Research Theme : Institution for the management of natural disaster at national level, a sharing between Nepal and Japan, in reference to south Asian countries

Research Report by VR Pradip Kumar Koirala
ADRC Visiting Researcher Program 2014A

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Acknowledgement

The changing perspective, from response focus to preparedness focus of disaster management is significantly important for Nepal along with the proper institutional setup and regulation backup. Since I was working in Disaster Management Division at the Ministry of Home Affairs, the nodal ministry for the disaster management in Nepal, it was imperative for me to have better understanding of the proper practices of disaster management of different countries with the exposure of Japanese System. In the mean time, I have seen the ADRC Visiting Researcher program, which sufficiently allows the member nations to their authority for proper research in any important disaster related topic, as the member nations authority think as an important. I have determined myself to have a contribution from my side in the area of disaster management. With the endorsement from the Ministry, I have prepared a research proposal and submitted to ADRC in the most relevant theme for us with the captioned topic. Now, here it is the result, as the hard workings of three and half month at Kobe.

In the trajectory process, first of all, I would like to thank the MOHA and its authorities especially Mr. LP Dhakal, the then national disaster focal point, for continuously encouraging and supporting me in my disaster field carrier. I am sure without him, it would not have initiated this research and the result, not only the acknowledgement from my side to him, I like to dedicate this research to him. Along with him, I like to appreciate the support from Mr. YN Aryal, Mr. R Dangal (Ex-ADRC,VR), Mr. RK Khadka, Mr. JN Dhakal, Ms. L Pandey, Mr. BK Acharya, Mr. S Paudel and Ms. P Jha for their continuous support even from Kathmandu. The consultation and support from DRR expert and actors of Nepal including Mr. MB Thapa, Mr. AM Dixit, Mr. RP Luitel, Mr. P Aryal, Ms. R Dhakal, Mr. RC Neupane, Mr. KB Dhungana, Mr. R Guragain, Mr. D Paudel, Mr. SP Basyal and Ms. M Riddik has remained very important for me to shape this report, as I have got their feedback from various ways including the social media as well.

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N Prasantha from Sri Lanka and Ms. H Fadhl from Yemen has good cooperation in cordial environment, is the most important part of the research period. The Management at DK House (International Resident House) is also memorable along with the Japanese Lessons from Mr. Kawahara was splendid, as he not only teaches us the Japanese lessons, but also presumes the duty of social and physiological counseling.

Our visit to Kobe City Emergency Management Center, Crisis Management Center at Kobe, Emergency Control 119 Bureau and the Police Operation Rooms of Service 110, Hyogo Prefectural Emergency Mgmt and Training Centre at Miki Disaster Management Park, Tsunami/Storm Surge Disaster Prevention Station at Osaka, Osaka Regional Headquarter of the JMA at Osaka, Hyogo Prefectural Government Disaster Management Canter, Japan Water Agency at Saitama were knowlegable. The visit to Cabinet Office at Chiyoda-ku lead and presented by Ms. Sasegawa, Deputy director general at Cabinet Office and meeting with the authorities of Cabinet office in charge of disaster management and attended her presentation at the office was real a great opportunity for us. The visit at the underground water discharge cannel and reservoirs at Saitama was really memorable, this have revealed if we desire we change the route of the river. Our visit to NuNoBiki Water Intake Facility near to the Shin-Kobe, Kobe Water Science Museum at Kusudanichoto, Kobe City Higashinada Water Sewage Treatment Plant and System at Kobe also has given the sense of understanding of different perspective of the disaster management. Our great opportunity to visit to Nagasaki at the Mt. Unzen Disaster Memorial Hall at Shimabara at Nagasaki Prefecture and the Onokoba Kansisho Overvatory, around the mostly affected primary school compound and the Mizunashi Honjin affected house with the preserved areas at Shimabara, Nagasaki Prefecture Public Works Department with the presentations by Mr. Satoshi Sugasaki, by Seiichirousu Chaya and other related authorities about the Nakasima River Flood Management and about their effect to control the sediment disaster in this region, Nagasaki Office of River and Road at Himi Omagari and the visit of Atomic Bomb Museum at Mamaguchi Machi was really praiseworthy support for us that has provided by the organizer.

We have attended dozens of presentations from different experts and professionals, just to remind some of them, the presentation by IkedaSan and NakaoSan about the activities of the Sentinel Asia, presentation by KiyoshiSan about the DM Policy in Japan, presentation by Ms. ShiomiSan about Disaster Data and about the the disaster institution and regulations in Japan, presentation on DM System in Japan and International Recovery Platform (IRP) activities by Mr. Shingo Kouchi, Presentation on a community base rain gage presentation and demonstration by Mr. Hidetomi Oi, Mr. Toshikatsu Omachi and Mr. Susumu Ueda, Volunteers for the promotion of community early warning system, presentation from Mr. Kiyoshi Natori about the change pattern of disaster management in Japan focusing on the institutions involved, Presentation on Business Continuity Plan (BCP) against future disaster by Dr. Seiichiro Fukushima from RKK Consulting Co. Ltd at Hibiya Library Tokyo,

Presentation on Japanese experience of DRM and the expectation for the post 2015 framework for DRR by Dr. Satoru Nishikawa, vice-president of Japan Metrological Agency, Presentation on flood management, water resource utilization in Japan and the outline of the integrated water resource management by Mr. Bobuyoki Ichhiara at JMA Saitama and the three-days presentation on Disaster Map-making with QGIS by Mr. Tian, focusing on creation of Asia Map, Country Map and Hazard Map from GIS Data was very knowledgeable and fruitful in future, as they have also given higher level input to shape this research.

The most important inputs for this research, beside the net-surfing materials, the outcome, presentation and the discussion at various national and international level seminars and symposium. Some of them that I have attended are the Symposium on Disaster Management in Rokkodai Campus at Kobe University, International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation at Kyoto University DPRI, International symposium - together with the people coping with increasing water-related disasters in the world organized by International Center for Water Hazard and Risk Management (ICHARM) at Grips College Roppongi Tokyo, Tohoku Forum for Creativity: International Workshop on Implementation of Practical Disaster Risk Reduction at Tohoku University at Sendai and Asian Studies Symposium 2014 at Kanagawa University, Yokohama Campus, where along with the other participations, I have also got chance to make my 45 minute presentation on 'The Natural Disaster in Nepal and Current Status and Issues of Disaster Management'. In the time attending the program, being as part of the seminar, we also got chance to have a fielf visit of the Kesennuma, a heavily tsunami affected area, now in the reconstruction process and the visit at Sendain Area tsunami affected area visit, especially visit of Gamou, Arahama and Yriage, getting sense of the tsunami devastating impact and its recovery process. This visit has also provided insight view of the disaster and the recovery process.

The Disaster Drills has prime important for response effectiveness and we have got opportunity for participation in some drills in including Ashiya City Disaster Response Drill, especially engagement of the community people in disaster response, Disaster Management Drill at Kyoto, focusing on the fire services in the ancient area of Kyoto and Toga Area BOKOMI (Disaster-Safe Welfare Community) Drill, focusing on Fire extinguishing, Bucket Relay, Smoke Experience and Takidashi Drill, I like to respect and acknowledge for this practical experience to have provided to us.

Last but not the least, I like to acknowledge the support and cooperation in any form, visible or invisible way to make this research complete by any person from within my research net or outside from the research net, all are equally important for me, I would like extend my thanks to the concern all for this research. Thank you.

Pradip Kumar Koirala

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Executive Summary

Disaster, a multi-faced phenomenon demanding multi-stakeholder's coordination from government, non-government and international governance systems, always demands high authoritative national attention not only in response but also in preparedness and recovery phases. Although many countries has already started the process of dealing the disaster from its high-level authoritative institutions, the institutional value of disaster management has found coming across after adoption of Hyogo Framework of Action in 2005, as targeting of creation of high-level government focal agency for disaster management as contact point or focal authority in any country. The process has been found adopted in south Asian region, as creating National Disaster Management Agency (NDMA) in India, Pakistan and Afghanistan. In line with this management through the proper institutional focus, Bangladesh, Sri Lanka and Maldives has created a separate Ministry for the overall management of disaster, not only to show the world community of their changing focus from response to preparedness but also to do accordingly.

In the vein of development of changing focus from response to preparedness, only Nepal and Bhutan have remained bit shy by managing and coordinating the overall disaster management through its Home Ministry. Although several questions have emerged in the time of submission of HFA Update about the focal institutional arrangement, the two nations continue to keep saying that their Home Ministry is a focal ministry for disaster management and to minimize the pressure from outsiders, they both have created some sort of small arrangement, like Bhutan has created a Department of Disaster Management under its Ministry of Home and Culture and also formulated a Disaster Management Act, 2013. In this same stream, Nepal has also created a Disaster Management Division at the Ministry of Home Affairs and has started the process of enactment of new Disaster Management Act.

By comparing the existing scenario and situation of changing focus from response to preparedness, the efforts of Nepal and Bhutan is not seemed sufficient. Observing the sensitivity of the situation, Bhutan is in the process of establishing a separate agency for disaster management. In the SAARC Region, if Bhutan established a separate agency for the overall management of disaster management, then only Nepal left behind managing and coordinating overall disaster management from its Home Ministry. It has become necessary to revel its changing focus from response to preparedness and to perform the action accordingly by proper institutional framework for overall disaster management at national level with proper Act.

Disaster management has been found studied and researched frequently on it's technical part like flood preparedness techniques, landslide control measures for mitigation, strength of constructed dam, community involvement in constructing local dams, earthquake resistance structure etc.. It is no doubt the technical aspect is very important, but without having managerial tightening, the technical aspect

always posses the deficiency of implementation. It is urgent need that we have to start the process of dealing the disaster management from the managerial point of view. In this context as well, the national level managerial view has been elaborated in this research in term of proper institutional framework, that would be dealing with overall disaster management in the country at national level.

By realizing the disaster management as a business for all and in line with the changing focus form response to preparedness, the coordinating agency of government for overall disaster management at national level has found or has treated in this research with great importance. The research has tried to witness the intuitions and regulations of different eight countries of south Asian region as a background concept for the findings, by taking reference of the Japanese disaster management system. Every disaster has it's own lesson learned for the future. In Nepal, the lesson has been learned by Ministry of Home Affairs, whose primary responsibility is to maintain peace and order in the nation. So, lesson learned from MOHA will difficulty in materializing in terms of program and budget. MOHA is responsible for search, rescue and relief, as it is doing its job in perfect way. Having said this or having effective response action from MOHA, the preparedness part is always left behind. The Ministry is having less focus on disaster preparedness in time of no-disaster. This is not the Ministry's intention to have less work on DRR, but this is all about the designated role and responsibility along with its priority of maintaining peace and security all the time, or it is all about which system we have adopted.

Disaster Management is said to have two types. Emergency Response Type (ERT) and Disaster Preparedness Type (DPT). The ERT, Emergency Response Type is generally lead by Security Related Agencies and it focuses more on response. It is a 'Cure Method' done for the disaster victims. In this type at time of disaster, all related agencies will actively dedicate for better response and at the time of no-disaster, the designated nodal agency for disaster management feels bit relax, as this method gives less focus on disaster preparedness. In the ERT Model, the result can be seen immediate after the action taken. In the same time, the DPT, Disaster Preparedness Type is lead by Development Related Agencies, focuses more on preparedness. It is a 'Care Method' done for everyone. In this type at time of no-disaster, all related agencies actively participate for better preparedness and at the time of disaster, the DPT cannot work well. In this type, the result can only be seen in indirect ways. So-many countries including Nepal is adopting the ERT Model of DM and so-many countries including Japan is adopting the DPT Model of DM. The institutional set-up do matter to determine the types but, in some case, although they have separate NDMA, but still there system considered as ERT, like Mangolia has NDMA, US has FEMA and Russia has EMERCON as a NDMA. But their NDMA is controlled by Security Related Agencies. So, although they have separate focal agency for disaster management, their system still considered as ERT. To have shift from ERT to DPT, it is necessary to have the NDMA, but it should not have to be controlled by Security Related Agency, as it is called the location of National Disaster Management Office (NDMO). In Nepal scenario, if we create the NDMA under

the Ministry of Home, then the drawbacks that has made by Mongolia and Russia, controlling the NDMA by security related agency and the question of location of NDMO, we are going to repeat again. To have a proper shift from ERT to DPT, it is most important to establish a separate focal agency and the location of the Agency do matters to make a focus on preparedness. In this way, only the ERT or DPT methods solely does not work in the real case scenario, so some sort of balance is needed between them.

Immediate after disaster, lot more lifeline utility services has to be restored in no-time, with proper relief for live and livelihood as well. Japan is seem doing the job properly, cause it has allocated its role to different central, prefectural and city level government and also it has incorporated the role of private sector in disaster management council. This has become possible for Japan, because it is managing the overall activities of disasters from Cabinet Office Disaster Management, from where all national level coordination is possible, directly under Prime Minister and Disaster Minister. In Nepal, if we could have manage the overall disaster from the Cabinet Office of Nepal, then it could have implemented the lesson learned in past. Consideration of past recommendation for institutional set up from different background documents both from national and international level's accepted agencies along with the Periodic Plan Document of Nepal, It has been tried to proposed a institutional proposal as National Disaster Management Authority in past, as placing this institutional arrangement in the proposed disaster management act, but this process has return back without getting approval due to some other consideration of the then parliament, allowing the initiation of the process again.

Institution for disaster management at national level is always important, as it shapes and widens the disaster management activities at national level. The research has conclude it's finding with the high valued three types of national organizations categorically 1. Disaster Management Bureau (lead by one minister) at the Office of Prime Minister and Council of Minister, 2. A separate Disaster Management Ministry and, 3. National Disaster Management Authority (independent), the Office of Prime Minister and Council of Minister as the approach office of the authority. By analyzing and considering the pros and cons of these three best alternatives/options, based on the analysis in this research at the respective chapters of south Asian countries experience along with Japanese system experience, it has been drawn for findings one as a best options.

It has been concluded here that it is better for the country to adopt the changing focus to preparedness from response with proper institutional setup at national level to ease and to expedite the coordination capacity at national level. Regarding the proper institutional setup, among these three type of institutional arrangements, the option of creating the Disaster Management Bureau (lead by a designated Minister) at the Office of Prime Minister Office is proper and suitable institutional arrangement at national level for the management and coordination of overall activities of all cycle of disaster management. Since the disaster management is multi-tasked agenda, all stakeholders from

government and non-government has to assume their role and responsibility with proper coordination from the apex coordinating body. It has been also seen that the coordinator should have higher authoritative hierarchy in the bureaucratic system of government to ease and to expedite the coordination capacity. Based in this presumption and analysis, in that case, it has been concluded that the best option for overall coordination for disaster management at national level is the Bureau, that works directly under the disaster management council headed by Prime Minister with three consecutive sub-committee for prevention, response and recovery lead by the sector Ministers. This conclusion and findings does not mean to under-estimate the national situation and condition taking into account, the system varies from national culture and system to respective culture and system.

CHAPTER ONE : RESEARCH PLAN

Research background, scope, theme and objective

1.1 Background as of growing concern for disaster

Disaster has been commonly identified as 'a serious disruption of the functioning of a community or a society causing widespread human, material, economic, or environmental losses which exceed the ability of the affected community or society to cope using its own resources (ICIMOD, 2007). 'Disaster risk is continuing to increase, mostly because greater numbers of vulnerable people and assets are located in exposed areas (Tom Mitchell, 2014). The vulnerability of disaster is increasing globally, regionally and nationally. Regarding the disaster events and its effect trend, the SDMC Report states 'the year 2011 witnessed a slight decrease in the occurrence of natural disasters globally. As against 373 natural disaster events in the year 2010, 302 natural disaster events were recorded in the year 20111. As against a total of 207 million people affected due to natural disasters in the year 2010, around 206 million people were affected due to natural disasters during the year 2011. As against 296,800 casualties during the year 2010, only around 29,782 people were killed during 2011. The economic damage to property and infrastructure due to natural disasters during the year 2011 is estimated at around 366 billion US$ as against 109 billion during the year 2010 (SDMC, 2011). This recent figure has revealed the growing importance of disaster management both at national and regional level.

Not only in the global arena, the disaster and its impact is getting widening in in Asia and Pacific along with South Asian Regions. 'The Asia and the Pacific region will be remembered as large-scale disasters with devastating impacts on economies, communities and above all the lives of people across our region. The Great East Japan Earthquake, Tsunami and the ensuing nuclear disaster, as well as the Southeast Asian floods, which so severely affected Thailand, were major contributors to the staggering $294 billion in regional economic losses, representing 80 per cent of global losses due to disasters in 2011 (UNISDR 2012). The losses has triggering impact of developing countries as well.

The economic losses from disaster is also significant not only in Globally but also it has significant impact in the South Asian Region. A Background Paper from SDMC states that 'The disasters have been eroding, over minutes, hours or days hard earned gains of development of years and decades. It is estimated that the countries of the region have been loosing between 2 to 20% of their GDP and 12 to 66% of the revenues on account of disasters every year (SDMC, 2008), crating 'the global cost of natural hazards in 2011 was estimated to be $380 billion (NIDM, 2013). If properly managed the disaster, then it has economic benefit, in other case it can create harmful environment for development. The Paper further illustrates this issue under the sequence of 'Disaster limits development, Development causes disaster risk and Development reduces disaster risk (SDMC, 2008).

Natural disasters have various types of impacts including loss of life and property, if not properly

managed the all activities at the all cycles of disasters. The same level of disaster, as Japan has experienced in Kobe would have higher damages of property and losses of lives if this has happened in another part of Asia. 'In coping with the Great East Japan Earthquake, Japan's advanced DRM system, built up during nearly 2,000 years of coping with natural risks and hazards, proved its worth. The loss of life and property could have been far greater if the country's policies and practices had been less effective (world bank, 2012b).

No matter how strength the search and rescue forces the country has and no matter how about the preparation for effective response, 'the experience at Great Hansin-Awaji (Kobe) Earthquake of 1995 reveled that more then 80 percent people died because of immediate house collapse and fire (Hyogo, 2010), This has shocked our preparation of strengthening the search and rescue capacity, being not moving ahead properly with the complete implementation of building code. Kathmandu valley is in maximum threat of vulnerability, as SDMC Journal states 'A pilot study in a locality of Kathmandu Valley shows that 84 per cent are vulnerable and 16 per cent are non-vulnerable buildings, and almost all adobe buildings would severely collapse if the area experienced an earthquake of intensity IX MMI (SDMC, 2010). In this case, the absence of proper national authority is highly critical for the management of all aspect of disaster cycles.

In terms of poor management of disaster, the people of developing countries are more suffering from the disaster losses. UN Secretary General Kofi Annan at an IDNDR Program on July 1999 has rightly pointed out that 'it is no accident that 90 percent of disaster victims worldwide are in developing countries. Poverty and population pressures are forcing growing numbers of poor people to live in harm's way – flood plains, earthquake-prone zones and unstable hills. Their extraordinary vulnerability is perhaps the single most important cause of disaster casualties (UNISDR, 2000).' To reduce the losses in life and property, it is utmost important to have a definite thought for the proper coordinating agency at National level.

This can be envisaged through the role of preparedness and mitigation, along with the preparedness to response. It can be further emphasized the role of institutions involved in disaster management at National level, complemented by the Institutionalism Theory at large. The institutions found country to country-wise are different in category and in nature, some are purely governmental, while some are semi-government and non-government. These institutions are found complemented and supported by government and non-government alliances and networks as well (Hyogo, 2010).

It would be interesting and knowledgeable to academic, to practice-holders and to the general people at large to see the role and function of national institutions, making differences for the management of natural disaster, especially focusing on the national institutions of Nepal and Japan, what are they in terms of type, nature and function. It would be more realistic and more knowledge, to provide the

depth-view for the institutions evolved in disaster managements at national level, if the institutions would be compared within south Asian as well.

1.2 Desired field of research

To manage the overall activities of the all cycle of disaster, it is necessary to have separate dedicated governmental organization in place at national level, mean the necessity of National Disaster Management Agency (NDMA). Some countries do have National Disaster Management Authority and some countries have separate Ministry for disaster management. Like at south Asian region, if we check India, Pakistan and Afghanistan, they have NDMA; and Bangladeshi, Sri Lanka and Maldives are having Separate Ministry of Disaster Management, but Bhutan and our country Nepal are managing disaster through Ministry of Home Affairs, assuming the MOHA as as NDMA. It can be found three types of Governmental Organization dealing with disaster management along with South Asian Region.

There is also a need for proactive measures, bearing in mind that the phases of relief, rehabilitation and reconstruction following a disaster are windows of opportunity for rebuilding the livelihoods and planning and reconstruction of physical and socio-economic structures, in a way that will build community resilience and reduce vulnerability to future disaster risks (SDMC, 2011a). This shift in dimension of disaster management and the new traditional way of managing disaster in Nepal, focusing on response has drag this research as a desired field of study.

Japan is managing disasters with bit different ways of national institutional arrangement. Prime Minister heads the Central Disaster Management Council, the council comprises different ministries and secretaries with other related stakeholders as per necessity. They decide a designated administrative authority/organs and also a designated public corporation. The role of the council is to formulate and execute the disaster management plans, to coordinate with different governmental and non-governmental organizations, to formulate and promote the execution of the basic disaster management plans and also to formulate and execute the disaster management operation plans. It coordinate with specific Minister for disaster management, the minister works directly under Prime Minister, as his subordinate. The Minister does not any specify ministry to administer, his role and function is to coordinate with all related government, semi-government and non-government agencies. The same goes true with prefectural level with Governors, as he leads the Prefectural Disaster Management Council. This is a bit unique and bit different system of Japan than other so many Asian countries.

It would be interesting and important to know the suitable type of the organization to have better and coherent disaster management both at center and local level. Also, some countries are managing overall disaster management activities through the regular and multi-tasked ministry or agencies.

Some countries are having specific research agencies like Japan's Fire and Disaster Management Agency, Asian Disaster Reduction Centre and so on. Some countries like Nepal lack these types of specific governmental agency to manage the disaster. Up to now, the Ministry of Home Affairs is managing the cycle of disaster management at national level, where as some other line ministries is taking step in at the various activities of disaster management, both from preparedness and response front. Desired field for research or the research question would be "does it makes any difference to have or not to have any designated specify agency like NDMA for the overall management of disaster cycles."

