



**Asian Disaster Reduction Centre
Visiting Researcher Program – FY2016-B**



Final Research Report

On

**“Disaster Education and Awareness as a Tool for Disaster Risk Reduction”
(Comparative Study of Japan and Pakistan).**

Submitted by

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I hope this report will be useful for individuals and organizations working in the field of disaster management and especially for the Government of Pakistan and member countries of ADRC. The study enhanced my disaster management knowledge and experience, which would be utilized in more proactive manner in home country.

PREFACE

The frequency and magnitude of natural and man-made disaster has considerably increased during the past three decades, leading to the increased vulnerability of the individuals, communities and countries. In order to face, prepare, mitigate and transfer the risk of future disasters and emergencies, it is imperative to promote disaster education and awareness among the people and communities in a benefitting manner.

Establishing “Safer and Resilient” societies is the most ever desire of every people centric government in the world. However, achieving resilience societies is a long journey and require number of actions from grass route to state and international level. Among all these actions, the top ranked actions would be promotion of disaster education and comprehensive awareness strategies at all sphere including community, state, national and global level.

The Sendai Framework for Disaster Risk Reduction-2015-2030 under its Priority-1, envisaged that “ *understanding disaster risk to build the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms and peer learning*” and to “ *promote national strategies to strengthen public education and awareness in disaster risk reduction, including disaster risk information and knowledge, through campaigns, social media and community mobilization, taking into account specific audiences and their needs* ”.

Increased awareness of natural hazards and appropriate risk reduction measures can encourage voluntary risk reduction activities, including such key measures as safe construction, retrofitting, and household preparedness. As part of a broad national risk reduction strategy, increasing public risk awareness can strengthen public support for the investment of public funds in risk prevention activities and for the implementation of compulsory risk reduction measures such as land use planning, building codes, environmental stewardship and, where applicable, disaster insurance schemes. Moreover, international organizations and regional and international collaborations can also help focus the attention of national governments and policy makers on the importance of natural hazards awareness and disaster risk reduction education programs.

Structural and / or engineering interventions yield far less dividends if general education, research, training and awareness components are undermined. For most of the countries especially in South Asia, DRM is relatively a new subject but owing to the region's exposure to a number of natural and human-induced threats, different countries have started taking a holistic approach by establishing dedicated institutes for public awareness and capacity building purposes. It is widely argued by disaster experts that knowledge/education, information and appropriate awareness make a community more resilient against the consequences of hazards.

Sustained focus of disaster education and awareness strategies / campaigns on disaster risk reduction can yield culture of resilience in societies in all stages. In past, educational and awareness strategies and campaigns were primarily rescue and relief-centric rather than DRR-centric. Therefore, there is a need for relevant DM organization to integrate disaster education and awareness as a tool for promoting disaster risk reduction. Sequel to this, gaps and issues in the existing system are needed to be identified and good practices and lesson learnt with some appropriate strategies, aligned with socio-cultural requirement of the communities to be adopted. Moreover, educational institutions, being the mushrooming and breeding centers for young generations, can contribute a lot in the disaster risk reduction, not only at the curriculum and research level but can also promote disaster awareness via number of academic and educational activities like seminar, exhibition, quiz competition and walks etc. A well-connected network of education institutions with the country designated disaster management bodies is very much important for DRR especially in the areas like research, damage assessment, feedback research results, capacity building of students and researchers and mass awareness through parent-teacher association etc.

Foregoing in view, it is very imperative to investigate the international and national commitments and obligations, current context of disaster education and awareness by DM organizations / educational institutions, identify issues and gapes and to explore best practices in developed country like Japan for further adaptation and replication by relevant organizations in Pakistan.

LIST OF ABBREVIATIONS

- ADRC	- Asian Disaster Reduction Center
- AJ K	- Azad Jammu and Kashmir
- APPSF	- All Pakistan Private School's Federation
- BOKOMI	- Volunteer Organization/Bosai Fukushi Komyunithi
- CBDRM	- Community Based Disaster Risk Management
- CDPM	- Center for Disaster Preparedness and Management
- CMD	- Crisis Management Department
- CRS	- Civil Services Academy
- DCO	- District Coordination Officer
- DDMA	- District Disaster Management Authority
- DIRC	- Disaster Information Resource Center
- DM	- Disaster Management
- DRI	- Disaster Reduction and Human Renovation Institution
- DRM	- Disaster Risk Management
- DRMP	- Disaster Risk Management Program
- DRR	- Disaster Risk Reduction
- EDMD	- Emergency and Disaster Management Directorate
- EQ	- Earth Quake
- FATA	- Federally Administered Tribal Area
- GADRI	- Global Alliance of Disaster Research Institutes
- GB	- Gilgit Baltistan
- GEJE	- Great East Japan Earthquake
- GEJET	- Great East Japan Earthquake Tsunami
- HFA	- Hyogo Framework for Action
- IFRC	- Intl Federation of Red Cross and Red Crescent Societies
- INGO	- International Non-Governmental Organization
- IRIDeS	- International Research Institute of Disaster Science
- ISDR	- International Strategy for Disaster Reduction (ISDR)
- JICA	- Japan International Cooperation Agency

