



# National Strategy for Disaster Risk Management in Nepal



March 2008



## 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                                   |
| DADRM   | District Authority for Disaster Risk Management |
| DANA    | Damage Assessment and Needs Analysis            |
| DDC     | District Development Committee                  |
| DDRC    | District Disaster Relief Committee              |
| DEOC    | District Emergency Operations Centre            |
| DIA     | Disaster Impact Assessment                      |
| DIMS    | Disaster Information Management System          |
| DPDRM   | District Platform for Disaster Risk Management  |
| 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                       |
| 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  |

|         |   |
|---------|---|
| MADRM   | Municipal Authority for Disaster Risk Management    |
| MDG     | Millennium Development Goal                         |
| MOAC    | Ministry of Agriculture and Cooperatives            |
| MEOC    | Municipal Emergency Operations Centre               |
| MOES    | Ministry of Education and Sports                    |
| MOHA    | Ministry of Home Affairs                            |
| MOHP    | Ministry of Health and Population                   |
| MOIC    | Ministry of Information and Communication           |
| MPDRM   | Municipal Platform for Disaster Risk Management     |
| NADRM   | National Authority for Disaster Risk Management     |
| NCDRM   | National Commission for Disaster Risk Management    |
| NEOC    | National Emergency Operations Centre                |
| NGO     | Non-Governmental Organization                       |
| NPC     | National Planning Commission                        |
| NPDRM   | National Platform for Disaster Risk management      |
| 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                    |
| RRT     | Rapid Response Team                                 |
| SAARC   | South Asian Association for Regional Cooperation    |
| SAR     | Search and Rescue                                   |
| SOP     | Standard Operating Procedure                        |
| TA      | Technical Committee                                 |
| UNDAC   | United Nations Disaster Assessment and Coordination |
| UNDP    | United Nations Development Programme                |
| 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              |
| WFP     | World Food Programme                                |
| WHO     | World Health Organization                           |

## INTRODUCTION AND EXECUTIVE SUMMARY

Nepal is a hotspot for geophysical and climatic hazards. The country is relatively ranked very high in terms of vulnerability to natural calamities. The risk is believed to be increasing very rapidly mainly due to the growth in population, especially in urban and urbanizing areas. Another major factor for the increasing risk is the lack of a favorable policy and legal environment commensurate with the present-day situation, needs, opportunities and resource availability.

The National Strategy for Disaster Risk Management in Nepal (NSDRMN) endeavors to facilitate the required change in order to achieve the goal of disaster resilient Nepal by providing guidance for improving the policy and legal environment, and by prioritizing the strategic interventions. The Strategy as well as the elaborate process of its development addresses Nepal's long-felt need to come up with a long term policy document and build on the enormous amount of disaster reduction planning and implementation works that have been carried out in the country in the past, especially after the commencement of the International Decade for Natural Disaster Reduction (1990-1999). It has put forth suggestions regarding institutional reorganization and development, and strategic improvement in the existing policy and legal environment for creating an enabling atmosphere for encouraging disaster risk reduction (DRR) and preparedness planning at all levels as well as for mainstreaming DRR strategies into the national development and poverty alleviation agenda. Thus, it is a road map that provides long term guidance in the area of disaster risk management planning and implementation in Nepal. Rather than being an Action Plan, it is but a guide for subsequent action planning for disaster risk management (DRM) in any of the development sectors by government or non-government institutions. Based on a sound analysis of the existing gaps, the NSDRMN aims to trigger a process of change in both aspects of DRM, namely, disaster reduction and emergency response planning and capacity enhancement.

The NSDRMN reflects the spirits and aspirations of the government and people of Nepal as embodied in the 10<sup>th</sup> Five-year Development Plan (2002-2007) and also the Interim National Development Plan (2008-2010). Their stipulations have been the guiding principle in the formulation of this Strategy. On the one hand, the NSDRMN addresses the need for organized approaches for DRM in Nepal and provides strategic direction to develop and implement realistic plans and programmes suitable to the needs and requirements of the country based on experiences and the capacity of the concerned national institutions. On the other hand, the Strategy follows the globally accepted principles of cross-cutting issues such as Human Rights and Protection, Gender and Social Inclusion, Decentralization and Local Self-Governance, and Humanitarian Security, and recommends implementation of DRM by mainstreaming these in each sectoral plans and programmes.

In addition, the Strategy also aims to facilitate fulfillment of the commitments made by Nepal through various international conventions and forums towards DRR. Of particular relevance is the Hyogo Framework of Action (HFA) 2005-2015, which is a consensus document adopted at the UN World Conference on Disaster Reduction, Kobe in 2005, towards achieving the stated goals of DRR within the stipulated time frame. The NSDRMN is also guided by the UN "Cluster approach" principle and recommends creation of equivalent working groups drawing members from relevant Nepalese institutions for coordination of efforts.

The responsibility for DRM, in reality, does not lie in one institution alone, but is shared by various institutions, requiring support from each and every institution as well as individual citizens of the country. Further, to be implemented successfully, the Strategy depends upon

the trust, understanding, acceptance and ownership of all the stakeholders. The process of developing the Strategy is an important vehicle for building that trust and understanding. Adhering to this concept, the Ministry of Home Affairs spearheaded the formulation of the NSDRMN by creating a Steering Committee (SC) that provided oversight and guided the process of its formulation. The SC consisted of senior level government officials from the development ministries. A gap analysis was done for all the key sectors based on an extensive literature research on policies, plans, programmes, international commitments, and achievements by the government, non-government, private sectors and academia. Structured interviews with 32 high level officials of different ministries and specialized government agencies helped identify the gaps and challenges in DRM, which provided a wealth of information and lead to quantitative data and programmes. Such situation analysis also helped develop in-depth understanding on the possible avenues for change. A national workshop and a series of eight sector-specific workshops were also conducted along with a SWOT analysis of all the sectors in terms of DRM. Participants of the workshops were drawn from the respective sector offices of all stakeholders – GoN ministries and departments, local-level government offices, the corporate sector, national and international organizations, NGOs, Community Based Organizations (CBOs), vulnerable communities, UN agencies and the external development partners (donors). Inputs from individual experts and UNDP disaster focal points of Pakistan, India, Sri Lanka and Bhutan Country Offices were also received through an external review process coordinated by the Bureau of Crisis Prevention and Recovery (BCPR) Asia Regional Office in New Delhi.

UNDP Nepal, with core financial support from the European Commission Humanitarian Aid Department, provided the management support and technical leadership. The National Society for Earthquake Technology – Nepal (NSET) served as the technical consultant.

This document provides background information on natural hazards and risks, and the disaster trends of the country; explores the existing structure for DRM; identifies the main issues and gaps; and suggests an institutional mechanism that needs to be put in place. It also outlines the strategic interventions – cross-sectoral as well as sector-specific and the relevant cross-cutting issues that are to be implemented and addressed in order to achieve the vision of a “**Disaster Resilient Nepal**”. Each of the topics discussed in this plan are summarized below:

#### ***Disaster Risk Management: A case for Nepal***

A brief description of the type, extent and distribution of the variety of natural hazards faced by the country is provided. The various causative factors of vulnerabilities are discussed to understand the ever increasing disaster risks in the country, which is one of the highest in the region. Disaster data for the past three decades show the increasing disaster trends, both in the number of events and impacts, which is shown in terms of disaster related deaths. The relation between disaster and other social and economic issues are also explored. This provides the rationale for adopting a new approach to DRM, the need to reorganize the DRM institutional, legal and policy mechanisms, and for embarking upon new strategies for DRM.

#### ***Institutional and Legal Systems for Disaster Risk Management***

Exploration of the existing institutional and legal systems for DRM, and also identification of existing national policies governing other development sectors such as poverty alleviation and forestry/environment that have relevance to the issues of DRM, have been done to form the background for developing the concept of the proposed institutional structure and concepts for DRM. The proposed institutional structure seeks to introduce a qualitative change in the national structure that is capable of proactively enhancing DRR capabilities and preparedness of the country for effective response. The national institutional mechanism is

designed in such a manner that it is able to trigger and support the process of DRR, decentralize the responsibility, open avenues for the involvement and engagement of all stakeholders and coordinate DRM actions nationally at all levels – from the community level to that of the district and central governments. The new structure is expected to enhance the authority of the nodal agency and, at the same time, ensure its capacity to integrate DRR into the national governance and development programmes to force/facilitate programme level coordination and synergy development. The regional realities and the need to establish regional/sub-regional cooperation and coordination have also been considered while formulating the proposed institutional mechanism.

The suggested DRM structure will have the National Commission for Disaster Risk Management (NCDRM) as the highest level institution responsible for a) endorsement of national policies on DRM and approving the national-level DRM plans and programmes, b) guide and oversee management of fund generation and mobilization and c) provide policy guidance for bilateral, sub-regional, regional and international cooperation in the area of DRM.

The Prime Minister is proposed to head the NCDRM as its Chair while the Opposition Leader in the Parliament is proposed as the Deputy Chair. Members of the Commission are proposed to be the ministers, Chief of the Army Staff, Chief of the police departments and two representatives of the civil society. One more member is to be nominated by the Chair.

The NCDRM is an apex policy body that will meet at least once a year for discussing DRM issues and its implementation status at the national level, providing policy guidance for implementing disaster management and risk reduction plans and programmes, and ensuring that an effective mechanism is in place for responding to emergency situations. It could also meet during or after a major disaster, or as and when required by the disaster situation in the country either for the purpose of monitoring of disaster response or endorsement of contingency plans for emergency response as the case may be. This will ensure much needed high level political support required to implement DRM plans and programmes, allocating necessary resources, and instructing the National Authority for Disaster Risk Management (NADRM) for the planning and implementation of DRM plans and programmes in a coherent, organized and coordinated manner. The NADRM will report to NCDRM on its progress at least once a year and will implement DRM plans and programmes at the national level. It will also coordinate district and local level DRM and emergency response activities and provide guidance and oversight to them as and when necessary.

The NADRM is proposed to be the operational arm of the NCDRM and will act as the executive agency for the implementation of the NSDRMN at the national level. It will seek policy guidance and support from NCDRM as and when required. It will be responsible for ensuring coordination among various agencies (government, non-government, civil society and international agencies) within the country for their support in DRM planning and implementation and fund mobilization for synergistic impacts in compliance with the NSDRMN and related policies and legislation. It will also monitor DRM-related works of all the concerned agencies. During and after a national level disaster, the NADRM will be the highest executive agency for the implementation and monitoring of emergency response, recovery and disaster rehabilitation and reconstruction of social and physical infrastructure. To be able to discharge this responsibility, the NADRM will develop necessary strategies, standards and guidelines, and will design plans and programmes for capacity building and emergency response. It will constitute Technical Committees as needed, drawing members from within and/or outside the government bureaucracy.

The institutional structure also envisages the constitution of a District Authority for Disaster Risk Management (DADRM) and Municipal Authority for Disaster Risk Management (MADRM), which will be similar to the NADRM in terms of responsibilities. Their jurisdiction, though, will be limited to the district and municipality level for DRM works and emergency responses.

The lowest level institution proposed to be responsible for local-level DRR and emergency response are the VDCs. Their responsibilities would include inventorying disaster events and impacts, local-level hazard and risk assessment, carrying out disaster awareness programmes, community-based DRM, VDC-level DRM planning, including capacity building for DRR and emergency response, pre-positioning and management of emergency stores for relief and light search and rescue (LSAR), development/implementation of disaster volunteer programmes and to articulate and advocate for DRM at the local and district levels. The VDCs are visualized as the village-level platform for DRM. They will report on DRM matters to the DADRM.

### ***The National Strategy for Disaster Risk Management in Nepal (NSDRMN)***

The main content of this section is the statement on Priority Strategic Actions that have been divided into two parts, namely, the Cross-sectoral and Sectoral strategies for DRM.

The recommended Cross-sectoral Strategies are based on already identified gaps and issues for each of the Priorities for Action that are in line with the HFA priorities, as given below:

#### **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 the institutional system for DRM
- Strategic Activity 2: Formulation/modification and enactment of policies, rules, regulations for incorporation of comprehensive disaster risk management concepts
- Strategic Activity 3: Mainstream DRR into national development
- Strategic Activity 4: Integrate DRR and preparedness for better response in the development plans, programmes and regular activities of local development institutions (DDCs, VDCs and Municipalities etc.)
- Strategic Activity 5: Prepare and gradually implement various policies and protocols, standards, guidelines, hazard-specific Standard Operating Procedures (SOPs), hazard-specific special national programmes for DRR
- Strategic Activity 6: Establish a network of Emergency Operation Centres (EOCs) – one at the central level and others at the district and municipality levels
- Strategic Activity 7: Allocate resources and develop sustainable funding mechanisms

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

- Strategic Activity 8: Assess the disaster risks due to different natural hazards and vulnerabilities at different levels and different scales; and develop a system to periodically update and make it publicly available
- Strategic Activity 9: Establish and institutionalize an authentic, open and GIS-based Disaster Information Management System (DIMS) at the central, district and municipal levels to cover all disaster-related information
- Strategic Activity 10: Establish a national system of hazard/risk monitoring and early warning to specific hazards
- Strategic Activity 11: Prepare land use maps focusing on urban and urbanizing areas, and develop a system for periodically updating and using it for land use planning

**Priority Action 3: Better knowledge management for building a culture of safety**

- Strategic Activity 12: Develop/modify the National Policy on education and implement it so that it gives recognition to schools as important centres for propagating disaster awareness.
- Strategic Activity 13: Implement disaster education
- Strategic Activity 14: Develop curricula on DRR training for different target groups and implement training programmes for all stakeholders
- Strategic Activity 15: Develop and implement a comprehensive national programme for disaster awareness
- Strategic Activity 16: Develop plans, programmes and facilitate for use of mass communication media for dissemination of information on disaster risk and risk reduction
- Strategic Activity 17: Develop/strengthen and encourage awareness raising programmes on DRM at the local level
- Strategic Activity 18: Encourage and support NGOs, CBOs and other stakeholders for developing and implementing awareness-raising programmes on disaster risk reduction and preparedness

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

- Strategic Activity 19: Integrate disaster risk reduction consideration into infrastructure development planning and implementation
- Strategic Activity 20: Assess, protect and strengthen critical public facilities and physical infrastructures
- Strategic Activity 21: Develop and implement, on a priority basis, special DRR programmes for the most vulnerable segments of the society – the marginalized and Dalit groups; women; the

handicapped; disadvantaged groups, children and the elderly

Strategic Activity 22: Incorporate disaster risk reduction 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 enact National Integrated Disaster Response System

Strategic Activity 25: Develop and implement emergency response and preparedness plan, including setting up a system of emergency operation centres throughout the country

Strategic Activity 26: Establish and/or strengthen warehousing 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

The sector-specific strategies are focused on addressing the identified gaps in particular sectors. They are divided into the five Priorities for Action. The following sectors have been considered:

- 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

Implementation and follow-up of the Strategy is the most important tasks. While the National government is the ultimate responsible agency for implementing the Strategy, the latter envisages decentralization of authority as well as responsibilities. Implementation of the Strategy foresees significant responsibility and contribution from all stakeholders – central and local government agencies and institutions; civil society, including NGOs, volunteer groups and the CBOs; the academia and private sector; the UN system; and other external development partners. Integration of DRR into the development process and promotion of

international and regional cooperation in DRM is the agreed approach for implementing the Strategy.

The responsibility for implementing the priority actions have been given to several institutions. The leadership and coordination role for the cross-sectoral strategies are to be taken up by the NADRM, while the leadership for the implementation of the sector-specific strategies will lie with the respective line ministry of the government. The post-disaster emergency response, early recovery and reconstruction, and rehabilitation will be implemented primarily under the leadership of NADRM, which can draw additional human and technical resources from other agencies - government or non-government.

Since NADRM will play a pivotal role in the implementation of the strategy, it is expected to carry out three key functions for successful implementation: a) Build support for the NSDRMN, b) Implement/support individual strategic actions and c) Monitor and evaluate progress.

Building support for the strategy means: i) Using transparent and inclusive mechanisms in coordination, planning and implementation; ii) Adopting informed, rational and consultative decision making process; iii) Building relationships with stakeholders based on the principles of equal opportunity and comparative advantages; iv) Raising awareness on DRR issues at all levels, including decision makers and politicians; and v) Conducting regular public hearings.

Supporting individual strategic actions means: i) Coordinating the actions of various partners and stakeholders with the objective of avoiding repetition and producing synergy by promoting a culture of sharing information, knowledge and experiences; ii) Assisting institutions, government or non-government, in the planning and execution of DRM initiatives by offering technical backstopping; iii) Conducting peer review of the action plan and joint initiatives; iv) helping the respective agencies to mobilize funds for DRR plans and programmes; and iv) Publicizing successful works done by individual agencies through professional networks, media and other channels.

Monitoring and evaluation (M&E) of the progress made will include: i) Developing an M&E plan for implementation and ii) Allocating necessary budgets for M&E and enhancing the capacity of respective agencies to conduct M&E of DRR plans and programmes.

## TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>Acronyms</b> .....  | <b>ii</b> |
| <b>Introduction and Executive Summary</b> .....  | <b>iv</b> |
| <b>1 Disaster Risk Management: A Case for Nepal</b> .....                                    | <b>1</b>  |
| 1.1 Natural hazards.....   | 1         |
| 1.2 Disaster Risks and Vulnerabilities.....  | 3         |
| <b>2 Institutional and Legal Systems for Disaster Risk Management in Nepal</b> .....         | <b>9</b>  |
| 2.1 Existing Legal and Institutional Systems.....  | 9         |
| 2.2 Existing Technical Capacities.....   | 10        |
| 2.3 Proposed Institutional Structure and Concepts for Disaster Risk Management in Nepal..... | 11        |
| 2.3.1 National Commission for Disaster Risk Management (NCDRM).....                          | 12        |
| 2.3.2 National Authority for Disaster Risk Management (NADRM) .....                          | 16        |
| 2.3.3 District Authority for Disaster Risk Management (DADRM) .....                          | 18        |
| 2.3.4 Municipal Authority for Disaster Risk Management (MADRM) .....                         | 20        |
| 2.3.5 Village Development Committee (VDC).....   | 21        |
| 2.3.6 Community Based Organizations.....   | 22        |
| <b>3 The National Strategy for Disaster Risk Management</b> .....                            | <b>23</b> |
| 3.1 Introduction.....  | 23        |
| 3.2 Vision.....  | 23        |
| 3.3 Mission .....  | 23        |
| 3.4 Guiding Principles .....   | 24        |
| 3.4.1 National development plans .....   | 24        |
| 3.4.3 Acceptance of the Cluster Approach and Creation of National Cluster Groups.....        | 26        |
| 3.5 Priority Actions .....   | 29        |
| 3.5.1 Cross-Sectoral Strategies for DRR.....   | 29        |
| 3.6 Sectoral Strategies for DRR.....   | 44        |
| 3.6.1 Agriculture and Food Security .....  | 44        |
| 3.6.2 Health and Nutrition Sector Strategies.....  | 46        |
| 3.6.3 Education Sector Strategies .....  | 48        |
| 3.6.4 Shelter, Infrastructural and Physical Planning .....                                   | 51        |
| 3.6.5 Livelihood Protection .....  | 55        |
| 3.6.6 Water and Sanitation Sector Strategies .....   | 57        |
| 3.6.7 Information Communication, Coordination & Logistics.....                               | 59        |
| 3.6.8 Search and Rescue (SAR) and Damage Assessment and Need Assessment (DANA).....          | 62        |
| 3.7 Implementation and Follow up.....  | 65        |
| 3.7.1 Implementation Strategy of NADRM .....   | 67        |

|          |  |           |
|----------|--|-----------|
| <b>4</b> | <b>Bibliography .....</b>  | <b>69</b> |
| <b>5</b> | <b>Annexes .....</b>   | <b>75</b> |
|          | Annex 1: Glossary of the disaster terms                                      |           |
|          | Annex 2: List of Workshop Participants                                       |           |
|          | Annex 3: Clusters and Global “Cluster Leads”                                 |           |
|          | Annex 4: National Policies and Protocols influencing aspects of DRM in Nepal |           |

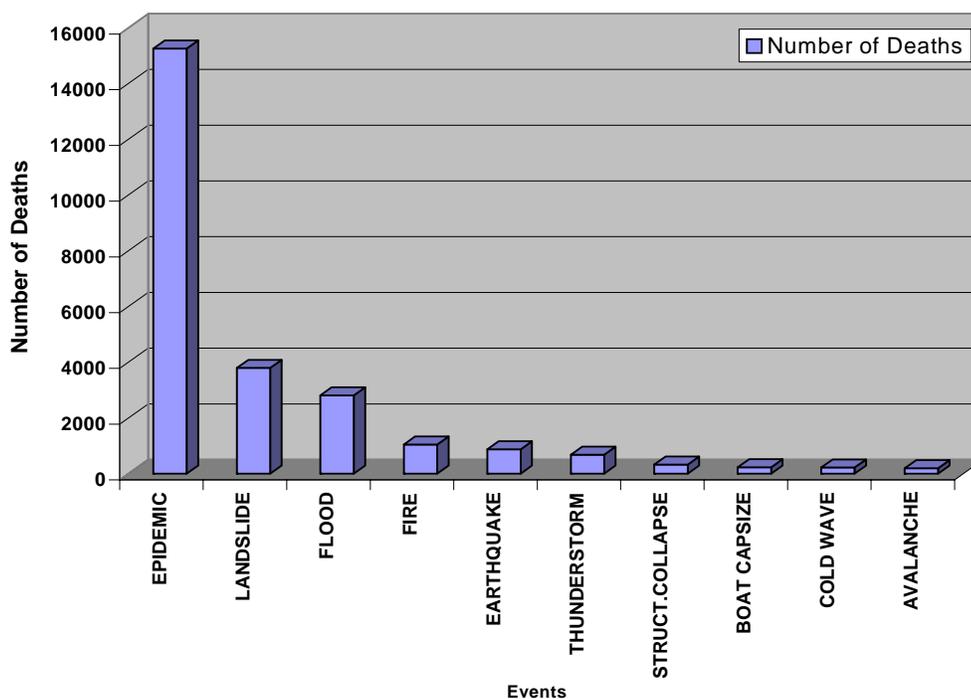
# 1 DISASTER RISK MANAGEMENT: A CASE FOR NEPAL

## 1.1 NATURAL HAZARDS

Nepal faces high magnitudes and intensities of a multitude of natural hazards such as flood, landslide, earthquake, fire, cyclonic winds and hailstorms, cloudburst, drought, famine, and epidemics. Industrial accidents, explosion, traffic accidents and hazardous events associated with poisonous substances are also recorded.

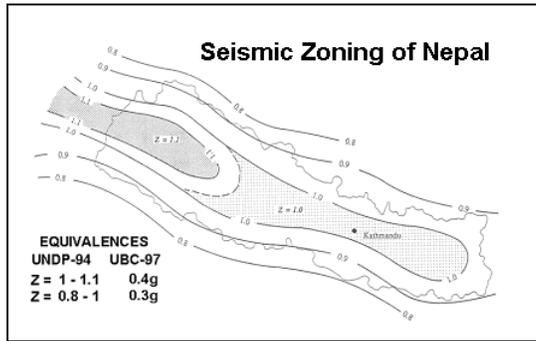
An inventory of past disastrous events during 1971-2006 reveals that epidemics takes the largest toll of life every year, and that landslide, flood (including the flash floods) and urban or rural fire are the principle hazards in terms of their extent and frequency of occurrence as well as the spread and intensity of physical and socio-economic impacts. Earthquake is a major potential hazard to reckon with – the country is located on an active seismic belt and the exponential urbanization trend over the past decade with general disregard of earthquake-resistant measures in building construction is the cause of ever-increasing earthquake risk.

**Ten Most Lethal Hazards in Nepal (1971 - 2005)**

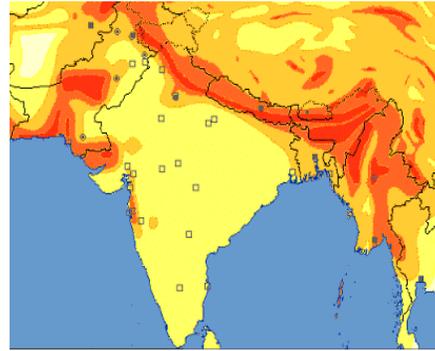


Different government departments have made significant efforts in the past in mapping the natural hazards of Nepal. A variety of geologic, hydrologic, climatic hazard maps has been prepared at various scales by the respective technical departments of the government and other agencies. Many of these maps are available in the public domain. The scale usually is 1:100,000 or smaller. Such maps are useful for development planning and for disaster risk management.

### Seismic Hazard Map of Nepal

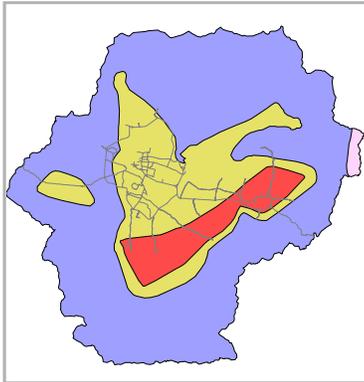


Source: Building Code of Nepal



| 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    |

The entire country falls in a high earthquake intensity belt: almost the whole of Nepal falls in high seismic risk scale of MMI IX and X<sup>1</sup> for the generally accepted recurrence period. The seismic zoning map of Nepal, which depicts the primary (shaking hazard), divides the country into three zones elongated in northwest-southeast direction; the middle part of the country is slightly higher than the northern and the southern parts. The flat plains of Tarai in the south of the country show the highest level of susceptibility to liquefaction. The middle hills and the higher mountains are highly susceptible to landslides including earthquake-induced ones. The middle hills and the high mountains are typically also susceptible to the phenomena of debris flow, including those due to landslide damming, cloudbursts and the resulting debris slides and flows, excessive erosion on the hill slopes, and rock falls. The flat plains of the Tarai faces sheet flood, and the problem is exacerbated by huge deposition of debris in the riverbed and by construction of embankments across the river flows, especially just across the international border with India.

Fire is a problem for all settlements. It is a huge problem in the rural as well as urban areas of the Tarai where the summer temperatures go as high as 45 deg Celsius.

<sup>1</sup> Source: Global Seismicity Hazard Assessment Program ( GSHAP)

Cyclonic wind is a hazard that destroys horticultural crops in spring, while hailstorm causes significant harm to the summer as well as winter crops, especially in the mountainous areas of the country.

Glacier lakes outburst floods (GLOF) and avalanches are typical of high Himalayan regions. GLOF hazard results from outburst of glacial lakes because of the destruction of the natural dams that contain the lake water. Most of these lakes are dammed either by ice-core moraine or by moraine debris. The damage occurs due either to the destruction of the moraine dam by backwater erosion due to overtopping of the dam by rapid melt or by avalanche in the background, or by melting of the ice-core of the damming moraine. The problem of Glacier Lakes Outburst Flood (GLOF) is being intensified due to the climate change resulting in accelerated melting of the glacier tongues and rapid enlargement of the glacial lakes contained by natural moraine dams. Several dangerous lakes have been mapped in Nepal Himalayas.

Snow avalanches are prevalent in the Himalayan region – they pose risk to the high mountain tourism industry.

## 1.2 DISASTER RISKS AND VULNERABILITIES

The high level of hazards easily translates into risk because of the vulnerabilities that have been built up and are being built.

A recent study (UNDP/BCPR, 2004) ranked Nepal, in terms of relative vulnerability to earthquakes, as the eleventh most at risk country in the world, and thirtieth with respect to floods. Another report (World Bank, 2005) classifies Nepal as one of the global ‘hot-spots’ for natural disasters. The DesInventar database in Nepal prepared for 1971-2003, shows the trend of one disaster event with two resultant deaths occurring every day over this period.

Among the major hazards, floods and landslides are the most recurrent in Nepal, claiming on an average of about 211<sup>ii</sup> lives annually in the past ten years. A devastating earthquake does not occur frequently, and hence its impact is not reflected in any statistics covering 30-40 years. However, should it occur, the damage could be of very large extent amounting to a significant proportion of the national GDP. The life loss from a strong earthquake in Kathmandu valley is estimated to be about 40,000 along with injury cases to the tune of 90,000, and almost all of the lifelines and critical facilities such as hospitals damaged at 50%. Among all the natural hazards, epidemics usually take the largest human toll in the country every year.

Official statistics of recent years say that about 1000 people die in Nepal every year due to the natural hazard events; about 300 deaths occur only due to floods and landslides. The country suffers a direct loss of an average of nearly 1208 million Nepali rupees per year. The accompanied indirect losses, in terms of lost time and opportunities, and the lack of services and the repercussions thereof, may be several times more than the above figure. This is a huge impact to neglect, especially if one considers that the losses due to natural hazards are increasing alarmingly.

Poor quality of construction of buildings and infrastructure is the main cause of structural vulnerability. Prevalence of non-engineered construction (>90%), poor quality control of materials and the construction processes make the construction poor enough even for normal conditions. Lack of awareness, and concentration of knowledge and skills only in academic centers contribute to the vulnerabilities. Development of settlements and public services in hazardous areas and marginal lands, because of the lack of proper land use assessment or the implementation of the land use policies, are yet another source of vulnerabilities.

Table 1 shows the losses due to disasters in six sample years in Nepal in terms of number of deaths and the direct losses in terms of the money value of damaged structures. It is seen that in “normal” year (without large events) the annual direct loss is or the order of less than a 0.01%

---

<sup>ii</sup> Source: Ministry of Home Affairs, GoN

of the national GDP and in the year of a significant large hazard impact, the direct loss reaches up to 4% of GDP. However, if the impact is by an earthquake, the damage loss can go much higher; for example, it was more than the annual GDP growth in 1988 despite the fact that the earthquake was a medium-sized event with an epicentral intensity of VIII MMI only. In case of a larger event, such as the one in 1934, the losses could be several ten times higher.

**Table 1: Disaster Losses Compared to GDP and Development Expenditure in Nepal**

| Disaster Year | Major hazard event in that year <sup>1</sup>     | Deaths <sup>1</sup> | Direct Disaster Loss by all hazard events in that year, MNR (Prices in same year) <sup>1</sup> | GDP MNR (for the Disaster year) | Loss as %GDP <sup>2</sup> | Average Annual GDP Growth, % <sup>2</sup> | Develop. Expenditure (MNR) |
|---------------|--|---------------------|--|---------------------------------|---------------------------|---|----------------------------|
| 1987/         | (Floods)   | 881                 | 2,005  | 76,906                          | 2.6                       | 4.6                                       |                            |
| 1988/         | (Earthquake)                                     | 1584                | 6,099  | 89,269                          | 6.83                      |   |                            |
| 1989/         | (Fire, flood, epidemics)                         | 1716                | 4,172  | 103,416                         | 4.0                       |   |                            |
| 1991/         | (No specific major hazard event, "normal year?") | 971                 | 43   | 149,485                         | 0.03                      |   | 91/92= 15,979              |
| 1993/         | Floods   | 1524                | 5,189  | 199,216                         | 2.6                       | 4.8                                       | 93/94 = 21,188             |
| 1996/         | (Floods)   | 895                 | 1,579  | 280,513                         | 0.56                      |   | 96/97 = 26,542             |

Notes:

<sup>1</sup>: Source: Ministry of Home Affairs quoted in Disaster Review, 2005, Series XIII, July 2006, pp.13; Min. Water Resources, DWIDP, Kathmandu

<sup>2</sup> Source: Statistical Pocket Book Nepal, 2000, Central Bureau of Statistics, Kathmandu

**Table 2: Direct Losses due to Earthquakes (1970-2003)**

| Item                                    | Number    | Value of direct losses (NR) |
|---|-----------|-----------------------------|
| <b>Total number of events</b>           | <b>22</b> |                             |
| Death                                   | 876       |                             |
| Injury                                  | 6,840     |                             |
| Affected                                | 4,539     |                             |
| Buildings Destroyed                     | 33,706    | 8,200,838,000               |
| Buildings Damaged                       | 55,234    | 1,309,606,450               |
| Livestock death                         | 2,215     | 11,075,000                  |
| Total loss at present value (NR)        |           | 9,566,605,507               |
| Average loss per year due to earthquake |           | 289,897,136                 |

**Table 3: Disaster Losses in Nepal during 1971 – 2006 (37 Years)**

| S. No. | Events       | Death         | Injury        | Peoples Affected | Buildings destroyed | Buildings damaged | Land Loss (Ha) | Livestock Death | Reported Direct Loss (Million NRs) |
|--------|--------------|---------------|---------------|------------------|---------------------|-------------------|----------------|-----------------|------------------------------------|
| 1      | DROUGHT      | 1             | -             | 1,512            | -                   | -                 | 329,332        | -               | 10                                 |
| 2      | EARTHQUAKE   | 873           | 6,842         | 4,539            | 33,710              | 63                | -              | 2,257           | 22.8337+50                         |
| 3      | EPIDEMIC     | 15,529        | 37,773        | 323,896          | -                   | -                 | 1              | 78              | 0                                  |
| 4      | FIRE         | 1,081         | 735           | 218,128          | 62,634              | 2,762             | 352            | 113,922         | 6,244                              |
| 5      | FLOOD        | 2,864         | 349           | 3,315,781        | 70,115              | 1,041             | 196,955        | 31,117          | 3,713                              |
| 6      | FOREST FIRE  | 24            | 13            | 10,178           | 1,698               | 18                | 3,173          | 82              | 1,031                              |
| 7      | LANDSLIDE    | 3,899         | 1,188         | 480,069          | 16,779              | 1,209             | 21,797         | 9,046           | 835                                |
| 8      | OTHER        | 2,385         | 2,670         | 360,725          | 3,917               | 388               | 290,323        | 79,935          | 2,030                              |
|        | <b>TOTAL</b> | <b>26,656</b> | <b>49,570</b> | <b>4,715,828</b> | <b>188,875</b>      | <b>5,482</b>      | <b>841,954</b> | <b>236,459</b>  | <b>13,885</b>                      |

Notes:

- 1 Epidemics means peoples seriously affected, hospitalized etc by epidemic events
- 2 The number "o" does not mean that the events were not occurred, it does mean the event is not reported.

