

STATUS OF NATURAL DISASTER REDUCTION IN NEPAL

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1 INTRODUCTION

1.1 General

Nepal is a Himalayan kingdom located within the latitudes of 26° 22" and 30° 27" N, and the longitudes of 80° 04" and 88° 12" E. Most part of the country's territory lies in the southern slopes of the Himalayan range, astride the boundary between the Indian and the Tibetan plates along which a subduction of about 3 cm/year is believed to occur.

Slope formation processes are very active in the Himalayan Mountains leading to a continuous modification of the slope inclination and river gradients. Also the country is very active seismically. This has created a scenario for the occurrence of almost all types of natural hazards in the country. Natural hazards such as floods, landslides, debris flow, glacier lakes outburst flood (GLOF), earthquakes, thunder, hailstone, droughts fire etc. occur in all possible variations in nature, magnitude, extent and damage.

1.2 Physiography and Climate

The topography of the country varies dramatically from the Terai situated on the Indo-Gangetic plains in the south to the highest Himalayas in the world bordering the high Tibetan plateau in the north.

Nepal is customarily divided into the following five conspicuous physiographic regions which are characterised by specific geological, geomorphologic, and climatic conditions:-

- **Terai:** A belt of alluvial and piedmont plain in the south, mean elevation amsl is 130m, subtropical climate, covers 14% of territory, densely populated
- **The Churia Range:** to the north of the Terai, rises up to the elevations of 1000-1500 m amsl, rugged and steep to very steep topography, covers 13% of territory
- **The Mahabharat Range & Middle Mountain:** elevation up to 2000-3000 m amsl, sub-tropical to temperate climate, mountain and valleys, rugged to gentle topography, very densely populated, occupies about 30% of the total area of the country.
- **High Mountain:** steeper and broken topography, elevation ranges from 3000-5000 m, temperate climate, high population density, Cultivation in steep and marginal slopes and a high density of landslides are the common features. The High Mountains occupy about 20% of the total area of the country.
- **High Himalayas** are cold and dry areas above 4000 m. The relief is very well pronounced, the drainage, usually, is with very high gradients, the upper parts of the basins are glaciated with all the geomorphic forms of alpine type of valley glaciation.

Over 80% of the precipitation in the country take place during the four months of monsoons. An intensity of 100 mm in 24 hours is not uncommon.

1.3 The People and the Administrative Set - up

Nepal, with an area of 147 000 square km, has a population of approximately 22 million people. The country is divided into five development regions and 75 administrative districts. Each district has a Chief District Officer as the representative of the Central Government and as the head of the District Administration Office. Similarly, for the development activities, each district has a District Development Committees (DDC) whose members are elected by the members of VDCs and municipalities. A district is divided into villages (called Village Development Committee, or VDCs) and municipalities. There are 3992 Village Development Committees (VDCs) and 58 municipalities in the country. VDC is also the term used for the body of elected representatives at the village level.

2 DISASTER PROFILE OF NEPAL

2.1 Types of Natural Hazard/ Disaster

Because of her location characterized by a rugged topography, very high relief, variable climatic conditions, complex geological structure, with active tectonic processes and continued seismic activities, the country is prone to various types of natural hazards. While the whole country faces high level of earthquake hazard, the hilly and mountainous regions are characterized by variable watershed conditions and are vulnerable to landslide and debris flow hazards. Presence of numerous lakes of glacial origin in the northern part of the country has created the possibility of Glacier Lakes Outburst Flood (GLOF). Similarly, the flat piedmont plains of the Terai and the low valleys in the mountains are susceptible to flood. Besides, almost every year smaller or larger part of the country is struck by one or several forms of other disaster such as drought, hailstorm, epidemics, fire and so on.

A wide variety of physiographic, geological, ecological, and meteorological factors contribute to the high level of natural hazard. With the country's high population growth rate, a practice of improper land use, widespread unawareness, lack of firm political and social commitment, the country is becoming increasingly vulnerable to natural disasters.

Major types of hazards faced by Nepal are listed in the following table.

