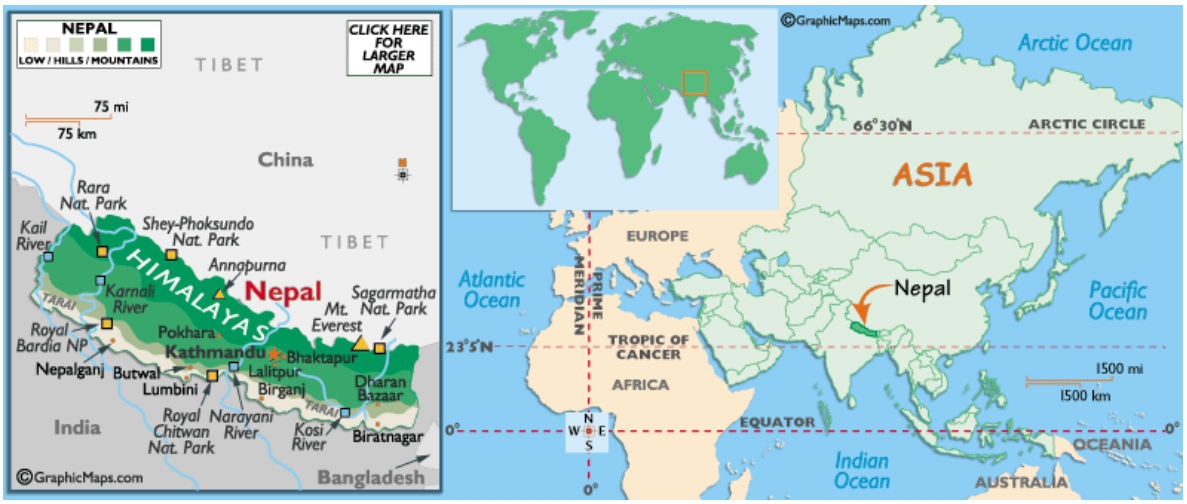
ASIAN DISASTER REDUCTION CENTER

FINAL REPORT

"Community Participation in Disaster Preparedness Planning: A comparative Study of Nepal and Japan"



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January to May 2011 (FY2010B)

Asian Disaster Reduction Center (ADRC) Japan

ADRC and its member countries:

To Enhance Disaster Resilience of the Member Countries.

To Build Safe Communities.

To Create a Society Where Sustainable Development is Possible.

ADRC Office: Kobe

The Asian Disaster Reduction Center was established in Kobe, Hyogo prefecture, in 1998, with mission to enhance disaster resilience of the member countries, to build safe communities, and to create a society where sustainable development is possible. The Center works to build disaster resilient communities and to establish networks among countries through many programs including personnel exchanges in this field.

Main activities of ADRC

- **Information Sharing on Disaster Reduction**

  (**Learning from Disasters and Benefiting from information.)**

  1. ADRC provides information on the latest disasters in Asia and the other part of the world, disaster management in member countries, and good practices for disaster risk reduction
  2. ADRC proposed a globally common, unique identification scheme for disaster events, as a tool for facilitating the sharing of disaster information archived by organizations around the world.
  3. ADRC receives emergency observation requests from the member countries and other organizations which participate in collaborative projects.
  4. ADRC convenes an annual international conference participated by disaster officials from the member countries and disaster experts from international organizations to promote information sharing, exchange opinions, and enhance partnerships among participating countries and organizations.

- **Human Resource Development**

  (Disaster Risk Reduction begins with Capacity Building)

  1. ADRC organizes and conducts various conferences, workshops and trainings for enhancing the human resources capacity of pursuing effective disaster risk management in member countries
  2. VR Program: Each year, ADRC invites four officials in charge of disaster management from Member Countries as visiting researchers for a term of about half a year. The researchers are provided with opportunities to discuss challenges for disaster management of each country, enhance understanding of the disaster management system, disaster reduction, and international cooperation in Japan.

- **Building Community Capabilities**

  (Community Participation is a Key to Effective Disaster Reduction)

  1. ADRC undertakes various efforts including increasing public awareness of disaster risk management, and development and dissemination of tools for reducing vulnerability of communities.
  2. ADRC has supported the effort to improve networking among Asian NGOs which play an important role in disaster reduction and response. This leads to more efficient and effective activities for the network members.

Some photos of disasters:


Koshi Flood Victims at 2008 (Nepal)




Destructive Earthquake and Tsunami at 2011/3/11 (Japan)

I am deeply shocked by the huge loss of valuable lives and properties due to TOHOKU PACIFIC OCEAN EARTHQUAKE -2011 in Japan. It is my firm believes and pray that courageous Japanese people would be very soon able to recover from this massive disaster.

Foreword
- Messages to Visiting Researchers -

Dear Visiting Researchers,

As noted everywhere, there is new and arresting evidence on how and why disaster risk is increasing globally. Increasing urbanization, vulnerable rural livelihoods, and the decline of ecosystems are among the key "risk drivers" according to the 2009 Global Assessment Report on Disaster Risk Reduction by the United Nations.

About 40% of all natural disasters occur in Asia, but these account for more than 80% of the number of casualties attributed to natural disasters. Indeed, disaster risk is extremely high in Asia as compared to other regions. A series of catastrophes recently occurred in China, Indonesia, Vietnam or elsewhere again reminded us of the great importance of disaster risk reduction.

The Asian Disaster Reduction Center (ADRC), since its inception in 1998, has committed itself to promoting multilateral cooperation on disaster risk reduction in close cooperation with its twenty-nine member countries. In so doing, the ADRC is engaged in a wide range of activities, such as promoting dissemination and sharing of disaster-related knowledge. The ADRC also cooperates with its member countries in strengthening their capacity to cope with natural disasters at various levels of government. As one of such endeavours, we are very pleased to have welcomed Visiting Researchers from member countries again this year.

During their stay at the ADRC, the Visiting Researchers have visited many institutions, government and non-government alike. They have learned new knowledge and ideas through lectures and seminars and, most importantly, met many first-class professionals in Japan. I would like to take this opportunity to express my great appreciation to those who have spent their precious time and resources for our Visiting Researchers.

I congratulate the successful completion of the ADRC Visiting Researcher Program and hope that they will go back to their home countries safe and will maintain good collaboration with the ADRC in the future.

Atsushi KORESAWA
Executive Director
Asian Disaster Reduction Center

Acknowledgement

This study "**community participation in disaster preparedness planning"**: **A Comparative study of Nepal and Japan":** is an outcome of the research to fulfill the requirement of the Visiting Researcher program of Asian Disaster Reduction Center, Japan. The main objective of the research is to examine the present issues of disaster preparedness planning and to recommend appropriate policy guidelines for Nepal. To fulfill the objective I got fullest supports and cooperation from all ADRC researchers. I am very happy for their continuous support to me.

My deep appreciation goes to the responders who provided me the important information relating on my research work, and I sincerely thank the Government of Nepal, Ministry of Home Affairs and ADRC for providing me this kind of great opportunity. I would like to thank Mr. Atsushi KORESAWA, Executive Director, of ADRC and Ms Miki Kodama, Senior Researcher, for all over supervision, valuable suggestions and guidance.

I express my deep gratitude and thanks to Mr. Shankar Prasad Koirala, Joint Secretary, Ministry of Home Affairs, Nepal for supporting and inspiring me to participate in this program.

I would also like to thanks Mr .Rameshwor Dangal, Under Secretary, MOHA and my entire colleagues for their support and help.

Especially, I am very much thankful to Mr. Suman Ghimire, Under Secretary, for his continuous support and valuable suggestion for the purpose of my research and encouragements for developing it.

I would also like to thank my entire fellows MS. Amornthip Paksuchon VR from Thailand and especially; I must thank Mr. Mohiuddin Ahmed Khan (Bangladesh), Visiting Researcher and all ADRC staffs for sincere support during my stay in Japan.

Last but not least, I am thankful to my family who inspired me to join this program and sacrificing their valuable time for me.

Maiya Kadel

Visiting Researcher (Nepal)

January to May, 2011 (FY2010B)

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Chapter 1

Introduction

1.1 Introduction

Nepal is vulnerable to various types of disasters. Floods, landslides, earthquake, fire and drought are some natural disasters which occur very frequently in Nepal. In addition, the impacts of climate change have been observed in environment and livelihood of rural people of Nepal. There has been general realization that communities are the heart and soul of disaster risk management. They can identify their own risks and vulnerabilities along with capacities and available resources as well as their own needs.

In comparison with the hazard risk of the Country, Nepalese disaster risk management (DRM) practices are mostly influenced by the supply driven approach not the community-led approach. Thus, there is lots of risk management opportunity in par with the Japanese noble-model. Though it is not always worthy copying the same technical or geo-physical prototype but applying the good or proven approaches in the specific disaster response or prevention is a intended study rationality.

Regarding the composition the report, it is divided into 7 chapters. First chapter deals with the research methods base. Second chapter highlights the Nepalese geo-political situation whereas the risk and rank of disaster in Nepal clarified in subsequent chapter. Institutional setup is briefed in chapter four. The core of this report is explained as conceptual as well as practices of community participation in disaster preparedness planning in chapter five. Likewise chapter five describes about the Japanese practices and last two chapters are giving elaboration of research questionnaire and the results of the research activities.

1.2 Objectives

The main objective of this study is to analyze some prevailing best practices of community participation in disaster preparedness planning in Nepal and Japan and make recommendations appropriate for Nepal. The followings are the specific objectives:

- To study practices of community participation in disaster preparedness planning in Nepal and Japan
- Look at the roles of government organizations and NGOs in preparedness planning in Nepal and Japan

- To recommend the appropriate practices of community participation in disaster preparedness planning and mobilizing communities to minimize the damages and losses from disasters.

1.3 Structure of the Report

The main objective of the first chapter of this study is to provide the information on research objectives and structure of the report.

The second chapter provides the general information of Nepal and Japan. The geographical setting, rivers, demography and the economic condition have been described in brief. Similarly, the third chapter of the study highlights the disaster scenario of Nepal and Japan. In this regard, the major disasters such as floods, landslides, earthquakes, drought, fire, windstorm, epidemics, lightening, Glacier Lake Outburst Floods (GOLF) in Nepal are described in briefly about Nepal. Likewise: Earthquakes, tsunami, volcanic eruptions, typhoons, landslides, floods, heavy raining and snowing in Japan have been briefly introduced.

The disaster risk management hinges on the sound policies with the competent organizations at all levels. The existing public sector institutions and policy guidelines are discussed in chapter four of this study.

The fifth chapter of this study provides the definition of community participation and their importance in disaster preparedness planning. In addition, this chapter also briefly describes the policy frameworks on community participation in disaster preparedness planning in Nepal. After the Great Hanshin-Awaji Earthquake, Japanese people, especially in Kobe city, realized the imperative role of community to save the lives and properties. Right after the quake (17 January, 1995) many people buried under buildings and debris were rescued by their relatives and neighbors. That time local-level lifesaving activities played a fundamental in highlighting the importance of community based disaster response. Community Based Disaster Management Planning is the most important for efficient communication, managing effective response and recovery. The local population responds first in times of crisis and is the last remaining participants as stricken communities strive to rebuild after a disaster. The fifth Chapter of this study highlights the importance of community participation in disaster preparedness planning through a comparative study between Japan and Nepal.

The Sixth chapter discusses the result of this study between Nepal and Japan. The last chapter is this study presents the conclusion and recommendations of this study.

1.4 Research Methods

The research is based on sociology, and sociology is concerned with understanding the nature of social action, social relationships and social structure. In social science, several research methods are applied depending on the nature of the research. The qualitative research methods were applied to collect the secondary data. This chapter discusses the research methods applied to accomplish the research study.

1.5 In depth Interview

The general interview guide approach was applied in the study. In this regard, appropriate guided questionnaires were developed after the pretest (Annex: 1). Following this, a list of interviewees were selected. Interviewees were selected from different government organizations, UN agencies, INGOs and NGOs. The list of interviewees is attached in the Annex of this study (Annex: 2)

1.6 Secondary Data Collection

Secondary data has been employed to accomplish this research study. Publish and unpublished dates were gathered and presented in this study. In this regards, publish and unpublished data and information available in the Ministry of Home Affairs of Nepal and several sources from Japan were referred. ADRC Reference materials, JICA's Training materials "Dissemination and Establishment of Disaster Prevention Culture for Asian Countries-JFY 2010" was main source of secondary data among others. In addition, other published data from different agencies were also employed as much as possible to accomplish the study.

Personal communication is also important in research study. In this regards, during the research work several informal communications have been conducted with concerned persons. Relevant and applicable information were also noted during the informal consultation and employed to accomplish the research study.

1.7 Data Analysis

The data obtained from the in-depth interview have been used in this study. This study employed the following procedures: Firstly, following the interview, the answers or statements given by the interviewees were systematically written and was printed as soon as possible. Interviews undertaken in Nepal were in Nepali language. However, some interviewees, from UN agencies and INGOs, had given their statements in English language.

Those interviews undertaken in Nepali and Japanese language were immediately translated in English language. Secondly, data obtained from in-depth interviews were manually coded according to the objectives of the research study.

1.8 Study Limitation

The main objectives of this study is to examine the existing issues/problems of disaster preparedness planning and recommend appropriate policy guidelines with institutional frameworks for community participation in disaster preparedness planning in Nepal. To achieve the above objectives, an in-depth interview was used in this study. Interviewees involved in this study were selected on the basis of their level of knowledge and experiences in disaster risk management. Interviews conducted in this study were in between second weeks of October to last week of November 2010 in Nepal, a total 21 person were interviewed in this study. But in Japan professionals from two sectors, were interviewed one is people from NGOs, Voluntary (social workers), and the other was selected from local Government agencies.

This is fact that small number people may not represent the whole country.

Chapter 2
Introduction of Study Area

2.1 Introduction

The main objective of this chapter is to supply background information on geographical setting, river and ecosystem of the both country Japan and Nepal. In addition, this chapter also briefly describes the population and economy of both Countries.

2.2 Outline of Nepal

Geographical Setting:

Mt .Fuji/Shinkansen/Sakura blossoms (In Japan), 3776 m.

Mt. Everest (Nepal), 8848 m.

Nepal has been known as a Himalayan Mountain between Indian and China. The country mostly occupied by mountain and hills. However, about 17 percent of its total land is covered by low and flat land along the Indian border in the South. Nepal is a land locked country and occupying the central part of the Hindu-Kush belt covers an area of 147, 181 square kilometer. It is characterized by a rugged topography, very high relief, variable climatic conditions, complex geological structures with active tectonic process and continued seismic activities. The elevation of the country rises from 60m. at Terai to 8848m. at Mt. Everest in the north within a short horizontal distance of 90 to 120 Km. Nepal is situated between longitudes 80.4 E to 88.12 E and latitude 26.22 N to 32.27 N, occupying the central part of the 2,400 km long Himalayan mountain chain (Disaster Review, 2008).

The mountains and hills of the country occupy about 83 percent of the total area whereas remaining 17 percent is covered by low and flat land, stretching in the southern part of the country up to the Indian border. In addition, 30 percent comprise, Middle Mountain followed by Himalayan 23 percent, High Mountains 20 percent, Terai 14 percent and Siwaliks 13 percent (Ibid).

Along a south-to-north transect, Nepal can be divided into three belts: Terai, Hill and Mountain Regions which are as follows.

i) The Terai Region

The Terai or Madeshsh region begins at the Indian border and includes the northernmost part of the flat, intensively farmed Gangetic Plain called the Outer Terai. This is similar cultural scenario an extension of northern India with Hindu, Awadhi, Bhojuri and Maithali

Spoken languages.The Outer Terai ends at the first range of foothills called the Siwaliks or Churia. This range has a densely forested skirt of coarse alluvium called the Bhabhar along its base. Bhabar range is composed of poorly consolidated, coarse sediments that do not retain water or support soil development so there is virtually no agricultural potential. Hillside vegetation is limited to scrub forest and the area functions as a deserted buffer zone allowing the development of distinctive cultures in valleys and hills further north. The Terai ends and the Hills begin at a higher range of foothills called the *Mahabharat Range*.

ii) The Hill Region

The hill Region Situated south of the Mountain Region, the Hill Region (*Pahar* in Nepali) is mostly between 700 and 4,000 meters (2,297 and 13,123 ft) altitude. This region begins at the *Mahabharat Lake* (Lesser Himalaya) where a fault system called the *Main Boundary Thrust* creates an escarpment 1,000 to 1,500 meters (3,281 to 4,921 ft) high, to a crest between 1,500 and 2,700 meters (4,921 and 8,858 ft).

Eastern part of Nepal (panther District)

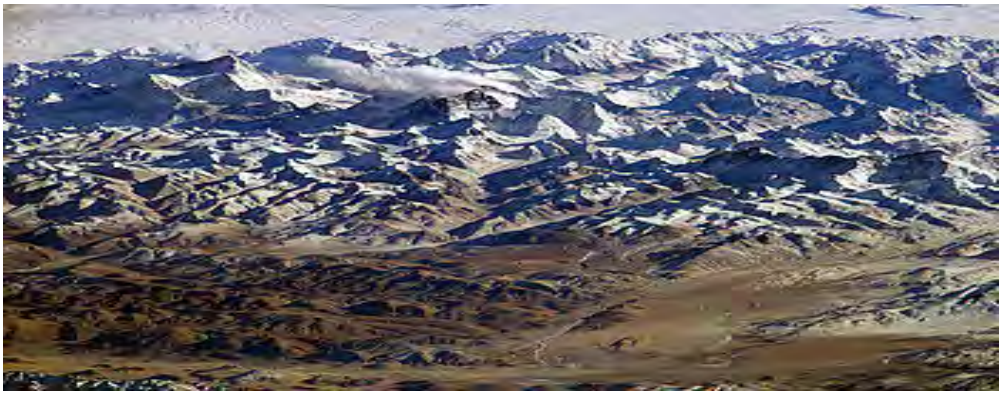
These steep southern slopes are nearly uninhabited, thus an effective buffer between languages and culture in the Terai and Hill regions. Northern slopes are gentler and moderately well populated. The Hill region ends dramatically where the main Himalayan Range abruptly rises thousands of meters.

iii) The Mountain Region

The Mountain Region or *Parbat* abruptly rises into the zone of perpetual snow along the Main Central Thrust fault zone. South of this fault system, "hills" do not greatly exceed tree line at about 3,500 meters (11,483 ft).

Snow fall in Mustang District

North of it the Himalayas rise as a virtual wall beyond the snowline at 5,000 to 5,500 meters (16,404 to 18,045 ft) to some 90 peaks over 7,000 meters (22,966 ft) and eight exceeding 8,000 meters (26,247 ft) including **Mount Everest at 8,848 meters (29,029 ft)** and **Kanchenjunga** at 8,598 meters (28,209 ft), KUMBU around Mt. Everest, LANGTANG north of Kathmandu, **Annapurna** north of Pokhara and Dhaulagiri further west, then Kanjiroba north of Jumla..



View of the Mount Everest from over the *Tibetan Plateau*.
(http://en.wikipedia.org/wiki/File:Himalayas.jpg)

Population:

As per 2001 census, the population of Nepal consists of 2, 31, 51, 423 people, of which 50.1 percent are females. The current estimated population of Nepal is 28 million with growth rate is 1.94 percent. About 45.5 percent people live in Middle hill and Cure, and 47.5 percent live in Terai area. Only 7.3% live in the high mountain hills. The density of the population is higher in south than the north.

