

Nepal Country Report 1999

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NEPAL.

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SUMMARY

Nepal is prone to various types of natural disasters due to her rugged and fragile geophysical structure, very high peaks, high angle of slopes, complex geology, variable climatic conditions, active tectonic processes, unplanned settlement, increasing population, weak economic condition and low literacy rate. Apart from the above reasons, the lack of coordination among agencies related to disaster management, no clear-cut job description of those agencies, resource constraint, the lack of technical manpower, the lack of public awareness, very remote, rural and difficult geo-physical situation of the country, absence of modern technology and so on are other factors are the other major obstacles to cope with the natural disasters in Nepal.

In view of the above situation, formulation of a Natural Disaster Management Regulation and amendment in the existing Act is needed to clarify the job and responsibilities of the agencies related to disaster management. Well trained technical manpower, advanced technology and sufficient means

and resources are also needed to reduce the natural disasters. Moreover, disaster management course has to be included in the school and university curriculum and various types of programs are to be launched in order to raise the public awareness. For an effective early warning system, it is needed to develop a scientific detection system to monitor changes in the physical environment. The system of hazard mapping, vulnerability assessment and risk analysis has to be developed as all these sectors are still undeveloped in Nepal. For all this, there is the necessity of strong political determination and effective policy formulation and their implementation.

Despite the above problems and limitations, Nepal is gradually picking up the momentum towards improving the disaster management situation. Policy makers have shown interest to look into the problems of disaster management from the point of view of economic development which is gaining strength in the country. Such interest of the policy makers might prove to be conducive to use existing scientific and technical knowledge to reduce vulnerability to natural disasters and environmental hazards. Being a developing country, Nepal needs assistance and support from international communities and friendly nations to strengthen her capabilities for natural disaster prevention and reduction, making early warning system as the key element.

At present, various agencies of His Majesty's Government of Nepal like : the Ministry of Home Affairs, the Ministry of Water Resources, the Ministry of Housing and Physical Planning, the Ministry of Health, the Ministry of Finance, the Ministry of Defense, the Ministry of External Affairs, the Ministry of Public Works and Transport, the Ministry of Information and Communication, the Ministry of Forest and Environment, the Ministry of Agriculture, the Ministry of Education, the Ministry of Science and Technology, the Ministry of Women and Social Welfare, the Ministry of Supplies, the Secretariat of National Planning Commission, the Royal Nepal Army, Nepal Police, Nepal Red Cross Society, Nepal Scout, the Department of Mining and Geology, the Department of Meteorology, the Department of Forest and Soil Conservation etc. are involved in disaster prevention and mitigation works in close cooperation with various international agencies such as : Japan International Cooperation Agency (JICA), Asian Disaster Reduction Center (ADRC), Asian Disaster Preparedness Center (ADPC), United Nations Development Program (UNDP), International Center for Integrated Mountain Development (ICIMOD), International Red Cross Society (IRCS), United States Agency for International Development Mission to Nepal (USAIDMN), United Mission to Nepal (UMN), Cooperation for American Relief Everywhere (CARE), OXFAM, Redd Barna, World Food Program (WFP), Save the Children Fund (SCF), Technical Cooperation of the Federal Republic of Germany (GTZ), Lutheran World Service (LWS) etc.. Besides, various other professional and non-governmental organizations like Nepal Red Cross Society (NRCS), Nepal Scout (NS) are providing highly valuable support at the time of natural disasters. Some other professional and non-governmental organizations of Nepal like Water Induced Disaster Prevention Technical Center (DPTC), Nepal Geological Society (NGS), National Society for Earthquake Technology (NSET) and few others have contributed significantly by conducting research and training programmes to raise public awareness in the country.

I . Country Background :^[1]

Nepal is a small and land locked country in South Asia. It is situated between the two large and densely populated countries of Asia - China in the North and India in the South, East and West. The shape of Nepal is rectangular and it has an area of 147, 181 sq. kms. The length (East to West) is 885 kms. and the width (North to South) is non-uniform, approximately 193 kms. It is situated between longitudes 80°4'E to 88°12'E and latitudes 26°22'N to 30°27'N, along the Southern slopes of the Himalayas (snow peaks). Within the narrow breadth of the country, all varieties of climate and topography can be found ranging from the sub-tropical to the alpine. The lowest altitude starts from 60 meters above the sea level in the Southern plain to 8, 848 meters in the Northern part. Mt. Everest the highest peak in the world with an altitude of 8,848 meters lies in Nepal. Ecologically, the country is divided into three regions namely: *the Tarai, the Hills and the Mountains*.

II . Climate, Population and Education :

Various types of climate can be found in Nepal i.e. monsoon subtropical, temperate monsoon and alpine/tundra. The subtropical monsoon climate is found in *the Tarai*, temperate monsoon in *the Hills* and alpine in *the Mountainous* region of Nepal.

The average rainfall of the country in the whole year is about 1,900 MM. But the mean annual rainfall varies from less than 300 MM. in the region near the Tibetan plateau to more than 3,700 m.m. in the Pokhara valley and the southern slopes. Monsoon usually starts in the month of June and ends in September. During summer the maximum temperature in the Tarai is more than 40°C and it is about 28°C in the middle Hills. During winter the minimum temperature in *the Tarai* is about 7°C, and it is about below the freezing point in *the Hills*.

According to the National Population Census of 1981 the total population of Nepal was 15,022,839 which increased to 18,491,097 in 1991 with an annual growth rate of 2.8 percent. The population for 1999 has been estimated to be 22,367,048 (11,167,503 males and 11,199,545 females). 90.8 percent of the total population live in the rural areas and the rest in the urban areas. The literacy rate of the country is 39.6 percent of the total population out of which the male literacy rate is 54.5 percent and the female literacy rate is 25.1 percent (CBS 1999).

III . Disaster Scenario

Rugged and fragile geophysical structure, very high relief, high angle of slopes, complex geology, variable climatic conditions, active tectonic processes, unplanned settlement, dense and increasing population, poor economic condition and low literacy rate have made Nepal vulnerable to various types of natural disasters. Most part of the country are seismically active. Hence, the geomorphology is very fragile. The constant tectonic action of different degree along with varied intensity of weather condition has adverse effect on stability of earth surface and river course. The physiography of earth is changing slowly due to its own tectonic action and universal planetary action. Such activities are more pronounced in Asia (Oceania) and South America. Among them all, the Himalayan region and some pocket of the Oceania are most active. And major part of the Himalaya lies in Nepal. The Himalayan region of Nepal can be considered as one of the severest flood hazard zone of the world. Besides, Heavy precipitation, high wetness and steepness of watersheds and river channels contribute to flood magnitudes. Mainly, the middle Hills are prone to landslides and the Tarai to flood and fire. Thus, flood, landslide and fire are the most frequent natural disasters in Nepal. These disasters occur almost every year in one part of the country or the other causing loss of life and heavy damage to physical properties.