The table shows that flood is the largest cause of materials losses while landslide appears to be the largest killer-hazard. However, that is true only in non-earthquake years. Earthquake happens to be the most lethal hazard – death per event due to an earthquake is much larger and so are the losses in terms of areal extent of damage and intensity of destruction. Even a medium earthquake of 1988 (6.6 Richter, Epicentral intensity of shaking VIII MMI) caused death of 721 persons and a loss of 5 billion Nepali Rupees as per the official estimates. Informal estimates put these figures much higher.

The escalation of the political conflict and the resulting internal displacement of population over the last decade have increased vulnerability and risk due to issues of security, population migration/displacement with deterioration of livelihood opportunities, restricted access and poor information flow. Though traditional modes of response may have been relevant in urban areas, the conflict has greatly inhibited capacities in search and rescue and relief works in the rural hinterlands. It has also been observed that a discernible proportion of internal displacement occurred due to the dual exposure and risk of living in fragile areas prone to natural disasters and the conflict though with varying levels of impact. This intersection of natural hazards and human-made vulnerability gave rise to the potential threat of a humanitarian crisis.

With an HDI ranking of 136 (HDR 2005), Nepal is among the least developed countries in the world. Disaster, among others, is one attribution of poverty. To take a basic example of floods, which is the recurrent hazard in Nepal, the problem tree would show poverty and disempowerment among the fundamental causes and lack of land tenure in safe areas as one of the underlying causes. As one of the immediate causes of the floods, becoming a disaster would be the population staying in flood prone areas including river valleys. While disasters create instant poverty through the loss of lives and productive assets, poverty accentuates natural disasters through encroachments in the high-risk marginal areas. Hence, poverty is both cause and consequence of disasters in countries with high vulnerability. Nepal has embarked on meeting the Millennium Development Goals (MDGs) and has reported a considerable headway in the first five years of the millennium. However, disaster risk reduction is essential for sustaining the achievements of all the MDGs since it provides a safety net for the hard-earned development gains of the country. Hence, the high levels of structural, non-structural, social and institutional vulnerabilities of the country to the various natural and human-induced hazards remain a severe impediment to reaching the goals.

Neglect of traditional wisdom and practices in construction or in the use of natural resources and unfamiliarity with the modern system of construction make the Nepalese very vulnerable. Similarly, rapid losses of the social cohesion system, for example the Guthi System, make us less resilient to the events of natural hazards.

Rapid population growth in Kathmandu and other municipal urban areas of the country, concentration of economic potentials and livelihood opportunities in urban areas, environmental degradation, and increasing pollution of air and water bodies are other causative factors of ever-increasing vulnerability of Nepal to natural hazards.

Insufficient disaster awareness among the development players and the communities fail to appreciate the strong correlation between hazards and vulnerabilities (existing and accumulating) and their interplay converting even a minor hazard-event into recurring disasters, which erode the hard-earned development gains and undermine the economic viability of communities and the affected regions. Lack of knowledge on such relationship, and the resulting mind-set, helped over the years to develop a sense of fatalism and complacency. Such mind-set needs to be changed, and this Strategy aims to create the conditions for such change in mind-set at all levels, encourage to bridge the disconnect between DRM initiatives and planning for sustainable development, and addresses all kinds of vulnerabilities, social, economic, cultural, as well as structural and non-structural.

The 1988 Udayapur Earthquake and the 1993 flood of south-central Nepal were the two medium-sized events that provided adequate lessons. Since then, Nepal has made significant progress towards disaster risk reduction, beginning with the formulation of the National

Building Code and several other standards for safeguarding infrastructure, and a positive response to the Yokohama Strategy and Plan of Action by preparing the National Action Plan for Disaster Management in 1994.

### **Natural Hazards and Environment**

There is a strong link between natural hazards and environment as the former, especially those leading to disasters, are normally caused by sudden or systematic changes in the state of environment. These changes are mostly introduced through natural phenomena, where through a gradual course, nature responds to multiple climatic and geological processes acting upon the environment. Apart from the natural phenomenon, environmental changes are also induced through human activities, which are of sudden nature. A set of focused human interventions over a very short period, for example injudicious exploitation of natural resources or emission of Green House gases (GHG) into the atmosphere because of excess burning of fossil fuels, destruction of the natural environment beyond their capacity to resume, and heavy breaking of the inter-relationship with human settlements.

This kind of sudden change in environment is normally irreversible and puts more risks on human settlements, by causing more damage to lives, property and infrastructure, which in many cases can be avoided by giving adequate attention to environmental priorities during development planning. Environment protection provides safety to the lives and livelihood as well as sustainability to infrastructure. At times natural processes of change overlap with human induced changes causing devastating hazard events more often both at local as well as regional levels.

The impacts of human induced changes are global in nature, adding more risks to the areas having fragile geological set up, unplanned urban settlements, overexploited natural resources and un-stabilized slopes used for farming. Economic growth along with the increasing consumption of fossil fuels, deforestation, irrigated agriculture, animal husbandry and cement manufacture are constantly releasing greenhouse gases to the atmosphere causing global warming and climate change. Damage to earth's capacity to act as a sink for GHGs and other pollutants, result in increased climatic variations leading towards frequent floods and droughts, giving room for disease and insect breakouts, causing severe threats for safety and health of the people, animals and plants as well as sustainability of the natural resources and ecological processes.

Usually events of natural hazards of large magnitude cause profound damage to the environment, which further amplify the impact on the communities and their livelihoods. This kind of impact is not always immediately evident, but can appear later, sometimes even years after the calamity. These impacts may appear in the form of pollutants accumulated in the air emitted from settlements, agricultural lands, factories and mines as well as forest fires. Similarly, degradation of fertile land leads to further expansion of agriculture in forested areas causing loss of habitat connectivity and direct threats to the biodiversity, thereby creating both short term and long-term implications for environment and ecological functions.

Environment is equally exposed to damage in post disaster situations, when people are relocated from the affected area or forced to move from their place of origin to the vicinity of protected areas, natural forests, riverbanks or hill slopes vulnerable to landslides. Severe damage is caused to environment from this kind of temporary settlements where the migrant community mostly depends on environmental resources for their livelihood. Normally in lack of law enforcement capacity of the government and alternatives provided to these people, the temporary relocation sites gradually become sites of permanent settlements, and loss of environment is forgone forever.

Environmental degradation makes especially poor communities more vulnerable to hazards because their livelihoods are more often fully dependent on natural resources. Moreover, they have little resources to deal with the issues and they are commonly living in the areas, more prone to natural hazards.

Since location, time and impact of hazards are difficult to predict, the preventive work including environmental conservation and sustainable use of natural resources are key to maintain environment's capacity to buffer against disaster risks and to recover after the calamities. Attention should be given towards adopting proper agricultural practices, watershed management, agro-forestry, soil conservation, wetland management and fire prevention techniques, as well as supporting sustainable use of natural resources and biodiversity conservation. Sound and sustainable agriculture and resource use practices in the hills and mountains minimize the impact on downstream environment and local livelihoods. These preventive measures are of special importance to Nepal, where 80% of rural population draws its livelihood from subsistence agriculture, which is highly dependent on natural resource use and supply of environmental services.

## 2 INSTITUTIONAL AND LEGAL SYSTEMS FOR DISASTER RISK MANAGEMENT IN NEPAL

### 2.1 EXISTING LEGAL AND INSTITUTIONAL SYSTEMS

The legal framework for disaster management has a long history in Nepal with the Natural Calamity (Relief) Act 2039 promulgated in 1982. This Act allocated the responsibility for preparing and responding to disasters in Nepal to the Government. The Act, for the first time in history of Nepal, provided for a disaster management administrative structure in the country.

#### Central Level

At the central level, it constituted the Central Disaster Relief Committee (CDRC) with the Minister of Home Affairs as the Chair. The 27-member apex body for disaster management comprises the Secretaries of the ministries of Finance; Defense; Local Development; Physical Planning and Works; Health and Population; Agriculture and Cooperatives; Education and Sports; Environment, Science and Technology; Land Reform and Management, Industry Commerce and Supplies; Foreign Affairs; Water Resources; Information and Communication; Forest and Soil Conservation; Women, Children and Social Welfare, and representatives from the Nepal Army, Nepal Police and Nepal armed Police, and also from the Nepal Red Cross Society, Nepal Scout, Social Welfare Council and the Department of Mines and Geology, the Department of Water-Induced Disasters, and the Department of Hydrology and Meteorology. Following a disaster, the CDRC would meet as and when necessary to address the needs of the affected population and on matters related to all sectors (e.g. food, health, shelter, water & Sanitation, etc.). Because of the devastating effects of the annually recurrent floods, CDRC has been meeting regularly at least twice a year - before the floods to take stock of the flood preparedness status and to augment it, and immediately after to evaluate the response.

#### Regional Level

The Natural Calamity (Relief) Act, 1982 provides for the establishment of regional committees as and when required. During the 1988 earthquake affecting eastern Nepal and the 1993 floods in south-central Nepal, Regional Service Centre established respectively at Biratnagar and Simara provided relief coordination demonstrating the usefulness of setting up regional committees to coordinate relief activities related to more than one district. However, these centers were closed after the emergency operations were over.

#### District Level

District Disaster Relief Committees (DDRC) is a permanent outfit at the district level to coordinate relief and preparedness. DDRC is chaired by the Chief District Officer (CDO) who is the main administrative functionary to maintain law and order at the district level. Other members to DDRC are the representatives of the district level offices of the various public sector agencies such as district water supply office, district education office and district health office. The Local development Officer (LDO) – the district level officer of the Ministry of Local development, who coordinates development works with the elected bodies at the district level, is the member-secretary of DDRC.

The Natural Calamity (Relief) Act 2039 (1982) was very progressive when promulgated, however, although amended twice, it has failed to internalize the concept development and paradigm shift in disaster risk management from a reactive intervention in the form of relief to a proactive approach of mitigation. The Act does not have any instrument to correspond to the current concept of mainstreaming disaster risk management to the efforts of national development. This Act should be abrogated and replaced by a new Act that could internalize all the recent concepts of disaster risk management.

This gap was in part tried to be filled by the Local Self Governance Act (1999) which promotes the concept of decentralizing disaster risk management and encourages the district authorities to

address the issues primarily at the district and VDC/municipality levels. While the Act assigns responsibilities to the district level authorities, it is not followed by supporting regulations and budgetary allocation resulting in poor implementation of the ideas contained in it.

While the tenth Five Year Plan has referred to disaster management, it has not been backed by suitable legal instruments, either in form of acts or ordinances. In fact, even Nepal's land use policy has not been able to arrest flood plain encroachment in rural and unsystematic town planning in the urban areas. Thus, a predominantly reactive approach to disasters has continued across generations among most of the relevant stakeholders rather than the less expensive option of proactive preparedness and risk mitigation.

Apart from the above-mentioned, a series of national policies and international protocols can have implications to the issues of disaster risk management in Nepal, and vice versa. These are listed in Annex 2.

Nepal is fortunate to have started two very important initiatives recently, namely a) formulation of the National Policy for Disaster risk Management and, b) preparation of a new legislation for Disaster risk Management to replace the existing Natural Calamity (Relief) Act, 1982. Both these initiatives are focused on internalizing the shift from a response-based national system to emphasizing the disaster risk reduction and effective preparedness approach. The drafts of the policy and the Act are being discussed and it is hoped that this National Strategy on DRM will be able to guide the review process for ensuring the required level of consonance among the three policy documents.

## 2.2 EXISTING TECHNICAL CAPACITIES

Nepal has witnessed accumulation of a vast wealth of knowledge in sciences and engineering, has developed a significant cadre of scientists, engineers, and professionals of allied disciplines, have conducted mapping of a variety of natural hazards at suitable scales, and have installed physical capacities for monitoring, analysis, and dissemination of user-friendly information to the public. Some representative examples of such capacities are shown below.

| Institution   | Capabilities  |
|---|---|
| Department of Mines and Geology                                   | Geological maps of entire country at 1:50,000 scale, Engineering geological maps at 1:10,000 scale for several cities, a network of 21 short-period seismic stations capable for monitoring uniformly any Magnitude 2 Richter earthquake,           |
| Department of Survey  | Mapping of the country at 1:25,000 and 1:50,000 scales, digital maps of VDCs, municipalities, aerial photographs at various scale, , real-time operation of continuous GPS stations, access to latest satellite mapping and interpretation capacity |
| Department of Hydrology and meteorology                           | Countrywide hydro-meteorological stations, weather monitoring tracking, analysis, forecast, and dissemination of information for public use.  |
| Department of Water-Induced Disaster Prevention (DWIDP)           | Capacities of research and river/hydraulic modeling, field-research stations for landslide/erosion studies, flood control researches and implementation of mitigation measures for floods and landslide/erosion                                     |
| Department of Urban development and Building Construction (DUDBC) | Building research, design of disaster-resistant construction, training directorate, curricula and training centers, training programs for engineers, architects and masons,   |

| <b>Institution</b>  | <b>Capabilities</b>   |
|---|---|
| Ministry of Local Development and District Development Offices (DDC)                              | Focal points on DRM in each DDC, information management system networked with 75 districts, District periodic plans for several districts integrating disaster reduction concerns,  |
| Academic Institutions (Public and Private)  | Researches and teachings on aspects of natural and man-made hazards, risk assessment, training capacity,  |
| Emergency Responders (Nepal Army, Nepal Armed Police, Nepal Police, Nepal Red Cross Society etc.) | A cadre of .>150 Medical First Responders and Collapsed Structure Search and Rescue personnel including more than 25 international class Instructors for disaster response, a cache of search and rescue training equipment, country-wide networks, warehouses with emergency supplies (NRCS) |
| Hospitals (Public and Private)  | A cadre of trained personnel and Instructors for Hospital Preparedness for Emergencies, Hospital preparedness plans, experiences of regular mock drills,  |
| Municipalities  | Cadre of trained personnel, trained masons, disaster management committees in several wards, prep-positioned emergency stores at several locations, etc   |
| Ministry of Home Affairs  | Tremendous experiences of responding to disasters, including establishment of coordination mechanism, cadre of professionals trained in UNDAC and INSARAG,  |
| Ministry of Health  | 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   | Damage assessment capacity, experiences of responding to fast-onset (e.g. Debris Flow as well as slow-onset hazard (draught)  |
| And so on   |   |

In addition, several other initiatives such as School Earthquake Safety Program, Program for Enhancement of Emergency Response have also been implemented successfully which can serve as model methodologies.

### **2.3 PROPOSED INSTITUTIONAL STRUCTURE AND CONCEPTS FOR DISASTER RISK MANAGEMENT IN NEPAL**

The Natural Calamity (Relief) Act, 1982 did perform a mission about three decades ago to formalize disaster response as a responsibility of the government to provide relief to the victims of the disaster-events, and it designated authorities at the centre and district levels to coordinate the rescue and relief efforts of various response agencies. However, the experience of the past three decades evidenced that this structure is capable to coordinate only small to medium level disasters. The stipulations of the Act and the institutional mechanism it has created were not adequate to manage emergency response during medium disasters such as the Udayapur Earthquake of 1988 or the flood disaster in south-central Nepal in 1993. Surely, the stipulations will not be able to handle larger disaster of the scale that of the Gujarat Earthquake of 2001 or the Kashmir Earthquake of 2005. Further, the Act, even with the

amendments, does not incorporate the shifting emphasis from relief to preparedness and mitigation and mainstreaming disaster risk reduction into the development efforts of the country.

Therefore, there is a need for a qualitative change in the national structure for disaster risk management that could proactively enhance the DRR capabilities of the country and prepare for effective response. The national institutional mechanism need to be able to trigger and support the process of DRR, decentralize the responsibility, involve and engage all stakeholders and coordinate the actions nationally at all levels – from the community to the level of the national government. At the same time, the new structure should have the authority as well as the capacity to integrate DRR into the national governance and development efforts and force/facilitate program-level synergy and coordination.

Considering these facts, and also based upon the lesson-based institutional restructuring implemented recently by neighboring countries and to be able to develop compatible structure for being able to play active role in the SAARC level initiatives in DRM, the following institutional mechanism is proposed. The Ministry of Home Affairs should immediately start the process for the establishment of this institutional structure, by building upon and transforming what exists and creating new elements of the structure where necessary. The proposed Act on DRM should be commensurate with this structure.

### **2.3.1 National Commission for Disaster Risk Management (NCDRM)**

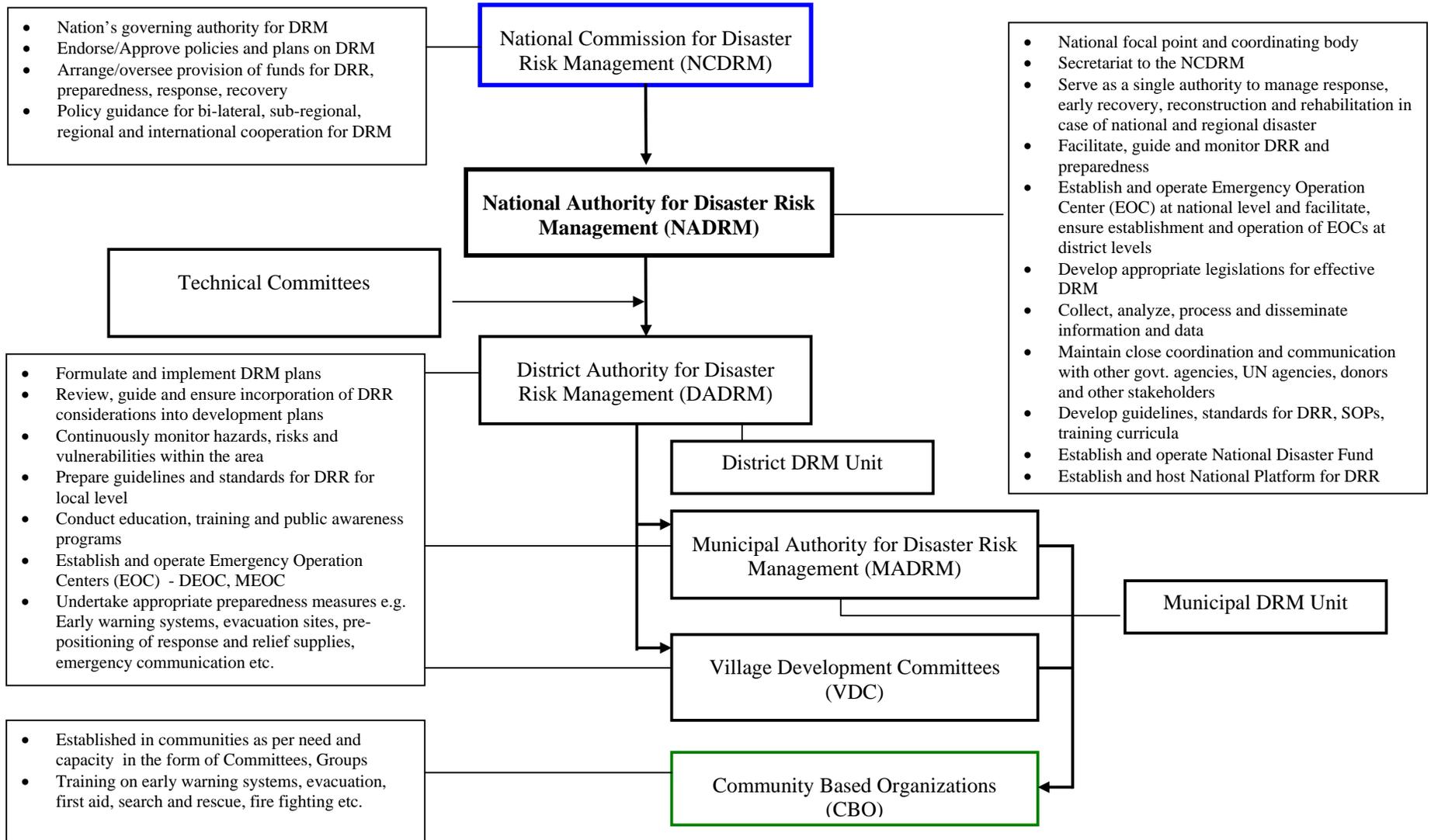
The NCDRM will be chaired by the Prime Minister. The Leader of the Opposition will serve ex officio as the Deputy Chairperson of the Commission. Other Members may include all cabinet ministers including ministers of Communication, Defense, Home Affairs, Foreign Affairs, Finance, Education and Social Welfare, Chief of the Army Staff, Inspector General of Police, Inspector General of the Armed Police, at least two representatives of Civil Society, and any other person of repute appointed or co-opted by the Chairperson.

The NCDRM will have the following functions:

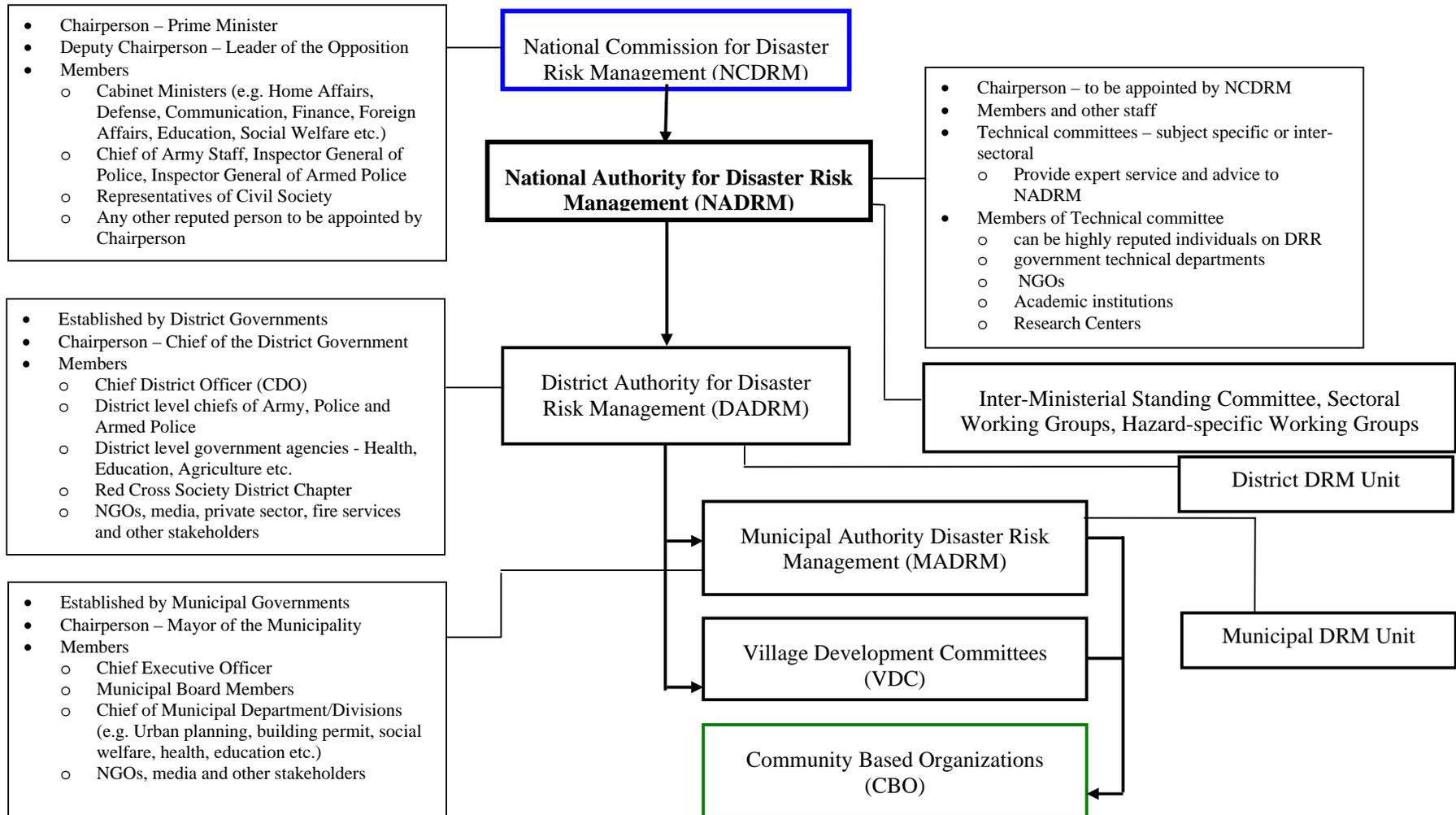
- Endorse national policies on disaster risk management
- Approve the National DRM Plan, sectoral plans for DRM, and the national programs for the reduction of specific natural hazards.
- Arrange for, and oversee, the provision of funds for disaster risk reduction, preparedness, response and recovery measures, and
- Provide policy guidance for bi-lateral, sub-regional (SAARC), regional and international cooperation in areas of disaster risk management

The operating arm of the NCDRM will be the **National Authority for Disaster Risk Management (NADRM)**, which is described below.

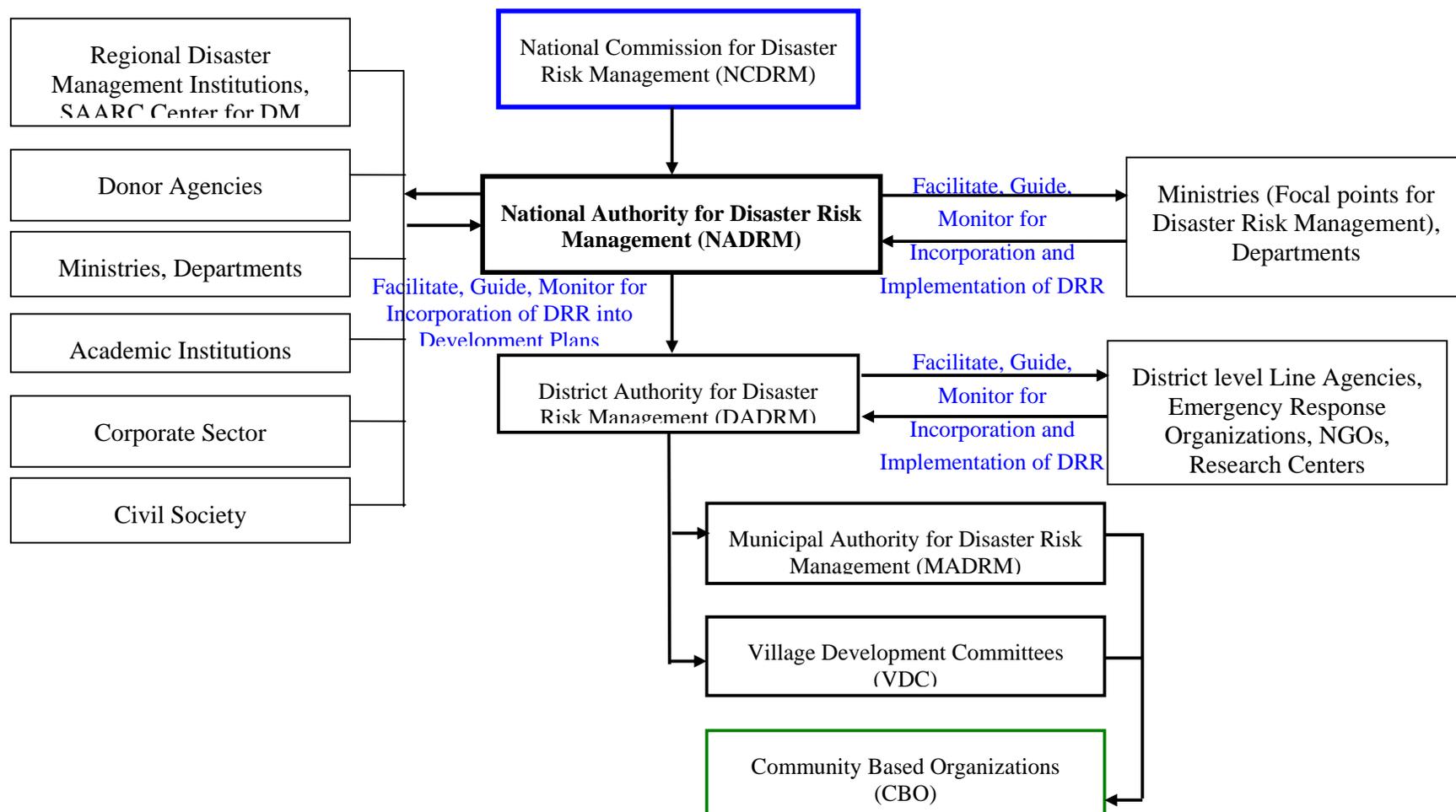
### Institutional Structure for Disaster Risk Management and their Roles



### Structure of Disaster Risk Management Authorities



### Linkage/Relationship of NADRM with Government, Local Government and Other Agencies



### 2.3.2 National Authority for Disaster Risk Management (NADRM)

NADRM will serve as the national focal point and coordinating body for facilitating and monitoring implementation of disaster risk management strategies in Nepal. This necessitates NADRM to directly interact with /communicate with all stakeholders, including ministries, departments, and district level institutions in matters related to the planning and implementation of DRR initiatives. The proposed legislation should provide such authority to the NADRM.

NADRM will be the single authority to manage response, early recovery, reconstruction and rehabilitation in case of national or regional disaster. For this purpose, to institutionalize operations, all stakeholders including government departments/agencies and emergency responders will work through and form a part of NADRM for the stated period.

In case of a disaster affecting a single district, NADRM will provide guidance and support to the District Authority for Disaster Risk Management (DADRM)

The following will be the functions of NADRM.

- Act as Secretariat to the National Commission on Disaster Risk Management
- Coordinate complete spectrum of disaster risk management at national level
  - Oversee development, implementation, monitoring and periodic updating of disaster risk reduction strategies, plans and programs throughout governmental and non-governmental entities.
  - implement response, recovery and rehabilitation works drawing cooperation from the sectoral agency,
  - coordinate international humanitarian assistance, liaise with the various disaster response “clusters”
  - facilitate and monitor incorporation/integration of DRR into the sectoral plans and programs
- Develop guidelines and standards of DRR works, SOPs for various sectors, draft (model) emergency preparedness plans for different stakeholders, and endorse training curricula for informal training on DRM for different target groups.
- Develop generic model bylaws for different levels of municipalities (metropolitan city, sub-metropolitan city, and municipality) incorporating the stipulations of the National Building Code, prepare guidelines for adapting the bylaws to the municipal conditions, approve the final bylaws for all municipalities. Develop/approve national curricula for training of engineers, architects, technicians, masons, contractors for promoting disaster-resistant construction practices and initiate training and capacity building programs for ensuring compliance.
- Explore and develop a system of financial incentives, including establishment of insurance and financial support, rebates, tax holidays etc for encouraging earthquake-resistant construction and seismic retrofitting of private houses, development of emergency response and business continuity plans for commercial and industrial sectors.
- Prepare national disaster risk management plans for different sectors and promote their implementation. Prepare guidelines for development and implementation of district, municipal, and VDC level disaster risk management plan including preparedness and emergency response plans, approve district level plans.
- Formulate national Disaster risk management policy/framework.
- Serve as national focal point for vetting all developmental projects from disaster management perspective to ensure that they do not introduce a new risk or enhance an existing one.