- KCBE - Kobe City Board of Education
- KCFB - Kobe City Fire Bureau
- KP - Khyber Pakhtunkhwa
- MCE - Military College of Engineering
- MLIT - Ministry of Land, Infrastructure and Transport Japan
- MoAFF - Ministry of Agriculture, Forestry and Fisheries
- NCRD - National Centre for Rural Development
- NDMA - National Disaster Management Authority
- NDMC - National Disaster Management Commission
- NDMO - National Disaster Management Ordinance
- NDMP - National Disaster Management Plan
- NHN - National Humanitarian Network
- NIDM - National Institute of Disaster Management
- NIED - National Research Institute for EQ Sciences & Disaster Resilience
- NPO - Nonprofit Organization
- NGO - Non-Governmental Organization
- NUST - National University of Science and Technology
- OCHA - Office for the Coordination of Humanitarian Affairs
- PDMA - Provincial Disaster Management Authority
- PRCS - Pakistan Red Cross Society
- PSSF - Pakistan School Safety Framework
- RIDRR - Research Institutes for Disaster Risk Reduction.
- SDMA - State Disaster Management Authority
- SDPI - Sustainable Development Policy Institute
- STI - Secretariat Training Institution
- UNDP - United Nations Development Program
- UNESCO - United Nations Educational, Scientific and Cultural Organization
- UNICEF - United Nations Children's Fund
- UNISDR - United Nations International Strategy for Disaster Reduction

CHAPTER # 01

INTRODUCTION TO DM SYSTEM IN PAKISTAN

1.1 General Information of Pakistan:

Pakistan is situated in South Asian region between longitudes 61° & 75°30'E and latitudes 23°30' & 36°45'N covering a total land area of 796,096 sq km. It comprises the four provinces of Punjab, Balochistan, Khyber Pakhtunkhwa (KP) and Sindh plus the Federal Capital (Islamabad), Gilgit-Baltistan region (GB) and 'Tribal Areas (FATA)' under federal administration, and Azad Jammu & Kashmir (AJK). There is a Parliamentary form of Government with a Prime Minister as the executive head and the President as the constitutional head. The National Language is Urdu. Population of the country is 90 million (Approx.).

The country shares its borders with Iran to the west, India in the south-east, Afghanistan in the north-west, and China in the north. The Arabian Sea lies to its south as shown in (Fig-1). Pakistan shares total border length of 6,744 km with neighboring countries; with Afghanistan (2,430 km); with China (523 km); with India (2,912 km) and Iran (909 km). The coastal belt is about 1,046 km.

