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## Country Profile: Nepal



### Disaster Management Institution and System in Nepal



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## **1. Background, in the light of Disaster**

Nepal is in a threat of multiple natural hazards. Flood, landslide and fire are frequent occurrence disasters and the country is prone to earthquake, being at a ridge of Tibetan and Indian Plates colliding each-other along with the Himalayan Region. The recent date has shown that the thunderstorm and the epidemics are becoming those disasters, which are killing the higher number of people in the recent days. The country has remained at the top 20th list of the most multi-hazard prone countries in the world. The country is ranked 4th, 11th and 30th in term of climate change, earthquake and flood risk respectively. Other disasters in Nepal are drought, storm, hailstorm, avalanches, cold-waves, forest fires and GLOF. Nepal poses an average two death per disaster and one disaster per day. According to the DisInventar data, more than 30,000 people are killed by anyone of the disaster, leaving more than 60,000 people injured; that has created huge loss of human lives and property.

Government of Nepal has promulgated various laws and policies, including Natural Calamity (Relief) Act, 1982 and National Strategy on Disaster Risk Management (NSDRM), 2009. The act has provisioned a Committee being chaired by the Minister of Home Affairs at the central level, Regional Natural Disaster Relief Committee at regional level and District Natural Disaster Relief Committee at district level. Ministry of Home Affairs is working as a nodal agency of disaster risk management, both at National and International level for Nepal. Along with the Act, Government adopted National Strategy for Disaster Risk Management (NSDRM), 2009 based on Hyogo Framework for Action and this new strategy encompasses prevention, mitigation, preparedness, response and recovery. This strategy has allocated the clear role of different Ministries for different phases of disaster. Disaster Risk Reduction and Climate Change Adaptation have become national priority and being institutionalized to support sustainable development in Nepal through the harmonization and mainstreaming process. The current thirteenth Five Year Plan (2013/14-2015/16) has emphasized the disaster risk management issues as an inherited character of sustainable development and has accorded priority to pre-disaster preparedness to recovery process.

Ministry of Home Affairs has established a National Emergency Operation Centre (NEOC) at national level on December 2010 and the ministry has established the emergency centers at 36 districts up to date with the planning to expand it in all districts within next three years. The Ministry of Home Affairs with support from different development partners has prepared country level Multi-Hazard Risk Assessment, targeting the better prepared, response and recovery activities with the proper knowledge of possible hazardous situation at district and at local level. The different hazards included the assessment are earthquake, flood, fire, drought, landslides and epidemic. Government has already endorsed the Search and Rescue Strategic Action Plan and is in the process of approval to the Early Warning Strategic Action Plan. A National Platform for DRR has been formulated as a loose network, led by Ministry of Home Affairs. The government has established disaster risk management focal

desk and appointed officials in different Ministries and Departments to make effective the disaster risk reduction process both at national and local level. Some more initiations are in place both from government and non-government level, which expedite the process of managing the disasters.

### **1.1 Nepal Specific**

Nepal is a landlocked country which borders India to the east, west and south, and to the north with China. Central part and north parts are hilly area with the Himalayas ranges, whereas southern part is covered with the Plain area called ‘Tarai’. The total Land area of Nepal is 147,000 square kilometers, where as the population density is 26.6 million, 12.84 million is male and 13.64 million are female, with total household size 542 thousand. The population comprises of different ethnicities, races and language, being 81.34 percent Hindu, 9.04 Buddha, 4.39 percent Islam, 3.05 percent Kirat and 1.42 percent Christian. Nepal has all six seasons, the famous rainy season is in June to August and the winter is between December to February. The capital city of Nepal is Kathmandu, where only the capital about 3 million peoples are living. It covers a landmass area of 147,181sq km. It spreads 145 to 241 Kilometers from north to south and 885 kilometers from east to west. It is located in South Asia occupied only 0.01 percent of the total landmass of the Earth. (all the data has been derived from National Population Census, 2011)

### **1.2 Geography**

Nepal is characterized by rugged topography, variable climatic conditions, complex geological structure with active tectonic process and continued seismic activities. The rise and the fall of the country lies from 60 meter in plane area to 8,848 meter at Mount Everest in the north within a short horizontal distance of 145 to 241 kilometers. The sharp vertical landscape renders the country highly vulnerable to potential water induced disasters like landslide, slope failure, soil erosion and debris flow. Such short descending order of the land provided the water current very fast, creating the possibility of heavy erosion of the soil from mountain. Nepal is divided into five physiographic regions which are almost parallel to each other, running from west to east. They are categorically recognized as high Himalayan region, high mountain, middle mountain, Siwaliks (land in between plane and mountain) and Terai (plane area). However, in common phrasing, Himalaya, mountain hills and Tarai is generally used, respectively covering 15%, 68% and 17% of the total land area.

### **1.3 Administrative Division**

Nepal was declared a federal republic in 2008, through the promulgation of the new interim constitutions. The country is still in the process of creating a new federal republic constitution and concluding the peace process. Up to date, for development and management purposes, Nepal is administratively divided into 5 Development Regions, 14 Zones, and 75 Districts. Due to migration trend and development of infrastructure, the urbanization trend is increasing, the number of municipalities has increased to 130 in 2014, previously it was 58 decreasing the numbers VDCs to

3,633 across the country, down from 3,915 VDCs.

#### **1.4 Demography**

The country has approximately 26.6 million populations with annual growth rate of 1.4 percent average (Population Census 2011). Nepal is the 41st most populous, 93rd largest country by landmass and 115th largest economy of the world. It has diversity with several race, caste, tribes, rituals, ethnicity, religion and languages. That means Nepal is multilingual, multicultural, multi-religious, and multiethnic society. Nepal is diverse linguistic heritage evolved from four major languages groups – Indo Aryan, Tibeto-Burman, Mongolian, and Indigenous language isolates. Nepal is a combination of 102 ethnic, 92 linguistic and 6 religious people living with the social harmony and unity. The Nepalese population consists of Indo-Aryan and Mongol races. Religiously, the overwhelming populations are Hindus (80.6%) followed by Buddhist (10.7%), Islam (4.2%), Kirat (3.6%), Christians (0.5%) and the others (0.4%). In March 2008 Nepal is declared as a secular state.