Types of Disaster in Nepal

Types of Disaster	Prevalence
Earthquake	All over the country
Flood	Middle mountains, Terai
Landslide	Mountain and hilly parts
Debris Flow and Glacier Lakes Outburst	Higher Himalayas, Higher Mountains and
Avalanche	Higher Himalayas
Forest Fire	Middle Mountains and Terai
Drought	All over the country
Storms/ Hailstorm	Mountainous parts
Epidemics	Mostly in Terai, and remote areas
Fire	Terai

3 NATIONAL POLICIES ON DISASTER MANAGEMENT

3.1 Natural Calamity (Relief) Act, 1982

His Majesty's Government of Nepal promulgated the Natural Calamity (Relief) Act in 1982. Prior to this, relief and rescue works as well as resettlement of the victims were carried on an ad hoc basis, largely as a social work. The Act has since then been amended thrice (first in 1986, second in 1989 and third in 1992) enunciating the significance of the pre-disaster and post disaster activities.

The Act was instrumental in imparting an organized approach to disaster management in the country. It helped develop an organizational structure from central to local level, to deal with response and relief works. Furthermore, the Act provided the basis for coordination among various agencies, government as well as non-government in emergency response activities.

3.2 Nepal National Building Code

Recent enactment of the Building Code Act has paved the way for the implementation of the national building code, which focuses primarily on earthquake loads and seismic resistant design. The Ministry of Housing and Physical Planning is currently formulating the bylaws that will help implement the code.

However, there is very little existing infrastructure available in Nepal to enforce a building code straight way. As the implementation of the code requires to mobilize the assistance and awareness of all professionals associated with the building design process, efforts are required to initiate well conceived program of training for the masons, overseers (engineering technicians), building inspectors, engineers and architects.

3.3 Concept on National Policies of the Home Ministry

The following summarizes the concept on National policies with respect to disaster management in Nepal.

- To identify the disaster prone areas and the extent of vulnerability and formulate plan and programs on preparedness, response, mitigation and reconstruction and rehabilitation and integrate it with national development plan
- To identify activities to be undertaken by key disaster actors and make a standard operation procedure.
- To make necessary legal framework for land use planning, water and forest management, building code etc.
- To increase awareness among the people and concerned authorities (Government and NGOs) on the possible causes and effect of natural disaster including the ways and means to combat it.
- To provide immediate rescue and relief assistance to the disaster victims.
- To ensure the effective distribution of relief materials like food, cloths, medicine and shelter materials and proper use of national and international assistance for the victims during emergency.
- To explore the possibility of mobilizing resources and seeking foreign assistance in the field of technology transfer, human resource development, material acquisition, reconstruction etc.

3.3.1 Priorities

The stated priorities are:

- Amendment of the existing laws and strengthening of the institutional capabilities
- Awareness raising programs through different media at community level.
- Dissemination of information on the possible causes and effects of disasters through different communication media.
- Hazard mapping with vulnerability and risk assessment.
- Human resource development
- Identification of historical disaster events, their magnitude and impact on the people and the country.
- Identification of safe havens/ emergency sites for the victims in all districts.
- Initiation of flood line survey in major rivers.
- Initiation of vocational training and 'food for work program'
- Installation of reliable early warning and weather forecasting systems at the central, regional and district levels.
- Emergency response planning at central and institutional levels
- Development of Prevention and Mitigation policies covering settlement policies, watershed management, river training, embankments, zoning laws etc.
- Review of the draft National Compressive Plan on Disaster Management and preparation of sectoral disaster management plans.
- Strengthening the capability of the existing Natural Disaster Relief Section/ CDRC.
- Inventory of the type of emergency assistance provided to the victims from all sources in the past, the effectiveness of that assistance provided and the problems faced and the lessons learned from it.
- Vulnerability and risk assessment through hazard mapping, flood-line survey and geomorphologic study

The CDRC may constitute Relief and Treatment Sub-committee (RTSC) and Supply, Shelter and Rehabilitation Sub-committee (SSRSC) to give necessary advice and suggestions to the Central Committee, to help to execute policies and directives of the Central Committee and to effectively operate the relief and rehabilitation work during a serious natural disaster.