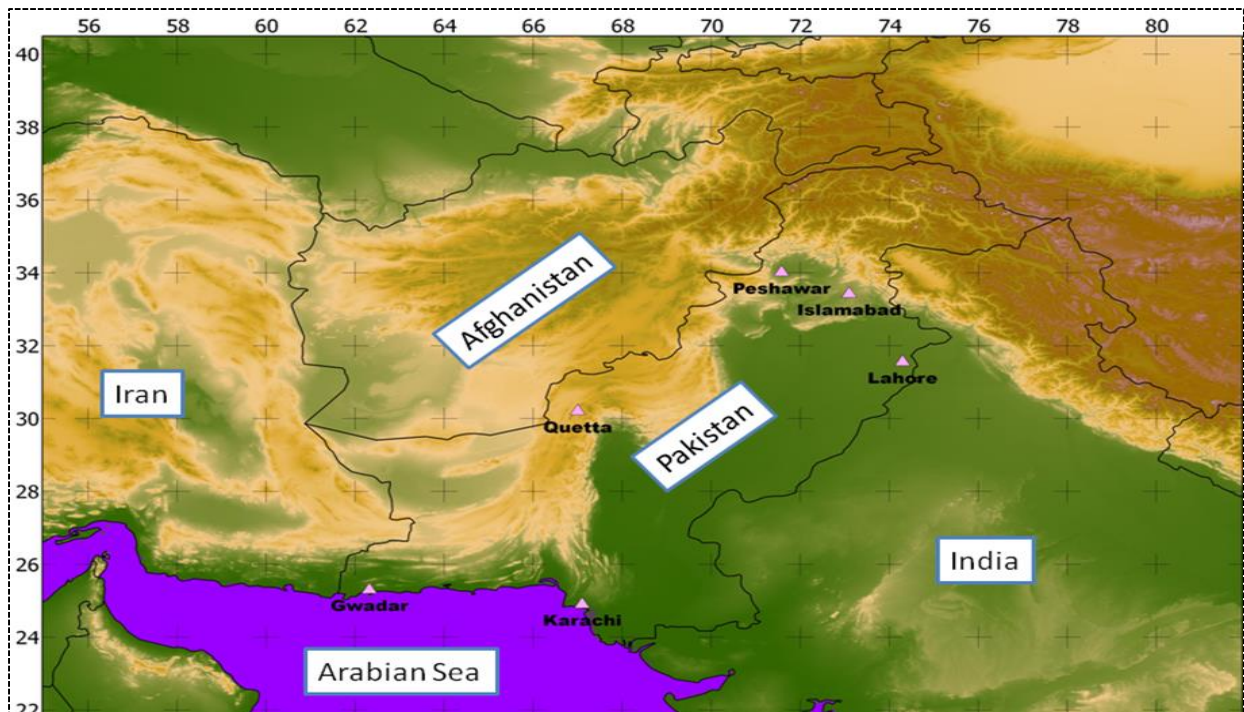


Figure-1. Geographic location of Pakistan

Geographically Pakistan can be divided into five major portions including, Northern high mountain ranges (the Himalayas; the Karakorum and the Hindukush), the Balochistan Plateau along western bordering, the Indus River plains in the east, the Salt range across the northern portion of the Punjab province and the Deserts (Cholisthan in Punjab & Thar in Sindh province).

The climate of Pakistan varies with its topography but most consists of hot, dry desert, temperate in north-west and arctic in the north. About 60% of the total land area is classified as arid, which receives less than 200 mm annual rainfall. The southern slopes of the Himalayas and the sub mountainous tract receive higher rainfall ranging from 760 to 1270 mm annually. Some areas adjoining Kashmir receive more than 2000 mm precipitation per annum.

Pakistan has four well marked seasons namely Spring, Summer, Autumn & Winter. It's usually, cold from November to February; Pre-monsoon (Hot), from March to mid of June; Monsoon, from mid of June to mid of September and Post-monsoon, from mid of September to October. Summer season is extremely hot and the relative humidity ranges from 25% to 50%. Day-time temperature in this season remains 40°C and beyond in plain areas. The average temperatures in winter range from 4°C to 20°C. Mercury sometimes falls well below freezing point in Northern parts of the country. Temperatures can be as low as - 27°C in the north (at Skardu) in winter and as high as 52°C in the southern parts during summer.

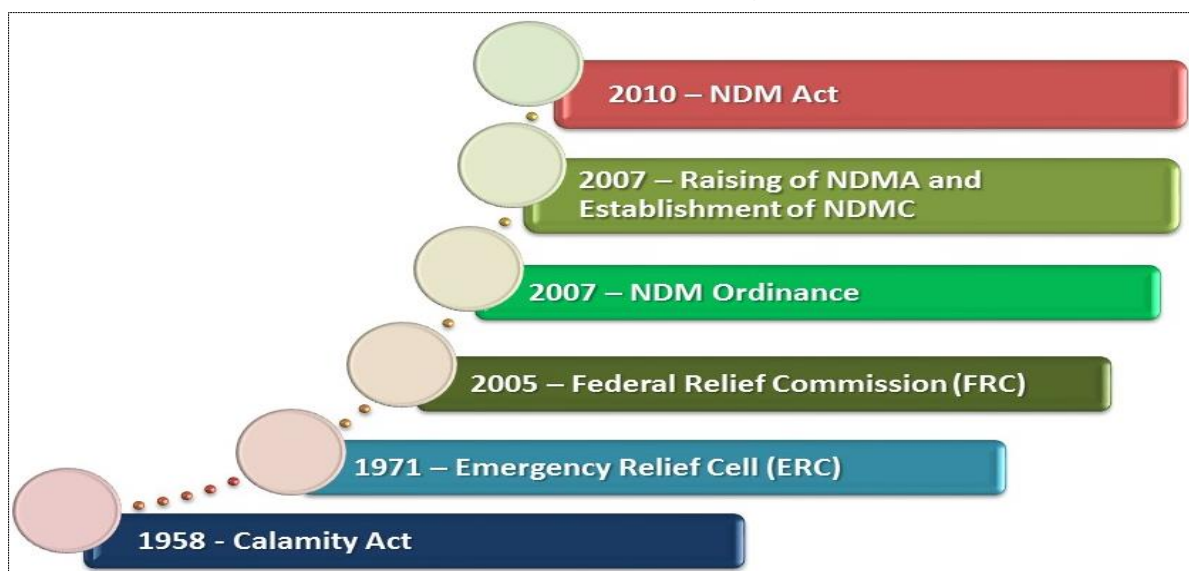
1.2 Natural Hazards in Pakistan:

Geo-physical conditions, climatic extremes, and high degrees of exposure and vulnerability, made Pakistan a disaster-prone country. Pakistan's exposure to natural hazards and disasters could be ranked between moderate to severe. A range of hydro meteorological, geo-physical and biological hazards including earthquakes, floods, tsunamis, cyclones and storms, droughts, glacial lake outbursts, landslides, avalanches, pest attacks and epidemics pose risks to Pakistani society. Some of these hazards (e.g. floods, landslides etc.) are predominantly seasonal and occur on an annual basis, whereas other hazards such as earthquakes and tsunamis are rare events but potentially highly destructive.