- Serve as national focal point for promoting public-private-partnerships for disaster management through active involvement of corporate sector and other professional organizations.
- Establish a series of hazard-specific Working Groups, chaired by senior representative of respective government departments, credible academic, or NGO institutions, drawing members from the various technical departments of the government, academic institutions, private sector, specialized NGOs and research centers. Facilitate the Working Groups to develop pertinent hazard reduction program for the country. Promote implementation of such programs by securing necessary resources and supporting the related lead institution.
- Create another series of sector-specific Working Groups chaired by senior representative of respective government department or credible academic or NGO institutions, drawing members from the various government, local government, academic institutions, private sector, specialized NGOs and research centers. These sector-specific Working Group will be the national equivalent of the UN led Clusters for planning/programming humanitarian response. Support the functioning of the sector Working Groups by securing and providing resources.
- Ensure establishment and smooth operation and maintenance of Emergency Operation Centers at National and District levels. Ensure uninterrupted communication between the district and the centre Emergency Operation Centers (EOCs).
- Establish and operate Disaster Risk Management Information System and periodically publish information and database on disasters, hazards, vulnerabilities, risks etc by compiling and collating primary or secondary data from respective data generating agencies, public or private.
- Collect, analyze, process and disseminate inter-sectoral information on DRM implementation
- Framing up and enactment of appropriate legislations for effective management of disaster risk and response including volunteer teams,
- Manage to provide technical assistance to ministries, departments, and district authorities in aspects of DRM.
- Ensure that the government establishes a funding mechanism for sustained efforts in implementing DRM. Convene expert workshop for exploring the feasibility for such funding mechanisms (bonds, tax, National Fund for DRM etc). Facilitate and advocate for allocation of funds and resources enabling ministries and other stakeholders to implement DRR programs.
- Serve as the one-window authority for the registration, monitoring and promotion and facilitation of NGOs working in aspects of DRM
- Serve as the lead agency for bi-lateral, sub-regional, regional or international cooperation in DRM
- Maintain close communication with all stakeholders, government, NGOs, donor agencies and the UN system, corporate sector and academia
- Establish and host the National Platform on DRR. NADRM will ensure that the National Platform secures effective involvement of the civil society and corporate sector entities in disaster risk management, and promotes integrated approaches and convergent programming among different agencies and actors.
- Ensure development and implementation of hazard-specific and sector-specific national plans for DRM.

- Establish National Steering Committee or Inter-ministerial level Task Force for the purpose of monitoring and evaluation of DRM initiatives.
- Report to NCDRM periodically.

NCDRM will appoint the Chairperson, Vice-Chairperson, and five members of NADRM. All these positions are of technical character; will be filled by the NCDRM after a careful scrutiny of senior professionals of the country from within or outside the government bureaucracy. The positions will have the status of a Cabinet Minister, Minister of State, and Assistant Minister respectively.

NADRM will have a corps of fulltime staff, the strength will grow gradually. To start with the core staff may be drawn (on deputation) from the line agencies, critical facilities such as police, army, NRCS, lifeline system such as water, electricity, transport, health institutions, etc. The NADRM will constitute inter-ministerial standing committee, hazard-specific working groups and sectoral working groups. The organizational structure appearing above outlines the proposed institutional system.

#### 2.3.2.1 Inter-ministerial Standing Committee

The inter-ministerial standing committee provides the policy and program support for ensuring the integration of DRR into the development programs, creates environment for incorporation of the experiences and existing capacities of the line ministries and department to contribute to the holistic DRM to be coordinated by NADRM

#### 2.3.2.2 Hazard specific Working Groups

Establish a series of hazard-specific Working Groups, chaired by senior representative of respective government departments, credible academic, or NGO institutions, drawing members from the various technical departments of the government, academic institutions, private sector, specialized NGOs and research centers. Facilitate the Working Groups to develop pertinent hazard reduction program for the country. Promote implementation of such programs by securing necessary resources and supporting the related lead institution.

#### 2.3.2.3 Sectoral Working Groups

Create another series of sector-specific Working Groups chaired by senior representative of respective government department or credible academic or NGO institutions, drawing members from the various government, local government, academic institutions, private sector, specialized NGOs and research centers. These sector-specific Working Group will be the national equivalent of the UN led Clusters for planning/programming humanitarian response. Support the functioning of the sector Working Groups by securing and providing resources.

### **2.3.3 District Authority for Disaster Risk Management (DADRM)**

District Disaster Management Authorities (DADRM) shall be established by the respective district governments. The DDRMA will comprise of the chief of the district government (Chair), Chief District Officer (CDO), District level head of the Army, The District level Chief of the Police and the Armed Police, District Health/Education/Agriculture, representative of the Red Cross Society District Chapter. Other members of the DADRM should include representatives of NGOs, media, private sector, fire services, and other local stakeholders. DADRM will also serve as the district level platform for disaster risk reduction, and will report to the NADRM on matters related with disaster risk reduction and emergency preparedness planning.

The DADRM will establish a District Disaster Risk Management Unit as an operating arm and secretariat of the DADRM. The DADRM will:

- Lead the formulation of the district disaster risk management plan in collaboration with the district level line agencies of the central government, district level NGOS, private businesses, and other stakeholders engaged in district level development planning, such as media and women's group, representatives of institutions working for the interest of the marginalized communities. The plan will be realistically based upon local-level risk assessment by the DADRM, who will also coordinate implementation and periodic updating of the plan.
- Review development plans of government departments and provide guidance on mainstreaming disaster risk reduction measures in these plans, ensure incorporation of DRR in district level development and planning process.
- Promulgate building and planning bylaws for guiding the construction practices in rural areas by adapting the generic national bylaws to the local conditions and incorporating the stipulations of the National Building Code, prepare guidelines for adapting the bylaws to the VDC conditions,
- Conduct training of engineers, architects, technicians, masons, contractors and instructors for promoting disaster-resistant construction practices and initiate training and capacity building programs for ensuring compliance.
- Implement the system of financial incentives, including establishment of insurance and financial support, rebates, tax holidays etc for encouraging disaster-resistant construction and seismic retrofitting of private houses, development of emergency response and business continuity plans for commercial and industrial sectors.
- Anchor community-based disaster preparedness initiatives by NGOs/CSOs and other national and international development/humanitarian organizations.
- Constitute inter-agency coordination cells to promote multi-stakeholder partnerships.
- Continuously monitor hazards, risks and vulnerable conditions within the district, municipality, or other hot-spot areas,
- Prepare guidelines and standards for local stakeholders on disaster risk reduction,
- Conduct education, training and public awareness programs for local officials, stakeholders and communities,
- Encourage involvement of community groups in disaster risk reduction and response by providing them necessary financial and technical assistance for implementing community level initiatives,
- Examine construction in the area and if hazard safety standards have not been followed, direct the relevant entities to secure compliance of such standards,
- DADRM will be responsible for appropriate preparedness measures at district level, e.g.
  - maintain an early warning system for the type(s) of identified hazards,
  - identify buildings to be used as evacuation sites,
  - stockpile relief, rescue materials, stockpiles of grain, medicines, water purification medicament, etc
  - Prepare an inventory of all heavy equipment such as cranes, back-hoe, earthquake-moving machines, and
  - Conduction of annual drills to test the disaster preparedness plan,
- Maintain a District Emergency Operation Centre (DEOC), which will have 24-hour link with the central EOC at NADRM via communication channel, with built-in redundancy (alternate channel also available for 24-hours.)

- Perform such other functions as the NADRM may assign to it.
- Take leadership in re-structuring smoothly the current obsolete mechanism of disaster rescue and relief at the district level into a modern one with institutional capacities suitable to address the wishes of the people to reduce disaster risk.

#### **2.3.4 Municipal Authority for Disaster Risk Management (MADRM)**

Municipal Authority for Disaster Risk Management Authorities (MADRM) shall be established by the municipal governments. The larger municipalities, e.g. the Metropolitan cities, sub-metropolitan cities and other larger municipalities should gradually establish such authorities. The MADRM will typically comprise of the municipal Mayor, Chief Executive Officer, Chiefs of the municipal divisions (e.g. urban planning, building permit, GIS, social services, municipal police, health, education, cultural heritage, fire services etc), municipal board members, and representatives of NGOs, media, private sector, or any other local stakeholders. Municipal Disaster Risk Management Authorities (MADRM) will be established in urban areas and cities; it will serve as the local municipal platform for DRM.

The MADRM will:

- Formulate a municipal disaster risk management master plan (DRMMP), based upon local risk assessment, and coordinate its implementation,
- Formulate and municipal emergency response plan as a part of the DRMMP, conduct regular drills to test the plan,
- Review municipal development plans and other development plans of the central/district government and provide guidance on mainstreaming disaster risk reduction measures in these plans,
- Promulgate bylaws by adapting the generic national bylaws to the local condition and incorporating the stipulations of the National Building Code, prepare guidelines for adapting the bylaws to the municipal conditions,
- Conduct training of engineers, architects, technicians, masons, contractors and instructors for promoting disaster-resistant construction practices and initiate training and capacity building programs for ensuring compliance.
- Implement the system of financial incentives, including establishment of insurance and financial support, rebates, tax holidays etc for encouraging earthquake-resistant construction and seismic retrofitting of private houses, development of emergency response and business continuity plans for commercial and industrial sectors.
- Continuously monitor hazards, risks and vulnerable conditions within the municipality, especially in the hot-spot areas,
- Prepare guidelines and standards for local stakeholders on disaster risk reduction,
- Conduct education, training and public awareness programs for municipal officials, stakeholders and communities,
- Encourage involvement of community groups in disaster risk reduction and response by providing them necessary financial and technical assistance for implementing community level initiatives,
- Examine construction in the area and if hazard safety standards have not been followed, direct the relevant entities to secure compliance of such standards,
  - It may create expert working groups and advisory committees as necessary, or commission specific study on aspects of DRM.

- Undertake appropriate preparedness programs at municipal level; e.g. maintain an early warning system, identify buildings to be used as evacuation sites, stockpile relief and rescue materials and identify alternative means for emergency communications,
- Establish and operate municipal emergency operation centre (MEOC), and in the event of a disaster, organize emergency response in coordination the MEOC.
- Coordinate with DADRM, NADRM and the District Emergency Operations Centre (DEOC),
- Perform such other DRR functions as the NADRM may assign to it.
- Review and re-structure the municipal organization structure for ensuring DRR implementation (building code implementation, land use planning and implementation, use of GIS etc).

### **2.3.5 Village Development Committee (VDC)**

The VDC are the lowest tier in the governance structure and should be included in the institutional framework as the frontline institution to manage disaster risks. Elected representatives from village and ward levels form these bodies. These bodies have an important role in allocation of resources for local development works. VDCs can play an important role in inventorying disaster events and their impacts, delineating hazard impact areas and risk mapping, advocating demands of communities to the DADRM and District Government Authorities. Community demands may include requests for allocation of resources from local budgets for hazard mitigation and vulnerability reduction activities; e.g. spurs for flood control, rainwater harvesting structures for drought mitigation, vocational training for livelihoods to reduce vulnerability etc. Therefore, it will be important to develop orientation and knowledge of local political leadership at this level. VDCs that are more capable may develop local policies and guidelines for vulnerability reduction.

The VDC will serve as the village-level local platform for DRM. It will report on DRM issues to the village meetings and to the DADRM.

The VDC should designate a focal point for DRR who report the issues of DRR to the District Authority for Disaster Risk Management and get support from it. The network of focal point for DRR could gradually be extended to the ward level where the ward chairperson should serve as the focal point.

Main function of the focal point would be:

- Prepare a disaster inventory in the VDC as per a standard format and feed the information to the district-level disaster database to be operated by the DADRM.
- Undertake local level disaster risk assessment in close collaboration with other knowledgeable people and institutions such as the schools, health, electricity and other lifeline institutions and critical facility managements,
- Prepare VDC level disaster preparedness plan and integrate it into the VDC development plan.
- Develop and implement a volunteer program, provide training on first aid, light search and rescue (LSAR) to the volunteers.
- Sample pre-positioning of LSAR and first aid equipment, relief materials, grains, seeds, etc within the VDC by mobilizing formal and informal resources available.
- Coordinate with the schools within the VDC in conducting disaster-drills, and in propagating disaster awareness in the VDC.

### **2.3.6 Community Based Organizations**

In order to promote community level disaster risk management activities, the capacity of existing community organizations will be developed and enhanced by district and VDC authorities for disaster risk management. In the absence of community organizations, new groups would be established to work on DRM. CBOs will be trained about local early warning system, evacuation, first aid, search and rescue, fire fighting etc. Linkages would be developed between CBOs and relevant local agencies; e.g. agriculture, banks, health and veterinary services to promote disaster preparedness. Skills and knowledge of CBO leadership will also be developed in financial management, people management, resource mobilization, interpersonal communication and presentation and negotiation skills.

## 3 THE NATIONAL STRATEGY FOR DISASTER RISK MANAGEMENT

### 3.1 INTRODUCTION

The National Strategy for Disaster Risk Management is a commitment of the Government of Nepal to reflect the paradigm shift towards Protection as part of the fulfillment of the basic right of the people. It also expresses the desire of the people and government of Nepal to reduce disaster risks to an acceptable level for safeguarding their lives, properties, development investments, cultural heritage as well as to mitigate the adverse impact to the environment from natural hazards thereby contributing to the aspirations of alleviating poverty and improving the quality of life of all Nepalese.

It should be seen as emanating from the policies, needs and thought processes in the country, must be aligned with the objectives enshrined with different policy pronouncements and the national planning process. Put here linkages with the positive policies.

The National Strategy recognizes the following as the main characteristics of the process of Disaster Risk management:

- a) Integrating risk reduction concerns; safeguarding lives, livelihoods and assets of communities by promoting disaster-resilience; developing appropriate institutional, policy and legislative mechanisms for holistic disaster risk management at all levels, with involvement of all-stakeholder approach is essential for achieving the national goal of sustainable development and poverty reduction.
- b) Citizen of the country have the right for dignified life and livelihood and that the government is responsible to ensure the protection from disasters, which in essence is avoidable, with no risk creation in recovery / rehabilitation process; being accountable to the communities at risk and communities impacted by disaster, and being sensitive to such values as social equity, justice and inclusion, gender- and ethnicity- equality, and putting especial efforts in case of marginalized communities, dalits, deprived and physically handicapped.

The National Strategy, developed as a consensus by a participatory process involving all group of stakeholders, government, non-government, academic and communities, private sector and the international development partners, aims to serve as a guide to all, and at all levels, in planning and strategizing disaster reduction works or their integration in national development works processes in Nepal.

As mentioned earlier, the floods/flash floods and landslides constitute the principal hazards in Nepal and earthquake is a primary potential hazard. Hence, the Strategy should specifically encompass components to address these as well as other hazards.

### 3.2 VISION

The national vision is **Disaster-resilient Nepal**

### 3.3 MISSION

The mission is to guide, encourage, and ensure development and implementation of organized approaches for managing and minimizing disaster risks and for effective preparedness at all levels. This includes:

- Institutional development,
- Enhancing policy and legal environment for participation by all stakeholders adhering to the principles of **Centralized Policy, decentralized implementation**.
- Creating enabling environment to encourage DRR and preparedness planning and implementation at central level to household levels, and
- Ensuring integration of disaster risk reduction strategies into sectoral development and poverty alleviation plans.

### 3.4 GUIDING PRINCIPLES

#### 3.4.1 National development plans

Formulation of the National Strategy derived the required motivation from the gradually improving national thoughts on Disaster Risk Management issues, which have been reflected in the National Development plans. The recently developed and published “3-Year Interim Plan (2007 – 2010)” of Nepal is yet another milestone – it recognizes disasters as one of the major impediments of national development process, and tries to address the disaster risk management tasks by devoting one separate chapter on Disaster Risk Management (Chapter 26), and provides recourses to DRM issues in different chapters pertaining to various development sectors. The plan recognizes the importance of disaster risk reduction and mitigation, emphasizes the need to introduce changes into the prevailing national policies for the required shift of focus from disaster response to prevention, mitigation and preparedness, identifies challenges such as the need to foster coordination among the institutions, and seeks to promote better understanding of hazards and the related disaster risks. The Plan recognizes existing lacunae such as the lack of institutional capacities at various levels, and emphasizes the need for systematic hazard/vulnerability mapping, enhancing public awareness and capacities for disaster risk assessment and building code implementation, and the need to establish proper institutional mechanism at the highest level for establishing a comprehensive DRM system

The plan provides the following as the vision, objectives, strategies, policy, plans and programs for DRM in Nepal for the next three years:

- **Vision:** Minimize the adverse social and economic impacts of disasters
- **Objective:** To enhance the safety of life and property from the natural disasters by making disaster management system efficient, capable, strong and effective and by means of sustainable, environment-friendly and feasible development / construction.
- **Action Strategy:** The plan proposes several relevant strategies, policies, approaches and programs, and actions to cover all stages of disaster risk management from reduction and mitigation to preparedness, planning capacity building for effective response, to reconstruction and rehabilitation. As a major shift in national approach, the plan tries to link disaster risk management actions to the national development efforts. The Plan provides adequate emphasis on the need to develop a comprehensive national strategy, formulation of appropriate mechanisms, institutional development and capacity building at various levels.
- The Plan recognizes the potential contribution of local communities in disaster risk reduction and preparedness, the pivotal role of local governments and authorities, the need to recognize the contribution and continued engagement of NGOs and private sector in aspects of disaster risk management, and the need to foster collaboration and coordination among the key players and institutions active in different sector of national economy.

#### 3.4.2 Consideration of Cross-Cutting Issues in DRM Planning and Implementation

Nepal is undergoing a rapid process of unprecedented political and social transformation. In this process, new value systems are being committed in all walks of national life. Principles such as protection of human rights, social inclusion, equality of all Nepalese irrespective of caste, creed, ethnicity, gender, decentralization of governance and devolution of authority, special consideration and provision of opportunities to the marginalized and handicapped segment of the societies such as dalits, active discouragement of “elite capture” etc are being accepted as action agenda.

Since disaster risk management is also a development issue, the National Strategy for Disaster Risk Management and the action agenda for disaster reduction will actively follow these principles at every stages from conceptualization, design and implementation of DRM initiatives, and special programs should be initiated for educating both the agencies and

individuals, including the target population on the methods of implementing these principles in DRM initiatives, especially at community levels. Some of the specifics of these principles, as applicable to DRM processes, are briefed below.

#### Human Rights and Protection

Persons affected by natural disasters should enjoy the same rights and freedoms under human right law and national law as others not affected. Protection shall not be limited to securing the survival and physical security of those affected by natural disaster. The full range of social, economic and cultural rights would also be secured. These are:

- Rights related to physical security and integrity;
- Rights related to basic necessities of life;
- Rights related to other social, economic and cultural protection needs; and
- Rights related to other civil and protection needs.

#### Gender and Social Inclusion

The proposed authorities and institutions for DRM and those made responsible for its implementation will have the responsibility to ensure that:

- DRR programs including emergency response and relief should be gender-sensitive based upon an understanding that class, caste, and ethnicity further complicate the scenario. Therefore, such division of labor should be identified, understood and analyzed *a priori* for pre, during and post disasters conditions.
- At the time of disaster, public services often are paralyzed and therefore, community systems must be placed well in order so that they can function effectively and efficiently. For this, girls/women of all sections of the community, and other minority groups, dalits etc. must be able to know what to do, when to do and how to do depending on the kind of disaster. There must be clarity and confidence in them to exercise required knowledge and power.
- Women of various categories – young, single, married, widow, different ethnic groups, handicapped, sick etc. must be identified and programs are, therefore, targeted accordingly.
- Often marginalized groups of community as well as girls and women are the most vulnerable groups when a disaster takes place. The weak bargaining power at home and community reflects in their decision making to manage disasters. The reproduction functions of the female gender and the social divisions of power result in widening gaps within gender/groups. This demands special attention especially at times of disaster response and recovery, the need to mainstream gender and social inclusion into all stages of disaster risk management i.e., disaster preparedness, disaster reduction, disaster response and disaster recovery.

#### Decentralization and Local Self-governance

Based on Nepal's policy, law and practice, the District Development Committees (DDC), municipalities and Village Development Committees (VDC) are the functional local governments. They have the responsibility to help communities enhance safety against disaster risk and to be prepared to respond to disturbing hazard events. From these perspectives, the implementation process for the National Strategy shall embody the following stipulations:

- Empower local governments for DRM by providing adequate resources such as financial, human resources, materials and equipment, communication facilities etc.
- Integrate DRM in local governments' planning process and formulate DRM plan for each district, municipality, and village, and encourage community groups to prepare community level DRM plan

- Introduce a system of insurance for the damage or loss of crops, livestock and physical properties both in urban and rural areas, and make special arrangement for the poorest of the poor
- Strengthen a monitoring and evaluation system to ensure progress in disaster risk management planning and preparedness.

#### Staff Safety and Security

Implementation of the Strategy and programs under it shall ensure that the issue of Staff Safety and Security during disaster events has been built-in into the DRM procedures so as to adequately address the this issue in the following four major areas, notably,

- a) Life line system (water supply and sanitation, electricity system, telephony etc,
- b) Critical facilities, businesses and services with important roles in post-disaster situation (industry/trading houses dealing in materials that are important during disaster emergencies),
- c) Emergency response system and the response staff (SAR teams, medical first responders, etc), and
- d) Staff Security and Safety Team that is mobilized and dispatched to the site of disaster occurrence to provide safety and security to the emergency response operation.

The safety and security of the staff of all the above fair categories of institutions is vital for effective delivery of the emergency response and relief. For all the four categories, the Staff Safety and Security System can generically consist of the following four constituents:

**Staff:** These staff of the institution have designated role for emergency. For the national Safety and security team, the staffs include experienced emergency national managers and staff identified for disaster/emergency missions by the Government of Nepal. Team members should be specially trained and equipped for their task;

**Methodology:** Predefined methods for establishing safety and security including security assessments, and information management during the first phase of a sudden-onset disaster or emergency;

**Procedures:** For institution, the procedures should be pre-defined in the Standard Operating Procedures (SOPs) that forks a part of the emergency response plan. For the national Safety and Security team, these are the proven systems to provide safety and security on the arrival of staff at the disaster or emergency site within 24 hours of request;

**Equipment:** This equipment should be pre-positioned in the institutions themselves as specified in the Emergency response plan. For the national Team, these include the personal and mission equipment for safety and security teams to be self-sufficient in the field when deployed for disasters/emergencies for the first three (3) week period.

### **3.4.3 Acceptance of the Cluster Approach and Creation of National Cluster Groups**

Following the devastating 1993 floods in south-central part of the country, Nepal established three “Working Groups” for Disaster Management, notably i) Logistics Working Group, ii) Agriculture and Food Working Group, and iii) Disaster Health Working Groups, led respectively by the Ministry of Home Affairs, Ministry of Agriculture and Food and the Ministry of Health Services respectively. These working groups drew membership from the pertinent government agencies, the NGOs, and the international partnering agencies working in the particular area. Each Working Group created its standard Manual for Emergency Response, especially guiding the contribution to be made in the form of international relief and response. All the three working groups are still functional today, although they are at different levels of legal and functional standing.

This concept of “Working Group” is similar, to a certain extent, to the “Cluster Approach” promulgated by the UN Inter-Agency Standing Committee (IASC) in 2005. It is now globally

accepted as an effective UN mechanism that can help to address identified gaps in response and enhance the quality of humanitarian action, by ensuring greater predictability and accountability, while at the same time strengthening partnerships between NGOs, international organizations, the International Red Cross and Red Crescent Movement and UN agencies.

At the country level, the aim of the “Cluster Approach” is to strengthen humanitarian response by demanding high standards of predictability, accountability and partnership in all sectors or areas of activity. It is about achieving more strategic responses and better prioritization of available resources by clarifying the division of labor among organizations, better defining the roles and responsibilities of humanitarian organizations within the sectors, and providing the UN Humanitarian Coordinator with both a first point of call and a provider of last resort in all the key sectors or areas of activity. The cluster approach represents a raising of standards in humanitarian response. At the country level, it involves having clearly identified leads (within the international humanitarian community) for all the key sectors or areas of activity, with clearly defined responsibilities for these agencies in their capacities as sector leads.

Utilizing the excellent experience of the functioning of the three disaster working groups and that of the UN Cluster Approach, the Strategy will ensure that the National Authority for Disaster Risk Management (NADRM) revitalizes the Working Group concept with creation of additional groups, with designated leader-agency for each Working Group in the same line as the UN Clusters, and that the related cluster and working groups will meet periodically to jointly assess the disaster situation, impact, need analysis, and humanitarian response

#### **3.4.4 HFA 2005-2015**

Hyogo Framework of Action 2005-2015 (HFA) is the consensus strategy adopted by 168 member countries in the UN World Conference on Disaster Reduction in January 2005 in Kobe for spearheading the task of disaster risk reduction globally. The HFA 2005-2015 was developed based on the gap analysis in the national and global efforts in DRR in the preceding decade from 1994-2004.

The goals set by the HFA 2005-2015 are: a) Integration of disaster risk reduction into sustainable development policies and planning, b) development and strengthening of institutions, mechanisms and capacities to build resilience to hazards, and c) systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery program. It recommends five priorities for Action, namely,

- a) Priority Action 1: Ensure that disaster risk reduction (DRR) is a national and a local priority with a strong institutional basis for implementation.
- b) HFA Priority Action 2: Identify, assess and monitor disaster risks and enhance early warning.
- c) HFA Priority Action 3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels
- d) HFA Priority Action 4: Reduce the underlying risk factors
- e) HFA Priority Action 5: Strengthen Disaster preparedness for effective response

The HFA Framework provides logical steps for achieving DRR; knowledge of the risk faced, especially from a participatory process with the participation of the people and communities at risk, is the starting point. Once the risk is known and there is a conviction on the possibility and commitment for reducing the risk, one needs the knowledge, skills, and methodologies for reducing the risk. The next priority action stresses on knowledge management for DRR aiming at propagating the knowledge and empowering communities with the skills. The next step suggested is to home into action for risk reduction targeting the causative factors; thus, it focuses on risk assessment as the starting point for DRR. However, risk reduction is a long-term process, and there is always some residual risk at any point of time, hence the Framework suggests also disaster preparedness for effective response. All the steps mentioned above are

possible only if there is a firm commitment by the nation to make disaster risk reduction as its priority and if it creates suitable legal, policy and institutional arrangements for implementing the DRR initiative, which forms the first priority action of the HFA. Nepal has expressed her commitments to DRR by signing the HFA 2005-2015.

Hence, the strategy for disaster risk management derives motivation, especially in international context, from the intent of the HFA, and the general outline of the HFA framework has been followed in developing this Strategy.

### 3.5 PRIORITY ACTIONS

#### 3.5.1 Cross-Sectoral Strategies for DRR

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

##### **Issues and Gaps**

- Nepal needs to establish and institutionalized an integrated Disaster Risk Management system that could address the entire spectrum of disaster-related issues from mitigation to preparedness and response. Only such DRM system can provide the encouragement as well guidance to all stakeholders to undertake initiatives to make the country safe from natural hazards, to develop hazard-specific national programs for DRR. The system typically would comprise of institutional mechanisms as stipulated by this NSDRM, and the corresponding policies and legislations.
- Lack of a comprehensive legal and policy instrument for disaster risk reduction and planning/implementation of emergency response. Existing Act does not address the issue. The draft Act and Policy for DRM, currently being discussed, needs to be screened against the stipulation of this Strategy.
- Lack of proper mechanism for integrating DRR issues with Development initiatives (Even PRSP and MDGs do not include disaster issues)
- There is an urgent need to enhance emergency response planning and capabilities at all levels
- Lack of suitable funding mechanism for implementing DRR

##### **Suggested Strategies**

The suggested strategies vis-à-vis the identified gaps are tabulated in the following pages. Main umbrella type of priority action for each of the strategic interventions is also given together with suggestion of responsibilities to the central level government and other institutions at the national level.

| <b>Priority Action 1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>                       |  |  |   |
|--|--|--|---|
| <b>Issues and Gaps</b>   | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>  | <b>Responsible Authority / Organization</b>   |
| Urgent need to establish and institutionalize an integrated Disaster Risk Management System comprising of institutional mechanism and corresponding policies and legislation | 1. Establish an institutional system for Disaster Risk Management  | <ul style="list-style-type: none"> <li>Establish NCDRM, NADRM at the national level, establish DADRM at district levels and MADRM at municipal levels</li> </ul>               | MOHA to undertake preparatory works for decision by the Council of Ministers (Cabinet)                              |
|  |  | <ul style="list-style-type: none"> <li>Create and establish National Platform for Disaster Risk Management</li> </ul>  | NADRM <sup>iii</sup>  |
| Lack of a comprehensive legal and policy instrument for disaster risk reduction and planning/implementation of emergency response.   | 2. Formulation/modification and enactment of policies, rules, regulations for incorporation of comprehensive disaster risk management concepts | <ul style="list-style-type: none"> <li>Creation and enactment of New Disaster Risk Management Policy and Act</li> </ul>  | Ministry of Home Affairs to present draft policies, acts to the Council of Ministers and through that to Parliament |
|  |  | <ul style="list-style-type: none"> <li>Modification of relevant policies and acts to incorporate comprehensive concept of DRM</li> </ul>                                       | Related ministries (coordination by Focal points)   |
| Lack of proper mechanism for integrating DRR issues with Development initiatives   | 3. Mainstream disaster risk reduction into national development  | <ul style="list-style-type: none"> <li>Incorporate DRR into existing national development strategies and policies such as PRSP, MDGs and periodic development plans</li> </ul> | National Planning Commission and NADRM  |
|  |  | <ul style="list-style-type: none"> <li>Develop systems for mandatory hazard and risk assessment for major infrastructure development projects</li> </ul>                       | NPC, NADRM and Ministries   |

<sup>iii</sup> Till the NADRM is established, all activities for which NADRM is made responsible should be initiated /implemented by MOHA.

|   |   |   |  |
|---|---|---|--|
|   |   | <ul style="list-style-type: none"> <li>Establish Disaster Risk Management Focal Points in each ministry with designated roles and responsibilities for planning and implementing DRR and preparedness</li> </ul>  | Ministries   |
|   | 4. Disaster risk reduction and preparedness for better response are integrated into the development plans, programs and regular activities of local development institutions (VDCs, Municipalities, DDCs etc.)        | <ul style="list-style-type: none"> <li>DDCs, Municipalities and VDCs to incorporate DRR and Preparedness into their development plans, programs and regular activities</li> </ul>   | <p>MOLD and NADRM to provide overall guidance and support</p> <p>DADRM, MADRM<sup>iv</sup> to provide technical guidance</p> |
| Urgent need to enhance emergency response planning and capabilities at all levels | 5. Prepare and gradually implement various policies and protocols, standards, guidelines, hazard-specific Standard Operating Procedures (SOPs), hazard-specific special national programs for disaster risk reduction | <ul style="list-style-type: none"> <li>Specific policies, protocols, standards and guidelines are developed</li> </ul>  | NADRM, Related Ministries and Departments  |
|   |   | <ul style="list-style-type: none"> <li>Standard Operating Procedures are developed</li> </ul>   |  |
|   |   | <ul style="list-style-type: none"> <li>Hazard specific national programs are developed and implemented</li> </ul>   |  |
|   | 6. Establish a network of Emergency Operation Centers (EOC), one at the central level, and others at district and municipality levels   | <ul style="list-style-type: none"> <li>National Emergency Operation Centre (EOC) established and operationalize at the centre</li> </ul>  | NADRM  |
|   |   | <ul style="list-style-type: none"> <li>District, municipal and village Emergency Operation Centers (EOCS) are also established and operationalize</li> </ul>  | DADRM, MADRM, VDCs   |
| Lack of suitable funding mechanism for implementing DRR and Preparedness          | 7. Allocate resources and develop sustainable funding mechanisms  | <ul style="list-style-type: none"> <li>Establish a Funding Mechanism (or funding mechanisms) for implementing the stipulations of this Strategy based on the recommendation of a Task Force consisting of experts. The funding mechanism(s) should be backed up by</li> </ul> | NADRM, Ministry of Finance   |

<sup>iv</sup> Till the DADRM and MADRM are established, all activities for which DADRM and MADRM are made responsible should be initiated /implemented respectively by DDRC and municipalities.

|  |  |  |  |
|--|--|--|--|
|  |  | legislation  |  |
|  |  | <ul style="list-style-type: none"> <li>• Allocate resources for the development and implementation of DRM policies, programs, laws and regulations in all relevant sectors of economy and authorities at all levels of administration based on identified priorities</li> </ul>  |  |
|  |  | <ul style="list-style-type: none"> <li>• Establish a separate funding mechanism (such as basket fund) with the representation of key DRM stakeholders, and with the provision of fund replenishment (donations from government, donors, private sector or charity or tax) and channeling to the affected sector and community, and develop a fast-track system to disburse the fund to the affected community</li> </ul> |  |

*Note: Until the NADRM and DADRM are established, all responsibilities assigned to them should be initiated/implemented by MOHA and CDO respectively.*

## **Priority Action 2: Identify, assess and monitor disaster risks and enhance early warning.**

### **Issues and Gaps**

- There is an urgent need to interpret existing hazard information into risk information for the entire country for each hazard type by combining the knowledge on vulnerability and capacity and the socio-economic and demographic profiles
- A comprehensive national and district level database on disasters, hazards, vulnerabilities and capacities is yet to be established in Nepal. There is also a lack of unified system of information dissemination, the capacities for a prudent use of media and the modern communication technologies.
- Establishment / strengthening of early warning system and addressing the need to understand the impacts of climate change process as well as the hazard-environment relationships, especially at the local levels is to be done on an urgent basis.