Nepal, due to wider diversity of population in terms of ethnicity, cultures and languages, is heterogeneous society, consisting of 102 different caste and ethnic groups and 92 languages and dialects. The religious diversity is equally important feature of Nepal. The average literacy rate stands 54.1 percent. The progress in the growth of literacy rates, however, has remarkably increased in the last decade, despite several constraints posed by intense conflict and political instability.

2.3 Outline of Japan

Japan consists of four major islands, surrounded by more than 4,000 smaller islands. About three-fourths of Japan's land surface is mountainous which are more than 3,000 meters high. Japan's highest mountain is Mt. Fuji 3,776 meters high on the border of the Yamanashi and Shizuoka Prefectures. The Chubu Region of central Honshu is known as "the roof of Japan". Japan's closest neighbors are Korea, Russia, and China. The Sea of Japan separates the Asian Continent from the Japanese archipelago. Japan's topographical features include coastlines with varied scenery, towering mountains, which are very often volcanic and twisted valleys that invite visitors into the mysterious world of nature.

Area: Japan is situated in northeastern Asia between the North Pacific and the Sea of Japan. The area of Japan is 377,873 square kilometers. Japan is politically structured into 8 regions and 47 Prefectures.

The following are the four major islands (about 7,000 islands):

1. Hokkaido (northern island): 83,000 square kilometers
2. Honshu (main island): 231,000 square kilometers
3. Shikoku (smallest island): 19,000 square kilometers, and
4. Kyushu (southern island): 42,000 square kilometers.

Population: Japan's population is over 127 million.

Location: Japan's northernmost point (in the Russian-occupied Northern Territories) is 45˚33' north latitude, and its southernmost point is at 20˚25' north latitude.

Land use:

- Agriculture 4.73 million (12.5 % of the total)
- Forestry 25.08 million (66.4 %)
- Field o.28 million (0.7 %)
- Surface water, rivers and water channels 1.33 million (3.5 %)
- Roads 1.34 million (3.5 %)
- Residential: 1.87 million (4.9%),
- Others: 3.16 million (8.4%)

About three-fourths of Japan's land surface is mountainous and many hills and mountainsides are cultivated all the way to the top.

Climate: Varies from tropical in south to cool temperate in north

Land boundaries: none

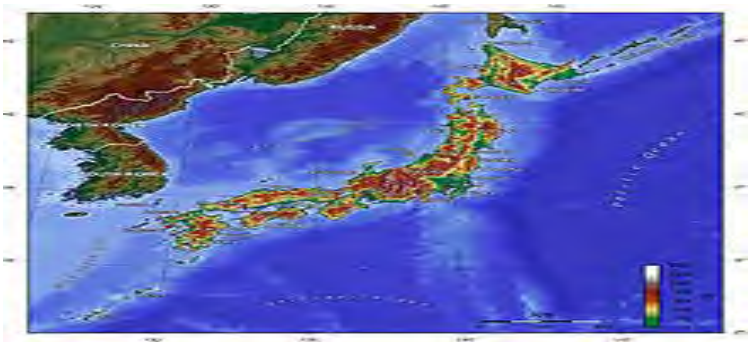
Terrain: mostly rugged and mountainous

Coastline: 34,751 km (21,593 mi)

Natural resources: negligible coal, oil, iron, fish, and mineral resources

Irrigated land: 27,820 km2 (73% of Japan is mountains)

Composition and topography



Topographic map

Map of Japan

Japan is situated in a volcanic zone along the Pacific, frequent low-intensity earth tremors and occasional volcanic activity is felt throughout the islands. Destructive earthquakes occur several times a century. Hot springs are numerous and have been exploited as an economic capital by the leisure industry.

2.4 The Ecosystem of Nepal and Japan

About Nepal:

Ecologically, Nepal has five main categories of ecosystem. They are forests, wetlands, rangelands, agro ecosystems, and mountain ecosystems. The average precipitation of the country is about 1600 mm with the variation of 300 mm in dry rain shadow area to more than 5000 mm in wet region. The average temperatures in the country show extreme values with less than 0C in the Himalayan region and more than 40C at the Terai during the summer. Over 39 percent of Nepal's total geographic area is classified as forest, of which at least 23 percent is forested. One quarter of Nepal's forest area is heavily degraded, which has led to loss of biodiversity, increased landslides, and soil erosion.

About Japan:

Introduction

Location of the Sea of Japan (LME). (Source: NOAA)

The Sea of Japan Large Marine Ecosystem (LME) is a semi-enclosed sea with an area of approximately 978,000 square kilometers (km^2), a volume of 1,713,000 cubic kilometers (km^3), and a mean depth of 1,350 meters (m). The Sea of Japan is connected to the Sea of Okhotsk, the Northern Pacific Ocean and the East China Sea through four shallow straits. The Tsushima Current, a small branch of the warm Kuroshio Current, enters the Sea of Japan through the Tsushima Strait between Kyushu and Korea and flows out to the Pacific through the Tsugaru and Soya Straits. Climate is the primary force driving the LME, with intensive fishing as the secondary driving force.

(*Source:LME book chapters and articles pertaining to this LME include Terazaki, 1999)*

The northwestern Sea of Japan is colder, with sharp temperature declines in winter and the presence of ice in the Tartarskiy Strait from November to April. Seasonal temperatures vary by 20 degrees Celsius in the northwest, and 14 degrees Celsius in the south. The Sea of Japan Large Marine Ecosystem is considered a Class I, highly productive (>300 grams of Carbon per square meter per year (gC/m^2-yr) ecosystem based on SeaWiFS global primary production estimates. For information on hydrographic conditions, primary production in winter and summer, phytoplankton, zooplankton and micronekton, see Terazaki, 1999. The zooplankton community shows low variance in taxonomic groups and species.

2.5 River System of Nepal and Japan

About Nepal

Nepal has three categories of rivers. The largest systems -— from east to west KOSHI, GANDAKI, KARNALI and MAHAKALI, originate in multiple tributaries rising in or beyond the high Himalaya that maintain substantial flows from snowmelt through the hot, droughty spring before the summer monsoon. These tributaries cross the highest mountains in deep gorges, flow south through the Middle Hills, then join in candelabra-like configuration before crossing the Mahabharat Range and emerging onto the plains. The KOSHI is also called SAPTAKOSHI for its seven Himalayan tributaries in eastern Nepal:

The GANDAKI has seven Himalayan tributaries in the center of the country: After the seven upper tributaries join, the river becomes the NARAYANI inside Nepal and is joined by the east RAPTI from CHITWAN Valley, Crossing into India, its name changes to GANDAK.

The KARNALI drains western Nepal, with the Bheri and Seti as major tributaries. The upper Karnali rises inside Tibet near sacred Lake Manasarovar and Mount Kailash. The area around these features is the hydrographic nexus of South Asia.

The MAHAKALI along the Nepal-India border on the west joins the Karnali in India, where the river is known as Ghaghara.

Second Category Rivers rise in the Middle Hills and Mahabharat Range, from east to west. Without glacial sources, annual flow regimes in these rivers are more variable although limited flow persists through the dry season.

Third Category Rivers rise in the outermost Siwalik foothills and are mostly seasonal. None of these river systems support significant commercial navigation. Instead, deep gorges create obstacles to establishing transport and communication networks and de-fragmenting the economy. Foot-trails are still primary transportation routes in many hill districts.

About Japan:

Rivers in Japan are generally steep and swift, and few are suitable for navigation except in their lower reaches. Most rivers are fewer than 300 kilometers in length, but their rapid flow from the mountains provides a valuable, renewable resource: hydroelectric power generation. Japan's hydroelectric power potential has been exploited almost to capacity. Seasonal variations in flow have led to extensive development of flood control measures. Most of the rivers are very short. The longest, the Shinano River, which winds through Nagano Prefecture to Niigata Prefecture and flows into the Sea of Japan, is only 367 kilometers long. The largest freshwater lake is Lake Biwa, northeast of Kyoto.

Extensive coastal shipping, especially around the Seto Inland Sea (Seto Naikai), compensates for the lack of navigable rivers. The Pacific coastline south of Tokyo is characterized by long, narrow, gradually swallowing inlets produced by sedimentation, which has created many natural harbors. The Pacific coastline north of Tokyo, the coast of Hokkaidō, and the Sea of Japan coast are generally unindicted, with few natural harbors.

Inundation of Toyooka City, Japan,(21,Oct.2004)

Koshi flood of Nepal,August,2008(Rt.)

The Sea of Japan coastline is highly developed, with commercial ports and fishery harbors. Parts of the coast are protected by seawalls and breakwaters against storm surges, high waves, and beach erosion. Japan has a densely populated coastal zone. The fisheries sector is an important industry for Japan. It is very reliant on the sea for its supply of fish, seaweed and other marine resources. Japan maintains one of the world's largest fishing fleets and accounts for nearly 15% of the global catch. The coastal zone is used to harvest marine resources, and for petroleum exploration, industrial development, waste dumps and recreation. An efficient transport system links the islands. The lack of natural resources means that fuel, raw materials and food have to be imported in large quantities. As a result, Japan is very reliant on trade and international shipping. Industry is heavily dependent on these imported raw materials and fuels. The main ports in this LME are Otaru, Sakata, Fushiki, Tsuruga, and Maizuru.

2.6 Climate Variation of Nepal and Japan

About Nepal:

Nepal has tremendous variation in climate. Its latitude is about the same as that of Florida so Terai land up to 500 meters (1,640 ft) has a fully tropical climate, with a subtropical zone extending up to 1,200 meters (3,937 ft) which is the lower limit of frost in winter.. Eastern Nepal gets about 2,500 mm (98.4 in) annually; the Kathmandu area about 1,400 mm (55.1 in) and western Nepal about 1,000 mm (39.4 in). This pattern is modified by adabiatic effects as rising air masses cool and drops their moisture content on windward slopes, then warm up as they descend so relative humidity drops. Annual precipitation reaches 5,500 mm (216.5 in) on windward slopes in the ANNAPURNA Himalaya beyond a relatively low stretch of the Mahabharat Range. In rain shadows beyond the high mountains, annual precipitation drops as low as 160 mm (6.3 in), creating a cold semi-desert.

The monsoon is preceded by a buildup of thunderstorm activity in the hills that helps farmers irrigate rice seedbeds. Sustained rain on average arrives in early June as rising temperatures over Inner Asia creates a low pressure zone that draws in air from the Indian Ocean, but this can vary up to a month. Significant failure of monsoon rains historically meant drought and famine while above-normal rains still cause flooding and landslides with losses in human lives, farmland and buildings. The monsoon also complicates transportation with roads and trails washing out while unpaved roads and airstrips may become unusable and cloud cover reduces safety margins for aviation. Rains diminish in September and generally end by mid-October, ushering in generally cool, clear, and dry weather, as well as the most relaxed and jovial period in Nepal. By this time, the harvest is completed and people are in a festive mood. The two biggest and most important Hindu festivals are DASHAIN and TIHAR arrive during this period, about one month apart. The post monsoon season lasts until about December.

After the post monsoon comes the winter monsoon, a strong northeasterly flow marked by occasional, short rainfalls in the lowlands and plains and snowfalls in the high-altitude areas. Precipitation varies from year to year but increases markedly with elevation. Adequate snowfall in the Himalaya is important for sufficient spring and summer melt water for irrigation in the lower hills and valleys. At lower elevations, winter rainfall is needed for the success of winter crops such as wheat, barley and vegetables. In this season the Himalaya functions as a barrier to cold air masses from Inner Asia, so southern Nepal and northern India has warmer winters than would otherwise be the case. April and May are dry and hot,

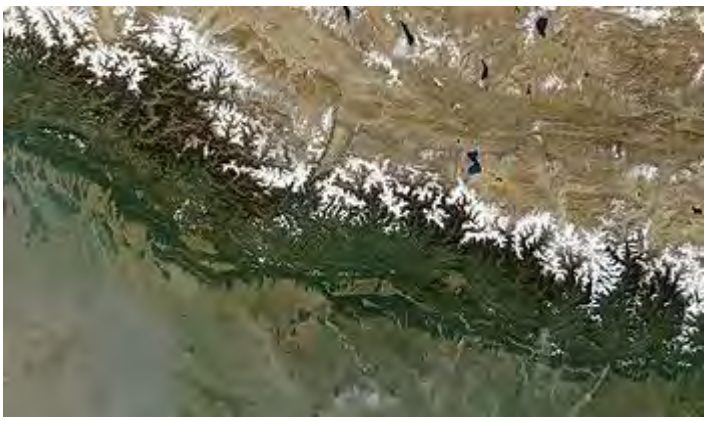
especially below 1,200 meters (3,937 ft) where afternoon temperatures may exceed 40 °C (104 °F).

Conducted the Cabinet meeting at Mt. Everest:

Cabinet meeting has been held at Mt. Everest on 4th December 2009. The main purpose of the meeting was to sensitize the impact of climate change on Himalayan region. In addition, the aim of the meeting was also drawing the attention of the international community to the impact of climate change on the Himalaya and poorest and most vulnerable communities depending on its resources.

About Japan:

Satellite image of Hokkaidō in January



Satellite image of Nepal in October 2002(Rt.)

Climate classification of Japan

Japan belongs to the temperate zone with four distinct seasons, but its climate varies from cool temperate in the north to subtropical in the south. The climate is also affected by the seasonal winds that blow from the continent to the ocean in winters and vice versa in summers.

Japan is generally a rainy country with high humidity. Because of its wide range of latitude, Japan has a variety of climates. The generally humid, temperate climate exhibits marked seasonal variation celebrated in art and literature, as well as regional variations ranging from cool in Hokkaidō to subtropical in Kyūshū. Climate also varies with altitude and with location on the Pacific Ocean or on the Sea of Japan. Northern Japan has warm summers but long, cold winters with heavy snow. Central Japan has hot, humid summers and short winters, and southwestern Japan has long, hot, humid summers and mild winters.

Two primary factors influence Japan's climate: a location near the Asian continent and the existence of major oceanic currents. The climate from June to September is marked by hot, wet weather brought by tropical airflows from the Pacific Ocean and Southeast Asia. These

airflows are full of moisture and deposit substantial amounts of rain when they reach land. There is a marked rainy season, beginning in early June and continuing for about a month. It is followed by hot, sticky weather. Five or six typhoons pass over or near Japan every year from early August to early September, sometimes resulting in significant damage. Annual precipitation, which averages between 1,000 and 2,000 mm (39.4 and 78.7 in), is concentrated in the period between June and September. In fact, 70 to 80 percent of the annual precipitation falls during this period. In winter, a high-pressure area develops over Siberia, and a low-pressure area develops over the northern Pacific Ocean. The result is a flow of cold air eastward across Japan that brings freezing temperatures and heavy snowfalls to the central mountain ranges facing the Sea of Japan, but clear skies to areas fronting on the Pacific.

Its varied geographical features divide Japan into six principal climatic zones.

- **Hokkaido**: Belonging to the cool temperate zone, Hokkaidō has long, cold winters and cool summers.
- **Sea of Japan**: The northwest seasonal wind in winter gives heavy snowfalls. In summer it is less hot than in the Pacific area.
- **Central Highland: A** typical inland climate gives large temperature differences between summers and winters and between days and nights. Precipitation is not large throughout the year.
- **Se to Inland Sea**: The Mountains in the Chūgoku and Shikoku regions block the seasonal winds and bring mild climate and many fine days throughout the year.
- **Pacific Ocean**: Winters are cold, with little snowfall, and summers are hot and humid due to the southeast seasonal wind.
- Southwest Islands : This zone has a subtropical climate with warm winters and hot summers. Precipitation is very high, and is especially affected by the rainy season and typhoons.

2.6 The Economy of Nepal and Japan

About Nepal:

The second Nepal living Standards Survey (NLSS II 2003-04 cited in ICCPR, 2010) estimated that 25.4 percent of Nepalese people are living below the poverty line. In addition, Nepal ranks 193 out of 210 countries in terms of gross national income per capita adjusted for purchasing power and more than 70 percent of people live on less than USD2 per day (ADB, 2009 cited in NAPA, 2010:2). This means that they are living in households where per-capita

expenditure for food and non-food items is beneath the required amount to purchase the minimum caloric requirement and other basic needs. The average per capita income the Nepalese people are living with NRS. 15000. The unemployment rate of male and female aged 15 and above in 2008 is 2.2 and 2 percent respectively. According to the Nepal Labour Force Survey (2008), the work participation (labour force) rate is 77.8 percent. The economic progress has been steadily moving towards the millennium development goals.

About Japan:

Rank 3rd (nominal) / 3rd (PPP)
Currency Japanese Yen (JPY)
Fiscal year 1 April - 31 March
Trade organizations APEC, WTO, OECD, G-20, G8 and
GDP growth 3.9% (2010)
GDP by sector Agriculture1.5%, industry: 22.8%, services: 75.7% (2010 est.)Inflation (CPI) 0% (January 2011)
Population below poverty line NA
% Ginny index 38.1 (2002)
Labor forces 65.64 million (2010 est.)
Labor force by occupation Agriculture: 4%, industry: 28%, services: 68% (2009 est.)

The economy of Japan is the third largest in the world after the United States and the People's Republic of China but ahead of Germany at 4th. According to the international monetary fund, the country's per capita GDP was at $32,608 or the 23rd highest in 2009.
After the World War II, Japan underwent a period of restoration followed by high economic growth. Eventually, Japan was becoming the economy with the second largest GDP in the World in 1967.
The Japanese economy maintained a long lasting recovery since the beginning of 2002. However, the path has not been flat, given the two “soft patches (temporary softening in the market)” in the past and impairment in some parts of economy. In the start of 2008, private consumption and investment in plant and equipment fell flat and so did production, bringing the economic recovery to a standstill.
For three decades from 1960, Japan experienced rapid economic growth, which was referred to as the Japanese post-war economic miracle. With average growth rates of 10% in the

1960s, 5% in the 1970s, and 4% in the 1980s, Japan was able to establish and maintain itself as the world's second largest economy from 1968 until 2010..

- Japan's economy is disrupted in early 2011 due to the earthquake and the effect of the tsunami. It is estimated Japan's GDP Growth will be lowered by 1% which is bad as it contracted 1.5% at the end of 2010.

Infrastructure of Japan

Shinkansen

Energy in Japan and Transportation in Japan

Japan (world's third largest economy) faces its biggest challenge since World War II. The Lightly touching on the Human tragedy in Japan, while in the next anticipating with delight the economic recovery it will (supposedly) create. The natural disaster in Japan is tragic both on a human level and economically. Japan may, possibly, enjoy a GDP boost in six months or so as a result of some rebuilding, but the billions in present –day lost productivity will easily negate only future upside.

The buildings and businesses with billions in loans have (and will continue to) experience enormous losses. Who will realize these losses? Insurance losses – the capital that would be invested in other productive assets - now must cover billions in claims. And what about the economic impact is resulting from the loss of nuclear efficiency? Consider the power situation in Japan over the coming months with 40% of electricity used in greater Tokyo historically originating from the Niigata and Fukushima prefectures. In totality, it is mystifying how any economist could predict a net economic positive.

"Attention also turns towards the extent of the damage to the economy and its reconstruction and rehabilitation plans . . . Japan's economic growth rate will fall in the immediate aftermath of the natural disasters before rising sharply due to reconstruction activities . . . Moreover, in a really good recovery scenario.

The priority for Japan's economy after the devastating earthquake and tsunami was reconstruction and to get economy going, Japan had a "relatively ample pool" of financial resources to support the reconstruction efforts, adding that the broad response of the Japanese government to tackle the impact of the disaster was "decisive and swift". The Japanese government recently projected that the economic cost of the March 11 earthquake and ensuing tsunami on the seven most affected prefectures in the northeast of Japan could total up to 309 billion U.S. dollars.