Pakistan frequently suffers from earthquakes. Northern and Western parts are particularly vulnerable to earthquakes. The Indus River is known as flood-prone area especially in July and August. High priority hazards in terms of their frequency and scale of impact are: earthquakes, flooding, droughts, wind storms and landslides that have caused widespread damage and losses in the past.

1.3. Disaster Management System in Pakistan:

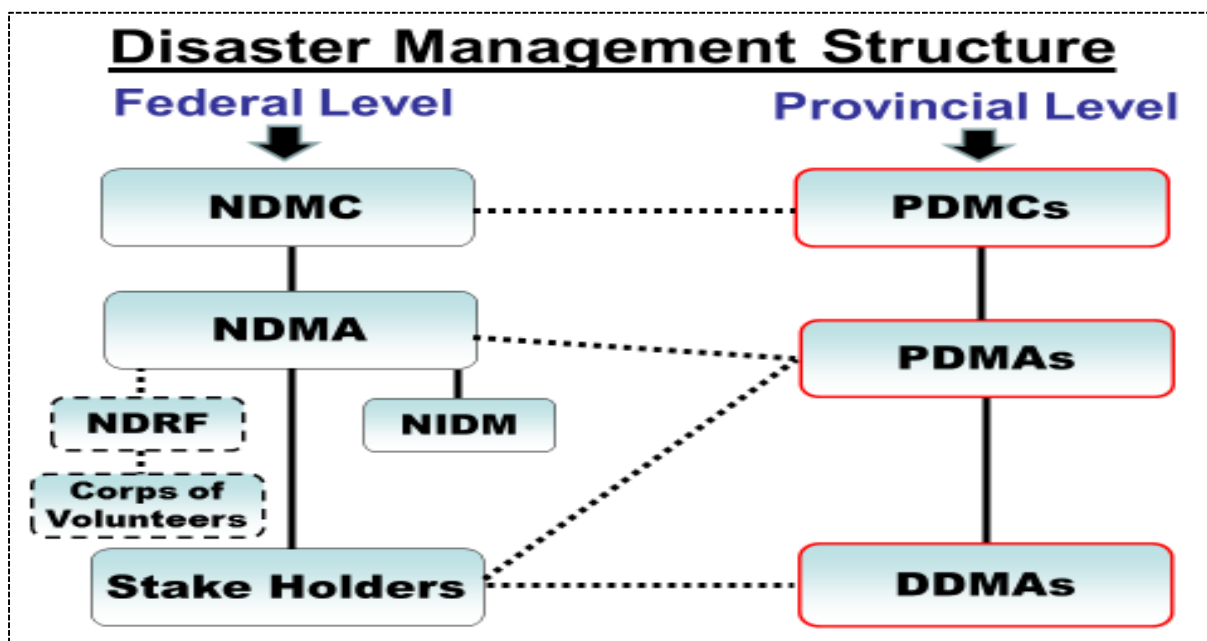
Prior to Earthquake 2005, the West Pakistan National Calamities Act of 1958 was the available legal remedy that regulated the maintenance and restoration of order in areas affected by calamities and relief against such events. An Emergency Relief Cell within the Cabinet Division has been serving since 1971 as an institutional disaster relief support at the national level. Similar institutional arrangements existed at the provincial



level in the form of relief commissioners. However, that regime provided a reactive approach towards emergency response only. The occurrence of mega Kashmir earthquake of 2005, followed by global obligations have provided the required stimuli for the government to introduce a new Disaster Management System in the Country.

Subsequently, the National Disaster Management (NDM) Ordinance was promulgated in December 2006 which became NDM Act with the approval of the Parliament in 2010. This Act serves as the primary law of the land in the field of disaster management and to implement the law, National Disaster Management Authority (NDMA) was created under National Disaster Management Commission (NDMC). Similar arrangements were enacted in the four provinces, FATA, GB and AJ&K. The creation of National

Disaster Management Commission under stewardship of the Prime Minister, and its executive organ National Disaster Management Authority ushered an across the board transformation of the national perspective about the subject of DRM.



The NDM Act 2010 elaborates following components of the system: -

- a. National Disaster Management Commission(NDMC)
- b. National Disaster Management Authority(NDMA)
- c. Provincial Disaster Commission(PDMC)
- d. Provincial Disaster Management Authorities(PDMAAs)
- e. District Disaster Management Authorities(DDMAAs)
- f. National Institute of Disaster Management(NIDM)
- g. Obligation of Federal and Provincial Governments in case of disaster.
- h. Establishment of National / Provincial Fund for Disaster Management (N/PDMF).