#### **1.5 Socio-economic formation**

Nepal's life expectancy at birth has reached to 69.1 at 2013 from 60.8 at 2001. (Environment Statistics of Nepal, 2013 by CBS, Nepal) Adult literacy rate (15-24 years) is 86.5% (CBS, 2009). Some other social indicators like net enrolment rate in primary education is 93.7% (DOE, 2009), population below poverty line is 25.2% (CBS, 2011), human development index of Nepal is 0.458 (UNDP, 2011). Annual GDP growth rate of Nepal is estimated 3.6% percent in 2012 (Economic Survey 2012-13, MoF) while the inflation rate is 13%. Total GDP for the year 2012 is estimated to be US \$17.92 billion with the primary sector like agriculture, forest and fishery contribute around 37%, secondary sectors contributing around 14% and Tertiary sector/service sector contributing around 51 per cent of the total GDP (Economic Survey 2012-13). Nepal's economy is based on primary sectors, although only about 20% of the total area is cultivable; another 33% is forested; most of the rest is mountainous. Nepal was ranked 54th worst of 81 ranked countries (those with GHI > 5.0) on the Global Hunger Index in 2011. Nepal's current score of 19.9 is better than in 2010 (20.0) and much improved than its score of 27.5 in 1990. GDP per capita in current price estimated for 2012 is US \$743 (Global Finance). 86% of the total foreign trade comprises of imports and remaining 14% are exports, which results huge trade deficit in the economy (Economic Survey 2012-13).

#### **1.6 Climate**

Climatic condition varies in Nepal within a short distance primarily due to its variation in altitude and different type of topography, along with the distances of its corners. The variety in climate has created contrasting habitats, vegetation, flora and fauna. The average annual rainfall is about 1,600 mm (mean annual precipitation varies from more than 4,000 mm along the southern slopes of the Annapurna Himalayan range to less than 250 mm in the rain-shadow areas near Tibetan plateau, about 80% of which falls between June to September in the form of summer monsoon. The rainfall is much higher

in east part of Nepal than the west part, but the sudden and heavy rainfall can be experienced in the west part.

Nepal has five climatic condition/zones from subtropical to arctic broadly corresponding to the altitudes. The tropical and subtropical zone lies below 1,200 meters, the temperate zone 1,200 to 2,400 meters, the cold zone 2,400 to 3,600 meters, the subarctic zone 3,600 to 4,000 meters, and the arctic zone above 4,400 meters. Nepal has four major seasons comprises winter (December-February), spring (March-May), summer (June-August), autumn (September-November). The Terai and the Siwalik ranges poses sub-tropical climate and the northern mountainous regions have cold, dry continental and alpine winter climate. Summer and late spring temperatures range from about 28<sup>0</sup> C in the hilly region to more than 40<sup>0</sup> C in the Terai. In winter, average maximum and minimum temperatures in the Terai range from a brisk 7<sup>0</sup> C to a mild 23<sup>0</sup> C respectively. The central valleys experience a minimum temperature often falling below the freezing point. Much colder temperatures prevail at higher elevations.

## **2. Disaster Profiles in Nepal**

The fragile geology and steep topography has made Nepal the 20th topmost disaster prone country in the world. Among 200 countries, Nepal ranks 4th, 11th and 30th with regard to relative vulnerability to climate change, earthquake and flood hazards respectively. It faces high magnitudes and intensities of a multitude of natural hazards such as flood, landslide, earthquake, fire, cold waves, hailstone, windstorm, thunderbolt, cloudburst, drought, Glacier Lake Outburst Flood (GLOF), avalanches and epidemics. Unstable steep slopes and fragile geological formation of a young mountain range with heavy monsoon rainfall leads to a wide range of geological and hydro-meteorological disasters across the country. The variation in geological characteristics, together with torrential rain during rainy season, result in landslides, debris flows, floods, etc.

Apart from these, several other human-induced disasters are reported in the country, Nepal is affected by many natural hazards. The recent data shows that the frequency of natural disasters such as floods, landslides and fire have increased, especially during past three decades and could be attributed to uncontrolled development, environmental degradation or human interventions. Evidence has suggested that the human interventions can increase or decrease the frequency or severity of certain types of hazards such as landslides, floods, drought, etc. or cause hazards that were not previously experienced. With the ever increasing growth of population, safe land is in scarce and there is a greater tendency for people to occupy marginal lands thereby increasing their susceptibility to hazards.

In this context, managing disasters in this current period requires a concerted as well as an integrated national effort which needs to be coordinated at all levels. The Government of Nepal has been

working to reduce risks through mainstreaming disaster management into sectoral development for preventing the occurrence of disasters, mitigating their impact and ensuring that there is adequate preparedness to ensure an effective response. Historical records show that Nepal has been suffering from various types of disaster. The entire country is prone to earthquake as well. While the hilly areas, with rough topography and very young geology, are very prone to landslides, the lowland Terai is prone to floods. Avalanches, GLOFs and snowstorms are common in high hills of Nepal. The biggest recorded disasters in Nepal are the earthquakes of 1934 and 1988 and the floods of 1993, 2008 and 2012 in addition to the Jajarkot diarrhea outbreak of 2009. The avalanches have been experienced in 2012, where huge flood triggered by avalanches kill around 72 people in one time.

The earthquake of 1934 put the country in shocks. The Geological, ecological, demographic and hydro-meteorological phenomena, such as rapid population growth and increasing population density, high degree of environmental degradation particularly deforestation, fragility of landmass, wider spread poverty, topography which poses huge infrastructural challenge, poor building practices and no enforcement of building codes and unplanned city development, insufficient emergency preparedness and lack of awareness, and political instability and various form of societal misinterpretations are major contributor factors to disaster vulnerability in Nepal. Disaster risk and vulnerability has increased due to security issues and decreased livelihood opportunities, migration, displacement, limited access to and weak flow of information to the population displaced internally due to more than a decade-long conflict in the country as well.