It is a great challenge to the nation to protect infrastructure and property from frequent landslide and floods. Each year flood, landslide, fire, epidemic, avalanche and various other natural and man made disasters cause the casualty of thousands of human lives and destruction of physical properties worth billions of rupees. The earthquake of 1934 A.D., 1980 A.D. 1988 A.D. and the flood of July, 1993 A.D. are the most devastating natural disasters which not only caused heavy losses of human lives and physical properties but also adversely affected the development process of the country as a whole. In this way, the country has been found to be a disaster prone country. The loss of lives by disasters from 1983 to 1999 is given in Appendix 1.

IV . Past Major Disasters

A brief description of some past major natural disasters are given below:

1. Earthquake

The high Mountains and the Himalayan range of Nepal are the young mountain chain. They stretch almost 2500 kms. in the east - west direction and they fall under the seismically active zone which is considered as the result of subduction of the Indian plate under the Tibetan plate. The seismic

record of Nepal goes back to 1255 A.D. Since then a series of destructive earthquakes occurred in 1408 A.D., 1681 A.D., 1810 A.D., 1833 A. D. and 1866 A.D. Among all these earthquakes, the event of 1833 A.D. was the major one. Exact data of that event are not available. After that Nepal passed through a very big earthquake in 1934 A.D. with a tremor of 8.4 Richter scale magnitude. Kathmandu was the epicentre of the quake. The quake claimed the life of 16,875 people and destroyed 3,18,139 houses. Nepal experienced two other major earthquakes one in 1980 A.D. and another in 1988 A.D. The earthquake of 1980 A.D. had a tremor of 6.5 Richter scale magnitude epicentre of which was Bajhang district. In the quake 178 people lost their life and about 40 thousand houses were destroyed. The earthquake of 1988 A.D. had a tremor of 6.6 Richter scale with the epicentre in Udayapur district which killed 721 people, 1566 cattle heads and destroyed about 64,467 houses.

2. Flood, Landslide and Debris Flow

There are more than 6000 rivers and streams in Nepal. Most of them flow from the north towards the south, generally with high velocity due to high river gradient. Most of the big rivers are snow fed which originate from the Himalayan range that are covered by perpetual snow. As the topography of the country is steep, rugged and high-angle slope with complex geology, very high intensity of rainfall during the monsoon season causes flood, landslide and debris flow. The landslide and flood are the most destructive types of disasters in Nepal. Three quarter of the total land area of Nepal is hilly and many villages are situated on or adjacent to the unstable hill slopes. As a result, landslide and flood with debris flow occurs. Unplanned settlements and physical constructions without due consideration to the natural hazards are considerably aggravating the mountain environment. On the other hand the landslide add enormous load to the streams and rivers causing flood and debris flow downstream. Each year such types of disasters cause the losses of a number of human life and immense damages to agricultural land, crops, human settlements and other physical properties. In July 1993 A.D. Nepal experienced a devastating flood in the Tarai region of Nepal which took the life of 1336 people and affected 487,534 people. After 1993 A.D. last year's (1998 A.D.) flood and landslide was severe which affected various parts of the country, mainly the Tarai and the middle Hill region. This disaster claimed 273 human lives, injured 80 people and killed 982 cattle heads. Besides, 33,549 families were affected, 13,990 houses and 1244 cattle sheds were destroyed and 45 thousand hectares of land and agricultural crops were ruined. The disaster of 1998 A.D. caused the total loss of about NRs 2 billion.^[2] This year (1999 A.D.) also flood and landslide killed 193 people while the corpse of 47 people could not be found and 91 people were seriously injured. In this disaster 8,844 families were affected, 3,507 houses and cattle sheds were destroyed and 177.32 hectors of land and agricultural crops were ruined. The disaster caused a total loss of about NRs 360.11 million.

3. Fire

Fire disaster occurs mainly in the dry season between April to June. During this season the temperature in the Tarai region rises above 35° Celsius and it rains seldom. Fire disaster takes place mostly in the rural areas of the Tarai and the middle Hill region of Nepal. As 90.8 percent of the total population live in the rural areas in a very poor housing condition fire hazards are common. The houses of the rural areas especially of the Tarai areas are usually very close to each other and are made up of straw or reeds and timber which are easily caught by fire. In 1999 A.D. fire disaster claimed the life of 39 people injuring 10. The number of affected families by this disaster reached up to 1,065 destroying 1,035 houses and 52 cattle sheds. The number of livestock loss was 148. The total loss has been estimated to be about NRs 45.23 million due to the fire disaster of 1999 A.D.

4. Epidemic

In most cases the epidemic of cholera, gastro enteritis, encephalitis, meningitis, typhoid, jaundice, malaria and so on occur during the summer and rainy season. This type of disaster occur mainly due to the lack of proper health care and sanitation. In 1999 A.D. 1,207 people died of epidemics and 6,119 families were affected in various parts of the country.

5. Avalanche

As the northern part of the country is covered with snow peaks, avalanche is very common and sometimes it claims the life of human being as well. The avalanche of November, 1995 killed 43 people including some foreign trekkers at Khumbu and Kanchanjungha areas. In 2 January 1999 A.D. 5 people were swept away by the avalanche that occurred in Chunchet Village Development Committee Ward No. 8 of Gorkha district.

6. Glacier Lake Outburst Flood (GLOF)

In the Himalayan region of Nepal glacier lakes are common. A total of 159 glacial lakes have been found in Koshi basin and 229 in Tibetan Arun basin. Among them 24 are potentially dangerous. The areas like: Upper Barun, Lower Barun, Chamlangtsho, Tsho Rolpa, Sabou, Dudh Kunda, Majang, Inja, Thulari have potentially dangerous glacier lakes. These lakes contain huge volume of water and remain in unstable condition, as a result, they can burst any time and a natural catastrophe may cause loss of life and physical property. About 14 such glacier lake outburst flood have already been experienced between 1935 A.D. to 1991 A.D.

7. Windstorm, Thunderbolt and Hailstorm

Windstorm occur mainly during the dry season between March to May. Thunderbolt occurs during the monsoon and hailstorm takes place during the beginning and end of the monsoon. Hailstorm causes heavy losses of agricultural crops though human life loss is seldom. Windstorm and thunderbolt causes the loss of human life as well as physical property. This year (1999A.D.) Windstorm and thunderbolt killed 22 and injured 37. The disaster killed 50 cattle heads, destroyed 85 houses and cattle sheds and affected 348 families causing a total loss of about NRs 7.2 million.