1.3.1. National Disaster Management Commission(NDMC):

The National Disaster Management Commission (NDMC) headed by prime minister has been established for the formulation of overall policies & guidelines etc. at national level while Provincial Disaster Management Commission (PDMC) headed by the chief minister of respective province at provincial level. Chairman NDMA and Director General PDMA will act secretary of the Commission at federal and provincial level respectively.

Key members of NDMC included: -

- a. The Prime Minister of Pakistan - Chair

- b. Leader of Opposition in the Senate & National Assembly
- c. Key Federal Ministers (Like Defense/interior/communications/ Health/ Finance etc.)
- d. Governor NWFP (for FATA)
- e. Chief Ministers of all four Provinces
- f. Prime Minister, AJK & GB
- g. Chairman, JCSC or his nominee; and
- h. Civil Society & Co-opted Members.

Main powers and functions of the National Commission includes but not limited to: -

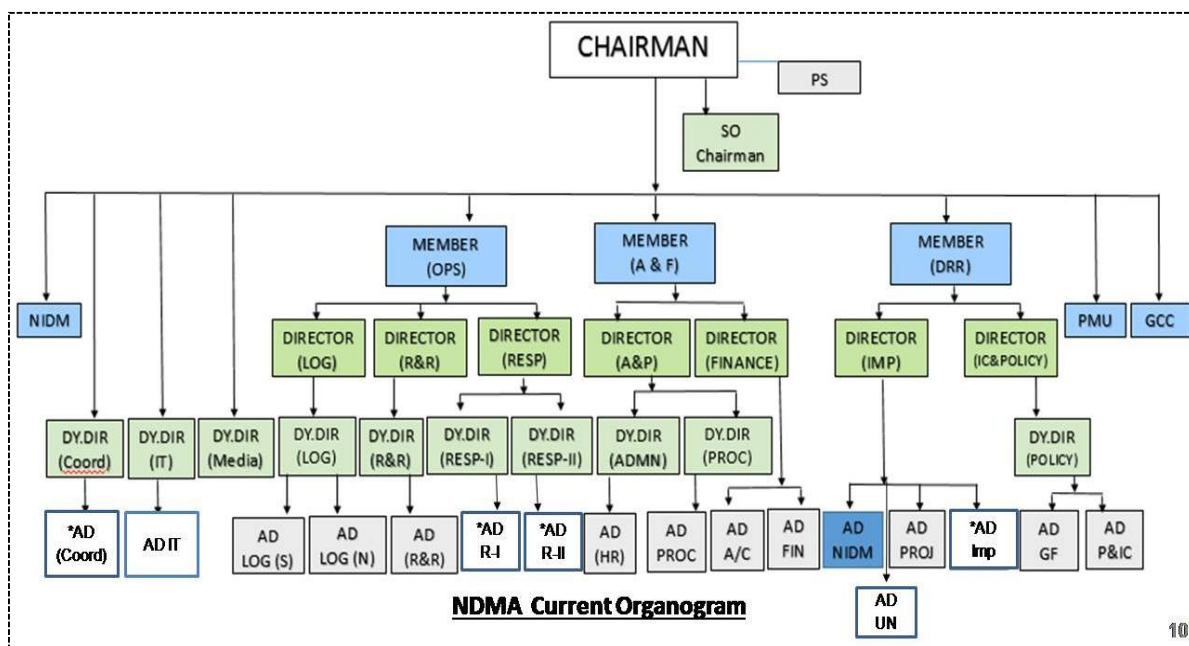
- a. lay down the policies, plans and guidelines for disaster management.
- b. approve the National Plan.
- c. approve plans prepared by the Ministries or Divisions of the Federal Government in accordance with the National Plan.
- d. arrange for, and oversee, the provision of funds for the purpose of mitigation measures, preparedness and response.
- e. provide such support to other countries affected by major disasters as Federal Government may determine.

1.3.2. National Disaster Management Authority (NDMA):

Sequel to the NDMO/ NDMA Act, National Disaster Management Authority (NDMA) at federal level was established in 2007. The power of the Authority includes but not limited to: -

- a. act as the implementing, coordinating and monitoring body for disaster management;
- b. prepare the National Plan to be approved by the National Commission;
- c. implement coordinate and monitor the implementation of the National policy;
- d. lay down guidelines for preparing disaster management plans by different Ministries or Departments and the Provincial Authorities;
- e. provide necessary technical assistance to the Provincial Governments and the Provincial Authorities for preparing their disaster management plans in accordance with the guidelines laid down by the National Commission;
- f. coordinate response in the event of any threatening disaster situation or disaster;
- g. **promote general education and awareness in relation to disaster management;**

- h. Lay down guidelines for, or give directions to the concerned Ministries or Provincial Governments and the Provincial Authorities regarding measures to be taken by them in response to any threatening disaster situation or disaster.