### **Suggested Strategies**

The suggested strategies vis-à-vis the identified gaps are tabulated in the following pages. Main umbrella type of priority action for each of the strategic interventions is also given together with suggestion of responsibilities to the central level government and other institutions at national level.

| <b>Priority Action 2: Identify, assess and monitor disaster risks and enhance early warning.</b>   |  |  |   |
|--|--|--|---|
| <b>Issues and Gaps</b>   | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>  | <b>Responsible Authority / Organization</b>   |
| There is an urgent need to interpret existing hazard information into risk information for the entire country for each hazard type by combining the knowledge on vulnerability and capacity and the socio-economic and demographic profile | 1. Assess the disaster risks due to different natural hazards and vulnerabilities at different levels and different scales; develop system to periodically update and make it publicly available     | • Prepare National Atlases for hazards, vulnerabilities and risk for all hazard types  | • NADRM with the assistance from related ministries, departments and professional organizations |
|  |  | • Develop vulnerability profiles (structural, non-structural, socio-economic and cultural vulnerabilities) of the country  |   |
|  |  | • Develop system to use vulnerability profiles to guide DRM and development efforts at all levels  |   |
|  |  | • Develop system of indicators for disaster risk and vulnerabilities   |   |
|  |  | • Develop system for use of such indicators for budgetary planning   |   |
|  |  | • Develop/adapt/adopt methodologies for risk assessment and ensure uniformity of standards and understanding – publish guidelines on methodologies and standards |   |
| Lack of comprehensive disaster database and a unified system of information dissemination  | 2. Establish and institutionalize an authentic, open, and GIS-based Disaster Information Management System (DIMS) at centre, district and municipal levels to cover all disaster-related information | • Establish the DIMS   | • NADRM, NPC  |
|  |  | • Record, analyze, summarize and disseminate statistical information on disaster occurrence, impacts and losses, on a regular bases                              |   |
|  |  | • Ensure all sectors, and all stakeholders, including the international centers working in disaster information databases are encouraged to use it               |   |
| Establishment /  | 3. Establish a national system of  | • Design and establish system for monitoring of pertinent hazards  | • NADRM, related ministries and   |

| <b>Priority Action 2: Identify, assess and monitor disaster risks and enhance early warning.</b>  |   |   |  |
|---|---|---|--|
| <b>Issues and Gaps</b>  | <b>Strategic Activity</b>   | <b>Indicative Activity &amp; Outcomes</b>   | <b>Responsible Authority / Organization</b>  |
| strengthening of early warning system and addressing the need to understand the impacts of climate change process as well as the hazard-environment relationships, especially at the local levels is to be done on an urgent basis. | hazard/risk monitoring and early warning to pertinent hazards   | <ul style="list-style-type: none"> <li>• Support database work to enhance the early warning assessment through strengthening institutional coordination among donors</li> </ul>                       | departments to develop, design system of monitoring and early warning<br><ul style="list-style-type: none"> <li>• DADRM, MADRM, VDCs and related ministries and departments to implement the plan and designs</li> <li>• CBOs, NGOs to facilitate implementation at local level</li> </ul> |
|   |   | <ul style="list-style-type: none"> <li>• Establish early warning systems so that early warning information are disseminated widely, especially to the at-risk communities and institutions</li> </ul> |  |
|   |   | <ul style="list-style-type: none"> <li>• Develop and implement system of information dissemination, prudent use of media and communication technologies</li> </ul>                                    |  |
|   |   | <ul style="list-style-type: none"> <li>• Encourage use of early warning systems at the local level for pertinent hazards</li> </ul>   |  |
|   | 4. Prepare land use maps focusing on urban and urbanizing areas and develop a system for periodically update and use it for land use planning | <ul style="list-style-type: none"> <li>• Encourage preparing land use maps for urban and urbanizing areas and use it for land use planning</li> </ul>   | <ul style="list-style-type: none"> <li>• NADRM, NPC and ministries</li> </ul>  |
|   |   | <ul style="list-style-type: none"> <li>• Develop system for continuously update it through research and monitoring of the changes and its implications</li> </ul>                                     |  |

**Priority Action 3: Better Knowledge Management for Building a culture of Safety.****Main Issues and gaps**

- The level of disaster awareness and knowledge on disaster risk management is conspicuously low at all levels: Education policy needs to be modified to include disaster education at all levels in formal and non-formal and continuing education programs. Massive campaign for DRR is required
- Currently, the institutional capacity to develop, plan and implement DRR is very poor with all key stakeholders. They need to be educated and motivated – the capacity must be built-up. There is a huge lack of knowledge on building codes, land use plans, climate risk management approaches etc even with the key players, resulting in continued high vulnerability of residential buildings, critical facilities and infrastructures and even increase of such vulnerabilities.

**Suggested Strategies**

The suggested strategies vis-à-vis the identified gaps are tabulated in the following pages. Main umbrella type of priority action for each of the strategic interventions are also given together with suggestion of responsibilities to the central level government and other institutions at national level.

| <b>Priority Action 3: Better Knowledge Management for Building a culture of Safety</b>  |   |   |  |
|---|---|---|--|
| <b>Issues and Gaps</b>  | <b>Strategic Activity</b>   | <b>Indicative Activity &amp; Outcomes</b>   | <b>Responsible Authority / Organization</b>  |
| The level of disaster awareness and knowledge on disaster risk management is conspicuously low at all levels: a special national policy is necessary to improve the situation | 1. Develop/modify the National Policy on education and implement it such that it recognizes the schools as important centre for propagating disaster awareness. | • Integrate Disaster Risk Reduction and Effective Preparedness in School Curricula at primary, secondary, higher secondary and higher level education.                                | • Ministry of Education and departments to implement<br>• NADRM to facilitate and guide the process      |
|   |   | • Develop programs and provide support to enhance DRM capacities of all schools. Assist them to institutionalize disaster preparedness and response plans including emergency drills. |  |
|   |   | • Set minimum standards for private and public schools for disaster preparedness.   |  |
| Disaster Education in Schools and academic institutions   | 2. Implement Disaster Education   | • Compulsory teaching and exercise in DRR (including national building codes) in the undergraduate courses of engineering education and technical vocational training for technicians | • Related ministries, departments, and agencies to implement<br>• NADRM to facilitate/ guide the process |

| <b>Priority Action 3: Better Knowledge Management for Building a culture of Safety</b>   |  |  |   |
|--|--|--|---|
| <b>Issues and Gaps</b>   | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>  | <b>Responsible Authority / Organization</b>   |
|  |  | <ul style="list-style-type: none"> <li>Integrate disaster risk management education in the syllabi of Civil Services, Academy, the Administrative Staff College, National Police Academy, and Army training institutions</li> </ul>                                |   |
| Non-formal Education and training on DRR/DRM   | 3. Develop curricula on DRR training for different target groups and implement training programs for all stakeholders                              | <ul style="list-style-type: none"> <li>Conduct a needs assessment and develop program for non-formal education (training) for DRR and Preparedness for all key sectors from individual and household level to the levels of the decision/policy makers.</li> </ul> | <ul style="list-style-type: none"> <li>Related ministries, departments, and agencies to implement</li> <li>NADRM to facilitate and guide the process</li> </ul>           |
|  |  | <ul style="list-style-type: none"> <li>Promote web-based programs of training to the various target groups</li> </ul>  |   |
| Lack of a national program on disaster awareness and community education and institutionalization  | 4. Develop and implement a comprehensive national program for disaster awareness and training  | <ul style="list-style-type: none"> <li>Formulate and implement special programs to develop a cadre of practitioners, professionals and support staff/personnel for disaster risk handling at DDC, VDC, municipality and ward levels</li> </ul>                     | <ul style="list-style-type: none"> <li>Related ministries, departments, and agencies to implement</li> <li>NADRM to facilitate and guide the process</li> </ul>           |
|  |  | <ul style="list-style-type: none"> <li>Develop public awareness materials (e.g. posters, brochures, booklets, videos) targeting a variety of groups including the parliamentarians, bureaucrats, politicians etc.</li> </ul>                                       |   |
|  | 5. Develop plans, programs and facilitate for use of mass communication media for dissemination of information on disaster risk and risk reduction | <ul style="list-style-type: none"> <li>Develop a system and organize media orientations about its role in promoting disaster risk management and community preparedness</li> </ul>   | <ul style="list-style-type: none"> <li>Ministry of Information and Communication, Media forums to implement</li> <li>NADRM to facilitate and guide the process</li> </ul> |
| <ul style="list-style-type: none"> <li>Encourage to use FM radio, print and electronic media, and other forms of communications</li> </ul> |  |  |   |
| 6. Develop/strengthen and encourage  |  | <ul style="list-style-type: none"> <li>Encourage to develop plans, programs for</li> </ul>   | <ul style="list-style-type: none"> <li>NADRM, DADRM, MADRM</li> </ul>   |

| <b>Priority Action 3: Better Knowledge Management for Building a culture of Safety</b> |   |   |   |  |
|--|---|---|---|--|
| <b>Issues and Gaps</b>   | <b>Strategic Activity</b>   | <b>Indicative Activity &amp; Outcomes</b>   | <b>Responsible Authority / Organization</b> |  |
|  | awareness raising programs on DRM at local level  | awareness-raising at local level  |   |  |
|  |   | <ul style="list-style-type: none"> <li>• Ensure use of radio, television, print media, brochures, pamphlets</li> </ul>  |   |  |
|  |   | <ul style="list-style-type: none"> <li>• Encourage use of indigenous knowledge</li> </ul>   |   |  |
|  |   | <ul style="list-style-type: none"> <li>• Ensure smooth flow of information through local media for the community of disaster prone areas</li> </ul>   |   |  |
|  | 7. Encourage and support CBOs, NGOs and other stakeholders for developing and implementing awareness-raising programs on disaster risk reduction and preparedness | <ul style="list-style-type: none"> <li>• Create supportive policy environment and provide incentives</li> </ul>   |   | <ul style="list-style-type: none"> <li>• NADRM for creating policy environment and monitoring the performance</li> <li>• DADRM, MADRM and VDCs to facilitate and support at local level</li> </ul> |
|  |   | <ul style="list-style-type: none"> <li>• Develop and implement comprehensive plans, programs for awareness-raising</li> </ul>   |   |  |
|  |   | <ul style="list-style-type: none"> <li>• Develop a system of monitoring performance of stakeholders in DRR. Objective indicators should be developed for such evaluation. The NGOs working in DRR should be classified based on their performance and achievement. Such classification should be used for determining their eligibility for receiving financial support from the government and for any reward for the job best done</li> </ul> |   |  |

#### Priority Action 4: Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR

##### Main Issues and gaps

- Hazard and risk mitigation issues are disconnected from development and integrated environmental and natural resource management approaches leading to wastage of opportunities and creation of additional vulnerabilities.
  - DRR not considered in poverty alleviation programs.
  - Critical facilities and lifelines not yet protected from natural hazards; existing land use plans and bylaws not fully implemented and no strict mechanism for such implementation exists
  - Issues of Climate change, and climate risk management and the need to adapt to the climate variability and its relation to disaster risk management not adequately understood and incorporated in national policies, plans and programs.
- The power of bottom-up, community-initiated/implemented approaches has not been acknowledged fully in DRR program – the top-down approach prevails.
- Private sector businesses and insurance companies not involved in DRR adequately.
- The role and potentials of private sector, NGO and CBO in DRR and emergency response not properly recognized and consecutively these actors are not adequately engaged into the DRR processes

##### Suggested Strategies

The suggested strategies vis-à-vis the identified gaps are tabulated in the following pages. Main umbrella type of priority action for each of the strategic interventions are also given together with suggestion of responsibilities to the central level government and other institutions at national level.

| <b>Priority Action 4: Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>                                  |  |   |  |
|--|--|---|--|
| <b>Issues and Gaps</b>   | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>   | <b>Responsible Authority / Organization</b>  |
| Hazard and risk mitigation issues are disconnected from development and integrated environmental and natural resource management | 1. Integrate disaster risk reduction consideration into infrastructure development planning and implementation | <ul style="list-style-type: none"> <li>• Develop system and mechanism to include Disaster Impact Assessment (DIA) along with Environmental Impact Assessments (EIA) in all major projects; and incorporate disaster consideration in environmental and natural resources management.</li> </ul> | NADRM <sup>v</sup> , NPC to develop system to ensure that disaster impact assessment (DIA) is conducted for all major projects.<br>NADRM to define the standards |

| <b>Priority Action 4: Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>   |  |   |   |
|---|--|---|---|
| <b>Issues and Gaps</b>  | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>   | <b>Responsible Authority / Organization</b>   |
| approaches leading to wastage of opportunities and creation of additional vulnerabilities. DRR not considered in poverty alleviation programs   |  | <ul style="list-style-type: none"> <li>• Develop and implement systems to ensure that all new hospitals are built with a level of safety and resilience that strengthens their capacity to remain functional in disaster situations; promote the goal of “hospitals safe from disaster”</li> </ul>  | <p>Related ministries and departments to develop and implement the systems and NADRM to facilitate and provide technical support</p> <p>Related ministries, departments, professional organizations and academic institutions to develop, upgrade guideline, standards, codes and methodologies</p> |
|   |  | <ul style="list-style-type: none"> <li>• Develop and implement systems to ensure that all new schools are built with a level of safety and resilience so that they do not collapse during disasters</li> </ul>  |   |
|   |  | <ul style="list-style-type: none"> <li>• Develop, upgrade and encourage use of guidelines, standards, codes (including building codes) and methodologies for incorporating DRR</li> </ul>   |   |
| Critical facilities and lifelines not yet protected from natural hazards; existing land use plans and bylaws not fully implemented and no strict mechanism for such implementation exists | 2. Assess, protect and strengthen critical public facilities, lifeline, and physical infrastructure  | <ul style="list-style-type: none"> <li>• Develop and implement a system for assessing and strengthening critical public facilities and infrastructures particularly schools, clinics, hospitals, water and power plants, communications and transport lifelines, disaster warning and management centers, and culturally important lands in order to render them adequately resilient to hazards</li> </ul> | <p>NADRM, NPC and ministries to develop the system</p> <p>Departments and other related agencies to implement</p>   |
|   |  | <ul style="list-style-type: none"> <li>• Conduct need assessment for the each of the groups and develop/implement special DRR programs for the most vulnerable target groups with high priority on:               <ul style="list-style-type: none"> <li>• Awareness and training programs</li> <li>• Personal household safety</li> </ul> </li> </ul>  | <p>NADRM/DADRM to conduct the need assessment</p> <p>DDC, Municipalities and VDCs to implement the program</p> <p>NGO (National or international)/CBO to help conduct the programs</p>  |
|   | 3. Develop and implement, on a priority basis, special DRR programs for the most vulnerable segment of the society – the marginalized and the Dalit-groups, women’s’ groups, handicapped and the |   |   |
|   |  |   |   |

| <b>Priority Action 4: Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b> |  |  |  |
|---|--|--|--|
| <b>Issues and Gaps</b>  | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>  | <b>Responsible Authority / Organization</b>  |
|   | disadvantaged groups, children and the elderly groups  | <ul style="list-style-type: none"> <li>• Community safety</li> <li>• Develop curricula for Training of Trainers</li> <li>• Implement Training Programs for the different target groups</li> </ul>  |  |
| Need to plan for Building Back Better after a Disaster  | 4. Incorporate disaster risk reduction measures into post-disaster recovery and rehabilitation processes       | <ul style="list-style-type: none"> <li>• Prepare system and mechanism for incorporating disaster risk reduction into post-disaster recovery and rehabilitation (Build Back Better)</li> <li>• Develop policies, standards, guidelines</li> <li>• Ensure system for using opportunities during the recovery phase to develop capacities that reduce disaster risk in the long term, including through the sharing of expertise, knowledge and lessons learned.</li> </ul> | NADRM to develop relevant strategy, programs and guidelines<br>Related government agencies at various levels to prepare themselves for implementation  |
| Need to promote Innovative financial instruments and the private sector in DRR                  | 5. Develop and promote alternative and innovative financial instruments for addressing disaster risk reduction | <ul style="list-style-type: none"> <li>• Enhance involvement of Private Sector in DRR for use of financial instruments (micro finance, micro credits, insurance etc)</li> <li>• Promote the development of financial risk-sharing mechanisms, particularly insurance and reinsurance against disasters.</li> </ul>   | NADRM to develop relevant strategy, programs and guidelines<br>Private sector, Federation of Nepal Chamber of Commerce and industries, traders, industries, etc and other Related government agencies at various levels to prepare themselves for implementation |

#### **Priority Action 5: Enhance Preparedness for Effective Response**

##### **Main Issues and gaps**

- Emergency response planning and capability enhancement not institutionalized at the centre, district or community levels; response capacity exists only at the central level and it may be considered adequate good for smaller disasters, but not adequate for medium or large disasters.

- There is a lack of fully equipped emergency operation centers at the central or district levels.
- No emergency preparedness or response plan exists even for the majority of lifelines and critical facilities such as the telephone, -electricity, -health, -water supply departments and other facilities; none of the ministries or departments or industrial establishments has adequate emergency response and business continuity plans.
  - The Fire Brigade, the country is not a unified institution it and the coordination is ad hoc.
- There is a lack of agreed upon standards for emergency response: even the existing norms for relief is not widely known to people because of the lack of proper mechanisms
- There is no system for the enrolment and sustained operation of volunteers programs. Community as the first responder is usually not recognized and not assisted by any nationally organized program so far.
- No system for periodic assessment/updating of and monitoring of disaster response capability made. Disaster drills have taken place few and far in between.

### **Suggested Strategies**

The suggested strategies vis-à-vis the identified gaps are tabulated in the following pages. Main umbrella type of priority action for each of the strategic interventions are also given together with suggestion of responsibilities to the central level government and other institutions at national level.

| <b>Priority Action 5: Enhance Preparedness for Effective Response</b>           |   |   |  |
|---|---|---|--|
| <b>Issues and Gaps</b>  | <b>Strategic Activity</b>   | <b>Indicative Activity &amp; Outcomes</b>   | <b>Responsible Authority / Organization</b>  |
| Need to institutionalize Emergency response planning and capability enhancement | 1. Develop and enact National Integrated Disaster Response System             | <ul style="list-style-type: none"> <li>• Develop an Integrated system for response during a disaster that describes roles, responsibilities, and reporting relationships for each of the key players at the national, district, municipal/village and ward level of governance</li> <li>• Install a mechanism for the use of Nepal Army, Nepal Police and the Nepal Armed Police for their role (use of human and institutional resources) in emergency response</li> </ul> | <p>NADRM take the main responsibility in putting the system in place</p> <p>NADRM to provide incentives and technical guidance</p> <p>NADRM in coordination with related ministries to install the mechanism</p> |
| Emergency Response and Preparedness plans and capabilities in each              | 2. Develop and implement emergency response and preparedness plan including a | <ul style="list-style-type: none"> <li>• Prepare and implement integrated Emergency Response and Preparedness Plans at various levels of institutions: ministries, departments, district level offices, municipalities, VDCs, industrial establishments, schools, hospitals, etc</li> </ul>   | <p>NADRM, DADRM, MADRM to assess and monitor</p> <p>NADRM, Local authorities to develop the</p>  |

| <b>Priority Action 5: Enhance Preparedness for Effective Response</b> |  |   |  |
|---|--|---|--|
| <b>Issues and Gaps</b>  | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>   | <b>Responsible Authority / Organization</b>  |
| institution   | system of emergency operation centers throughout the country   | <ul style="list-style-type: none"> <li>• Periodic Assessment and monitoring of Disaster Preparedness capacities at the central level</li> </ul>   | system   |
|   |  | <ul style="list-style-type: none"> <li>• Develop system of Fire Brigade services at central to local levels</li> </ul>  |  |
|   |  | <ul style="list-style-type: none"> <li>• Establish and operate Emergency Operation Centers (EOCs) at central, district, municipal and village levels</li> </ul>   | NADRM, DADRM, MADRM to establish and operate EOCs  |
|   | 3. Establish and/or strengthen warehouse and pre-positioning capacities at strategic locations (central, district, municipality and villages) for storing food, medicines, other relief supplies and rescue tools and equipment  | <ul style="list-style-type: none"> <li>• Develop minimum standards for pre-positioning of relief and rescue supplies – review SPHERE standards as applicable to Nepal’s levels of acceptable risks, build common understanding</li> </ul> | NADRM with assistance from other humanitarian organizations<br>NADRM, DADRM, MADRM and other humanitarian/relief organizations such as Red Cross, local clubs etc. |
|   |  | <ul style="list-style-type: none"> <li>• Establish warehouse and pre-positioning stations at various strategic locations</li> </ul>   |  |
|   |  | <ul style="list-style-type: none"> <li>• Focus on food security (food storage facilities in disaster-prone areas), seed bank (drought/flood resistant species</li> </ul>  |  |
|   | 4. Establish a robust communication system that can be used during emergency situation as well as in preparedness phase  | <ul style="list-style-type: none"> <li>• Enhance Police wireless communication network,</li> </ul>  | Related ministries, departments<br>NADRM to facilitate and guide the process   |
|   |  | <ul style="list-style-type: none"> <li>• Establish communication system/networks with the EOCs at the national and district levels.</li> </ul>  |  |
|   |  | <ul style="list-style-type: none"> <li>• Develop system and mechanism to use rural telephony established by the telephone agencies</li> </ul>   |  |
|   |  | <ul style="list-style-type: none"> <li>• Equip gradually the DADRM, MADRM offices and EOCs with satellite phones, radio communication systems and other modern system of communications.</li> </ul>                                       |  |
| 5. Establish efficient transport and logistics management mechanism   | <ul style="list-style-type: none"> <li>• Strengthen transport facilities in disaster-prone areas; improve capacity of the airports</li> </ul>  | Related ministries, departments<br>NADRM to facilitate and guide the process  |  |
|   | <ul style="list-style-type: none"> <li>• GON should designate an alternate airport as a redundant international airport; the candidates for such alternate airport could be Bhairahawa, Bharatpur, Pokhara or Biratnagar. The existing infrastructure of the selected airport should be</li> </ul> |   |  |

| <b>Priority Action 5: Enhance Preparedness for Effective Response</b> |  |  |  |
|---|--|--|--|
| <b>Issues and Gaps</b>  | <b>Strategic Activity</b>  | <b>Indicative Activity &amp; Outcomes</b>  | <b>Responsible Authority / Organization</b>                        |
|   |  | improved according to a plan to fulfill the intended objective.  |  |
|   |  | <ul style="list-style-type: none"> <li>• Necessary understanding should be reached with India for the use of airport close to the international border to support the logistics management when required</li> <li>• Develop mechanism for utilization of CBOs, NGOs and other stakeholders for the management, distribution of relief supplies at the local level</li> </ul>                   |  |
|   | 6. Enhance emergency response capacities of community at VDC level | <ul style="list-style-type: none"> <li>• Enhance capacity of communities, VDCs on first aid, light search and rescue (LSAR) pre-positioning of LSAR equipment etc.</li> <li>• Ensure immediate mobilization of social service sector such as red cross, local clubs and other rescue organizations</li> <li>• Encourage HAM radio network especially in remote areas of the country</li> </ul> | NADRM, DADRM, MADRM and VDCs<br>Related ministries and departments |

### **3.6 SECTORAL STRATEGIES FOR DRR**

The following sections provide the recommended strategies for the different sectors for incorporating disaster risk reduction and emergency preparedness in the particular sector. These recommendations came out from the sectoral workshops conducted for this purpose.

#### **3.6.1 Agriculture and Food Security**

##### **Main Issues and gaps**

- Disaster Risk Management is yet to be integrated into the planning and programming initiatives in the agricultural sector.
- There is a lack of emergency assistance networks both in production and food supply, with poor seed and food storage facilities
- There is a need to build up institutional mechanism within the offices of the Ministry of Agriculture and Cooperatives to address the issues of disasters into the sectoral plans and programs; an emergency preparedness plan needs to be drawn/updated for the sector
- Improvement in early warning system can enhance efficiency in preparedness for flood and draughts
- There is a need to enhance DRM capacity among professionals within the sector in both government and private sectors.
- There is an un-harnessed scope for the engagement of private sector through crop and livestock insurance.
- The indicative strategic action for DRR for this sector is given in the following table.

| <b>Strategies for DRM in Agriculture and Food Sector</b>  |   |  |  |   |
|---|---|--|--|---|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>   | <b>Better Knowledge Management for Building a culture of Safety</b>  | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>   | <b>Enhance Preparedness for Effective Response</b>  |
| <ul style="list-style-type: none"> <li>o The 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 should be prepared in a participatory dialogue with all stakeholders and be available in the public domain.</li> <li>o The MOAC should ensure that DRM issues are integrated into district agriculture and village agriculture plans</li> <li>o Enhance under the leadership of Min of Home Affairs 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 operational and technical capacities of agriculture offices operating at district and area level on disaster risk management.</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 sectors;</li> <li>o Establish a simple crop and livestock monitoring system and data base 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 Meteorology) into agricultural impact forecast products and strategic decision support tools for farmers in (slow on-setting) drought prone areas</li> <li>o Establish in collaboration with Water Dep. a flood and landslide early warning system for local levels</li> <li>o Develop a DRM related communication strategy in agriculture 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 risk (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)</li> <li>o Promote improvement of strategic seed banks and national seeds storage system.</li> <li>o Encourage to convert land slide areas in to plantation, discourage settlements in the flood prone areas</li> <li>o Invest on river training especially to reduce flood related risks.</li> <li>o Promote land and water conservation practices on farmers fields</li> <li>o Increase irrigation coverage where water resources are available without negative impacts on ground water</li> <li>o Encourage the use of crops and livestock species and of integrated production systems which are more resistant to natural hazard risks, and diseases</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 (from AG perspective) at all levels</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 Promote the establishment of strategic emergency buffer stocks of seeds,</li> <li>o food , and agricultural inputs in District Agricultural Offices or at regional level</li> <li>o Build capacity to know the risks at all levels</li> <li>o formulate definitions and indicators and triggers about the declaration of emergency situations in AG / food security and phasing of emergency response</li> </ul> |

### **3.6.2 Health and Nutrition Sector Strategies**

#### **Main Issues and gaps**

- Despite the presence of an effective program of health and nutritional surveillance and preparedness for response 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 implemented fully, the identified vulnerabilities in the major hospitals systems have not been addressed, and a majority of health facilities including the 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 within the public hospitals of Kathmandu Valley.

| <b>Strategies for DRM in Health and Nutrition Sector</b>   |  |   |  |  |
|--|--|---|--|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>  | <b>Better Knowledge Management for Building a culture of Safety</b>   | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>   | <b>Enhance Preparedness for Effective Response</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>○ Develop a properly functioning primary health care system, public health plans and interventions at community level to ensure participation of private sector, civil society, community-based organizations and non - governmental organizations in the plan implementation.</li> <li>○ Monitor continuously the capacity of health institutions and flag the critical vulnerabilities.</li> <li>○ Provide needed funds and stocks for relief and rescue 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>○ Launch an integrated system for disaster risk reduction and clarify roles &amp; responsibilities in the National Health System and essential Health Care. Ensure that the Epidemiology and Disease Control Division (EDCD) of the Department of Health Services</li> <li>○ Operationalize the 2003 Health Sector DRM Emergency Plan</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Extend emergency planning, triage training and simulation exercises with good trainers and proper 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> <li>○</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.</li> <li>○ Develop a properly functioning Primary Health Care system, public health and nutrition plans and interventions at community levels and sanction field posts to minimize inadequate allocation and utilization of resources</li> <li>○ Improve health facility capability to cope with emergency situations, both in immediate and remote areas</li> <li>○ Properly stock and supervise supplies for medical response and ensure effective distribution mechanisms.</li> <li>○ Maintain emergency stock of drugs at suitable places and make proper distribution channel, in case of emergency.</li> </ul> |

### 3.6.3 Education Sector Strategies

#### Main Issues and gaps

- Disaster Risk Reduction is not included in the formal education curricula at any level from the class 1 to the university level (accepting a few initiatives). The existing lessons of natural hazards in the textbooks of science and other subjects do teach about the physics of the hazards, but they do not teach 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 to be established.
- Most of the buildings of the public schools are structurally vulnerable and hence pose a risk to the occupants during the 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.
- The lack of human resources trained and educated in aspects of disaster risk management need to be overcome by a need analysis and subsequent efforts for implementation in a targeted time frame at the national level. .
- Dialogue among disaster risk managers and emergency response institutions within the country is still not mature because of the lack of mechanism at various levels. Existing disaster preparedness network lacks clarity of vision and modus operandi. There is no government policy to guide, direct or utilize such networks.
- Preparation and implementation of emergency preparedness plan including drills and pre-positioning of emergency supplies in educational establishments, public or private is virtually non-existent.
- There is a tremendous need to enhance disaster awareness even among the teachers and educators. Public awareness is very low and demands massive public campaign
- There is a need to establish proper mechanism to combat rumors especially during disasters.