8. Drought

Some parts of the country face the problem of drought. Uneven and irregular monsoonic rainfall is the main factor of drought. The mountainous region (the northern belt) of Nepal is generally dry. The lack of irrigation facilities make the problem even more serious as prolonged drought condition has adverse effect in crop production. The drought of 1994 affected 35 districts of the country destroying the agricultural crops cultivated in 157, 628 hectares of land.

Figures of loss of lives and property caused due to the various types of natural disasters in 1999 A.D. is given in Appendix 2.

V. Emergency Relief from Abroad

Being a developing country, Nepal lacks sufficient resources to provide adequate assistance to the natural disaster victims. Mainly, reconstruction and rehabilitation programs have had to suffer due to such resource constraints. Despite very limited funds and resources the Ministry of Home Affairs has been trying to cope with the natural disasters to its utmost capacity. Moreover, several Governmental as well as Non-Governmental International agencies such including: the Government of Japan, Japan International Cooperation Agency (JICA), United States Agency for International Development (USAID), Lutheran World Service (LWS), Technical Cooperation of the Federal Republic of Germany (GTZ), OXFAM, Cooperation for American Relief Everywhere (CARE), United Mission to Nepal (UMN), United Nations Development Program (UNDP), Save the Children Fund (SCF) Caritas, Redd Barna and so on have been providing cash, kind and technical assistance for the rescue and relief operation of the disaster victims from time to time. Various other International Governmental as well as Non-Governmental agencies are also channeling the resources through local NGOs as well. Some of the significant contributions made by the international communities have been stated below:

During the earthquakes of 1980 and 1988 and the flood and landslide of 1993 the international communities had provided rescue and relief materials to the disaster victims. The UN agencies such as : World Food Program (WFP), United Nations Children's Fund (UNICEF), United Nations High Commissioner for Refugees (UNHCR), United Nations Department of Humanitarian Affairs (UNDHA) and so on played a significant role by channeling food stuffs, medicines, clothing, temporary settlement materials etc. Japan, USA, UK, Switzerland and some other countries also provided highly valuable support at the time of 1993 disasters.

In July, 1998 the Japanese government provided 1000 sheets of blankets and 21 cartoons of medical kits for the victims of the epidemics of Humla district. The Korean Fellowship Program provided NRs. 50 thousand to the disaster affected people of Humla. A Canadian medical team also went there for the treatment of victims of epidemics. In August 1998 CARE, Nepal have provided NRs. 680 thousand for the reconstruction of irrigation canals, drinking water pipes and trail roads for the victims of landslide and flood that occurred in August, 1998 in Syangja district. Similarly, UMN provided food assistance and medicines equivalent to NRs. 50 thousand for the natural disaster victims of the same district.

Beyond the relief and rescue assistance international as well as national agencies are being involved in developing the manpower and public awareness raising program. JICA, DPTC, UNDP, USAID, ADPC, ADRC, NASC, NGS, NSET and various other agencies are being involved in conducting various type of workshops, seminar and training programs. Such types of activities contribute significantly to raise the public awareness and manpower development in the country.

VI. Other Assistance from Abroad

During the early Nineties, UNDP/UNDRO/UNDTCD provided technical as well as financial assistance in improving the institutional capacity of the Ministry of Home Affairs, the focal point of disaster management in Nepal, through *International Support to Disaster Preparedness and Relief Plan* with a view to strengthen the institution and develop manpower. At the same time the Government of France provided assistance to the Department of Mines & Geology to establish 17 microseismic stations to record the magnitude of the earthquake.

The Government of Japan is continuously providing assistance particularly in the area of capacity building. It helped in establishing Water Induced Disaster Prevention Technical Centre (DPTC) in October, 1991. The main objective of the centre has been to promote prevention/mitigation of water induced disasters in Nepal and to strengthen capability of His Majesty's Government of Nepal to cope with water induced disasters through technology development, provision of training and establishment of database. DPTC has been established as a joint undertaking of concerned agencies of HMG/N with the Ministry of Water Resources as leading agency while the Government of Japan had cooperated through JICA for the initial five years from the date of agreement i.e. 7 October 1991. From 8 October, 1996 the activities of DPTC was extended upto the end of March, 1999. 31 March 1999 to 2 September 1999 there was preparatory works between DPTC and JICA for the finalization of the second phase of the project. In 2 September 1999 His Majesty's Government of Nepal and the Government of Japan entered into an agreement to launch Disaster Mitigation Support Programme as the second phase of the project for a period of five years. The total cost of the project has been estimated to be about NRs. 480.00 million.

Besides the above the Government of Japan provides various inputs such as gabion wires for river control, GI sheets for school buildings and other accessories from time to time. In such a way, till now, Japan stands at the first position to assist Nepal in the field of disaster management.

Office of Foreign Disaster Assistance (OFDA) proposed for a four to six year training program to be implemented by Asian Disaster Preparedness Centre (ADPC) with support from the Metro Dade Fire Department, Miami, Florida, United States of America Agency for International Development Mission to Nepal (USAID/N) and His Majesty's Government of Nepal, the Ministry of Home Affairs (HMG/N, MOHA). In this program training for instructors, Introduction to Disaster Management, Urban Search and Rescue Canine Course, Collapsed Structures Rescue Course, Advance First Aid Course, Canine Training Program, Search and Rescue Management Training Program, Medical First Responder's Course and Data Collection and Dissemination are the main training components.

The main objective of the training program is to improve the capability and performance of up to 600 officials and their agencies in Nepal to effectively plan for, undertake and manage effective search and rescue operations in the event of an earthquake in the Kathmandu Valley. The training will be directed to those who currently are expected to perform urban search and rescue functions when a disaster strikes. The primary target audience includes Government and Non-Government organizations, consisting of Police, Army, Civil Servants, Red Cross, Health, Scouts and the Non-Governmental Organizations.

UNDP is going to launch a 3 years project on Participatory Disaster Management Programme in the two districts of Nepal i.e. Syangja and Bardiya from August this year. The project is funded by the Government of Japan.

VII. Laws and Regulations

Before the advent of Natural Disaster Relief Act (NDRA), 1982 A.D. there was no well structured disaster policy in Nepal. Prior to 1982 A.D. relief and rescue works were carried out as the social works only. Thus, realizing the need of an act, Natural Disaster Relief Act, 1982 A.D. was formulated which has already been amended twice in 1989 A.D. and 1992 A.D.