1.3.3 Provincial Disaster Management Authority(PDMA):

Provincial Authority is established at each province including region of Gilgit Baltistan and Azad Jammu & Kashmir. Key powers and functions of the Provincial Authorities includes: -

- Responsible for implementing policies and plans for disaster management in the Province.
- Formulate the provincial disaster management policy obtaining the approval of the Provincial Commission;
- Coordinate and monitor the implementation of the National Policy, National Plan and Provincial Plan.
- Examine the vulnerability of different parts of the Province to different disasters and specify prevention or mitigation measures.
- Lay down guidelines to be followed for preparation of disaster management plans by the Provincial Departments and District Authorities.
- Promote general education, awareness and community training.**

- g. **Ensure that communication systems are in order and disaster management drills are being carried out regularly; and**
- h. Coordinate response in the event of disaster.
- i. Evaluate preparedness at all governmental or non-governmental levels to respond to disaster and to enhance preparedness.

1.3.4. District Disaster Management Authority(DDMA):

As per NDM Act 2010, each Provincial Government shall establish a District Disaster Management Authority (DMA) for every district. The District Authority shall consist of the following members, namely:

- a. Nazim of the District who shall be Chairperson, ex officio;
- b. the District Coordination Officer;
- c. the District Police Officer, ex-officio;
- d. the Executive District Officer Health; and
- e. such other district level officers, to be appointed by the District Government.

The District Authority shall act as the district planning, coordinating and implementing body for disaster management and take all measures for the purposes of disaster management in the district in accordance with the guidelines laid down by the National Authority and the Provincial Authority. Mandate of the District Authority includes but not limited to: -

- a. prepare a disaster management plan including district response plan for the district;
- b. coordinate and monitor the implementation of the National Policy, Provincial Policy, National Plan, Provincial Plan and District Plan;
- c. ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the departments of the Government at the district level as well as by the local authorities;
- d. ensure that the guidelines for prevention, mitigation, preparedness and response measures as laid down by the National Authority and the Provincial Authority are followed by all departments of the Government at the district level and the local authorities in the district;
- e. **organize and coordinate specialized training programs for different levels of officers, employees and voluntary rescue workers in the district;**

- f. **facilitate community training and awareness programs for prevention of disaster or mitigation with the support of local authorities, governmental and non-governmental organizations;**
- g. encourage the involvement of non-governmental organizations and voluntary social-welfare institutions working at the grassroots level in the district for disaster management set up, maintain, review and upgrade the mechanism for early warnings and dissemination of proper information to public;
- h. identify buildings and places which could, in the event of disaster situation be used as relief centers or camps and make arrangements for water supply and sanitation in such buildings or places;
- i. establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice;

The Act has also delegated an additional powers to District Authorities for the purpose of assisting, protecting or providing relief to the community, in response to any disaster like:-

- a. give directions for the release and use of resources available with any department of the Government and the local authority in the district;
- b. control and restrict vehicular traffic to, from and within, the vulnerable or affected area;
- c. remove debris, conduct search and carry out rescue operations;
- d. provide shelter, food, drinking water and essential provisions, healthcare and services;
- e. establish emergency communication systems in the affected area;
- f. procure exclusive or preferential use of amenities from any authority or person;

1.3.5. National Institute of Disaster Management (NIDM):

The Act allows the Federal Government to establish an institute to be called the National Institute of Disaster Management (NIDM). Subject to the provisions of this Act, the National Institute of Disaster Management shall be responsible for planning and promoting training and research and developing core competencies in the area of disaster management. The NIDM is empowered to: -

- a. develop training modules, undertake research and documentation in disaster management and organize training programs;

- b. formulate and implement a comprehensive human resource development plan covering all aspects of disaster management;
- c. provide assistance in national level policy formulation;
- d. provide required assistance to the training and research institutes for development of training and research programs for stakeholders including Government functionaries;
- e. provide assistance to the Provincial Governments in the formulation of Provincial level policies, strategies, disaster management framework and any other assistance as may be required by the Provincial Governments for capacity-building of stakeholders, Government including its functionaries, civil society members, corporate sector and people's elected representatives;
- f. develop educational materials for disaster management including academic and professional courses;
- g. promote awareness among stakeholders including college or school teachers and students, technical personnel and others associated with multi-hazard mitigation, preparedness and response measures;

The Act also entrusted the Federal Governments to take all such measures as it deems necessary or expedient for the purpose of disaster management and shall include all such measures pertaining to: -

- a. coordination of actions of the Ministries and Divisions of the Federal Government, Provincial Governments, National Authority, Provincial Authorities, governmental and non-governmental organizations in relation to disaster management;
- b. cooperation and assistance to Provincial Governments, as requested by them or otherwise deemed appropriate by it;
- c. requisition and deployment of armed forces, civil armed forces or any other civilian personnel or foreign contingents required for the purposes of this Act;
- d. coordination with the United Nations agencies, international organizations and governments of foreign countries for the purposes of this Act;
- e. **establish institutions for research, training, and developmental programs in the field of disaster management;**
- f. The Federal Government may extend such support to other countries affected by major disaster as it may deem appropriate.