## Strategies for DRM in Education Sector

| Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.   | Identify, assess and monitor disaster risks and enhance early warning.   | Better Knowledge Management for Building a culture of Safety   | Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR   | Enhance Preparedness for Effective Response  |
|--|--|--|---|--|
| <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 should direct respective agencies (curriculum development Board) to improve and strengthen the DRM curriculum base in the next major curriculum revision expected to take place soon.</li> <li>○ Establish mechanism to recognize schools-teachers, students and parents as change agents to raise awareness in the communities.</li> <li>○ Take advantage of the communication network from central to village level of the Ministry of Education and Sports (MOES) in disseminating 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</li> </ul> | <ul style="list-style-type: none"> <li>○ Make necessary financial resources available to impart DRM knowledge and skill to 28000 school communities in the next 15 years</li> <li>○ Assess disaster vulnerability of all public schools. Similar assessment of disaster risks should be made mandatory for all private schools of all levels including colleges and other educational institutes.</li> <li>○ Informal education on “hazard hunt” and use of simple kits such as a rain gauge, makeshift seismographs etc should be promoted in schools.</li> </ul> | <ul style="list-style-type: none"> <li>○ Formulate elaborate and specific plans to disseminate DRM education</li> <li>○ Raise concern about and organize programs with issues relating to disaster risk reduction in educational institutions</li> <li>○ Broaden the coverage of DRM in school level curriculum</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 school teachers so as to enhance their capacity to enable them to make more effective delivery</li> <li>○ Strengthen disaster risk management (DRM) curriculum base by integrating relevant learning experiences in 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 illustrations in textbooks so that the students have a</li> </ul> | <ul style="list-style-type: none"> <li>○ Arrange for safe, stable and flood-free land available for construction of school building</li> <li>○ Ensure that all new school buildings have improved seismic performance and disaster-resistance by compliance to building code.</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 dramas, etc</li> <li>○ Train local masons on disaster risk reduction techniques. While constructing earthquake-resistant school building 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 of the construction of school physical facilities based on 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. This should be a part of the school disaster preparedness plan.</li> <li>○ Prepare disaster kits and other promotional materials to suit local needs</li> <li>○ Carry out research and development programs on DRM for better disaster preparedness, especially for adapting the existing methods to the local context.</li> </ul> |

**Strategies for DRM in Education Sector**

| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning.</b> | <b>Better Knowledge Management for Building a culture of Safety</b>  | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b> | <b>Enhance Preparedness for Effective Response</b> |
|--|---|--|--|--|
| <p>DRM education and awareness programs and promote it.</p> <ul style="list-style-type: none"> <li>○ Ensure that implications of DRR initiatives are included in the existing system of monitoring and supervision of education programs.</li> </ul> |   | <p>clear understanding of hazards and risks</p> <ul style="list-style-type: none"> <li>○ Transfer knowledge on DRM to communities</li> <li>○ Derive lessons for dissemination from traditional knowledge and values on DRM</li> <li>○ Expose students to practical experience relating to DRM</li> <li>○ Train teachers and orient parents about disaster risks and their mitigation measures</li> <li>○ Organize programs to sensitize school management committees and parents on disaster risk reduction</li> </ul> |  |  |

### 3.6.4 Shelter, Infrastructural and Physical Planning

#### Main Issues and gaps

- Despite the 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 the 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 hazards faced
- The national building code is not mandatory in the university curriculum of civil engineering courses of most universities
- There is no national seismic standard for bridges, hospitals and other structures for housing critical facilities and lifelines. Disaster Impact assessment is seldom carried out during the design of infrastructure projects
- Many of the public buildings and facilities, physical infrastructure and cultural heritages suffer from structural and non-structural vulnerabilities and need urgent attention for vulnerability assessment and implementation of proper interventions for improving their seismic performance and resilience. There is no system to map out vulnerable structures even in urban areas including Kathmandu Valley. map showing
- 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 slopping lands, hazardous lands, and flood plains. 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 build-up of additional urban vulnerabilities.
- There is a rapid depletion of open spaces in urban and urbanizing settlements and the pertinent land use planning policies and guidelines need serious upgrading to include disaster risk reduction

| <b>Strategies for DRM in Shelter, Infrastructural and Physical Planning Sector</b>   |   |  |   |   |
|--|---|--|---|---|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>   | <b>Better Knowledge Management for Building a culture of Safety</b>  | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>  | <b>Enhance Preparedness for Effective Response</b>  |
| <ul style="list-style-type: none"> <li>○ Update, with due consideration of the present-day situation, the strategy for the implementation of the National Building Code in consultation with the major municipalities. The implementation strategy should be prepared as a consensus among the main stakeholders in the building production process, and it should contain some indicative process, the minimum human resources and a recommendation on organizational structure and capacity enhancement needs of the municipalities.</li> <li>○ Recognize that building code implementation involves enforcement or control and well as encouraging code-compliance from the house-owners; establish system of incentives and disincentives for building code compliance.</li> <li>○ Formulate district, municipal and village level disaster mitigation and adaptation plan 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 local level.</li> <li>○ Improve capacity and secure continued functionality of central and regional airport and transportation infrastructure.</li> </ul> | <ul style="list-style-type: none"> <li>○ Prepare an inventory of important buildings in cities using GIS and database, conduct vulnerability assessment on a priority basis, and conduct program for vulnerability reduction.</li> <li>○ Ensure that all critical facilities conduct vulnerability assessment (structural, non-structural and functional) of their building and system. This pertain to the electricity system, water supply and sanitation system, road &amp; bridge system</li> <li>○ Promote researches for developing suitable methods of vulnerability assessment and risk reduction including applicability of modern methods such as base-isolation, fir-resistance etc.</li> <li>○ Promote participation of Nepalese institution/professional in ongoing international program focused on such initiatives.</li> <li>○</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 are all understanding of the disaster risk of the country and know the stipulations of the national building code, and have the capabilities to design earthquake-resistant buildings and other infrastructure</li> <li>○ Ensure that all civil engineers of the country are capable of understanding "damage assessment" of buildings and other structures such as bridges for the purpose of "triage" and also for guiding the post-disaster financial assistance program.</li> <li>○ Ensure that all construction technicians and petty contractor have been trained on earthquake-resistant construction including proper bar-bending, concrete mixing etc.</li> <li>○ Ensure that all designing measures have been trained, free of cost on the skills of earthquake-resistant construction. Promote creation of Trained Masons Association in each municipality and such trainings are regarded as a minimum qualification for the masons.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>○ Improve building permit process for municipalities for enhanced compliance to the building code.</li> <li>○ Develop enforce building code, planning and building by laws</li> <li>○ Promote cost effective products (building materials)</li> <li>○ Undertake disaster impact assessment on building and infrastructure</li> <li>○ Promote researches directly towards structural assessments of historical monuments and buildings that have proven resilience to disasters. For Example, there are many historical monuments in Kathmandu Valley that have withstood at least two episodes of MMI IX level shaking due to earthquake A study of these building could reveal the indigenous methods for enhancing disaster resilience.</li> <li>○ Build technical capacity to enforce building code, planning and building by laws at local government level</li> <li>○ Educate and involve users monitoring and follow up on quality of building materials</li> <li>○ Upgrade or retrofit buildings of historical importance and infrastructure facilities</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Inventory the capacities of the sector to respond to disasters. This includes inventory of heavy mechanism, earth moving equipments cranes etc: a plan to mobilize these resources during disasters.</li> <li>○ Build up disaster preparedness capacity of the shelter, infrastructure and physical planning sector for effective response at all levels ,</li> <li>○ Improve institutional capacity for damage assessment and need analysis the capacity to cope with it.</li> <li>○ Encourage use of traditional knowledge and wisdom of building construction that are proven effective. Prepare roaster of skilled people who have the knowledge and publicly recognize the skills of making good temporary shelter from local materials</li> <li>○ Recognize the importance of air transport during disaster response and ensure functionality of central and regional airport and their capacity and ancillary infrastructure</li> </ul> |

| <b>Strategies for DRM in Shelter, Infrastructural and Physical Planning Sector</b>   |   |   |  |  |
|--|---|---|--|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning.</b> | <b>Better Knowledge Management for Building a culture of Safety</b> | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b> | <b>Enhance Preparedness for Effective Response</b> |
| <ul style="list-style-type: none"> <li>○ Local governments need to be empowered with authority, resources and enhanced capacities to implement DRM within their territories.</li> <li>○ Encourage insurance industry to increase building insurance outreach and penetration, especially for such targets as schools, community centers, community health facilities etc.</li> <li>○ Update the Shelter Strategy with due consideration of the building code and the knowledge on the hazard risk of the country.</li> <li>○ Encourage preparation and implementation of seismic codes or minimum standards for critical facilities and infrastructure</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, the contractors, the developers, the materials manufacturers and suppliers, Recognize the important role played by NGO, CBO, other community organizations such as Guthi and students clubs and involve them in enhancing awareness for building code</li> </ul> |   |   |  |  |

| <b>Strategies for DRM in Shelter, Infrastructural and Physical Planning Sector</b>   |   |   |  |  |
|--|---|---|--|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning.</b> | <b>Better Knowledge Management for Building a culture of Safety</b> | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b> | <b>Enhance Preparedness for Effective Response</b> |
| <p>compliance in the communities</p> <ul style="list-style-type: none"> <li>o Establish proper mechanism for controlling urban development by the private sector: prepare minimum standards for urban development. Especially in lands previously occupied by agricultural farming.</li> <li>o Establish, within the respective sector, a practice to conduct disaster risk assessment for all new infrastructure construction.</li> </ul> |   |   |  |  |

### **3.6.5 Livelihood Protection**

#### **Main Issues and gaps**

- Efforts on enhancing and diversification of livelihood options are still in its infancy, and the current efforts are geared towards scaling up of the good and successful cases. However, these efforts have not been factored into the prevailing disaster risk preparedness programs.
- Disasters physically destroy the livelihood protection infrastructure and could undo the success of a long period of time unless a business-continuity plan has been factored in into the program
- In a post-disaster scenario, quick restoration of livelihood becomes very important which can be done smoothly by implementing such programs as Cash-for-Work (CFW), and Cash-for-Training (CFT). Implementation of such programs and their success 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 etc. These concepts are relatively new to Nepal, and vulgarized into party-political concepts rather than hard realities of implementation.
- Although a cross-sectoral issue, livelihood protection and strengthening has not been an important agenda for any sector so far.

| <b>Strategies for DRM in Livelihood Protection Sector</b>  |   |  |  |  |
|--|---|--|--|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>   | <b>Better Knowledge Management for Building a culture of Safety</b>  | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>   | <b>Enhance Preparedness for Effective Response</b>   |
| <ul style="list-style-type: none"> <li>○ Promulgate new or amend existing legislations, acts and policies to improve their effectiveness in diversifying livelihood options, opportunities and choices for poor and excluded groups with consideration of a post-disaster scenario. Strengthen institutional mechanisms across all sectors to incorporate livelihood protection issues with due consideration of the impact of disaster event on livelihood. 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> <li>○ Improve physical as well as social infrastructures in the rural areas and ensure that these are accessible to poor and disadvantaged groups.</li> </ul> | <ul style="list-style-type: none"> <li>○ Formulate a livelihood protection package, which should clearly identify people and areas at risks as well as roles and responsibilities of different sectors to ensure livelihood protection.</li> <li>○ Develop and deliver a livelihood protection package program for poor &amp; excluded groups</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Assess needs and deliver training programs focusing on livelihood Issues. Develop effective DRM related training and extension programs</li> <li>○ Encourage use of local languages for mass communication to generate awareness as well as to educate people in DRM and livelihood protection issues.</li> <li>○ Develop training program on livelihood management particularly in enterprise management</li> <li>○ Improve and expand communication systems in rural areas</li> </ul> | <ul style="list-style-type: none"> <li>○ Expansion of saving credit cooperatives and financial institutions to create more livelihood options, opportunities and choices. Explore and expand livelihood insurance schemes</li> <li>○ Promote farm-based or off-farm enterprises to create employment and income opportunities.</li> <li>○ Implement and expand programs that contribute to the local livelihood diversifications and prepare practice CFW and CFT programs</li> <li>○ Establish and promote a taxing 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.</li> <li>○ Develop and implement beneficiary M &amp; E systems</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 Water and Sanitation Sector Strategies

#### Main Issues and gaps

- 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 high and the restoration of services is expected to be lengthy and difficult.
- The fact that Drinking water is a lifeline system is not factored in the sector program. Consequently, failure of the water system is expected to trigger a chain reaction in a post-disaster scenario. 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 disastrous event.
- There is little redundancy in the sector mainly in the urban environment.
- No plan exists for water supply in vulnerable urban areas. Successful cases of WAT/SAN preparedness as done by LSMC should be replicated by the municipalities, DADRM, MADRM and NADRM.

## Strategies for DRM in Water and Sanitation Sector

| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>   | <b>Better Knowledge Management for Building a culture of Safety</b>  | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>   | <b>Enhance Preparedness for Effective Response</b>   |
|---|---|--|--|--|
| <ul style="list-style-type: none"> <li>○ The existing government policies and strategies for the water and sanitation sector need to be amended to reflect the urgency and importance of DRM and ways to address it including clarifying the DRM roles and responsibilities of concerned government agencies. Such policies and laws should be responsive.</li> <li>○ Dissemination and integration of existing or the amended policies into practice should be given priority especially by supporting the local governments in establishing such programs.</li> <li>○ Incorporate disaster risk reduction and emergency response management for the water and sanitation sector in the district development plan. This should include a WAT/SAN emergency preparedness plan for provision of emergency water and for restoring the WAT/SAN facilities post-disaster including identify a convenient and safe location for locating water storage during emergencies.</li> <li>○ Formulate Policy for water and waste management.</li> </ul> | <ul style="list-style-type: none"> <li>○ Ensure that disaster risk assessment of water and sanitation systems is carried out and feasible options identified for uninterrupted water/sanitation services is assured by developing redundancy and implementing mitigation measures.</li> <li>○ Identify for each city the disaster risk to the sanitation system and prepare alternate plans especially for disaster emergency period</li> <li>○ Prepare disaster preparedness and emergency response plan at the central level and for each municipality.</li> <li>○ The DDC should ensure that emergency response plan for each VDC also includes emergency planning for uninterrupted water supply and sanitation system.</li> <li>○ Propagation of the risk management and response plan of action to all concerned stakeholders is needed.</li> </ul> | <ul style="list-style-type: none"> <li>○ Conserve and save water sources (intake of drinking water lakes etc).</li> <li>○ Monitor water quality (according to WHO standards or national standards).</li> <li>○ Promote local level water treatment procedures at the household level or point-of-use (like screening, sand &amp; coal methods, sun bathe).</li> <li>○ Disseminate information to the general public on water and sanitation and promote the use of existing local knowledge on water and sanitation</li> <li>○ Train people, community &amp; local persons in the provision of emergency water and sanitation facilities.</li> <li>○ Increase awareness among the community to safeguard water / sources and have effective sanitation systems.</li> </ul> | <ul style="list-style-type: none"> <li>○ Accord priority for water and waste management. Increase storage capacity of drinking water in city and rural areas.</li> <li>○ Promote local level water treatment procedures at the household level and the 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>○ Budget allocation, allocation of human and other resources for DRM needs to be made at all levels, as part of a contingency plan 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 and use them during emergencies.</li> <li>○ MOLD should ensure that all DDCs integrate WAT/SAN issues in the District level disaster risk management plan which itself should go into the district periodic plan.</li> <li>○ Establish Disaster Risk Mitigation warehouses at central &amp; regional levels so that a minimal provisioning of life saving WATSAN supplies at District/town levels are pre-positioned.</li> </ul> |

### **3.6.7 Information Communication, Coordination & Logistics**

#### **Main Issues and gaps**

- Main problem of the sector are low awareness level, lack of commitment, confusing responsibilities, weak coordination, unclear laws and acts, poor implementation, lack of trained personnel in remote areas, economic constraints, weak infrastructure, inadequate human, logistical and financial resources.
- The vulnerability of communication systems such as telephony (landline and cellular) is believed to be high. 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 shaking.
- Diverse and rugged mountain topography, lack of all-weather paved road network especially in the remote areas, is the tremendous physical constraints for effective communication, coordination, and logistics management during disasters. Lack of preparedness planning further exacerbates the problem.
- Lack of proper pre-established mechanisms for effective communication and information generation and sharing among the government departments, and between the government and other stakeholders including the UN system and the donor groups further complicates the situation.
- Lack of awareness and knowledge as well as institutional capacity, especially in terms of assembling verified and timely statistics on damage, is a big problem for dealing with disasters of large proportions.
- OCHA has initiated the "Cluster approach" in Nepal with designation of responsibility of coordination to identified UN agencies. There is a need to further enhance the communication and coordination and planning by greater participation of stakeholders, especially of the government agencies, in the Cluster mechanisms.
- There is a challenge of donor coordination, which is further augmented by the lack of reliable system and capacity for post disaster damage assessment and need analysis including identification of the requirements of food and logistics.

| <b>Strategies for DRM in Information, Communication, Coordination and Logistics Sector</b>   |   |   |   |  |
|--|---|---|---|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>  | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>   | <b>Better Knowledge Management for Building a culture of Safety</b>   | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>  | <b>Enhance Preparedness for Effective Response</b>   |
| <ul style="list-style-type: none"> <li>○ The Ministry of Communication should enunciate liberal policy on establishment of local and community radio stations, and levy minimal import duties and taxes for importing equipment for communication system.</li> <li>○ Enable information system through promoting technical capacities in communication among partners. Promote use of standard technology by stakeholders for enhanced communication and coordination.</li> <li>○ . Strengthen co-ordination among government agencies and develop required software regarding reporting and accounting. Establish standard software and protocols for damage assessment reporting, accounting and logistics management. Encourage and support local FM stations to air DRR programs, and to broadcast disaster information during emergencies. Maximize the use of information technology (IT) for public disaster awareness in collaboration with private sector.</li> <li>○ Establish an enhanced and reliable communication system nationwide to disseminate disaster related existing information and control rumors at all levels.</li> <li>○ DDCs at the district level and NADRM at</li> </ul> | <ul style="list-style-type: none"> <li>○ The Ministry of Communication should review its communication strategy to include aspects of DRR.</li> <li>○ The Ministry of communication should make it mandatory for all communication agencies; telephone service providers, internet service providers conduct vulnerability assessment of their system to various hazards, and implement proper vulnerability reduction measure to ensure uninterrupted function and service delivery during disasters. Each of the institutions should prepare emergency response plan, which should ensure speedy recovery of services in the impacted areas.</li> <li>○ Provide technical support for the vulnerability reduction and preparation of disaster response action planning.</li> <li>○ Ensure that cellular telephone antennae are placed on buildings with earthquake-resistant structure.</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 warning and recovery plans.</li> <li>○ Establish single door communication system at district and regional level</li> </ul> | <ul style="list-style-type: none"> <li>○ Details on national capacity on DRM including capacities of roads, bridges, airports, and the capacities of existing warehouses etc should be made available to all stakeholders. The government should work with UN system, especially OCHA, WFP to post this information on a web site and ensure its continued updating.</li> <li>○ Organize capacity development programs (training for skill development as well as institutional strengthening) to potential agencies, both government, local government, NGOs and volunteers in each district. 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 should progressively be continued at VDC levels. Some programs should 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 should be given the task of managing disaster awareness in</li> </ul> | <ul style="list-style-type: none"> <li>○ Strengthen the capacity of local governments and local/national NGOs to implement the disaster response and recovery.</li> <li>○ Establish and strengthen the communication and information infrastructure up to each VDC, if possible, up to settlement area.</li> <li>○ Collect/Share information and assets (transporters &amp; rates, customs and exemptions, equipment suppliers, port etc.) and develop roster of DRM institutions and skilled human resources at national and local levels. Establish mechanisms with the transporters, producers, vendors/suppliers of emergency relief materials for the speedy procurement of emergency supplies in a disaster situation as per previously agreed upon rates and conditions.</li> <li>○ Establish similar mechanisms with the owners of heavy equipment and machinery for their use in a disaster situation.</li> <li>○ Develop information sharing system and identify the needs of disaster prone population (children, illiterate people, women, poor etc.) regarding safety &amp; risk.</li> <li>○ Develop and agree on data sharing,</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 etc.) and capacity-building programs for the emergency</li> </ul> |

| <b>Strategies for DRM in Information, Communication, Coordination and Logistics Sector</b>  |  |  |   |  |
|---|--|--|---|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>  | <b>Better Knowledge Management for Building a culture of Safety</b>  | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>  | <b>Enhance Preparedness for Effective Response</b>   |
| <p>the central level should assign clear-cut communication responsibilities all the concerned stakeholders, and should monitor their work, especially during a disaster. They should serve as the single sources of disaster impact information to the print and electronic media respectively at the central and district level to achieve uniformity of information.</p> <ul style="list-style-type: none"> <li>○ Review existing legislation to ensure speedy entry of external support from the UN system and Bi-, multi-lateral agencies following an appeal for external assistance. This entails establishing mechanisms for granting visa to foreign rescuers, emergency responders 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 their capacities and provide assistance in capacity development.</li> </ul> | <p>centre to avoid duplication and increase people's participation</p> <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. 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 should also be used for wide dissemination of information on disaster reduction and response.</li> </ul> | <p>the normal times.</p> <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 should be collected and fed into the district level Disaster Information Management System (DIMS) and made available to pertinent stakeholders</li> </ul> | <p>processing and analyzing procedures through establishing standard tools and techniques among the partners due to lack of info management capacity and contradictory sources of information.</p> <ul style="list-style-type: none"> <li>○ Foster better coordination among information and communication agencies involved in hardware and software.</li> <li>○ Prepare guidelines, disseminate information on search, and rescue to the public.</li> <li>○ Enhance partnership for Disaster Risk Reduction (DRR) and sustainable environment management</li> </ul> | <p>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> |

### **3.6.8 Search and Rescue (SAR) and Damage Assessment and Need Assessment (DANA)**

#### **Main Issues and gaps**

- There is a lack of well-defined and institutionalized emergency response system, and consequently, there is no accountable agency or specific policy for undertaking SAR and DANA. The skills of DANA are not available with the disaster management institutions. So all SAR and DANA is done on ad hoc basis, the teams are collected and mobilized without systematic understanding of the risk.
- Limited professional level SAR capability exist for disasters with collapsed structure and medical first response with the Nepal police, Nepal Armed Police, and the Nepal Red Cross. There is a chronic lack of equipment for the rescuers for other hazards, such as flood, or snow avalanche. For such hazards, SAR capabilities do not exist.
- There are no stand-by teams for SAR and DANA. There is no system of community volunteer for assisting the 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 large disaster. The command system, if any, is usually developed after the disaster incidence and it follows the existing bureaucratic hierarchy rather than skills. Lack of pre-defined 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.
- No manual/Standard Operating Procedures (SOPS) exist for guiding the SAR or damage assessment for providing SAR or relief.

| <b>Strategies for DRM in Search and Rescue (SAR) and Damage Assessment and Need Analysis (DANA)</b>   |   |   |   |  |
|---|---|---|---|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>   | <b>Better Knowledge Management for Building a culture of Safety</b>   | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>  | <b>Enhance Preparedness for Effective Response</b>   |
| <ul style="list-style-type: none"> <li>○ Institutionalize SAR and DANA process in the central and local governance. 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, avalanches, 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 simulation exercises with good trainers and proper budgets Train, practice and organize more frequent disaster drills</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 DANA and emergency response.</li> <li>○ Prepare separate inventories of equipment for local procurement and for import. Identify agencies responsible for storing and maintaining the equipment.</li> <li>○ Prepare inventory of important building, critically important buildings, vulnerable buildings, high occupancy buildings. Familiarize the potential responders including the local volunteers with 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, homes. Promote community watch and conduction of vulnerability tours in all settlements, especially in urban areas</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 platform for DRR. This requires conducting a review of existing communication systems, both upstream</li> </ul> | <ul style="list-style-type: none"> <li>○ Develop capacity building policy and guidelines for SAR and DANA.</li> <li>○ Promote joint capacity building programs with the involvement of GO, NGO and private sector.</li> <li>○ Prepare capacity-building packages and impart training to build understanding and raise awareness on SAR and DANA.</li> <li>○ Community role as first responder and asserted to focal SAR &amp; DANA. Develop trainers and master trainers 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 level. 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.</li> <li>○ Develop communication system at central and local levels for proper coordination and collaboration among the government and non-government agencies through the</li> </ul> | <ul style="list-style-type: none"> <li>○ Assign functional responsibilities to the local government bodies for SAR and DANA preparedness programs. Coordination with other related agencies should be made mandatory.</li> <li>○ Designate focal person on disaster responses and communicate with all other concerned stakeholders.</li> <li>○ Maintain full time liaison with OCHA</li> <li>○ Organize meetings/participatory interactions with the stakeholders including participation of the Rapid Response Teams in such forums</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 in the public domain.</li> <li>○ Prepare capacity-building packages for SAR and DNA including establishment of training centre.</li> <li>○ Provide SAR equipment and materials to local level and training to local community.</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>○ The formal SAR/DANA teams should be well linked with the 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 in the public domain.</li> <li>○ The SAR team should have easy access to the 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</li> </ul> |

| <b>Strategies for DRM in Search and Rescue (SAR) and Damage Assessment and Need Analysis (DANA)</b>   |   |  |   |  |
|---|---|--|---|--|
| <b>Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.</b>   | <b>Identify, assess and monitor disaster risks and enhance early warning.</b>   | <b>Better Knowledge Management for Building a culture of Safety</b>  | <b>Reducing Risks in Key Sectors and Establishment of Mechanisms for DRR</b>  | <b>Enhance Preparedness for Effective Response</b>   |
| <p>in Kathmandu and districts</p> <ul style="list-style-type: none"> <li>○ Encourage pre-positioning of emergency supplies and light SAR for home, tole, ward, municipality and at district levels.</li> <li>○ Promote development of volunteerism for light SAR and for assisting the external responders in SAR and DANA.</li> <li>○ Review existing legislation to ensure speedy entry of external support from the UN system and Bi-, multi-lateral agencies following an appeal for external assistance. This entails establishing mechanisms for granting visa to foreign rescuers, emergency responders 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 their capacities and provide assistance in capacity development</li> </ul> | <p>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 wide dissemination of information on disaster reduction and response.</p> | <p>national and district platform for DRR. 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 should also be used for wide dissemination of information on disaster reduction and response.</p> | <ul style="list-style-type: none"> <li>○ Ensure budget allocation for disaster emergency works based on demand</li> </ul> | <p>equipments and tools for SAR. Allocate and release necessary budget to the SAR teams.</p> <ul style="list-style-type: none"> <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. Reporting storage facilities for water, food and medicine in temporary settlement sites.</li> <li>○ Keep 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> |

### 3.7 IMPLEMENTATION AND FOLLOW UP

Government of Nepal will have the primary responsibility for the implementation and follow up of the strategic goals and priorities for action included in this National Strategy.

The traditional concept of “disaster management” focuses heavily on government-sector as the only “provider of safety, and relief” to the people. This mind-set needs to be changed by developing an effective networking structure that goes beyond the government apparatus. Even within the government apparatus, it is necessary to develop horizontal linkages, for example, by creating DRM focal points in every ministry and departments responsible for national development tasks. Strong operational linkages among all such focal points at the government ministries, departments, district and municipal governments will form the nucleus of the national network for DRR that additionally includes other vital stakeholders from outside the government. The National Platform for disaster risk management will be the main central node of this extended networking structure, and will serve as the advisory body to assist the government to enhance the multi-sectoral approach and to monitor the achievements made in DRR.

Effective implementation of this strategy can be done only by adopting a multi-sectoral approach, with participation of all stakeholders. Vital stakeholders that can significantly contribute in supporting the implementation of DRR at all levels are the government agencies and the local governments, the civil society including volunteers and community-based organizations, the scientific communities and the private sector. UN agencies operating in Nepal should also be drawn in the process as a key stakeholder.

The central government will have to commit necessary resources and budgets for the implementation of this Strategy by establishing a funding mechanism backed by proper legislation. The DRR programs of sectoral government agencies should be reflected in the annual development plans of the government. Private sector so that budgetary outlays are secured. The proposed Policy and Act for DRM should include articles that direct the government to encourage and facilitate the NGO sector to mobilize local, national, regional and international resources, and to take up their responsibilities as stipulated in this Strategy. The government at all levels should ensure provision of financial assistance/grants to the NGOs for their programs drawn as per this NSDRM.

Human resources development conspicuously appears as one of the key areas for achieving success in the implementation of the Strategy. NADRM should carry out a need analysis and develop a national program with clearly articulated targets and approaches... Obviously, the programs for capacity development and training will have to involve all stakeholders, the central and local governments, the CBOs and NGOs, and the private sector.

Organizations, government or non-government, national or local levels, are encouraged to develop their programs for DRM in their respective fields of activities or expertise based on the crosscutting strategies or the sector-specific strategies spelt out in the National Strategy. The Strategy could be used as a “Guide” for organizations for putting up proposals to get resources for the implementation of DRM programs.

The HFA and other related international conventions emphasize providing especial support to the disadvantaged (e.g. landlocked) countries and least developed countries. Thus, Nepal is in a good position to garner such international support towards implementation of this Strategy. The success depends upon the extent Nepal respects the commitment in DRR and has made itself capable of implementing this strategy by enunciating conducive the policy, legal and institutional environments and suitable mechanisms.

Nepal should also develop suitable strategies for utilizing the opportunities of cooperation emanating from such outfits as UNDAC, INSARAG and create conditions for active participation of the key stakeholders in these networks.

DRR is getting more and more attention in the SAARC agenda. As one of the most vulnerable countries, the government of Nepal through the NDRMA should actively participate in SAARC level activities on DRR promoting regional cooperation towards implementation of this Strategy.

The implementation will strongly depend on the extent DRR considerations are integrated into the sustainable development policies, planning and programming at all levels. The international development partners should be made aware of this Strategy and encouraged to include the stipulations of this strategy into their respective Strategies for providing development assistance to Nepal. It is expected that the international development partners will use the stipulations of this Strategy as a Guide for reviewing or formulating their funding decisions in DRM. Towards this, the NADRM should utilize the “Donor Forum” for chalking out strategies for international cooperation in DRR and emergency response planning for Nepal.

The proposed National Authority for Disaster Risk Management (NADRM) will be the agency primarily responsible for implementing the specific elements of this strategy and facilitating the implementation by other stakeholders, and monitoring the implementation of overall national strategy. The NPC is to be responsible to monitor the integration of DRR into the development programs. The responsibility of civil society monitoring DRR should be a part of the monitoring process. Necessary indicators should be developed for such monitoring of vulnerability and risk reduction.

| Implementation of the Strategy: Responsibility and Use by Different Stakeholders |  |
|--|--|
| NCDRM  | Establish and direct NADRM   |
| NADRM  | Overall responsible and accountable for the implementation of the Strategy including establishment of funding mechanisms for DRM implementation  |
| GON Institutions   | Regulate effective service delivery including disaster response and mitigation, risk free infrastructure construction and other disaster reduction works in the country<br>A guide on incorporation of disaster risk reduction in all their policies, legislations and priority programs |
| Local Government   | Guide in planning, programming and implementing towards implementing mainstreaming of disaster risk management at district, municipal/VDC, and community levels.<br>Encourage decentralization of DRM initiatives up to the community and household levels                               |
| Corporate Sector   | Strategy would help protect business losses due to disaster impact<br>Provide better avenues for corporate social responsibilities<br>Higher knowledge and disaster awareness would generate greater business opportunities  |
| National and International Organizations, NGOs and CBOs                          | Help to achieve higher security for development initiatives against natural hazards<br>Enhanced opportunity for resource mobilization for DRR works in respective areas of competence  |
| External Development Partners (Donors)   | Guide for investment in DRM sector in Nepal<br>Enhanced protection of resources committed for long term development of Nepal   |

The sectoral ministries shall bear the responsibility to develop and implement the respective sector-specific strategies through a) initiating 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) implement the Action Plan including its periodic monitoring, evaluation and updating. The NADRM, DADRM(s), MADRM(s), and NGOs should be involved in the action planning process. In return, the components of the sectoral action plans should be reflected in the annual programs at the central, district, municipal or VDC levels. NADRM shall have the responsibility to provide oversight and to ensure that a) the sectoral action plans and programs conform to this NSDRM, b) optimal budgetary allocation has been obtained and that the program allows for resources mobilization from outside the government funds, and c) the sectoral plan has adequate system of monitoring and evaluation of plan implementation.

### **3.7.1 Implementation Strategy of NADRM**

DRR is a multifaceted task. Since NADRM is the highest level nodal executing agency responsible to implement the NSDRM, there are certain specific activities that it has to undertake in addition to what has been described above. These activities range from building support for earthquake mitigation activities in general, to providing guidance for specific risk management initiatives. These activities are classified into three groups: Building Support for the Plan and Earthquake Risk Management in General, Supporting the Individual Initiatives, and Keeping the Plan Going.

#### **3.7.1.1 Building Support for the Plan and Sector-specific Action Plans for DRR**

Any activities that increase 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. NADRM will 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 “key players”, in particular the beneficiary 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.

##### *Making Decisions Rationally*

All decisions as per the Strategy should be justified rationally. Some of the decisions may be subjective, the decision making process and the information used to influence those decisions should be documented and available for review.

##### *Building Relationships with Other Groups*

NADRM 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 trust. It is expected that these relationships will help strengthen the NSDRM, even if the interaction is not related to it.

##### *Conducting Regular Public Hearings*

NADRM will hold regular hearings to allow parties responsible for implementing the strategy interventions to report on progress, to investigate interesting topics and to educate the NADRM staff. These meetings will provide an opportunity for NADRM 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.

### 3.7.1.2 Supporting the Individual Initiatives

The individual strategies are important for DRR. For the strategy to be successful, the initiatives need to be successful. To that end, NADRM should 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 work is not repeated, knowledge is shared, and that activities of various different institutions fit together smoothly. NADRM will act as a link, as needed, between these organizations and a catalyst to get them working together.

#### *Planning Initiatives*

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

#### *Arranging Technical Support*

NADRM 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 without an interest in a specific project are asked to review the concepts 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. NADRM will arrange for peer review by Nepalese and foreign experts for selected initiatives based on needs and priority.

#### *Seeking External Funding for Respective Agencies*

NADRM will present the Strategy as a whole to a variety of groups that may be interested in funding DRR in Nepal.

#### *Publicizing Successful Initiatives*

NADRM will publicize successful initiatives and the responsible organizations to public groups and the press. This will be accomplished through workshops, lectures, and press conferences.

