | UNHCR               |
|   | <i>Disaster situations</i>  | IOM                 |
| Protection:   | <i>IDPs (from conflict)</i>   | UNHCR               |
|   | <i>Disasters/civilians affected by<br/>conflict (other than IDPs)**</i> | UNHCR/OHCHR/UNICEF  |
| Early Recovery  |   | UNDP                |
| <i>Common service area</i>  |   |                     |
| Logistics   |   | WFP                 |
| Emergency<br>Telecommunications   |   | OCHA/UNICEF/WFP     |
| <p>* IFRC has made a commitment to provide leadership to the broader humanitarian community in Emergency Shelter in disaster situations, to consolidate best practice, map capacity and gaps, and lead coordinated response. IFRC has committed to being a ‘convener’ rather than a ‘cluster lead’. In an MOU between IFRC and OCHA it was agreed that IFRC would not accept accountability obligations beyond those defined in its Constitutions and own policies and that its responsibilities would leave no room for open-ended or unlimited obligations. It has therefore not committed to being ‘provider of last resort’ nor is it accountable to any part of the UN system.</p> <p>** UNHCR is the lead of the global Protection Cluster. However, at the country level in disaster situations or in complex emergencies without significant displacement, the three core protection-mandated agencies (UNHCR, UNICEF and OHCHR) will consult closely and, under the overall leadership of the HC/RC, agree which of the three will assume the role of Lead for protection.</p> |   |                     |

## National Policies and Protocols influencing aspects of DRM in Nepal

| Sector  | Protocols/Documents   |
|---|---|
| Agriculture                                   | Agricultural Perspective Plan<br>National Agricultural Policy, 2004                                 |
| Bio-diversity                                 | The Nepal Biodiversity Strategy, 2002<br>International Convention for Biodiversity (CBD), June 1992 |
| Climate Change                                | Framework Convention on Climate Change (UN FCCC), June 1992   |
| Development                                   | Interim Development Plan, Planning Commission ( <i>yet to be finalized</i> )                        |
|   | Tenth Five-Year Development Plan, 2002-2007, Planning Commission                                    |
|   | Millennium Development Goals (MDGs), 2000   |
| Disaster Risk Management                      | SAARC Disaster Management Plan ( <i>yet to be finalized</i> )                                       |
|   | Disaster Relief Implementation Manual, Food and Agriculture Working Group, November 2001            |
|   | Disaster Relief Implementation Manual, Food and Agriculture Working Group, November 2001            |
|   | Disaster Relief Implementation Manual, Logistics Support, November 2001                             |
|   | Natural Calamity Relief Act, 1982   |
|   | Hyogo Framework of Action 2005-2015   |
| Environment                                   | Nepal Environmental Policy and Action Plan, 1993  |
| Environment                                   | Nepal Environmental Policy and Action Plan, 1993  |
| Environment                                   | Stockholm Convention on Persistent Organic Pollutants, 2001   |
| Forestry                                      | Forestry Sector Policy, 2000  |
| Hazardous Waste and their disposal, 1994 July | Basel Convention on the control of Trans-boundary movement of hazardous waste                       |
| Health  | National Health Policy, 1991  |
|   | Second Long Term Health Plan (1997-2017)  |
| Industry                                      | Industrial Policy, 1992   |

| Sector                        | Protocols/Documents  |
|-------------------------------|--|
| Information and Communication | Long-Term Policy of Information and Communication Sector, 2003   |
| Information                   | Information Technology Policy, 2000  |
| Irrigation                    | Irrigation Policy, 2003  |
| Ozone Layer                   | Vienna Convention for the Protection of Ozone layer and the Montreal Protocol, December 1992                           |
| Poverty Reduction             | Poverty Reduction Strategy Paper (PRSP)  |
| Science and Technology        | Science and Technology Policy, 2005  |
| Shelter                       | National Shelter Policy, 1996 ( <i>under revision</i> )  |
| Water and Sanitation          | Policy on the Participation of NGO in Water Supply & Sanitation Programme, 1996  |
| Water Resources               | National Resources Strategy, 2002<br>National Water Plan (2002-2027)<br>Water-Induced Disaster Management Policy, 2005 |
| Wetland                       | National Wetland Policy, 2003  |