Similarly, the Provincial Government, subject to the provisions of this Act, shall take all measures specified in the guidelines laid down by the National Authority and such further measures as it deems necessary or expedient, for the purpose of disaster management in their respective province.

1.3.6. National / Provincial Funds for Disaster Management:

a. National Disaster Management Funds (NDMF):

The Federal Government shall constitute a Fund to be called the National Disaster Management Funds for meeting any threatening disaster situation or disaster. The NDMF shall be administered by the National Authority towards meeting the expenses for emergency preparedness, response, mitigation, relief and reconstruction. The NDMF shall be financed from the following sources, namely: -

- (1) grants made by the Federal Government;
- (2) loans, aid and donations from the national or international agencies; and
- (3) donations received from any other source.

b. Provincial Disaster Management Funds (PDMF):

Similarly, the Provincial Disaster Management Fund shall be administered by the Provincial Authority towards meeting the expenses for emergency preparedness, response, mitigation, relief and reconstruction in the Province. The PDMF shall be financed from the following sources, namely: -

- (1) grants made by the Federal Government or Provincial Governments; and
- (2) loans, aid and donations from the national or international agencies provided in accordance with prescribed procedure.

It may be highlighted that the Federal Government and Provincial Governments shall, in their annual budgets, make provisions for funds for the purposes of carrying out the activities and programs set out in its disaster management plan.

The disaster management system elaborated above, is a well-articulated robust system, based on international good practices and local dynamics. The system is growing, despite limited resources and disaster management capacities. The performance of the system, witnessed appreciation not at national level but has also gained attention of international community during the past disasters.

Establishment of “Safer and Resilient” societies is the most ever desire of every people centric government of the world. However, achieving resilient societies is a long journey and require number of intervention from grassroots to state and international level. Among all these actions, the top ranked action would be promotion of disaster education and comprehensive awareness strategies at all sphere including community, state, national and global level. Following are some relevant gleams on the subject nation and international level.

2.1. Obligations and Commitment at International Level:

International organizations, regional and international collaborations can help focus the attention of national governments and policy makers on the importance of natural hazards awareness and disaster risk reduction education programs. International organizations have a key role to play with regard to long-term planning as they are decoupled from the shorter-term political mandates of national, local and local decision-makers. International efforts may also lead to the establishment of transnational platforms and networks aimed at developing a coherent cross-border approach to disaster risk management strategies and promoting a culture of safety in the long run.

a. Sendai Framework for Disaster Risk Reduction (SFDRR -2015-2030):

Sendai Framework for Disaster Risk Reduction-2015-2030 vide achievable actions under its Priority-1 has states “understanding disaster risk to build the knowledge of government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms and peer learning” &

" promote national strategies to strengthen public education and awareness in disaster risk reduction, including disaster risk information and knowledge, through campaigns, social media and community mobilization, taking into account specific audiences and their needs”.

b. Previously, the Hyogo Framework for Action (HFA) also highlighted the importance, role of education and public awareness in building the culture of safety and resilience at all levels. The Hyogo Framework for Action 2005-2015, has explicitly called for the “integration of disaster risk reduction as an intrinsic element of the United Nations Decade of Education

for Sustainable Development (2005–2014). Experience shows that impacts of disasters can be substantially reduced if communities are well prepared and ready to act and are equipped with the knowledge and capacities for effective disaster management &

Effective public awareness and education activities help local communities acquire the skills and knowledge to make informed decisions on how to reduce their vulnerability to disasters, enhance their capacity and adapt their livelihoods to withstand current and future risks, as well as to demand greater action and accountability from those responsible.

- c. The Global Platform for Disaster Risk Reduction (GPDRR) during its fourth Session-Invest today for safer tomorrow, held in Geneva, Switzerland 19-23 May 2013, stipulated vide “*The Role of Public Awareness and Education in building community resilience*” :
 - (1) That “Ensure greater funding and action on safe education facilities, management and integration of DRR in formal and non-formal learning.
 - (2) Agreement towards for a common global framework on Education for DRR.
 - (3) Secure greater South to South collaboration on good practice and lessons learning for advancing DRR and Education.
- d. UNESCO supports countries to include DRR components into education policies and plans as well as school programs and curricula to increase the level of preparedness and protection of individual learners and entire communities. Disaster preparedness work is linked with efforts to integrate education for sustainable development (ESD), including climate change adaptation into the education system with the overall aim of building resilient and sustainable communities through education. UNESCO’s work on DRR education refers to key dimensions of an integrated approach on School Safety which encompasses structural safety, as well as school disaster management and disaster prevention education and curriculum development.
- e. DRR Education at global level has been coordinated, through the ISDR Thematic Platform on Knowledge and Education (TPKE), which includes UN agencies, International Organizations, International NGOs. TPKE platform, now called Global Alliance for DRR knowledge and education, promotes joint multi-stakeholder strategies for enhancing knowledge and education for disaster risk reduction as an intrinsic element of UN Decade of Education for Sustainable Development (DESD), 2005-2014.
- f. The Red Cross Red Crescent National Societies has a long tradition in working with communities on disaster risks, increasing safety and resilience through campaigns, informal

education, participatory learning and formal school-based interventions. RCRC National Societies, have developed a wide array of tools to support these activities and have carried out structured public-awareness and education activities on disaster reduction. Many of these activities are connected to children and schools.