1.3 Background and significance of the research

Proper institutional set-up for overall disaster management at national level is the core concept of the research and it has taken south Asian Region along with Japan as a base of comparison. The south Asian Region has been chosen because 'South Asia is exposed to a variety of hazards due to the geo-climatic characteristics of the region. These hazards range from avalanches and earthquakes to Glacial Lake Outburst Floods (GLOF) in the Himalayas in the North, droughts and floods in the Plains, and cyclones that originate in the Bay of Bengal and the Arabian Sea. Importantly, many countries in the region share common geological formations and river basins, and natural (world bank, 2012). The past researches in disaster management are mostly found in its technical part of disaster. The managerial aspect of disaster management has fond overlooked. It has been tried to analyze the disaster management from managerial aspect in this research. In the same time, in worldwide, it has found the changing dynamics of disaster management from response to preparedness. The FAO states this concept in this way 'in order to achieve the stated outcome by 2015, the HFA emphasizes a shift from reactive emergency relief (which nonetheless remains important) to pro-active disaster risk reduction in the pre-disaster stages by strengthening prevention, mitigation and preparedness. A related approach that is gaining widespread support is that of disaster risk management which combines, through a management perspective, the concept of prevention, mitigation and preparedness with response (FAO, 2008). This changing shift has been analyzed in this research from national institutional, regulation and management perspective.

In this context, this research would take a base of literature review of the existing literature about the existing specific agency of disaster management; also do the literatures review of some other country those who are not having specific disaster management agency in place. The research plan will be followed by the field visit of some of the selected agencies within Japan. I will also go through the legal and institutional backup for these agencies. I will be more focusing on the existing legal and institutional setup of Japan, taking case scenario of specific Nepalese case, where there is no separate specific agency. The problem of exiting framework can be seen in two ways. Those countries that are not having separate disaster management agency lack coherent and collaborative action for preparedness, response and recovery. The all efforts are fragmented and uncoordinated. Whether these

countries need separate disaster management agency or not could be one issue. The second issue would be those countries who are having separate disaster management agencies, how to have better coordination. The disaster management activities are being done by lot of multi-tasked agencies and all agencies have their own separate role and authority. In that case, how the single agency coordinates or commands the all agencies. There are two gaps as well, that I will try to find out answer under the research program.

1.4 Scope of the research

It is vital to start reversing trends of increasing disaster (Tom Mitchell, 2014) and the institutions involved from government at national level has its great significance. Nepal and Japan are having different type of Institutional Arrangement to manage disaster and different South Asian countries are also managing disaster through different institutional setup. There are lot more agencies working for the management of disaster management in the country and one specific agencies has designated to do the overall management and coordination in the area of disaster management. Different countries have different types of institutional arrangement with different legal set-up and the major one are :

Nepal	Disaster Management Division, Ministry of Home Affairs
	Natural Calamity (Relief) Act, 1982 (1st revision in 1989 and 2nd in 1992 Sep)
Japan	Cabinet Office Disaster Mgmt, (Designate one Minister for Disaster Mgmt)
	Disaster Countermeasures Basic Act, 1961
Afghanistan	Afghanistan National Disaster Management Authority (ANDMA)
	National Law on disaster response, management and preparedness in the Islamic Sate of Afghanistan (updated on 2006 and 2011)
Bangladesh	Disaster Mgmt and Relief Division, Ministry of Food and Disaster Mgmt
	Disaster Management Act, 2012
Bhutan	Department of Disaster Management, Ministry of Home and Culture Affairs
	Disaster Management Act of Bhutan, 2013
India	National Disaster Management Authority (NDMA)
	Disaster Management Act, 2005
Maldives	National Disaster Mgmt Center, Ministry of Defense and National Security Services
	Disaster Management Act, 2006
Pakistan	National Disaster Management Authority (NDMA)
	National Disaster Management Act, 2010
Sril Lanka	National Disaster Mgmt Center, Ministry of Disaster Mgmt and Human Rights
Sri lank	Disaster Management Act No. 3 of 2005

It would be highly interesting and knowledgeable to see the different institutional arrangements and regulation backups in those country, with the role of the institutions and the overall process differences between these countries to have disaster managed. while comparing the institutions and regulations in different countries, the more focus will be levied on the the arrangements of Japan and Nepal.

1.5 Methodology of the research

The basic foundation of the research is to visualize the disaster management form managerial perspective. Lot more literatures can be found visualizing the disaster management from the technical level study. This research has tried to observe the secondary publication and previous research finding and publications in the area. The recommendation from the prevention web and the Hyogo Framework has taken as a basic in term of proper institutional arrangement. It has not taken the primary data for its inputs, rather rely on the secondary observations of the publications. Net base Search and document review has been used in the process of research. The key word for Searches of databases were conducted on primary key words with a 'or', and also combining modifier strings with 'and' operators. On the whole, the more qualifiers added the more restricted the search so in conducting the searches of the fields and sub-fields separately, search sensitivity was increased.

Database search terms and strings were also employed for the website searches as appropriate. The main primary key words and search are 'institution, organization, disaster, disaster management, disaster risk reduction, capacity development, institutional development, capacity building, disaster capacity, disaster capacity building, disaster fragile, government/non-government capacity building for disaster risk reduction, DM in academic/non-academic literature, institutional arrangements for DM, DM system in South Asian Region and many more disaster related words' at various search engine websites. The visited websites and the gone through the publication has all been listed the reference section of the research paper.

In the time of research, there were some visiting programs, as we have visited Hyogo Prefectural Disaster Management Office, Kobe City DM Office, Japan Metrological Agency Osaka, Cabinet Office Disaster Management Office and Japan Water Agency Office at Saitama, along with some disaster related museums. The research has also enriched with the visiting programs at Kobe City Emergency Management Center, DM Drill Programs at various places, Tsunami/Storm Surge Disaster Prevention Station, Water science museum and Sewage Treatment Plant at Kobe along with attending international seminars Geotechnical Engineering for DM at Kyoto University, ICHARM Symposium in GRIPS, the symposium at Kobe University. The visit at Cabinet office at Tokyo, Public Works Department at Nagasaki and Prefectural DM office at Sendai has further enriched the research for better findings. The learning from the visit has been incorporated in the research. In the same time, there are lot more questions related to this research has been asked to the authority and and to the presenter and their answers has taken into consideration in designing the research.

As an administrative arrangement for the research, the ADRC has has provided the round-trip air ticket to recipient country, provided the the full accommodation along with fully furnished office space with net-linked computer and other accessories. The center will also arrange the side meeting with different stakeholder, organize lecture and seminars and exposure field-level to bring the better performance in

the research. The ADRC staff has gathered various information and knowledge, along with their presentations to the researcher as a backup for the research. The sending organization, Ministry of Home Affairs has granted leave to the researcher for the designated period with full support of salary and allowance to the family members for this period. The researcher, myself will contribute my whole time, effort and patient to produce a good research. The tri-partite arrangement for this research will expedite the process of presuming the research and making praiseworthy research findings.

1.6 Specific aim and expected result

The proposed research work, about the rational and applicability to the country like Nepal, will give fruitful thought and the way forward to us whether we need separate agency for DM at national level or not. Nepal is in a process of formulating new disaster management act, in place of response focused old Natural Calamity Relief Act, 1982, the finding of the research will be really helpful to shape future disaster related policies. Since many developing countries lack the administrative, organizational, financial, and political capacity to effectively cope with disasters, the poor become particularly vulnerable. Low-income countries have suffered only 9% of worldwide disasters since 1980, but suffered 48% of the fatalities (world bank, 2012a) and the knowledge and its applicability of the role of national institutions and regulations has become important at national context. This specific aim has taken consideration while dealing with the institutions and regulation of different selected countries, which is believed to be fruitful for general readers, practice-holders and academia. Since the researcher is working for the Disaster Management Division of the Ministry of Home Affairs in the capacity of the section head of disaster study and research section, the initiation of the policy and the research at this research at ADRC will have sincere policy feedback to the Government of Nepal in the area of disaster management.

'Disaster management is increasingly important, as the global economy becomes more interconnected, as environmental conditions shift, and as population densities rise in areas around the world. A proactive approach to risk management can reduce the loss of human life and avert economic and financial setbacks. To be maximally effective, and to contribute to stability and growth over the long term, the management of risks from natural disasters should be mainstreamed into all aspects of development planning in all sectors of the economy (NIDM, 2013). In line with the policy shift, the research will have evidence and literature base findings, which will helpful to shape the policy of those countries that are not having separate disaster management agencies at national level. This results also help to those countries who are having separate disaster management agencies to have coherent and collaborative efforts for further improvements. The results from the research will also show the right path to manage disaster by institutional setup. The expected results from the research would be the rational and possibility of the transformation of the idea of single powerful governmental organization for overall management of disaster.

The finding of the research will be shared to the colleagues by organizing in-house sharing and also by organizing the national disaster platform meetings. As Government of Nepal, Ministry of Home Affairs is hosting the National Disaster Risk Reduction Platform at a minimum three times in a year; the finding of the research will be shared to that platform to have common understanding about that designated agency for disaster management in place. The praiseworthy performance happened in Japan and other countries will be disseminated at different forums, including different official setups and the possibility for the transformation of this idea, based on our existing institutional capacity will be presumed. The drawbacks and problems that those countries are being faced in terms of better coordination will be further discussed. The research finding and its way forwards will surely not only benefit to our organization and broadly, to the nation, also enhancing the further professional career to expedite my further academic research in the area of disaster management.

1.7 Structure of the report/chapter plan

This reports consists of seven chapters, the first chapter deals with the general research proposal and the basis of the research with the background, theme and objective. The second chapter tries to explore the existing literature and findings about the institutional and regulation issues for the disaster management at national level. The third chapter exhibits current Disaster scenario and the DM System with existing institutional and regulatory framework of Nepal in brief. The forth chapter focuses more the institutional arrangement for disaster management with their regulation systems in different chosen countries. The fifth chapter deals with the disaster management pattern of Nepal with reference with the past disasters linking the disaster management institutions and regulation and the patter has been tried to find out in the case of Japan in sixth chapter. Finally the last but not the least, the seventh chapter has wrapped up with the conclusion and finding, focusing on the designated proper institution for overall disaster management at national level. The Chapters are planned in a way to show the Disaster Management related regulations and institutions in that order starting from south Asian Countries, more focusing on Japan and Nepal along with the background of disaster and disaster managements, that will further followed by lesson learned and findings.

This research lacks the basic or primary data, as the performance level can be derived from the beneficiary level. The report is totally based on the conversations with the designated authorities at different disaster management institutions of Japan, some lecture and classes from experts and some official visit. The has taken the experience of the researcher at the national level governance system as one of the basic foundation for the research. The web addresses of different disaster management related institution both at Nepal and Japan, along with the the institutions from south Asian Regions are the main source of information and findings, that may limit the scope and validity of the findings. The research has some finding, based on the referenced documents analysis and also based on the researcher inherit experience in the field, this might create some sort of biasness and improperly, creating further limited scope of the research.

CHAPTER TWO : LITERATURE REVIEW

Literature review on institutional mechanism of disaster management at national level

2.1 Policy institution at national level

Institution has a high importance for proper management of any discipline. As FAO has stated in his paper 'institutions play a key role in operationalizing the different phases of the DRM framework and mediating the link between development, DRM and humanitarian actions. Without institutions, there would be no action and DRM would remain a concept on paper (FAO, 2008). Disaster management demands a comprehensive strategic management with institutional framework at national level, as the response focused agencies is not enough. 'The UN General Assembly resolution 54/219 on the successor arrangements to IDNDR called for the implementation and further development of a 'comprehensive strategy to maximize international cooperation in the field of natural disasters, based upon an effective division of labor, from prevention to early warning, response, mitigation, rehabilitation and reconstruction, including through capacity building at all levels, and the development and strengthening of global and regional approaches that take into account regional, sub-regional, national and local circumstances and needs, as well as the need to strengthen coordination of national emergency response agencies in natural disasters (UNISDR, 2000). Proper policy, strategy and institutions have high importance in any discipline and this importance has even much higher in the area of disaster management, cause this discipline does not stand along, it needs broader and meaningful participation from the community. 'While people should own the problems, consequences and challenges of any mitigation and/or preparedness initiative, it is necessary to see people's involvement in a broader perspective, which is related to policy and strategy (Rajib, 2012). In light of this, the proper institutional framework for DRM at national level has been considered here for discussion.

Institutions, in this research paper is considered as 'an established organization or foundation, especially one dedicated some specific subject and area, an organization or establishment founded for a specific purpose, such as a hospital, church, company, or college' this meaning has been traced our from the 'from the free dictionary' from free dictionary website (Farlex, 2014 ed.), as this meaning goes well with disaster management at national level. The term institution itself has broad meaning, as it coins with social, political and economical context, but in this research paper it has considered just as an organizational context. The organization comprised of human, financial and material resources, it all come together with set-up, rules and procedures. 'Complex organizations, comprises of manufactories firms, hospitals, schools, armies, community agencies are ubiquitous in modern societies, but or understanding of them is limited and segmented. the fact that impressive and sometimes frightening consequences flow from organizations suggests that some individuals have had considerable insight into these social instruments. But insight and private experiences may generate private understandings without producing a public body of knowledge adequate for the preparation of

a next generation of administrators, for designing new styles of organizations for new purposes, for controlling organizations, or for appreciations of distinctive aspects of modern societies (James, 2007). The organization in this context has used the general definition and connotation as described in some literature of the discipline 'the allocation of responsibilities, the grouping of functions, decision-making, coordination, control and reward-all these are fundamental requirements for the continued operation of an organization (John, 1984). The institutional analysis for proper disaster management has no doubt high important as the second of the three strategic goals of the HFA is 'the development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards (HFA, 2005). The signatory countries of HFA were in a process of creating a dedicated national agency to show their policy shift from response to preparedness.

2.2 National institution for disaster management

Disaster risk in Asia is much more then any other continents. 'Asia continues to be the most affected continent, with more than 62.5 per cent of deaths caused by disasters and 89.7 per cent of the affected people. Africa, Asia and the Americas together account for 87 per cent of the total deaths associated with disasters during the period 2000-2010. Europe and North America are less affected in terms of death and injury but more in terms of economic impacts. The 66 disasters reported in Europe in 2007 accounted for 28 per cent of the world's economic losses from natural hazards but only five per cent of people killed globally (ISDR, 2010a). 'The world has witnessed an alarming increase in the frequency and severity of disasters: 240 million people, on average, were affected by natural disasters world-wide each year between 2000 and 2005. During each of these six years, these disasters claimed an average of 80,000 lives and caused damage of an estimated US$ 80 billion (FAO, 2008). The impact of disaster is high in South Asian Region as, 'SAR is highly exposed and highly vulnerable to the impacts of hazard events. Between 1971 and 2009, South Asia has experienced 1,017 natural disasters that meet the criteria of EMDAT (10 or more people reported killed, 100 or more people reported affected, declaration of a state of emergency and call for international assistance). The absolute number of disasters has increased steadily starting with 8 reported disasters in 1971 to more than 40 in 2009 – a fivefold increase. These events have cumulatively affected over 2 billion people and have caused over 800,000 deaths. Direct economic losses recorded over this time period amount to over US $80 billion (world bank, 2012).

This sever situation has pressurized the world community to work hard, especially from the national context with proper institutional and managerial framework to tackle the disasters in future. 'Disaster has been managing in a convention methods in many countries, as after disaster the forces designated for response intensively engaged for search, rescue and relief along with the support of some other humanitarian agencies. The approach is changing now, it is getting more focus on disaster risk reduction from disaster response. Disaster risk reduction activities are directed towards reducing risk

at its source with the aim of preventing hazards before they become disasters. As a consequence of the increasing frequency and severity (measured in both the loss of life and property damage) of disasters, countries are increasingly studying disaster risk reduction methodologies along with the more conventional post-disaster response measures (EFDRR, 2014). The research has tried to analyze the situation based on the new dimensional changes.

The several literature found in disaster management are mostly deals with its technical aspect. It is no doubt the technical aspect is very important, but without having managerial tightening, the technical aspect always posses the deficiency of implementation. It is urgent need that we have to start the process of dealing the disaster management from the managerial point of view. In this context as well, the national level managerial view has to be elaborated. Due to having one specific disaster focal point in the country, there seems some some problem arises for coordination. This has mentioned in SAARC Reporting Series Paper, reads in this way 'a number of scientific, technical and research organizations are involved with risk assessments. These are under the administrative control of different Ministries and authorities of the Member States. SDMC finds it extremely difficult to network with such institutions. Even the national focal points on disaster management in the Member States have been finding it difficult to coordinate with theses agencies for conducting studies (SAARC, 2013). This finding of SDMC can be treated as an importance of designated focal national agency for the overall management and coordination of disaster at national level.

The Focal Point or Focal Organization at National level has to be considered as a powerful coordinating agency, that has to coordinate with all Ministries and Agencies. This has been widely accepted in the area of DRR at National level. This can be seen as 'the focal point is the key agency that has the authority and resources to coordinate all related bodies for disaster management such as ministries, international donor agencies, NGOs and the private sector. The focal point agency needs a core of well-trained staff and adequate resources and should be supported by appropriate legislation and authority for decision making and implementation (InterWorks, 1998). 'The focal point is the key agency that has the authority and resources to coordinate all related bodies for disaster management such as ministries, international donor agencies, NGOs and the private sector. The focal point agency needs a core of well-trained staff and adequate resources and should be supported by appropriate legislation and authority for decision making and implementation (InterWorks, 1998). In Nepal, Ministry of Home Affairs is playing a National Focal Point for Disaster Management. According to this definition, it still needs proper authority and resources to coordinate all related bodies for disaster management, along with insufficiency of trained staff and adequate resources with appropriate legislation and authority for decision making and implementation. To have better managed the disaster, Japan has envisioned the Cabinet Office Disaster Management Concept, that is lead by one Disaster Management Minister with proper offices at Cabinet Office.

'In light with the recommendation of the Hyogo Framework of Action to establish the National Disaster Management Office, NDMO (HFA, 2005), in Nepal, it is recommended to have a national independent and powerful agency, named National Disaster Management Authority (NDMA) by National Strategy for Disaster Risk Management (NSDRM, 2009). By taking consideration with the Japanese system, the proposed Authority could a independent, but it does not seem to be able to coordinate with all government and non-government stakeholders, including Ministries, Department and Agencies. In this research paper, it has been tried to analyze the proposed system in comparing with the Japanese system.

2.3 Location of National Disaster Management Office (NDMO)

Regarding the location of the national disaster management office has major implications for effective horizontal connections across ministries. 'If the NDMO is located in a ministry then the minister is likely to be the chairman of the national disaster committee, whereas, if the NDMO is located in the prime minister's office, then the prime minister or deputy prime minister is usually chairman of the committee. Case studies from Tanzania, Zimbabwe and Trinidad and Tobago clearly identify the advantages of locating the NDMO in the Prime Minister's and President's office. The primary advantage is that it provides the NDMO with greater authority in coordinating and integrating the inputs from various line ministries. When the NDMO is located in a line ministry, it may not be able to guarantee the representation and participation of the other line ministries (InterWorks, 1998). This observation has Clearly defines the position and location of NDMO in the country. This situation in Nepal, the coordination role lies with Ministry of Home Affairs, since it is not lies with prime minister's office, it might be having some sort of coordination and resource allocation problem in Nepal.

The InterWorks, 1998 also have some recommendation regarding the location of NDMO, as it is in the Prime Minister's or President's Office, need to ensure more adequate connections and authority rather than location in a line ministry and before a NDMO is relocated to the Prime Minister's Office, it is necessary to assess whether or not the Office has the long-term capacity to take over responsibility for disaster management. The Office also needs to have professional credibility among the line ministries to be effective at coordinating their inputs (InterWorks, 1998).

The DRR policy of any government does not stand alone, as it comes with the various facet of the governance aspects. 'To comprehend the governance policies on disaster risk reduction of different countries, an examination of legislatures, administrations, legal systems, property rights, and political and financial institutions helps to assess the actors responsible for transparency and accountability of DRR work. Within the scope of 'good enough risk governance', the importance of capacities and structures of central and local administrations should be emphasized. It is crucial to take into consideration DRR work in the unique national context. However, across national settings the

following factors are characteristics of risk governance: accountability, legality, impartiality, transparency, participation, coordination, subsidiary, effectiveness, and education-awareness and must be taken into account by central and local governments in respect of DRR (EFDRR, 2014). Along with the location, authority and coordination capacity, some other major factor for governance has been considered in this research paper.

The primary base for the visited literatures are the visualization of the disaster management discipline from purely technical ground to managerial aspect, the national level shift from disaster response to disaster preparedness, creation of national disaster management offices at national level and the location of the NDMO with proper power of coordination along with various type and patterns of the national agencies in some countries. 'It's been recommended to improve national disaster management structures with the proper characteristic like greater resources for NDMOs and further training of NDMO staff are required, clearly defined authority for coordination and possible acquisition of resources of other ministries is more important for the NDMO than having its own resources and ensuring that the structure operates as designed and committees meet as required by providing adequate resources and motivation to all levels (InterWorks, 1998). This has taken consideration to analyze the situation in case of Nepal in defining the proper national disaster management offices structure.

CHAPTER THREE : DISASTER OVERVIEW AND MANAGEMENT

Disaster scenario and the DM System with existing institutional and regulatory framework

3.1 Disaster at a multi-hazard scenario

As 'disasters result from the combination of three key elements: i) natural hazards, including earthquakes, cyclones, excess rainfall, Tsunamis, etc.; ii) exposure (of people and property to these hazards); and iii) vulnerability (of the human and physical capital exposed) due to physical, social, economic, governance, and environmental factors that increase the susceptibility of a community to the impact of a natural hazard (world bank, 2012), the disasters are getting higher concern, simply not because of it have various types of impacts including loss of life and property, if not properly managed the all activities at the all cycles of disasters, but it the same time it is creating huge losses in the overall world economy. As GAR 2013 main findings, 'disasters have growing impact on business, globalised supply chins created new vulnerabilities, business loses its lifeline when disasters damage public infrastructure, small and medium enterprises are particularly at risk, disasters undermine longer-term competitiveness and sustainability, the disaster phenomena is getting higher concern all over the world (GAR, 2013). The disasters have various kind of losses. The three dimensions of disaster losses: 'mortality, national economic losses and livelihood losses, assessed as disaster-induced impoverishment (Tom Mitchell, 2014) has high significant. Having importance of these type of losses, the disaster scenario and management has taken into consideration.