### 3.7.1.3 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.

## 4 BIBLIOGRAPHY

- Basnet S.S, Cardona C, Dixit A.M, Dwelley L, Nakarmi M, Pradhanang S.B, Tucker B, Villacis C. Kathmandu Valley Earthquake Risk Management Project; Presented to Second Nepal Geological Congress, 11-13 November 1997
- Bornemisza, O, Checchi, F. Mission Report: Health Interventions in Crisis-Affected Communities of Nepal. London: LSHTM, 2006.
- Disaster Management Policy of India (Draft).
- Disaster Reducing Disaster Risks in Bhutan "National Disaster Risk Management Framework, Ministry of Home and Cultural Affairs, Royal Government of Bhutan. 2006.
- Disaster Relief Implementation Manual: Logistics Support, December 1999. Kathmandu
- Dixit A. M; and other School, 2001, Earthquake Safety Program: Experience of Kathmandu Valley; Paper presented to the International Workshop on Earthquake Safer World in the 21st Century: Emphasis on Self-help, Cooperation and Education through Community Involvement, January 29-31, 2001 Kobe Japan
- Dixit, A. M., 1991. Geological Effects and Intensity Distribution of the Udaypur (Nepal) Earthquake of August 20, 1988. Journal Nepal Geol. Soc. . Nepal Geol. Soc. 7(Special Issues): pp 1-17.
- Dixit, A. M. and Maskey, N. D., 1992, Landslide Studies in Nepal, in Proc. 1st South Asia Geological Congress (GEOSAS I), 23-27 Feb. 1992, Islamabad.
- Dixit, A. M., , August 2004; Promoting safer Building Construction in Nepal, Proc. 13th World Conference on Earthquake Engineering Vancouver, B.C., Canada August 1-6, 2004.
- Dixit, A. M., 2004; Seismic Risk Reduction Efforts towards Disaster-Free Development in Nepal, in Proc. World Congress on Natural Disaster Mitigation 19-21 2004 February, India,
- Dixit, A. M., Guragain R., Shrestha S. N, Kandel R. C, Pandey B. H, Bothara J. K, Nakarmi M. R., Acharya S. P.; Nov 2002; School Earthquake Safety Program is an Effective Tool for Seismic Vulnerability Reduction through Community Participation: Experiences from Nepal School, Paper published on The Third International Workshop on Earthquakes and Megacities “Reducing Vulnerability- Increasing Sustainability of the World’ Megacities”, November 2002; Shanghai, China; panel 1: Reducing Vulnerability through community participation
- Dixit, A. M., January 2005, Thematic Session 5.2, Humanitarian Preparedness: Lessons and Challenges, Building National Capacity in Emergency Preparedness and Response, World Conference on Disaster Reduction Kobe, Japan, January 18-22, 2005. <http://www.unisdr.org/wcdr/thematic-sessions/presentations/session5-2/nset.pdf>
- Dixit, A. M., January 2005; International Symposium on “Building Safer Communities against Disaster”, Safety on non-engineered constructions a public forum event for the UN world conference on disaster reduction, 18-22, 2005, Kobe, Japan
- Dixit, A. M., January 2005; preparing for the Big One in Kathmandu Valley a case studies of Total Disaster Risk Management – Good Practice, prepare by ADRC on the World Conference on Disaster Reduction Kobe, Japan, January, 18-22, 2005.
- Dixit, A. M., Parajuli Y. K., Guragain R., 2004; indigenous skills and practices of earthquake resistant construction in Nepal, Proc. 13th World Conference on Earthquake Engineering Vancouver, B.C., Canada, August 1-6, 2004.

- Dixit, A. M., Status of Seismic Hazard and Risk Management in Nepal. Meguro, K., Katayama, T., 1994. WSSI Workshop on Seismic Risk Management for Countries of the Asia Pacific Region; 1993 Feb. 8; Bangkok, Thailand. Tokyo: INCEDE, Inst. Industrial Sc., Uni. Tokyo; 1994; INCEDE Rep. 1994-02, Sr. No. 5: pp. 133-145.
- Dixit, A. M.; 1990. Landslide Hazards in Nepal – Causes and Assessment, Water Nepal, v. 2, No. 1.
- DMC, Towards a Safer Sri Lanka, A road Map for Disaster Risk Management, Disaster Management Centre (DMC), Ministry of Disaster Management, Government of Sri Lanka, supported by UNDP, Sri Lanka. December 2005.
- Epidemiology & Disease Control Division, Ministry of Health and Population, World Health Organization, National Society for Earthquake Technology –Nepal: " Non-Structural Vulnerability Assessment of Hospitals in Nepal". Kathmandu, December 2003
- Epidemiology & Disease Control Division, Ministry of Health and Population, World Health Organization, " Health Sector Emergency Preparedness and Disaster Response Plan Nepal" , Disaster/Analysis, Management Framework and Planning Guidelines. Kathmandu, September 2003.
- Epidemiology and Disease Control Division (EDCD), Ministry of Health and Population (MOHP), World Health Organization (WHO). Guidelines on Emergency Preparedness and Disaster Management of Hospitals. Kathmandu: Ministry of Health and Population, 2002.
- Epidemiology and Disease Control Division (EDCD), Ministry of Health and Population (MOHP), World Health Organization (WHO). Health Sector Preparedness and Disaster Response Plan Nepal: Disaster Analysis, Management Framework and Planning Guidelines. Kathmandu: Ministry of Health and Population, 2003a.
- Epidemiology and Disease Control Division (EDCD), Ministry of Health and Population (MOHP), World Health Organization (WHO). Guidelines on Best Public Practices in Emergencies for District Health Workers. Kathmandu: Ministry of Health and Population, 2003b.
- Epidemiology and Disease Control Division (EDCD), Ministry of Health and Population (MOHP), World Health Organization (WGO). Guidelines on Non-Structural Safety in Health Facilities. Kathmandu: Ministry of Health and Population, 2004.
- Epidemiology and Disease Control Division (EDCD), Ministry of Health and Population (MOHP), World Health Organization (WHO). Guidelines on Emergency Preparedness and Disaster Management of Hospitals. Kathmandu: Ministry of Health and Population, 2002.
- F. Priyanthi And F. Vijitha (1997). South Asian Women: Facing Disaster, Security Life. Colombo, Sri Lanka, Duryog Nivaran.
- Food and Agriculture Working Group: Disaster Relief Implementation Manual, November 2001, Kathmandu
- General Guidelines for Construction of Earthquake Safe Buildings: Lalitpur Sub- Metropolitan City, and UNICEF. 2007
- General Guidelines for the Implementation of the National Policy on Disaster Prevention and Management (NPDPM), 1995.
- GOI, Ministry of Home Affairs, Notification on “Constitution of National Disaster Management Authority”, No.1/15/2002-DM (1)/NDM III (A), New Delhi, the 30th May, 2005; [www.nidm.net/NDMA/Constitution%20of%20NDMA.pdf](http://www.nidm.net/NDMA/Constitution%20of%20NDMA.pdf)

- GOI, National Policy for Integrated Development in the Himalayas: "Report of the Expert Group", Planning Commission, Government of India. October 1993.
- GON (1982). Natural Calamity Relief Act (1982), Government of Nepal
- GON (1996): National Shelter Policy (1996), Government of Nepal, Ministry of Housing and Physical Planning, Kathmandu.
- GON (1999). Local Self-Governance Act (1999), Government of Nepal
- GON/UNDP/UNCHS (Habitat), 1994: Seismic Hazard Mapping and Risk Assessment for Nepal, prepared by Beca Worley International Consultants (New Zealand), Golder Associates Ltd. (Canada), TAEC Consult (P) Ltd. (Nepal), Urban Regional Research (USA). Government of Nepal, United Nations Development Program and United Nations Centre for Human Settlements (HABITAT), Kathmandu, 1994.
- GSDMA,: Earthquake Rehabilitation Policy, Gujarat State. The Gujarat State Disaster Management Authority (GSDMA), Gandhinagar 2001.
- Guragain R, Dixit A.M; Repair and Strengthening measures for Seismic Capacity Enhancement of Archaeological Building; 2004 NSET, Kathmandu
- Guragain, R; Dixit, A. M, August 2004; Seismic Vulnerability Assessment of Hospitals In Nepal, Proc. 13th World Conference on Earthquake Engineering Vancouver, B.C., Canada August 1-6, 2004.
- Guragain, R.; Pandey, B. H. and Shrestha, S. N.; Guidelines for Seismic Vulnerability Assessment of Hospitals, WHO and NSET, Kathmandu, 2004.
- Guzman, de Manny, Dixit, A. M; Feb 2002; Profiling NGOs of Asian Countries: Commonalities and Rationale for Networking in Disaster Reduction and Response; Paper Presented to Regional Workshop on Networking and Collaboration among NGOs of Asian Countries in Disaster Reduction and Response 20-22 February 2002, Kobe, Japan; pp 17-21
- ICIMOD, Disaster preparedness for Natural Hazards: Current Status in Nepal, International Centre for Integrated Mountain Development (ICIMOD), 2007
- IDNDR, Disaster Prevention for Sustainable Development, Economic and Policy Issues, Ed. Mohan Munasinghe and Caroline Clark; The International Decade for Natural Disaster Reduction (IDNDR) and The World Bank " A Report from the Yokohama World Conference on Natural Disaster Reduction" Japan, May 1994.
- IFRC, SPHERE Project. Humanitarian Charter and Minimum Standards in Disaster Response. Geneva, Switzerland, 2004.
- IFRC, World Disaster Report (s) 2003, 2004. 2005, 2006; International Federation of Red Cross and Red Crescent Societies, Geneva.
- International Strategy for Disaster Reduction (ISDR), Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters. Extract from the final report of the World Conference on Disaster Reduction. www.unisdr.org, 2006.
- International Strategy for Disaster Reduction (ISDR), Living With Risk: A Global Review Of Disaster Reduction Initiatives Preliminary Edition. Geneva, ISDR, 2002
- Kandel, R. C, Pandey B, Dixit, A. M, August 2004; Investing In Future Generation: The School Earthquake Safety Program of Nepal, Proc. 13th World Conference on Earthquake Engineering Vancouver, B.C., and Canada August 1-6, 2004.
- Ministry of Culture Tourism and Civil Aviation (MOCTCA), Tourism for Rural Poverty Alleviation Programme (TRPAP), Nepal Tourism Board (NTB), UNDP, DFID, SNV Nepal: "Nepal's Tourism Industry Strategic Plan 2005-2009". Kathmandu, May 2004

- Ministry of Culture Tourism and Civil Aviation (MOCTCA), Tourism for Rural Poverty Alleviation Programme (TRPAP), Nepal Tourism Board (NTB), UNDP, DFID, SNV Nepal: Livelihood Change " Making a difference helping poor people out of the poverty cycle, Pro-Poor Tourism Policies of Nepal – Developing Tourism as a Livelihood Strategy for Pro-poor Growth. Kathmandu, May 2004
- National Action Plan for Disaster Reduction 2006-2009, Office of the State Minister for National Development Planning/National Development Planning Agency with National Coordinating Agency for Disaster Management, 2006, Republic of Indonesia
- National Disaster Management Action Plan 1996, published by Government of Nepal.
- National Disaster Risk Management Framework: Pakistan, February 2007, National Disaster Management Authority, Government of Pakistan.
- National Disaster Risk Management Framework: Reducing Disaster Risks for a Safe and Happy Bhutan. Disaster Management Division, Dept. of Local Governance, Ministry of Home and Cultural Affairs (MoHCA), Royal Government of Bhutan, 2006.
- National Policies, Strategies, Action Plans, Perspective Plans: Informal Sector Research and Study Centre. Kathmandu, 2006.
- National Policies: Strategies, Action Plans, Perspective Plans, Collected and Compiled By Informal Sector Research And Study Centre, 2006, Kathmandu
- Natural Disaster Hotspots: A Global Risk Analysis, World Bank, 2005
- NCDM, 2007 (a), Policy on Disaster Management in Nepal (Draft), a draft of the national policy on Disaster Risk Management in Nepal, drafted by the National Centre for Disaster Management (NCDP), Kathmandu.
- NCDM, 2007 (b), NCDM, विपद् व्यवस्थापन ऐन, २०६३, Disaster Management Act, 2007 (Draft in Nepali), drafted by the National Centre for Disaster Management (NCDP), Kathmandu.
- Nepal Centre for Disaster Management (NCDM): "Action Plan on Pre-monsoon Disaster Preparedness, 2007, Kathmandu
- Nepal Country Report. Source: EM-DAT: The OFDA/CRED International Disaster Database [www.em-dat.net](http://www.em-dat.net) Université Catholique de Louvain - Brussels – Belgium, 2005.
- NPC (2001). The Tenth Plan, National Planning Commission, GON
- NSET, 1998, Earthquake Scenario Of Kathmandu Valley, National Society For Earthquake Technology-Nepal and GeoHazards International (GHI), Kathmandu.
- NSET, 1998; The Kathmandu Valley Earthquake Risk Management Action Plan published by NSET-Nepal
- NSET, 1999, The Kathmandu Valley Earthquake Risk Management Action Plan, National Society for Earthquake Technology – Nepal and GeoHazards International (GHI), Kathmandu
- NSET/LWF, 2007, School Earthquake Preparedness: A TOT Manual for Teachers Training, published by Lutheran World Federation and National Society for Earthquake Technology –Nepal, Kathmandu, Nepal, 2007.
- NSET/WHO, 2000: Emergency Country Profile of Nepal; A Research Report prepared for the World Health Organization by the National Society for Earthquake Technology Nepal (NSET), Kathmandu
- PAHO, Natural Disasters: Protecting the Public's Health. Pan American Health Organization (PAHO). 2000.

- Pathak, P. K. Presentation: "Country Approaches to Disaster Risk Mitigation in Nepal: From Vision to Implementation". Ministry of Home Affairs (MoHA). World Bank Regional Conference on Hazards, Risks and Opportunities for Development in South Asian Countries. New Delhi, India, 2006.
- Pradhanang S. B., Dixit, A. M., Nakarmi M, Bothara J.K, Pandey B.H, Guragain R, Shrestha S.N. Kandel R.C, Pokharel M.B; Nov 2002; Community – Based approach in Earthquake Disaster Risk Reduction: An Experience working in Ward 34; Paper published on volume of abstracts of Symposium on Seismology, Earthquake Hazard Assessment and Risk Management ASC 2002; Kathmandu, Nepal PP. 106
- Pradhanang S. B., Dixit, A. M., Nakarmi M, Bothara J.K, Samant L. D, Pandey B.H, Guragain R, Shrestha S.N. Kandel R.C, Acharya S.P, Thapa R.C; Nov 2002; School Earthquake Safety Program Paper published on volume of abstracts of Symposium on Seismology, Earthquake Hazard Assessment and Risk Management ASC 2002; Kathmandu, Nepal PP. 85
- Pradhanang S. B., Dixit, A. M., Nakarmi M, Bothara J.K, Samant L. D, Pandey B.H, Guragain R, Shrestha S.N. Kandel R.C, Acharya S.P, Basnet S; Nov 2002; Successful Approaches in Earthquake Awareness: Experience of NSET-Nepal, Paper published on volume of abstracts of Symposium on Seismology, Earthquake Hazard Assessment and Risk Management ASC 2002; Kathmandu, Nepal PP. 105
- Protecting the public from disasters, Natural disasters in Japan. [www.cao.go.jp/about\\_e/pmf2006/p24\\_25.pdf](http://www.cao.go.jp/about_e/pmf2006/p24_25.pdf)
- Shrestha, S, Dixit, A. M, August 2004; Earthquake Risk Management In Rapidly Urbanizing Areas Of Nepal, Proc. 13th World Conference on Earthquake Engineering Vancouver, B.C., Canada August 1-6, 2004.
- Shrestha, S. N.; Acharya, S. P.; Kandel, R. C.; Upadhyay, B.; and Bothara, J. K.; Earthquake Resistant Construction of Buildings: Curriculum for Mason Training: Guidelines for Training Instructors, ADPC & NSET, Kathmandu, 2005.
- State Mitigation Strategy: Maharashtra Disaster Management Plan, Maharashtra Emergency Earthquake Rehabilitation Program, Government of Maharashtra, Mumbai, 1998.
- "Thulagi Glacier Lake Study", Final Report, published by Department of Hydrology and Meteorology in cooperation with Federal Institute for Geosciences and Natural Resources (BGR), 1997, Hannover, Germany.
- UN/ISDR, Guidelines for Reducing Flood Losses, Ed. P. J. Pilon, United Nations, International Strategy for Disaster Reduction (UN/ISDR), Geneva [www.unisdr.org](http://www.unisdr.org).
- UN/ISDR, Guidelines: National Platforms for Disaster Risk Reduction, United Nations International Strategy for Disaster Reduction (UN/ISDR) June 2007, Geneva. [www.unisdr.org/guidelines-np-eng](http://www.unisdr.org/guidelines-np-eng).
- UN/ISDR, Report on Implementation of the Hyogo Framework for Action: Asia, Global Platform for Disaster Risk Reduction, United Nations International Strategy for Disaster Reduction (UN/ISDR) June 2007, Geneva.
- UN/ISDR; "Words Into Action: A Guide for Implementing the Hyogo Framework"; Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters. United Nations International Strategy for Disaster Reduction (UN/ISDR) Geneva, 2007.
- UNDP, Islamabad Pakistan: Pakistan 2005 Earthquake: Early Recovery Framework, United Nations Development Program Pakistan(UNDP Pakistan), November 2005.

- UNDP, Reducing Disaster Risk: A Challenge For Development, United Nations Development Program (UNDP), 2004.
- UNDP, Report on: “The Workshop on Action Plans for Earthquake Disaster Risk Management in Southwest and Central Asia”; United Nations Development Program Iran,. Tehran, Iran, 2004.
- UNDP/BCPR,.: Governance for Disaster Risk Management 'How To' Guide; a conference draft. United Nations Development Program/ Bureau for Crisis Prevention and Recovery, June 2007.
- UNDP/NGS, 1997: Comprehensive Database (Basic Information) on Natural Disaster Management Capabilities in Nepal. United Nations Development Program, UN Disaster Management Secretariat and Nepal Geological Society. Kathmandu, 1997.
- United Nations (UN): Report on “The World Conference on Disaster Reduction”. Kobe, Hyogo, Japan, 2005.
- Upreti, B. N. (Prof. Dr.); “The Nexus between Natural Disaster and Development: Key Policy Issues in meeting the Millennium Development Goals and Poverty Alleviation. A paper presented to the Workshop in Kathmandu, Nepal, 2006.
- WHO / GON, A Structural Vulnerability Assessment of Hospitals in Kathmandu Valley, WHO Nepal and Government of Nepal, Kathmandu, 2002.
- World Bank, Global Facility for Disaster Reduction and Recovery, Progress Report 1, World Bank, [www.worldbank.org](http://www.worldbank.org).
- Yadav, R. P.; Singh, P. L.; Dixit, A. M.; and Sharpe, R. D.; 1994. Status of Seismic Hazard and Risk Management in Kathmandu Valley, Nepal, in Issues in Urban Earthquake Risk, pp. 183-197, Eds. B.E. Tucker; Kluwer Academic Publishers, Dordrecht.

नेपाल ऐन संग्रह, खण्ड ३(क), २०५५

स्थानीय स्वायत्त शासन ऐन २०५५

|                  |
|------------------|
| <b>5 ANNEXES</b> |
|------------------|

- Annex 1 Glossary of disaster terms
- Annex 2 List of Workshop Participants

**Annex 1: GLOSSARY OF DISASTER TERMS**

प्रकोप, जोखिम र विपद् व्यवस्थापन मा प्रयोग हुने शब्दहरूको अङ्ग्रेजी-नेपाली शब्दावली

| क्र. सं. | अङ्ग्रेजी 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                            |
| 21       | Sustainable Development        | दिगो विकाश                                |

| क्र. सं. | अंग्रेजी शब्द                        | प्राविधिक शब्द निकर्वाण गरिएको नेपाली शब्द |
|----------|--------------------------------------|--|
| 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                          | दोलन                                       |
| 34       | Intensity                            | तीव्रता                                    |
| 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 (GIS) | भौगोलिक सूचना प्रणाली                      |

| क्र. सं. | अंग्रेजी शब्द                      | प्राविधिक शब्द निकर्वाण गरिएको नेपाली शब्द |
|----------|------------------------------------|--|
| 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                  | विपरित 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"                | "भूकम्प भागोला"                            |
| 62       | Shaking Table                      | कम्पन मञ्च                                 |
| 63       | Duck, Cover and Hold               | घुंटा टेक गुडुल्क, ओत लाग समात             |

**Annex 2: LIST OF CONTRIBUTORS FOR FORMULATION OF NSDRM****Development of National Strategy for Disaster Risk Management in Nepal  
Inception Workshop, 26-Feb-07, Kathmandu****List of Workshop Participants**

| S.No | Name of Participants      | Organization                     | Address                | Contact No |
|------|---------------------------|----------------------------------|------------------------|------------|
| 1    | Mr. Arend Van Rissen      | Mercy Corps                      | Sanepa                 | 5521715    |
| 2    | Kiltee                    | ADB                              | Kamaladi, Kathmandu    | 4227779    |
| 3    | Mr. Makoto Yoshino        | Embassy of Japan                 | Panipokhari, Kathmandu | 4426680    |
| 4    | Mr. Kailash Man Pradhan   | Embassy of Japan                 | Panipokhari, Kathmandu | 4426680    |
| 5    | Mr. Rajendra Shrestha     | Department of Mines & Geology    | Lazimpat               | 414740     |
| 6    | Mr. Ramesh M Tuladhar     | NGS                              | Pulchowk               | 5535502    |
| 7    | Ms. Pragati Shahi         | Kathmandu Post                   | Subidhanagar           | 4480100    |
| 8    | Mr. Vijay Khadgi          | ICIMOD                           | Khulmatar, Kathmandu   | 5003222    |
| 9    | Mr. Surya Bahadur Thapa   | SWE                              | Lazimpat               | 4418849    |
| 10   | Ms. Megh Ranjani Rai      | DIPECHO-CPDRR                    | Maharjung              | 4720217    |
| 11   | Mr. Rajendra Kumar Paudel | DDC- Dang                        | Dang                   | 8260144    |
| 12   | Mr. Shyam Sunder          | Action Aid                       | Lazimpat               | 4436477    |
| 13   | Mr. Kiran Pokhrel         | Radio Sagarmatha                 | Thapathali, Kathmandu  | 5545200    |
| 14   | Mr. Devi Prasad Panta     | DDC, Kavre                       | Kavre                  | 116149241  |
| 15   | Ms. Manju Chepang         | NCA                              |                        | 5539141    |
| 16   | Mr. Kuldeep Khatri        | Armed Police Force               | Hallchowk              | 9841338636 |
| 17   | Dr. M B P Chhetri         | DP-Net                           | Kalimati               | 9851073456 |
| 18   | Mr. Suresh Kumar Rai      | MEDEP                            | Pulchowk               |            |
| 19   | Dr. Ritu Prasad Gadroulla | Social Welfare Council           | Lainchaur              | 480049     |
| 20   | Mr. Gopal Prasad Parajuli | DDC Jhapa                        | Jhapa                  | 23455084   |
| 21   | Mr. Monica Pradhan        | NEBICO Biscuit                   | Balaju                 | 4350130    |
| 22   | Mr. Narayan Pradhan       |                                  |                        | 9841522477 |
| 24   | Ms. Poonam Devi           | RCDSC                            | Mahottari              | 9803316916 |
| 25   | Mr. Raj Kishor Mandal     | RCDSC                            | Mahottari              | 9803316916 |
| 26   | Mr. Mat Erikson           | ICIMOD                           | P O Box 3226           | 5003222    |
| 27   | Mr. Bhowa Bahadur Gurung  | PAT                              | Rabilas, Chitwan       |            |
| 28   | Mr. Vivek Dhar Sharma     | GEF/SGP                          | Bhanimandal            | 5000119    |
| 29   | Mr. Laxmi Bilas Koirala   | OPMCM                            | Singha Durbar          | 4211112    |
| 30   | Mr. Shyam Sundar Sharma   | NPC                              | Singha Durbar          |            |
| 31   | Mr. Peter Crawford        | Practical Action                 | Pandole Marg, Lazimpat | 9851003747 |
| 32   | Mr. Pinkesh Regmi         | NGO Form Chitwan                 | Bharatpur, Chitwan     | 9845044713 |
| 33   | Ms. Suchana Pokharel      | SNV Nepal                        | Bakundole              | 5523444    |
| 34   | Mr Larry Robertson        | UNICEF                           | Pulchowk               | 523200     |
| 36   | Mr. S B Malakar           | NCC                              | Kantipath              | 4230947    |
| 37   | Mr. Om Prakash Pudasaini  | NCC                              | Kantipath              |            |
| 38   | Mr. Anup Kumar Shrestha   | NCC                              | Kantipath              |            |
| 39   | Mr Kush Kumar Joshi       | FNCCI                            | Teku                   | 4262003    |
| 40   | Mr. Ram Prasad Basnet     | V S Niketan School               | Koteshwor, Kathmandu   | 9803369351 |
| 41   | Mr. Shiv Neupane          | Abhiyan Sewa Kendra              | Nawalparasi            | 691749     |
| 42   | Mr. Karan Singh Ayer      | Rural Energy Development Section | Dadeldhura             | 96420107   |
| 43   | Mr. Binod Chaudhary       | CPDRR                            |                        | 23621396   |
| 44   | Mr. Chet Bahadur Gurung   | Community People                 | Tanahun                | 9846042960 |
| 45   | Mr. Kumar Kanchan G C     | RUPP                             | Tanahun                | 9846045512 |
| 46   | Mr. Bishnu Paudel         | RUPP                             | Palpa                  | 9847021373 |
| 47   | Mr. Surendra Dahal        | The Himalaya                     | Kathmandu              | 9841368028 |
| 48   | Mr. Shree Prasad          | CPDRR                            | Jhapa                  | 623620197  |
| 49   | Ms Prasanna Chitrakar     | Freelance                        | Dallu                  | 9851000672 |
| 50   | Ms. Geeta Shrestha        | Hoste Hainse                     | Ekantakuna             | 9851056325 |
| 51   | Ms. Sulochana Shah        | Formation Carpet                 | Ekantakuna             | 5000071    |

National Strategy on Disaster Risk Management 2007-2015 (NSDRM)

| S.No | Name of Participants    | Organization                                   | Address                   | Contact No |
|------|-------------------------|--|---------------------------|------------|
| 52   | Mr. Paul Wright         | UMN  | Thapathali, Kathmandu     | 4228118    |
| 53   | Mr. Binod Dhakal        | INLOGOS  | Anamnagar                 | 4102534    |
| 54   | Mr. Debendra R Dhungana | DFDP   | Jawalakhel                | 4482836    |
| 55   | Mr. Yagya Raj Bohara    | DAO Darchula                                   | Darchula                  | 4476729    |
| 56   | Ms. Selina Chan         | UNICEF   | Pulchowk                  | 9803001692 |
| 57   | Mr. Pradip Raj Pande    | MoWR   | Singha Durbar             | 4211515    |
| 59   | Mr. Ram Limbu           | Gorkha Tea Estate                              | Sinamangal                | 4478307    |
| 60   | Mr. Mahesh Nakarmi      | NSET   | Baneshwor                 | 4490359    |
| 61   | Mr. Bijay Upadhyay      | NSET   | Baneshwor                 | 4474292    |
| 62   | Mr. B B Deaju           | INLOGOS  | Anamnagar                 | 4476789    |
| 63   | Mr. Ishwar R Regmi      | MoHA   | Singha Durbar             |            |
| 64   | Mr. Umesh Ranjitkar     | Nepal Police                                   | Naxal                     | 4411569    |
| 65   | Mr. R C Parajuli        | NTV  | Singha Durbar             |            |
| 66   | Ms. Nathalie Gielen     | TDH  | Jhansikhel                | 555348     |
| 67   | Ms. Mary Laure Martin   | TDH  | Jhansikhel                | 5555348    |
| 68   | Mr. Shiva B Pradhananga | NSET   | Baneshwor                 |            |
| 69   | Mr. Pratap Kumar Pathak | MoHA   | Singha Durbar             |            |
| 70   | Mr. Varun P Shrestha    | NSET   | Baneshwor                 |            |
| 71   | Mr. Bishan Gurung       | RES  | Dhapashi                  | 2151003    |
| 72   | Mr. Ram P Paudel        | WTLCP  | Babar Mahal               | 484618     |
| 73   | Brig Gen Lok Thapa      | Nepal Army                                     | Army Headquaer, Kathmandu | 4460673    |
| 74   | Mr. Shanmukhesh Amatya  | Dept of Waer Induced Disaster Program          | Pulchowk                  | 5535403    |
| 75   | Mr. Santosh Nepal       | ICIMOD   | Koteshwor                 | 5003222    |
| 76   | Mr. Ram Krishna Pokhrel | DLGSP  | Bakhundole                | 5523770    |
| 77   | Mr. Staurt Zimble       | WHO/EHA  | Un House                  |            |
| 78   | Mr. Nick Russel         | IFRC   |                           |            |
| 79   | Mr. Janardhan Bhattarai | Ministry of Land                               | Singha Durbar             | 9841444619 |
| 80   | Mr. Shanker Man Singh   | Nepal Chamber                                  | Jamal                     | 4236947    |
| 81   | Mr. Badri Khanal        | DP-Net   | Kalimati                  | 427056     |
| 82   | Mr. Dil Kumar BK        | Micro Enterprise                               | Bardia                    | 5541951    |
| 83   | Ms. Hema KC             | MEDEP/UNDP                                     | Pulchowk                  | 5541951    |
| 84   | Dr. R Gurung            | UNFPA  | Pulchowk                  | 5523637    |
| 85   | Mr. Umesh Dhakal        | Nepal Red Cross                                | Tahachal                  | 4270650    |
| 86   | Mr. R C Neupane         | ECO-Nepal                                      | Naxal                     | 4445322    |
| 87   | Mr. Banwari Lal Mittal  | Shree Airlines                                 | Teku                      | 4222948    |
| 88   | Mr. Dipendra P Dhakal   | NCDM   | Pulchowk                  | 5530664    |
| 89   | Mr. Prakash Mahat       | NTV  | Kathmandu                 | 4228136    |
| 90   | Mr. Bhupendra Paudyal   | MoD  | Kathmandu                 | 4211289    |
| 91   | Ms. Rita Bhwel          | LDC  | Kavre                     |            |
| 92   | Mr. Suresh Pokharel     | AAN  | Lazimpat                  | 9841325813 |
| 93   | Mr. Madhav Gautam       | DMC  | Makwanpur                 |            |
| 94   | Ms. Ambika Gautam       | DMC  | Makwanpur                 |            |
| 95   | Mr. Bhakta Raj Joshi    | Ministry for Land Information of Communication | Singha Durbar             | 4242562    |
| 96   | Mr. Martin Sergeant     | DFID   | Ekantakuna, Lalitpur      |            |
| 97   | Mr. Madhu Krishna Joshi | Nepali Paper                                   | Sitapaila                 | 4274012    |
| 98   | Mr. Babu Ram Pathak     | Concern Worldwide                              | Sanepa                    | 5548040    |
| 99   | Mr. Albert Giri         | CARITAS  | Dhobighat, Kathmandu      | 5535043    |
| 100  | Mr. Purna Kadariya      | MoPPW  | Singha Durbar             | 4229279    |
| 101  | Mr. Vinod               | MoHP   | Ram Shah Path             | 4262933    |
| 102  | Mr. R K Shrestha        | Nepal Red Cross                                | Kalimati                  | 4270761    |
| 103  | Mr. Isaac Anup Rana     | World Vision                                   | Kathmandu                 | 4434943    |
| 104  | Mr. Buddhi N Maharjan   | MoAC   | Kathmandu                 | 4228137    |
| 105  | Mr. Suresh Bhattarai    | UMN  | Kathmandu                 | 4228118    |
| 106  | Mr. Yagya Raj Bohara    | DAO  | Darchula                  | 4476729    |

National Strategy on Disaster Risk Management 2007-2015 (NSDRM)

| S.No | Name of Participants        | Organization                    | Address              | Contact No |
|------|-----------------------------|---------------------------------|----------------------|------------|
| 107  | Mr. Tikaram                 | DDC/Nawalparasi                 | Nawalparasi          | 78520247   |
| 108  | Mr. Gehendra Gurung         | Practical Action                | Lazimpat             | 446015     |
| 109  | Mr. Babu Ram Gautam         | MOLD                            | Pulchowk             | 5548514    |
| 110  | Mr. Hari Krishna Uprety     | TRPAP                           | Bhrikutimandap       | 4269768    |
| 111  | Mr. Nirajan Tamrakar        | DP-Net Nepal                    | Kalimati             | 4672165    |
| 112  | Mr. Ram Gupta               | Plan Nepal                      | Lalitpur             | 5535580    |
| 113  | Mr. Shambhu Dev Baral       | ADDCN                           | Lalitpur             | 5529202    |
| 114  | Mr. Sonam Tsong             | SAARC                           | Travani Marg, Thamel | 4228929    |
| 115  | Mr. Santosh Gyawali         | USAID                           | Rabi Bhawan          | 4270144    |
| 116  | Mr. Ramesh Adhikari         | RUPP/UNDP                       | Sanepa               | 5536156    |
| 117  | Mr. Ujaya Shakya            | Outreach Nepal                  | Thamel               | 4445873    |
| 118  | Mr. Pursottam Man Shrestha  | PPPUE/UNDP                      | Sanepa               | 5534750    |
| 119  | Mr. Gopi Prasad Paudel      | MoHA                            | Kathmandu            | 9841342626 |
| 120  | Mr. Madhav Pahari           | UNICEF                          | Kathmandu            | 9851010970 |
| 121  | Mr. Madhav Prasad Pudasaini | ASALI                           | Kathmandu            | 4412381    |
| 122  | Mr. S P Marasaini           | MoHA                            | Kathmandu            | 4211200    |
| 123  | Ms. Sangita Shrestha        | WTLCP                           | Kathmandu            | 4262316    |
| 124  | Ms. Christina Chan          | CARE Nepal                      | Kathmandu            | 5522800    |
| 125  | Mr. Pradeep Dixit           | Agro-Farm Foresters Association | Hetauda              | 4412053    |
| 126  | Mr. Sanjay Rajbhandai       | UNDP                            | Tahachel             | 4285330    |
| 127  | Mr. Anil Kumar Pandey       | DAO Surkhet                     | Surkhet              | 83520123   |
| 128  | Mr. Tek Bahadur Sapkota     | Practical Action                | Chitwan              | 9855058612 |
| 129  | Mr. Krishna Karkee          | CDS/AFFAN                       | Kathmandu/Hetauda    | 9841328073 |
| 130  | Mr. Bhanu Bhakta Pokharel   | DAO Sarlahi                     | Sarlahi              | 46520177   |
| 131  | Mr. Tek Tamrakar            | CDNHRC                          | Lalitpur             | 5539728    |
| 132  | Mr. Kalyan Bista            | NSET                            | Kathmandu            | 4486444    |
| 133  | Mr. Krishna Bahadur Rawal   | LWF                             | Maharjung            | 4720152    |
| 134  | Mr. Bala Bhadra Giri        | DAO Khotang                     | Khotang              | 36420133   |
| 135  | Mr. Narendra Kumar Gurung   | JICA Nepal                      | Pulchowk             | 5552711    |
| 136  | Mr. Jiba Raj Pokhrel        | NCDM                            | Pulchowk             | 5530768    |
| 137  | Mr. Vincent Omuga           | OCHA                            | Pulchowk             | 9851072870 |
| 138  | Mr. Sano K Karkee           | DDC Chitwan                     | Chitwan              | 9845028507 |
| 139  | Mr. Gopesh S Maskay         | Vijaydeep Lab Ltd               | Lalitpur             | 5525515    |