However, Natural Disaster Relief Regulations (NDRR) could not yet be formulated which is very essential. In the absence of NDRR, NDRA could not be fully effective. NDRA, 1982 does not describe the duties and responsibilities of all the disaster management related agencies other than the Ministry of Home Affairs. Duties and responsibilities of various other disaster management agencies has to be reflected in NDRR as each and everything could not be stipulated in the Act. According to NDRA, 1982 there has been the provision of Central Natural Disaster Relief Committee (CNDRC). Furthermore, there is also the provision of a Relief and Treatment Sub-Committee (RTSC), Supply, Shelter and Rehabilitation Sub-Committee (SSRSC), Regional Natural Disaster Relief Committees (RNDRC), District Natural Disaster Relief Committees (DNDRC) and Local Natural Disaster Relief Committees (LNDRC) in the NDRA, 1982. RTSC and SSRSC shall be activated in the time of very serious natural disasters while CNDRC and DNDRC are active all the time. This is so to expedite the immediate rescue and relief works. However, RNDRC and LNDRC shall be activated as and when necessary, at the moment, these two agencies are as dormant agencies. Besides, as the NDRA, 1982 does not describe the functions and duties of all district disaster management related agencies, the problem of cooperation, coordination and mutual understanding between various district disaster management related agencies are seen. Consequently, sometimes, disaster victims do not get immediate, efficient and effective rescue and relief services. Delayed relief works often brings very serious and unpleasant results. And, sometimes, duplication of relief works have also been experienced, mainly due to the absence of dialogue and mutual understanding among disaster management related agencies. In addition, some of the district disaster management related agencies try to shift their responsibilities to the other as there is no clear cut job description in the Act. Thus, immediate formulation of NDRR is very necessary where clear cut job description of all the disaster management related agencies should be made.

VIII. Definition of Natural Disaster

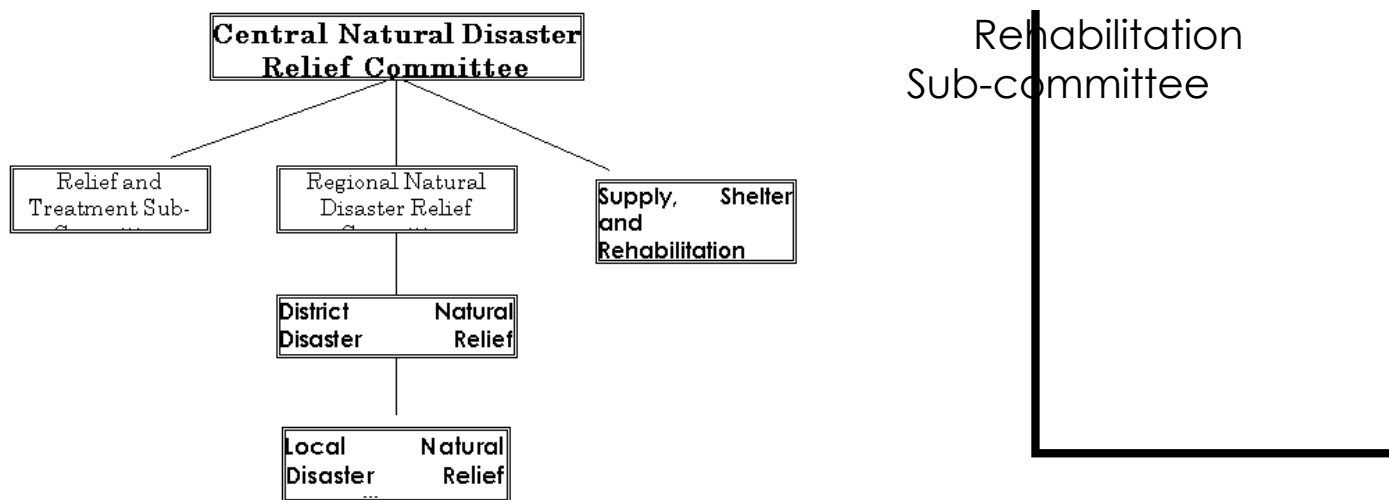
According to the Natural Disaster Relief Act (NDRA), 1982 A.D. *Natural Disaster* means earthquake, fire, storm, flood, landslide, heavy rain, drought, famine, epidemic and other similar natural disaster. It also includes the industrial incident or accident caused by explosions of poisoning and any other kinds of disaster.

The Act defines *Natural Disaster Relief Work* as any relief work to be 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.

IX. Organizations

NDRA, 1982 has constituted the following organizational structure through which rescue, relief, rehabilitation and resettlement programs are being carried out effectively and efficiently :

Supply, Shelter and



Please see appendix 3 for the Organizational Structure of the Ministry of Home Affairs.

According to the NDRA 1982 Central Natural Disaster Relief Committee (CNDRC) has been constituted under the chairmanship of the Home Minister in order to formulate and implement the policies and programs relating to the natural disaster relief work and to undertake other necessary measures related thereof. Moreover, the Central Committee prepares specific norms of relief assistance to be given to the disaster victims of the affected area in cash and/or in kind. Please see appendix 4 for the composition of CNDRC.

The working procedures of the Central Committee may be managed by the Central Committee itself.

The Central Committee may constitute Relief and Treatment Sub-Committee (RTSC) and Supply, Shelter and Rehabilitation Sub-Committee (SSRSC) which provide necessary advice and suggestions to the Central Committee, help to execute policies and directives of the Central Committee and operate effectively the rescue, relief and rehabilitation work during a very serious natural disaster. Please see appendix 5, 6 and 7 for the composition of Relief and Treatment Sub-Committee (RTSC), Supply, Shelter and Rehabilitation Sub-committee (SSRSC) and District Natural Disaster Relief Committee (DNDRC).

X. Functions and Duties of the Central Natural Disaster Relief Committee

- (a) To recommend to His Majesty's Government to declare the areas affected by natural disaster as the 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 Natural 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 working procedures of the Relief and Treatment Sub-Committee and the Supply, Shelter and Rehabilitation Sub-Committee may be managed by themselves. However, the functions, duties and responsibilities of the two Sub-Committees shall be as specified by the Central Natural Disaster Relief Committee.

XI. Formulation of Other Natural Disaster Relief Committees

By publishing a notification in the Nepal Gazette^[3] His Majesty's Government may constitute the Regional Natural Disaster Relief Committee, District Natural Disaster Relief Committee and Local Natural Disaster Relief Committee in order to undertake the natural disaster relief work. The working procedure of such committees and the term of office of the members shall be as specified in the said notice. Albeit, there is the provision of the Regional Natural Disaster Relief Committee and Local Natural Disaster Relief Committee nothing has been mentioned regarding the composition of these two committees in the Act. In fact, these committees are like dormant agencies.

XII. Functions and Duties of the Regional Natural Disaster Relief Committee

- (a) To give necessary suggestions to the Central Natural 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.