The fragile geology and steep topography has made Nepal the 20th topmost disaster prone country in the world. Nepal is in a threat of multiple natural hazards. Flood, landslide and fire is frequent occurrence disasters. 'It faces high magnitudes and intensities of a multitude of natural hazards such as flood, landslide, earthquake, fire, cold waves, hailstone, windstorm, thunderbolt, cloudburst, drought, Glacier lake outburst flood (GLOF), avalanches and epidemics. Unstable steep slopes and fragile geological formation of a young mountain range with heavy monsoon rainfall leads to a wide range of geological and hydro-meteorological disasters across the country. The variation in geological characteristics, together with torrential rain during rainy season, result in landslides, debris flows, floods, etc.

The recent date has shown that the thunderstorm and the epidemics are becoming more common disasters, which are killing the higher number of people in the recent days (NDR, 2011). The country has remained at the top 20th list of the most multi-hazard prone countries in the world. The country is ranked 4th, 11th and 30th in term of climate change, earthquake and flood risk respectively (UNDP/BCPR, 2004). Other disasters in Nepal are drought, storm, hailstorm, avalanches, cold-waves, forest fires and GLOF. Nepal poses in an average two death per disaster and one disaster per day. According to the data, more than 30,000 thousand people are killed by anyone of the disaster,

leaving more then 60,000 people injured; that has created huge loss of human lives and property. (DisInventar Database)

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

In this context, managing disasters in this current period requires a concerted as well as an integrated national effort which needs to be coordinated at all levels. The Government of Nepal has been working to reduce risks through mainstreaming disaster management into sectoral development for preventing the occurrence of disasters, mitigating their impact and ensuring that there is adequate preparedness to ensure an effective response. Historical records show that Nepal has been suffering from various types of disaster. The entire country is prone to earthquake as well. While the hilly areas, with rough topography and very young geology, are very prone to landslides, the lowland Terai is prone to floods. Avalanches, GLOFs and snowstorms are common in high hills of Nepal.

The floods of 1993, 2008 (Koshi Flood) and 2012 and the Jajarkot diarrhea outbreak of 2009 was major disasters recorded in Nepal. The avalanches has been experienced in 2012, where huge flood triggered by avalanches kill around 72 people in one time. The Geological, ecological, demographic and hydro meteorological phenomena, such as rapid population growth and increasing population density, High degree of environmental degradation particularly deforestation, Fragility of landmass, Wider spread poverty, Topography which poses huge infrastructural challenge, Poor building practices and no enforcement of building codes and unplanned city development, Insufficient emergency preparedness and lack of awareness, and Political instability and various form of societal misinterpretations are major contributor factors to disaster vulnerability in Nepal. Disaster risk and vulnerability has increased due to security issues and decreased livelihood opportunities, migration, displacement, limited access to and weak flow of information to the population displaced internally due to more than a decade-long conflict in the country as well.

Nepal has a long history of destructive earthquakes. Since 'Maps of the surface geology present a very complicated scenario for how the collision is being accommodated at present, at least in the terms of crustal deformation. The current locus of thrusting occurs mainly along the Main Boundary

Trust (MBT) at the southern foot of the Himalayas (Yu & Nutt, 1996) leaving Nepal at the ridge of Tibetian and Indial Plates colliding each-other along with the Himalayan Region, the country is highly prone to earthquake. 'With a burgeoning population of almost a million people, uncontrolled development, and building construction techniques that have changed little in the past century, Kathmandu Valley becomes increasingly vulnerable to catastrophic earthquakes with each passing year (ADPC, 2000). The biggest recorded disasters in Nepal are the earthquakes of 1934 and 1988 claiming ….people life. The earthquake of 1934 put the country's in economical and social shocks.

3.2 National disaster management context

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

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

In line with the progress, Nepal does not fall in the category of well-prepared nations for disaster risk reduction. This is mainly because of not having a focal agency as a specific ministry and due to absence of specific targeted law focusing on disaster risk reduction. The UNISDR report express in that way 'of the 61 countries and areas in Asia and the Pacific, 30 have enacted national or central legislation that specifically deals with disaster risk management. The documents cited do not include policies or directives that are without overarching legislative mandate, such as regulations or directives issued by individual ministries (UNISDR, 2012).

3.3 Institutional arrangement for disaster management in some other countries

To manage the overall activities of the all cycle of disaster, it is necessary to have separate dedicated governmental organization in place, mean the necessity of National Disaster Management Agency (NDMA) at National level. Some countries do have National Disaster Management Agency and some countries have separate Ministry for disaster management. Like at south Asian region, if we check India, Pakistan and Afghanistan, they have NDMA; and Bangladeshi, Sri Lanka and Maldives are having Separate Ministry of Disaster Management, but Bhutan and our country Nepal are managing disaster through Ministry of Home Affairs. It can be found three types of Governmental Organization dealing with disaster management along with South Asian Region.

Japan is managing disasters with bit different ways of national institutional arrangement. Prime Minister heads the Central Disaster Management Council, the council comprises different ministries and secretaries with other related stakeholders as per necessity. They decide a designated administrative authority/organs and also a designated public corporation. The role of the council is to formulate and execute the disaster management plans, to coordinate with different governmental and non-governmental organizations, to formulate and promote the execution of the basic disaster management plans and also to formulate and execute the disaster management operation plans. It coordinate with specific Minister for disaster management, this minister is directly under Prime Minister, as his subordinate. The Minister does not any specify ministry to administer, his role and function is to coordinate with all related government, semi-government and non-government agencies. The Council is secretariat by Cabinet Office Disaster Management, thus the actual level coordination lies with the Cabinet Office. The same goes true with Prefectural level with Governors, as he leads the Prefectural Disaster Management Council. This is is the bit unique and bit different system of Japan than other so many Asian countries.

The separate kind of arrangement in Japan has seen as a plus benefit for the overall management of disaster in Japan, expressing its efficiency in past various disasters. This can be envisaged through the role of preparedness and mitigation, along with the preparedness to response. It can be further emphasized the role of institutions involved in disaster management at National level, can be

complemented by the Institutionalism Theory at large. The institutions found country to country-wise are different in category and in nature, some are purely governmental while some are semi-government and non-government. These institutions are found complemented and supported by government and non-government alliances and networks as well. It would be interesting and knowledgeable to academic, to practice-holders and to the general people at large to see the role and function of national institutions, making differences for the management of natural disaster, especially the national institutions of Nepal and Japan, what are they in terms of type, nature and function. It would be more realistic and more knowledge, to provide the the depth-view for the institutions evolved in disaster managements, if the institutions would be compared within south Asian as well.

It is relevant to link the disaster management activity with the proper institutional arrangements at national level. Currently, some countries are trying to get shift its priority from disaster response to disaster preparedness and some have got achievement too. As the UNISDR states 'Bangladesh, India, Pakistan, the Philippines and Thailand have shown that well-targeted social protection measures are not only affordable but that they also reduce vulnerability to a great extent. Innovative technologies in information, communication and space-based applications have been put to good use by several countries to fill critical gaps in the information supply chain (UNISDR, 2012). This progress has clearly linked with the national institutional context. Since Bangladesh have a separate disaster management Ministry making proper focus on disaster mitigation. In the same time, India and Pakistan got success through NDMA Structure. Anywhere in the UNISDR and other international agency report, it is very difficult to see the name of Nepal and Bhutan, this is because of the DM issue is been managing by their Home Ministry, getting more focus on traditional disaster response.

It has always been interesting and important to know the suitable type of the organization to have better and coherent disaster management both at center and local level. Also, some countries are managing overall disaster management activities through the regular and multi-tasked ministry or agencies. Some countries are having specific research agencies like Japan's Fire and Disaster Management Agency, Asian Disaster Reduction Centre and so on. Some countries like Nepal lack these types of specific governmental agency to manage the disaster. Up to now, the Ministry of Home Affairs is managing the cycle of disaster management at national level, where as some other line ministries is taking step in at the various activities of disaster management, both from preparedness and response front. As the desired field for research or the research question was 'does it makes any difference to have or not to have any designated specify agency like NDMA for the overall activity management of disaster cycles', has guided the whole research activities.

3.4 Specific institutions for the coordination of disaster management at national level and their corresponding regulations

Different countries are having different type of Institutional Arrangement to manage disaster in different legal set up. Nepal and Japan along with other South Asian countries are also managing disaster through different institutional setup. There are lot more agencies working for the management of disaster management in the country and one specific agencies has designated to do the overall management and coordination in the area of disaster management. Different countries have different types of arrangement and the major arrangements and their major respective regulations for the coordination of the disaster management at national level are as follows :

Nepal	Disaster Management Division, Ministry of Home Affairs
	Natural Calamity (Relief) Act, 1982 (1st revision in 1989 and 2nd in 1992 Sep)
Japan	Cabinet Office Disaster Mgmt, (Designate one Minister for Disaster Mgmt)
	Disaster Countermeasures Basic Act, 1961
Afghanistan	Afghanistan National Disaster Management Authority (ANDMA)
	National Law on disaster response, management and preparedness in the Islamic Sate of Afghanistan (updated on 2006 and 2011)
Bangladesh	Disaster Mgmt and Relief Division, Ministry of Food and Disaster Mgmt
	Disaster Management Act, 2012
Bhutan	Department of Disaster Management, Ministry of Home and Culture Affairs
	Disaster Management Act of Bhutan, 2013
India	National Disaster Management Authority (NDMA)
	Disaster Management Act, 2005
Maldives	National Disaster Mgmt Center, Ministry of Defense and National Security Services
	Disaster Management Act, 2006
Pakistan	National Disaster Management Authority (NDMA)
	National Disaster Management Act, 2010
Sril Lanka	National Disaster Mgmt Center, Ministry of Disaster Mgmt and Human Rights
	Sri lank Disaster Management Act No. 3 of 2005

Some interesting and knowledgeable fact has come out from these countries to see the different institutional arrangements and their major respective laws to deal with disaster with the role differences of the institutions and the overall process differences between these countries to have disaster managed. while comparing the institutions and regulations in different countries, it has been more focused on the legal and institutional arrangements of Japan and Nepal in preceding chapters.

CHAPTER FOUR : DM INSTITUTIONS AND REGULATIONS

Institution and regulations for disaster management at national level in south Asian countries

4.1 Institution and regulation for the management of disaster at national level

In South Asian Region, three kind of arrangement for the coordination of overall disaster management at national level has found. Afghanistan, India and Pakistan is dealing the overall national level disaster management coordination by its newly created National Disaster Management Authority. Bangladesh, Maldives and Srilanka is managing the same level of national coordination through the separate disaster management Ministry. In the SAARC Countries, Bhutan and Nepal is managing overall disaster management coordination from its Ministry of Home Affairs. Although it posses the similar structure of National Disaster Management Council, it is headed by Home Minister, rather the Prime Minister in another countries. The Home Minister headed committee is the apex body for overall disaster management coordination. The specific institutional mechanism and regulations are given here as different subheadings.

4.2 Disaster management institution and regulation in Afghanistan

Afghanistan is recurrently hit by natural disasters causing losses to lives, livelihoods and property. In recent decades, this has led to massive problems of food insecurity and population exodus from the worst hit areas. From 1954 to 2006, the country has experienced 118 large-scale disasters, with a total number of persons killed estimated at 22,000 and the affected persons estimated around 11 million. With almost three decades of conflict, the vulnerability of the people has been heightened. In the recent past, the country experienced a series of disasters – the Baghlan Earthquake, the avalanches in north Badakshan region, sandstorms in Farah, floods and landslides in central provinces and a prolonged drought. It has no doubt that Afghanistan is a disaster prone country.

'The original institutional framework for disaster risk management was put in place in the early 1980s. At the core of this structure was the Department for Disaster Preparedness. This Department was a ministerial level department and served the central disaster coordination agency and the secretariat of the National Commission for Emergency Response Currently, the Afghanistan National Disaster Management Agency is responsible for coordinating and managing all aspects of disaster preparedness and response. The National Disaster Management Commission serves as the apex body within the country's DRM institutional framework. The role of the Commission is to formulate national policy on disaster management, including periodic reviews (world bank, 2012). In light of the disaster, it has formulated some of the institutions and regulation as bellow :

Institutions	Regulations
• National Disaster Management Commission, as an Apex body, chaired by the Second Vice President with	• National Law on disaster response, management and preparedness in the Islamic Sate of Afghanistan

participation of relevant ministries • Afghanistan National Disaster Management Authority (ANDMA) established in 1971, as a secretariat of the Commission • Province level Disaster Management Committees /Commissions • District level Disaster Management Committee • National Emergency Operations Centre • Mobile Rapid Response Task Force • National DRR Platform • Cluster System • National Emergency Fund	(updated on 2006 and 2011) • National Disaster Management Plan, 2010. The National Disaster Management Plan takes into account the current status of infrastructure availability, institutional capacities and constitutional authority in Afghanistan. In accordance, it provides procedures that may be implemented with immediate effect and subsequently upgraded as more resources become available and capacities of stakeholders get built. Its immediate purpose is to bring about greater role-clarity and coordination amongst national level disaster response agencies. It covers the operational context, preparedness and response procedures, and an outline of future directions. • National Disaster Management Framework of Afghanistan • National Disaster Risk Reduction Plan • Disaster Risk Reduction initiatives and activities, in line with HFA priorities • National Strategy for Disaster Management • National Disaster Management Planning 2003 • National Disaster Response & Recovery Plan • Emergency Declaration with level of Emergencies • Natural Disaster Mitigation Policy in Afghanistan

Regarding the Disaster Management in Afghanistan, the SDMC Background Paper states that 'Disaster Management Framework of Afghanistan states to strengthen the capacity of government and civil society to manage disasters at both the national and sub-national levels, with immediate attention being given to the highest priority needs of (a) effective disaster preparedness and response; and (b) the implementation of community-based disaster reduction projects for the most vulnerable communities. The National Disaster Management Program, as envisaged in 2003, advocates a comprehensive risk management approach. Members of the National Emergency Commission represent key sectors and have been active in dealing with a range of emergency responses, but the risk reduction thinking and capacity across government is still quite limited. Afghanistan National Disaster Management Authority (ANDMA) has the lead role and is the apex agency for coordinating disaster management activities. The primary function of ANDMA is coordination of disaster management activities at national level (SDMC, 2008).

The formation of NDMA in Afghanistan has no doubt important, then dealing disaster from any other line ministry like Home Ministry. But still, the effectiveness of NDMA is always in questions. The SDMC Journal states about the plan of Afghanistan in a way that 'unfortunately, Afghanistan's formulated plans for disaster preparedness are virtually existence on the paper: the emphasis is rather on mitigation through structural measures or relief as and when the need arises. Plans, including response through prior evacuation from threatened locations, timely and effective search and rescue, and long-term relief and rehabilitation are not practical (SDMC, 2010). This has emphasized if disaster could have been managed by Prime-Minister Office or any specific disaster management ministry, then the plan does not have to synchronize in paper only.

Regarding the efficiency of ANDMA, the SDMC Journal has further emphasized that 'Based on the draft national strategy regarding disaster preparedness and response, all the member ministries of the National Commission for DM are expected to prepare DM and preparedness plans at sector level. Some of the ministries have prepared their plans but they are not practical; the actual data is not yet send to the central office. ANDMA suggested to president to have annual budget. In addition to these are other stakeholders within the Government of Afghanistan. A number of international and national NGOs, civil society, academia CSOs, and UN Agencies are currently working in the sector. The ANDMA was established in 1971 as a coordination office to support a multicultural national commission supported by the United Nations Disaster Response Office (UNDRO). There are no separate plans for different categories of disaster in Afghanistan. The water strategic policy was formulated in 2004 but due to problem of poor coordination, it is not approved yet; in the same state is the national water plan made in 2005 but not approved. Drought policy and strategy that was made in 2005 had been approved in 2008; the draft action plan for flood mitigation that was made in 2006 has neither been updated nor approved (SDMC, 2010). This shows the poor efficiency of NDMA in Afghanistan.

4.3 Disaster management institution and regulation in Bangladesh

Bangladesh is highly disaster prone country, especially Dhaka and Chittagong as a densely populated area with poor infrastructure. The SDMC Journal States that 'Natural disasters in a built environment can cause huge casualties, and if the area is densely populated and poorly constructed, the disaster can reach devastating level. Dhaka, the capital city of Bangladesh, acts as the focal point of all social, political, and economic activities of the country; it is facing a huge pressure of urbanization (SDMC, 2010). The vulnerability for Bangladesh has further exacerbated by its flood prone and drought as well.

'Bangladesh's DRM structure is organized on the national and sub-national-levels. On the highest level, the National Disaster Management Council, headed by the Prime Minister, formulates and reviews disaster management policies. The Inter-Ministerial Disaster Management Coordination Committee was established to implement disaster management policies and decisions, assisted by the National

Disaster Management Advisory Committee. The Ministry of Disaster Management and Relief, which has a central Disaster Management Bureau coordinates disaster preparedness and mitigation interventions across all agencies. On the sub-national level committees coordinate and review activities (world bank, 2012).

The National Disaster Management Policy, act and plan cover all possible kind of hazard for all over Bangladesh. As very frequently experienced natural hazards, flood and cyclone got emphasis here. The generalized description of all possible hazards is provided in the plan, and both policy and plan contain specific strategies/actions for each hazard. The act has fixed the name and responsibilities of concerned agencies/departments and the definitions of all terms related to disaster (SDMC, 2010). Disaster Management Institutions and Regulations in Bangladesh can be listed in this way :

Institutions	Regulations
• Department of Disaster Management, headed by Director General, set up in Nov 2012 with the mandate to implement the objectives of Disaster Management Act by reducing the overall vulnerability from different impacts of disaster by undertaking risk reduction activities; conducting humanitarian assistance programs efficiently to enhance the capacity of poor and disadvantaged as well as strengthening and coordinating programs undertaken by various government and non-government organizations related to disaster risk reduction and emergency response. DDM is responsible to execute the directions, recommendations by the Government in connection with disaster management as well as the national disaster management principles and planning • Ministry of Disaster Management and Relief • The National Disaster Management Council (NDMC) headed by Prime Minister, and Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) headed by the Minister of DM and Relief, has ensured the coordination of disaster related activities at the National level • National Disaster Management Advisory Committee (NDMAC) headed by an experienced person having been nominated by Prime Minister. • National Platform for Disaster Risk Reduction (NPDRR) headed by Secretary of the MoDMR	• Disaster Management Act, 2012 • National Disaster Management Policy • National Plan for Disaster Management 2010-015, along with Disaster Management Action Matrix 2010-2015 • Disaster Management Plan • Standing Orders in Disaster • Various Guidelines for Disaster Management • Disaster Impact and Risk Assessment Guideline • Local Disaster Risk Reduction Fund Management Guidelines • Emergency Fund Management Guidelines • Indigenous Coping Mechanism Guidebook • Community Risk Assessment Guidelines • Damage and Needs Assessment Methodology • Hazard Specific Risk Assessment Guidelines • Emergency Response and Information Management Guideline • Contingency Planning Template • Sectoral Disaster Risk Reduction Planning Template • Local Level Planning Template • National Risk Reduction Fund Management Guideline • National Disaster Reduction and Emergency Fund Management Guideline • Local Disaster Management Fund Guideline • Guideline for Road and Water Safety • Guideline for Industrial Safety

• Earthquake Preparedness and Awareness Committee (EPAC) headed by Minister for MoDMR • Cyclone Preparedness Program Implementation Board (CPPIB) headed by the Secretary, Disaster Management and Relief Division to review the preparedness activities in the face of initial stage of an impending cyclone. • Cyclone Preparedness Program (CPP) Policy Committee headed by Minister of MoDRM • Focal Point Operation Coordination Group of Disaster Management (FPOCG) headed by the Director General of DDM to review and coordinate the activities of various departments/agencies related to disaster management and also to review the Contingency Plan prepared by concerned departments. • NGO Coordination Committee on Disaster Management (NGOCC) headed by the Director General of DDM to review and coordinate the activities of concerned NGOs in the country. • Committee for Speedy Dissemination of Disaster Related Warning/ Signals (CSDDWS) headed by the Director General of DDM to examine, ensure and find out the ways and means for the speedy dissemination of warning/ signals among the people.	• Guideline for Disaster Shelter Management • Monitoring and Evaluation Guideline for the Implementation of the Plan • Guideline for International Assistance in Disaster Emergency

'Bangladesh's government has successfully utilized its increased revenues from 5.5 percent GDP growth per annum to invest in risk resilient infrastructure. The Government of Bangladesh has invested more than US$10 billion during the past 35 years to make Bangladesh less vulnerable to natural disasters. The country has come a long way in its efforts and should continue to strengthen disaster planning in its long-term development goals and practices (world bank, 2012). This specific effort seems getting progress because of the identity of separate ministry of disaster management in Bangladesh.

Specific Ministry concentrates on their specific job and have less concern about the cross-cutting issue like disaster management. This has to perform by the specific agency, like Ministry of Disaster Relief in Bangladesh, but this specific ministry in some cases lacks the cohesive power to control the business of other ministry. This issue can be visualized with the start of provision mentioned by SDMC Journal as 'Lack of supervision and non-compliance of building code and safety laws have become a very common practice in the construction sector of Bangladesh. Chittagong, which is regarded as the commercial capital of Bangladesh, is less developed compared to Dhaka though it is rapidly developing and expanding due to current construction boom (SDMC, 2010)'. In this case, if Prime Minister

Office coordinates, then it has become much easier to force the particular line ministry to implement the building code.