## 2.1 Disaster scenario

Disaster scenario in Nepal Loss of lives by major types of disasters in Nepal from 1971 to 2011

Event	Data Cards	Deaths	Injured	Missing	Houses Destroyed	Houses Damaged	Affected
Accident	1314	1280	491	202	5	473	2509
Avalanche	104	234	99	45	32	33	1298
Biological	18	0	0	0	0	0	0
Boat capsize	146	284	154	541	0	0	410
Cold wave	458	595	83	0	0	0	2393
Drought	161	0	0	0	0	0	1625
Earthquake	212	882	7024	0	34810	57004	39596
Epidemic	3452	16566	43076	0	0	0	514535
Explosion	46	34	91	0	4	1	19
Famine	28	10	0	0	0	0	589957
Fire	5264	1328	1200	186	72367	1932	264114

Flood	3520	3329	523	663	95944	89934	3935933
Forest fire	187	65	45	410	1835	2	16392
Frost	1	0	0	0	2	0	5
Hail storm	725	65	100	2	208	1635	210963
Heat wave	46	42	20	0	0	0	381
Landslide	2908	4476	1589	626	18491	33960	574020
Leak	1	0	0	0	1	0	0
Liquefaction	1	0	0	0	1	2	16
Other	97	77	64	11	68	0	11982
Panic	6	89	121	0	0	0	0
Plague	326	11	0	0	0	0	50
Pollution	12	0	0	0	0	0	1000
Rains	243	88	44	3	740	1858	66921
Sedimentation	1	0	0	0	0	0	0
Snow storm	195	88	44	828	102	59	12950
Storm	123	52	283	2	1022	566	2397
Strong wind	456	171	480	0	2013	7443	38815
Struct.collapse	425	414	643	8	1282	623	2671
Thunderstorm	1175	1091	2111	1	328	465	8447

(Source: DisInventar, 2012, data from 1971 to 2011)

## 2.2 Landslide and Debris flow

The movement of earth, rock or debris down slope under the influence of gravity by certain processes is considered as a landslide. Landslide usually occurs as secondary effects of heavy rainfall and earthquakes. In so many cases, the landslide has occurred in Nepal even if there is small amount of rainfall, but it was continuous for weeks. After finishing the landslide, the higher level of sunshining has usually triggered the landslide. A debris flow is slurry of soils, rocks and organic matter combined with air and water. The causes of landslide in Nepal are natural as well as manmade. In general the middle hills are prone to landslides. The natural phenomena like heavy rainfall, active geotectonic movements, deforestation and disturbance of hill slopes are also the major causes for occurring landslides. Even in August 5, 2014, the mass landslide occurs in the Sindupalchok District, claiming Sunkoshi River Blocked and taking life of 156 people, making it the deadliest to hit the Himalayan nation in three decades. The landslide has also created a dangerous blockage of the Sunkoshi River, stoking fears of floods downstream in neighboring India's Bihar state, where the river is known as

Kosi. The landslide also damaged part of the Arniko Highway linking Kathmandu with the Tibetan capital Lhasa, stranding more than 500 foreign hikers and their guides. These types of phenomenon are common in Nepal, seeking special attraction from stakeholders.

### **2.3 Floods**

The topographical feature of Nepal is mainly responsible for flood. Flood is caused by heavy precipitation which may occur at any places except high Himalayan region during the monsoon season. Inundation along the river banks and erosion of land along the riverbanks causes loss by damaging irrigation and communications facilities and fertile lands across or adjacent to the riverbanks. Such phenomenon's have caused loss of lives and property in mountainous areas of Nepal and have posed severe hazards to physical infrastructure like roads and bridges. Inundations have disrupted social and economic development of many parts of terrain region in the country. The floods of August 2008 in Koshi river, September 2008 in Western Nepal and July and August 1993 in the Bagmati and other rivers were the most devastating floods in Nepal. Nepal has observed monsoon flood as well as flash flood. Rainfall variability (unequal rainfall in time and space), topography (steep mountain and flat Tarai), deforestation (decreasing vegetative cover) are the major factors contributing to the floods in Nepal.

### **2.4 Earthquake**

The Nepalese people are living in a country of highest seismic hazard, have faced the consequences of many earthquakes including those of great earthquakes. 45 million years ago, the Indian continent collided into Southern Tibet. The Indian continent is driven under Tibet, pushing lightweight sediments upwards and thus the formation of the Himalayas. Nepal lies across the boundary between India and southern Tibet which are still moving towards each other by 2 meters per century. This movement creates pressure within the Earth, which builds up and can only be released through earthquakes. This is the only way earthquakes can happen in Nepal. Earthquakes happen very often in Nepal. Based on the seismic record of the number of earthquakes that occurred since 1255, earthquakes of magnitude greater than 8 occurred on average once every 80 years. The last great earthquake of magnitude 8.3 occurred in 1934. The seismic record of Nepal is available since 1255 AD in which 7.7 richter scale in Kathmandu valley king Avaya Malla and one third of population lost their lives in this event. After that, a series of earthquake occurred in Nepal. Major ones are in 1260, 1408, 1681, 1767, 1810, 1823, 1833, 1834, 1866, 1934, 1980 and 1988 AD. According to the seismological center of Nepal medium and small size earthquake event occur in a different part of Nepal frequently. According to Global Earthquake Safety Initiative, Kathmandu is exposed to the greatest earthquake risk per capita among 21 megacities around the world, largely due to building collapse and insufficient preparedness and insufficiency of medical care. If an earthquake of the 1934 magnitude is reported at this point of time, an estimated 40,000 death, 90,000 injured and 600,000 to 900,000 homeless can be expected.