XIII. Functions and Duties of the District Natural Disaster Relief Committee

- (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.

XIV. Functions and Duties of the Local Natural Disaster Relief Committee

- (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 in the natural disaster to the nearest hospitals and health posts 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.

XV. Norms of Relief Assistance

The Central Natural Disaster Relief Committee (CNDRC) has formulated some norms for an immediate relief assistance to the victims of the natural disaster in cash and/or in kind. The amount and quantity of such assistance may be revised by the CNDRC from time to time. According to the present norms specified by the Central Committee, Rs. 10,000.00 (Ten Thousand) shall be provided as relief assistance to the family of a dead victim. Injured persons shall be provided the facility of treatment in the nearest hospital or health post. Seriously injured people will even be airlifted and taken to the well equipped hospital, if necessary. If a house has been destroyed in a natural disaster, then up to Rs. 3,000.00 shall be provided to the owner of the damaged house. If there is the threat of disaster or the house is not safe to live, then up to Rs. 2000.00 shall be provided to the owner of the house for the arrangement of temporary settlement. Homeless families shall get 7 kilos of rice or Rs. 125.00 per head as foodgrain assistance and Rs. 500.00 shall be provided for the clothing and utensils. Those who have completely lost their land and crops and have nothing to eat, shall get an amount of Rs. 500.00. Those victims whose house has been destroyed in a natural disaster shall get 50 cu.ft. timber at concessional rate to construct a house. Generally, all the above mentioned relief assistance are to be provided through the District Natural Disaster Relief Committee.

XVI. Fund Channel Process

Provision of a Central Natural Disaster Aid Fund has been made under the control of the Central Natural Disaster Relief Committee. The fund consists of: (a) cash and kind provided by His Majesty's Government of Nepal, (b) fund received from the Prime Minister Aid Fund, (c) cash and kind assistance received from foreign countries, agencies and individuals, and (d) fund received from other sources. In addition, provision has also been made of a Regional Natural Disaster Aid fund, a District Natural Disaster Aid Fund and a Local Natural Disaster Aid Fund. These funds consists of the cash and kind provided by His Majesty's Government of Nepal, the cash and kind received from Central Natural Disaster Aid Fund and from other sources. Whatsoever, at present, only the Prime Minister's Aid Fund, the Central Natural Disaster Aid Fund and the District Natural Disaster Aid Fund are into operation. The Central Fund releases budget to the District Natural Disaster Aid Fund according to the need and justification for immediate rescue and relief assistance to the victims of the natural disasters.

XVII. Role of The Ministry of Home Affairs in Disaster Management

In context of the above mentioned provisions the Ministry of Home Affairs has to work as the apex body in relation to disaster management in Nepal. Formulation of national policies and their implementation, preparedness and mitigation of disaster, immediate rescue and relief works, data collection and dissemination, collection and distribution of funds and resources are the vital functions of the Ministry. It has its network throughout the country to cope with the natural disasters. There are 75 administrative districts in the country and each district there is the Chief District Officer as the district administrator who acts as the crisis manager at the time of natural disasters. Thus, the Ministry of Home Affairs is the key agency for immediate response during disasters and has to play a leading role in managing the natural disasters in the country. Despite very limited funds and resources the Ministry of Home Affairs is managing the natural disaster in all respects. Of course, there are a number of problems in disaster management and enough room for the improvement.

XVIII. Disaster Management Planning

Ninth Plan (1998 A.D. to 2002A.D.) underlines the need to strengthen the disaster management capability by adopting various possible means. The plan envisages that an attempt should be made for prevention, mitigation and reduction of natural disaster through more advanced geological, hydrological and meteorological technology. Hazard mapping, vulnerability assessment, risk analysis and early warning system has to be developed for which well trained and efficient manpower should be made available. The plan also stresses the need to strengthen the capability of fire brigade. The Plan suggests that the policies and regulations concerning disaster management should be amended according to the need. The plan emphasizes the importance and need for national and/or international assistance.

Responding the call of United Nations Nepal has constituted a high level National Committee for the International Decade for Natural Disaster Reduction (IDNDR) which is Chaired by the Home Minister and represented by other high level dignitaries from Governmental and Non-Governmental agencies. Please see appendix 8 for the constitution of the IDNDR National Committee. This Committee formulates policies for natural disaster reduction. The National Action Plan (NAP) of HMG/N has been prepared under the direction of the IDNDR National Committee. The NAP includes activities on disaster preparedness, response, mitigation, rehabilitation and reconstruction programs. The NAP specifies the responsibilities of various disaster actors with specified time frame according to which they should implement their disaster reduction jobs by formulating special course of action and should mobilize the available resources in the given period. In this way the objectives of NAP are under implementation.

The disaster preparedness plan includes the following activities:

- Measures related to national policy and planning for making institutional arrangement, providing legal framework, adopting national policy and plan on disaster management.
- Measures related to geological, hydrological and meteorological hazard assessment and environmental engineering studies.
- Infrastructure specific and hazard specific preparedness measures.
- Measures related to strengthening fire fighting capabilities in fire prone areas.

- Measures related to awareness raising, training, rehearsal, simulation activities.
- Measures related to establishment of disaster management information system and stock piling of emergency supply materials.
- Risk assessment for development planning.
- Policies on the role of NGOs, local community, private sector and also people's participation especially women and socially disadvantaged groups.
- Incorporation of environment impact assessment for disaster reduction development planning.
- Promotion of regional and sub-regional cooperation between countries expecting same types of hazards.
- establishment of documentation centre on disaster activities.

XIX. Other Activities

Nepal has prepared a National Comprehensive Plan on Disaster Management in cooperation with UNDP/UNDRO/UNDTCD. This plan emphasizes on improvement of national capacity for disaster management and institutional structures. This plan also focuses on hazard mapping, risk assessment, vulnerability analysis and so on. As the objectives of this plan are very wide, keeping in view the resource constraints it might take long time to attain all the objectives. The UNDP and concerned Government agencies have prepared manuals in food, health and logistics sectors.

As the theme of IDNDR day 1999 was "Prevention Pays" various programs were organized by the various Government agencies as well as Non-Government Organizations in the whole country upon the call of IDNDR National Committee. Disaster management actors, teachers, students, social workers and the public were involved in the IDNDR day programme. Each year various public awareness raising programs are being launched in radio and television. Besides, posters, pamphlets and notification in the media during the hazardous season are being given to raise public awareness. Public media are contributing to raise public awareness in association with various Governmental, Non-Governmental and Social Organizations.