4.4 Disaster management institution and regulation in Bhutan

Institutions	Regulations
• Department of Disaster Management, Ministry of Home and Culture Affairs (MoHCA) • Department of Local Governance, Ministry of Home and Culture Affairs • The cabinet Office to assess the situation, summon national resources, allocate money from Major Disaster Fund and if required, decide to seek international assistance and decide on appropriate response measures • National Committee for Disaster Management (NCDM), chaired by Ministers in a rotation-basis and HCA Minister as a voice-chair to oversee/supervise the effectiveness of response mechanisms, give directions to line Ministries/agencies, decide on the quantum of relief assistance, mobilization of resources, provide regular inputs to the Cabinet and directions to Dzongkhags, Dungkhags, Thromdes and Geogs etc • Inter-Ministerial Task Force, chaired by Minister from MoHCA • Technical-advvisor Committee, directly reporting to Inter-ministerial Task Force • Dzongkhag DM Committee (DDMC) • National Emergency Operation Centers • His Majesty's Relief Fund to strengthen response capabilities at various administrative levels eg. Roads, Police, Communication and to address speedy relief, recovery, rehabilitation & reconstruction, administered by MoHCA • National Disaster Mitigation and Preparedness Fund, to finance hazard-specific risk mitigation projects/schemes formulated at national level by different sectors/Ministries and to finance similar projects developed by Dzongkhags, Geogs and Municipalities, administered by NCDM	• Disaster Management Act of Bhutan, 2013 • National Disaster Risk Management Framework, 2007 • National Recovery and Reconstruction Plan, 2010 • Environment Assessment Act, 2002 • Bhutan Water Policy, 2003 • Bhutan Building Rules, 2002 • Environmental Management Framework For Bhutan, 2013 • Guideline on Proper Construction Practices for Non-Engineered Buildings, 2010 • National Action Plan for School Earthquake Safety, 2013 • National Action Plan for Earthquake Safety of Health Facilities, 2013 • Materials for Annual School Preparedness Drill, 2010 • September 21, 2009 Earthquake Joint Rapid Assessment for Recovery, Reconstruction and Risk Reduction, 2009 • Initial Seismic Vulnerability Assessment of Jigme Dorji Wangchuck National Referral Hospital: Thimphu, Bhutan, 2012

The SDMC Background Paper has further emphasize the disaster management system of Bhutan by saying 'Bhutan, a tiny Himalayan land locked state with population of over 600,000 (approx.) is threatened by GLOF, flash flood, landslides, forest fires and earthquakes disasters. acknowledging the emerging disaster threats, Government of Bhutan had asked Ministry of Home and Cultural Affairs (MoHCA) to come up with a comprehensive National Framework for disaster risk management in the country. With assistance from UNDP Office in Bhutan and regional experts, MoCHA have drafted a National Framework for disaster risk management (SDMC, 2008). Since the Ministry of Home and Culture is coordinating disaster management activities, may be it can visualize bit limited progress on designing the overall framework in Bhutan, rather it has more focus in response management.

Bhutan has specific line agency polices like National Recovery and Reconstruction Plan, 2010, Environment Assessment Act, 2002, Bhutan Water Policy, 2003, Bhutan Building Rules, 2002, Environmental Management Framework For Bhutan, 2013, Guideline on Proper Construction Practices for Non-Engineered Buildings, 2010, National Action Plan for School Earthquake Safety, 2013, National Action Plan for Earthquake Safety of Health Facilities, 2013, Materials for Annual School Preparedness Drill, 2010, September 21, 2009 Earthquake Joint Rapid Assessment for Recovery, Reconstruction and Risk Reduction, 2009 and Initial Seismic Vulnerability Assessment of Jigme Dorji Wangchuck National Referral Hospital: Thimphu, Bhutan, 2012, clearly specifying the probrem of proper coordination from the Ministry of Home Affairs, since other line ministry presume their duties well in their specific area.

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4.5 Disaster management institution and regulation in India

'Large-scale disasters, especially during the last decade, have contributed to the development of a proactive approach to disaster risk management in India. The Gujarat earthquake in 2001 and the 2004 Asian Tsunami have served as platforms to move from a reactive emergency response to a pro-active risk reduction approach (world bank, 2012). The 1999 super cyclone in Orissa, 2001 Bhuj earthquake in Gujarat, 2004 Indian Ocean Tsunami, 2009 big flood in Bihar are the triggering factors in India to have disaster better managed with more focus on preparedness. Indian disaster management has been dealt by Home Ministry before, being as a response focus. The shift in the priority from response to preparedness leads the establishment of the separate agency for overall disaster management. The institutional framework and its regulation mechanism is given categorically here. Disaster Management Institutions and Regulations in India can be listed in this way :

Institutions	Regulations
• National Disaster Management Authority (NDMA), under the chairmanship of Prime Minister, as an apex body for Disaster Management in India set up after the Indian Ocean Tsunami, as a part of the Government of India's decision to put in place	• Disaster Management Act, 2005, that lays down institutional, legal, financial and coordination mechanisms at the national, state, district and local levels • National Disaster Management Policy

necessary institutional mechanisms for drawing up and monitoring the implementation of disaster management plans, ensuring measures for prevention and mitigation of disasters and for undertaking a holistic, coordinated and prompt response to any disaster situation. • National Executive Committee (NEC) comprises the Union Home Secretary as the Chairperson • National Disaster Management Fund is administered by NDMA • National Disaster Response Fund is administered by NDMA, through the National Executive Committee • Different Ministry and Agencies are doing DM Related activities, the NDMA is coordinating • NDMA may lay down plans and policies on disaster management; approve the National Disaster Management Plan; approve plans prepared by the Ministries and Departments of the Government, lay down guidelines to be followed by a State Authority in drawing up the State Plan; lay down guidelines to be followed by different Ministries and Departments for the purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects; coordinate the enforcement and implementation of the policies and plans for disaster management; arrange for, and oversee, the provision of funds for mitigation measures, preparedness and response; provide such support to other countries affected by a major disaster; lay down guidelines for the minimum standards of relief to be provided to persons affected by disaster; give directions regarding relief in loan repayment or for grant of fresh loans on such concessional terms as may be appropriate in the judgment of the Authority; take such other measures for the prevention of disaster, of the mitigation of its effects, or for preparedness and capacity building for dealing with the threatening disaster situation or	• National Disaster Response Plan • The National Disaster Response Fund will be applied by the National Executive Committee (NEC) towards meeting the expenses for emergency response, relief and rehabilitation, in accordance with the guidelines laid down by the Central Government in consultation with the NDMA • National Disaster Mitigation Fund (NDMF) may be created for projects exclusively for the purpose of mitigation, as mandated by Act • Hazard zoning, mapping and vulnerability analysis in a multi-hazard framework • Remote sensing and applications of Global Positioning Systems (GPS) • Environmentally Sustainable Development and Climate Change Adaptation • Forecasting and Early Warning Systems • Efficacy of plans and Standard Operating Procedures (SOPs) • Community Based Disaster Preparedness • Corporate Social Responsibility (CSR) and Public Private Partnership (PPP) • Revision of Municipal Regulations and Land-use Planning • Incidence/Response Command System • A National Contingency Action Plan (CAP) for dealing with contingencies arising in the wake of natural disasters has been formulated by the Government of India and it had been periodically updated. • A Calamity Relief Fund (CRF) has been set up in center level and in each State level • National Calamity Contingency Fund (NCCF) - a fund created at the Central Government level • National Disaster Mitigation Fund (NDMF) is in place • PM National Disaster Relief Fund • National Disaster Management Policy and National Disaster Response Plan

disaster as it may consider necessary • NDMA also coordinate with National Disaster Response Force and also with State Disaster Response Force • National Institute of Disaster Management (NIDM) as a research institution for capacity development as one of its major responsibilities, along with training, research, documentation and development of a national level information base • National Disaster Response Force (NDRF) as a specialized consolidated force to tackle the disaster situation or disasters/emergencies both natural and man-made. The general superintendence, direction and control of this force shall be vested in and exercised by the NDMA and the command and supervision of the Force shall vest in an officer to be appointed by the Central Government as the Director General of Civil Defense and National Disaster Response Force, as provisioned by the Act. This has subsequently extended to State Level, named as SDRF • Cabinet Committee on Management of Natural Calamities (CCMNC) • High-level Committee (HLC) and Inter-Ministerial Group (IMG), in the case of calamities of severe nature, based on the situation, deployed/targetted as per the necessity • National Crisis Management Committee (NCMC), comprising high level officials of the GoI headed by the Cabinet Secretary, will continue to deal with major crises which have serious or national ramifications. • Disaster Management Authority at State and District level under the chairmanship of Chief Minister and Collector respectively • The Orissa State Disaster Mitigation Authority (OSDMA) was set up in Orissa after the 1999 Orissa Super cyclone. The major focus of OSDMA's	

activities is preparedness and response planning for various disasters. These include : • Disaster Management Framework for the State • Disaster Management Policy for the State • Draft Disaster Management Plan focusing on Water and Climate-Related Hazards, Geological Hazards, Chemical /Industrial /Nuclear Disasters, Accident Related Disasters and Biological Disasters • Draft Disaster Management Bill at State level • Community Based Disaster Preparedness Program • The Gujarat State Disaster Management Authority (GSDMA) was set up in Gujarat after the 2001 Bhuj Earthquake • National, State, Metro and District level Emergency Operation Centers	

'The DM Act 2005 envisaged a paradigm shift in the GoI's focus from its hitherto post-disaster rescue, relief and rehabilitation-centric approach to a more proactive pre-disaster preparedness, mitigation and improved response capacities approach. This paradigm shift is also influenced by global best practices which have established that strengthening preparedness and mitigation strategies would considerably reduce the vulnerability of disaster-prone communities and thereby reduce the risks associated (NDMA, 2010).

Stating the importance of the proper disaster management act and proper disaster management authority, the SDMC Background Paper has realized that the progress in India as 'the Act has provided for constitution of dedicated funds at national, provincial and local levels for disaster risk mitigation. The National Disaster Management Authority has issued comprehensive guidelines for holistic management of specific types of disasters. Every Ministry is expected to develop its disaster management plan which would include measures for prevention, mitigation and preparedness (SDMC, 2008).

Regarding the efficiency of the NDMA in India, the IDR 2012 has not claimed the structure of NDMA is appropriate for the overall coordination of the disaster management, rather it has claimed for it success of collecting data and publishing documents. 'It becomes imperative to compile a database and document past disasters so that the above mentioned functions entrusted to the Institute can be carried out effectively. Documenting a disaster also helps in reviewing and analyzing the challenges faced by the country and the emerging trends it observed during the past while dealing with disasters. The reflection of the past disasters would help in illustrating vital lessons to be learnt so that the future

disasters can be handled cautiously and confidently (NIDM, 2013).

The IDR 2012 report further emphasize 'we are still relying on a response driven approach to this disaster in spite of the fact that early warning can be generated before the disaster strikes. It implies that there are some major gaps in the generation of warning and its effective dissemination to the community. The government needs to strengthen this mechanism of early warning dissemination (NIDM, 2013). This also shows that there is much room for improvement the role of NDMA for over all coordination.

National Guideline for Tsunami Management emphasize some of the gaps as ' one of the major gaps in the Tsunami risk management was the lack of awareness on the Tsunami risk and vulnerability in India, and hence the lack of preparedness as reflected in the absence of a Tsunami Early Warning System (TEWS) in India. The critical gaps that now remain are the lack of public awareness on Tsunami risk and vulnerability in the coastal areas, the weak enforcement and compliance of town planning byelaws, development control regulations and building codes in the coastal areas, and the challenges in implementation of appropriate technologies to disseminate and communicate the early warning to the coastal inhabitants located in the near vicinity of a near source Tsunami (NDMA, 2010). As we it can be seen that the NDMA can point out the problem by publishing reports and books, but the coordination to the real work, done by different agencies, the NDMA does not claim to be done by it. This also somehow leads the thought what would have be better if this coordination has been done by Inida's Prime-Minister Office.

4.6 Disaster management institution and regulation in Maldives

'A presidential decree established the National Disaster Management Centre (NDMC) soon after the December 2004 Tsunami. It was created haphazardly and its mandate was to coordinate the recovery process for the Tsunami relief effort. However, as things progressed, the government handed the mandate of disaster preparedness and risk reduction as well to NDMC (UNDP, 2009). 'Prior to this event, few major disasters impacted Maldives and DRM structures were therefore absent. In the wake of the Tsunami, the National Disaster Management Center, under the Ministry of Defense and National Security, was created. A permanent institution since then, the center is responsible for coordinating disaster management activities, providing relief assistance and temporary shelters, and coordinating reconstruction (world bank, 2012). Disaster Management Institutions and Regulations in Maldives can be listed in this way :

Institutions	Regulations
• National Disaster Management Center (NDMC), Ministry of Defense and National Security Services, MoDNSS • National Disaster Management Council • National Security Service (NSS) Maldives	• Disaster Management Act, 2006, an act to provide for the creation of a national disaster management council, a national disaster management authority and other matters related and incident

• National Geophysical Data Center Maldives • The National Disaster Relief Coordination Unit (NDRCU) • National Economic Recovery and Reconstruction Program ➢ National Economic Recovery Unit (NERU) ➢ Housing and Infrastructure Redevelopment Unit (HIRU) ➢ Transport and Logistics Unit (TLU) • Maldives National Defense Force	• Climate Risk Profile of Maldives 2006 • Developing a Disaster Risk Profile for Maldives, 2005 • Strategic National Action Plan for Disaster Risk Reduction and Climate Change Adaptation 2010-2020 • The Maldives One year after the Tsunami, 2005 • Tsunami Impact and Recovery, 2006 • Terminology in Disaster Risk Reduction, 2006 • National Reconstruction and Recovery Plan 2006 • Tsunami Recovery Trust Fund 2006 • National Development Plans at the Ministry of Planning and National Development • Climate Change Vulnerability and Adaptation assessment of Maldives • Safer Islands Strategy in Maldives • Emergency preparedness and response in tourists resorts

The work done by the concern Disaster Management Ministry has praised by SDMC by saying 'Maldives has developed the Safe Islands Program, focusing on the development of the larger islands with better economic opportunities, high environmental resilience, and incentives for voluntary migration to these islands. To mitigate future risk from disasters, land use plans of the safer islands have been developed incorporating features of high resilience: with a wider environmental protection zone, elevated areas for vertical evacuation in case of floods, establishment of alternative modes of communication and energy and detailed disaster management plans. Currently five islands have been identified for the program and development plans prepared in consultation with people (SDMC, 2008).

After getting examined the Maldives DM System, the report has suggested 'to Develop guidelines for settlement planning (inclusive of disaster risk reduction principles), which are integrated into development processes. Guidelines will be required for, inter alia, building codes, land reclamation, harbor development, and land use, to ensure that any development is sustainable and resilient to climate change, reducing rather than increasing risk. The EIA process needs to be more systematic, with clear guidelines for implementation of EIAs, and the process should be transparent and monitored to ensure that recommendations are incorporated into any projects. Introduce a more holistic approach to risk mitigation, which puts much greater weight on societal and economic adaptation rather than the current focus on physical mitigation (UNDP, 2009). The question again comes with the Maldives DM System, for this recommendation, does the one ministry designated for DM can presume the recommended work.

4.7 Disaster management institution and regulation in Pakistan

In Pakistan, 'both the 2005 earthquake and the 2010 and 2011 floods have revealed the vulnerability of Pakistani society and economy to disasters. Damages and losses have been massive but could have been largely reduced if disaster risk reduction measures had been incorporated into physical, social and economic development. The 2005 earthquake illustrated the fact that disasters are not natural; they are closely related to human knowledge, skills and action or inaction. The 2005 earthquake provided a wake-up call to move away from an emergency response paradigm, and to devote more attention to prevention, mitigation and preparedness (NDMA, 2013).

The earthquake of 2005 brought many valuable lessons for national policy makers, local government practitioners as well as the communities to rethink and reassess their capacities and weaknesses when dealing with disasters. Government of Pakistan introduced legal, institutional and administrative arrangements for disaster risk reduction and management at national, provincial and local levels, whereas, NGOs and INGOs brought a wealth of knowledge and experience to cope with ensuing hazards and vulnerabilities (GIZ, 2013). Legal and institutional arrangements were made for comprehensive disaster risk reduction and management. In order to address the shortcomings and to be compliant with the International Strategy for Disaster Risk Reduction (ISDR) 1999 and Hyogo Framework for Action 2005-2015, National Disaster Risk Management Framework was developed. On the lapse of 2006 Ordinance, the Parliament enacted National Disaster Management Act in 2010. Comprehensive legal and institutional arrangements were made to deal with the compelling disasters in the country. National Disaster Management Authority (NDMA) was established as a national entity with provincial and district structures (GIZ, 2013). The institutions and regulations in Pakistan is given below as:

Institutions	Regulations
• 2005 Flood, 2010 & 2011 Flood is the triggering factors for the better management of disaster in Pakistan • National Disaster Management Authority (NDMA), as an independent, autonomous, and constitutionally body established disaster preparedness federal institution mandate and responsible to deal with whole spectrum of disaster management and preparedness in the country • National Disaster Management Commission (NDMC), under the Chairmanship of the Prime Minister, as the apex policy making body in the field of Disaster • National Disaster Management Commission (NDMC), chaired by the Prime Minister • Provincial Disaster Management Commissions (PDMCs)	• National Disaster Management Act, 2010 • National Disaster Risk Reduction Policy, 2013 • National Disaster Management Plan • Monsoon Contingency Plan 2014/09/19 • National Strategy for Disaster Risk Management • National Disaster Risk Management Framework (NDRMF) (2007-2012) • Cluster System is in place with emergency contingency plan at all clusters

• Disaster Response Force, 1122 Force • National Emergency Operation Centers	

The overall disaster management function has been taking lead by the National Disaster Management Authority (NDMA) in Pakistan since its establishment in 2007, as it is an independent, autonomous, and constitutionally body, established for disaster preparedness with federal institution mandate and responsible to deal with whole spectrum of disaster management and preparedness in the country. In Pakistan, the establishment of NDMA has taken as an achievement, but not fully satisfy with its work, as the Message from the Prime Minister of Pakistan On the occasion of National Disaster Awareness Day, 8 Oct 2014 states 'due to improved mechanisms and responsive disaster management institutions, we are able to contain some of losses, but, we need to further ensure better preparedness and take preventive measures to mitigate the negative impact of disasters (Message, 2014).

Pakistan has enacted the DM Policy by stating 'build up its resilience to shocks from natural and man-made hazards with a sense of urgency, creating a solid base to address disaster risk reduction in vulnerable areas, while involving an increasingly wider range of stakeholders from government, civil society and private sector with the identified challenges for the DRR Pakistan is 'Low levels of risk awareness and knowledge, Development not “risk conscious” and DRR not yet effectively integrated and Insufficient DRR capacity at all levels of society (NDMA, 2013).

4.8 Disaster management institution and regulation in Sri Lanka

Sri Lanka is prone to natural disasters commonly caused by floods, cyclones, landslides, droughts and coastal erosion for generations with increasing losses to life and property in the past few decades. 'The devastation caused by Tsunami in 2004, however, took Sri Lanka by surprise warning that Sri Lanka is also vulnerable to low-frequency high impact events with extensive damage. Although several initiatives were taken by the governments in the past to mitigate these damages they were mostly reactive emphasizing relief and recovery rather than proactive with damage prevention or minimization strategies (Jayawardan, 2007). Sri Lanka has been experiencing natural disasters mainly caused by floods, cyclones and landslides until the devastating 2004 Tsunami making it the worst disaster ever experienced in Sri Lanka. Although the need for a long term disaster risk management plan was identified after each disaster, the idea soon died with the recovery from such localized disasters (Jayawardan, 2007). The Institutions and Regulations used for the management of disaster in Sri Lanka can be listed in this way :

Institutions	Regulations
• Ministry of Disaster Management, MoDM • National Disaster Management Center (NDMC, established 1996), headed by Director General, under the Ministry of Disaster Management	• Sri lank Disaster Management Act No. 3 of 2005 • National Disaster Management Plan, 2010 (revision on 2014) • Comprehensive Disaster Management Plan for Sri

• National Disaster Relief Services Center (NDRSC), headed by Director General, under the Ministry of Disaster Management • National Council for Disaster Management (NCDM), Chaired by Prime Minister • District Disaster Management Units in 25 Districts, headed by Assistant Directors • National Disaster Management Coordination Committee, chaired by Secretary of DM and HR • National Platform on Disaster Risk Reduction • SAHANA Disaster Management System, for the collection, processing and dissemination of the disaster data • Comprehensive Disaster Management Program 2013-017 • Parliament Select Committee on Natural Disaster	Lanka, 2013-017 • A Road Map for Disaster Management : Towards a Safer Sri Lanka, 2006-2016 • National Policy on Disaster Management, 2013 • The legal basis for the Policy, and all other core elements of Sri Lanka's disaster management regime, is the Act. These include: the National Disaster Management Plan (NDMP); National Emergency Operations Plan; Disaster Management Plans for every Ministry, Government Department and public corporation; and other plans, programs and guidelines. Laws, policies and undertakings on other topics, such as land use planning and local government, also contribute directly and indirectly to disaster management outcomes in Sri Lanka • Mainstreaming Disaster Risk Reduction in Housing Sector, 2009 • Disaster Preparedness and Emergency Response Plan up to district level • Early Warning Plans and Mitigation Plans • Rehabilitation and Reconstruction Plan, • National Disaster Relief Services Center (NDRSC) Circulars 2010, and Guidelines, 2013

CHAPTER FIVE : DISASTER MANAGEMENT SYSTEM OF NEPAL

Disaster occurrence and current disaster management institution and regulation in Nepal

5.1 Major earthquake incident in Nepal from history

'The historical seismicity of earthquakes preserved in different form such as written history, chronicles, inscription etc which plays an important role in the seismic hazard assessment because instrumentally recorded earthquakes are lacking before the current century. Historical events must be available for a long period of human civilization which should throw light on the extent of damage besides the date and place of occurrence. The great earthquake of June 7, 1255, damaged palaces, temples, and houses in the Kathmandu Valley and killed one-third of its population. The reigning monarch, Abhaya Malla, died six days after the earthquake as a result of injuries sustained during the event. The earthquake of August 26, 1833, destroyed 4,040 buildings, killed 414 persons, and injured many in the vicinity of Kathmandu where there were hundreds of additional fatalities and it also destroyed houses in the eastern villages. The fort at Chisapani in the Mahabharat range south of Kathmandu was damaged and landslides blocked the passes to Tibet. The Kamala River was dammed by a landslide which burst out four days after the event flooding the village of Baldeah, north of Darbhanga in the (ICIMOD, 2007).