## 2.5 Fire

Fire is a recurring disaster in Nepal. During the dry season from February to May, large numbers of incident of fire are reported, mostly in the Terai where about three quarter of houses are built with thatched roofs. Forest fires occur throughout Nepal and result deforestation of around 1.7% of the total forest area annually. These fires cause economic losses and environmental degradation throwing dedicates ecosystems out of balance. It is also threatening valuable and endangered flora and fauna, degrading the soil and inducing flood and landslide. Most of the fire incidents are caused by negligence of the people. Hunting practices, negligence by cigarette smoker, intentional fire to accelerate growth of grasses to feed livestock, intentional fire setting by herb and charcoal collectors and children playing with fires are some of the reasons for forest fires. Certain type of trees especially Sal (shores Robusta) is particularly susceptible to fire. About 86% of the population of the country inhabit in the rural areas mainly in thatched houses closely clustered where fire hazards are likely to be common.

## 2.6 Glacial Lake Outburst Flood (GLOF)

Glacial lakes are like natural water reservoirs dammed by ice or moraines. Lake outburst can be triggered by several factors: ice or rock avalanches, the collapse of the moraine dam due to the melting of ice buried within, the washing out of fine material by springs flowing through the (piping) earthquakes or sudden inputs of water into the lake e.g. through heavy rains or drainage from lakes further up glacier. ICIMODs 2001 inventory of glaciers, glacial lakes and GLOFs counted 3,252 glaciers and 2,323 glaciers lakes in Nepal 20 of which are very vulnerable to flooding (MoHA, 2009). GLOF affects high Himalayan region as well as downstream by extremely damages of lives and properties. Major events shown in past were Tamor Koshi (1980), Sun Kosi (1935, 1981), Dudh Kosi (1977, 1985), Arun (1968, 1969, 1970), etc.

## 2.7 Drought

In Nepal, most of the country is in the grip of drought-like condition from the end of March till the monsoon arrives next in June, but the districts like Manang and Mustang in the Trans-Himalayan region are extremely dry throughout the year and the Terai and western hills are more frequently affected than other regions. Drought results in crop failures and famine, both during the monsoon season and rest of the year, when winter crops are sown. About 5,000 families living in pockets in the hills and Terai are badly affected by drought each year (MoHA, 2009). Planned land use with crop rotation, rain water harvesting, drought monitoring, using recycle water, developing irrigation system, water rationing are some of the strategy which help to minimize impact of drought.

## 2.8 Others

Although about 300 people has died in June and July month of 2009 in Midwestern part of the

country, this year there is no severe case of diarrhea, but it is likely to recur again in anytime in the monsoon season, as the country is always in the threat of the epidemic of diarrhea. Some other kind of disasters are drought, hailstone, thunderbolt, avalanche, boat capsized, structure collapse, cold wave, hot wave, swine flu, bird flu, encephalitis, meningitis is common during hot and rainy season. The lightning and hailstorm are other natural disaster. The date at 2012 (MOHA, 2012) has shown the different figure that there are about 200 people has been killed by lightning only, the trend is increasing as well. The sudden avalanche and heavy snow fall in winter season sometimes cause heavy loss of human lives and properties. Road accident and aircraft accidents are also major source of disaster in Nepal. In Nepal, road accidents are one of the top ten causes of death. Aircraft accidents are more common in hilly terrain and areas with extreme climatic condition. But the road accident and aircraft accident has been dealt by other government agencies, treating them as an accident, not the disaster one.

A scenario of past disastrous events during 1980-2012 reveals that epidemics, landslide and floods takes the largest toll of life every year, 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.

### **3. Legal and Institutional Arrangements**

#### **3.1 Natural Calamity (Relief) Act, 1982**

Natural Calamity Relief Act (NCRA), 1982 is a milestone legal instrument for disaster management in Nepal. The act was formulated twice in 1982 and amended in 1989 and 1992 accordingly. The Act has envisaged the natural disaster as earthquake, fire, storm, flood, landslide, heavy rain, drought, famine, epidemic, and other similar natural disaster. The Act also includes industrial accident or accidents caused by the explosions or any other kinds of disaster. Similarly, the Act defines natural disaster relief work as “any relief work carried out in the area affected or likely to be affected by the natural disaster in order to remove the grief and inconvenience caused to the people, to rehabilitate the victims of the natural disaster, to protect the public property and life and property of the people, to control and prevent the natural disaster and to make advance preparation thereof”. According to the Act, the provision has been made to set up different institutions from centre to local level to arrange relief and rescue works during the emergency. There has been a provision of Central Natural Disaster Relief Committee (CNDRC) with Relief and Treatment sub-committee and Supply, Shelter and Rehabilitation sub- committee at the centre level as an apex body of disaster management in Nepal.

There is also provision of a Regional Natural Disaster Relief Committee (RDRC), District Natural

Disaster Relief Committee (DDRC) and Local Natural Disaster Relief Committee (LDRC). Among those institutions CNDRC and DDRC are very much active all the time, but two subcommittees and RDRC and LDRC could not be functioning as per the stipulated manner. The Act also empowers the government to the state of emergency during the intensive disaster. It also furnishes some special rights to the disaster manager for managing rescue and relief work in an effective and efficient manner. It also empowers the government to allocate for dedicated fund at central to local level as a Disaster Relief Fund for delivering effective relief and rescue during the disaster.

### **3.2 Local Self Governance Act, 1999**

The Local Self Governance Act (LSGA) 1999 empowers local bodies to govern themselves and recognizes that local people and local bodies are the most appropriate points of entry to meet development needs at the local level. The LSGA authorizes to undertake certain functions with respect to DRR by local bodies. Some provisions have been made to establish Environment Protection Fund and Disaster Management Fund at DDCs, VDCs and municipalities. Control of natural calamities, prevention of infectious disease and epidemics, operation and management of fire brigades, developing mitigating and preventive measures against landslide and floods are some of the assigned task that local bodies can pursue by using the legal authority granted by the LSGA.