Chapter 3

Disaster Scenario of Nepal and Japan

3.1 Disaster Scenario of Nepal

Nepal is sits in the top 20 list for the most multi-hazard prone countries in the world. The country is also ranked 11th in term of risk from earthquakes and 30th from the risk of floods. Geographical, topographical, climatic and socio-economic conditions have made Nepal vulnerable to various types of natural and non-natural (manmade) disasters. Nepal is facing floods, landslides, earthquakes, drought, fire, windstorm, epidemic, lighting, Glacier Lake Outburst Floods and there is regularly one hazard constantly occurring. The third chapter of this study described the types of disaster briefly in the following sections.

3.1.1 Flood

Floods in Nepal can be classified into two categories as regular floods and flash flood. River floods occur when the river is contained with full of water and inundated the area alongside the river by over flowing. River floods, however, followed by sudden outburst of clouds localized in nature with incessant rain for days together cause disastrous situations. This type of flood is common in the southern Terai belt, inner Terai and the valley.

Flood of Mahotari District (Terai belt of Nepal)

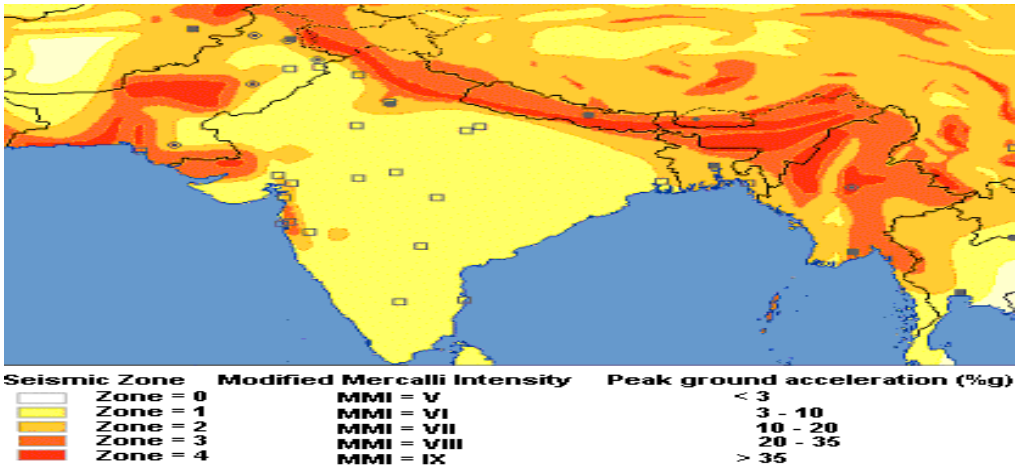
Nepal also faces flash floods. Flash floods are severe floods that occur with little or no warning, characterized by little time laps between the start of the flood and peak discharge. Flash floods caused by the glacial lake outburst, which have the devastating impacts on hundreds of kilometers downstream with, little warning times of minutes or hours at the most.

3.1.2 Landslides

Landslides are one of the main natural disasters that occurring frequently in hilly areas of Nepal mostly during the monsoon season. Heavy rainfall in the hills with the days, past saturates and erodes the shear strength triggering a landslide. Infrastructures such as roads and irrigation canals built without proper planning and protection measures can be damaged and washed away by frequently occurring landslides.

3.1.3 Earthquakes

Nepal is vulnerable to earthquakes because of its location in a tectonically active zone. The presence of 3main fault systems; the Main Central Thrust (MCT) at the foot of Greater Himalaya joining the midland mountains, the Main Boundary Thrust (MBT) at the junction of the lesser Himalaya and the Siwaliks and the Himalyan Frontal Faults (HFF) south of the Siwaliks, all running east to west ,are the main sources of earthquakes in Nepal .



These fault lines occurs as a result of the movement of the Indian plate underneath the Eurasian plate.

3.1.4 Drought

Drought is a weather phenomenon in a climate cycle with a dry spell for days and weeks together presenting a very dismal picture for the people affected with a parched land with broken surface. The drought depletes the water in the lake and the reservoir affecting the water supply to the power station, irrigation system and the community for drinking water. During droughts the food production and supply becomes scarce causing health hazard to the population mainly because of malnutrition.

3.1.5 Fire

Fires generally occur in Nepal with the coming in dry summer season in the hills and plains of Terai. The villages with clusters of houses with thatched roofs in the plain make them vulnerable to both types of the fire sometimes disastrous results. The main causes of fire outbreak are: improper use of fire by children, negligence in using fire especially in Terai region, the electric short circuiting and use of highly flammable materials in houses. In addition, forest fire (bush fire) has been occurred in dry season in hilly region and the cause behind fire incidents identified as negligence of farmers. The main causes of forest fire are anthropogenic due to negligence and causational deliberate bumming of bushes to induce succulent grass growth for domestic animals.

3.1.6 Epidemics

Epidemics are one of the hazards which often turn into disaster in Nepal. Nepal faces most of the epidemics problems during the monsoon period especially in May and June. However, epidemics can happen even until August. The remote villages are not accessible to medical facilities and found to be highly affected by different types of epidemics. Diarrhea, measles, typhoid and cholera are some of the common and frequently occurring epidemics in Nepal.

3.1.7 Lightning

Lightening is normally 0ccurs in monsoon in Nepal. Every year several people lose their lives due to lightening. The main cause of death by the lightening is lack of earthing in houses. In addition, lack of awareness among people about lighting and thundering is found another cause of death by lightening/thundering in Nepal. It has been a serious natural disaster in remote communities of Nepal.

3.1.8 Windstorm

Windstorm is usually hit Nepal, in the month of March and April. It has not been ranked as major natural disaster in terms of casualty of human lives. However, private and public properties have been often severely damaged due to the windstorm in Nepal. According to the Ministry of Home Affairs, windstorm has been occurring almost every year especially in Hills and Terai regions. In 2009, about 23 districts of the Hill regions of Nepal were badly affected from the windstorm. Many public schools lost their roofs due to windstorm.

Types, location and reasons of disaster in Nepal (Table---1)

Types	Location		Reasons
	Major	**Minor**	
Floods	Terai	Hill	Heavy rain fall, siltation, dike failure
Landslides	Hill	-	Young geology, steep topography, deforestations, encroachment of marginal land
Earthquake	Hill	Terai	Indo-Tibetan plate collision
Drought	Terai	Hill	
Fire	Terai	Hill	Lack of awareness, hazardous and inflammable construction materials close dwellings, thatched roofs
Epidemics	Hill	Terai	Poor sanitation, food shortage, lack of health services

Year wise disaster scenario Loss of lives by major types of disasters in Nepal (2000-2009) Table--2

	Flood &landslide	**Earth-quake**	**Thunder-bolt**	**fire**	**Hails-tone**	**Wind-storm**	**epidemic**	**avalanche**	**total**
2000	**173**	**0**	**23**	**53**	**1**	**2**	**141**	**-**	**393**
2001	**196**	**1**	**39**	**26**	**1**	**1**	**154**	**-**	**418**
2002	**441**	**0**	**3**	**14**	**0**	**3**	**0**	**-**	**461**
2003	**232**	**0**	**42**	**16**	**0**	**20**	**-**	**-**	**310**
2004	**131**	**0**	**10**	**10**	**0**	**0**	**41**	**-**	**192**
2005	**141**	**0**	**18**	**28**	**0**	**0**	**34**	**21**	**242**
2006	**141**	**0**	**17**	**28**	**1**	**0**	**34**	**-**	**221**
2007	**216**	**0**	**35**	**34**	**18**	**1**	**9**	**9**	**322**
2008	**134**	**0**	**14**	**11**	**0**	**2**	**10**	**0**	**171**
2009	**135**	**0**	**7**	**35**	**0**	**0**	**462**	**2**	**641**

(Source:MoHA,2009)

Among the above types of disasters, floods, landslides fire and epidemic occur every year in Nepal, and have a serious impact on human lives and property. In 2009, epidemic has been considered as major cause of human casualty.

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

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

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

All the types of disaster have serious impacts on the community as it disrupts their way of life causing immense hardship to the affected people. In addition, it has also a negative impact on the national economy from the point of view of reducing the projected annual economic growth of Nepal.

3.2 Natural Disasters in Japan:

3.2.1 Introduction

Japan also faces several major disasters every year. Japan has been affected frequently by earthquakes, typhoons and tsunamis. In addition, Japan is also home to several volcanoes. The worst earthquake in Japan's history was in 1923, which devastated the cities of Tokyo and Yokohama. Typhoons occur each summer in Japan and destroying land and buildings. At present, TOHOKU Earthquake of 11, March 2011 is considered as most devastating Earthquake in the history of Japan interns of loss of lives and property.

Tsunami occurs as a result of an earthquake under the sea. Japan has 10% active volcanoes of the earth. Japan has 67 volcanoes that could erupt at any time on the Japanese islands.

3.2.2 Earthquakes:

Japan is located at the lines of huge sheets of tectonic plates: the East and the Pacific Plate are sliding underneath the west plate, the Asian Plate. The movement of these plates causes frequent earthquakes. Smaller earthquakes are common in Japan. The Japanese have become used to dealing with frequent smaller tremors. However, major earthquakes are very disastrous in Japan.

The most disastrous earthquakes in Japan was in 1923. That earthquake destroyed the main cities of Tokyo and Yokohama. That earthquake killed over 100,000 people. In addition, fires spread quickly throughout the wooden cities and added massively to the damage. Around 500,000 houses were destroyed.

In 1995 January 17th, Japan suffered from another major earthquake. The Great Hanshin Awaji Earthquake hit the city of Kobe. It caused considerable damage mainly in the south part of Hyogo Prefecture. The earthquake caused 6,434 deaths and 43,792 people injured and about 640 thousand houses were completely destroyed. It was centered at the north end of Awaji Island and had the magnitude of 7.3 (Japan Meteorological Agency scale).

3.2.3 Typhoons

Typhoons occur every summer in Japan. The winds of typhoons are so powerful that they can blow trees over and bring buildings down. Typhoons can cause both flooding and landslides.

3.2.4 Tsunamis

A tsunami is a huge wave. Tsunamis are caused when an earthquake rocks the ocean floor. A tsunami looks like a wave we may see at a surf beach but it is not the same thing. A tsunami originates in a different manner. A tsunami can be a lot bigger than the average wave, however, and cause enormous damage.

An earthquake in July 1993 caused a tsunami off the coast of Hokkaido. The impact of this tsunami was devastating. 202 people were killed and hundreds were injured and missing. The recent tsunami, in Tohoku, northeastern part of Japan is the worst case of disaster in the history of Japan after 2nd world war.

[The Great Tohoku Pacific Ocean Earthquake]

The great Pacific Ocean Earthquake occurred on March, 11, 2011 at 2:46 pm at a magnitude of 9.0 at a depth approximately 25 kilometer and tsunami hit along Sanriku offing, near the east coast of Honshu, Japan. The magnitude of the main shock was the largest in Japan's History. Either way it was the strongest quake ever recorded in Japan. It has been followed by more than 150 powerful aftershocks. Tohoku Pacific Ocean Earthquake followed by jet storm tsunami of 10 meters high waves devastated the entire eastern Japan namely Fukushima prefecture, Iwate, Sendai, Soma city, Miyagi prefecture.

After a quake-crippled nuclear power plant exploded and sent low levels of radiation floating toward Tokyo, prompting some people to flee the capital and others to stock up on essential supplies. Japan estimated the immense economic impact of the March 11 earthquake and tsunami, saying it could hit $309 billion-- double that of the 1995 Kobe Earthquake .The confirmed death toll from the earthquake and tsunami that battered Japan's northeast coast rose to 14,084 and Japan holds out little hope for 13,511 officially listed as missing (Source: Police Agency of Japan, date: 21 April 2011). Large areas of the countryside remained surrounded by water and unreachable.

The government said 2,75, 000 people have been evacuated to emergency shelters. Civil society has emphasized the need for more community involvement through organizing community volunteers. Meanwhile, community members of those affected areas have started working which will gear up the relief and rehabilitation activities of the earthquake and tsunami affected areas. The Great Hanshin Awaji experience and other disaster related experiences had helped Japan to recover soon from this great disaster and human catastrophe.

Some Touchable photos after **Tohoku Pacific Ocean Earthquake:**

3.2.5 Volcanoes

An active volcano could erupt at any time: When a volcano erupts; it sends out a huge quantity of ash and smoke and sends out lava, which is burning, hot, molten rock. Japan has 67 active volcanoes; it means 10% of the world's total active volcanoes over here in Japan. Mount Sakurajima still erupts. When this mountain erupts it covers the city of Kagoshima in ash, more violent eruptions also release lava.

Mount Sakurajima still erupts

River Dam

Shelter **Vulnerable place-Still some People living**

Japan is a disaster prone country. Every year Japan faces disasters such as Earthquake, Tsunami, Typhoon, Volcanoes. There is a very few nations of the world like Japan, facing so many disaster. As a result Government of Japan has attached highest priority to manage disasters and minimize the effects of disaster. Japan is pioneer of disaster management and disaster risk reduction campaign in the World. There are many public and private organizations in Japan have been working on disaster field. Asian Disaster Reduction Center and Hyogo Framework of Action are the reflections of Japan's willingness and active participation in combating disasters in Asia and also in the world.

Chapter 4
Policy and Institutional Frameworks Related to Disaster Management in Nepal and Japan

4.1 Introduction

Disaster risk management always hinges on sound policy guidelines and competent institutions. The existing public sector institutions could be at two levels. One is the policy institution that involved in the policy decisions. At the second tier are the operational level institutions whose function is to implement the policy and provide feedback for policy purposes. This chapter furnished the existing policies and institutional frameworks for disaster risk management in Nepal and Japan.

4.2 Disaster Risk Management Policy and Institutional Framework in Nepal

a) Natural Calamity (Relief) Act, 1982

The Government of Nepal enacted Natural Calamity (Relief) Act in 1982 for disaster management in Nepal. Prior to the enactment of the Act, natural disasters were treated in ad-hoc basis. There were no pre-disaster preparedness plans and post disaster mitigation measures. All the forces and resources used to be mobilized on ad –hoc basis when disasters occurred to alleviate the misery brought on to the community.

The main objectives of the Act are to provide arrangements for relief operations and to provide protection of lives and properties of people. The Act includes followings disaster: events as major disaster types in Nepal **Earthquake**, **Fire outbreak**, **Storm**, **Flood**, **Landslide**, **Drought**, **Famine**, **Epidemics**, **Industrial Accident** and **Explosion.** Earthquake, Fire outbreak, Storm, Flood, Landslide, Drought, Famine and Epidemics are found major disasters in Nepal.

The Act also defines Natural Calamities Relief works. According to the Act natural calamities relief works means: i) any relief work to be carried out in the area affected or likely to be affected, ii) ease people's grief and inconvenience, iii) rehabilitation of disaster victims, protection of life and iv) property of people preparation and adoption of preventive measures.

The Act has made a provision of Central Disaster Relief Committee (CDRC) at the central level which is comprised of 34 members from different agencies. In addition to this, the Act has made provision of Regional Disaster Relief Committee (RDRC) and District Disaster

Relief Committee (DDRC) at regional and district level respectively. These committees provide overall leadership for disaster management at different levels.

b) Three Year Interim Plan

The Three -Year Interim Plan (2007-2010) recognizes disasters as one of the major impediments of national development process, and addresses DRM tasks. The Plan recognizes the need to foster collaboration and coordination among key DRM players and institutions active in different sectors of the national economy.

The following strategies have been outlined in the plan to be adopted for the management of disasters:

- Emphasis will be given to develop and apply environment friendly system in development and construction works.
- Appropriate information flow and pre-disaster preparedness will be made for the mitigation of risks of natural disasters.
- Collaborative works will be strengthened between the government, non-government and private sectors for providing relief and rescue to the affected population.

The following working policies are also outlined:

- Provisions relating to EIA and natural disaster assessment will be strengthened prior to the implementation of infrastructure construction.
- Timely reforms will be made on policy and institutional mechanism in relation to the risk mitigation of natural disasters.
- Appropriate mechanism will be developed to strengthen the collaborative works among the government, non-government and private sector to provide relief, rescue and rehabilitation to the affected population.
- Awareness programs will be run to enhance the participation of community organizations and the general public to mitigate the risks.
- Emphasis will be given to pre-disaster preparedness through the process of identifying the areas with high risk and their mapping.
- The role of Ministry of Home affairs will be strengthened as a competent coordinator for the disaster management by enhancing the capacity of agencies and human resources associated with disaster management.
- Robust technology will be used to make weather and climatic forecasts.

- Soil erosion, landslides, floods and river control works will be implemented in an effective way.

c) Prime Minister's Natural Calamity Relief Fund

The prime Minister's Natural Calamity Relief Fund has been established under the Prime Minister's Office. A high level committee has been set up to regulate the funds. The Vice Chairman of the National Planning Commission chairs the committee. The committee channels the funds for rescue relief and disaster risk management in the country. Any person or organization can donate money to this fund.

d) National Strategy for DRM 2009

The Government of Nepal has approved the National Strategy for Disaster Risk Management (NSDRM) 2009, based on Hyogo Framework for Action. This new National Strategy on Disaster Management as a guiding framework, which encompasses prevention, mitigation, preparedness, response, recovery. The general outlines of the Hyogo Framework for Action and Cluster Approach have been incorporated with a national vision of "disaster-resilient" Nepal.

Objectives of NSDRM:

- Integration of Disaster Risk Reduction (DRR) into sectoral development policies and planning
- Development and strengthening of institutional mechanism and capacities to build resilient communities
- Systematic incorporation of different approaches into Emergency Preparedness; Response and Recovery; Reconstruction and Rehabilitation programs

The following are the Directive Principles of DRM Planning encompasses in NSDRM.

- Mainstream DRM into development plans
- Ensure life safety and social security
- Emphasize gender and social inclusion
- Adopt decentralized implementation
- Follow a holistic approach
- Prioritize staff safety and security
- Follow one-window policy and cluster approach
- Work with participation and coordination.

The NSDRM has incorporated the following Sectoral Strategies for DRR.