4.2.1 Functions and duties of the CDRC

The functions and duties of CDRC is as follows:

- a) To recommend to His Majesty's Government to declare the areas affected by Natural Disaster as Disaster Area,
- b) To formulate the national policy regarding the Relief Work including the rehabilitation of the victims of Natural Disaster and the reconstruction in the areas affected by Natural Disaster etc. and for the control and prevention of Natural Disaster and the advance preparation thereof and to prepare the programs in accordance with the said policy and submit it to His Majesty's Government,
- c) To implement or cause to be implemented the policy and program formulated pursuant to the clause (b) after it has been approved by His Majesty's Government,
- d) To keep the money, food stuff, clothes, medicines, construction materials and other goods received within the Kingdom of Nepal and from outside as aid or donation under the Central Disaster Aid Fund and to send such goods as required for relief work in Disaster Area,
- e) To associate the social organizations in Natural Disaster Relief Work and to coordinate the activities of those organizations,
- f) To form groups and send them to Disaster Area to assist in Natural Disaster Relief Work,
- g) To give direction to the District Committee and Local Committee on the matters relating to relief work,
- h) To perform the works specified by His Majesty's Government for the execution of Natural Disaster Relief Work,
- i) To submit progress report of work to His Majesty's Government from time to time.

The subcommittees, notably RTSC and SSRSC may themselves formulate their working procedures, however, the functions, duties and responsibilities of the Sub-Committees shall be as specified by the CDRC.

4.3 District Disaster Relief Committee (DDRC)

The Chief District Officer (CDO) is the administrative chief in each district. He is also the Chairman of the District Disaster Relief Committee (DDRC). It is the most active body for coordinating the relief works and supports relief activities in the district in case of a disaster. The Committee has a membership representation from relevant public sector organizations like District Health Office, District Development Committee Office, Royal Nepal Army district unit, District Police Office, Nepal Red Cross Society (District Office) etc.

The functions and duties of the DDRC are as follows:

- a) To coordinate or cause to be coordinated between Local Committees regarding Natural Disaster Relief Work,
- b) To formulate district level plans on Natural Disaster Relief Work and submit such plans to the Regional Committee,
- c) To monitor the Natural Disaster Relief Work being conducted by the Local Committees and to support the on going work,
- d) To provide information to the Regional Committee about Natural Disaster Relief Work from time to time,
- e) To work in accordance with the directives of the Central and Regional Committees.

4.4 Disaster Response Unit (DRU)

A Disaster Response Unit (DRU), as sated above, exists within the Home Ministry of His Majesty's Government of Nepal. All the information about the losses in terms of human lives as

well as the damage of houses, cattle, trails etc. in any part of the country, collected through the offices of the Chief District Officer and the district offices of the Nepal Police, first come to this unit. The DRU provides secretarial services to the (i) Central Disaster Relief Committee (CDRC), and (ii) National Committee for the International Decade for Natural Disaster Reduction (IDNDR National Committee).

4.5 Regional Disaster Relief Committee and Local Disaster Relief Committee

Apart from the DDRC, the Natural Calamity Act 1982 also provides for the establishment of regional and local disaster relief committees as and when required. Unlike the DDRC, these committees are not of permanent nature.

The functions and duties of the Regional Disaster Relief Committees are as follows:

- a) To give necessary suggestions to the Central Disaster Relief Committee regarding the formulation of regional level policy on Natural disaster relief work and preparation of the progress thereunder,
- b) To coordinate or cause to be coordinated between District Committees regarding Natural Disaster Relief Work,
- c) To provide information to the Central Committee about Natural Disaster Relief Work from time to time,
- d) To work in accordance with the directives of the Central Committee.