### **3.3 National Strategy for Disaster Risk Management (NSDRM), 2009**

The NSDRM was promulgated in 2009. This strategy has been developed on the base of Hyogo Framework for Action (HFA) 2005. A detailed process was adopted during the preparation of the NSDRM, 2009. Multiple occasions were organized to solicit the view of governmental, nongovernmental agencies, local bodies, academic institutions, private sector, UN agencies, INGOs, and civil society organizations. The long term vision of the strategy is to develop Nepal as a disaster-resilient community. It has also a mission to provide guidance and ensure effective disaster management through development and implementation of the concept of effective preparedness for mitigation, disaster risk reduction and incidence of calamities. Besides this, the strategy has been adopted the some major directive principles for disaster risk management, which are mainstreaming DRR concept into the development plan, ensuring life safety and social security, and giving emphasis to gender and social inclusion. It adopts decentralized process of implementation by following the holistic approach and by giving priority to staff safety and security. It follows one-window policy and cluster approach in implementation of DRM to work in the spirit of participation, interaction, and coordination. The strategy has been framed on the foundation of five priority actions of HFA 2005. In addition, 29 activities have been identified within the priority areas. Realizing that disaster management is a multidimensional and multi-sectoral responsibility, sectoral strategies have also been adopted. Those sectors are broadly divided into nine areas, which are 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 Need Assessment. The strategy has also proposed new institutional arrangement for disaster management which entail the formation of a National Disaster Management Council (NDMC) being chaired by Prime Minister. Besides, it also envisions National Disaster Management Authority (NDMA) as a secretariat of the council where other three committees under the council for preparedness, rescue and relief and reconstruction and rehabilitation activities. The strategy realizes that disaster management is possible only through integrated, participatory, and collaborative involvement of all partners. As such due importance is given to UN agencies, donor community, inter-governmental agencies, I/NGOs, and people from different segments of civil societies.

### **3.4 Consortium/Flagship Approach on Disaster Risk Reduction**

A Consortium was formed in May 2009 to support the Government of Nepal till 2015, to develop a long term Disaster Risk Reduction Action Plan building on the National Strategy for Disaster Risk Management (NSDRM). Members of the Consortium are Department of International Development UK (DFID), the Asian Development Bank (ADB), the International Federation of the Red Cross and Red Crescent Societies (IFRC), United Nations Development Program (UNDP), UN Office for the Coordination of Humanitarian Affairs (OCHA), UN International Strategy for Disaster Reduction (ISDR) and the World Bank. The Indian Government and Japan International Cooperation Agency also joined the Consortium as an observer. In addition, the Consortium initiated a multi-stakeholder participatory process with the Government of Nepal and civil society organizations to identify short to medium term disaster risk reduction priorities that are both urgent and viable within the current institutional and policy arrangements in the country. Based on the priorities set by the government and also discussions with multi-stakeholder groups, five flagship areas of immediate action for disaster risk management in Nepal are school and hospital safety- structural and non-structural aspects of making schools and hospitals earthquake resilient, emergency preparedness and response capacity, flood management in the Koshi river basin, integrated community based disaster risk reduction/management and policy/institutional support for disaster risk management. The estimated total budget of the three-year Flagship Programs is US \$131.1 million and the amount may keep changing according to the consensus with the development partners. In developing the programme, the priorities outlined in the ‘Hyogo Framework of Action 2005-2015, Building the Resilience of Nations and Communities to Disasters’, and the Outcomes of the Global Platform for Disaster Risk Reduction (2009), which sets out specific targets for reducing losses from disasters, were taken into account. On 19 March 2010 the Government formally established the Nepal Risk Reduction Consortium (NRRC) Steering Committee, chaired by the Secretary of Home Affairs. Members include the Joint Secretaries of the Ministries of Finance, Education, Irrigation, Local Development, Physical Planning, Health and Population, and the National Planning Commission. Directors and representatives of the ADB, WB, UNDP, OCHA, IFRC, NRCS, and DP-Net are also members. The Joint Secretary of MoHA is Member Secretary. The concept of Consortium is working smoothly till to date.

### **3.5 Periodic Plans**

As the history shows that the Disaster Management Programs was first included in the 10th national plan (2002-2007) of the government of Nepal, the emphasis has gone to ascending orders till the current three year plan (2013/14-2015/16) that has emphasized the disaster management as a separate topics and also has tried to mainstream the disaster management with various line items topics. This has also focus on the importance of new disaster management act and new institutions to deal with the disasters. The plan emphasizes on policy formulation, strengthening institutional mechanism, EWS, coordinated approach for DRR and linking disaster management with climate change. It is hoped that this attempt would be a landmark in the history of Disaster Management. The plan has set up its vision to minimize social and economic loss and damage caused by disasters. The main objective of plan is to promote the security of life and property from the impact of natural disasters through sustainable, environment-friendly and result oriented development by making disaster management practices efficient, competent, strengthened and effective. To develop and apply environment-friendly systems in development and construction works, appropriate information flow and pre-disaster preparedness for the mitigation of risks of natural disaster, strengthen collaborative works between the government, non government and private sector for rapid response and recovery are the major strategies of the plan. The plan has listed the programs of formulation of national strategy, awareness raising, preparedness for effective response and recovery, study and research, risk and hazard zone mapping, stockpiling of relief and rescue materials, and enhancement of involvement of local bodies.

The approach paper to the current 13th three year development plan (2013/14-2015/16) has not only devoted separate chapter for disaster management issues, but also the plan addressed disaster management issues more comprehensively. It has set its disaster management goal to achieve goal of Hyogo Framework for Action by 2015 and has also tried to link up with the HFA2 Priorities, along with the long term goal of the plan is to develop disaster resilient Nepal. Moreover, mainstreaming disaster risk reduction, institutional and legal reform and preparedness for better response are the strategies of this plan.

### **3.6 Other Laws and Policies**

There are lot more acts, rules, regulations and guidelines, directly related to, just related to and indirectly related to the disaster management, some of them like Soil and Water Conversation Act, 1982, Nepal Building Act, 2007 and Building Code, 1994, Environmental Protection Act, 1996, National Agriculture Policy, 2004, National Shelter Policy, 1996, National Urban Policy, 2006, National Water Plan, 2005 and Water Resource Policy, 1993, National Water Resource Strategy, 2002, Water Induced Disaster Management Policy, 2006 and some strategies related to health and infrastructure sectors are considered as a majors in the area of disaster management in Nepal.