In 1934 AD, an earthquake, known as Great Nepal Bihar Earthquake and popularly known as 9o's earthquake hit Nepal with the magnitude of 8.4 on the Richter scale. Casualty figures were highest for any recorded earthquake in the history of Nepal. In total 8519 people lost their lives in Nepal, a total of 126355 houses were severely damaged and around 80893 buildings were completely destroyed. Total money spent from the earthquake relief fund was NRs 206500 inside Kathmandu valley only. Earthquake relief fund was established by the king, loans were provided for earthquake effected people and earthquake volunteers groups were formed. After this event in 1999 AD, Udayapur Earthquake has affected the east part of Nepal and some parts of Central Development region leaving 721 deaths, 6553 people injured, 64174 private buildings, 468 public houses, 790 government buildings damaged, 1566 live stocks. Nepal is prone to earthquake, as the two plates colliding eachother passing from the Nepal, always threatening for next big earthquake. (this earthquake information has taken from http://nset.org.np/nset2012/index.php/menus/subsubmenudetail/submenuid-137/subsubmenuid-48/menuid-58, last visited date Oct 7, 014 and authenticity lies with the organization).

5.2 Flood, landslide and fire as a regular occurrence disasters

The movement of earth, rock or debris down slope under the influence of gravity by certain processes is considered as a landslide, as it usually occurs as secondary effects of heavy rainfall and earthquakes. In so many cases, the landslide has occurred in Nepal even if there is small amount of continuous rainfall for weeks, triggered by the higher level of sun shining after rain. A debris flow is slurry of soils, rocks and organic matter combined with air and water. The causes of landslide in Nepal are

natural as well as manmade. In general the middle hills are prone to landslides. The natural phenomena like heavy rainfall, active geotectonic movements, deforestation and disturbance of hill slopes are also the major causes for occurring landslides. 'Even in Aug 5, 2014, the mass landslide occurs in the Sindupalchok District, claiming Sunkoshi River Blocked and taking life of 156 people, making it the deadliest to hit the Himalayan nation in three decades. The landslide has also created a dangerous blockage of the Sunkoshi River, stoking fears of floods downstream in neighboring India's Bihar state, where the river is known as Kosi. The landslide also damaged part of the Arniko Highway linking Kathmandu with the Tibetan capital Lhasa, stranding more than 500 foreign hikers and their guides (NEOC Data). These type of phenomenon is common in Nepal, seeking special attraction from stakeholders.

The topographical feature of Nepal is has the prime responsible factor for floods in Nepali rivers. Flood is caused by heavy precipitation which may occur at any place except high Himalayan region during the monsoon season. Inundation along the river banks and erosion of land along the riverbanks causes loss by damaging irrigation and communications facilities and fertile lands across or adjacent to the riverbanks. Such phenomenon's have caused loss of lives and property in mountainous areas of Nepal and have posed severe hazards to physical infrastructure like roads and bridges. Inundations have disrupted social and economic development of many parts of terrain region in the country. 'The floods of August 2008 in Koshi river, September 2008 in Western Nepal and July and August 1993 in the Bagmati and other rivers were the most devastating floods in Nepal. Nepal has observed Monsoon flood as well as Flash flood. Rainfall variability (unequal rainfall in time and space), topography (steep Mountain and flat Tarai), Deforestation (decreasing vegetative cover) are the major factors contributing to the floods in Nepal. The 1978 flood in the Tinao Basin, the 1980 flood along the Koshi River, the 1985 cloudburst and outburst of the debris dam in the Tadi River Basin, the 1987 flood in the Sunkoshi Basin resulting in the submergence of the central and eastern Terai by up to one meter, and the 1989 cloudburst affecting the Central region - some areas of Chitwan and the Western region - the inner Terai, and Butwal and the Parasi areas are among the major floods recorded in Nepal. The devastating flood that occurred from July 18-20, 1993, in the Central Region surpassed all the floods mentioned above in terms of its ferocity and the damage it caused to the national economy. It caused heavy destruction of life and property, made thousands of people homeless, and destroyed standing crops spread over thousands of hectares of lands. Forty-four districts were affected. Some 1,336 people lost their lives in that disaster. About half a million people from 73,000 households were affected (ICIMOD, 2007).

Fire is a recurring disaster in Nepal. During the dry season from February to May, large numbers of incident of fire are reported, mostly in the Terai where about three quarter of houses are built with thatched roofs. Forest fires occur throughout Nepal and result deforestation of around 1.7 per cent (Dhital, 2009) of the total forest area annually. These fires cause economic losses and environmental

degradation throwing dedicates ecosystems out of balance. It is also threatening valuable and endangered flora and fauna, degrading the soil and inducing flood and landslide. Most of the fire incidents are caused by negligence of the people. Hunting practices, negligence by cigarette smoker, intentional fire to accelerate growth of grasses to feed livestock, intentional fire setting by herb and charcoal collectors and children playing with fires are some of the reasons for forest fires. Certain type of trees especially Sal (shores Robusta) is particularly susceptible to fire. About 86 per cent of the population of the country inhabit in the rural areas mainly in thatched houses closely clustered where fire hazards are likely to be common.

5.3 Multi-hazard threats in Nepal

Glacial lakes are like natural water reservoirs dammed by ice or moraines. Lake outburst can be triggered by several factors: ice or rock avalanches, the collapse of the moraine dam due to the melting of ice buried within, the washing out of fine material by springs flowing through the (piping) earthquakes or sudden inputs of water into the lake e.g. through heavy rains or drainage from lakes further up glacier. ICIMODs 2001 inventory of glaciers, glacial lakes and GLOFs counted 3252 glaciers and 2323 glaciers lakes in Nepal 20 of which are very vulnerable to flooding (MOHA, 2009). 'GLOF affects high Himalayan region as well as downstream by extremely damages of lives and properties. Major events shown in past were Tamor Koshi (1980), Sun Kosi (1935, 1981), Dudh Kosi (1977, 1985), Arun (1968, 1969, 1970) etc (ICIMOD, 2007).

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

'Although about 300 people has died in June and July month of 2009 in Midwestern part of the country, this year there is no severe case of diarrhea, but it is likely to robust again in anytime in the monsoon season, as the country is always in the threat of the epidemic of diarrhea. Some other kind of disasters are drought, hailstone, thunderbolt, avalanche, boat capsize, structure collapse, cold wave, hot wave, swine flu, bird flu, encephalitis, meningitis is common during hot and rainy season. The lightening, hailstorm are other natural disaster. The data at 2012 has shown the different figure that there are about 200 people has been killed by the lightening only, the trend is increasing as well (MOHA, 2012). The sudden avalanche and heavy snow fall in winter season sometimes cause heavy loss of human lives and properties. Road accident and Aircraft accidents are also major source of disaster in Nepal.

In Nepal, road accidents are one of the top ten causes of death. Aircraft accidents are more common in hilly terrain and areas with extreme climatic condition. But the road accident and aircraft accident has been dealt by other government agencies, treating them as a accident, not the disaster one.

A scenario of past disastrous events during 1980-2012 reveals that epidemics, landslide and floods takes the largest toll of life every year, and urban or rural fire are the principle hazards in terms of their extent and frequency of occurrence as well as the spread and intensity of physical and socio-economic impacts. Earthquake is a major potential hazard to reckon with – the country is located on an active seismic belt and the exponential urbanization trend over the past decade with general disregard of earthquake-resistant measures in building construction is the cause of ever-increasing earthquake risk. (All data are from MOHA/NEOC Data Bank)

5.4 Legal and institutional framework of Nepal for disaster management

Disaster management system in Nepal is still response and relief focus. Ministry of Home Affairs is coordinating the overall disaster management activities, although different ministries is presuming their duties of disaster preparedness. In the absence of specific agency, it has become increasingly more challenging for the proper management of disaster. As the ICIMOD report cited in a way 'efficient implementation of preparedness activities has often been hampered by lack of coordination between and within government and non-government organizations. The concentration of disaster preparedness has, in general, been on response and recovery and assistance to communities struck by disasters on an ad hoc basis and, in many cases, to an insufficient degree. Lack of coordination has, in cases, led to duplication of work by different organizations. The priority is still mainly on post-disaster activities, i.e., rescue and relief work, and this is a common mindset of people and organizations working in this field. Because of this mindset, preparedness activities have not received sufficient priority in disaster management activities (ICIMOD, 2007) in Nepal.

Natural Calamity Relief Act (NCRA), 1982 is a milestone legal instrument for disaster management in Nepal. The Act has envisaged the Natural Disaster as earthquake, fire, storm, flood, landslide, heavy rain, drought, famine, epidemic, and other similar natural disaster. The Act also includes industrial accident or accidents caused by the explosions or any other kinds of disaster. Similarly, the Act defines Natural disaster relief work as “any relief work carried out in the area affected or likely to be affected by the natural disaster in order to removed the grief and inconvenience caused to the people, to rehabilitate the victims of the natural disaster, to protect the public property and life, to control and minimize the natural disaster and to make advance preparation thereof”. According to the Act, the provision has been made to set up different institutions from centre to local level to arrange relief and rescue works during the emergency.

There has been a provision of Central Natural Disaster Relief Committee (CNDRC) with Relief and

Treatment Sub-committee and Supply, Shelter and Rehabilitation Sub- committee at the centre level as an apex body of disaster management in Nepal. The CNDRC, chaired by the Home Minister is responsible for preparing national policies on preparedness, response and recovery and ensuring their implementation, stockpiling relief and rescue materials, collecting and disseminating relief materials and fund during emergency, give direction to the district and local committees for the execution of relief work. To support the functioning of CNDRC, there is Sub-committees of Relief and Treatment, and Supply, Shelter and Rehabilitation, headed by relevant Ministers. Regional Disaster Relief Committee (RDRC) is present in all five regions of Nepal and is chaired by the Regional Administrator. It comprises related government agencies and security agencies (law and order, emergency response and development institutions) along with voluntary organizations such as Red Cross. It is responsible for supporting and monitoring the activities implemented by DDRCs and formulates regional and district level disaster management plan. All 75 districts of Nepal have a District Disaster Relief Committee (DDRC). The chairperson is the Chief District Officer (CDO), who is the highest-level government official to take disaster-related decisions. It comprises various line agencies such as law and order, emergency response (police and armed police), district chapter of NRCS and critical facilities such as irrigation, road, livestock, health etc. The role of DDRC is to coordinate the local committees, formulate district disaster management plan, coordinate and operate relief work during emergencies and provide information to RDRC and CNDRC. The Local Disaster Relief Committee (LDRC) is responsible for disaster management at the local level, such as disbursement of funds during emergencies, and rescue and transport of the injured to hospitals.

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

The NSDRM, developed on the base of Hyogo Framework for Action (HFA) 2005 as well, has promulgated in 209 with the long term vision of the strategy is to develop Nepal as a disaster-resilient community with adopting the some major directive principles for disaster risk management such as, mainstream DRR concept into the development plan ensure life safety and social security, given emphasis to gender and social inclusion. It adopt decentralize process of implementation with one-window policy and cluster approach in implementation of DRM in the spirit of participation, interaction, and coordination. The strategy has been framed on the foundation of five priority actions of HFA 2005 by identifying the 29 activities as the priority areas. Realizing that disaster management

is a multidimensional and multi-sectoral responsibility, the sectoral strategies have also been adopted with nine broad sectors. The strategy has also proposed new institutional arrangement for disaster management which entail the formation of a National Disaster Management Council (NDMC) being chaired by Prime Minister. Besides, it also envisions National Disaster Management Authority (NDMA) as a secretariat of the council where other three committees under the council for preparedness, rescue and relief and reconstruction and rehabilitation activities. The strategy realizes that disaster management is possible only through integrated, participatory, and collaborative involvement of all partners by giving the due importance to UN agencies, donor community, inter-governmental agencies, I/NGOs, and people from different segments of civil societies.

A Consortium, headed by Home Secretary was formed in May 2009 to support the Government of Nepal till 2015, to develop a long term Disaster Risk Reduction Action Plan building on the NSDRM. Members of the Consortium are from related government ministries and concerned development partners. The Consortium has initiated a multi-stakeholder participatory process with the Government of Nepal and civil society organizations to identify short to medium term disaster risk reduction priorities that are both urgent and viable within the current institutional and policy arrangements in the country. Based on the priorities set by the government and also discussions with multi-stakeholder groups, five flagship areas of immediate action for disaster risk management in Nepal has been initiated . The five priority, in the name of flagship program are school and hospital safety, emergency preparedness and response capacity, flood management in the Koshi river basin, integrated community based disaster risk reduction/management and policy/Institutional support for disaster risk management. In developing the program, the priorities outlined in the HFA 2005-2015 as building the resilience of nations and communities to disasters and the Outcomes of the Global Platform for Disaster Risk Reduction (2009) as setting out specific targets for reducing losses from disasters has been taken into consideration as a basis.

As the history shows that the Disaster Management Programs was first included in the 10th national plan (2002-2007) of the government of Nepal, the emphasis has given to ascending orders till the current three year plan (2013/14-2015/16) that has emphasized the disaster management as a separate topics and also has tried to mainstream the disaster management with various line items topics. This has also focus on the importance of new disaster management act and new institutions to deal with the disasters. The plan emphasizes on policy formulation, strengthening institutional mechanism, early warning systems, coordinated approach for DRR and linking disaster management with climate change. It is hoped that this attempt would be a landmark in the history of Disaster Management in Nepal. The plan has set up its vision to minimize social and economic loss and damage caused by disasters. The main objective of plan is to promote the security of life and property from the impact of natural disasters through sustainable, environment-friendly and result oriented development by making disaster management practices efficient, competent, strengthened and effective. The approach paper to

the current 13th three year development plan (2013/14-2015/16) has clearly set its disaster management goal to achieve goal of Hyogo Framework for Action by 2015 and has also tried to link up with the HFA2 Priorities, along with the long term goal of the plan is to develop disaster resilient Nepal. Moreover, mainstreaming disaster risk reduction, institutional and legal reform and preparedness for better response are the strategies of this plan.

There are lot more Acts, Rules, Regulations and Guidelines, directly related to, just related to and indirectly related to the disaster management, some of them like Soil and water conversation act, 1982, Nepal building act, 2007 and Building Code, 1994, Environmental protection act, 1996, National agriculture policy, 2004, National shelter policy, 1996, National urban policy, 2006, National water plan, 2005 and Water resource policy, 1993, National water resource strategy, 2002, Water induced disaster management policy, 2006 and some Strategies related to health and infrastructure sectors are considered as a majors in the area of disaster management in Nepal.

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

Ministry of Federal Affairs and Local Development, Disaster Management Section is responsible lead ministry for preparedness and mitigation, Ministry of Urban Development is responsible lead ministry for recovery, Ministry of Irrigation for embankment and irrigation is related disaster management activities, Ministry of Defense is for foreign search and rescue coordination, Ministry of Forest and Soil Conservation is for forest and land related disaster management activities, Ministry of Energy for water dam and Ministry of Health and Population is for emergency medical care. Similarly, Ministry of Physical Infrastructure and Transport Management, Ministry of Science and Technology, Department of Soil Conservation and Watershed Management, Department of Irrigation, Epidemiology and Disease Control Division, National Seismological Center Department of Water Induced Disaster Prevention, Department of Hydrology and Meteorology and Department of Mines and Geology are some of the other direct institutions dealing with disaster management activities at operational level.

5.5 Disaster management institution and regulation in light of disaster event in Nepal

Disaster Management institutions and Regulations in light of disaster events in Nepal has been listed

here based on the literature review and the reference materials, as follows :

Major Disaster Events	Regulations	Institutions and Remarks
• 1255 (1310 BS) , the first recorded earthquake in history of Nepal • 1260 (1316 BS), recorded big earthquake • 1408 (1463 BS), a major earthquake • 1833 (1890 BS) great earthquake • 1934 (1990 BS) Great Earthquake with magnitude of 8.4 on the Richter scale, leaving 8519 people losing the lives	• General rules and regulation related to maintain law and social harmony, not specific to disaster management	• Prime Minister and Home Minister • Home Ministry, mobilizing the police and Army (as per need) for disaster response • Relief work has been carrying out at that time as a social work
• 1980 (2037 BS), 6.5 Richter scale earthquake in eastern part of the country • 1988 (2045 BS), Udayapur Earthquake with 721 deaths, 6553 people injured, 64174 private buildings, 468 public houses, 790 government buildings damaged • 1993 flood in the Terai region, taking life of 1,289 people and affecting 575,000 people • 1994 (2051 BS) earthquake in Mid Western Region affecting around 700 people • 1998, flood affecting an about half million people with the total loss of about 2 billion Nepal rupees	• Natural Calamity (Relief) Act, 1982 (1st revision in 1989 and 2nd in 1992 Sep) • Local Self Governance Act, 1999 • Central Natural Disaster Response Fund established by the Act of 1892	• Central Natural Disaster Relief Committee (CNDRC), headed by Home Minister, active from 1982 • Regional Disaster Relief Committee (RDRC), headed by Regional Administrator from 1982 • District Disaster Relief Committee (DDRC), headed by Chief District Officer from 1982 • Celebration of National Earthquake Safety Day from 1999
• 2008 Big Flood at Koshi River/River embankment collapse, living 2.7 million people affecting (both at Nepal and India) and around 200 people death	• Rescue and Relief Standards, 2007 (1st revision in 2008 and 2nd in 2012 Jun) • Prime Minister Disaster Response Fund Guideline 2006, (1st revision in 2008) • PM Natural Disaster Response Fund from 2006 • Disaster Related Funds at Line	• National Strategy for DRM, 2009 • The Cabinet at OPMCM takes active role from 2008 • National Risk Reduction Consortium (NRRC) 2009-2014, chaired by Home Secretary from 2009 • Five Flagship Program 2009-2014 from 2009

	Ministries, in process of creation from 2008	• Disaster Preparedness and Response Plan (DPRP) Guideline, 2011 • Rescue and Treatment Sub-committee chaired by Health and Population Minister play active role from 2008 • Supply, Shelter and Rehabilitation Subcommittee, chaired by Urban Minister play active role from 2008 • National Emergency Operation Center at National Levels and Regional/District Emergency Centers (EOCs) from 2010 • SAHANA Program for data collection, processing and for dissemination from 2011 • National Platform on Disaster Risk Reduction, 2008, NPDRR • Publication of Disaster Report started, till date the reports are of 2009, 2011, 2013
• 2011 Sikkim Eartahquake with 6.8 Magnitude killing 16 People and affecting thousand of people of the east part of the country • 2012 (May 5) A great avalanches at Seti River, taking life of 72 people and damaging millions of worth • 2012 (May), a big fire in Siraha District, burning around 1008 houses affecting 2063 people • 2010 the cold-wave start considering the major disaster in Terai Region and the incident of fire has increased in those regions	• Rescue and Relief Standards, 2007 (1st revision in 2008 and 2nd in 2012 Jun) • Government Work Division Regulation, 2012 May • Local Level Disaster Management Funds, mobilized by the District Development Committee active from 2012 • Open Space Cabinet Decision, 2013 • Directive for Relief from Cold-wave to the economically deprive people, 2012	• Local Disaster Risk Management Guideline, 2012, LDRMP • Guideline for the relief to cold-wave victims, 2012 • Various Line Ministries, presuming the duty of Disaster Management creating either unit or focal point from 2012 • National Disaster Response Framework, 2012 • Ten Cluster and one Early Recovery Network owned by Government Ministries from 2012 • Post-Disaster Dead body management Guideline, 2012 • APF Disaster Management Training

		Center, along with DM from 2012 • Ministry of Home Affairs, Disaster Management Division in 2013 • Disaster management section at MOFALD and DM Units in different Ministries from 2013 • DM Units/Squared/Brigades at the three Security Forces from 2013
• 2014 (August), Sunkoshi Blocked by big landslide, affecting around thousands of people in upper and lower river streams	• National Strategic Action Plan on Search and Rescue, 2014 approved by cabinet	• DRR Portal, one stop to all disaster related activities in Nepal from 2014 • Health Emergency Operation Center, along with Emergency Centers at TIA, Red cross, Security forces and UN Agencies from 2014
• Since 1971 there is a record of significant loss of lives and livelihoods due to floods, landslide and fires on every single year	•	• National Disaster Management Act (Proposed) in process till to date • Establishment of National Disaster Management Agency (NDMA) is in process

As the past major disaster events were found quoted in various publications, the response has been found considering from then rulers with the use of general rules and regulation related to maintain law and social harmony or not having specific to disaster management and the management of disaster has been considered as a part of social work. In the time of disaster, the response mechanism of the states were working promptly directly under the leadership of then rulers. Even after the restoration of democracy, the situation for the management of disaster remained same as before till the formation of Natural Calamity (Relief) Act, 1982. This has given the 1st legal base to have better and coordinated disaster management both at policy and implementation level. By observing the above listing of the incidents and subsequently rules and institutions, it is very difficult to established the relationship between them, directly quoting as a lesson learned, beside the Koshi Flood 2008.

CHAPTER SIX : DISASTER AND INSTITUTIONS/REGULATION IN JAPAN

Disaster response and DM institution/regulation in the light of disaster incidents

6.1 Disaster prone Japan and the major responses carried out

'Destructive natural disasters have posed greatest challenge for Japanese society. Unfavorable geographical, topographical and meteorological conditions of the country have made it one of the most disaster prone countries in the world. Although its territory accounts merely for the 0.25 % of the planet's land area, Japan is subject to about 20.5 % earthquakes with the magnitude 6 or more; and 7% of the world's active volcanoes is located on its territory. The most frequent natural hazards in Japan are earthquakes, Tsunamis, typhoons, volcano eruptions, floods and landslides. Occasional torrential rains and heavy snows are another challenge for the country. The high number of earthquakes, Tsunamis and active volcanoes are the conditioned by the fact that territory of Japan forms the part Circum-Pacific Seismic Belt which is sometimes called as Pacific Ring of Fire (Nazarov, 2011).