The Department of Mines and Geology (DOMG) is preparing a landslide inventory. Water Induced Disaster Prevention Technical Centre (DPTC) is carrying out thematic studies on landslide and monitoring of two-three landslides. The Department of Soil Conservation (DOSC) is doing some protection works in different districts. The Department of Roads (DOR) is carrying out some bio-engineering works in cooperation with the Tribhuvan University (TU), in order to stabilize the slope and road cut sides. The Department of Hydrology and Meteorology (DOHM) and International Centre for Integrated Mountain Development (ICIMOD) are preparing the map of flood prone areas. The ICIMOD conducts research and training activities on natural hazards as well. The Department of Hydrology and Meteorology (DOHM) is involved in generating data on earthquakes and weather forecasts in the country. The Tribhuvan University has established a Mountain Risk Engineering Unit (MREU) for training purposes.

On 4 June 1998 a task force was formed under the coordination of the Special Secretary of the Ministry of Home Affairs Mr. Sri K. Regmi to examine the problems of disaster management in Nepal and to suggest the measures to solve them. The task force identified a number of problems after thorough examination and review of the present acts, rules, regulations, budget and functions and duties of various agencies related to disaster management. The task force suggested a number of solutions for each of the identified problems. The final report of the task force was submitted on 30 August, 1998 to the Home Minister. Some of the suggestions of the task force have already been implemented and the rest are under the process of implementation.

XX. Disaster Reduction Cooperation Among Asian Countries

Nepal is taking part in various international activities i.e. seminars, workshops, meetings and conferences and is exchanging ideas and sharing experiences on the matter of mutual co-operation in disaster reduction efforts. Nepal always stands for the international cooperation and advocates for the establishment of international, regional and sub-regional centers where issues of common concerns can be addressed. At this point establishment of the Asian Disaster Reduction Centre at Kobe, Japan on 30 July 1998 is a landmark for the whole Asian Continent as it aims to collect and disseminate information on natural disasters and their reduction, carry out studies on the promotion of disaster reduction cooperation, gather information on emergency relief during times of disaster, disseminate knowledge and raise awareness of disaster reduction in the Asia region and so on. And it is a very good start. There is no doubt that ADRC will certainly contribute significantly to the reduction of natural disasters in the whole region. Moreover, the resolutions adopted by the IDNDR World Conference on Natural Disaster Reduction held at Yokohama, Japan on May 23 - 27, 1994, Asian Natural Disaster Reduction Conference held at Kobe, Japan on December 17-18, 1995, Asian Natural Disaster Reduction experts Meetings held at Tokyo, Japan on 23-24 October, 1996, Asian Disaster Reduction cooperation Promotion Meeting held at Tokyo, Japan on June 16-17, 1997, International Seminar on Water Induced Disasters held at Kathmandu, Nepal on November 4 - 6, 1998, the First ADRC International Expert's Meeting held at Kobe, Japan from 15-18 February 1999, International Conference on Disaster Management Co-operative Networking in South Asia held at New Delhi, India from 28-30 November 1999 and this Second ADRC International Expert's Meeting which we are attending now at Kobe, Japan from 5-8 December 1999 are some to mention to this end.

XXI. Concept of Regional Cooperation

While talking about Regional Cooperation Nepal, India, Bangladesh, Bhutan and Pakistan have common problems. Thus a country's disaster situation affects the others as well. For instance, if it rains heavily in Nepal, India and Bangladesh may be flooded. And if a cyclone hits any part of India or Pakistan or Bangladesh, it might rain heavily in Nepal and may cause flood and landslides. In this way these countries are economically and socially affected due to the serious natural disasters in a particular country. Therefore, all these countries have to work together to solve the problems by protecting the environments. It is very necessary to establish a Regional Information Center to share the information so as to cope with the natural disasters. Moreover, there should be regional planning and joint effort to solve the disaster problems.

XXII. Problems in Disaster Management in Nepal

Disaster management is a difficult task. Disaster happens all of a sudden. Thus, the suddenness of a disaster and its destruction, especially during a very serious natural disaster, it becomes very difficult to cope with a normal administrative set up and limited funds and resources. In view of the above situation Nepal is facing a number of severe problems like : poor public awareness, low literacy rate, mass poverty, fatalistic nature of some people, difficult and undeveloped physical infrastructure, unplanned settlement, lack of political commitment, slow decision making process and so on. Apart from the above the lack of cooperation and coordination among various disaster management related agencies and their behavior indifference, duplication of relief works, inadequate funds and resources and the lack of modern technology especially early warning system have made the disaster situation more complex.

XXIII. Measures to Solve the Problems

Despite of the various problems, appropriate policy measures could help to solve the problems. As public awareness is one of the vital problem in managing the disaster in Nepal, it is felt necessary to work at increasing the literacy rate. Moreover, disaster management course should be included in the school and university curriculum. It is also necessary to train school teachers, selected students, women leaders, health workers and social workers

to educate others in measures to prevent or mitigate the natural disasters. Such types of programmes may convince people to believe that natural disasters are not an act of God. To attain all this, there is the need of the strong political determination, pragmatic policy formulation and quick decision making. Moreover, active people's participation is also very necessary. On the other hand it will be better to include disaster management component in the development plans and programs of concerned agencies for the effective implementation of disaster mitigation programs.

It is also needed very much to improve road infrastructure, transportation and communication facilities to carry out rescue and relief works effectively and efficiently. In order to prevent inappropriate construction of buildings, the building code should be strictly implemented.

To prevent duplication of relief works and the lack of cooperation, it is needed to establish mutual understanding and frequent dialogue between the focal persons. It is felt necessary to amend the Natural Disaster Relief Act, 1982 and formulate the Natural Disaster Relief Regulations whereby the role, functions, duties and responsibilities of all the disaster management related agencies could be specified so that no agency could ignore or shift their responsibilities.

XXIV. Expectations and Conclusion:

Not only in Nepal, natural disasters happen almost all over the world all of a sudden causing heavy loss of human life, destruction of infrastructure and properties. Usually natural disasters can not be stopped. However, the magnitude of disasters can be reduced if preventive measures be taken in due time for which pragmatic government policies and public awareness are of utmost importance. This is especially true if the government, community and the people work together to this end. The effects of natural disasters have shown the necessity to intensify international cooperation for natural disaster mitigation.

Above and over, international and regional cooperation in this field is very necessary. Establishment of the institutions like : Asian Disaster Reduction Centre (ADRC) at Kobe, Japan and Asian Disaster Preparedness Centre (ADPC) at Bangkok, Thailand could help greatly to redress the situation by means of collecting and disseminating information and conducting trainings and organizing meetings. This kind of gatherings at international, regional and sub-regional basis will promote international cooperation, mutual understanding and help among the countries by exchanging ideas and sharing experiences between the fellow participants. Such meeting will also help to learn from each others experiences. This Second ADRC International Meeting could contribute significantly in reducing natural disasters as it aims to share disaster-related information and to exchange views and opinions among disaster reduction experts from Member countries so as to promote further cooperation for disaster reduction in Asia based on the First ADRC International Meeting held at Kobe in February, 1999. Outcome of this kind of gathering will be very much useful for the participant and his/her country and institution.