Similarly, the local disaster relief committee(s) are supposed to discharge the following duties and responsibilities:

- a) To prepare detailed description of the loss caused by Natural Disaster and to submit to the District Committee the estimation of means and resources required to the relief and rehabilitation of the victims of Natural Disaster,
- b) To organize volunteer's teams according to need and conduct or cause to be conducted the relief work,
- c) To make necessary arrangements to take the injured to the nearest health facilities as soon as possible,
- d) To make arrangements for the evacuation of the victims of Natural Disaster to a safe place,
- e) To systematically distribute the cash and kind received in assistance from District Committee and local resources to the families of the victims of Natural Disaster,
- f) To conduct an awareness program as a precaution for the prevention and control of the possible events of the Natural Disaster,
- g) To hand over the goods and cash balance and the accounts thereof to the District Committee upon completion of Natural Disaster Relief Work.

4.6 Ministry of Housing & Physical Planning (MHPP) and the Department of Buildings (DOB)

With the enactment of the Building Council Act, MHPP has been engaged in the formulation of the bylaws and regulation for the implementation of the national building code. A Bylaw Committee is currently working under DOB towards such formulation of the bylaws.

DOB also organises training programs to engineers, architects and mason for imparting the necessary knowledge on the code and seismic resistant building construction practices.

4.7 Water Induced Disaster Prevention Technical Center (DPTC)

Established with assistance from the Government of Japan in 1991 with the objective of strengthening the national capabilities to cope with water induced disasters through technology development, training and establishment of database, DPTC carries out the following activities in prevention, mitigation and preparedness:

- analysis of disaster mitigation practices in Nepal

- development of appropriate mitigation technology in the field of sabo engineering, landslide prevention, river engineering
- preparation of guidelines on disaster prevention and mitigation
- Training to engineers and technicians
- Research(modelling) in a hydraulic laboratory
- Conduction of national and international seminars including roving seminars in different regions
- provision of support to other institutions in the implementation of disaster management actions

4.8 Department of Mines & Geology (DMG)

DMG operates a 17-station telemetric network of short period seismographs. The network covers the whole country, and has the capability to uniformly record earthquake of magnitude 2 Richter and larger for the whole country.

Additionally, it also operates a local network of 4-seismographs for the monitoring the seismicity in the vicinity of the proposed Karnali-Chisapani hydroelectric project.

DMG also carries out geological mapping and mineral exploration. Most part of the country has already been mapped geologically in 1:50,000 scale. DMG also carries out landslide hazard mapping and studies, engineering geological and environmental geological mapping. Recently, it as published environmental and engineering geological maps of Kathmandu Valley and Pokhara Valley. These maps depict the geological and hydrologic hazards in the two valleys and can excellently be used as planning tools for mitigation works.

4.9 Department of Hydrology and Meteorology (DHM)

DHM operates a network of hydrologic meteorological stations distributed all over the country. The data are processed and routine weather forecasts are made with respect to temperature, rainfall etc. using the national newspaper, television and the radio.

DHM is also responsible for the study of some of the potentially dangerous lakes of glacial origin for the mitigation of potential Glacier Lakes Outburst Floods (GLOFs). It has established, in cooperation with other government agencies, a warning system for the possible outbreak of GLOF from the Tso-Rolpa Lake in the Sunkoshi Valley. The department is currently implementing a program for draining the lake safely and its monitoring.

4.10 National Society for Earthquake Technology-Nepal (NSET-Nepal)

NSET-Nepal is a multidisciplinary professional society that is solely devoted to the task of enhancing seismic safety in the country. The Society has developed strong national and international relationship: it is the national member of the International Association for Earthquake Engineering and actively participates in the World Seismic Safety Initiative (WSSI). It has been representing Kathmandu Valley as an Associate City and as the Member City in the UN/IDNDR RADIUS program.

NSET-Nepal is implementing, in association with GeoHazards International (GHI) the Kathmandu Valley Earthquake Risk Management Project (KVERMP) under the Asian Urban Disaster Mitigation Program (AUDMP) of the Asian Disaster Preparedness Center (ADPC). KVERMP has prepared an earthquake Scenario for Kathmandu Valley, which was used to develop an Action Plan for Earthquake Risk Management for the valley. The Society will implement the Action Plan by promoting and supporting institutions accepting to execute individual actions included in the plan. At present, KVERMP is conducting a School Earthquake Safety program, which seeks to assess the earthquake vulnerability of buildings of about 650 public schools in the valley with an

aim to prescribing retrofit options. Actual retrofitting of sample schools is envisaged as demonstration projects.