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

The strategy has ensured to put collective efforts of all stakeholders at all level in the disaster risk management.

e) National Adaptation Program of Action (NAPA)

It is indeed true that climate Change is increasingly magnifying disaster risks around the world. It is estimated that, during the last century, the world temperature has increased by 0.74 degree Celsius. Thus, it is important to address climate change adaptation and disaster risk reduction together. Realizing this, the Government of Nepal has approved National Adaptation Program of Action (NAPA) to climate change 2010.

f) Local Self Governance Act 1999

Local Self Governance Act, 1999 is the legal instrument for formulating local level development plans and programs. According to this Act, the District Development Committee, Municipality and Village Development Committee are responsible for formulating and implementation local level development programs. The Act addresses disaster risk reduction while developing programs and their implementation.

g) Sectoral Policies and Acts Related to Disaster Risk Management

There are number of sectoral policies related to disaster risk management. For instance, National Health Policy, National Water Plan 2005, Water Induce Disaster Management Policy, 2006 and Environment Policy are directly or indirectly linked with disaster risk management in Nepal. In addition, other sectoral Acts such as Forest Act, Environment Protection Act, Soil and Water Conservation Act 1982, Nepal National Building Code, 2010 are also linked with disaster risk management in Nepal.

h) Cluster Approach in Disaster Risk Management

The Government of Nepal has adopted the UN cluster approach in disaster risk management. The National Strategy for Disaster Risk Management 2009 explicitly mentioned the cluster approach in disaster risk reduction.

i) Relief Standards

The Ministry of Home Affairs is responsible for rescue and relief at the time of disaster. The ministry has developed the relief standard guidelines to distribute relief items such as food and nonfoods items. However, the standards do not meet the international standards.

j) Institution and Partners

The existing public sector national institutions could be placed at two levels. One is policy level that involved in the policy decisions such as Council of Ministers. The second level is the operational level institutions whose primary function is to implement the policy and provide feedback for policy purposes. At the national level, following institutions are in policy formulation and coordination:

i) Ministry of Home Affairs

The Ministry of Home Affairs (MoHA) as the national focal point for all disaster related activities has a prime responsibility to play in its day to day affairs dealing with disaster relative activities. In addition, the ministry is also responsible for policy formulation and their implementation. The Ministry is involved in rescue, relief, data collection and distribution of funds at the local level for relief activities. The ministry works as a secretariat of the Central Natural Disaster Relief Committee.

ii) Centre Natural Disaster Relief Committee (CNDRC)

The Central Natural Disaster Relief Committee is responsible for rescue and relief operations as well as channeling funds. The committee is chaired by the Minister for Home Affairs and there is representation from different governmental as well as non-governmental organizations. The committee has different tiers at regional and district level viz, Regional Disaster Relief Committee and District Disaster Relief Committee.

iii) Other Policy Level Institutions

Other governmental institutions, which have stake in policy formulation and coordination related to disaster risk management, are as follows:

- National Planning Commission
- Water and Energy Commission
- Ministry of Irrigation
- Ministry of Energy
- Ministry of Forest and Soil Conservation
- Ministry of Environment
- Ministry of health and population
- Ministry of Local development

iv) Implementation level Institution (Departmental level)

At the execution level, there are several departments which are primarily responsible for executing plans and programs related to disaster risk reduction. In addition, these departments are also responsible for providing policy feedbacks to the respective ministries.

- Department of Water Induced Disaster prevention
- Department of Soil Conservation and Watershed Management
- Department of Hydrology and Meteorology
- Department of Health Service

- Department of Local Infrastructure Development and Agricultural Road
- Department of Mines and Geology
- Regional Disaster Relief Committee

v) Local Level and Self Governing Institutions

There are two types of local level institutions. One comprises of the representatives of various line agencies. The other consists of the District, Municipality and Village Councils, and other related agencies such as District Development Committee (DDC), Municipality and Village Development Committee (VDC). In addition, DDC, municipality and VDC are also self-governing body at the local level. Each consists of elected representatives. In addition to these local level institutions, the District Disaster (DDRC) Relief Committee is responsible for rescue and relief activities at the local level. The DDRC is comprised of representatives from the different organizations including security agencies and Nepal Red Cross Society.

vi) Non-Governmental Sector (UN Agencies, NGOs, INGOs)

There are two types of non-governmental organizations are involved in disaster risk management. The Nepal Red Cross Society and local level NGOs are working at the local level. Similarly, UN agencies such as UNOCHA, UNDP, WFP, WHO and International Non-governmental Organizations (INGOs) are also involved in disaster management as well as humanitarian assistances.

4.3 Disaster Management Framework in Japan:

Disaster Management of Japan is categorized into 3 levels including national, regional and municipal level. The significance of each level is detailed as follows:

i) National Level:

The Prime Minister is the National Commander through the National Disaster Management Council, and the designed government organizations (23 ministries and agencies), and designated public corporation (63 organizations including independent administrative agencies, Bank of Japan, Japanese Red Cross Society, NHK, electricity and gas companies). In this connection, the national council is responsible for formulation and promoting the implementation of the Basic Disaster Management Plan. Meanwhile, the other two designated agencies of government and public corporations are responsible for

formulation and implementation of the Disaster Management Operation Plan.

ii) Prefectural Level:

The Governor is the commander ordering via the Prefectural Disaster Management Council, and the designated government organization and public corporations in local. The prefectural council will conjunctionally work with the mentioned designated agencies to formulate and promote the implementation of Local Disaster Management Plan.

iii) Municipal Level:

In this level, the Mayor of City, Town and Village is the commander, as the same of Governor in prefectural level, will function through Municipal Disaster Management Council to formulate and promote the implementation of Local Disaster Management Plan.

a) Disaster Management Plan

To correlate with the three disaster management systems, Japan has made up the basic plans, operational plan, to effectively response to various types of disaster and to properly use in areas. The first is Basic Disaster Management Plan- the key plan for disaster reduction activities prepared by the Central Disaster Management Council based on the Disaster Countermeasures Basic Act, the second is Disaster Management Operational Plan made up by each designated government organization and designated public corporation, and the last one is Local Disaster Management Plan set up by each prefectural and municipal council. The last two plans are based on the Basic Disaster Management Plan.

Basic Disaster Management Plan is the plan to state on comprehensive and long- term disaster reduction issues such as disaster management related system, disaster reduction projects, early and appropriate disaster recovery and rehabilitation, as well is scientific and technical research. For the Plan‘s structure, it consists of various plans for each type of disasters which is categorized into 2 main points of natural disaster and accident disasters.

The tangible countermeasures will be taken by each stakeholder such as the national and local governments, public corporations and other entities in term of the disaster phrases of prevention and preparedness, emergency response, as well as recovery and rehabilitation. Additionally, the conceptual formulation of the Basic Disaster Management Plan has emphasized on the important points of hazard and risk mapping, clarification of Jurisdiction, responsibilities and procedures on establishment of emergency response

headquarter, evacuation guidance and order to citizens, designing map of evacuation area in advance, procedure for disaster information gathering and dissemination, and public participation.

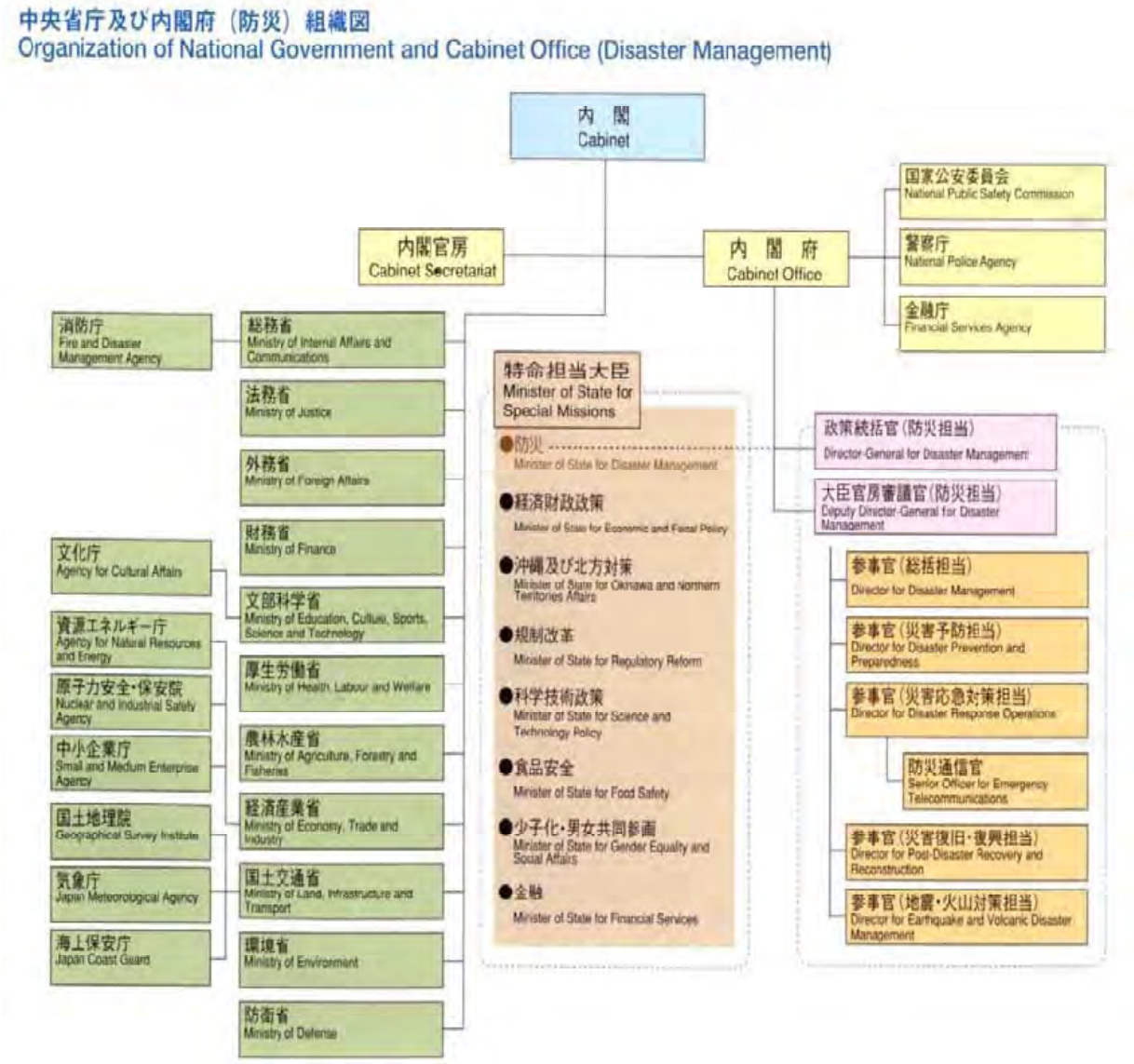


Figure 1 Disaster Management structure of Japan

b) Basic Legal Frameworks of Disaster Management in Japan

In applying to all of the disaster phases of prevention, mitigation and preparedness, emergency response as well as recovery and rehabilitation, relevant laws and regulations were enacted including Disaster Countermeasures Basic Act (1961) This Act is the cornerstone of legislation of disaster management which set out the basic for measures for disaster risk reduction, emergency response, post-disaster recovery and reconstruction. It was formulated in 1961, after the devastating of Typhoon Ise-wan in 1959 that caused more

than 5,000 fatalities. Following acts are the other relevant acts associated with disaster countermeasures Basic Act (1961);

(i). Erosion Control Act (1897), Disaster Relief Act (1947), Building Standard Law (1950)

(ii). Landslide Prevention Act (1958), River Act (1964), and Act on Special Measures for Large-scale Earthquakes (1978).

(iii). Erosion Control Act 1897:

To clearly define the responsibilities of the national and local governments and other public organizations to take necessary measures for preventing sediment-related disaster from the generation and discharge of unstable sediment due to natural events, such as heavy-rain induced landslides and river-bed erosion, to ensure a sound environment and maintain the function of river in flood control and water use, and thus to contribute to the conservation of the national land and the stability of the people‘s livelihood.

(iv). Disaster Relief Act 1947:

The purpose of this law is to allow the national government to take necessary emergency relief measures in case of disaster in cooperation with local municipal governments, the Japan Red Cross, and other relevant organizations. Distribution of foods and drinking water, Supply of clothing, bedding, and other basic necessities, Medical and natal care, Rescue of disaster victim , Emergency repairs of housing subject to disaster, Distribution and/ or loan of funding, equipment, and materials required to maintain livelihoods, Distribution of school supplies , Interment and other matters as specified by government ordinance.

(v). Building Standard Law 1950:

In Article 39 of the law, the municipal government is allowed to designate the area with considerable risk due to tsunami, storm surge, and flood and so on as disaster prone area by its local ordinance. And it shall be determined in the above ordinance that necessary items for disaster Prevention in the disaster prone area such as prohibition against building a residence or restriction concerning to build a building.

(vi). Land slide Control Act 1958:

To provide the measures for preventing landslides or slag heap collapses to avoid or mitigate damage from those hazards, and thus to contribute to the conservation of the national land and the stability of the people‘s livelihood.

(vii). River Act 1896:

The law is to clearly define the responsibilities of the national and local governments and

other public organizations to take necessary measures for comprehensive river management, through which disaster due to floods and storm surges will be prevented, rivers will be in proper use, the regular functions of river water will be maintained, and river environment will be improved and conserved, which will contribute to the conservation and development of the national land, and thus ultimately to enhance public welfare. This law specifies the administration of rivers including classification of administrator.

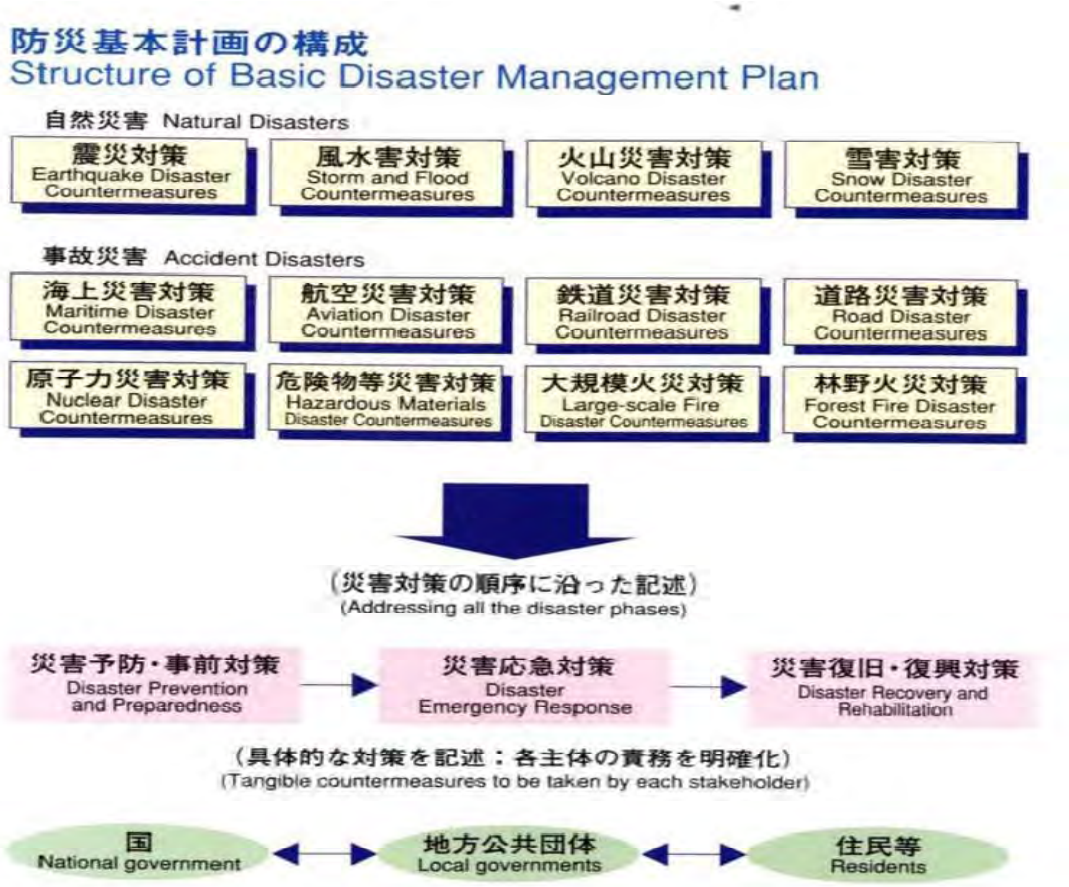


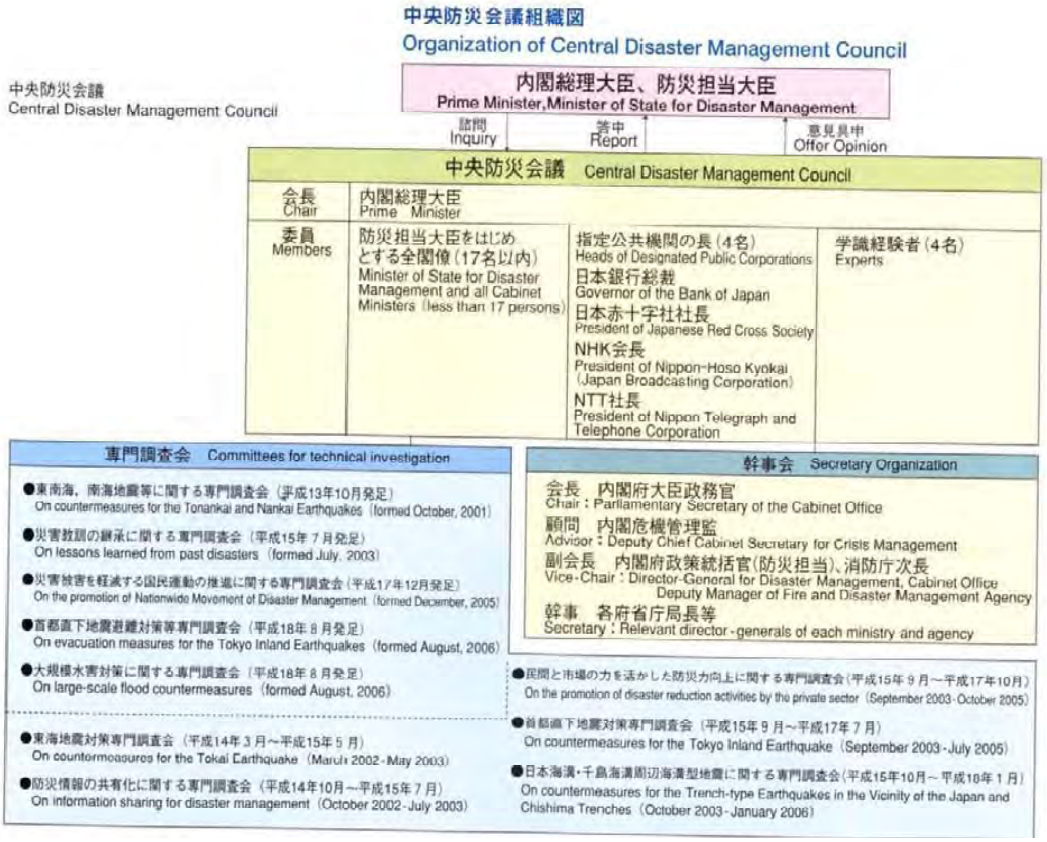
Figure 2 Structure of basic disaster Management Plan

c) Organization Responsibility and Response Mechanism

In addition to the Central Disaster Management Council, there are 23 designated ministries and 63 designated public corporations, prefectural Disaster Management Council, and Municipal Disaster Management Council . It also includes other main agencies namely Cabinet Secretariat, Cabinet Office, and Residents too.