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

**List of Workshop Participants**

| S.No | Name                    | Organization                  | Designation                 | Contact No  |
|------|-------------------------|-------------------------------|-----------------------------|-------------|
| 1    | Mr. Hari Babu Pokharel  | RED MOE, Sanothimi            | Section Officer             | 5170290     |
| 2    | Mr. Umesh Kattel        | Merlin/UK                     | Country Health Director     | 9851061241  |
| 3    | Dr. M N Mishra          | WRHD                          | Reg Director                | 520-390     |
| 4    | Mr. Dilip Kumar Shah    | DHO, Bajura                   | MO                          | 97540318    |
| 5    | Mr. Bhim Lal Gurung     | NAT COM For UNESCO            | Deputy Secretary General    | 9851057068  |
| 6    | Ms. Sue M               | USAID/OFDA                    | Regional Advisor            | 9851021993  |
| 7    | Dr. Anderson            | UNFPA                         | DRR                         |             |
| 8    | Mr. Nirajan Tamrakar    | DPNet                         | Coordinator                 | 4672165     |
| 9    | Mr. Bhim Bahadur Bogati | REED                          | Chairperson                 | 98413278245 |
| 10   | Mr. Prakash Raj Pandey  | DOE                           | Director                    | 6631974     |
| 11   | Dr. B R Marasini        | MoHP                          | Coordinator                 | 9851066412  |
| 12   | Mr. Khem Raj Parajuli   | NLCAG(DMC)                    |                             | 9847044025  |
| 13   | Mr. Megh Nath Dhimal    | Nepal Health Research Council | RO/Env.Health               | 9841467581  |
| 14   | Mr. Upendra Aryal       | Equal Access                  | Content Director            | 9851077214  |
| 15   | Ms. Seema Luitel        | RRN                           | Program Officer             | 9851067974  |
| 16   | Mr. Parshu Ram Shrestha | DHO Bara                      | Public Health Administrator | 9841354128  |
| 17   | Mr. Mani Raj Niroula    | CARE Janakpur                 | DRRC Member                 | 984421160   |

**National Strategy on Disaster Risk Management 2007-2015 (NSDRM)**

| S.No | Name                      | Organization                    | Designation                   | Contact No      |
|------|---------------------------|---------------------------------|-------------------------------|-----------------|
| 18   | Mr. Y Koori               | NSET                            | Senior JICA Volunteer         |                 |
| 19   | Mr. Rajendra Shakya       | UNICEF                          | Project Officer Emergency     | 9851017751      |
| 20   | Mr. Raghu Shrestha        | DLG-SP/UNDP                     | Monitoring & Research Advisor | 9851087281      |
| 21   | Ms. Ritu Raj Sapkota      | NPABSAN                         | Secretary                     | 9851070049      |
| 22   | Mr. Shambhu Pd. Marasaini | MoHA                            | Section Officer               | 9851058177      |
| 23   | Dr. Kolika Devi Shakya    |                                 | Director                      | 4253395         |
| 24   | Dr. Pradeep Vaidya        | TUTH                            | HOPE Coordinator              | 9851041119      |
| 25   | Ms. Durga S               | MoHP                            | Nursing Advisor               | 4433605         |
| 26   | Dr. M B P Chhetri         | DPNet                           | General Secretary             |                 |
| 27   | Mr. Surendra Dahal        | THT                             | Translator Sub Editor         | 9841368028      |
| 28   | Mr. Mahendra Kr Bohara    | DEO Surkhet                     | School Supervisor             | 9841279056      |
| 29   | Mr. Binod Dhakal          | INLOGOS                         | Director                      | 4102534         |
| 30   | Dr. Naresh Giri           | Army Hospital                   | General Surgeon               | 9851064614      |
| 31   | Ms. Dil Bahadur Baniya    | MoPPW                           | Under Secretary               | 9841276918      |
| 32   | Dr. R Gurung              | UNFPA                           | RH Specialist                 | 9851088394      |
| 33   | Dr. Bimal Dhakal          | Koshi Zonal Hospital            | MS                            | 9852023260      |
| 34   | Mr. Binod Jnawali         | MoHP                            | Joint Secretary               | 42662935        |
| 35   | Dr. D S Bam               | MoHP                            | Chief of Medical Department   |                 |
| 36   | Mr. Amod Mani Dixit       | NSET                            | Executive Director            | 4474192         |
| 37   | Ms. Nisha Shrestha        | NSET                            | DOA                           | 448644          |
| 38   | Mr. Kalyan Bista          | NSET                            | Admin Director                | 448644          |
| 39   | Mr. Aditya Kantha         | NSET                            | Administration Assistant      | 448644          |
| 40   | Ms. Eleonora Genovese     | UNICEF                          | Health Program Officer        | 015523200--1136 |
| 41   | Mr. Jeet Bahadur Lama     | CARE                            | DRRC Member                   | 46530455        |
| 42   | Mr. Varun P Shrestha      | NSET                            | Senior Technical Advisor      |                 |
| 43   | Dr. Manas K Banerjee      | EDCD, DHS                       | Director                      | 9841282932      |
| 44   | Dr. Gopal Khanal          | Dho, Nawalparasi                | Medical Superintendent        | 9851063028      |
| 45   | Mr. Sagar Prasain         | DHO, ILLAm                      | PHO                           | 985268141       |
| 46   | Mr. Rajan Rijal           | DEPROSC-Nepal                   | Reporting Officer             | 9841395779      |
| 47   | Mr. Bharat Shrestha       | MoES                            | Section Officer               | 9841318716      |
| 48   | Mr. Umesh Dhakal          | Nepal Red Cross                 | Executive Director            | 9851056369      |
| 49   | Mr. Anil Maharjan         | DIPECO-CPDRR                    | Asst Program Officer          | 9841373925      |
| 50   | Mr. Rojina Maharjan       | DIPECO-CPDRR                    | Community Member              | 4335331         |
| 51   | Mr. Damodar Adhikari      | WHO-EHA                         | NOO                           |                 |
| 52   | Mr. Lokhnath Pandey       | DMC                             | President                     |                 |
| 53   | Ms. Basanta Shrestha      | Nepal Red Cross                 | Program Manager               | 9851071111      |
| 54   | Dr. Chitra Prasad Sharma  | DHO-Argkhachi                   | DHO                           | 420188          |
| 55   | Mr. Erik Kjaerjaard       | WHO EHA                         | TO                            |                 |
| 56   | Mr. Mahendra Malla        | DHL Nepal                       | Country Manager               | 9851021427      |
| 57   | Dr. U N Devkota           | GTZ-HSSP                        | Disease Control Advisor       | 4261404         |
| 58   | Mr. Janak Raj Bhatta      | MOHP                            | Section Officer               | 4254759         |
| 59   | Mr. Rajendra Khatan       | Khetan Group                    | President                     | 4446400         |
| 60   | Dr. R Kharel              | NCASC                           | SMO                           | 9841486243      |
| 61   | Mr. Deben Karki           | USAID                           | SPMS                          | 4270144         |
| 62   | Dr. S R Upreti            | Bharatpur Hospital              | Medical Superintendent        | 9855058767      |
| 63   | Mr. K P Dahal             | Department of Health Sense,     | Senior Health Attendant       | 9841592308      |
| 64   | Mr. Anup K Shrestha       | Nepal Chamber of Commerce       | Officer                       | 4230947         |
| 65   | Dr. Shrawan K Chaudhary   | Seti Zonal Hospital             | Medical Superintendent        | 9851014966      |
| 66   | Mr. Sachindra Nand Deo    | District Health Office, Udaipur | Sr. PHO                       | 9854021425      |
| 67   | Dr. Pushpa Malla          | NTC                             | Director                      | 9841333360      |
| 68   | Mr. Krishna Raj Giri      | NHEICC                          | Director                      | 9841295744      |
| 69   | Mr. Antti Rajahalme       | ICRC                            | Health Coordinator            | 9851045483      |
| 70   | Mr. Jiban Karki           | PHASE Nepal                     | Executive Director            | 16203479        |

**Education Sector Workshop for the development of National Strategy for  
Disaster Risk Management in Nepal, 11 April 2007, Kathmandu  
List of Workshop Participants**

| S.No | Name                        | Organization            | Designation                 | Contact No |
|------|-----------------------------|-------------------------|-----------------------------|------------|
| 1    | Mr. Mukunda M Khanal        | MoES                    | SO                          | 9841395714 |
| 2    | Mr. Megha Nath Sharma       | DOE                     | SO                          | 9841442470 |
| 3    | Mr. Padhm Jung Thapa        | Save the Children       | SPO                         | 9841220361 |
| 4    | Mr. Shyam K Shrestha        | World Education         | SPO                         | 4477010    |
| 5    | Mr. Chitra PD Devkota       | CDC                     | Deputy Director             | 4232365    |
| 6    | Mr. Harka Prasad Shrestha   | Joint Secretary         | Administration Chief        | 6637873    |
| 7    | Mr. Madhav Shivakoti        | WFP                     | Program Officer             | 5542607    |
| 8    | Ms. Anjalee Tuladhar Shakya | Save the Children-US    | Team Leader                 | 4412398    |
| 9    | Mr. Vincent Omnge           | OCHA                    | HAO                         | 9851072870 |
| 10   | Mr. Karna BD Shahi          | NPABSAN                 | Secretary General           | 9851047032 |
| 11   | Mr. Janak Lal Maharjan      | DIPECHO-CPDRR           | Volunteer of DMT            | 9841602336 |
| 12   | Mr. Bodh Raj Niroula        | MoES                    | Joint Secretary             | 9851067969 |
| 13   | Mr. Amod Mani Dixit         | NSET                    | Executive Director          | 9851027459 |
| 14   | Mr. Kalyan Bista            | NSET                    | Admin Director              | 9851030406 |
| 15   | Mr. Varun P Shrestha        | NSET                    | Senior Technical Advisor    | 4486444    |
| 16   | Mr. Lok Nath Pandey         | DMC                     | President                   | 9845030862 |
| 17   | Mr. Jit Bahadur Lama        | Care Nepal Janakpur     | DRRC Member                 | 046-530455 |
| 18   | Mr. Madiraj Niroula         | Care Nepal Janakpur     | DRRC                        | 9844021160 |
| 19   | Mr. Anil Maharjan           | DIPECHO-CPDRR           | DMTs member, Kirtipur       | 4334114    |
| 20   | Mr. Laba Raj Oli            | Educational Pages       | Managing Editor             | 9851073498 |
| 21   | Mr. Kshitij Prasain         | COPE/UNDP               | O/C                         | 9851034113 |
| 22   | Mr. Badri Pandey            | FHD/UNDP                | Director of Program         | 9841418195 |
| 23   | Mr. Hari Sharan Bhandari    | STRO                    | D. Director                 |            |
| 24   | Mr. Uttara Bajracharya      | CERID, TU               | Educational Researcher      | 9851078200 |
| 25   | Mr. Bhola Kr Shrestha       | Keshar Library          | Chief Librarian             | 9841221664 |
| 26   | Mr. Youb Raj Poudyal        | Department of Education | Engineer                    | 6633027    |
| 27   | Mr. Dashrath Thapa          | Nepal National Library  | Librarian                   | 5521132    |
| 28   | Mr. Surendra Singh          | Department of Education | Section Officer             |            |
| 29   | Mr. Vishnu Prasad Thapa     | NEED/DEOL               | Director                    | 9841261147 |
| 30   | Dr. Lawa Awasthi            | MoES                    | Under Secretary             | 4443332    |
| 31   | Mr. Juho Kusihakala         | Embassy of Finland      | Counsellor                  | 4416636    |
| 32   | Mr. Nitesh Koirala          | FNCCI                   | Officer                     | 4262218    |
| 33   | Mr. Laba P Trapathi         | MoES                    | Joint Secretary             | 4416693    |
| 34   | Mr. Laba P Trapathi         | NSET                    | Outreach Officer            | 486444     |
| 35   | Mr. Romesh Thapa            | MoES                    | School Supervisor, Kanchpur |            |
| 36   | Ms. Suman Tuladhar          | UNICEF                  | Education Specialist        | 5523200    |

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

**List of Workshop Participants**

| S.No | Name                       | Organization          | Designation         | Contact No |
|------|----------------------------|-----------------------|---------------------|------------|
| 1    | Mr. Kishor Shakya          | CWSSP                 | Project Manager     | 430948     |
| 2    | Mr. Binod Dhakal           | INOGOS                | Director            | 4102534    |
| 3    | Mr. Vijaya P Singh         | UNDP                  | ARR                 | 5523200    |
| 4    | Mr. Christian Guillot      | ICRC                  | Coordinator         | 9851083692 |
| 5    | Mr. Adhir Sharma           | Helvetas              | DYCPD               | 9851016386 |
| 6    | Mr. Shambhu Rijal          | DWSS                  | Regional Director   | 4432340    |
| 7    | Mr. Ishwar Man Tauruvar    | DWSS                  | Director General    | 4413744    |
| 8    | Mr. Shyam Sundar           | Action Aid Nepal      | Sr. Team Leader     | 4436477    |
| 9    | Mr. Andre Arriaza          | Action Contre La Faim | ACF Head of Mission | 5013003    |
| 10   | Mr. Dipak N Chalise        | RBN                   | Executive Director  | 4493515    |
| 11   | Mr. Ishwori Prasad Poudyal | MoPPW                 | Joint Secretary     | 4228930    |
| 12   | Mr. Ramji Baniya           | NHEICC                | PHO                 | 9857620224 |
| 13   | Mr. Madhav Pahari          | UNICEF                | Program Officer     | 9851010970 |

**National Strategy on Disaster Risk Management 2007-2015 (NSDRM)**

| S.No | Name                      | Organization               | Designation                         | Contact No  |
|------|---------------------------|----------------------------|-------------------------------------|-------------|
| 14   | Mr. Nabin Pradhan         | Plan Nepal                 | WES Coordinator                     | 5535580     |
| 15   | Mr. Amod Mani Dixit       | NSET                       | Executive Director                  | 4486444     |
| 16   | Mr. Aditya Nath Kanth     | NSET                       | Administration Assistant            | 4486444     |
| 17   | Mr. Chandra Prasad Bohara | REDP                       | Energy Development Officer          | 4362000     |
| 18   | Mr. Shankar Shani         | RCDS                       | Community                           | 44520770    |
| 19   | Mr. Ishwari Prasad Pandit | District NGO Co-ordination | Member                              | 9845054066  |
| 20   | Mr. Rameshwor Giri        | Disaster Risk Management   | Community                           | 55620280    |
| 21   | Mr. Intamar Khan          | Disaster Risk Management   | Community                           | 55620167    |
| 22   | Mr. Binay Shah            | ICON                       | Facilitator                         | 4470933     |
| 23   | Mr. Aslam Perwar          | ADPC                       | Project Manager                     |             |
| 24   | Mr. Gita Pradhan          | LWF-Nepal                  | Health & HIV/Aids Manager           | 9851100833  |
| 25   | Mr. Kumar Prasad Koirala  | TIACAO                     | Director                            | 4489996     |
| 26   | Mr. Gyan B Napit          | Earthquake Risk Program    | Chairman                            | 9841286100  |
| 27   | Mr. Ram Krishna Sherchan  | CRM & SO, DWSS             | Act. Regional Chief                 | 9841459717  |
| 28   | Mr. Rajeeb Ghimire        | MoPPW                      | Senior Divisional Engineer          | 9841201801  |
| 29   | Mr. C B Bajracharya       | Nepal Electricity          | Director                            | 98510707920 |
| 30   | Mr. Niranjana Tamrakar    | DP Net                     | Coordinator                         | 9841221851  |
| 31   | Mr. Govinda Adhikari      | UNHCR                      | Senior Programme Assistant          | 4414724     |
| 32   | Dr. B P Yadav             | GON                        | Focal Poinr Disaster Unit           |             |
| 33   | Mr. I S Dhakal            | DOR                        | SDE                                 |             |
| 34   | Mr. Bhusan Tuladhar       | ENPHO                      | Executive Director                  |             |
| 35   | Er. Shaligram singh       | NEA                        | Vice President                      |             |
| 36   | Mr. Y Kooki               | NSET                       | Senior Volunteer                    | 4486444     |
| 37   | Mr. Varun P Shrestha      | NSET                       | Chief Technical Advisor             | 4486444     |
| 38   | Mr. Bhuikaji Maharjan     | ERMC                       | 17. Ward Coordinator                | 9841400845  |
| 39   | Mr. Buddhi Sagar Thapa    | DUDBC                      | SOE                                 | 9856027477  |
| 40   | Mr. K P Acharya           | MoPPW                      | Joint Secretary                     | 9841552076  |
| 41   | Mr. Pratap Kr Pathak      | MoHA                       | Joint Secretary                     | 9851058799  |
| 42   | Mr. Kailash Sharma        | IDE-Nepal                  | Head of Engineering                 | 9841228968  |
| 43   | Mr. Makota Yoshino        | Japanese Embassy           | First Secretary                     |             |
| 44   | Mr. Kailash M Pradhan     | Japanese Embassy           | Program Manager                     | 4426680     |
| 45   | Mr. Arun Pekurel          | ICRC                       | Engineer                            |             |
| 46   | Mr. Binod Chandra Jha     | DWSS Surkhet Office        | Regional Chief                      | 83520360    |
| 47   | Mr. Kumar Prasad Lohani   | DUDBC                      | Section Chief                       | 9841267321  |
| 48   | Mr. Hendrik Uisser        | SNV                        | Rural Infrastructure Senior Advisor | 9851029216  |
| 49   | Mr. Subarna Shilpakar     | HAMA Group                 | Chief Finance                       | 9851056674  |
| 50   | Mr. Kalyan Bista          | NSET                       | Admin Director                      | 9851030406  |
| 51   | Mr. Sourab Rana           | JICA                       | Program Officer                     | 9851081228  |
| 52   | Mr. Han Heijen            | WHO                        | E H Advisor                         |             |

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

**List of Workshop Participants**

| S.No | Name                      | Organization               | Designation              | Contact No |
|------|---------------------------|----------------------------|--------------------------|------------|
| 1    | Dr. Rajan Suwal           | Khwopa Engineering College | Principal                | 9851041987 |
| 2    | Mr. Binod Dhakal          | INOGOS                     | Director                 | 4102534    |
| 3    | Mr. Amod Mani Dixit       | NSET                       | ED                       |            |
| 4    | Mr. Aditya Narayan Kanth  | NSET                       | Administration Assistant | 4486444    |
| 5    | Mr. Suresh Prasad Acharya | ORRDP                      | Sup Engg                 | 9841252904 |
| 6    | Mr. Anil Manandhar        | Shree Airlines             | Manager                  | 9851026197 |
| 7    | Mr. Kalyan Bista          | NSET                       | Administration Director  | 985103046  |
| 8    | Mr. Niranjana Tamrakar    | DP Net-Nepal               | Coordinator              | 9841221857 |
| 9    | Mr. Raghu Shrestha        | DLGSP                      | MRA                      | 9851087281 |
| 10   | Mr. Y Koori               | NSET                       | Senior Volunteer         |            |
| 11   | Mr. Hari Om Srivastav     | DOR                        | RD, CRRD                 | 9851037539 |
| 12   | Mr. Dhurba Raj Regmi      | DOR                        | DDG, DOR                 | 4216317    |
| 13   | Mr. Kumar Tamang          | ICRC                       | WATHAB Field Officer     | 9841382603 |

**National Strategy on Disaster Risk Management 2007-2015 (NSDRM)**

| S.No | Name                       | Organization                     | Designation                | Contact No |
|------|----------------------------|----------------------------------|----------------------------|------------|
| 14   | Mr. Nick Russel            | IFRC                             | Representative             |            |
| 15   | Dr B P Yadav               | DOHS                             | Medical Officer            | 9803415265 |
| 16   | Dr. S S Tiwari             | DOHS MD                          | Director                   | 4262063    |
| 17   | SDE Shivahari Sapkota      | MoPPW                            | SDE                        | 9841328023 |
| 18   | Mr. Rajendra Prasad Mishra | CDM, Butwal                      | President                  |            |
| 19   | Ms. Shanti Devi Harijan    | OXFAM, Kapilvastu                | Treasurer                  | 98410463   |
| 20   | Mr. Ram Prasad Neupane     | CFONDM, Chitwan                  | Member-Secretary           | 9855057121 |
| 21   | Mr. P B Chhetri            | RUPSON                           | Consultant                 | 5590029    |
| 22   | Mr. Chabilal Shivakoti     | DIPECHO-CPDR                     | President                  | 23621389   |
| 23   | Mr. Mohan Raj Sharma       |                                  | Consultant                 | 5590029    |
| 24   | Ms. Gita Pradhan           | LWF-Nepal                        | Health & HIV Aids Manager  | 9851100833 |
| 25   | Mr. Madhav Gautam          | Action Aid Nepal-WCDFM           |                            | 57690998   |
| 26   | Ms. Manita Maskey          | World Vision International Nepal | Technical CDF              | 4443137    |
| 27   | Mr. Tulasi Sitaula         | Departments of Road              | DDG                        | 9851091938 |
| 28   | Mr. Manoj Kumar Verma      | NTL                              | Senior Engineer            | 9841323988 |
| 29   | Mr. Thir Bahadur GC        | MoHA                             | Under Secretary            | 9841320345 |
| 30   | Mr. Ramesh Maka            | NRC, Bhaktapur                   | Community Motivator        | 9841488324 |
| 31   | Mr. Kishore Thapa          | DUDBC                            | DG                         | 4262927    |
| 32   | Mr. Buddi Sagar Thapa      | DUDBC                            | SDE                        | 9856027477 |
| 33   | Mr. Harka Bhandari         | DIPECHO-CPDR                     | President                  | 23620215   |
| 34   | Mr. Shyam Adhikari         | Panchakanya Group                | Executive Chief            | 9841443191 |
| 35   | Mr. Hari Bhakta Shrestha   | ERRD, DAMAK                      | RD                         | 9841272784 |
| 36   | Dr. Mahendra Subba         | DUDBC                            | Senior Planner             | 4262365    |
| 37   | Mr. Durga Prasad KC        | DOR                              | Director General           | 4262675    |
| 38   | Mr. Dinkar Sharma          | MoPPW                            | Joint Secretary            | 4228284    |
| 39   | Mr. Ramesh Bastola         | Roads Board Nepal                | Director                   | 4493515    |
| 40   | Mr. Yogendra Kumar Rai     | Mid Western Road Directorate     | Director                   | 83521366   |
| 41   | Mr. Nitesh D Joshi         | REDP                             | EDO                        | 9841352444 |
| 42   | Mr. Govinda Adhikari       | UNHCR                            | Senior Programme Assistant | 4412521    |
| 43   | Mr. K K N Pradhan          | MoPPW                            | S.D Engineer               | 4228199    |
| 44   | Mr. B B Dhakal             | WRRD, Pokhara                    | Regional Director          | 61520327   |
| 45   | Mr. Varun P Shrestha       | NSET                             | Senior Technical Advisor   |            |
| 46   | Mr. Anil Sthapit           | NRCS, Kathmandu                  | Community Trainer          | 4229410    |

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

**List of Workshop Participants**

| S.No | Name                     | Organization               | Designation                     | Contact No  |
|------|--------------------------|----------------------------|---------------------------------|-------------|
| 1    | Mr. Nhuchhe Kumar Twayna | NRCS BKT                   | Secretary                       | 9841369027  |
| 2    | Ms. Manisha Bonjan       | Channel Nepal              | Reporter                        | 9851012465  |
| 3    | Ms. Prabha Pandey        | MoIC                       | Under Secretary                 |             |
| 4    | Mr. Somnath Lamichhane   | RFS                        | Reporter                        | 98412877378 |
| 5    | Mr. Kalyan Bista         | NSET                       | Administration Director         | 9851030406  |
| 6    | Mr. Amod Mani Dixit      | NSET                       | ED                              |             |
| 7    | Mr. Soma Natha Sapkota   | DMG                        | Senior DIV Seismologis          | 9851018141  |
| 8    | Mr. Bipin Chitrakar      | Nepal Red Cross L C        | President                       | 9851031187  |
| 9    | Mr. Ganga Prasad Luitel  | Office of Prime Minister   | Under Secretary                 | 9841399343  |
| 10   | Mr. Gopal Dahal          | LWF Nepal                  | EPD Manager                     | 9851016527  |
| 11   | Mr. Subarna K Shilpakar  | HAMA Group                 | Chief Finance                   | 9851056674  |
| 12   | Mr. Vivek Sharma         | GEF/SGP                    | NPA                             | 9841205638  |
| 13   | Ms. Biva Joshi           | UIC                        | Management Trainee              | 9841358981  |
| 14   | Mr. Niranjan Tamrakar    | DP Net                     | Coordinator                     |             |
| 15   | Mr. Sanjeev Maharjan     | I-Ward Disaster Management | Secretary                       | 9841330574  |
| 16   | Mr. Badri N Koirala      | MoIC                       | Section Officer                 | 9841256830  |
| 17   | Mr. Prakash Giri         | Image Channel TV           | Reporter                        | 9841206496  |
| 18   | Dr. Meen Chhetri         | NCDM                       | General Secretary               | 5530668     |
| 19   | Mr. Raghu Shrestha       | DLGSP                      | MRA                             | 9851087281  |
| 20   | Mr. Larmie N Sanyon      | UNHCR                      | Associate Admin/Finance Officer | 9851048559  |
| 21   | Mr. Paul Handley         | OCHA                       | Officer-in-Charge               |             |
| 22   | Mr. Binod Dhakal         | INLOGOS                    | Director                        | 9841264841  |

**National Strategy on Disaster Risk Management 2007-2015 (NSDRM)**

| S.No | Name                       | Organization              | Designation                         | Contact No |
|------|----------------------------|---------------------------|-------------------------------------|------------|
| 23   | Dr. P Tulachan             | ADB                       | Senior Program Officer              |            |
| 24   | Dr. B P Yadav              | GON                       | Medical Officer                     | 9803415265 |
| 25   | Ms. Shuku Pun              | UNDP                      | Programme Coordinator               |            |
| 26   | Mr. Prazit KC              | Nepal Police              | Police Inspector                    | 9851011199 |
| 27   | Mr. Rudra Prasad Bhatta    | Ministry of Defence       | Section Officer                     | 9841404998 |
| 28   | Mr. T Devkota              | REDP                      | DPM                                 | 5547609    |
| 29   | Mr. Bal Krishna Shrestha   | NRCS Kathmandu            | Accounts and Administrative Officer | 4229410    |
| 30   | Ms. Beena Kharel           | LWF Nepal                 | Communication Manager               | 9851016300 |
| 31   | Mr. Rabi M Joshi           | United Insurance Company  | General Manager                     | 4246686    |
| 32   | Mr. Rakesh Maharjan        |                           | Committee Volunteer                 | 16212735   |
| 33   | Mr. Gehendra G             | Practical Action          | Team Leader                         | 4446015    |
| 34   | Mr. Bharat Shakya          | Image FM                  | Station Manager                     | 9851036348 |
| 35   | Mr. Umesh Ranjitkar        | Nepal Police              | DySP                                | 9851037060 |
| 36   | Mr. Rajan Ghimire          | CARITAS Nepal             | CBDP Project Coordinator            | 9851060374 |
| 37   | Mr. Rajendra Napit         | Image Channel TV          | Reporter                            | 4433141    |
| 38   | Mr. P R Pande              | MoWR                      | SDE                                 | 4211515    |
| 39   | Mr. Y Kooki                | NSET                      | Senior Volunteer                    |            |
| 40   | Mr. R C Parajuli           | NTV                       | Reporter                            | 4228436    |
| 41   | Mr. Mohan Ghimire          | NTV                       | Cameraman                           | 4228436    |
| 42   | Mr. Babu Ram Acharya       | MoLRM                     | Joint Secretary                     | 9851003374 |
| 43   | Mr. Mohan Raj Sharma       |                           | Consultant                          | 9841528910 |
| 44   | Mr. Pashupati P Paudel     | Department of Information | Director                            | 9841669235 |
| 45   | Mr. S R Sharma             | CARE Nepal                | PSLO                                | 5522800    |
| 46   | Mr. R P Luitel             | UN OCHA                   | NCO                                 |            |
| 47   | Mr. Ashok Baskota          | Radio Nepal               | Engineer                            | 9841339123 |
| 48   | Mr. Bishnu Khanal          | OXFAM                     | PC                                  | 9851011638 |
| 49   | Mr. S P Marasaini          | MoHA                      | Officer                             | 9851058177 |
| 50   | Mr. Kishor Poudel          | Channel Nepal             | Reporter                            | 9841416363 |
| 51   | Mr. Kedar Niroula          | Channel Nepal             | Reporter                            | 4276610    |
| 52   | Ms. Anjali Thakali         | Save the Children         | SC Alliance EP-DPR Coordinator      | 4412598    |
| 53   | Mr. Sanjeev Kafley         | Nepal Red Cross           | Director                            | 9851074246 |
| 54   | Mr. Tony Randallar         | WFP                       | Logistics Officer                   | 9851022432 |
| 55   | Mr. Surya Khanal           | Nepalese Army             | Asst Chief Ops Officer              | 9841597342 |
| 56   | Mr. Uma Shankar Joshi      | MoIC                      | Under Secretary                     | 9841480245 |
| 57   | Mr. Keshav Raj Baniya      | Communication HTD         | Office Chief                        | 9845028766 |
| 58   | Mr. Hari Bahadur Khatri    | Communication Center,     | Office Chief                        | 9848023324 |
| 59   | Dr. Rossu Thapa            | Armed Police Force        | Medical Officer                     | 9841309805 |
| 60   | Mr. Mitra Prasad Khatiwoda | Communication Center      | Office Chief                        | 9842042322 |
| 61   | Mr. Loknath Pande          | DMC                       | Chairman                            | 9845030862 |
| 62   | Mr. Nara Hari Dhakal       | RMC/UNDP                  | Realignment Coordinator             | 9851048729 |
| 63   | Mr. Parshu Ram Aryal       | MoIC                      | Under Secretary                     | 4211625    |
| 64   | Mr. Shree Kamal Dwivedi    | DWIDP                     | Eng Geologist                       | 5535502    |
| 65   | Mr. Dinkar S Rana          | NPA/Nepal Police          | SSP                                 | 9851010219 |
| 66   | Mr. Damodar Adhikari       | WHO                       | NOO                                 | 5523200    |
| 67   | Mr. Chakra Pani Pandey     | MOWCSW                    | Section Officer                     | 9841252516 |
| 68   | Mr. Prakash Regmi          | NGO Forum on Natural      | Member Secretary                    | 9845044713 |
| 69   | Mr. Mikito Yamamoto        | JICA                      | Senior Volunteer                    | 9851081227 |
| 70   | Mr. Binod Prasad Shrestha  | World Vision              | Customer Service                    | 9851040919 |
| 71   | Mr. Mukunda Mani Khanal    | MoES                      | SO                                  | 9841395714 |
| 72   | Mr. Shiba Prasad Gautam    | Co. Pokhara               | Chief                               | 9846043504 |
| 73   | Mr. Prashant Manandhar     | UNESCO                    | IT Specialist                       | 5554769    |
| 74   | Mr. Sohan Bahadur Nyachhon | MoIC                      | Joint Secretary                     | 16201063   |
| 75   | Mr. Hem Raj Regmi          | MoAC                      | SSO                                 | 9841324608 |
| 76   | Mr. Bikram Nepal           | HRA                       | Chairman                            | 9851086717 |
| 77   | Mr. Kosh Raj Onta          | APHQ, Halchowk            | Digp                                | 9851047676 |
| 78   | Mr. Varun Prasad Shrestha  | NSET                      | Senior Technical Advisor            |            |
| 79   | Mr. Babu Raja Maharjan     | NRCS, Lalitpur            | Secretary                           | 9841353042 |
| 80   | Mr. Vijay Khadgi           | ICIMOD                    | Network Officer                     | 5003222    |