'Disaster management system of Japan addresses all phases of disaster prevention, mitigation and preparedness, and emergency response, as well as recovery and rehabilitation. Japan's central government plays a leading role in mitigating the risks of disaster across the country, but local governments have the principal responsibility for managing the DRM systems. The Reconstruction Agency, which the prime minister heads, was established under the oversight of the cabinet office to promote and coordinate reconstruction policies and measures in an integrated manner (Makoto, 2012). The Disaster Countermeasures Basic Act, 1962 is the basic foundation for the management of disaster in Japan, as it is carried out at every stage of disaster prevention, emergency response to disaster, and recovery and reconstruction. The Basic formation of the disaster prevention is the master plan in the area of disaster management, and it is created by the Central Disaster Management Council (CDMC). This master plan presents the basic guidelines for establishment of the disaster management system, promotion of disaster management projects, development of faster and more appropriate disaster recovery, assignment of priorities in disaster management operation plans and regional disaster management plans by assigning clear and distinct role for both governmental and nongovernmental organization. The master plan provides a basis for every ministry and agency along with for the other disaster management-related organizations such as the Bank of Japan and Japan Broadcasting Corporation to create their disaster management operation plans, whereby local governments create regional disaster management plans, and whereby all these bodies implement their disaster management countermeasures (Cabinet Office, 2011).

As the VR Nazarov conclude by saying 'being one of the most disaster prone countries in the world, Japan has developed sophisticated and all-embracing disaster management system. Based on 3-layered national government system and administrative delimitation of the country, formation and evolution of the disaster management system in Japan has been heavily influenced by unfavorable geographical

position, as well as, meteorological, and topographical conditions and various large-scale disasters have been driving force of new changes and enhancements to it. Although inheriting some basic elements of previous systems, current disaster management of Japan has been formed during the last 50-60 years. Rapid development of the country during this period enabled it to make considerable investments on DMS and integrate latest technological achievements of the country to it. Rather than being managed by one central body disaster management system of Japan is decentralized and growing trend of decentralization is being observed recent years. As one of the most prominent characteristic features of the system decentralization enables more government agencies to be involved in disaster management, although to various extent and bearing various responsibilities, fosters development disaster coping capability of each body or region individually and enhancement overall disaster management system (Nazarov, 2011).

A number of laws are enacted to address all the phases of disaster reduction. For example, Large-scale Earthquake Countermeasures Special Act and Earthquake Disaster Management Special Measures Act for building nation and communities resilient to disasters. Disaster Relief Act and Act Regarding Special Measures to Weigh the Preservation of Rights and Profits of the Victims of Specified Disasters for immediate support to the affected populations and local authorities. Act Concerning Support for Reconstructing Livelihoods of Disaster Victims and Act Concerning Special Financial Support to Deal with Designated Disasters of Extreme Severity for better recovery to safer communities. All the line ministries and agencies have responsibility to take actions related to disaster reduction within their own mandate. The Cabinet Office is responsible for formulating basic policies, strategies and guidelines for disaster reduction and for securing coordination of government disaster reduction activities. A post of Minister of State for Disaster Management was newly established in the Cabinet in 2001 who takes lead in the responsibilities for disaster reduction in the Natural Government. Under the Disaster Countermeasures Basic Act, the Central Disaster Management Council was formed to ensure multi-ministerial and multi-sector involvement in disaster reduction in a coordinated manner. Not only all the Ministers but also Heads of relevant public corporations such as the Bank of Japan, the Japanese Red Cross Society, NHK (public broadcasting corporation) and NTT (telecommunication company), and some academic experts are the member of the Council. The Council formulates the Disaster Management Basic Plan and other basic policies, strategies and guidelines.

6.2 Response at the Great East Japan Earthquake

Response from Government (both central, prefectural and municipal level) and non-Government sector at the Great East Japan Earthquake can be take as an example to see the effectiveness of Japanese disaster management system. 'At 14:46 p.m. on March 11, 2011, a strong earthquake of magnitude 9.0 earthquake at 14:46 and the series of large scale earthquakes that followed had resulted in multiple Tsunami waves of unprecedented scales at the coastal areas of Hokkaido, Aomori, Iwate Miyagi, Fukui, Ibaraki, and Chiba Prefectures (ADRC, 2011). 'It devastated cities, towns, and villages

along a broad swath of the Pacific coast of the Tohoku Region in northeastern Japan, causing vast human and material damage. In Tokyo, the intensity of the quake was measured at level 5-upper on the Japanese scale, but there was only minor damage. The magnitude of 9.0 made it the largest earthquake ever measured in Japan, and the fourth largest in the world since 1900. The earthquakes and the huge Tsunami that followed caused heavy casualties and enormous damage in the northeastern area and its vicinity, such as the Kanto Region. As of April 27, 2011, the government has confirmed 14,508 deaths and 11,452 people missing as a result of the disaster (ADRC, 2011). These figures have already exceeded that of the 1995 Great Hanshin Awaji (Kobe) Earthquake, making it the worst disaster in Japan since World War II. The response and rehabilitation work done by Japanese Government is enormously good with proper response. The recovery part in Japan covers life, livelihood, infrastructure and social resettlement, as the ADRC paper refers 'residents are one of the highest priorities in Japan after earthquake. Livelihood and employment, which were not often given the highest priorities, are among the highest priorities in Japan, giving the equal importance to the provision of physical and mental health care for those directly affected by the earthquake, especially focusing on plans for restoring infrastructure and redeveloping urban environments in order to establish collaboration among efforts targeting roads, railroads, airports, ports and sewage facilities (ADRC, 2012).

The earthquake and the resulting Tsunamis (tidal waves) devastated a vast area and caused a great number of casualties. Large numbers of buildings and facilities were damaged or washed away. Constraints on electric power supply intensified over a wide area, mainly due to the accident at a nuclear power station. The financial sector in Japan was seriously impacted by the disaster, in terms of both physical damage and indirect effects. At this earthquake, the Bank's has effective Responses to the Disaster, it has establish a Disaster Management Team, provisioned for cash Services, supply the cash to financial institutions, exchange of damaged banknotes and coins to ensure the stable Operation of the BOJ-NET. It has also requested for Special Financial Measures to Assist Disaster Areas to make sure the smooth operation of Treasury Funds and JGB Services with accurate and timely communication.

At this disaster the response from private sector was also praiseworthy. The main actor of private sectors like Financial Institutions and Payment and Settlement Systems in Disaster Areas supply of cash to affected depositors in coordination and cooperation with financial institutions. The measures taken by bill and check clearing houses and the responses of Payment and Settlement Systems and Financial Institutions throughout Japan has established the stable operation by payment and settlement systems. The system failure at a major bank and extension of Zengin System operating hours has managed by the market-wide business continuity arrangements through the the responses to surges in trading activity in stock markets and through the responses to blackouts in disaster areas and planned blackouts in TEPCO service areas. The report concludes that payment and settlement systems and

financial institutions in Japan continued to operate stably even in the wake of the unprecedented disaster, and succeeded in maintaining smooth provision of financial services. This was largely due to the dedicated efforts of financial institutions in disaster areas that worked hard to restore their business offices and resume operations to meet the needs of depositors and firms, even though they had also been affected by the disaster. It also reflected the constant efforts made by payment and settlement systems and financial institutions to put in place robust business continuity arrangements prior to the disaster (BOJ, 2011).

The Prime Minister, on April 15, posted his message on several newspapers overseas (Washington Post and Herald Tribune) stating: “The government will dedicate itself to demonstrating to the world its ability to establish the most sophisticated reconstruction plans for East Japan, based on three principles: first, create a regional society that is highly resistant to natural disasters; second, establish a social system that allows people to live in harmony with the global environment; and third, build a compassionate society that cares about people, in particular, the vulnerable (ADRC, 2011)'. This shows the priority from the government in Japan. 'Great East Japan Earthquake has low probability but high impact, high level of complexity, widespread impact due to globalized supply chains. Japan’s DRM system is based on investment in structural and non-structural measures, Culture of preparedness and learning from past disasters, Multi-stakeholder involvement, Legislation, regulation, and enforcement High-tech, sophisticated instruments (world bank, 2012b).

6.3 Linkages of disaster and policy changes in Japan

A Great Kanto Earthquake in 1923 with 450,000 house damaged and 143,000 people dead/missing, lead the policy changes the requirement of Seismic Force base Structural Calculation in Japanese Building Code. This was the first requirement in the world. The amendment was made in 1924. The enactment of the Building Standard Law (BSL) made in 1950 can not prevent much houses in the Niigata Earthquake in 1964 and Tokachi Off-Shore earthquake in 1968, this has further pave the way for the amendment of the BSL to strengthen the RC standards. The Ise-wan Typhoon in 1959 has triggered the Government of Japan to enact new specific law directly related to disaster management and it has come-up in the name of Disaster Countermeasures Basic Act 1961. The Miyagi Off-shore Earthquake in 1978 has further pressurize for the further amendment of the BSL with new Seismic Codes, targeting not damaged by medium-scale earthquakes and not collapse by large-scale earthquakes.

A Great Hansin-Awaji Earthquake in 1995 hit Kobe City and surrounding areas collapsing 104,906 houses, damaging 6148 buildings and killing 6,433 people. Most of the collapse building were those which were constructed before 1981, when the new Seismic Building Regulation were enforced. Therefore the Seismic enforcement of old buildings were become utmost importance in Japan. It also gave the way for the Act for Supporting Livelihood Recovery of Victims 1999 and helped to provide

mandate to the Self-Defense Force directed to disaster response. The Act of Promotion of Seismic Retrofitting of Buildings, targeting the approval of seismic retrofitting plans were enacted in 1995 and further amendment of the BSL, aiming the building confirmation by private sector, introduction of interim inspection and performance-based standards were made in 1998 from the lesson learned from the Great Hansin-Awaji Earthquake.

The West Off Fukuoka Earthquake in 2005, the Off Niigata-Chuetsu Earthquake in 2007, the Noto Peninsula Earthquake in 2007, the Iwate-Miyagi Inland Earthquake in 2008 and Iwate North Coast Earthquake in 2008 was some of the events that has tested the strength of the Building Standard Law and has given some insight view for further improvement. The Great East-Japan Earthquake in 2011 hit Pacific Coast of Tohoku of Japan, causing the hit of Tsunami to the Tohoku Costal Area cause around 20,000 people death or missing. it leads the restriction of buildings in the Tsunami hazardous area and placement of Tsunami evacuation buildings. Structural Design Method from the viewpoint of structural safety against Tsunami was designed and utilized. Some large fire cases like Sen-nichi department store fire in 1972 with 118 deaths, Taiyo department store fire in 1973 with 100 deaths, Hotel New Japan fire in 1982 with 33 deaths and Kawaji Prince Hotel fire in 1980 with 45 deaths has also pressurized to revise the building codes. Fire codes concerning necessary number of stairs, interior finishing materials, etc. was strengthened in 1973 and fire codes concerning automatic sprinkler systems, etc. was strengthened in 1980. The laws related to building regulations are Building Standard Law, Fire Service Law, Barrier-free Law and Kenchikushi Law. Building code also consist of landslides and rainfall in Hilly area, typhoon, health position in house and the city planning, as per necessity.

6.4 Disaster management institution and regulation in light of disaster events in Japan

Disaster Management institutions and Regulations in light of major disaster events in Japan, to reveal the linkage of the disaster incident with the creation of institution creation and regulation formation, can be listed as below :

Major Disaster Events (Death Toll)	Regulations	Institutions and Remarks
1923 ・ Great Kanto Eqk M7.9 (142,807) 1925 ・ North Tajima Eqk M6.8 (428) 1927 ・ North Tango Eqk M7.3 (2,925) 1930 ・ North Izu Eqk M7.3 (272) 1933 ・ Showa Sanriku Eqk & Tsunami M8.1 (3,064) 1943 ・ Tottori Eqk M7.2 (1,083) 1944 ・ Tonankai Eqk M7.9 (998)	1897 ・ Erosion Control Act 1924 ・ First Seismic Building Code • Directly impacted by Great Kanto Eqk of 1923	Traditional institutions

1945 ・ Mikawa Eqk M6.8 (2,306) 1945 ・ Typhoon Makurazaki (3,756) 1946 ・ Nankai Earthquake M8 (1,443) 1947 ・ Typhoon Catherine (1,930) 1948・Fukui Earthquake M7.1 (3,769) 1948 ・ Ion Typhoon (838) 1950 ・ Jane Typhoon (539) 1951 ・ Ruth Typhoon (943) 1952 ・ Tokachi-oki Eqk M8.2 (33)	1947 ・ Disaster Relief Act 1949 ・ Flood Control Act 1950 ・ Building Standard Law • Directly impacted by Fukui Eqk of 1948	
1953 ・ North Kyushu Rain 1953 ・ Nanki Torrential Rain (1,124) 1954 ・ Toyamaru Typhoon (1,761) 1958 ・ Kanogawa Typhoon (1,269) 1959 ・ Typhoon Ise-wan (5,098) 1960 ・ Chile Earthquake M8.5 (139)	1957 ・ Dam Control Multipurpose Act 1960 ・ Soil Conservation and Flood Control Urgent Measures Act 1961 ・ Disaster Countermeasures Basic Act, 1961, DCBA	1960 ・ Ise-wan Typhoon was the 1st Epoch-Making Turning Point and it has enacted the DCMB Act, 1961 • From Response oriented to preventive approach • Individual to comprehensive multi-sector approach • Expenditure to investment for disaster risk reduction • National to national, prefecture and municipal government responsibilities
1961 ・ Heavy Snowfalls 1964 ・ Niigata Earthquake M7.5 (26) 1968 ・ Tokachi-oki Eqk M7.9 (52)	1962 ・ Act on Special Financial Support to Deal with Extremely Severe Disasters 1962 ・ Act on Special Measures for Heavy Snowfall Areas 1966 ・ Act on Earthquake Insurance, this action is made from Niigata Eqk, 1964	1961 ・ Formulation of comprehensive and strategic DM System • Annual Gov't Official Report on Disaster countermeasure • Investment for disaster prevention • Formulation of National DRR Platform • Definition of responsibility of DM and state of disaster emergency 1962・ Establishment of Central Disaster Management Council, provisioned by DCBA, 1961 1963・ Basic Disaster Management Plan for Disaster Prevention, provisioned by DCBA, 1961

		1961・ Designation of Disaster Reduction Day
1973 ・ Mt. Sakurajima Eruption 1973 ・ Mt. Asama Eruption 1974 ・ Izu-hanto-oki Equk M6.9 (30) 1976 ・ Seismological Society of Japan's report about the possibility of Tokai Earthquake 1978 ・ Izu-Oshima Kinkai Eqk M7 (25) 1978 ・ Miyagi-ken-oki Eqk M7.4 (28) 1983・Japan Sea/Nihonkai Chubu Eqk M7.7 (104) 1984 ・ Nagano-ken Seibu Eqk M6.8 (29)	1973 ・ Act on Special Measures for Active Volcanoes 1978 ・ Act on Special Measures for Large-Scale Earthquakes 1980 ・ Act on Special Financial Measures for Urgent Earthquake 1981 ・ Amendment of Building Standard Law, the Miyagi-ken-oki Eqk of 1974 has lead this	1979・Tokai Earthquake Countermeasures Basic Plan 1980・Countermeasure Improvement Projects in Areas for Intensified Measures 1981 ・ Revision of Building Standard Law 1983・Designation of Disaster Reduction Week Campaign
1993 ・ Hokaido Nansei-0ki Miyagi-ken-oki Eqk M7.8 (230) 1995 ・ Great Hanshin-Awaji/South Hyogo Eqk M7.3 (6,437) 1999 ・ Torrential Rains in Hiroshima 1999 ・ JCO Nuclear Accident	1995 ・ Amendment of Disaster Countermeasures Basic Act, 1961, the Great Hanshin-Awaji Eqk, 1995 has pressurized for this 1995 ・ Act on Special Measures for Earthquake Disaster Countermeasures 1995 ・ Act on Promotion of the Earthquake-proof Retrofit t of Buildings 1995 ・ Amendment of Act on Special Measures for Large-scale Earthquakes 1996 ・ Act on Special Measures for Preservation of Rights and Profits of the Victims of Specified Disasters 1997 ・ Act on Promotion of Disaster Resilience Improvement in Densely Inhabited Areas 1998 ・ Act on Support for Livelihood Recovery of Disaster Victims 1999 ・ Act for Supporting Livelihood	1995・Amendment of Basic Disaster Management Plan Designation of Disaster Reduction and Volunteer Day 1995 ・ Great Hansin-Awaji Eqk was 2nd Epoch-making turning point • about 83% was killed immediately by house collapse • Most rescue done by family and community people • House safely is the responsibility of house owner • Business continuity planning is important • Importance of pre-disaster measure has high importance • focus shifted from government centered to multi-stakeholders approach

	Recovery of Victims 1999 ・ Act on Special Measures for Nuclear Disasters 1999 ・ Self-Defense Force, getting Mandate for Disaster Response	
2000 ・ Torrential Rains in the Tokai Region 2004 ・ Niigata-Fukushima Torrential Rains and other rains 2004 ・ Niigata-ken-Chuetsu Eqk M6.8 (68) 2004 ・ Heavy Rain Nationwide 2007 ・ Noto Peninsula Eqk M6.9 (1) 2007 ・ Niigata Chuetsu Eqk M6.8 (15) 2008 ・ Tagagawa Flash Flood 2008 ・ Iwate/Miyagi Inland Eqk M7.2 (23)	2000 ・ Act on Promotion of Sediment Disaster Countermeasures for Sediment Disaster Prone Areas 2101 ・ Amendment of Flood Control Act 2002 ・ Act on Special Measures for Promotion of Tohnankai and Nankai Earthquake Disaster Management 2003 ・ Specified Urban River Inundation Countermeasures Act 2004 ・ Act on Special Measures for Promotion of Disaster Management for Trenchtype Earthquakes in the Vicinity of the Japan and Chishima Trenches 2005 ・ Amendment of Flood Control Act 2005 ・ Amendment of Act on Promotion of Sediment Disaster Countermeasures for Sediment Disaster Prone Areas 2005 ・ Amendment of Act on Promotion of the Earthquake-proof Retrofit of Buildings 2005 ・ Hazard Map (at municipality level) Preparation Guideline 2006 ・ Amendment of Act on the Regulation of Residential Land Development	2001・ Establishment of the Cabinet Office 2003・ Policy Framework for Tokai Earthquake 2003・ Policy Framework for Tonankai and Nankai Earthquakes 2003・ Tokai Earthquake Countermeasures Basic Plan 2004・ Tonankai and Nankai Earthquake Countermeasures Basic Plan 2005・ Tokai Earthquake Disaster Reduction Strategy 2005・ Tonankai and Nankai Earthquake Disaster Reduction Strategy 2005・ Policy Framework for Tokyo Inland Earthquakes 2006・ Policy Framework for Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches 2006・ Tokyo Inland Earthquake Disaster Reduction Strategy 2006・ Basic Framework for promoting a Nationwide Movement for Disaster Reduction 2008・ Disaster Management Strategy for Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches 2009・ Chubu and Kinki regions Inland

		Earthquake Countermeasures Basic Plan
2011 ・ Talas (No.12) Typhoon 2011 ・ Great East Japan Earthquake & Tsunami M9.0 (18,559) 2014 ・ Hiroshima Landslide (50)	2011 ・ Tsunami Resident City Development Act, 2011 2012 ・ Amendment of Disaster Countermeasures Basic Act, 1961 2013 ・ Re-amendment of DCBA, 1961, these amendments is because of the Great East Eqk of 2011 Reforms are in process	
International disaster assistance by Japan		
1999 ・ Earthquake in Turkey	Cooperated opening disaster management education center	
2011 ・ Flood in Thailand	Drainage pump vehicles, 8.1 million cubic meters water drained Investigation team and recommendation provided	
2013 ・ Typhoon Haiyan in Philippines	Dispatch medical support team Relief supplies Emergency grant aid	

Disaster management in this country (Japan) is carried out at every stage of disaster prevention, emergency response to disaster, and recovery and reconstruction following disaster. A special board of inquiry of the Central Disaster Management Council has studied large-scale earthquakes such as the Tokai Earthquake, Tonankai and Nankai Earthquakes, major earthquakes centered in Tokyo, and ocean trench earthquakes occurring in the vicinity of the Japan Trench and Chishima Trench. It is to be hoped that the entire nation will join in the work of disaster preparation. The geographical features and meteorological conditions found in Japan make this country susceptible to earthquakes, typhoons, torrential rains, volcanic eruptions, and other such disasters (Kazusa, 2010).

CHAPTER SEVEN : CONCLUSION AND FINDING

A designated proper institution for overall disaster management at national level

7.1 Changing focus form response to preparedness

The changing focus form response to preparedness can be found in worldwide, especially after the Hyogo Conference 2005. This has found extended to national level significantly, as 'disasters were previously perceived as isolated events which need to be responded with ‘emergency relief’ as the standard norm. The normal practice was to provide disaster relief by different line ministries with reactive or relief focus rather than proactive or risk mitigation and management focus. It is now recognized that disaster management is more effective if it is preceded by preparedness and the relief is followed by rehabilitation and reconstruction (Jayawardan, 2007). The world communities are changing their focus from response management to preparedness of natural disaster.

Previously more budget used for response, as the budget amount pulled-over from other heading in time of disaster response. The situation has changed now, as shift focus on preparedness from response, and the budget for Preparedness has significantly increased. India has witnessed as it has to spend more money for response and relief in the absence of proper preparedness. 'Several state governments spend significantly more on relief and damages than on their rural development programs. For example, in the state of Maharashtra, India, a single drought in 2003 and a flood in 2005 consumed more of the state budget (US $3.5 billion) than the entire planned expenditure (US $3.04 billion) on irrigation, agriculture, and rural development for the 2002–2007 planning period (world bank, 2012).If we don't shift our focus to preparedness, then we have to continuously spend more money for disaster response and relief. This exemplary data also revels the shift of the priority from efficient response to proper preparedness.