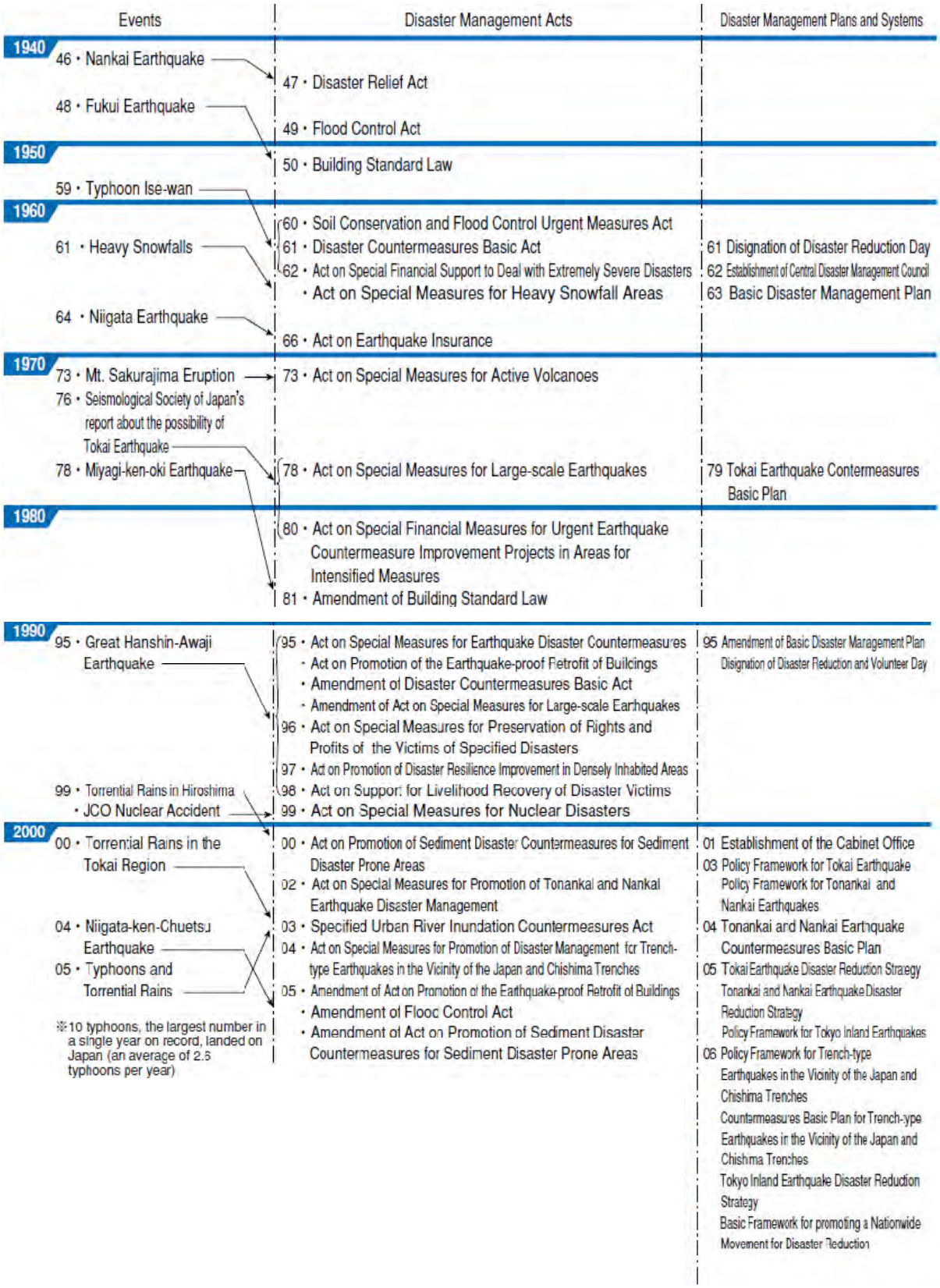
In Cabinet Office has been established, the post of Minister of state for disaster management has newly established after 1995 to take into account for the large-scale disaster and serious accident including the Great Hanshin- Awaji Earthquake that happened in that time. Government organization in wide-ranging issues, planning of basic disaster management

policies and supporting the Cabinet Secretariat to response to large-scale disaster. The Central Disaster Management Council has been, dealing with the Basic Disaster Management Act, formed under the Cabinet Office. The Prime Minister is the Chair person, Minister of State for Disaster Management, all 23 ministries, and heads of major public institutions and experts. The council has mainly taken task of formulation and promotion on implementation of the Basic Disaster Management Plan and Earthquake Countermeasure Plans. When there are large-scale disaster occurred in Japan, all agencies concerned will deal cooperatively with in disaster affacted areas. The two main organizations, the Cabinet Office, and Prime Minister‘s Office, will be directly responsible for this matters in line with national commanding. Firstly, the Cabinet will collect the information and dispatch the initial emergency survey team to the happening areas, coordinate and hold the inter-ministerial meeting, and then dispatch again to investigate the situations. Meanwhile, the Prime minister‘s Office will keep a close watch to the situation, analysis of damage and discuss the disaster situation.



d) Progress in Disaster Management Laws and Systems

In Japan, the disaster management system has been developed and strengthened, which is shown in the following figure.



Outline of the Disaster Management System

Source: Disaster Management in Japan (Cabinet office, Government of Japan)

Chapter 5
Community Participation in Disaster Preparedness Planning
Study in between Nepal and Japan

5.1 Introduction

Community participation in disaster preparedness planning is recently developed phenomenon in Nepal. Before the enactment of Natural Calamity relief Act, 1982, there was no effort in place for disaster preparedness planning. Normally, all disasters were dealt on as and when necessary. Wait and see policy was in place and funds and relief items were allocated on the ad- hoc basis. There is little attention or no attention paid to community participation in disaster preparedness planning and implementation. However, local community members were involved as volunteers at the time of rescue and relief distribution. The main objective of this chapter is to define what community is and why it is important in disaster preparedness planning. In addition, this chapter also briefly describes the policy framework on disaster preparedness planning in Nepal and Japan.

5.2 Concept of Community Participation

A community is a group of individuals and households living in the same location and having the same hazard exposure, who can share the same objectives and goals in disaster risk reduction. The community referred to are local villages such as the Ward in Nepal, the Ban in Laos, the Commune in Vietnam, and the Barangay in the Philippines (*Regional Workshop on Best Practices in Disaster Mitigation)*.

World Health organization (2002) defines community participation as a process by which people are enabled to become actively and genuinely involved in defining the issues of concern to them in making decisions about factors that affect their lives, in formulating and implementing policies, in planning, developing and delivering services and taking action to achieve change. Similarly, DIPECHO (2009) stated that community participation is a process whereby a group of people have transcended their differences to meet on equal terms in order to facilitate a participatory decision making process. In other words it can be viewed as process which begins a dialogue among members of the community to determine who, what, and how issues are decided, and also to provide an avenue for everyone to participate in decisions that affect their lives. The above definitions of community participation explicitly explain the participation of group of people to achieve some predetermined goal or objective.

5.3 Significance of Community Participation in Disaster Risk Management

Community participation has been recognized as the additional element in disaster management necessary to reverse the worldwide trend of exponential increase in disaster occurrence of and loss from small- and medium-scale disasters, build a culture of safety, and ensure sustainable development for all. The community members may have varying perception of disaster risk depending on social class, education, age, gender, etc., and the community risk assessment and disaster risk reduction planning processes helps to unite the community in understanding of the risks and in preparedness, mitigation and prevention actions (*Regional Workshop on Best Practices in Disaster Mitigation).*

Community participation always attempts to empower people to participate in their own development. The WHO (2002) stated that community participation for many different reasons and offers many different benefits for individuals, communities, organizations and society as a whole. These benefits relate to both process and the effects and outcomes of the participation - participation as an end in itself and participation as a means to achieve other goals. The WHO (2002) further stated that involving communities in decision-making will lead to better decisions being made, which are more appropriate and more sustainable because they are owned by the people themselves.

The DIPECHO (2009) stated that community mobilization is inevitable for effective and successful implementation of any program that intends to achieve sustainable results (DIPECHO, 2009:5). The communities are the heart and soul of disaster management. They can identify their own risks and vulnerabilities along with capacities and available resources as well as their own needs. Major benefits of the community based risk assessment, mitigation planning and implementation processes underscored include building confidence, pride in being able to make a difference, and enhanced capabilities to pursue disaster preparedness, mitigation as well as bigger development responsibilities at the local level. Additionally, individual and community ownership, commitment and concerted actions in disaster mitigation, including resource mobilization produce a wide range of appropriate, innovative and do-able mitigation solutions, which are cost-effective and sustainable (*Regional Workshop on Best Practices in Disaster Mitigation).*

5.4 Community Based Disaster Risk Management

Community based disaster management (CBDRM) is anchored in the disaster risk reduction framework. CBDRM covers a broad range of interventions, measures, activities, projects and

programs to reduce disaster risks, which are primarily designed by people in at-risk localities and are based on their urgent needs and capacities. Simply put, the aim of CBDRM is to:

1) Reduce vulnerabilities and increase capacities of vulnerable groups and communities to cope with, prevent or minimize loss and damage to life, property, and the environment,

2) Minimize human suffering, and

3) Hasten recovery.

Through CBDRM vulnerable groups and communities can be transformed to disaster resilient communities, which can withstand and recover from stresses and shocks from the natural/physical and socio-economic political environment. While resilience is a relatively new concept in CBDRM, it is easily grasped and appreciated by communities when illustrated by the example of the bamboo, which sways with the battering of strong winds but stays rooted and weathers the typhoon. Key indicators are safety, livelihood security and sustainable economic, social and physical development (general wellbeing, health, education, amenities, natural and physical environment, etc.)

(*Regional Workshop on Best Practices in Disaster Mitigation).*

5.5 Concept of Disaster Preparedness Planning

The Regional Workshop on Best Practices in Disaster Mitigation also expressed that preparedness involves measures taken in anticipation of a disaster to ensure that appropriate and effective actions are taken during the emergency such as setting up the systems for early warning, coordinative and institutional arrangements, evacuation and emergency operations management, public awareness, disaster and evacuation drills, and stockpiling Programs. Planning is organizing the future. Disaster preparedness planning involves forecasting and taking precautionary measures prior to an imminent threat when advance warnings are possible. In addition, preparedness also involves the development and regular testing of warning systems (linked to forecasting systems) and plans for evacuation or other measures to be taken during a disaster alert period to minimize potential loss of life and physical damage. Moreover disaster preparedness minimizes the adverse effects of a hazard through effective precautionary actions, rehabilitation and recovery to ensure the timely, appropriate and effective organization and delivery of relief and assistance following a disaster.

Disaster preparedness also involves the education and training of officials and the population at risk, the training of intervention teams, and the establishment of policies, standards, organizational arrangements and operational plans to be applied following a disaster. Disaster preparedness requires a realistic and competent planning that improves the response to the

effects of a disaster by organizing the delivery of timely and effective rescue, relief and assistance.

5.6 Community Participation in Disaster Preparedness Planning

The goal of disaster preparedness planning is to achieve a satisfactory level of readiness to respond to any emergency situation through programs that strengthen the technical and managerial capacity of governments, organizations, and communities. These measures can be described as logistical readiness to deal with disasters and can be enhanced by having response mechanisms and procedures, rehearsals, developing long-term and short-term strategies, public education and building early warning systems. Preparedness can also take the form of ensuring that strategic reserves of food, equipment, water, medicines and other essentials are maintained in cases of national or local catastrophes.

5.7 Policy Guidelines for Community Participation in Disaster Preparedness Planning in Nepal

Prior to 1982, before the enactment of Natural Calamity Relief Act, 1982, preparedness activities for the disaster management were not in place. The disaster events were dealt on as and when necessary basis. It was only after 1991 following the declaration of International Decade for Natural Disaster Reduction (IDNDR), disaster preparedness activities were started to be taken into consideration. The picture of disaster preparedness planning and involving communities in the planning process in Nepal is briefly explained in the following paragraphs below.

5.7.1. National Action Plan 1996

A National Action Plan was prepared in 1996 which is the centerpiece for taking necessary measures to all types of natural disasters in the different stages of disasters. This policy paper has pointed out the importance of disaster preparedness planning. The community participation in disaster preparedness process at the local level has been sufficiently soughed in the policy paper. Although, this is the first policy paper address the need of preparedness activities for the disaster management in Nepal.

5.7.2. Periodic Plans

Among the periodic plans of Nepal, the Tenth Five Year Plan (2002-2007) and the Three year Interim Plan (2007-2-10) are the important ones which have given policy directives in the

disaster risk management. The Three -Year Interim Plan (2007-2010) recognizes disasters as one of the major impediments of national development process, and addresses DRM tasks in Chapter 26. The plan recognizes the need to foster collaboration and coordination among key DRM players and institutions active in different sectors of the national economy. The plan outlined importance of appropriate information flow and pre-disaster preparedness for the mitigation of risks of natural disasters and the collaborative works between the government, non-government and private sectors for providing relief and rescue to the effected population.

5.7.3. National Strategy for DRM 2009

As mentioned in previous chapter, the Government of Nepal has approved the National Strategy for Disaster Risk Management (NSDRM) 2009. The strategy is based on the Hyogo Framework for Action. This new policy paper is a guiding framework, which encompasses the cycle of disaster risk management i.e. prevention, mitigation, preparedness, response, recovery. One of the major objectives of the NSDRM is "systematic incorporation of different approaches into emergency preparedness; response and recovery; reconstruction and rehabilitation programs. Similarly, working with participation and coordination with different stakeholders as well as local communities is one of the Directive Principles of DRM Planning.

5.7.4. Disaster Preparedness and Pre-monsoon Planning Workshops

Among the natural disasters impacted at global scale, the floods and induced landslides caused maximum damage which is triple in developing world. For instance, Nepal loses more than 300 lives each year due to water Indus disaster, which is likely to be aggravated further in coming years due to climate change and/or variability induced factors. Keeping this in mind, the Ministry of Home Affairs organizes Disaster Preparedness and Pre-monsoon planning workshops each year at national and regional level, and there is wider participation from local stakeholders.

5.7.5. District Disaster Preparedness Plans

The District Disaster Relief Committee is the apex body responsible for disaster preparedness planning at the district level. The District Administration Office coordinate in this regards. In 2010, more than 60 District Disaster Relief Committees have developed their District Disaster Preparedness Plan (DDPP) as per the instruction of the Ministry of Home Affairs. The ministry has also developed the guidelines for district disaster preparedness plans. There is wider participation from different agencies involved in disaster risk reduction at the local

level. For instance, local association of commerce and industry, Red Cross Society and security agencies were involved in the preparation of disaster preparedness plan.

5.7.6. National Platform for DRR

Realizing the importance of collective efforts of all stakeholders at all level to put in the disaster risk management, a National Platform for DRR has been formed with multi-sectoral involvement. One of the major objectives of establishment of National Platform is to involve private sector in disaster risk reduction at all level. In this regard, there will be wider participation of local communities in disaster preparedness planning.

5.7.7. Community Participation in UN and DIPECHO Projects in Nepal

There is increasing involvement of UN agencies, INGOs, NGOs in disaster risk management in Nepal. Ministry of Home Affairs (MOHA) has been charging series of meetings with UN agencies, AIN members, the Red Cross Movement and Government officials on the process, methodologies, organizational roles and responsibilities of different organizations in order to strengthen response capacities of the stakeholders involved in disaster risk reduction. In April 2010, MOHA compiled the outcomes of workshops held at the district, regional and central levels and forwarded the results to the Central Natural Disaster Relief Committee (CNDRC) for endorsement. Under the instruction of CNDRC, MOHA then circulated 21 action points to all 75 districts, 5 regional authorities, concerned ministries, departments and other humanitarian agencies for implementation. As a result, more than 60 districts and five regional authorities initiated disaster preparedness planning jointly with other humanitarian partners. One of the recommendations was the allocation of District Lead Support Agency (DLSA) amongst UN agencies, INGOs, and the Nepal Red Cross Society in every district to support the District Disaster Relief Committees (DDRCs) for disaster preparedness initiatives. As a result, disaster response during the monsoon season in 2010 was handled and coordinated locally by the DDRCs in coordination with local Government and humanitarian partners in affected districts.

However, these preparedness initiatives need to be strengthened in terms of quality and consistency among the districts and regions. Equally, institutionalization of these initiatives with proper documentation for the future is urgent. The existing Guidance Note of 2008 is limited to general preparedness for flood disaster scenarios. The Guidance Note of 2008 therefore requires updating to include multi-hazard scenarios for response planning. This document will be circulated to all districts, departments, ministries and other partners

working on disaster preparedness and is named as “Guidance Note 2011 - Disaster Preparedness and Response Planning”.

With initiation and leadership of MoHA, National platform has been already formed with multi-sectoral involvement. A process to institutionalize its functionality and effectiveness has been initiated by MoHA and the National Platform is expected to gear up its activities by the end of 2010.

In addition to the National Platform, MoHA has initiated a process to regularly organize Focal Desk Meeting where all the stakeholders including cluster representatives are invited. However, the effort is still at very central level only and need to expand to district level and to the local levels also. Likewise, lot of non-governmental institutions is in place to preparedness. Established in 1996, the Disaster Preparedness Network (DP-Net) is envisioned as a loose association of individual organizations within the development sector in Nepal, which are concerned with disaster management. DP-Net complements the effort of these agencies to inform and prepare organizations and communities to deal effectively with disasters.

Nepal Risk Reduction consortium comprising of ADB, IFRC, UNDP, UNOCHA, UNISDR and World Bank has developed a draft program proposal identifying five flagship areas of immediate intervention for disaster risk management in Nepal. The programs were developed based on government priorities and discussions with multi-stakeholder group.

Additionally, various mechanisms (e.g. Cluster meeting, workshops, exercises, lessons learnt implemented) are functioning and coordination mechanisms have been developed to share information among national and international level.

5.8 Community Participation in Disaster Preparedness Planning (CP-DPP) in Japan:

5.8.1 Introduction:

Japan has many experiences about natural disasters most frequently in the world. It has gained the knowledge and developed the skills of responding and preparing for disasters through its past experiences. In Japan, 1995 January 17, Kobe experienced an exceptional, disaster, called the Great Hanshin –Awaji Earthquake, caused 6,400 deaths and approximately,10 trillion Yen damage. Though the recovery process, Hyogo learned many lessons and acquired much knowledge on disaster management. When disasters strike, communities become the immediate victims, but they are also the first responders.

In the recent years in Japan, “Community –based disaster Management” has drawn people’s attention in the field of disaster management. This is an idea that it is important not only to

provide support for developing countries to implement sabo works and build levees, as well as to improve their disaster specialist's technical skills, but also to provide to support for the improvement of the ability of their local communities to prevent disasters in order to reduce damages.

The "preparations" for emergencies that have been made on a regular basis will be greatly valued. Various preparations can be made for disasters, such as improving earthquake-proof equipment in houses, preparing emergency goods that can be easily carried out in case of disaster, and preparing the necessary materials and devices to directly respond to the disaster. Conducting the regular emergency drills is very important for being prepared for natural disaster situations.

It is impossible to stop "natural disasters" from happening, but at least we can prepare for them. Recently developed new term, gensai "to reduce disasters" has commonly be used in Japan. We cannot reduce the damage from disasters to Zero but we can do our best to reduce the destruction to a small amount. Community based disaster prevention led by citizens that plays the central role in reducing disasters.

5.8.2 Community Emergency Drill Programs:

After the Great Hanshin-Awaji Earthquake, Kobe City lessons from the Earthquake and the city government has focused on establishing and developing voluntary organization for disaster prevention in communities. It is also distributing various disaster prevention equipment and materials, assisting the organizations in conducting the different emergency drills and offering them subsidies to conduct disaster prevention activities.

Kobe city calls these community –based disaster prevention organizations "Disaster Safe Welfare Communities" Short name is BOKOMI. It introduces a series of emergencies drill programs which can be conducted by community –based disaster prevention organizations and a serious of disaster preventions educations programs mainly targeting to elementary schools.

The Kobe City Fire Bureau (KCFB) is assisting with training projects conducted by JICA (Japan International Cooperation Agency) as part of human resource development in the disaster prevention field in the developing countries. Community –based disaster prevention organizations, explains their specific activities to the training participants who are involved in the disaster management in disaster prone- countries.

5.8.3 School Disaster Prevention Education Programs:

School Disaster Prevention Education Program explains varies disaster prevention education programs basically target to elementary school. This program are designed and utilized mainly by teachers, but most of the program can be conducted in cooperation with local communities. It can utilize the information for implementing for community and school joint educational activities. Local communities (BOKOMI) assist schools in conducting emergency drills which are normally held evacuation drills at the school. Local government organizations including fire stations also assist in the emergency drills.