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Appendix-1

LOSS OF LIVES BY DISASTERS (1983-1999)

Year/Types	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
Earthquake	-	-	-	-	-	721	-	-	-	2	-	-	-	3	-	-	-	726
Flood & Landslide	293	363	420	315	391	328	680	307	93	71	1336	49	203	258	83	273	193	5656
Fire	69	57	52	96	62	23	109	46	90	97	43	43	73	61	65	54	39	1079
Epidemics	217	521	915	1101	426	427	879	503	725	1128	100	626	520	494	951	840	1207	11580
Windstorms, Hailstorm & Thunder bolts	NA	NA	NA	NA	2	NA	28	57	63	20	45	47	34	75	49	23	22	465
Avalanche	-	-	-	-	-	14	20	-	-	-	-	-	43	4	12	-	5	98
Stampede	-	-	-	-	-	71	-	-	-	-	-	-	-	-	-	-	-	71
Total	579	941	1387	1512	881	1584	1716	913	971	1318	1524	765	873	895	1160	1190	1466	19675

Appendix 2

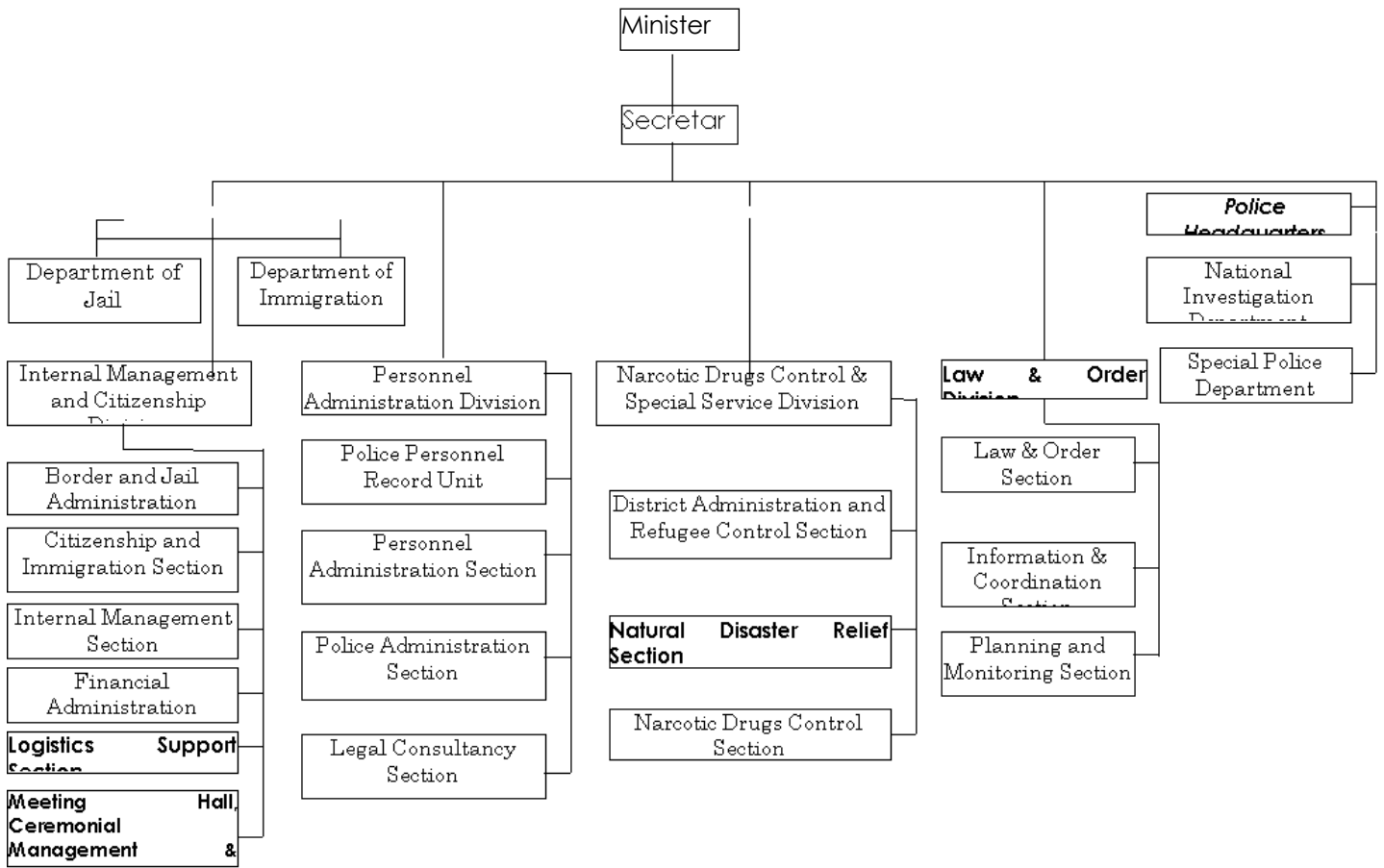
His Majesty's Government Ministry of Home Affairs (Disaster Relief Section) Loss of lives and properties Year 1999

S.N.	Types of Disasters	People			Affected Family	Livestock Loss	House Destroyed	Cattle Shed Destroyed	Land Losses (In Hectors)	Estimated Loss Rs.*
		Dead	Missing	Injured						
1	Flood & Landslide	193	47	91	8925	458	3382	125	177.32	360,116,970.00
2	Fires	39	-	10	1065	148	1035	52	-	45,230,916.00
3	Epidemics	1207	-	-	6119	-	-	-	-	-
4	Windstorm & Hailstorm	6	-	7	293	1	51	3	-	5,516,985.00
5	Thunderbolt	16	-	30	55	49	23	8	-	1,662,420.00
6	Earthquake	-	-	-	90	1	90	-	-	633,200.00
7	Avalanches	5	-	-	1	22	5	-	-	-
Total		1466	47	138	16548	679	4586	188	177	413160491

Based on the data received on or before November 4, 1999 (Kartik 18, 2056)