7.2 ERT vs DPT, Emergency response vs. disaster preparedness types

Disaster Management (DM) is said to have two types. Emergency Response Type (ERT) and Disaster Preparedness Type (DPT). The ERT, Emergency Response Type is lead by Security Related Agencies, focuses more on response. It is a 'Cure Method' done for the victims. In this type at time of disaster, all related agencies will be actively dedicate for better response and at the time of no-disaster, the designated nodal agency for disaster management feels bit relax, as this method gives less focus on disaster preparedness. The DPT, Disaster Preparedness Type is lead by Development Related Agencies, focuses more on preparedness. It is a 'Care Method' done for everyone. In this type at time of no-disaster, all related agencies actively participate for better preparedness and at the time of disaster, the DPT cannot work well. So-many countries including Nepal is adopting the ERT Model of DM and so-many countries including Japan is adopting the DPT Model of DM.

The institutional set-up do matter to determine the types but, in some case, although they have separate

NDMA, but still there system considered as ERT, like Mangolia have NDMA, US has FEMA and Russia has EMERCON as a NDMA. But theier NDMA is controlled by Security Related Agencies. So, although they have separate focal agency for disaster management, their system still considered as ERT. To have shift from ERT to DPT, it is necessary to have the NDMA, but it should not have to be controlled by Security Related Agency. In Nepal scenario, if we create the NDMA under the Ministry of Home, then the mistake that has made by Mongolia and Russia, we are going to repeat again. To have a proper shift from ERT to DPT, it is most important to establish a separate focal agency directly under the Prime-Minister Office, or it is highly important that the location of NDMO do matter for the overall management of disaster at national level. Of letting the job of effective response to the security related agencies, other jobs of preparedness and recovery has to be assigned the other development related Ministries, assuming the role of coordination and integration to the higher authority directly under the Prime-Minister. Only the ERT and DPT methods solely does not work in the real case scenario, so some sort of balance is needed between them and what could be the proper balance, it would be the interesting research question for future research.

7.3 Coordinating agency of government for DRR at national level

The management of disaster from policy perspective with proper institutional framework by shifting focus from response to preparedness has become utmost important and has become extremely urgent for any nations, as 'natural disasters are caused by extreme occurrences in nature for which society is unprepared. Disasters have not only disrupted the normal course of life of affected communities and countries in South Asian Region, but have also halted development efforts. Funds originally earmarked for new initiatives must be transferred to relief, response, and rehabilitation work, often crowding out new infrastructure and capital development (world bank, 2012).

National Focal Point or Coordinating Agencies at Government level can be seen a background recommendation by the UNISDR Papers, as it is advocating for the 'establishing a proper national agency for overall disaster coordination (Hyogo, 2005). It can also be drown from 'in order to reduce vulnerability to natural and other types of hazards, the public sector and concerned stakeholders should be institutionally organized, adequately staffed and trained. In the absence of adequate institutional capacity other efforts aimed at reducing vulnerability cannot be effectively realized. The Yokohama Strategy, adopted at the World Conference on Natural Disaster Reduction in May 1994, mentioned 'human and institutional capacity-building and strengthening 'as an important component of the prevention, reduction and mitigation of natural disasters (UNISDR, 2000). This demands a stronger coordinating agency at national level.

The six criteria, set by the ADBI Working Paper 448 to find out the strength of the National Coordinating Agencies for the ability to coordinate other disaster management actors : the national platform, coordinated by the focal agency functions as the highest decision making body,

Sub-committees under the national platforms play important roles in coordinating specific issues, political commitment should be secured in coordinating mechanisms, focal point agencies in national governments should have a mandate to allocate DRM budgets, focal point agencies can utilize drills and training as opportunities to strengthen coordinating capacities and networks, focal point agencies can strengthen its coordinating powers (Mikio, 2013 ADBI) can also be used to judged the strength of the National Focal Agencies. Based on these six criteria, it is important to analyze the situations and it is needed another data-base research how the current coordinating agency in Nepal is presuming the duty of disaster preparedness with proper coordination.

7.4 Disaster management as a business for all

Disaster management is not only business for any specific agency, rather it goes well with all line agencies including government and non-government sectors. Previously the meaning of disaster management is just a response, mean response focus disaster management. At that time, disaster has been centrally managing by security forces and security related ministries. Changing shift of the meaning of disaster management, as it goes from the response focus to preparedness focus, it is considered to have this managed by all agencies. 'Single-sector development planning cannot address the complexity of problems posed by natural hazards, let alone mega disasters, nor can such planning build resilience to threats (world bank 2012b). As UNISDR has promoted the concept of 'engagement of all government and non-government sectors and actors in the name of DRR Platform (Hyogo, 2005), many more signatory countries of HFA has established the platform. Nepal is also one of the country that has established the platform (HFA Update, Nepal) but the real functionalities and effectiveness is always a critical, as it's role mainly focused on sharing and discussing the DRR issue, rather then any official decision. It can be seen globally, including Nepal the getting accepted the concept that disaster management as a business for all government and non-government stakeholders.

7.5 Coordination from the central coordinating agency

In the UNISDR framework architect, it has been visualize a coordinating agency, which can cover all related agencies. 'While the responsibility for monitoring progress on DRR lies with national governments, it is needed to collect data and help strengthen national and local monitoring capacity. Such a body would need to involve national statistical offices and other relevant governmental bodies. This could be supported by regional technical agencies, with data also drawn from the scientific community to establish risk profiles, from technology companies and from other groups on disaster losses. The institutional architecture should span the post-2015 agreement on DRR and the SDGs so as not to create duplication (Tom Mitchell, 2014)'. The national institute need to include the all related stakeholders from government and non-government.

The National Disaster Preparedness Central Committee, headed by Prime Minister is apex lead body in Myanmar and the Fire Services Department Headquarters, under the Ministry of Social Welfare, Relief and Resettlement, served as the secretariat and National Disaster Preparedness Management

Working Committee chaired by 1st secretary where most of the the Ministers serving as a members (ADPC, 2009) and means the overall coordination at National level is presuming by the Fire Services. The ADPC report further emphasize that ' although there is a well-laid out systems at all levels for disaster management, the operational capacities for each of the unit and inter and intra coordination mechanisms still needs to be further enhanced (ADPC, 2009). It can be clearly visualize that the without the absence of central coordinating agency in any form, like cabinet office, separate ministry or NDMA, the disaster management in the country gives lot of room for improvement. This lesson can be drawn for the observing the disaster management system of Myanmar.

Nepal is facing multi-sector problem of implementation like 'poor land use planning and ill-enforced building codes result in structures that are highly vulnerable to hazard events. Without a strong culture of safety and proper enforcement mechanisms to ensure resilient construction of buildings, these structures are often not strong enough to withstand hazard events (world bank, 2012), as the line agencies are busy with their own line item programs having less focus on the implementation of DRR concept, as the focal coordinating agency MOHA more concentrate on response and it's preparedness. Coordination power with the Imagine for future in DRR is important. For disaster management, having more focus on only response does not create permanently the happiness to people. Once disaster occurs, all agencies are running behind the disaster and after disaster finished, there is no sufficient attention not allow for further damage in future. It seeks the preparedness and it has to come up with 'Imagine for Future (Tsukuba, 2012)' that sufficiently allow us for better preparedness by imagining the future prospect for development. For this reason, it is important to visualize whether the overall disaster has been managing by one specific agency responsible for response or it has been managing by a higher apex body that also poses the power for coordination.

7.6 Use of learned lessons

Every disaster has it's own lesson learned for the future. In Nepal, the lesson has been learned by Ministry of Home Affairs, whose primary responsibility to maintain peace and order in the nation. So, lesson learned from MOHA will difficulty in materializing in terms of program and budget. MOHA is responsible for search, rescue and relief, as it is doing its job in perfect way. Having said this or having effective response action from MOHA, the the preparedness part is always left behind. The Ministry is having less focus on disaster preparedness in time of no-disaster. This is not the Ministry's intention to have less work on DRR, but this is all about the designated role and responsibility along with its priority. Immediate after disaster, lot more lifeline utilities has to be restored in no time with proper relief for live and livelihood as well. Japan is seem doing the job properly, cause it has allocated its role to different central, prefectural and city level government and also it has incorporated the role of private sector in disaster management council. This has become possible for Japan, cause it has managed at national level from Cabinet Office Disaster Management Office, from where the all national level coordination is possible. In Nepal, if we could have manage the overall disaster from the

Cabinet Office of Nepal, then it could have implemented the lesson learned in past.
'Specialized DRM focal point ministries/agencies are expected to play a vital role in coordinating these many activities and ensuring their relevance to medium- and long-term development objectives and activities. In this context, sound analyses and understanding of the role of formal and informal organizations in natural DRM, their institutional and technical capacities (including strengths and weaknesses), best operational and technical practices, and comparative strengths in coordinating and promoting vertical and horizontal linkages are required (FAO, 2008). The question again arise, since MOHA is presuming the role of focal ministry in Nepal, does this ministry is fulfilling this role with the use of learning for the past in proper way.

One lesson learned from past catastrophic events such as the Great Hanshin-Awaji Earthquake, Hurricane Katrina, and the Great East Japan Earthquake, is that the private sector plays an important role in reducing economic damage and regional impacts when they are well prepared for disasters. As its supply chains are closely intertwined, a single disaster could affect the economic activities of the entire region (ADRC, 2011). As the role of private sector has high importance, it need to encourage them to ready in any case of devastating impacts from disaster and for this reason, it is important to have a dedicated organization at national level for disaster management to mobilize the non-government sector including private sector with the use of past learned lessons.

It is also important to seek example of some another countries like Finland. The same way as in Nepal, the disaster management was the overall responsibility with the response agency. Laying the response part to the response agency, they gradually shift the wider responsibility of disaster management under the its Prime Minister Office, presuming the better coordination at national level. The UNISDR Paper states this development as 'The Rescue Act, covering prevention, preparedness and response, was amended in 2011 and lays down, among other things, the tasks of rescue services and the administration and the powers of rescue authorities from national to local levels. The implementation of this comprehensive set of policies and wide-ranging legislation is adapted to the Finnish institutional setting; it combines the assignment of strategic tasks and responsibilities at the national level to responsible line ministries under the responsibility of the Prime Minister’s Office, together with operational implementation from both national technical agencies and independent local governments (UNISDR, 2014). There system seems more closer to Japanese System aiming to manage disaster from powerful coordinating office from center. This could be better lesson learned for Nepal as well.

7.7 Consideration of past recommendation for institutional set up

The UNISDR system has always focus on the focal government agency at national level, especially independent and being powerful enough for coordination. In it's annual report 2013, it has mentioned that only few progress has shown up for the establishment of the separate specific agency. it says 'the

most significant gains have been at country level. Those gains have revolved largely around risk identification and early warning, the mainstreaming of disaster risk reduction, and strengthened knowledge, innovation and education. In addition, countries' disaster preparedness and responses also improved, although governance and institutional arrangements showed little change. The visit of Special Representative of the Secretary General to Palestine led to a high level political decision to establish the Presidential committee that is now tasked with developing a disaster risk reduction system including consideration of a legal and institutional framework. Governance and institutional arrangements, however, were not being adapted quickly enough, and political commitment for disaster risk reduction was not yet sufficiently reflected in fiscal and budgetary decision-making (UNISDR, 2013). This has not mentioned the name of Nepal, but it can be easily visualized that there is a need to have separate independent powerful coordinating body in Nepal.

Under the heading of the Mechanism for sustainable development for disaster, to improve the current capacity of disaster management in Nepal, the NDR 2011 have also suggested to establish a strong legal base for a comprehensive risk management system and to create a sustainable mechanism for inter-governmental and inter-institutional coordination by saying that currently Nepal lacks a necessary mechanism for sustainable disaster management (NDR, 2011). The establishment of National Disaster Management Office (NDMO) is inherit recommendation from HFA and lot more has expected from NDMOs. Some are : 'initiate dialogue between Ministry of Finance, Planning and NDMO on earmarking a percentage of national and local development funds for DRR programs, establish regular in-country dialogue between NDMOs, related Government Departments and Donor agencies for the prioritization of DRR in country programming of donors, build capacity of government, technical and research institutions and academics to undertake cost benefit analysis of DRR, promote business case of benefits of investing in DRR with Ministries of Finance and Planning, Private sector finance institutions and donor community, support provincial and district level authorities to develop specific preparedness and risk reduction plans and corresponding budgets and develop partnerships with National Industry Associations/Chambers of Commerce and Industry (ISDR, 2010). The question again raised here, does these all expected can be fulfilled by our response focused ministry. We are in a phase of struggling establishing the NDMO and still need to road ahead for us.

7.8 Institution for disaster management at national level

The proper linkage of each and every activity of all cycle of disaster management is crucial. A ICIMOD research paper has emphasized some of the drawback in Nepalese disaster management system, as the quotes are quoted here with slight wording modification as 'disaster preparedness has to be approached holistically because it is difficult to isolate preparedness from other components of disaster management such as reduction, response, and recovery. There is insufficient coordination prevails among key actor in the field of DM. lack of political will in an unstable political climate and lack of proper coordination among key stakeholders also play prominent roles in the policy failure in

Nepal. Policies have not addressed disaster management adequately, responsible departments are under the bureaucracies of ministries, and committees are top heavy with policy-level rather than practical-level actors. Manpower is also extremely limited in the key department for dealing with water-induced disasters (ICIMOD, 2007). This situation demands one specific government coordinating agency at national level. Without the proper institutional framework of DRR at National level 'the technical information about earthquake risk in the Kathmandu Valley is not applied to the infrastructure of modern-day Kathmandu Valley, and is not presented in a form that is comprehensible to the public and to government officials. The next large earthquake to strike will cause significant loss of life, structural damage, and economic hardships, unless immediate action is taken by public and private stakeholders to reduce the vulnerability of exposed populations in the Kathmandu Valley (world bank, 2012) and it seems authority of Nepal is waiting for mega destructive disaster to have proper institutional framework in future.

The role of focused institution for better management of disaster is important and this constraints seems improving. 'Institutional weaknesses increase vulnerabilities to disasters. Policies and legislations for managing natural disasters are often insufficiently enforced in South Asian Region. Technical capacity for dealing with natural disasters is often constrained. Furthermore, administrative bodies and public sector officials involved in disaster management often lack training in disaster risk management and show weaknesses in longer term planning. Sudden larger scale catastrophes sometimes overwhelm the governments' response capacities, further exacerbating the impact of disasters. The region has begun efforts to institutionalize and mainstream disaster risk management activities. To varying degrees, each country in the region has set out to establish institutional structures and an ex-ante approach to mitigate the impact of hazard events at the national and sub-national levels (world bank, 2012). The situation for having specific institution for overall disaster management seems improving globally.

In South Asian Region, only Nepal and Bhutan is managing disaster from its Home Ministry, rest other countries either they have separate ministry for disaster management or they have created NDMA. Bhutan is in the process of creating new separate institution, as 'Bhutan is working towards adopting the National Disaster Risk Management Bill to further strengthen the disaster management system in the country. The Bill is an effort to decentralize disaster management activities and to empower the nodal institutions at all levels, with the legal status to implement disaster reduction strategies more effectively. Although it was endorsed by the Cabinet during its 114th session on October 4th, 2011, the Bill is with the National Parliament and still pending. The National Disaster Management Bill provides establishment of National Disaster Management Authority under the leadership of the Prime Minister at national level as the highest decision-making body on disaster management in the country (world bank, 2012). Once Bhutan establish the NDMA, Nepal would be the last country in South Asian Region to have managing and coordinating the overall disaster

management activities through its response focused Home Ministry.

7.9 Some alternatives for proper institutional set up

The Ministry of Home Affairs is presuming two type of responsibility in Nepal, based on the current institutional and legislative setup, namely playing active role for managing disaster response and assuming the role of overall management of disaster cycle. Other key ministries, department and other offices is playing their part of the role for line agency responsibility, creating linkages with disaster management aspect. Being observed with the role of the central coordinating agency and being observed the decision of past CNDRC meetings with reviewing the various literatures, it can be summarized that, in time of response, their role is effective. So, in future, even though the new institutional setup, the response role should be rested on the Ministry of Home Affairs. Based on the finding, it has been taken into consideration as a best option for Nepal as the three types of institutional arrangement for overall disaster management as alternatives and these have been presented here with proper prioritizing sequences. They would be :

I. Disaster Management Bureau (lead by one minister) at the Office of Prime Minister and Council of Minister
II. Disaster Management Ministry
III. National Disaster Management Authority (independent) under the Office of Prime Minister and Council of Minister

7.10 Proper institutional setup for overall DM at national level

Disaster management council, headed by the Prime Minister would a apex coordinating body and the proposed three options/institutions would play a secretariat role for the council. Based on the previous research and the literature review of this research, these all option would have their own strength and weakness. The researcher has found that the 1st option, among three is best option for the overall disaster management at national level. Based on the DM Study of the south Asian region and of Japan, it would have been perfect to have a SWOT Analysis, 'an analysis as one of the most prevalent tools of strategic planning (Sage, 2013) but, in the absence of the proof or evident for the points raised in the analysis, only some elaborative pints are given here below, as the researcher believe it would have been important.

For the option of the DM Bureau at Prime Minister's Office, headed by one designated Minister, would have benefit of Engagement of Prime Minister and his good Offices in coordinating the DM Activities, that would be not only easy for policy decision and quick decision but also easy for finding appropriate budget on DRR, that will ultimately lead for effective Policy coordination for DM both at national and international level. The benefit of this arrangement has been drawn here from the experience from Japanese DM System, as it can be seen in the analysis part of this research. This arrangements could also draw attention of high level politicians with proper priority on DRR, that can

assemble all government and non-government stakeholders in the form of effective DRR Platform, ultimately having timely policy initiations in the form of mainstreaming DRR into development planning process and having proper coordinate to all phase, the pre, during and post phase of DM. The arrangement of DM Bureau at Prime Minister's Office, headed by one designated Minister also have some of weakness and limitations. In some case, if there is no disaster in the country, the high level political attention might not permanently lies with the direct interest from PM, not getting attention of the PM's good offices in normal time, as the office has to engage with other so many governance issues in the same time. In the same time, if the DM issues go to the PM Offices, there must be involvement of too many actors in DM decision, this some time leads confusion and less coherent decision process, might be creating some back drops for DM at national level. One big question always remains unanswered that if the top organization in the country fails or got unsuccessful initiations, then what could be the next option for the proper organizational setup, it is very difficult to find the answer in this case.

In case of DM Ministry in the country, it would have extreme benefit of having separate designated ministry for the overall management of all activity of all cycle of disasters by having separate and specific program and program-base budget, as it have been seen in case of Bangladesh, Sri lanka and Maldives in the analysis part of this research. This will ministry will work continuously whether there is disaster incident or not or in this case, disaster management will be treated as a regular job of the government by focusing DM as a holistic approach and by engaging the wider stakeholder of DRM. This will also lead to the performance base incentive systems both for government employee the non-government sectors, as awarding or punishing them on the basis of achievement they have made in the area of DRM. This provision also poses some of the weakness. In some case, especially in time of response, the role of this ministry will contradict with the Home Ministry and in some other case, the role of this ministry may confuse with the other line Ministries, that might create some confusion and delay in work. Since it will act as a separate Ministry, in some case, law priority Minster would join the DM Ministry, that might lead the law political priorities with less motivated politicians and bureaucrats.

In case of powerful and independent Disaster Management Authority, independently works under the Prime Minister Office, has some praiseworthy benefit to the areas of disaster management, as it have been seen in case of India and Pakistan in the analysis part of the research. This arrangement would lead towards a designated high level office with designated leader and employee at national level, even independent with proper authoritative power from Act. It can independently works for overall activity of disaster management with proper policy feedback to the Prime Minister headed DM Council and also monitor independently monitor the DM implementation status in the country. This institutions can be involved itself with proper and sufficient study and research on different issues of DM, followed by proper plan and program with wider engagement of DRR stakeholders. This institution

can revel the effective coordination with international DRR actors to fulfill of the commitments from national level. But the arrangement also posses serious threats, as it can be seen in some of the countries case that the authority always poses the role and power conflict with other ministries and departments, especially in the area of DRR and Recovery. For the response, the quote and unquote one rescue from National Disaster Response Force has Cleary mentioned in one incident command system training that the authority is a paper-base organization, dealing disaster from papers. This might have some sensitivity issue and might have some confusion with the role conflict with response organization. Since the authority is independent and outsiders employee then core government employee, it might, in some cases, lead to the insufficiency of budget although the program and policy is nicely prepared. In so many case, due to cohesive power of implementation, as other authority case has to be analyzed, the Authority lacks the implementation capability of approved plan and programs. Authority itself means self-sustained agency. In the DM case, it can not generate revenue by itself rather it has to rely on government budget for DRR. In some case, there is always question of priority arise before releasing budget to this type of autonomous agency, that leads the question of self-sustained Authority.

This short analysis, based on the analysis in this research in the respective chapters of south Asian countries experience along with Japanese system experience has been drawn here for necessary finding. I t has been concluded here that among these three type of arrangement the first option i.e. Disaster Management Bureau (lead by a designated Minister) at the Office of Prime Minister Office is proper and suitable institutional arrangement at national level for the management and coordination of overall activities of all cycle of disaster management. Since the disaster management is multi-tasked agenda, all stakeholders from government and non-government has to assumer their role and responsibility with proper coordination from the apex coordinating body. It has been also seen that the coordinator should have higher authoritative hierarchy in the bureaucratic system of government to ease and to expedite the coordination capacity. Based in this presumption and analysis, in that case, the concluded thought would have found the best option for overall coordination for disaster management at national level, that works directly under the disaster management council headed by Prime Minister with three consecutive sub-committee for prevention, response and recovery lead by the sector Ministers. This conclusion and findings do value the current national situation and condition, taking into account the ground necessity and the system varies from national culture to culture, accepting the sole responsibility of the country to adopt the proper system, as the country think necessary.