It is heartening to note that the experience of NSET- Nepal in developing earthquake scenario and the action plan for earthquake risk management for Kathmandu Valley is being replicated under the IDNDR/RADIUS project in nine different cities around the world.

4.11 Other National Institutions involved in aspects of Natural Disaster Management

Several other government offices and departments as well as non-government institutions are directly or indirectly involved, and responsible for conducting works in aspects of disaster management. These government organizations are partly or fully responsible to study particular types of natural disasters in the country. The following table list the institutions and their activities in disaster management.

No.	Name of Institutions	Areas of Activities in Disaster Management
1	Water & Energy Commission	GLOF Hazard assessment
2	Ministry of Science & Technology	Organises Earthquake Safety Day annually on January 15/16; has constituted a National Committee for Earthquake Safety Day
3	Ministry of Population & Environment	Prescribes standards for pollution control, prepares and enforces environmental guidelines
4	Nepal Bureau of Standards & Metrology	Prepares and endorses national standards, including those for products (e.g. construction materials such as cement, steel, bricks) and processes (e.g. testing procedures)
5	Department of Roads	Responsible for ensuring safety of roads and bridges, conducts hazard assessment for strategic road network and conducts mitigation activities
6	Department of Soil Conservation and Watershed Management	Landslide & erosion hazard assessment and mitigation, watershed management
7	Ministry of Women and Social Welfare	Registers non-government organizations including those working in the field of disaster management
8	Department of Irrigation	Responsible for ensuring safety of major irrigation infrastructure, conducts hazard assessment for strategic road network and conducts mitigation activities
9	Department of Survey	Responsible for topographic maps, GIS, Aerial photography
10	Royal Nepal Army	Emergency response
11	Nepal Police	Emergency response

4.12 Non-government Organizations

Several professional and non-governmental organizations (NGO) are active in different aspects of disaster preparedness, mainly in the field of awareness raising, training, community based disaster preparedness activities, preparation and publication of awareness raising materials.

The Nepal Geological Society has taken the main responsibility to organize IDNDR Day on an annual basis. The Society of Consulting Architectural and Engineering Firms has made the building code mandatory for its member firms undertaking design of buildings. The Society of Nepalese Architects and Nepal Engineers Association represent the professions on government committees investigating bylaws.

The United Mission to Nepal, Lutheran World Federation, Action Aid-Nepal etc. implement specific disaster preparedness projects as part of their annual programs.

5 CURRENT RESOURCES

5.1 Manpower

A critical mass of well-qualified engineers, geologists, and environmental specialists are available to provide the technical basis for an effective use of science and technology for disaster management. However, there is a conspicuous deficiency in administrative manpower trained in aspects of disaster management.

5.2 Information

A vast amount of information on natural hazards has been generated in country. However, these are scattered among the various institutions.

5.3 Access to international Database,

The advent of Internet has greatly facilitated on-line access to international database. The quality of services is good, however, the related costs are quite inhibitive.

5.4 GIS

Despite the growing interest and proliferation of Geographic Information System, it has not yet been used for disaster management purposes.

5.5 National Coordination of Efforts

There are a number of institutions working in various aspects of disaster management in the country. However, the responsibility for managing risk is diffused. There is a growing realization of the fact that it is not possible for any one agency, or even the government as a whole, to manage all aspects of risks, and that the responsibility lies with all concerned organizations.

Such realization has created positive environment for several non-government organizations to undertake serious efforts, mainly in the fields of awareness raising and training.

5.6 National and International Networking

A strong relationship between individual overseas organizations and Nepalese counterparts in the fields of disaster management is growing. Many of these are driven by very specific projects, and others are part of inter-country aid and development programs under bilateral arrangements.