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

**List of Workshop Participants**

| S.No | Name                       | Organization                                | Designation   | Contact No  |
|------|----------------------------|---|---|-------------|
| 1    | Mr. Nhuchhe Kumar Twanya   | NRCS BKT                                    | Secretary   | 9841369027  |
| 2    | Mr. Bipin Chitrakar        | Nepal Red Cross L.C                         | President   | 9851031187  |
| 3    | Mr. Babu Raja              | NRCS LP                                     | Secretary   | 984135342   |
| 4    | Mr. Gopal Dahal            | LWF Nepal                                   | Manager-EDP   | 9851016257  |
| 5    | Mr. Hari Budhathoki        | Fire Brigade                                | Superintendent                                      | 9851072258  |
| 6    | Mr. Kumar Regmi            | Panchakanya Group                           | Sales Officer                                       | 9841247587  |
| 7    | Mr. Prakash Regmi          | CFON-NDM Chitwan                            | Project Advisor                                     | 9845044713  |
| 8    | Ms. Beena Kharel           | LWF Nepal                                   | Communication Manager                               | 9851016519  |
| 9    | Mr. Shyam Basnet           | Nepal Telecom                               | Dy-Manager  | 9851092088  |
| 10   | Mr. Ganga Prasad Luitel    | Office of PM                                | Under Secretary                                     | 9841399343  |
| 11   | T Devkota                  | REDP  | DPM   | 5547609     |
| 12   | Mr. Pashupati Paudel       | DOI   | DG  | 9841669235  |
| 13   | Mr. Sharad Bhandari        | National News Agency                        | Senior Correspondent                                | 9851044204  |
| 14   | Mr. Ram Prasad Luitel      | UN OCHA                                     | NCO   | 9852023033  |
| 15   | Mr. Rajendra Manandhar     | MoEST                                       | Under Secretary                                     | 9841236762  |
| 16   | Mr. Bal Krishna Shrestha   | Nepal Red Cross Kathmandu                   | Account Officer                                     | 4229410     |
| 17   | Mr. Uma Shankar Joshi      | MoIC  | Under Secretary                                     | 9841480245  |
| 18   | Dr. P Tulachan             | ADB   | Senior Programme Officer                            | 4227779     |
| 19   | Mr. Madhav Prasad Regmi    | District Administration<br>Office, Dhanusha | CDO   | 41520075    |
| 20   | Mr. Shashi Bhusan Sharma   | K L Dugar Group                             | General Manager                                     | 9851061067  |
| 21   | Mr. Rabi Man Joshi         | United Insurance Co                         | General Manager                                     | 4246686     |
| 22   | Mr. Kosh Raj Onta          | APHQ, Halchowk                              | DISP  | 9851047678  |
| 23   | Mr. Bimal Prasad Dhakal    | District Administration<br>Office, Kaski    | CDO   | 9856024501  |
| 24   | Mr. Binod Dhakal           | INLOGOS                                     | Director  | 9841264841  |
| 25   | Mr. Bikram Nepal           | HRA   |   | 9851036717  |
| 26   | Mr. Prajeet KC             | Nepal Police                                | Inspector   | 9851011199  |
| 27   | Mr. Mukunda Man Khanal     | MoEST                                       | Section Officer                                     | 9841395714  |
| 28   | Mr. Shree Kamal Dwiuedi    | DWIDP                                       | Engineer Geogolist                                  | 5535502     |
| 29   | Mr. Santosh Khadka         | Armed Police Force                          | DySP  | 9851078386  |
| 30   | Mr. Umesh Ranjitar         | Nepal Police                                | DySP  | 9851037060  |
| 31   | Mr. Vincent Omuga          | OCHA  | HAO   |             |
| 32   | Mr. Raghu Shrestha         | DLGSP                                       | MRA   | 9851087281  |
| 33   | Mr. Suresh Pradhan         | UNESCO                                      | National Project Coordinator                        | 98414464241 |
| 34   | Mr. Amod Mani Dixit        | NSET  | ED  |             |
| 35   | Mr. Y Kooki                | NSET  | Senior Volunteer                                    |             |
| 36   | Col Ganesh Bhandari        | NA  | Colonel   | 9851039220  |
| 37   | Mr. Jaya Singh Pal         | Shree Air                                   | Station Manager                                     | 4222948     |
| 38   | Mr. Dhurba Gautam          | GEF SEP/UNDP                                | Participatory Monitoring & Evaluation<br>Specialist | 9851095808  |
| 39   | Mr. Narayan Kumar Acharya  | JICA  | Senior Security Officer                             | 9851050142  |
| 40   | Mr. Trilok Prasad Shrestha | MOHA  | C.D.O   | 9841410399  |
| 41   | Mr. Padam Paudel           | CARE  | Program, Operation Advisor                          | 9851085030  |
| 42   | Mr. B N Tiwari             | SHDI/UNDP                                   | National Programme Manager                          | 9851102078  |
| 43   | Mr. B N Maharjan           | MOAC  | Agri-Economic                                       | 4228137     |
| 44   | Mr. Rudra Prasad Bhata     | Ministry of Defence                         | Section Officer                                     | 4211290     |
| 45   | Mr. Gayatraj Sharma        | WCDF  | Community   |             |
| 46   | Mr. Binod Shrestha         | WVI-N                                       | Customer Service                                    | 9851040919  |
| 47   | Mr. Damodar Adhikari       | WHO   | National Operations Officer                         | 5523200     |
| 48   | Dr B P Yadav               | MOH/DOHS                                    | Medical Officer                                     | 9803415265  |

National Strategy on Disaster Risk Management 2007-2015 (NSDRM)

| S.No | Name                      | Organization                            | Designation                    | Contact No |
|------|---------------------------|---|--------------------------------|------------|
| 49   | Mr Pradeep B Shah         | WB                                      | Security Advisor               | 9851048737 |
| 50   | Mr. Dipesh Raj Pant       | MOH                                     | Community                      | 9841526411 |
| 51   | Mr. Hari Krishna Paudel   | District Administration Office, Bajhang | CDO                            | 9841511601 |
| 52   | Mr. Prakash Thapa         |   | Community                      | 9845042514 |
| 53   | Mr. Kapil Ghimire         | COHAT                                   | Sector Consultant              | 9851073665 |
| 54   | Mr. D Devkota             | SC/US                                   | Program Manager                | 9858020827 |
| 55   | Dr. Rossu Thapa           | APF Hospital                            | Medical Officer                | 9841309805 |
| 56   | Mr. N Bastakoti           | Nepal Police                            | SSP                            | 4411675    |
| 57   | Mr. Deo Narayan Yadav     | Koshi Victims Society SAPTAM            | Chairperson                    | 9842821464 |
| 58   | Mr. Chakra Pani Pandey    | MoWCSW                                  | Section Officer                | 9841252516 |
| 59   | Mr. Bibek Dangol          | DMT                                     | Volunteer                      | 9841365016 |
| 60   | Mr. Pradip Maharjan       | DMT                                     | Volunteer                      |            |
| 61   | Mr. Varun Prasad Shrestha | NSET                                    | Senior Technical Advisor       |            |
| 62   | Mr. Thir Bahadur GC       | MOHA                                    | Under Secretary                |            |
| 63   | Mr. Hari Krishna Upadhyay | District Admin Office                   | CDO                            | 4431560    |
| 64   | Mr. Rajan Ghimire         | CARITAS NEPAL                           | Program Coordinator CBPD & GRT | 9851060374 |

**Agriculture & Food Security Sector Workshop for Development of National Strategy for Disaster Risk Management in Nepal, 24-May-07, Kathmandu**

**List of Workshop Participants**

| S.No | Name                        | Organization                          | Designation                      | Contact No |
|------|-----------------------------|---------------------------------------|----------------------------------|------------|
| 1    | Ms Shanti Chanda            | Nepal Women Craft                     | Proprietor                       | 4420868    |
| 2    | Mr. Rajan Ghimire           | CARITAS Nepal                         | Program Coordinator              | 9851060374 |
| 3    | Mr. N P Chaudhary           | Leasehold FORENTY & Livestock Program | Livestock Coordinator            | 9841392220 |
| 4    | Ms. Anjali Thakali          | Save The Children                     | SC Alliance EP-DPR Coordinator   | 4412398    |
| 5    | Mr. Bishnu Bahadur Bhandari | Department of Soil Conservation       | Watershed Management Officer     | 9841354051 |
| 6    | Mr. Rabi Man Joshi          | United Insurance Company              | GM                               | 4246686    |
| 7    | Mr. Durga Adhikari          | SEAN                                  | General Secretary                | 4252314    |
| 8    | Mr. Sribindu Bajracharya    | USAID                                 | Development Programme Specialist | 4270144    |
| 9    | Dr P Pathak                 | Department of Livestock               | Deputy Director General          | 5521610    |
| 10   | Dr V K Karna                | Central Vet Laboratory                | Veterinary Officer               | 4261938    |
| 11   | Ms Biva Joshi               | UIC                                   | Management Trainee               | 9841358981 |
| 12   | Mr Kamal Gautam             | DOA                                   | Chief M & E                      | 9851068759 |
| 13   | Mr Achyut Prasad Dhakal     | DADO, Kathmandu                       | SADO(Chief)                      | 9841574566 |
| 14   | Mr. Binod Dakal             | INLOGOS                               | Director                         | 4102534    |
| 15   | Mr Surya Koirala            | MOLD                                  | Section Officer                  | 5522015    |
| 16   | Mr Ratna Krishna Jha        | National Plant Quarantine Program     | Plant Quarantine Officer         | 5524352    |
| 17   | Mr. Narayan Adhikari        | Press Club                            | Reporter                         | 5841265619 |
| 18   | Mr. Binod Sharma            |                                       | Team Leader CRRN                 | 9851074576 |
| 19   | Mr Ashok KC                 | Metro Post                            | Reporter                         | 251200     |
| 20   | Mr. L K Gautam              | FAO                                   | AFAOR                            | 5523239    |
| 21   | Mr. Mahendar Prasad Khanal  | MOAC                                  | Agriculture Officer              | 9841340502 |
| 22   | Mr. Rudra Prasad Khanal     | MOAC                                  | Technical Assistant              | 9841354289 |
| 23   | Mr. Kamal Acharya           | MOAC                                  | TA                               | 9841415378 |
| 24   | Dr Dhan Raj Ratala          | DLS                                   | Director Animal Health           | 9851002247 |
| 25   | Ms. Sue McIntyre            | USAID/OFDA                            | Regional Advisor                 | 9851021993 |
| 26   | Mr. Buddhi Man Maharjan     | MOAC                                  | Agri-Economist                   | 4228137    |
| 27   | Mr. Umesh Acharya           |                                       |                                  | 9851081732 |
| 28   | Mr Virendra Nath            | CEAPRED                               | Project Coordinator              | 5520272    |

National Strategy on Disaster Risk Management 2007-2015 (NSDRM)

| S.No | Name                           | Organization                     | Designation                 | Contact No |
|------|--------------------------------|----------------------------------|-----------------------------|------------|
| 29   | Mr. Gehendra Bahadur G         | Practical Action                 | Team Leader                 | 4446015    |
| 30   | Mr. Ram Chandra                | Prayachhan                       | Team Leader                 | 984161792  |
| 31   | Mr. Devendra Bilas Bajracharya | SAPPROS                          | Technical Chief             | 9851018074 |
| 32   | Mr. Govinda Adhikari           | UNHCR                            | Senior Program Assistant    | 4412521    |
| 33   | Mr. Uttam Kumar Bhattarai      | DFTQC                            | DG                          | 4262430    |
| 34   | Dr Bala Ram Thapa              | MOAC                             | Chief AR                    | 4261605    |
| 35   | Mr Raghu Shrestha              | DLGSP                            | MRA                         | 9851087281 |
| 36   | Mr. R Pathak                   |                                  |                             | 4241433    |
| 37   | Mr. K P Sharma                 | RDLS Pokhara                     | RD                          | 61528824   |
| 38   | Mr. V P Shrestha               | NSET                             | Senior Technical Advisor    |            |
| 39   | Mr. Y Kooki                    | NSET                             | Senior Volunteer            |            |
| 40   | Mr. Chabbi Paudel              | SSMP/Helvetas                    | Senior Program Officer      | 5525220    |
| 41   | Dr. Shiva Sharma               | National Labour Academy          | ED                          | 4255908    |
| 42   | Mr. Luma Nath Adhikari         | UMN                              | FS Advisor                  | 4228118    |
| 43   | Dr. B Parajuli                 | RDLS, Biratnagar                 | Regional Director           | 9841204878 |
| 44   | Dr. K B Bogati                 | RDLS, Dipayal                    | Regional Director           |            |
| 45   | Mr. Jan Morrenhof              | DFID                             | PA APPSP                    | 440472     |
| 46   | Mr. Hem Raj Regmi              | MOAC                             | SSO                         | 9841324608 |
| 47   | Mr. Shekhar Raj S              | NGO                              | Gramin                      | 9841488002 |
| 48   | Mr. Suresh Bhattarai           | UMN                              | Disaster Management Advisor | 2211818    |
| 49   | Mr Ganesh K KC                 | MOAC                             | Secretary                   | 4225108    |
| 50   | Dr. Kaushal K Lal              | NCDB                             | Member Seretary             | 5520190    |
| 51   | Ms. Tara Shrestha              | REDP                             | REA                         | 5547609    |
| 52   | Dr. Nanda Prasad Shrestha      | NARC                             | ED                          | 9851035085 |
| 53   | Mr. Abhaya Bahadur Singh       | FAO                              | PA                          | 9841298567 |
| 54   | Dr. Surendra Thapa             | LWF                              | PC                          | 9851016812 |
| 55   | Mr. Rajesh K Shrestha          | MOAC                             | TA                          | 6214694    |
| 56   | Mr. Suresh Verma               | MOAC                             | Joint Secretary             | 4226465    |
| 57   | Lt Col Ajit Thapa              | Nepal Army                       |                             | 9841214680 |
| 58   | Mr. Thir Bahadur GC            | MOHA                             | Under Secretary             | 9841320345 |
| 59   | Mr Mitsuo Shimada              | EOJ                              | Second Seretary             | 4426680    |
| 60   | Mr Naveen M Joshi              | DWIDP                            | S.D.E                       | 5539451    |
| 61   | Ms Anita Etholen               | UNDP                             | Environment Specialist      | 9851075761 |
| 62   | Mr Dala Ram Pradhan            | MOAC                             | H Sec                       | 9851068073 |
| 63   | Mr. Shib Raj Bhattarai         | HANK                             | Reporter                    |            |
| 64   | Dr. Narayan Prasad Ghimire     | Department of Livestock Services | Senior Vet Officer          | 9841336399 |
| 65   | Mr. Matrika Prasad Ojha        | Kamana                           | Reporter                    | 9841552513 |
| 66   | Mr. Bharat Upadhyay            | DOA                              | DDG                         | 5521127    |

**Livelihood Protection Sector Workshop for Development of National Strategy for  
Disaster Risk Management in Nepal, 25-May-07, Kathmandu**

**List of Workshop Participants**

| S.No | Name                         | Organization                     | Designation                    | Contact No |
|------|------------------------------|----------------------------------|--------------------------------|------------|
| 1    | Mr. Rudra Khanal             | MoAC                             | TA                             | 9841354289 |
| 2    | Mr. Kamal Acharya            | MoAC                             | TA                             | 9841415378 |
| 3    | Mr. Rajan Ghimire            | Caritas Nepal                    | Program Coordinator DM Program | 9851060374 |
| 4    | Ms. Sue McIntyre             | USAID/OFDA                       | Regional Advisor               | 4220144    |
| 5    | Dr Bala Ram Thapa            | Central Animal Quarantine Office | Senior Vetenary Officer        | 4261605    |
| 6    | Mr. Rabindra Bahadur Pradhan | DOA, Planning                    | Ext Officer                    | 9841465672 |
| 7    | Ms. Renuka Bhandari          | KU                               | Student                        | 9841348661 |

National Strategy on Disaster Risk Management 2007-2015 (NSDRM)

| S.No | Name                        | Organization                               | Designation                  | Contact No  |
|------|-----------------------------|--|------------------------------|-------------|
| 8    | Ms. Silu Bhochhibhoya       | KU   | Student                      | 9841497258  |
| 9    | Ms. Saru Jaujale            | KU   | Student                      | 9841441433  |
| 10   | Mr. Rabi Man Joshi          | United Insurance Company                   | GM                           | 4246686     |
| 11   | Dr. Dhan Raj Rai            | AHD  |                              | 9841202247  |
| 12   | Mr. Mukund                  | DDC, Bhaktapur                             | Program Officer              | 9841560557  |
| 13   | Mr. Thir Bahadur G C        | MoHA                                       | Under Secretary              |             |
| 14   | Dr. Dilip Prasad Sherchan   | NARC                                       | Director                     | 9851102922  |
| 15   | Mr. Bijaya Raj Subedi       | MoLD                                       | SO                           | 5548514     |
| 16   | Mr. Paul Wright             | United Mission to Nepal                    | DM Advisor                   | 4228118     |
| 17   | Mr. Abhaya Bahadur Singh    | FAO  | PA                           | 9841298567  |
| 18   | Mr. Raghu Shrestha          | DLGSP                                      | MRA                          | 9851087281  |
| 19   | Mr. Bishnu Bahadur Bhandari | DSCWM                                      | Watershed Management Officer | 9841354051  |
| 20   | Mr. Ganesh Bhandari         | Nepal Army                                 | Col                          | 9851037220  |
| 21   | Mr. Raj Bahadur Shrestha    | MEDEP                                      | MES                          | 5541949     |
| 22   | Mr. Y Kooki                 | NSET                                       | Senior Volunteer             |             |
| 23   | Mr. Shesha Kanta Sharma     | DDC, Nawalparasi                           | PO                           | 7820247     |
| 24   | Mr. Amod Mani Dixit         | NSET                                       | ED                           |             |
| 25   | Mr. Gyanendra Chaudhary     | KU   | Student                      | 9841487228  |
| 26   | Mr. Rajesh Kumar Shrestha   | MOAC                                       | Technical Assistant          | 6214694     |
| 27   | Mr. Tej Raj Shakya          | MoICS                                      | Joint Secretary              | 4224631     |
| 28   | Dr K B Karki                | CVC MOA                                    | VO                           | 4261938     |
| 29   | Mr. Nischal Shrestha        | DIPECHO CPDRR                              | PO                           | 9852670847  |
| 30   | Dr Narayan Prasad Ghimire   | Department Livestock Services              | Senior Vetenary Officer      | 9841336399  |
| 31   | Dr B Parajuli               | Regional Directorate of Livestock Services | Regional Director            | 9841204878  |
| 32   | Mr. K P Sharma              | RDLS Pokhara                               | RD                           | 61528824    |
| 33   | Mr. Dilli Prasad Thapaliya  | United Insurance                           | Manager                      | 9851038778  |
| 34   | Mr Surya Koirala            | MoLD                                       | Section Officer              | 5522015     |
| 35   | Mr Subarna Shilpakar        | HAMA Group                                 | Chief Finance                | 9851056674  |
| 36   | Mr Prajjwal S Aryal         | Ministry of Labour                         | Under Secretary              | 4223691     |
| 37   | Mr Devi Prasad Lamsal       | Decont                                     | Member                       | 4488486     |
| 38   | Mr. Binod Dhakal            | INLOGOS                                    | Director                     | 4102534     |
| 39   | Dr Surendra Thapa           | LWF Nepal                                  | PC                           | 98510716812 |
| 40   | Mr. Krishna Ojha            | DDC, Sunsari                               | LDO                          | 9852021070  |
| 41   | Ms. Junu Shrestha           | KU   | Student                      |             |
| 42   | Mr. Babu Ram Gautam         | MoLD                                       | Under Secretary              | 5548514     |
| 43   | Mr. Hem Raj Regmi           | MoAL                                       | Under Secretary              | 9841324608  |
| 44   | Mr. Chhabi Paudel           | SSMP                                       | Senior Program Officer       | 5525220     |
| 45   | Ms Tara Shrestha            | REDP                                       | REA                          | 5547609     |
| 46   | Mr. Virendra                | CEAPRED                                    | PC                           | 5520272     |
| 47   | Mr. B N Maharjan            | MoAC                                       | Agri-Economist               | 4228137     |
| 48   | Mr. K R Gautam              | DOA  | Chief M & E                  | 5524226     |
| 49   | Dr R M                      | CVO  | CVL                          | 9841209372  |
| 50   | Dr K B Bogati               | RDLS, Dipayal                              | Regional Director            | 94440132    |
| 51   | Mr. Kalyan Bista            | NSET                                       | Admin Director               | 9851030406  |
| 52   | Mr. Ram Chandra Kandel      | NSET                                       | Director                     | 9851073743  |
| 53   | Mr. Shailendra Thakali      |  | Consultant                   |             |

**Development of a National Strategy for Disaster Risk Management in Nepal  
Final Sharing Workshop, 29-Jun-07, Kathmandu**

**List of Workshop Participants**

| S.No | Name                      | Organization                           | Designation                 | Contact No |
|------|---------------------------|--|-----------------------------|------------|
| 1    | Mr. Niranjana Tamrakar    | DP Net-Nepal                           | Co-coordinator              | 4672151    |
| 2    | Mr. Vijaya P Singh        | UNDP                                   | ARR                         | 4467191    |
| 3    | Mr. Rabindra B Pradhan    | Kirtipur Volunteer Society             | President                   | 9851046921 |
| 4    | Dr. Manas Banerjee        | EDCD, DHS                              | Director                    | 9841282932 |
| 5    | Ms. Christina Chan        | CARE Nepal                             | DIPECHO Manager             | 5522800    |
| 6    | Mr. Dipendra P Dhakal     | NCDM                                   | Immediate Past President    | 5530668    |
| 7    | Mr. Isaac Anup Rana       | World Vision International             | RMD                         | 4425516    |
| 8    | Mr. Sharad Neupane        | UNDP                                   | ARR                         | 5523200    |
| 9    | Ms. Lazima Onta Bhatta    | UNDP                                   | GSIS                        | 5523200    |
| 10   | Mr. Keshab Dhakal         | ROJ/UNDP                               | NPM                         | 4770778    |
| 11   | Mr. Suresh Bhattarai      | UMN                                    | District Management Advisor | 422118     |
| 12   | Mr. B N Tiwari            | SHDI/UNDP                              | NPM                         |            |
| 13   | Mr. Amod Mani Dixit       | NSET                                   | ED                          |            |
| 14   | Mr. Ganesh Bhandari       | NA                                     | Planning Officer            | 4292038    |
| 15   | Mr. Bhussan Shrestha      | GBC                                    | Advisor                     | 9803014967 |
| 16   | Mr. Kosh Raj Onta         | APF                                    | DIG                         | 4282552    |
| 17   | Mr. P R Pande             | MoWR                                   | SDE                         | 4211515    |
| 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 |
| 27   | Mr. Suresh Dhoj Shrestha  | RUPP                                   | ICTA                        | 5530123    |
| 28   | Mr. Sabin Basnyat         | REDP                                   | REDA                        | 5544609    |
| 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 |
| 34   | Mr. Kshitij Prasai        | COPE                                   | O/C                         | 5537433    |
| 35   | Mr. R C Neupane           | ECO-Nepal                              | Chairperson                 | 4445322    |
| 36   | Mr. Mohan Sharma          | Freelance                              | Consultant                  | 9841528910 |
| 37   | Ms. Rita Dhital           | UN DESK, MOFA                          | Section Officer             | 4416011    |
| 38   | Ms. Tara Shrestha         | REDP                                   | REA                         | 5547609    |
| 39   | Mr. Christopher Anderson  | OHCHR                                  | Head of Administration      | 9851014456 |
| 40   | Mr. Umesh Ranjekar        | 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    |
| 44   | Mr. Bin P Shrestha        | Kathmandu University                   | Head of Department          | 9851018136 |
| 45   | Ms. Rita Dhakal           | CARE                                   | Project Manager             | 9854022790 |
| 46   | Mr. Purna Bhakta Lama     | Tole Lane Organization                 | Treasurer                   | 9804226902 |

National Strategy on Disaster Risk Management 2007-2015 (NSDRM)

| S.No | Name                         | Organization                      | Designation                          | Contact No |
|------|------------------------------|-----------------------------------|--------------------------------------|------------|
| 47   | Mr. Komal Aryal              | DAC Northumbria University        |                                      | 4466581    |
| 48   | Mr. Ramesh Adhikari          | DDC, Dhading                      | Planning Officer                     | 9841424770 |
| 49   | Mr. Hari Prasad Mainali      | D A Office, Rasuwa                | CDO                                  | 9741027000 |
| 50   | Mr. Michele Manca di Nissa   | UNHCR                             | Deputy Representative-Protection     | 4414724    |
| 51   | Mr. Rajan Ghimire            | Caritas Nepal Ktm                 | CBDP Project Coordinator             | 9851060374 |
| 52   | Mr. Thomas Norberj           | UNMIN                             | Section Officer                      | 9851102558 |
| 53   | Mr. Amit Manandhar           | ACF-Nepal                         | Capital Logistician                  | 5013003    |
| 54   | Mr. Dev R Dhakwa             | Nepal Red Cross                   | Secretary General                    | 9851036050 |
| 55   | Mr. Krishna P Kaphle         | Department of Mines & Geology     | Superintendent Geologist             | 9841203555 |
| 56   | Mr. Surya N Shrestha         | NSET                              | Str. Engineer                        | 4486444    |
| 57   | Ms. Rakhi Bhavnani           | World Bank                        | Hazard Risk Management Consultant    | 9873426774 |
| 58   | Mr. S B Pradhananga          | NSET                              | President                            |            |
| 59   | Mr. Nagendra Sapkota         | ADB                               | Social & Environmental Officer       | 4227779    |
| 60   | Mr. Madhav Adhikari          | CDMS                              | Member                               | 2150078    |
| 61   | Mr. Hari Raj Bhatarai        |                                   |                                      |            |
| 62   | Mr. Bhupendra KC             | REDP                              | Myagdi                               | 9841736373 |
| 63   | Mr. Bhupal Baral             | DDC, Mahottari                    | Planning & Monitoring Officer        | 9841314205 |
| 64   | Ms. Rubi Maiya Lagai         | Local Development Training Center |                                      |            |
| 65   | Mr. Hirendra Mahara          | Local Development Training Center | Vice Chairman                        |            |
| 66   | Mr. N Nakarmi                | Kirtipur Volunteer Society        | Secretary                            | 9841384311 |
| 67   | Mr. Mani R Shakya            | DHM                               | SDM                                  | 4473382    |
| 68   | Mr. Iswar Regmi              | MOHA                              | SO                                   | 9841472083 |
| 69   | Avril Nathalie               | ACF-Nepal                         | Nutrition Officer                    | 5013003    |
| 70   | Mr. Amit Lamsal              | MOLD                              | Programme Monitoring & Admin Officer | 9841274931 |
| 71   | Mr. Naveen M Joshi           | DWIDP                             | SDE                                  | 5539451    |
| 72   | Mr. Y Kooki                  | NSET                              | Senior Voluneer                      |            |
| 73   | Mr. Gopal Dahal              | LWF Nepal                         | Project Manager                      | 9851016527 |
| 74   | Mr. Bikram Dangol            | DIPECHO-CPDRR                     | Member                               | 4334228    |
| 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    |
| 79   | Mr. Kishore Pradhan          | FNCCI                             | Local Eco Development Chairman       | 9852020628 |
| 80   | Mr. Vijay Khadgi             | ICIMOD                            | Network Officer                      | 5003222    |
| 81   | Mr. Gehendra Gurung          | Practical Action                  | Team Leader                          | 4446015    |
| 82   |                              | DFID                              | DRR Advisor                          |            |
| 83   | Mr. Erik Kjaergaard          | WHO                               | Technical Officer                    |            |
| 84   | Mr. Purna Basnet             | Nepali Mato                       | Rep                                  | 2325184    |
| 85   | Mr. Sarad Chandra Aryal      | ECR                               | Reporter                             | 9841510454 |
| 86   | Mr. Vivek Sharma             | GEF/SGP                           | NPA                                  | 5000119    |
| 87   | Mr. Rameshwar Pradhan        | Bulbula Khola Laghu Jalbidhyut    | Chairperson                          | 9803254811 |
| 88   | Mr. Prem Neupane             | MEDEP                             | Micro-Enterprise Specialist          | 9841539413 |
| 89   | Ms. Sue McIntyre             | USAID/OFDA                        | Regional Advisor                     | 9851021993 |
| 90   | Mr. Shreedhar Prasad Pokhrel | MoD                               | Joint Secretary                      |            |
| 91   | Mr. Shiva Sharma             | NIA                               | ED                                   | 4255908    |
| 92   | Mr. Ujwal Pradhananga        | UNICEF                            | ICT Officer                          | 9851054141 |
| 93   | Ms. Bui Thi Lan              | FAO                               | Representative                       |            |

National Strategy on Disaster Risk Management 2007-2015 (NSDRM)

| S.No | Name                       | Organization           | Designation                | Contact No |
|------|----------------------------|------------------------|----------------------------|------------|
| 94   | Mr. Dibakar Paudyal        | MoAC                   | Joint Secretary            | 9841286257 |
| 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 |
| 100  | Mr. Kashinath Marasaini    | DAO, Tanahun           | CDO, Tanahun               | 9846043333 |
| 101  | Mr. Desmond O Hanlon       | DSS                    | DSA                        | 98501847   |
| 102  | Mr. Padma Khadka           | IoE                    | Msc Programme Coordinator  | 9841305745 |
| 103  | Mr. S P Marasaini          | MoHA                   | Section Officer            | 4211200    |
| 104  | Mr. B S Bista              | MLD                    | Section Officer            | 9851085333 |
| 105  | Mr. M R Humagain           | DDC Sindhupalchok      | Planning Officer           | 9841458447 |
| 106  | Mr. Badri D Pande          | FHD                    | Director of Programmes     | 984141895  |
| 107  | Mr. Vidhu P Kayastha       | CDNHRC                 | Communication Specialist   | 9851013613 |
| 108  | Mr. Varun P Shrestha       | NSET                   | Senior Technical Advisor   |            |
| 109  | Ms. Madhavi Ariyabandhu    | UN ISDR                | Programme Officer          |            |
| 110  | Mr. Sanjeev Maharjan       | DIPECHO-CPDRR DMT      | Member                     | 4334117    |
| 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                        |            |
| 115  | Mr. H K Khatiwoda          | DAO Baitadi            | CDO                        | 9841364074 |
| 116  | Mr. R Joshi                | SWE                    | Director                   | 4415312    |
| 117  | Mr. H K Shrestha           | CDRS/NEC               | Director                   | 9841555318 |
| 118  | Mr. Pragyan Mathema        | UNICEF                 | Project Officer            | 9851038822 |
| 119  | Mr. Ujaya Shakya           | Outreach               | MD                         | 9851034851 |
| 120  | Mr. Achyut Luitel          | Practical Action       | CD                         | 4446015    |
| 121  | Mr. Megesh Tiwari          | Winrock International  | Research Officer           | 4467087    |
| 122  | Mr. Brahma Malakar         | United Trade Syndicate | Senior Project Manager     | 4478302    |
| 123  | Mr. Govinda Adhikari       | UNHCR                  | Senior Programme Assistant | 4414724    |
| 124  | Mr. Tusuke Tsumori         | JICA                   | ARR                        | 5552711    |
| 125  | Mr. Nigel Sanders          | WFP                    | Head of Logistics          | 9851022432 |
| 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    |

**Annex 3: Clusters and Global “Cluster Leads”**

| <b>Global “cluster leads”</b><br>(As agreed by the IASC Principals in December 2005)  |   |                            |
|---|---|----------------------------|
| <b>Sector or Area of Activity</b>   |   | <b>Global Cluster Lead</b> |
| <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> |   |                            |

**Annex 4: National Policies and Protocols influencing aspects of DRM in Nepal**

| <b>Sector</b>                                 | <b>Protocols/Documents</b>  |
|---|---|
| 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  |