### **3.7 Ministry of Home Affairs**

Ministry of Home Affairs (MoHA) acts as National Focal Agency on Disaster Management and lead agency responsible for implementation of the Natural Calamity (Relief) Act, 1982. The MoHA is also responsible for rescue and relief work, data collection and dissemination, as well as collection and distribution of funds and resources. The assigned task has been implemented through Disaster Management Section and National Emergency Operation Centre. The Ministry has established a separate division of disaster management named it Disaster Management Division, placing three sections namely Disaster Preparedness and Recovery Section and Disaster Study and Research Section along with the response focused National Emergency Operation Center.

### **3.8 Central Natural Disaster Relief Committee (CNDRC)**

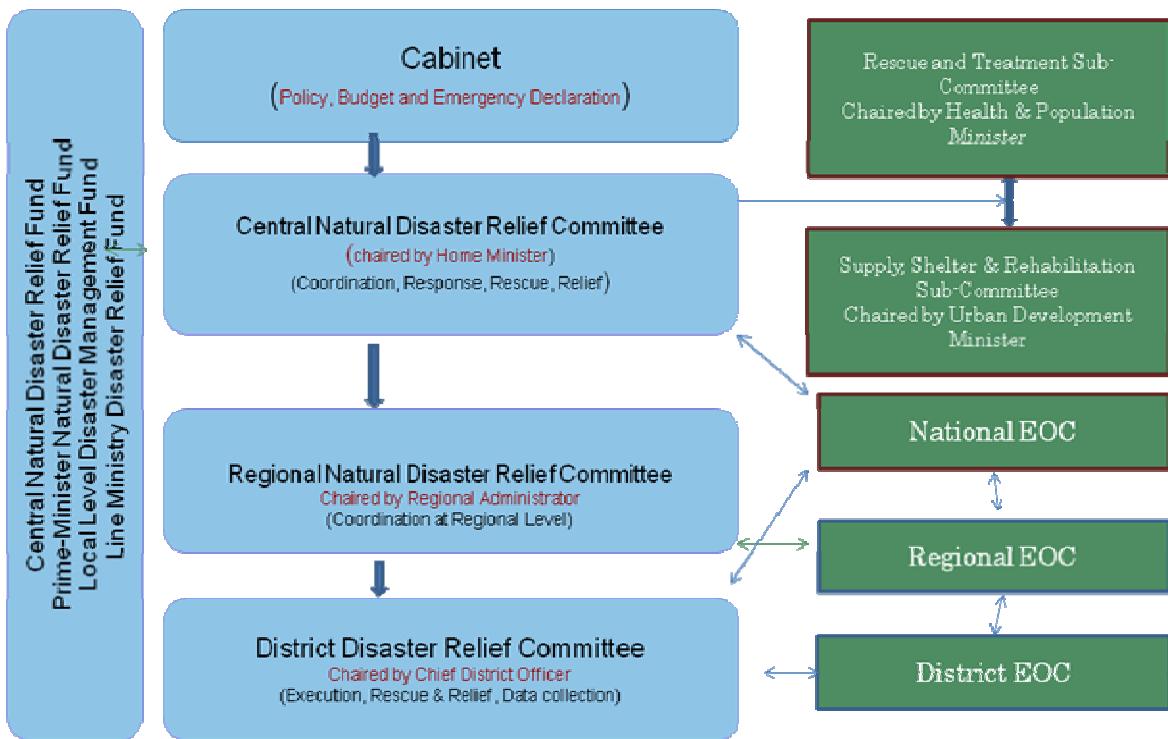
CNDRC is chaired by the Home Minister and includes related ministries and security agencies along with voluntary organizations such as NRCS. CNDRC is responsible for preparing national policies on preparedness, response and recovery and ensuring their implementation, stockpiling relief and rescue materials, collecting and disseminating relief materials and fund during emergency, give direction to the district and local committees for the execution of relief work. To support the functioning of CNDRC, there are Sub-committees of Relief and Treatment, and Supply, Shelter and Rehabilitation.

### **3.9 RDRC/DDRC/LDRC**

Regional Disaster Relief Committee (RDRC) is present in all five regions of Nepal and is chaired by the Regional Administrator. It comprises related government agencies and security agencies (law and order, emergency response and development institutions) along with voluntary organizations such as Red Cross. It is responsible for supporting and monitoring the activities implemented by DDRCs and formulates regional and district level disaster management plan. All 75 districts of Nepal have a District Disaster Relief Committee (DDRC). The chairperson is the Chief District Officer (CDO), who is the highest-level government official to take disaster-related decisions. It comprises various line agencies such as law and order, emergency response (police and armed police), district chapter of NRCS and critical facilities such as irrigation, road, livestock, health, etc. The role of DDRC is to coordinate the local committees, formulate district disaster management plan, coordinate and operate relief work during emergencies and provide information to RDRC and CNDRC. The Local Disaster Relief Committee (LDRC) is responsible for disaster management at the local level, such as disbursement of funds during emergencies, and rescue and transport of the injured to hospitals.

### **3.10 Institutional arrangement in Chart**

The figure below clearly reveal the proper institution arrangement for disaster management, but this still does not reflect the all cycles of disaster management, placing the role of Ministry of Federal Affairs and Local Development and Ministry of Urban Development.