* 1.00 US Dollar is equivalent to NRs. 69.05

ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF HOME



Appendix-4

The Central Disaster Relief Committee comprises the following members

- | | | |
|---|---|----------|
| (a) Home Minister | - | Chairman |
| (b) Housing and Physical Planning Minister | - | Member |
| (c) Health Minister | - | Member |
| (d) Secretary, Ministry of Finance | - | Member |
| (e) Secretary, Ministry of Defense | - | Member |
| (f) Secretary, Ministry of Home Affairs | - | Member |
| (g) Secretary, Ministry of External Affairs | - | Member |
| (h) Secretary, Ministry of Public Works and Transport | - | Member |
| (i) Secretary, Ministry of Water Resources | - | Member |
| (j) Secretary, Ministry of Communication ^[4] | - | Member |
| (k) Secretary, Ministry of Forest and Environment | - | Member |
| (l) Secretary, Ministry of Labour and Social Welfare ^[5] | - | Member |
| (m) Secretary, Ministry of Supplies | - | Member |
| (n) Secretary, Secretariat of National Planning Commission | - | Member |
| (o) Brigadier, Royal Nepal Army | - | Member |
| (p) Inspector General of Police, Police Headquarters | - | Member |
| (q) Representative, Social Service National Coordination Council ^[6] | - | Member |
| (r) Representative, Nepal Red Cross Society | - | Member |
| (s) Representative, Nepal Scout | - | Member |
| (t) Director General, Mining and Geological Department | - | Member |
| (u) Director General, Department of Meteorology | - | Member |
| (v) Two reputed persons nominated by His | | |

- Majesty's Government^[7] - Member
- (w) Additional Secretary (who looks after Natural Calamity related activities), Home Ministry^[8] - Member-Secretary
-

The Central Disaster Relief Committee can invite at its meetings the concerned Member of Parliament representing the district affected by natural disaster.

Appendix-5

The Relief and Treatment Sub-Committee

- (a) Health Minister - Coordinator
- (b) Secretary, Ministry of Communication - Member
- (c) Secretary, Ministry of Public Works and Transport - Member
- (d) Brigadier, Royal Nepal Army - Member
- (e) Inspector General of Police, Police Headquarters - Member
- (f) Representative, Nepal Red Cross Society - Member
- (g) Representative, Nepal Scout - Member

The coordinator of the Relief and Treatment Sub-committee is empowered to designate the Secretary of the Sub-Committee.

Appendix-6

The Supplies, Shelter and Rehabilitation Sub-Committee

- (a) Housing and Physical Planning Minister - Coordinator
- (b) Secretary, Ministry of Finance - Member
- (c) Secretary, Ministry of Home Affairs - Member
- (d) Secretary, Ministry of Supplies - Member
- (e) Secretary, Ministry of Labour and Social Welfare^[9] - Member
- (f) Secretary, Ministry of Water Resources - Member
- (g) Secretary, Ministry of Public Works and Transport - Member
- (h) Representative, Social Service National Coordination Council^[10] - Member

The Coordinator of the Supply, Shelter and Rehabilitation Sub-Committee is empowered to designate the Secretary of the Sub-Committee.

Appendix-7

The District Natural Disaster Relief Committee

- (a) Chief District Officer - Chairman
- (b) District Level Representative of the National Level Political Parties - Member
- (c) Chief of the Royal Nepalese Army unit - Member
- (d) Chief of the District Police Office - Member
- (e) In-charge, Public Health Office/Hospital - Member
- (f) Representative, Nepal Red Cross Society - Member
- (h) Engineer, District Housing and Town Development Office - Member
- (i) Chief, District Irrigation Office - Member
- (j) Chief, District Forest Office - Member
- (k) Chief, District Agriculture Development Bank - Member
- (l) Reputed Social Worker - Member
- (m) Local Development Officer - Member Secretary

Appendix-8

International Decade for Natural Disaster Reduction National Committee

- a) Home Minister - Chairman
- b) Governor, Nepal Rastra Bank - Member

c)	Secretary, Ministry of Home Affairs	-	Member
d)	Secretary, Ministry of Foreign Affairs	-	Member
e)	Secretary, Ministry of Women and Social Welfare	-	Member
f)	Secretary, Ministry of Health	-	Member
g)	Secretary, Ministry of Forest and Soil Conservation	-	Member
h)	Secretary, Ministry of Finance	-	Member
i)	Secretary, Ministry of Public Works and Transport	-	Member
j)	Secretary, Ministry of Housing and Physical Planning	-	Member
k)	Secretary, Ministry of Industry	-	Member
l)	Secretary, Ministry of Information & Communication	-	Member
m)	Secretary, Ministry of Supply	-	Member
n)	Secretary, Ministry of Local Development	-	Member
o)	Secretary, Ministry of Water Resources	-	Member
p)	Member Secretary, Secretariat of the National Planning Commission	-	Member
q)	Executive Secretary, Water Resources and Energy Commission	-	Member
r)	Inspector General of Police, Police Headquarters	-	Member
s)	Brigadier, Royal Nepal Army	-	Member
t)	Director General, Housing and Town Development Department	-	Member
u)	Director General, Mining and Geological Department	-	Member
v)	Director General, Department of Meteorology	-	Member
w)	President, Nepal Journalist Association	-	Member
x)	Dean, Institute of Engineering, Tribhuvan University (T.U.)	-	Member
y)	Chairman, Central Teaching Department of Geology, T.U.	-	Member
z)	Chairman, Nepal Geological Society, T.U.	-	Member
aa)	Chairman, National Society - Nepal Earthquake Technology	-	Member
bb)	Chairman, Nepal Medical Association	-	Member
cc)	Chairman, Nepal Engineering Association	-	Member
dd)	Member Secretary, Social Welfare Council	-	Member
ee)	Representative, Nepal Red Cross Society	-	Member
ff)	Representative, Nepal Scout	-	Member
gg)	Joint Secretary, Disaster Relief Section, Home Ministry	-	Member-Secretary
hh)	Project Chief, Water Induced Disaster Prevention Technical Centre	-	Invitee

[1] Most of the figures in this chapter are cited from Statistical Year Book of Nepal, 1999 Published by Central Bureau of Statistics

[2] 1.00 US dollar equals to Nepalese Rupees 69.05

[3] Nepal Gazette is a Government Newspaper published by HMG/N to notify the public and the government officials regarding the government's major decisions and notices.

[4] Now the name of this Ministry should be amended as the Ministry of Information and Communication.

[5] The name of this Ministry should be amended as the Ministry of Women and Social Welfare

[6] The name of this Organization should be amended as Social Welfare Council.

[7] Nobody has been nominated so far.

[8] At present, there is no post of Additional Secretary, so this should be amended as Joint Secretary.

[9] As already stated earlier the name of this Ministry should be amended as the Ministry of Women and Social Welfare

[10] As already mentioned earlier name of this Organization should be amended as Social Welfare Council.