6 RECENT MOVEMENTS FOR CHANGE

6.1 Establishment of Disaster Preparedness Network (DPNET)

An association of individual organisations within the development sector that are concerned with issues of disaster management has recently been established with a goal of enhancing disaster management capability, self-reliance and safety of communities in the country. The stated objectives are coordination among government and non-government agencies, provision of assistance to the local government to cope with disasters, provision of assistance in integrating activities of different agencies, awareness creation, capacity enhancement of local communities to assess available resources, enhancing linkage between government agencies and communities, interaction of community development and disaster preparedness, dissemination of disaster

management guidelines to communities. Members of DPNET are: Action Aid Nepal (AAN), CARE-Nepal, CARITAS, ECKRADS, Japan Medical Association (JICA/JMA), Lutheran World Service - Nepal (LWS/Nepal), Nepal Red Cross Society (NRCS), OXFAM -Nepal, Rural Reconstruction Nepal, Disaster Management Section of UNDP - Nepal (UNDP/DMS), National Society for Earthquake Technology Nepal (NSET-Nepal), United Mission to Nepal (UMN), JICA/DSCWM

6.2 Institutionalization of Earthquake Safety Day

Nepal has institutionalized the Earthquake Safety Day to be observed on annual basis. The Ministry of Science and Technology has been designated as the responsible agency to coordinate the efforts of various institutions for implementing demonstration activities, drills with the aim enhancing preparedness.

6.3 Establishment of Disaster Management Units within Municipalities

Kathmandu Metropolitan Corporation has taken the lead in establishing a Disaster Management unit within its organizational structure, and has initiated programs of institutional strengthening, preparedness, awareness- raising, and training. Other municipalities have also expressed interest to follow suit.

6.4 Building Regulations

Enactment of the Building Council Act has paved the way for the implementation of the building code. The government as well as many municipalities are, at present, modifying the municipal by-laws governing construction quality and land-use. This will ensure the incorporation of safety measures against natural hazards in the constructions within the municipal areas.

6.5 Training

Several governmental as well as non-governmental agencies are organising training programs in different aspects of disaster management targeted towards the senior decision making levels as well as junior executives. International cooperation has been received in the organization of such training programs.

The Water Induced Disaster Prevention Technical Centre (DPTC) organizes regular training programs for the engineer and overseer level technicians working with different governmental agencies. The emphasis is placed on mitigation of natural hazards.

The Nepal Red Cross Society organizes training programs at various levels for its staff and members as well as for the community leaders and social workers. Trainers training programs are also conducted. The emphasis is usually placed in preparedness, rescue and relief, mitigation as well as reconstruction and rehabilitation aspects.

All these training programs are found to be highly useful. However, the need to institutionalize the activities is apparent, as it is necessary to make it a continual process.

NSET-Nepal, National Administrative Staff College and DPTC are putting up efforts, with assistance from ADPC, to enhance institutional capability in organizing national training programs on disaster management on a sustainable basis.

7 IDENTIFIED AREAS FOR FURTHER IMPROVEMENT

Significant experiences have been gained in Nepal in the fields of disaster management activities during the past Decade as described above. While this has strengthened the national capabilities, it has also helped to identify gaps, deficiencies and areas for further improvements. Some of these are described in the following sections.

7.1 Policies

The Natural Calamity (Relief) Act was amended for the last time in 1992, and hence it does not fully reflect the concept of IDNDR, especially of the Yokohama Declaration. Hence, it needs further amendment to address the concept of disaster cycle with necessary emphasis on preparedness and mitigation.

It is felt that the Act should explicitly assign responsibilities to the different government agencies creating an effective mechanism for enhancing coordination. At the same time, the role of non-government organizations and professional bodies in aspects of disaster management and risk reduction actions should also be clearly defined.