### 3.11 Other Government Institutions Working on Disaster Risk Management

- Ministry of Federal Affairs and Local Development, Disaster Management Section, responsible lead ministry for preparedness and mitigation
- Ministry of Urban Development, responsible lead ministry for recovery
- Ministry of Irrigation for embankment and irrigation related disaster management activities
- Ministry of Defense for foreign search and rescue coordination
- Ministry of Energy for water -dam and other energy related disaster management activities
- Ministry of Physical Infrastructure and Transport Management
- Ministry of Science and Technology, Department of Hydrology and Meteorology
- Ministry of Health and Population for emergency medical care
- Ministry of Forest and Soil Conservation for forest and land related disaster management activities
- Central Natural Disaster Relief Committee, apex policy body headed by home minister responsible for policy formulation, program approval and monitoring the implementation related to disaster management activities
- Relief and Treatment Sub-Committee, headed by federal affairs and local development minister and Supply, Shelter and Rehabilitation Subcommittee headed by urban development minister as two major sub-committee directly working with the CNDRC
- Regional Natural Disaster Relief Committee
- District Disaster Relief Committee
- Local Disaster Relief Committee (VDC or Municipality)

- Department of Water Induced Disaster Prevention
- Department of Mines and Geology
- Department of Hydrology and Meteorology
- Department of Soil Conservation and Watershed Management
- Department of Irrigation
- Epidemiology and Disease Control Division
- National Seismological Center
- Other government Ministries and Departments
- And Local Bodies

#### **4. HFA Update in Nepal**

Nepal is a signatory country to HFA 2005. It has already expressed a commitment to achieve the HFA goals by 2015. So far, Nepal has submitted two HFA progress monitoring report regularly and has also submitted the priority for Nepal in HFA2. Nepal has achieved the following progresses which are also featured in HFA final report.

**4.1 Strategic Outcome for Goal 1:** *The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.* Disaster Risk Management has remained a national priority from the initiation of 10<sup>th</sup> Five Year Plan (2002-2007) period, as the plan has incorporated the DRM issues in Plan and Policies first time in Nepal, that underscored DRM as a main objective to ensure sustainable development, sustain development gains, public safety, effective management of natural resources and human induced disasters. The subsequent 3-year development plans including the 13th Three-Year Plan (2013/14-2015/16) have emphasized that DRM is a national priority and an integral component of sustainable development. In addition to these development plans, the Government of Nepal adopted the National Strategy for Disaster Risk Management (NSDRM) 2009 has outlines the priority objectives for DRM in Nepal based on HFA Priorities. To successfully implement the NSDRM, the Government of Nepal, financial, humanitarian and development partners jointly initiated the Nepal Risk Reduction Consortium (NRRC), which officially launched in 2011. The NRRC has developed a comprehensive Flagship program, which identifies 5 priority areas in DRM for immediate intervention.

As the focal ministry for DRM in Nepal, the Ministry of Home Affairs (MOHA) has recently completed the National Level Multi Hazard Risk Assessment covering five major hazards. This has enabled Nepal to identify and understand the major hazards facing the country and probable risks. The cabinet has also approved National Disaster Response Framework (NDRF) putting the clear role and mandate of all government and non-government related stakeholders to response disaster. At the district level, all 75 districts have developed Disaster Preparedness and Response Plans (DPRP) and

are in a process of updating in yearly basis. In order to implement these plans, the District Disaster Relief Committees (DDRCs) have been streamlined and empowered to strengthen DRM efforts and enhance emergency response capacity. These all DPRPs have now listed in Ministry's website to disseminate the idea to all stakeholders and also for feedback. About 100 VDCs, in several districts have prepared Local Disaster Risk Management Plans including prioritization of three main hazards with a mandatory earthquake risk assessment.

To make DRM a part of development process at local level, the Ministry of Federal Affairs and Local Development developed the Local Disaster Risk Management Planning Guidelines (LDRMP). At local level, there is a focus on enhancing the engagement of local bodies and communities in prevention initiatives and also for mitigation. With support and initiation of NGOs, Disaster Management Committees have been formed at VDC level. Under the NRRC Flagship 4, Community Based Disaster Risk Reduction a total of 583 VDCs (out of 1,000 target) have been covered for current and agreed CBDRR projects. Six municipalities out of 58 have started implementing Safe Building Construction Practices using the seismic code provisions in the local context. To promote safer construction and infrastructure development, concerted efforts by government and NGOs are gearing up to support the implementation of seismic safety standard effectively throughout the country. The code practices have been initiated in new Municipalities. In 2012 alone about 100 engineers and sub engineers and about 1,000 masons have been trained on earthquake safe construction practices. Cabinet has approved the 83 Open Space in Kathmandu Valley to have managed campsites in time of mega disaster and this is process of Gazette-Notification, will be followed by formulation of Camp Management Planning.

**4.2 Strategic Outcome for Goal 2:** *The development and strengthening of institutions, mechanisms and capacities at all levels, in particularity the community level that can systematically contribute to building resilience to hazards.* The Ministry of Home Affairs (MoHA) is the focal agency for implementing the NSDRM in Nepal. The mandate of MoHA has been strengthened to address the comprehensive DRM needs in the country while international coordination mechanisms and linkages with relevant stakeholders has been developed and strengthened to enhance the institutional capacity for implementing DRM activities in the country. The National Disaster Response Framework (NDRF) has been finalized to ensure collective and coherent understanding of those roles and responsibilities. The NSDRM envisages a Central Level Disaster Management Council, which is to be chaired by the Honorable Prime Minister. The NSDRM proposes a Disaster Management Agency as a secretariat of the Council to streamline the institutional processes across the relevant agencies at national level with linkages down the line. The government has established Disaster Risk Management Focal Desk and appointed officials in all ministries to mainstream DRM in regular planning, implementation and monitoring activities. A harmonized ToR has been developed for all DRM and Climate Risk Management Focal Officials in each ministry. The government has promulgated the Local

Self-Governance Act, 1998, which initiated a decentralization process that delegates more authority to local bodies. The formation of Disaster Management Committees (DMCs) has been initiated in approximately 400 VDCs and the Government of Nepal is preparing to expand these institutions in other VDCs and strengthen their linkage with respective DDRCs. Along with the relief distribution of the Government, the relief has also carried out through the Cluster Approach. This approach has identified lead agencies in 10 clusters and one early recovery network both at Government Ministries and the Donors. Ministries have taken ownership of the cluster approach and have started implementation. This approach is instrumental to achieve effective response and improve strategic prioritization of available resources by clarifying the role and responsibilities of participating organizations.