In Japan, governmental support for emergency drills and first aid training is mainly provided by fire stations. This kind of emergency drill programs and disaster prevention education programs are also based on conditions in Japan.

5.8.4 Basic Disaster Management Plan

The Basic Disaster Management Plan states comprehensive and long-term disaster reduction issues such as disaster management related systems, disaster reduction projects, early and appropriate disaster recovery and rehabilitation, as well as scientific and technical research. The plan was revised entirely in 1995 based on the experiences of the Great Hanshin-Awaji Earthquake. It now consists of various plans for each type of disaster, where tangible countermeasures to be taken by each stakeholder such as the national and local governments, public corporations and other entities are described for easy reference according to the disaster phases of prevention and preparedness, emergency response, as well as recovery and rehabilitation.

5.8.5 Fire and disaster management agency in Japan (FDMA)

Fire services in Japan began as municipalities with functions closely linked to local communities and has played a vital role in ensuring the safety and security of the public of Japan. FDMA is active in areas ranging from emergency rescue to the handling of hazardous materials, as well as fire prevention and firefighting. FDMA will expend all efforts to fulfill its responsibilities in enhancing the current municipality –based fire and disaster prevention system that operates around regional fire defense headquarters and volunteer fire corps, and with the cooperation of residents in local communities.

Local residents

Voluntary disaster preventing organizations

Cities, Towns and Villages

(Fire Defense Headquarters, Volunteer Fire Corps)

Prefectures

Fire and Disaster Management Agency

Role of the Fire and Disaster Management Agency

"Safe and secure regional development with the cooperation with residents" and "National response in times of need"

Specialist training to sustain firefighting in Japan

Training highly skilled and specialized leaders and experts to lead firefighting activities:

Improving knowledge and skills that form the basis of activities is essential to ensure that Volunteer Fire Corps respond appropriately to more complex and diverse disasters, rescue efforts and more advanced fire prevention responsibilities. Education and training of Volunteer Fire Corps is conducted in a mutually coordinated arrangement with the national government, prefectures and municipalities, by assigning various functions particular to each of them. Training is conducted by each fire defense headquarters, fire department and Volunteer Fire Corps, as well as at the Fire and Disaster Management College and prefectural fire and disaster management schools. Specialist education and training is also conducted at the emergency medical training institute.

Training fire fighting leaders with high levels of general education

Training of firefighting personnel that will eventually become firefighting leaders and capable of responding to new types of disasters and accidents, and keeping up with the advances made to science and technology, is strongly encouraged. Fire and Disaster Management College, general training is provided for administrative positions within

firefighting organizations, including the fire chiefs, commissioners and heads of Volunteer Fire Corps. Training is also provided to develop personnel with specialist knowledge and skills on protection and policing, rescues, emergencies, fire prevention, dangerous materials and fire surveys for those who will take an active role in activities at disaster sites. Hands-on training is also actively provided to meet the demands of today including management of dangerous materials, NBC disasters and aerial firefighting. FDMA has made available the college to promote learning using visual images of actual disasters and all presented in an exciting quiz format, so that each and every member of the public can learn about disaster prevention, regardless of their situation or age.

Disaster Management of Local Government in Japan

Japan has a long history of earthquake disasters. Various actions have been taken by the central and local governments to mitigate earthquake disasters. In the national level, the Central Disaster Management Council chaired by the Prime Minister formulates and executes disaster management plan. Prefectural Governments and Municipalities also have their own Disaster Management Councils and formulate and promote disaster management local plans. However, at the 1995 Great Hanshin Awaji Earthquake Disaster, the central government failed to capture the damage situation correctly and delayed making right actions. The disaster caused more than 6,000 casualties. Most of them were killed by the collapse of old wooden houses. Since this disaster, many voluntary disaster management organizations have been established in the community level and voluntary activities for disaster mitigation have been conducted widely. Also, the central government issued regulations for promoting seismic retrofit of old buildings and many local governments provide free seismic evaluation to the citizens and prepare subsidy for retrofit of old wooden houses.

Local voluntary disaster management organizations and volunteer activities

At the Great Hanshin-Awaji Earthquake Disaster in 1995, the number of building collapse or heavily damaged is around 250,000 and the number of people captured in the buildings is around 35,000. After the earthquake happened, in the situation that telephone didn’t work and there was a heavy traffic on the road, 27,000 people were rescued by neighbors and 80% of them were alive. However, 8,000 people were rescued by Army, Police or Fire Fighters and less than 50% of them were alive. This fact gives us a lesson that the activity of local community is the key to mitigate earthquake disaster.

Promotion of seismic retrofit by local government

The most effective way to reduce human casualty in case of earthquake disaster is to retrofit vulnerable buildings to prevent building collapse. Most of the local governments in

Japan prepares the service of free building seismic evaluation of the wooden houses to promote seismic retrofit. This evaluation work is done by "Wooden House Seismic Evaluators" certified by the Mayor and the evaluators check the seismic resistance of the citizen's houses and give advices for retrofit. Citizens who want seismic retrofit of their houses can apply to the local government a financial grant or a loan with no interest to cover part of the retrofit cost.

5.8.6 "+ ARTs –Non Profit Organization" in Japan

(A new concept that includes not only classic arts but the essence of modern arts)

Plus Arts is one of the Non Profit Organization which creates awareness and encourages of Community Participation in Japan which clarifies the lessons and skills learned from the Great Hanshin Earthquake, making the disaster reduction part of the daily routine.

+ Arts project team started by using research to clarify the lessons and skills gained from the earthquake. They designed educational programs (including learning materials and games) to communicate this knowledge to children, and they developed a new type of disaster reduction training event for family to experience Themes of + arts disaster reductions activities:

1. Making disaster reduction part of the daily routine
2. Putting creativity to work in disaster reduction
3. Disaster reduction measures that are fun to learn about

Disaster reduction learning materials and games are developed into 3 steps. New disaster reduction training programs were held in seven locations throughout the Kobe City. While the Kobe events were held as demonstrations with the NPO +arts taking a central role, the program held later throughout the country were run primarily by local disaster reduction and educational professionals with NPO +arts providing support.

Learning Materials:

- Online Research
- Reading Earthquake Diaries
- Learning at Earthquake Themed Museums and Libraries
- Listening to the Stories of Earthquake Survivors

5.8.7 Iza! Kaeru Caravan

A new type of disaster drills system: (a new kind of disaster reduction training program learning through fun.)

Purpose of the Iza ! Kaeru Caravan:

Introduction of the system of Kaeru Caravan and basic idea of leaning disaster risk reduction in enjoyable ways which create an opportunity for further learning

Followings are the main Purpose:

- To develop original disaster prevention education system appropriate to local condition.
- To create program which is localized, sustainable and with extendibility by considering not completed as a ad-hoc activities.
- Original programs were developed through collaboration work with the local NGOs and preparatory workshop
- Create a mechanism to organize “Enjoyable Disaster Prevention Drill” by local residents themselves

Based on the experience of implementation “Iza! Kaeru Caravan”, new programs were developed in consideration of the following points:

(1) Overcome lack of knowledge of children
(2) Support evacuation of disabled people
(3) Promote a spirit of teamwork
(4) Transferring not only how to implement the event, but also background and process to create the event.

Positive impacts of Iza ! Kaeru Caravan:

Fun” makes children active and inspires them to participate in the program again and again, which bring significant learning effect to them.

- ”Fun” also makes staff members (Volunteer & DRR related persons) inspiring. And a sense of achievement ensures a continuity of their implementation of the activities.

- Program itself is “incomplete” and easy to customized/localized. Therefore, the program is adapted in a way suitable for the local condition by involving many people.
- Utilization of Mascot Character (Frog) works greatly to provide “Fun”, “Continuity” and “Customizing”.

The Potentiality of the community in Japan has been proven great at the time of disasters. As the result of the engagement of the local community, the extent of damages of lives and property reduced to the minimum. After the Great Hanshin Awaji Earthquake in Kobe, Japan, smooth recovery and reconstruction of the area was possible due to spontaneous participations of local communities.

Chapter 6
Results and Discussion

6.0. Introduction

As noted in the sixth chapter, data obtained from in-depth interviews is central to this study. A total of 21 interviewees were interviewed. The primary data is based on the in-depth interview with different people. It was difficult to take in-depth interview with the concern persons of Nepal from Japan. Thus, all interviews were taken prior to join Visitor Researcher Program in Japan. The result of the study is discusses on following headings:

6.1. Organization Involvement in Disaster Risk Management and their Roles

Achieving the successful disaster risk reduction relies as much as effective institutional factors as it does on development policy and planning for prevention, mitigation, preparedness, response and recovery. In addition, the policy and planning to be set out to allocate resources and involvement of local community who may sufferer from the disasters. The result stated that there are two types of organizations found involvement in disaster risk management. The first one is involved in formulating policies and/or support to formulate policies. For instance, National Planning Commission, Ministry of Home Affairs, Ministry of Irrigation, Ministry of Local Development, Ministry of Physical Planning and Works, and Ministry of Environment are in this first category. In addition, UNOCHA and UNDP are found assisting the government to formulate policies as well as implementing policy in disaster risk reduction of Nepal. For instance, an interview from UNOCHA said:

> *The Role of UNOCHA is to support government and humanitarian stakeholders for better preparedness during the emergency response.*

Second one is involved to implement disaster risk management policy. The Department of Water Induce, Kathmandu, Lalitpur and Bhaktapur municipalities fall in this category. In addition, INGOs like Oxfam, Action Aid, and Practical Action. Moreover, local NGOs like Nepal Red Cross Society, ECO-Nepal, DP-Net are involved in disaster risk reduction as well as mobilizing local community in disaster management. An interview from Oxfam said his organization's role as:

> *Oxfam is engaged in community capacity building, institutional strengthening and advocacy on DRR at all levels- national, districts and community; and contributing in building community and nation resilient to disasters.*

In addition, an interviewee from Red Cross Society who is involved in disaster risk management since long time said the role of Nepal Red Cross Society in disaster risk reduction as:

> *Mainly in institutional and community level preparedness, mitigation, small scale prevention activities, livelihood promotion, and climate change initiatives following integrated approaches.*

As noted in the chapter four, the government of Nepal approved the National Strategy for Disaster Management. The strategy aimed to decentralize disaster risk reduction at the local level. In addition, the strategy also acknowledged the Community Based Disaster Reduction. An interviewee from the Ministry of Home Affairs said:

> *The Government of Nepal approved the National Strategy for Disaster Risk Management 2009 which is based on Hyogo Framework of Action (HFA). The strategy has given importance to Community Based Disaster Risk Management. In addition, the government has also approved flagship approach including the Community Based Disaster Risk Management. In this regard, the government policy is aimed to community participation in disaster risk management.*

Interviewees from Ministry of Local Development and Municipalities stated that they always involve local communities not only in the planning but also at the implementation. They further stated that in many cases they formed User Groups and launched the project through the user groups. However, there are many examples that User Groups are formed only to sow the people and major financial role are taken by few local elites and they also influenced local bodies.

The Local Self Governance Act, 2055 is the legal instrument for formulating local level development plans and programs. According to this Act, the District Development Committee, Municipality and Village Development Committee are responsible for formulating and implementation local level development programs. The Act addresses community participation while developing programs and their implementation. However, Act did not explicitly address and assured the community participation in disaster preparedness planning.

6.2. Community Participation Process in Disaster Preparedness Planning

All interviewees have the same opinion that community is the first responder requires their proactive involvement and cooperation in disaster risk management. They also agreed that

community participation planning aimed to enhance capacity of local community in risk assessment, preparedness planning and mitigations.

Community participation in disaster preparedness planning is a process of involving local communities in such a way that decision-making is shared. Interviewees from Local Bodies and International Non-governmental Organizations stated that they involved communities from the beginning of the project. An interviewee from the Nepal Red Cross Society (NRCS) stated that NRCS has been implementing community based DRR projects since 1998 aiming to enhance capacity of local communities in risk assessment, disaster management planning, preparedness and mitigation. Interviewee further explains the following steps of community participation:

> *Step 1: In general, an autonomous DRR unit, representing from community people, from each project community which mobilizes all community people in local level activities.*
>
> *Step 2: Project develops trained human resources on DM, First aid and Light Search and Rescue through trainings and orientations.*
>
> *Step 3; member of DRR Unit with participation of other community people, jointly assess the prevailing hazards, risk and capacities and prepares detail report. Once the report is prepared, they prepare DM/DP plan, identifying key activities along with budget.*
>
> *Step 4: Coordination with local stakeholders and execution of DM/DP plan.*
>
> *Step 5: Reporting, monitoring, reviews, evaluation and project handing over.*

Oxfam GB Nepal as a lead support agency had supported DRRCs of six districts (Saptari, Sarlahi, Nawalparasi, Rautahat, Baitadi and Surketh) to organize pre-monsoon planning and thereby to develop District Disaster preparedness Plan. Interviewee from Oxfam, GB Nepal explains the local community participation in disaster preparedness planning (decision making process):

> *Communities are involved from the begging of the planning process. They take lead role in analyzing the risk, hazards vulnerability in their community. They analyze using participatory capacity and vulnerability assessment (PCVA) tool to find out the hazard and vulnerability and capacity to response to disasters. The functional task groups including community disaster management committee (CDMC) are formed*

democratically for preparing the disaster preparedness plans, mitigation measures, response plans and implement these plans by themselves.

Other interviewees also explained the similar process as explained by the Oxfam GB Nepal. An interviewee from the Ministry of Home Affairs explained that the National Strategy for Disaster Risk Management (2009) stated that local community should be involved and to be recognized the main actors. However, the strategy does not highlight how local communities are involved in disaster participation planning.

Most of the interviewees whose organization involved local community in disaster preparedness planning describe the following processes:

6.3. Motivation for Active Community Participation

Active community participation is always critical in disaster preparedness planning process. Local community can be encouraged through capacity building, resource mobilization and awareness rising. All interviewees have the same opinion regarding the motivation factors of active community participation. In addition, they also state that ownership is most important factor to motivate the local community in disaster risk management. An interview from the Nepal Red Cross Society stated regarding the ways and process of participation as the first thing is to build sense of ownership in local community. Then enhance knowledge and skill on how to assess hazards/risks and how to identify activities, prioritize them and develop the plan. He further stated that during the whole process, community people need to be encouraged for their direct involvement and facilitation from outsider needs to be ensured. In addition, representation from different groups such as women, elderly, marginalized groups etc need to be ensured. And finally clear roles and responsibilities of community people to be defined.

Various capacity building training as per the need of the local community are the major encouraging factors. These training provide information, knowledge and skill for risk assessment, planning and implementation of the mitigation and preparedness activities for safe community.

Another interview from the local NGO found dissatisfaction with government organizations and other stakeholders and said:

There are many lacks of knowledge and sensitization process within different stakeholders even government channels also. Many more activities are running add-

hock basis in the project area. If community people feel ownership, they will participate directly in the process. If project authorities and staff play mediator role with project and community, people will accept ownership and will play lead role on their local issues. Communities are unable to obtain the real information from different stakeholders because many projects implanting organizations are running on project base theme not as per need of community.

An interview from the government organization also agrees with the above statement and he also stated that many community level projects of INGOS are running in add-hock basis and projects personnel are found reluctant to involve local community in the project.

But another interview from UNDP disagrees with the above statements and he further claims that INGOS always involved local community in disaster preparedness planning. He said:

> *In the UNDP/CBDM activities, it is well informed to the community regarding the preparedness planning for effective response since disaster risk can only be reduce but not fully controlled. So that the preparedness planning is an integral part of the CBDM activities.*

Community participation is empowering local people in decision making process. It provides benefits for individuals, communities, organizations and society as a whole. Thus, communities are always encouraged to take active participation in disaster preparedness planning process disaster preparedness planning.

6.4. Satisfaction with the Participatory Process

An interview from UNOCHA, Nepal expresses his satisfaction on community participation process and said:

> *There is no doubt. One of the most successful and best practices on disaster preparedness is the CBDP programme at district level. The programme involves the affected people from the beginning of the design phase of the projects.*

Similarly another interview from UNDP said:

> *Participatory process in CBDM activities is very strong with enhascing the capacity of the CBDM proups and delegating the maximum authority to them. Further UNDP encourages the CBDM groups for the financial management of the CBDM activities directly transferring the fund in their account.*

Another interview from the Oxfam stated his satisfaction and said:

Yes, the participatory process will lead to the ownership of the community and sustainable management of the disaster effectively .The transparency, accountability in the program and sustainability will be enhanced by the community's participation.

An interview from a local ING expressed his dissatisfaction and he said:

I am not fully satisfied in present situation. Many people who have been involved in the decision process, they are unable to understand own role and dignity in the process due to the cause of poor understanding on disaster preparedness issues. The issue is capacity building and knowledge of the community.

Most of the interviewees expressed their satisfactions on the participatory process of their organizations in disaster risk management. In addition, they also mentioned that participatory process will lead the ownership of the community. The right process of community participation will also help to involve local community in disaster risk reduction. In Nepal, community participation has been found in other sectors such as conservation, drinking water supply, and trail construction at the local level. The community participation in conservation has been found more successful in Nepal.

During the study, interviewees from those organizations who do not involved community in disaster preparedness planning were asked to state the reasons of not involving community by their organizations. An interviewee from the Ministry of Agriculture stated that his organization has not introduced participatory process in majority of the districts. He further stated that community participation is vital, although, it need to streamline in the sectoral efforts. Similarly, another interviewee from the Ministry of Environment stated that the ministry is primarily involved in policy making and during the policy making process the ministry involved stakeholders in state of communities.

a) Some interviewees explained that they involved community as per nature of work. An interviewee from a research institute called Nepal Health Council stated that his organization involved local community as per the nature of research work. In fact, it is not always possible to involve local community in all kind of works. An interviewee from the UNOCHA stated that UNOCHA is not an operational agency, but the secretariat of the humanitarian coordinator in country. Their role is developing common strategy, assisting the situation and needs, mobilizing resources and information management. It may not possible to involve community at all stages as well as in all kind of works.

6.5. Community Participation and using their Inputs

Most of the interviewees stated that their organizations work with the local communities in many areas. However, some interviewees said that their organizations do not involve community directly. Although, their implementing partner organizations involved local community at all stage. For instance, an interview from DPNet stated that "our organization does not work directly with the local community but we reach them through our partner organizations". Similarly another interviewee from Oxfam said:

> *Oxfam DRR/Humanitarian programs are implemented through patner NGOs who are working very closely with the community in disaster management communities (DMC). DMC are involved in preparing CDRMP, VDRMP and take lead role in implanting these. Activities are planned jointly with DMCS with the participation of community members. Views of the community are taken in the mass meeting. All the member of committee indorses the decision of the meeting and implement. The design of the project is prepared in close consultation with community, their logical inputs are highly incorporated and even indigenous knowledge and technology also respected with technical backstopping and capacity building.*

Another interviewees from the government organization stated that his organization not directly work with the local community. However, they interact with the local community to know the reality. He said:

> *My organization not directly works with the local community. Though during the monitoring phase, we interact with the community to know the reality of their improvement in livelihood aspect. During the questionnaires of interaction we found that the real victims' did not get substantial and equitable benefit from the governmental or non-governmental program. It shows that our program input strategy or implementation modality should be change to reach the target groups substantially.*

Similarly another interviewee from an INGO called Action Aid said:

> *Action Aid conduct the participatory rearview and reflection on quarterly basis and social audit (public hearing) after the completion of its project and programs at community level and stakeholders' level where we get the feedback and incorporate the comments suggestion made for the project.*

Disaster Risk Reduction (DRM) and Climate Change Adaptation are critical issues of present world. It is therefore, community participation is equally important in both sectors. The government of Nepal has given its priority in climate change adaptation and involving

local community in climate change adaptation programs. An interviewee from the Ministry of Environment said:

Our organization worked with local community for climate change and health study in 2008 and participants provided a lot of feedbacks through active participation providing information.