7.2 Mitigation and Preparedness

Some of the identified gaps are listed below. Currently, there are no institutions with clear definition of responsibilities for addressing the following gaps:

- Planning for long-term recovery after a disaster, such as rebuilding infrastructure, limiting economic losses.
- Establishing and equipping Emergency Operations Centers in disaster-resistant (earthquake - resistant) building
- Training emergency response personnel, professional builders, scientists, engineers and planners
- Raising awareness of decision makers and of the community
- Assessing vulnerability of public buildings and retrofitting the vulnerable ones
- Most of the NGOs working in the fields of disaster management are Kathmandu-based, and their activities are beyond the reach of the largely illiterate and underexposed communities in the rural areas. NGOs should be encouraged to work with the rural communities

7.3 Emergency Response and Relief

- There are no standard formats for damage assessment for the different types of disasters
- There is a conspicuous lacking in the national capabilities in the rescue of entrapped persons and clearing of debris (which could hinder emergency response efforts) following a damaging earthquake
- There is no established system for informing the public about what to do and where to go, such as locations of emergency shelters and status of emergency supplies
- There is a conspicuous lacking of communication facilities, especially in rural and remote areas. This causes hindrances in an effective management of relief and rescue operations.

7.4 Rehabilitation and Reconstruction

- No organizations are made clearly responsible to decide about which buildings are safe to occupy, which need repair before occupancy, which need to be demolished following a disastrous event.
- There is no system to establish long term temporary locations for homeless families, schools, government offices, etc. during the rebuilding or repair process

8 IDNDR AND NEPAL

8.1 Impact of IDNDR in Nepal

8.1.1 General

Despite the fact that Nepal was rather late in recognizing the necessity and possibilities of disaster reduction, some definitive steps have been made towards improving the national scenario on disaster management. While previously the emphasis was on disaster response and relief and several governmental and non-governmental agencies were active in the field. The IDNDR was instrumental in changing attitude by emphasizing on preparedness and mitigation.

8.1.2 Policies:

- While previously, the government was looked as the sole actor in disaster management, now there is shift in outlook whereby the government is regarded as the facilitator and other agencies including NGOs are encouraged to participate in disaster management.
- Full cycle of disaster management has been recognized and largely accepted
- A National Action Plan for disaster management has been prepared and endorsed by the government
- For the first time, statements of the need of disaster management has been included in the Five Year Plan

8.1.3 Attitude/Awareness

- Sense of helplessness gradually changing to that of action
- Municipalities recognize their responsibilities: Kathmandu Metropolitan City has established Disaster Management Unit, other municipalities are trying to establish similar institutions
- The media is getting better educated on their role in awareness raising and disaster management
- Disaster News, an annual report on disasters, is being published on a regular basis
- IDNDR Day has been observed every year with full participation and coordination among related institutions
- Several training programs held
- implementation of KVERMP

8.1.4 Codes/Standards

- National Building Code has been prepared and corresponding Act for its implementation has been passed by the parliament
- Environmental guidelines/EIA/IEE methodologies consolidated
- Risk Engineering concept propagated and used in the planning and design of large infrastructure

8.1.5 Hazard/Risk Assessment

- Seismic Hazard assessment done at the national level
- Considerable work has been done in landslide hazard assessment, mapping and researches in mitigation
- EQ scenario/Risk assessment done for Kathmandu Valley. An Action Plan for managing earthquake risk has been prepared and accepted for implementation

8.1.6 Institutional Framework strengthened

- Establishment and operation of National Committee for IDNDR
- Establishment and operation of Water Induced Disaster Prevention Technical Center
- Establishment of Disaster Management Unit within the Kathmandu Metropolitan City

- Business get more and more interested in finding their role in disaster management
- Several NGOs and INGOs incorporate DM issues in their programs

8.2 Continuation of IDNDR Concept

Although Nepal was somehow late in picking up the momentum, the country has made great strides towards building national capabilities in disaster management during the concluding Decade. There have been several efforts in the national scale towards meeting the goals of disaster reduction. A national outlook regarding the necessities and ways of disaster reduction has been crystallized. This is an achievement.

However, there are still many more things to do, as stated above, to enhance the safety of the people from disaster risk. The country will definitely put all efforts towards achieving this, and assigns high importance of the international cooperation received so far.

Therefore, although the International Decade for Natural Disaster Reduction (IDNDR) is coming to a close, the concept, vision and the types of efforts made by IDNDR should continue into the next millennium. This is vital for a small and landlocked country like Nepal.