**4.3 Strategic outcome for Goal 3:** *The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programs in the reconstruction of affected communities.* Approximately there is one disaster per day and two deaths per disaster due to natural disasters in Nepal. These impacts will likely be aggravated due to climate change/variability induced factors. Most of the deaths and damages are due to water induced disaster and are reported during the monsoon season covering July to September each year. In order to cope with disaster, pre-monsoon planning workshops were initiated in 2011, replicated in 2012 and will continue in 2013 at national and district levels. In addition, stakeholders are engaged to prepare and to implement disaster response plans at district level. The National Emergency Operation Centre (NEOC) has been operationalized as a section at MOHA since its inception in 2011. The NEOC has strengthened the information and coordination mechanism among disaster management actors. The District Emergency Operation Centre (DEOC) has been established at 36 districts by 2013. Regional and municipality level EOCs in each region and five municipalities are in a process of establishment. Hospital Preparedness for Emergencies (HoPE), Medical First Responders (MFR) and Collapsed Structure Search and Rescue (CSSR) training are being given to medical officers and security personnel. 30 trainers from all security forces and fire brigades have been trained on basic fire safety for a month in 2012 and this training will continue in 2013 to cover more participants from each municipality.

Following a 2011 INSARAG scoping mission, work is underway to upgrade urban search and rescue and fire services. The scoping mission has been followed by Chinese Mission as well in 2013. MOHA has come up with USAR Strategic Action Plan, submitted to the Cabinet for endorsement. As a continuous process towards comprehensive emergency response planning in Kathmandu valley, 83 open spaces for evacuation during emergencies have been decided by Cabinet within Kathmandu valley and earthquake preparedness plans in 80 wards have been initiated. WASH facilities are being assessed in seven large open spaces. The Inter-Agency Standing Committee (IASC) contingency plans have been developed and endorsed by all clusters and shared. One window policy and the cluster

approach in emergency response have been successfully realized in dealing with different disasters in the past. For initial damage and loss estimation, a standard information collection process using Initial Rapid Assessment (IRA) at local level followed with Multi-sectoral Initial Rapid Assessment (MIRA) has been practiced since 2009. An initiation of preparing unified Assessment Tools is in process, trying to merge IRA, MIRA, Cluster-wise Assessment and Post-Disaster Need Assessment (PDNA). Linkages between risk reduction and response are being strengthened. For example, approximately 100 engineers and sub-engineers and 1,000 masons have been trained on earthquake resistance building construction in the eastern part of Nepal as part of a disaster recovery program.

## **5. Challenges and the way forward in the area of DM in Nepal**

### **5.1 Mainstreaming DRR**

- The new development policy of Nepal acknowledges the incorporation of DRR into development plans. However, what is reflected and underscored in the plans is not substantiated in the annual programs and budgets.
- One of the reasons for this is lack of tools to assess contribution of an investment in development sectors towards disaster resiliency of a community and/or nation.
- A separate and robust mechanism is required in place to assess disaster resiliency of the project itself and also of its contribution toward disaster resiliency of a community.

### **5.2 Institutional strengthening and capacity building**

- The emergency response and relief approach is so entrenched in the current system that it will take time to mobilize the system to more comprehensive disaster risk management approach.
- The new policy and act - currently in pipeline- will be instrumental to gear up the efforts towards changing the existing mindset.
- The new policy and act will also authorize the government to arrange and mobilize sufficient budget with straight mechanism to spend on mitigation, preparedness and recovery.
- The new legal and policy frameworks are expected to empower the government to undertake preparedness of better emergency response in effective way.
- Although emergency response has been the main thrust of the disaster risk management in the previous years, it was basically ‘wait and see’ approach with spontaneous reactions to provide rescue and relief.
- SOPs have not been fully developed, institutional mechanisms are in need of strengthening
- There is need to develop network of EOC across the country from central to local level with proper linkages.

### **5.3 Some other major challenges and way forward**

- Technical and financial capacity to implement plans successfully
- Difficult terrain and weak logistics resulting in delayed response

- Preparedness to response, management of warehouses with stockpiling
- Trained and consolidated Search and Rescue Team
- Communication equipment, transportation in emergency and other infrastructures
- Implementation of National Building Codes
- Management of evacuation sites, open spaces
- Limited Fire Services, strengthen their capacity
- Implementation of NSDRM, 2009
- Progress accordingly HFA Priority and HFA2
- Establishment of National Disaster Management Agency
- Strengthening the response mechanism and coordination among Security
- Implementation of National Disaster Response Framework
- Endorsement of EWS Strategic Action Plans and Establishment of Early Warning System
- Mainstreaming DRR into development planning, implementation and monitoring & Evaluation
- Expand EOCs at regional, district and municipal/ VDC levels
- Establish additional warehouses in various strategic locations of the country
- Emergency services: Fire and Health Services
- Develop USAR Capacities at National and Local levels
- Fund raising on the preparedness for humanitarian responses (technical and financial)

## **6. Conclusion**

It is encouraging to state that policy makers have realized that disaster risk management is a key to achieve sustainable development. After becoming signatory to HFA 2005, the government prioritized DRR in its development agenda and adopted National Strategy on Disaster Risk Management in 2009. The NSDRM, 2009 has clearly incorporated five priority areas as stipulated in HFA. The flagship approach has been introduced for immediate action for disaster risk management in Nepal. National Emergency Operations Centre (NEOC) facilitates effective emergency management. National Platform on DRR has been formed to make DRR effort more cooperative and collaborative between governmental and non-governmental actors. DRR Focal desk has been instrumental for effective implementation of disaster risk reduction related policies and programs in relevant ministries, departments, security agencies and local bodies.

Although the MoHA has achieved some fresh progress on policy and institutional levels and still some are in the offing, there ahead lies a well implementation and smooth functioning of policies and programs. Adequate resources, commitment, cooperation and collaboration are always needed to bring these policies and programs into fruition. Mainstreaming DRR in sectoral development, effective implementation of building code and building act, implementation of land use and settlement planning, changing mindset of the people, development and strengthening of effective institutions on

DRR are some pressing issues in disaster management of Nepal.

## 7. ADRC Counterpart

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