Community members are part of decision making in disaster preparedness planning. In the participatory process, communities are involved in project selection and implementation phases. Their feedbacks took great value in all stage of disaster risk management. In this study it is also found that some organization community through the leadership of government organizations and local bodies. For instance, an interviewee from an UNICEF stated that UNICEF works with local community through NGOs and Nepal Red Cross Society with the leadership of government and local bodies involving on community based disaster risk reduction. In addition, regarding the use of feedback and inputs he further stated that participants can receive and provide feedback on their input which is used through community action process.

6.6. Relationship with the Community

It is always vital that there should be intimate and harmony between the organization and the community in disaster preparedness planning. The success of the disaster preparedness planning as well as its effective implementation hinges on the relation of the community and organization. The planner always has to keeps in mind that without community support it is always difficult to implement the program. An interviewee from Oxfam said:

The relation of Oxfam with the community is very intimate. Community owned them program supported by Oxfam, which is design following the bottom up participatory approach. Oxfam works with the most vulnerable community especially dialect, poor, women, children in saving lives and properties of people. Oxfam focuses in capacity building of local community, local stakeholders including technical backstopping. Social audit is organized at community level, which insure transparency accountability and communities are involved in monitoring progress of the project. Therefore, Oxfam relationship with the target community is very friendly and closed.

Similarly, another respondent from the government organization highlighted that community intervention and said:

I work with my own community since twenty years. I feel that the community initiated development efforts are more sustainable than the imposed one. The haphazard intervention

is ultimately problem of itself. Thus, we need to approach for the very systematic, sustainable and sequential development intervention which must be technically fit, economically viable, and socially acceptable. We must try to mobilize the community very planned way rather ranking some ones role.

It is found that many development projects are failure due to conflict between the organization and community. Thus, the planning has to understand the needs and desires of the community. If the community feels that the program does not address their needs, the planner has to rethink on his program. In Nepal, many community level programs have been found unsuccessful due to conflict between the community and organization. In addition, many organizations only seek community support only at the implanting phase.

Questionnaire Survey in Japan about Community Participation in disaster preparedness planning:

In Japan, I interviewed two persons from two sectors, working in the disaster management field. One person, from local Government side, Mr. OHTSU, NOBUHITO, has been working Firefighter, Kobe City, and Hyogo Fire Station.

Another person, from NGOs (Social Workers-Voluntary) side, Mr. HIROKAZU NAGATA, has been serving Chairperson, of Plus Arts NPO (Non- profit Organization).

I appended the interviews of above mention persons at the last part of research paper.

I mentioned my questionnaire, and list of the interviewees in Japan --------Appendix-3.

My question responded by the Hirokazu Nagata, Chairperson of +Arts ----- Appendix -4,

My questionnaire responded by Ohtsu, Nobuhito, Firefighter, Kobe City, Hyogo Fire Station. ---------- Appendix -5

Chapter 7
Conclusion

Nepal is one of the disaster prone countries in the world, mainly due to geographical and natural features. The widespread poverty prevailing in the country and lack of awareness among the people contribute to increase the risk of disasters. Basically, floods, landslides, fires, epidemic, earthquake and road accidents are the major disasters taking place in the country.

Nepal falls in the top 20th list for the most multi-hazard prone country in the world. The Country is also ranked 11th in terms of risk from earthquakes and 30th from the vulnerability to floods and 4th from the risk of climate change in world hazard mapping[1].

In this given situation, community participation in disaster preparedness planning has been justified on political, social, environmental and economic grounds. The degree of community participation in disaster preparedness planning depends on responsibilities of the government and its political ideology. The significance of community participation in disaster risk management is that community mobilization is inevitable for effective and successful implementation of any program that intends to achieve sustainable results.

Japan has many experiences about natural disasters. It has gained the knowledge and developed the skills of responding and preparing for disasters through its past experiences. In Japan, 1995 January 17, Kobe city experienced an exceptional, disaster, called the Great Hanshin –Awaji Earthquake, which caused 6,400 people deaths and approximately,10 trillion Yen damaged. Though the recovery process, from this great Hanshin Awaji Earthquake, Hyogo Prefecture learned many lessons and acquired extensive technology-based expertise on disaster management. When disasters strike, communities become the immediate victims, but they are also the first responders.

In the recent years in Japan, “Community based disaster Management” has drawn people’s attention in the field of disaster management. This is an idea that it is important not only to provide support for developing countries, but also to provide support for the improvement of the ability of their local communities to prevent disasters in order to reduce damages, of lives and property.

For effective disaster management, it is important that the Central Government, Local government, Public corporations and private citizens must work out their roles appropriately. Especially in Japan, after the Great Hanshin Awaji Earthquake, the role of local government and Local community has been increasing. Such experience and knowledge of disaster mitigation action in Japan should be shared with other countries by taking into consideration of local conditions in each country.

Disaster risk reduction paradigm requires a multi-faceted approach either in preparedness or in response. Basically institutional infrastructure must be built-up and accordingly role of the local people might be enlightened. Accordingly I have mentioned some core of my research in this chapter in following sub-headings.

7.1 Challenges of community participation in Nepal.

Following major challenges faced by Government of Nepal in the field of Disaster Management for effective community mobilization.

- There is a major gap in terms of implementation of the comprehensive disaster management programs. The holistic commitment of the government is not reflected in plans, polices, and strategies regarding issue of disaster management.
- There is lack of capacity and lack of trained human resources at all levels (National and Local) to handle disaster situation.
- In Nepal, there is a lack of comprehensive disaster management, legal and policy instrument to internalize the board range of issues in DRR and disaster emergency response, rescue and recovery process.
- To build resiliency of the nation and communities to disaster, Nepal needs to establish and institutionalize an integrated Disaster Risk Management System that could address disaster related issues from mitigation to preparedness and response.
- Structure of the government of Nepal is moving towards a federal Republic that would have the direct impact on how the DRR policy and acts are likely to be formulated /adopted and institutionalized.
- There is not enough budget allocation in district level for disaster management though disaster preparedness plans are prepared in the periodic budget.

- There is no appropriate legal mechanism for disaster management and preparedness and mitigation activities which will ensure effective coordination of Central level disaster preparedness adaptation to grassroots level realities.
- Scaling up the successful adaptation to sustainability of major initiatives and concerns. Coping and accumulation of fact data, processed into useful information to communities at risk.
- There is a lack of systematic and scientific disaster data base system about hazards mapping and risk at macro and micro level (Role of media on dissemination of information about disasters is limited)
- To utilize the information for disaster risk reduction initiatives at local institutional mechanism at district and village level needed to be strengthened through formulating disaster preparedness plans and mitigation strategy.
- In Nepal, DRR education and training is inadequate to create awareness among school children and members of the community. A proper linkage about disaster management should be established between formal and non-formal education sectors.
- There should be sustainable community based DRR policy for the safety of life of urban people and their business.
- Lack of systematic studies to identify the most vulnerable economic activities and productive sectors in the country.
- Nepal is situated at a high EQ risk Zone; there is a building code for construction. However, buildings are not constructed according to seismic building code standard.
- There should be mainstreaming gender perspectives which basically need to put emphasis on women focused approach should be included into DRR and CCA (climate change adaptation) policy making and implementation process.

7.2 Knowledge gained from field visits to different DR organization in Japan.

I gained valuable knowledge and experience through visiting below Disaster Prevention Organization in different prefectures of Japan.

i) Study Tour Visit to Kagoshima Prefecture at 2011/3/28:-

- **Sakurajima International Volcanic Sabo Center (Exhibition Hall)**

After Visiting Sabo Project, I gained the Knowledge that SABO Project constructed by the supervision of the Ministry of Construction and started on the Nojiri, Harumatsu, Mochiki

and Kurokami Rivers, which have their sources at the especially devastated Mountain Minami. After that, the project proceeded for the Second Furusato, First Furusato, Arimura, Kanatoko, Hinohira and Fukura Rivers, and as of fiscal year 1999, a total of ten rivers have been involved.

Sakurajima had erupted 30 times in recorded history. The lava that gushed out due to the fierce eruption in 1914 which is called the Taisho Eruption connected Sakurajima to the Osumi Peninsula. I came to know that there are 19 rivers and all rivers are from steep mountain streams and normally no water runs in them. Devastated by active volcanic activities, the upper reaches of the rivers are full of unstable sediment, which seems to the main sources area of debris flow. Heavy rainfall may cause debris flow running down and damage the populated areas and roads in the lower reaches of the rivers.

I gained the knowledge that the Sakurajima International Volcanic Sabo Center is responsible for providing accurate information on the volcanic activity of Sakurajima and other information on avalanches. I got Experience about the horror of debris flow, knowledge gained about the Volcanic Eruption of Sakurajima and Sabo facilities and simulation of disaster prevention information at the center. SABO Center, involved in overseas technologies exchanges between the many countries like Nepal, India, Iran, Russia, Australia, New Zealand etc. in the field of erosion control.

I visited the Sakurajima international museum and park and simulated experiences for phenomena of volcanoes, debris flow, earthquake and all the information about disaster risk management. It is for great opportunity for Nepal that Japan provided technical cooperation for Nepal, began in 1977, assisting the water resource development in the Karnali and Kosi rivers and sending SABO experts to take short term sediment measures.

With the heavy monsoon rain and its geological features susceptible to weathering, makes frequently erosion in Nepal. Rivers of the Himalayas, carrying an enormous amount of earth and sand eroded by the glaciers, constantly change their course and precious land is being lost by bank erosion. Japan, especially International SABO Center has been helping Nepal for technical development to cope with water induced disaster prevention. Various methods are tried such as a use of low cost local material and simple construction techniques for the locals to carry out the program. This Project was very useful for Nepal sharing the information and

experience and learning the good lessons from Japan. Experience gained from Nepal for landslide management and erosion control can be replicated in Nepal so that landslide management and sediment control method can be applied for disaster prevention in hills and mountains.

- **Visit to the Kagoshima Prefecture DM training Center** (**Awareness Raising the Disaster Risk for Community)**

After visiting the disaster management training center, I gained the knowledge that we can survive an earthquake and minimize its damage simply by becoming aware of potential hazards and taking some basic precautions, develop a family earthquake plan, prepare and be ready every time and everywhere. I knew the methods of protecting ourselves like:

1. Stay calm and seek safety.
2. How to prevent by fires
3. Stay away from narrow streets, walled streets, cliffs and river banks
4. Evacuation procedure
5. How to listen the correct information
6. Always be ready with Emergency bag
7. Join forces for first aid
8. Join forces for rescue
9. What to do when driving a car

Some daily preparation activity I did practically over there and I learned about the daily Preparation like:

1. Anti disaster Training
2. What should do during earthquake
3. Reinforcing our houses, brick and stone walls
4. Preventing furniture and elevated furnishings from tipping over or falling down.
5. Preparing extinguishers and Preventing fires
6. Preparing personal effects and a first aid kit for emergencies
7. How to conform family members safety

Nepal is also very vulnerable to earthquake, landslide, flood, fire, volcanic eruption and so on. We have no such kind of good preparation about disaster risk reduction so after returning, I

will take initiative in my country to make this kind of Disaster Management Training Center for the awareness rising of the community people. It will be very useful for awareness about the disaster and minimize the disaster risk at all level.

ii) Study tour visit to AWAJI Island at 2011/3/19

- **Nojima Fault Preservation Museum)**

I knew about the detail information of the Great Hanshin Awaji earthquake, or Kobe earthquake, after visiting the Awaji Island, (Nojima Fault Preservation Museum). The Kobe earthquake occurred on Tuesday, January 17, 1995, at 05:46 in the southern part of Hyōgo Prefecture, Japan. The scale of the earthquake measured 7.3 magnitudes. The tremor lasted for approximately 11 seconds. The focus of the earthquake was located 16 km beneath its epicenter on the northern end of this Awaji Island, 20 km away from the city of Kobe.

Approximately 6,434 people lost their lives. Kobe was the closest to the epicenter and hit by the strongest tremors. The Great Hanshin earthquake began north of the island of Awaji, which lies just south of Kobe. It spread toward the southwest along the Nojima fault on Awaji and toward the northeast along the Suma and Suwayama faults, which run through the center of Kobe. I observed the real situation over there. I saw the many pictures, wall photos, and many guidance materials inside the museum on the devastation of earthquake. I practically experienced about the same magnitudes Earthquake inside the museum.

- **Fukura Port, Tsunami Disaster Risk Reduction Station,**

After visiting to the museum, I went to the Fukura Port Tsunami Risk Reduction Station. The Station is also used as emergency evacuation center for the people staying near the Pacific Ocean. The center is also equipped with observation and early warning system.

- **Uzu-no-Michi, view point of Giant whirling waves**

Finally, I visited the Uzu-no-Michi,view point of Giant waves. It was very exciting place. I realized the great develop of Japan seeing that bridge.

It demonstrates the technological development of Japan on ocean management. We can replicate the research and development initiatives of Japan in Nepal.

iii) Study Tour to Tokyo, Capital City of Japan at 2011/2/2

- **Visit to the Tokyo Metropolitan Government**

Raising Public Awareness of Disaster Reduction in Metropolitan activities was very wonderful. We learned by hearing, watching reality and doing exercise also. I learned many things by walking in the metropolitan City. I knew that the Capital City Tokyo has facing many verities of disaster like: earthquakes, typhoons, terrorist attacks, large-scale accidents, and new epidemics. The Tokyo Metropolitan Government (TMG) Disaster Prevention Center, located in the TMG building, is the central communication center for disaster management, analyzing data, deciding on measures, and giving instructions. The Center is equipped with image data communication and emergency wireless systems, and also it is designed to protect with standard earthquakes. After the lesson learned from Hanshin-Awaji Earthquake, the importance of preparing earthquake recovery plans in advance is now well understood. TMG has established an earthquake recovery headquarters and basic laws describing community cooperative recovery and other activities have been enacted. In addition, Community Cooperative recovery exercises have been conducted which simulate the conductions after a disaster, aiming to develop organizations of community residents. TMG also provides the disaster prevention website for the information on disaster damage, train operation status, traffic, etc…supporting a swift initial response and return home for those outside. At the onset of disaster, in cooperation with the media, evacuation recommendations and other pertinent information will be broadcast.

I learned lesson that “Daily Preparation will protect us and our Family from any disaster.”It is crucial that, Protecting one’s own life. Self-help awareness and offers support to its residents to be well-prepared for a disaster. To minimize the extent of disaster damage, it is important that self-help, mutual help, and public aid function properly and in coordination.

- **Visit to the Japan Broadcasting Corporation (NHK)**

I gained the knowledge about the Broadcasting system of NHK. Disaster and safety Information Center, Japan broadcasting corporation, NHK, Japan’s sole public broadcaster, was established in 1925 and is supported by the receiving fees paid by the TV viewers.NHK conducts overseas broadcasts on both TV and shortwave radio. The international TV services, NHK World TV and NHK world premium use the latest digital technologies to reach almost every part of the world. For “Anywhere, Anytime” viewing, NHK provides round-the-clock

broadcasts of major news and other information programs. Audio Japan is broadcast worldwide on shortwave in various languages, including Japanese and English. News and same programs of radio Japan are available on the internet.

I experienced about the latest virtual-reality images, sounds for the different scenes, and a world-first Watch 3-D Hi-Vision from a big screen without the need for special glasses. I watched the recording of actual TV programmers, Such as historical dramas and NHK's TV serial programs also.

I thought that it was very interesting and helpful for quick communicate to every sudden events. In my country, not any special channel for disaster news broadcast for disaster. We can follow the NHK, the Japanese National Broadcasting Center and formulate the guidelines for National Broadcasting Authority of Nepal for wide coverage and program on Disaster Risk Reduction and awareness activities.

- **Visit to the Urban Disaster Research Institute.**

Urban Disaster Research Institute has established the countermeasures of emergency commuter by community for awareness rising in Tokyo Central Area. Tokyo Central station computer Crops is based on proposal of autonomous disaster prevention organization with a new idea "inter-corporate support in Tokyo central station surroundings areas and disaster prevention countermeasure exploratory committee in 2002. Immediately after the proposal, volunteer companies in that area started activities to establish "commuter Corps" and was authorized by Chiyoda Ward. It sends the local safety information by a mailing list about safe community activities. Emergency warning System was started in 1985. The broadcasting of a test wave transmission is conducted every month. Special signals are sent and TVs and Radios are automatically activated.

Urban Disaster Research Institute followed the emergency warning system by the following way;

1) Proclamation of warning for a large –scale earthquake.
2) Warning of large-scale tsunami.
3) Request for broadcasting by Governors or Mayors.

   Increase public awareness is most essential things to understand risk, vulnerability, to improve scientific knowledge and to reduce disaster globally.

- **Participated in the promoting Seismic Retrofitting of school Building in Japan by MEXT (JICA TIC)**

"Disaster Risk Reduction begins at school". It is necessary to inform and mobilize governments, communities and individuals to ensure that disaster risk reduction is fully integrated into school curricula in high risk countries and that school buildings are built and retrofitted to withstand natural hazards.

I was able to know about the major elements of effective school seismic safety programmers and the basic principles of earthquake –resistant school buildings. The following are the basic principles:-

1. Prioritize school buildings to be retrofitted
2. Promote earthquake resistance evaluation of school buildings
3. Develop the plan for earthquake – proof school buildings
4. Disclose the result of the earthquake resistance evolution and the plan for promoting earthquake-proof school buildings
5. Check and take measures for earthquake proof non-structural elements

The conclusion aroused was that "School Safety is everybody's business to save our children". Let's make school buildings earthquake resistant and promote disaster risk education. Therefore we should make school buildings earthquake resistant and promote disaster risk education.

- **Visit to the Various Tools for DRR by Keio university (JICA TIC)**

The importance of the emergency drills is that "What was heard can be forgotten, what was watched can be learned, and what was performed can be understood." I gained the knowledge by playing very knowledgeable Card Game.

The following are the merits of game;

1. Positive participation can be expected because of the attitude towards the word "game" although it is not merely play.
2. Participants can find their lack of knowledge or problems for themselves during the game
3. Learning about feelings
4. Participants can notice other people's ways of thinking.

5. Participants can think about what issues in real disaster prevention are represented by the rules of the game.

It is true that, active participation, sharing the important information and responsibility from as many sectors of the community as possible can reduce the disaster risk at all level.
In Nepal we can introduce disaster reduction program at university level through fan game. Also, Disaster Management Volunteers can be picked up from University students.

iv) Study Tour to Nagasaki, Shimabara at 2011/1/26

I gained the Knowledge after looking the Nagasaki Atomic Bomb Museum. It was very touchable. The Atomic Bomb Catastrophe turned a dark page in Nagasaki's turbulent history, but the city in now a center of peace blessed with the beauty of nature and numerous places of historical and cultural interest which still exude the rich flavor of old Nagasaki.
Urakami Cathedral, which is the largest church in the Orient, it was destroyed by the atomic bomb and rebuilt in 1959. Peace Statue (Peace Park) which was completed in 1955, ten years after the atomic bombing. The raised arm points to the threat of nuclear weapons and the out stretched arm symbolizes peace.
I gained the lesson after visit those touchable places that peace is most essential matter. We cannot do any further development activities without peace. I learned how to recovery from any disaster situation from visiting Nagasaki Atomic bomb museum.