Abbreviation

ADBI	Asian Development Bank Institute
ADRC	Asian Disaster Reduction Center
ADRCVR	Asian Disaster Reduction Center Visiting Researcher
ADPC	Asian Disaster Preparedness Center
ANDMA	Afghanistan National Disaster Management Authority
BCP	Business Continuity Plan
BOJ	Bank of Japan
BOJ-NET	Bank of Japan Network
BOKOMI	Disaster-Safe Welfare Community (in Japan)
BSL	Building Standard Law, 1950 in Japan
CAP	Contingency Action Plan
CBOs	Community-base Organizations
CCMNC	Cabinet Committee on Management of Natural Calamities in India
CDMC	Central Disaster Management Council in Japan
CDO	Chief District Officer in Nepal
CNDRC	Central Natural Disaster Relief Committee in Nepal
CODM	Cabinet Office Disaster Management (in Japan)
CPP	Cyclone Preparedness Program in Bangladesh
CPPIB	Cyclone Preparedness Program Implementation Board in Bangladesh
CRF	Calamity Relief Fund in India
CSDDWS	Committee for Speedy Dissemination of Disaster Related Warning/ Signals in Bangladesh
CSOs	Civil Society Organizations
CSR	Corporate Social Responsibility
DCBA	Disaster Counter Measure Basic Act, 1961 in Japan
DDC	District Development Committee in Nepal
DDM	Department of Disaster Management at Bangladesh
DDMC	Dzongkhag DM Committee at Bhutan
DDRC	District Disaster Relief Committee in Nepal
DK House	International Residence House at Kobe
DisInventar	Disaster Inventory Database
DPRI	Disaster Prevention Research Institute
DPRP	Disaster Preparedness and Response Plan Guideline, 2011 in Nepal
DPT	Disaster Prevention Type
DM	Disaster Management
DMS	Disaster Management System
DRM	Disaster Risk Management

DRR	Disaster Risk Reduction
EFDRR	European Forum for Disaster Risk Reduction
EIA	Environment Impact Assessment
EMDAT	International Disaster Database
EMERCON	Ministry of the Russian Federation for Civil Defense, Emergencies and Disaster Relief
EOCs	Emergency Management Centers (at District or at Municipal level in Nepal)
EPAC	Earthquake Preparedness and Awareness Committee in Bangladesh
ERT	Emergency Response Type of Disaster
FAO	Food and Agriculture Organization
FEMA	Federal Emergency Management Agency at USA
FFP	Five Flagship Program 2009-2014 in Nepal
FPOCG	Focal Point Operation Coordination Group of Disaster Management in Bangladesh
GIS	Geographic Information System
GAR	Global Assessment Report
GDP	Gross Domestic Product
GIZ	German Federal Enterprise for International Cooperation
GLOF	Glacial Lake Outburst Floods
GoI	Government of India
GoN	Government of Nepal
GPS	Global Positioning Systems
GSDMA	Gujarat State Disaster Management Authority at India
HFA	Hyogo Framework of Action 2005-2015
HFA2	Framework of Action after HFA
HIRU	Housing and Infrastructure Redevelopment Unit at Maldives
HR	Human Resource
HLC	High-level Committee (in India, in the case of calamities of severe nature)
IDNDR	International Decade for Natural Disaster Reduction
ICHARM	International Center for Water Hazard and Risk Management
ICIMOD	International Center for Integrated Mountain Development
IDR	India Disaster Report
IMDMCC	Inter-Ministerial Disaster Management Coordination Committee at Bangladesh
IMG	Inter-Ministerial Group (in India, in the case of calamities of severe nature)
INGOs	International Non-Government Organizations
IRP	International Recovery Platform
ISDR	International Strategy for Disaster Reduction
JGB	Japan Government Bond Service
JMA	Japan Meteorological Agency
LDRC	Local Disaster Relief Committee in Nepal

LDRMP	Local Disaster Risk Management Guideline, 2012 in Nepal
LSGA	Local Self Governance Act, 1999 in Nepal
MBT	Main Boundary Trust
Mgmt	Management
MoDM	Ministry of Disaster Management in Sri Lanka
MoDMR	Ministry of Disaster Management and Relief in Bangladesh
MoDNSS	Ministry of Defense and National Security Services in Maldives
MOFALD	Ministry of Federal Affairs and Local Development in Nepal
MOHA	Ministry of Home Affairs, Nepal
MoHCA	Ministry of Home and Culture Affairs, Bhutan
MOLITT	Ministry of Land, Infrastructure, Transport and Tourism in Japan
MPM	Master of Public Management
NCCF	National Calamity Contingency Fund in India
NCDM Bhu	National Committee for Disaster Management in Bhutan
NCDM SL	National Council for Disaster Management in Sri Lanka
NCMC	National Crisis Management Committee in India
NCRA	Natural Calamity (Relief) Act, 1982 (at Nepal)
NDMP	National Disaster Management Plan of Sri Lanka
NDMA	National Disaster Management Agency/Authority
NDMAC	National Disaster Management Advisory Committee at Bangladesh
NDMC	National Disaster Management Council
NDMC SL	National Disaster Management Center in Sri Lanka
NDMC Pak	National Disaster Management Commission in Pakistan
NDMC Mal	National Disaster Management Center in Maldives
NDMC Nep	National Disaster Management Council in Nepal (proposed)
NDMF	National Disaster Mitigation Fund at India
NDMO	National Disaster Management Office
NDR	National Disaster Report
NDRCU	National Disaster Relief Coordination Unit at Maldives
NDRF India	National Disaster Response Force in India
NDRF	National Disaster Response Framework in Nepal
NDRSC	National Disaster Relief Services Center in Sri Lanka
NEC	National Executive Committee in India
NEOC	National Emergency Operation Center
NERU	National Economic Recovery Unit at Maldives
NGOs	Non-Government Organizations
NGOCC	NGO Coordination Committee on Disaster Management in Bangladesh
NHK	Public broadcasting corporation in Japan

NIDM	National Institute of Disaster Management in India
NPC	National Planning Commission in Nepal
NPDRR BDS	National Platform for Disaster Risk Reduction in Bangladesh
NPDRR NPL	National Platform for Disaster Risk Reduction in Nepal
NRCS	Nepal Red Cross Society
NRRC	National Risk Reduction Consortium in Nepal
NSS	National Security Service at Maldives
NSDRM	National Strategy for Disaster Risk Management, 2009
OSDMA	The Orissa State Disaster Mitigation Authority at India
NTT	Telecommunication company in Japan
PDMC	Provincial Disaster Management Commissions at Pakistan
PMNDRF	PM National Disaster Relief Fund in India
PPP	Public Private Partnership
QGIS	Quantum Geographic Information System
RDRC	Regional Disaster Relief Committee in Nepal
SAHANA	SAHANA Disaster Management Data-base System
SAARC	South Asian Association of Regional Cooperation
SDGs	Sustainable Development Goals
SDMA	State Disaster Management Authority in India
SDMC	SAARC Disaster Management Center
SDRF	State Disaster Response Force in India
SOP	Standard Operating Procedures
SWOT	Strength, Weakness, Opportunity and Threat Analysis
TEPCO	Tokyo Electric Power Company Service
TEWS	Tsunami Early Warning System in India
TIA	Tribhuvan International Airport at Nepal
TLU	Transport and Logistics Unit at Maldives
UN	The United Nations
UNDRO	The United Nations Disaster Response Office
UNISDR	The United Nations International Strategy for Disaster Reduction
UNDP	The United Nations Development Program
UNOCHA	The United Nations Office for Coordinating the Humanitarian Affairs
VDC	Village Development Committee in Nepal
VR	Visiting Researcher at ADRC

References

ADPC, 2000. Project Completion Report of the Kathmandu Valley Earthquake Risk Management Project Under the Asian Urban Disaster Mitigation Program, Asian Disaster Preparedness Center Publication from http://www.preventionweb.net/files/19643_np11.pdf

ADPC, 2009. Institutional Arrangements for Disaster Management in Myanmar, Asian Disaster Preparedness Center Publication, Bangkok from http://www.preventionweb.net/files/14637_14637Binding1.pdf

ADRC, 2011. BCP Status of the Private Sector in the APEC Region, APEC Emergency Preparedness Working Group, Asian Disaster Reduction Center, Kobe from http://www.adrc.asia/publications/bcp/2011_epwg_BCP_ADRC.pdf

ADRC & IRP, 2011. Great East Japan Earthquake (GLIDE:EQ-2011-000028-JPN) Preliminary Observations, Asian Disaster Reduction Center & International Recovery Platform, Kobe

ADRC, 2012. Recovery Vision from the Great East Japan Earthquake and Tsunami : Lessons for the disaster management in countries around the world, Asian Disaster Reduction Center Publication

Bhattarai, D. & Poudyal Chhetri, M. B. (2001). *Mitigation and Management of Floods in Nepal,* Ministry of Home Affairs, Government of Nepal

Bilham R., 1995. Location and magnitude of the 1833 Nepal earthquake and its relation to the rupture zones of http://www.cao.go.jp/en/disaster.html

BOJ, 2011. Report and Research Paper on Responses to the Great East Japan Earthquake by Payment and Settlement Systems and Financial Institutions in Japan, Bank of Japan from https://www.boj.or.jp/en /research/brp/ron_2011/data/ron111027a.pdf

CEDMHA, 2012. Country Disaster Response Handbook, October 2012; Centre for Excellence in Disaster Management and Humanitarian Assistance Publication

Chitrakar G.R & M.R. Pandey, 1986. Historical Earthquake of Nepal : Bulletin of Geological Society of Nepal Vol 4 pp 7-8, contiguous great Himalayan earthquakes. Current Science, 69, 2, 101-128 from http://www.currentscience.ac.in/php/volumes.php

Cabinet Office, 2011. Disaster Management in Japan, Cabinet Office Disaster Management Publications, 2011, from http://www.cao.go.jp/index-e.html

Dhital, Narayen 2009. Reducing Emissions from Deforestation and Forest Degradation (REDD) in Nepal: Exploring the Possibilities, Laval University, Canada, Forest and livelihood, Vol 8(1), 2009 Februrary

DPNet, 2008. Situation Report of the Koshi Flood (Updated), from http://un.org.np

DWIDP, 2011. Disaster Review 2010, DWIDP, Ministry of Irrigation, Government of Nepal, July 2011, series XVIII

EFDRR, 2014. Report on Governance and Accountability on Hyogo Framework for Action: The European Perspective, Working Group on Governance and Accountability for Disaster Risk Reduction, European Forum for Disaster Risk Reduction from

http://www.preventionweb.net/files/39593_efdrrreportgaweb.pdf

FAO, 2008. Disaster Risk Management Systems Analysis : A guide book, Prepared by Stephan Baas, et.al., Food and Agriculture Organization of the United Nations Rome from http://www.preventionweb.net/files/3769_ai504e00.pdf

Farlex (ed.), 2014. The Free Dictionary, Free Dictionary Publication from net at http://www.thefreedictionary.com /institution

GIZ, 2013. The Disaster Risk Management Handbook : A learning experience of DRM Model Mansehra, German Cooperation Publication at Pakistan from http://www.preventionweb.net/files/32968_32968buildingresiliencebylearningth.pdf

GON, 1982. Natural Calamity (Relief) Act, 2039, Government of Nepal, Kathmandu from www:://www.MOHA.gov.np

GON, 1999. Local Self Governance Act, 2055, Government of Nepal, Kathmandu from www:://www.mofald.gov.np

Harsh K Gupta (ed.) 2003. Disaster Management in India, Universities Press Delhi ISBN 81 7371 4568 from http://books.google.co.jp/books?id=m7UD_y4vP-0C&printsec= frontcover#v= onepage&q&f=false

HFA, 2005. Hyogo Framework for Action 2005 - 2015, HFA Update, UNISDR

Hyogo Phoenix, 2010. A Journal of Creative Reconstruction : 15th Anniversary of the Great Hansin-Awaji Earthquake, Hyogo Safety Day Promotion Committee Publication, Kobe

ICIMOD, 2007. Disaster Preparedness for Natural Hazards: Current Status in Nepal, Consultation Report by Bhubanesh Kumar Pradhan, International Centre for Integrated Mountain Development (ICIMOD) Kathmandu, Nepal from http://www.preventionweb.net/files/2738_icimodd6684002fabbc9ed275e7a53ca38ec55.pdf

InterWorks, 1998. Model for a National Disaster Management Structure, Preparedness Plan, and Supporting Legislation, DISASTER MANAGEMENT TRAINING PROGRAM Document Series from http://www.preventionweb.net/files/5142_US01MH840-Ft.pdf

ISDR, 2010. Advancing Implementation of the Hyogo Framework for Action (HFA) in Asia and the Pacific 2009-2015, International Strategy for Disaster Reduction and Asian Disaster Preparedness Center Publication from http://www.preventionweb.net/files/18038_hirap.pdf

ISDR, 2010a. Disaster through A Different Lens : Behind Every Effect, There is A Cause, The International Strategy for Disaster Reduction Publication

James D. Thompson, 2007. Organizations in Action : Social Science Bases of Administrative Theory, McGraw-Hill, Publication New York

Jayawardane, AKW, 2007. Disaster Mitigation Initiatives in Sri Lanka, Dean, Faculty of Engineering and Professor of Civil Engineering, University of Moratuwa, Sri Lanka from http://management.kochi-tech.ac.jp/PDF/IWPM/IWPM_Jayawardane.pdf

Kazusa, S., 2010. Disaster Management of Japan, A presentation from Kazusa, Shuhei, Director for Disaster Management, Cabinet office, Government of Japan, from

http://management.kochi-tech.ac.jp/PDF/IWPM/IWPM_Kazusa.pdf

Makoto Ideda, 2012. KNOWLEDGE NOTE 2-2 CLUSTER 2: Nonstructural Measures Disaster Management Plans, Prepared by Makoto Ikeda, Asian Disaster Reduction Center, the World Bank Publication from http://wbi.worldbank.org/wbi/Data/wbi/wbicms/files/drupal-acquia/wbi/drm_kn2-2.pdf

John Child, 1984. Organization : A guide to problems and practice, Paul Chapman Publishing ltd Publication, London http://books.google.co.jp/books?id=mpOtotiPfNIC&printsec=frontcover&dq=organization&hl=ne&sa=X&ei=nqAjVPT0Iobf8AWXxYLYAg&ved=0CFsQ6AEwCA#v=onepage&q=organization&f=false

Message, 2014. Message from the Prime Minister of Pakistan On the occasion of National Disaster Awareness Day (08 October 2014) in Islamabad from http://www.ndma.gov.pk/new/Documents/disaster-day-8-10-14.pdf

MOHA, 1996. National Action Plan on Disaster Management in Nepal, Government of Nepal, Ministry of Home Affairs, Kathmandu, Nepal

MOHA, 1998. Problems of Disaster Management in Nepal and Measures to Solve them, A Report prepared by a Task Force, Government of Nepal, Ministry of Home Affairs, Kathmandu, Nepal

MOHA, 2009. Nepal Disaster Report, 2009, Ministry of Home Affairs, Kathmandu

MOHA, 2010. Disaster Scenario in Nepal (Unpublished data), Disaster Management section, Ministry of Home Affairs, Kathmandu

MOHA, 1994. Disaster Management in Nepal: A Profile, Government of Nepal, Ministry of Home Affairs, Kathmandu, Nepal

MOHA, 2010a. Draft of Disaster Management Bill 2010, Ministry of Home Affairs Nepal, Kathmandu

MOHA, 2011. Nepal Disaster Report 2011, Ministry of Home Affairs Nepal, Kathmandu from http:://www.MOHA.gov.np

MOLitt, 2012. White paper on land, infrastructure, transport and tourism in Japan, Ministry of Land, Infrastructure, Transport and Tourism publication and many other white papers related to disaster managements

MOLITT, 2010. Water and Disaster Management Bureau Japan, Ministry of Land, Infrastructure, Transport and Tourism Japan publications from http://www.mlit.go.jp/en/index.html

Mikio Ishiwatari, 2013. Disaster Risk Management at the National Level, ADBI Working Paper Series, Asian Development Bank Institution Publication, Japan

Nazarov, VR-ADRC, 2011. Emergency Response Management in Japan, research report submitted to ADRC by VR011 Emin NAZAROV, Crisis Management Center, Ministry of Emergency Situations of the Republic of Azerbaijan

NDMA, 2010. National Disaster Management Guideline : Management of Tsunami, a publication of National Disaster Management Authority, New Delhi

NDMA, 2013. National Disaster Risk Reduction Policy of Pakistan, Ministry of Climate Change,

National Disaser Management Authority Publication

NIDM 2012, Indian Disaster Report, 2012, compiled by K.J. Anandha Kumar & Ajinder Walia, National Institution of Disaster Management, New Delhi, India

NPC, 2059: Tenth Plan, 2059-2064, National Planning Commission, Kathmandu

NPC, 2064: Three Year Interim Plan, 2064-2067, National Planning Commission, Kathmandu

NRCS, 2011. International Disaster Response Law (IDRL) in Nepal; A study on strengthening legal preparedness for disaster response, Nepal Red Cross Society and the International Federation of Red Cross and Red Crescent Societies, Geneva,

NSDRM, 2009. National Strategy on Disaster Risk Management, 2009, Ministry of Home Affairs, Kathmandu Nepal

Rajib Shaw (ed.), 2012. Community-based Disaster Risk Reduction, Emerald Group Publishing Limited, UK from http://books.google.co.jp/books?id=lr_2aTnmUnAC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=true

SAARC, 2013. SAARC Regional progress report on the implementation of the Hyogo Framework for Action (2011-2013), SARRC Reporting Series from website : http://www.preventionweb.net/files/32602_RegionalHFAprogress-SAARC(2011-2013).pdf

Sage, 2013. Encyclopedia of Management Theory : SWOT Analysis Framework, Contributors: Eric H. Kessler, pagination print book from http://www.uk.sagepub.com/gray3e/study/chapter3/Encyclopaedia%20entries/SWOT_Analysis_Framework.pdf

SDMC, 2010. Journal of South Asian Disaster Studies, Journal of the SAARC Disaster Management Centre, Volume 3, Number 2, 2010 December, New Delhi from http://saarc-sdmc.nic.in/pdf/publications/journal/saarc%20journal%20dec%202010.pdf

SDMC, 2011. South Asia Disaster Report, SAARC Disaster Management Center Delhi Publication from http://saarc-sdmc.nic.in/pdf/Publications/SADR2011.pdf

SDMC, 2008. A Background Paper at SAARC Workshop on Mainstreaming Disaster Risk Reduction in Development 14-15 November 2008, Colombo, Sri Lanka, prepared by SAARC Disaster Management Center from http://saarc-sdmc.nic.in/pdf/publications/drr/chapter-1.pdf

SDMC, 2011a. Hyogo Framework for Action 2005-2015 : Building the Resilience of Nations and Communities to Disasters, SAARC Disaster Management Paper, New Delhi

Thomas D. Schneild & Larry Collins, 2000, Disaster Management and Preparedness, CRC Press LLC Publication, USA

Tom Mitchell, Debarati Guha and et.al., 2014. Setting, measuring and monitoring targets for reducing disaster risk Recommendations for post-2015 international policy frameworks, Overseas Development Institute Publication, UK

Tsukuba, 2012. Promotion of Internationalization in Everyday Life Policy Paper on International Cooperation, Tsukuba Univesity from

UN, 2013. Global Assessment Report on Disaster Risk Reduction 2013, The Pocket GAR from Shared Risk to Shared Value : The Business Case for Disaster Risk Reduction

UNDP/BCPR, 2004. Disaster Risk Assessments in Nepal- A Comprehensive Country Situation Analysis, submitted to Global Risk Identification Program

UNDP, 2009. Cost Benefit Study of Disaster Risk Mitigation Measures in Three Islands in the Maldives, Co -Authored by Paul Venton and Ahmed Shaig, United Nations Development Program Maldives, Male

UNISDR, 2000. Capacity Building for Disaster Reduction in Developing Countries, Focus Paper No. 3, Inter-Agency Task Force on Disaster Reduction, Geneva

UNISDR, 2012. Reducing Vulnerability and Exposure to Disaster, Asia-Pacific Disaster Report 2012, UNISDR and UNESCAP Publication

UNISDR, 2013. ANNUAL REPORT 2013 : Final Report on 2012-2013, Biennium Work Program, UNISDR Publication

UNISDR, 2014. Finland Peer Review − Building resilience to disasters: Implementation of the Hyogo Framework for Action (2005-2015), UNISDR, EC, OECD.

Various publication/brochure of Japan Meteorological Agency from http://www.jma.go.jp/jma/en/Publications/publications.html

VR ADRC, Country Reports from Nepal and Research Reports from ADRC Liberary of different years, especially from VR Shambhu Prasad Marashini and VR Rameshor Dhangal

World Bank, 2012 .Disaster Risk Management in South Asia : The Regional Overview, the World Bank & GFDRR Publication, Washington

World Bank, 2012a. Sendai Report: Managing Disaster for a Resilient Future. Washington, DC, World Bank

World Bank, 2012b. The Great East Japan Earthquake, Learning from Mega disasters, IBRD/WB from http://wbi.worldbank.org/wbi/Data/wbi/wbicms/files/drupal-acquia/wbi/drm_exsum_english.pdf

Yu Jin & Marcia McNutt, 1996. Mapping the descent of Indian and Eurasian Plates beneath the Tibetan Plateau from gravity anomalies, Department of Earth, Atmospheric and planetary Science, Massachusetts Institute of Technology Cambridge, Journal of Geophysical Research, Vol. 101. No. B5 from http://www.ija.csic.es/gt/ivone/ftp/Tibet/References/Jin_etal._JGR1996_gravity.pdf

Zoë Scott, Roger Few, et.al. 2014, Strategic Research into National and Local Capacity Building for Disaster Risk Management, Literature Review: Version 1, Oxford Policy Management Publication from http://www.preventionweb.net/files/39416_39416opmifrcliteraturereviewv11.pdf