- **Participated in Community Disaster activities at Nagata ward at 2011/3/13**

I actively participated in community disaster activities at Nagata Ward. There is one Futaba Elementary School, which is now using for Local Community Center. Non–Profit Organization (NPO), Futaba supported by community. Its vision is to utilize local resource, characteristics, succeed local cultures, make active community, effective utilization of abolished Futaba Elementary school, and provide projects for revitalizing the local community. The main theme was "Transfer the lessons learned through the great Hanshin Awaji Earthquake, Effective Utilization of local resources for the earthquake learning".
In Nepal, we can arrange exercises /drills for community people and school children for Disaster Risk Reduction.

- **Participated to the development of Next Generation: Discussed with students in MAIKO HIGH SCHOOL.**

Before the great Kobe earthquake, most of the people did not realize the necessity of disaster mitigation activities. Based on the lesson learned from big Kobe earthquake, the disaster and mitigation course applied in this school. Students are learning so many contents about disaster preparedness, Prevention, Mitigation and so on.

The School is divided into 4 levels; these are

1. Elementary School
2. Junior High School
3. Senior High School
4. University

The children have a great opportunity to work outside also they can watch and realize their subject matter. They get chance to take special course of fire training from Kobe Fire Academy. They can gain the strong motivation to teach the children. Children visited NAGATA ward to convey the experience, to learn what really happened, to make hazard map and for scientific experience. They have also great chance to visit aboard. They can learn Hazard, Emergency Reaction, Social background and exchange the religions and contribution of other countries in this field.

We can train up school students of Nepal about disaster reduction, by following the example of Japan.

- **Visited to the Disaster Reduction and Human Renovation Institution**

I visited to the Great Hanshin –Awaji Earthquake Memorial DRI museum. Actually the Library is very informative and touchable also. I saw the DRI library collects and preserves many materials related to the Great Hanshin –Awaji Earthquake and disaster reduction.

- **Community based disaster risk management for cultural Heritage in Kyoto by Kyoto university.**

Kyoto became the capital of Japan in 1794 and it was the capital for 108 years until. It is located in quite mountain area with heavy snowfall. I knew the traditional Community based organizations for disaster preparedness mechanism and its sustainability is very high-quality here. There has always been a history of people in the village having coped with natural hazards. Before establishing new Capital Tokyo, find out thing that exists in the Kyoto city

community from DM perspective. They are very susceptible about Fire prevention .Every day they are visiting 4 times of their community resident's house like: 11AM call out "careful with fire. At 6pm walk around the area with tool. At 8PM Visit each houses and call out "are you ok with Fire" and at the end of day around 11PM walk around the whole district means OGI-MACHI district with tool and collects stamps that are located each corner of Kumi. Fire Volunteers and their Activities are astonishing.

It is most crucial things that one person cannot protect their traditional house once it's get fire, in order to protect his/her house, need cooperation of neighbors, that means you should to help others. Kyoto city is very famous for tourism; approximately 50 million visitors are visiting every year.

7.3 Lessons learnt from Disaster Management System in Japan

The disaster management practice in Japan is highly commendable .Following are the major experiences and lessons I learned from the ADRC, Visiting Researcher Program:

- How to manage the groups and voluntary organization for disaster prevention in communities and how to conduct practical disaster prevention activities.
- To minimize the extent of disaster damage, it is important that self-help, mutual help, and then public aid function should be properly coordinated.
- Preparing emergency goods that can be easily carried out in case of disaster and preparing the necessary materials and devices to directly respond to the disaster.
- Community – based disaster prevention culture led by citizens that can play a vital role in reducing disaster.
- Conducting regular emergency drills is very important for being prepared for natural disaster situations, in future.
- "Disaster Risk Reduction begins at school" It will be necessary to inform and mobilize governments, communities, and individuals to ensure that disaster risk reduction is fully integrated into school curricula in high disaster risk countries and that school buildings are built and retrofitted to withstand natural hazards.
- What was heard can be forgotten, what was watched can be learned, and what was performed can be understood." So we need to perform also.
- Active participation, sharing the important information and responsibility from as many sectors of the community as possible to reduce the disaster risk at all level

- Disaster Prevention is the person's bonds. The motto of every community is "make a town is happy town, Happy town against disaster."
- "Transmitting experience of volcanic disaster is difficult and also facing volcanic disaster without knowledge of eruption is dangerous."
- Disaster education can facilitate people to build awareness of contemporary threats.
- In the areas where large scale disasters are expected in near future, disaster education to school children is indispensable.
- Methodology is needed to enhance their awareness of disaster risk and to develop their ability to cope with and to respond disasters correctly.
- Whilst the education system is an excellent way to promote disaster reduction.
- Booklets, Maps, Sign Plates, those are valuable of the communication of information both students and others.
- Disaster education at school should be integrated into community based disaster reduction and there is, therefore also a need for a proliferation of initiatives in community based disaster reduction beyond schools.
- "City, Region, Home, Individual role =Improvement of the disaster responsive capability in the Region."
- Kaeru Caravan" was amazing to learn about how to reduce the risk of disaster.
- "Japanese experience on Disaster especially The Kobe city, regarding for earthquake showed the path of facing disaster successfully and early recovery.
- "The most powerful tool for disaster management is community empowerment and community sustainability."
- Learned from the past fact and experience, it will be very important for learning.
- Indigenous practices and traditional DP activities of community should be encouraged and systemized for the sustainability of program and to involve more community people

- **After occurring disaster, we should follow this formula:**
  1. Protect of our own life
  2. Education to be a superior
  3. Help others just after we are safe in a disaster
  4. To visit the affected area to support them
  5. Supports the survivors' far way
  6. Participate daily in the society

- **Tools for DRR:** Emergency drills are most effective tools to minimize the loss of lives and properties during disasters. The government of Japan and its local governments have focused on the importance of the emergency drills conducting everywhere of the country to make people conscious about disasters. It is true that, active participation, sharing the important information and responsibility from as many sectors of the community as possible can reduce the disaster risk at all level.
- The major elements of **effective school seismic safety programmers** and the basic principles of earthquake –resistant school buildings are lesson learnt from Japan:-
    1. Prioritize school buildings to be retrofitted.
    2. Promote earthquake resistant evaluation of school buildings
    3. Develop the plan for earthquake – proof school buildings
    4. Disclose the result of the earthquake resistance evolution and the plan for promoting earthquake-proof school buildings
    5. Check and take measures for earthquake proof non-structural elements

Conclusion point was that "School Safety is everybody's business to save our children". Let's make school buildings earthquake resistant and promote disaster risk education.

The Significance and Necessity of Disaster Education at Universities in Japan: Universities in Japan are jointly started the Interdisciplinary Education study system. University Students learned by doing practical exercise like on disasters such as earthquake, tsunami, flood and typhoon, fire and so on. Community Paramedic Training, Teaching materials and Classes are offered at local school etc. The main objective of mutual education is that they can use that expertise and can develop a system for rapid, response and mutual help in times of disasters.

7.4 Recommendations for effective community participation in Nepal

Finally, many best practices are certainly applicable in the context of Nepal. Though it is not always pragmatic to be comparative in the developed and developing status of uneven condition of the country. Lot of institutional, structural and execution level reform is required. Particularly, Japanese expertise of policy, program and implementation modality is the very prominent in the Nepalese context. As per the present need, following are the major recommendations for effective community participation in Nepal:

- There is no disaster management museum in Nepal. We can open a disaster related museum in Nepal so that citizens and school children can learn from visiting proposed museum.
- In Nepal Disaster prevention education at school should be integrated into community based disaster reduction and there is, therefore also a need for expansion of community based disaster reduction beyond schools.
- Nepal has been facing the risk of earthquake, floods and landslide disasters. Therefore, like interdisciplinary education of Kobe Gakuin University we can introduce interdisciplinary education on disaster management for the university students of Nepal.
- Nepal gradually we can introduce business continuity plan for small and large business enterprises so that if they are affected by disasters, business houses will get insurance coverage for quick recovery. In this regard necessary law can be enacted in Nepal.
- There should In Nepal we can follow the disaster management system of Cabinet Office of Japan and can open a disaster management and crisis management Cell under the chairmanship of the Prime Minister of Nepal
- There should be immediate adaptation of DRR policy and new disaster management Act formulated which encompasses comprehensive approach on DRR.
- Development of national plan of action based on the existing National Strategy, 2009.
- There should be an Integration of Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) issues in sectoral plans of all ministries in the next 3 year.
- Requires urgent establishment of institutional framework in line with the newly adopted NSDRM (National Strategy for Disaster Risk Management).
- Compulsory DRR Program should be incorporated for every institution’s day to day business or activities.
- Need to develop and implement a financial tracking system to monitor all DRR related expenditures for mitigation, preparedness, and emergency response.
- The assessment process should include criteria for assessing the progress in DRR, CCA and environmental Management.

- To minimize the future losses of lives and Properties that may result from a major Earthquake in Kathmandu Valley, a comprehensive action plan has to be developed for increasing seismic safety of public facilities, schools, hospitals, and lifelines.
- There should be need based orientation training on disaster preparedness to all local level authorities involve on DRR and Emergency Preparedness.
- Development of disaster mitigation tools for communities at risk to assess hazard and risk of their community (involving school teachers and students in the process).
- Conduct regular research on indigenous knowledge on hazard assessment and risk mitigation measures and disseminate it to wider audience.
- Establish national disaster information management database system accessible to all stakeholders and to the communities.
- Awareness creation, sensitizing and capacity building of media in disaster risk reduction is necessary for effective use of the reach of media to the society.
- Strengthen SAARC Disaster Management Center (SDMC) for member countries to play central role in regional level DRR.
- Review the existing school curricula from primary to higher secondary level and include DRR content in a systematic way. There should be compulsory DR training / drills in elementary and secondary schools.
- Urgently develop retrofitting strategy for public facilities, schools and hospitals with tools for prioritization to demonstrate proper earthquake technology.
- Formulate appropriate policy for incorporating gender perspectives into DRR.
- We have to establish voluntary organizations for disaster prevention in communities or, disaster safe welfare communities, in Nepal.
- Assessment and beneficiary selection process need to be further strengthened
- Mitigation measures at community level are essential in coping the risk of mega/small scale disasters
- Establishment of Early warning system at regional, district and community level helps save human lives and property
- Upgrade roaster of trained Human Resources focusing hazardous areas: a community based approach: continue working on strengthening corps of volunteers
- Establish a periodic review system: provision of rewards for the key contributors, volunteers.

7.5 Action Plan:

It is true that community participation in Japan is highly commendable. The best practices of community participation in disaster preparedness planning in Japan could be replicated in Nepal. The government and the local community both can be benefited by introducing the best practices of Japan in the area of Disaster Risk Reduction.

After the completion of the research, research findings will be published in the journals. Series of seminars will also be organized to disseminate research results for wider audiences. In addition, the results will be presented in disaster preparedness workshops at regional level.

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17. Relevant topics from internet

Appendix-1

Questionnaire

Topic-Questionnaire for community participation in Disaster Preparedness Planning: A case Study in Nepal

1. Please explain your organization's role in disaster management in Nepal and state the organization name and your role in the organization.
2. Can you specifically explain how local community members are involved in the disaster preparedness planning process (decision-making process)?
3. Does your organization involve local communities in disaster preparedness planning? If yes, please briefly explain how your organization involves community in planning process? (Can you provide a copy of the policy or regulation that guide the process?)
4. In what ways do you encourage the active participation of local communities in disaster preparedness planning? Can they obtain the information on the planning process, if so how? If not, why not?
5. Are you satisfied with the participatory process of community mobilization? Please explain why or why not?
6. If your organization does not involve community participation, in your opinion, why do you think your organization has not required community participation?
7. Have your organization work with the local community and on what assignment? Can the participants receive and /or provide feedback on how their inputs are used, if so how?
8. Please describe your relationship with the communities you have worked with (please rank your relationship with the community).

Appendix-2

List of the Interviewees of Nepal

1. Suresh Raj Acharya---------- Ministry of Physical Planning and Works
2. Dr. Badri Pokhral ----------National Planning Commission
3. Suman Ghimire ----------Ministry of Peace and Reconstruction
4. Ram Prasad Luetel ---------- UN OCHA
5. Naresh Sharma ---------- Ministry of Environment
6. Om Shankar Mulmi ---------- UNDP
7. Dr.Deepak Mani Pokhral ------ Ministry of Agriculture and cooperation
8. Asim Shrestha ---------- UNICEF
9. Kesab Sharma ---------- Practical Action
10. Rudra Neupane ---------- UNDP
11. Prajjul Acharya ---------- Red Cross
12. Ph.D.Meen B.Poudyal,Chettri -------Dp-Net,Nepal
13. Ram Chandra Neupane ---------- Eco-Nepal
14. Shyam Sundar Jnavaly ---------- Action Aid Nepal
15. Bishnu Kharel ---------- Oxfam Nepal
16. Dilip Shrestha ---------- Urban Development &Building Construction
17. Thakur Prasad Pandit ---------- Dept. of water supply &Sewerage
18. Ram Chandra Khanal ---------- Consultant of SPCR Project
19. Durba Kafle ---------- Kathmandu Metro-Politian City
20. Megnath Dhimal ---------- Nepal Health Research Council
21. Binod Prakash Singh ---------- Ministry of Local Development

Appendix-3

Interviewed in Japan

My questionnaire: (I want to know)

1. Can you explain me about Community Participation Process in disaster Preparedness Planning in your organization? And give me some examples of community participation /drills in Japan.
2. What are the motivating factors for active community participation?
3. Are you satisfied with the participatory Process?
4. How do you /your organization utilized inputs of Community participation in disaster risk management planning process?
5. Can you explain your organization's relationship with Community?
6. Do you think your organization has sufficient fund to ensure community participation in disaster preparedness planning?

List of the interviewees in Japan:-

1. HIROKAZU, NAGATA, Chairperson, plus Arts NPO (Non Profit Org.)
2. OHTSU, NOBUHITO, Firefighter, Kobe City, Hyogo Fire Station.

Appendix-4

My question responded by the Hirokazu Nagata, Chairperson, of Plus Arts, Non-Profitable Organization (NPO).

Q.N.1 Can you explain me about Community Participation Process in disaster Preparedness Planning in your organization? And give me some examples of community participation /drills in Japan.

Ans: My organization is directly involved in " Kaeru Caravan" program, it is especially focus to the children that they can learn the disaster risk reduction by playing funny games. The main themes in +arts disaster reduction activities are:

- Making disaster reduction part of the daily routine
- Putting creativity to work in disaster reduction
- Disaster reduction measures that are fun to learn

We formed a project team and started by using research to clarify the lessons and skills gained from the Great Hanshin –Awaji Earthquake. We designed educational programs (including learning materials and games) to communicate this knowledge to children. We developed a new type of disaster reduction training event for family to experience such programs, with the help of artist, Hiroshi Fuji. Community can gain the knowledge about disaster risk reduction through practical exercise and drills. Also Kaeru Caravan has been proved very effective tools of community participation and creates the awareness among the community about any sort of disasters.

These are the basic examples of Kareu Caravan Program

- Water fire extinguisher target practice game
- Blanket stretcher time trial
- Jack lifting game
- Emergency Kit Quiz
- Jumbo disaster reduction "Concentration"
- Picture story show

- Puppet Theater
- Learning through exercise (disaster reduction exercise)
- Survival cooking
- Creation new dishes in newspapers
- Learning how to stop falling furniture
- Disaster reduction card game using picture cards etc.

Q.2 what are the motivating factors for active community participation?

Ans: Fun is the most motivating factors for active community participation. Besides this following can also the cause of participation

- Large number of participants can join disaster drills exercise.
- Kids can learn disaster reduction while playing fun games
- Not complex, family oriented disaster drills
- Bokumi guide book has prepared to teach the community about disaster risks.

Q.N.3 Are you satisfied with the participatory Process?

Ans: Of course, it is the good way to transfer the lessons, knowledge, and technique to children and also the effective tools for active community participation in disaster preparedness planning to reduce disaster risk. Personally, I have fully motivation to conduct this kind of activity with community. I am social person; I like this kind of social work so I am fully satisfied.

Q.N.4 How do you /your organization utilized inputs of Community participation in disaster risk management planning process?

Ans: Practical training, disaster drills awareness creativity, dissemination of information among the community are the major inputs utilized for community participation in disaster risk management planning process.

Q.N. 5 Can you explain your organization's relationship with Community?

Ans: Kaeru caravan project, I mean, + arts projects concern with community awareness rising program and working with community. Disaster Reduction Training Programs held in different locations of the Country with active participation with community people and children. Local Government have strong relationship with community people, we organize our program through local Government so our project and local community have strong and good relationship making disaster reduction part of daily routine.

Q.N. 6 Do you think your organization has sufficient fund to ensure community participation in disaster preparedness planning?

Ans: Tokyo Metropolitan Government, Local Government, and Private Sector, are providing fund for this program. Since activities taken, we received many offers. However, for smooth running and sustainability of the project this fund is not sufficient.

Appendix-5

My question responded by OHTSU, NOBUHITO, Firefighter, Kobe City, Hyogo Fire Station.

Q.N.1 Can you explain me about Community Participation Process in disaster Preparedness Planning in your organization? And give me some examples of community participation /drills in Japan.

Ans:- My organization is directly involved in firefighting . Two fire fighting officer in charge concerned with one community. Great Hanshin Awaji Earthquake (1995, Kobe) proved that neighborhood rescue each other can save more lives than public rescue such as fire station.

In this area, community people have been participating very well in disaster preparedness planning and drills exercise. We are organizing meeting once a week. Every month we are consulting with community people for an hour, about the planning of our further step. Once in three month we have engaged in big drills exercise with community people like today.

Almost all community people have Hazard Map in this area.

Q.2 what are the motivating factors for active community participation?

Ans: Fun is the most motivating factors for active community participation. Besides this, increased recognition is also importance part of community based organizations and activities. Followings are some motivating factors for active community participation:

1. Fun and Learn Program for Disaster Preparedness, Prevention and Response.
2. Parents and their kids can find the good place to meet together and learn together.
3. Provide an opportunity to directly listen the story from the EQ victims to the children who never experience about disasters.
4. Provide an opportunity to participants to use fire extinguisher, fire fun etc.

Q.N.3 Are you satisfied with the participatory Process?

Ans : From the view of community, I am not fully satisfied with this Participatory Process. Some people have been joining with keen interest. However, some people make to request them to join this sort of program. But personally, I am satisfied with my Job because it is the good way to transfer the knowledge, and technique to children and also the community to make them a good fire fighter. So I have full motivation to conduct this kind of activity with community.

Q.N.4 How do you /your organization utilized inputs of Community participation in disaster risk management planning process?

Ans: Practical training, disaster drills awareness creation, dissemination of information among the community are the major inputs utilized for community participation in disaster risk management planning process. Some Survey report helps us to prepare the policy to disaster risk management.

Q.N. 5 Can you explain your organization's relationship with Community?

Ans: Kobe City Hyogo Fire Station, working with the community for raising awareness Program and prepare themselves as good fire fighter. I am looking for the solution for consistent neighborhood rescue with safety which saves people from Fire and any kind of disaster risk.

Q.N. 6 Do you think your organization has sufficient fund to ensure for community participation in disaster preparedness planning?

Ans: I am working in the Government Organization. The Government has provided fund to the tune of 1, 30,000 yen for every community. But this fund is not sufficient for active community Participation and sustainability for the project.