- g. The International Federation of the Red Cross produced a guide on public awareness and public education (PAPE) for DRR, as well as in 2012 key DRR messages to be used in PAPE activities.

2.2. Mandates and Obligations at National Level:

a. Legislative Perspective:

As per NDM Act 2010, the National Disaster Management Authority (NDMA) is mandated to “**promote general education and awareness in relation to disaster management**” in the country. Similarly, the Provincial Disaster Management Authorities are also required to “**promote general education, awareness and community training**” at their respective provinces /regions.

b. National DRR Policy Perspective:

- (1) The National Disaster Risk Reduction Policy (NDRRP) under Policy Intervention No. 3.2.4 “Promoting risk awareness and knowledge through DRR education vide “Promoting **DRR through public awareness campaigns**” stipulates that “Reaching the wider public with DRR messages requires clearly targeted awareness campaigns with clear objectives, core target groups and appropriate methodologies that ensure messages reach men and women. The NIDM has an important role to play in advising on the design of such campaigns but also in creating capacity within NDMA, PDMAs and DDMA to design, conduct and evaluate public awareness campaigns in the appropriate regional languages.
- (2) Vide “Promoting **DRR education in schools and colleges**” stipulates that the integration of DRR into the education syllabus at all levels should focus upon creating awareness of priority hazards, mitigation or prevention options and building basic self-help and mutual-help capacities through school-based preparedness or safety plans (covering recovery of functionality in a post-disaster situation). School preparedness needs to be linked into wider community-based DRR plans and mechanisms as schools may serve as shelters and safe havens in disaster situations. For better coverage it is important that DRR education is also promoted in private and religious schools. Peer mechanisms are effective in reaching out of school children and youth.

(3) Vide ***“Promoting professional and technical education”*** stipulates that Professional and technical education in DRR needs to be enhanced through a range of activities including: -

- i. The development of DRR as a professional discipline needs to be further promoted at national and provincial levels through high-quality academic programs while agreeing on common curricula standards.
- ii. The curricula of graduate and postgraduate courses in architecture, engineering, medicine, earth-, environmental and social sciences need to be further updated to incorporate the latest DRR knowledge and practices.
- iii. Everyday emergency responders (ambulance services, police, fire services require enhancement of their training and skills through dedicated DRR training.
- iv. Integrate DRR into curriculum of Civil Defense Training Institutions.
- v. At the local level training initiatives require support that target artisans such as builders and masons, and train them in hazard-resistant construction, focusing upon non-engineered buildings.

(4) **Vide Section 4.6 under “DRR Mainstreaming in Education System”** stipulates that DRR agenda will remain inconclusive unless the national education system is made an integral part of it. Efforts are already underway to mainstream DRR in education curricula at all levels (school, college, university). However, the task at hand is to develop the DRR curricula in national and regional languages for subsequent mainstreaming. NDMA will facilitate the process of developing DRR curricula in consultation with relevant forums. Similarly, an appropriate mechanism will be devised to review with DRR lens the curricula of graduate and post-graduate level courses in architecture, engineering, and earth sciences, etc.

c. NDMP Perspective:

National Disaster Management Plan (NDMP) under the **“Comprehensive Human Resource Development Plan”** has chalk out a comprehensive human resource development Program. The HRDN Plan of NDMP under Priority Actions / Programs for the Next Ten Years (2012-2022) has pledged number of initiatives vide following strategies on disaster education and awareness: -

(1). Vide Intervention- 5 - Promotion of Training, Education and Awareness in Relation to Disaster Management:

- (a) Develop NIDM (National Institute of Disaster Management) to promote human resource development in the field of disaster management.
- (b) Enhance the capacity of government agencies in charge of disaster management.
- (c) Promote mainstreaming DRR through capacity enhancement of governmental officers.
- (d) Develop the capacity of communities to cope with disasters.
- (e) Raise people's awareness of disaster management

(2).Vide Intervention-6- Strengthen Awareness Program on Disaster Risk Reduction at Local Level:

- (a) Enhance knowledge on disasters management in the general public.
- (b) Establish safe evacuation places in the case of disaster situation.
- (c) Implement and disseminate CBDRM activities.
- (d) Disseminate self-help and mutual help efforts in disaster management.
- (e) Establish disaster mitigation measures incorporated with existing development program.

(3).Vide Out-put/ Activities on Education / Awareness highlightes that NIDM will take initiative for improvement of human resources in the field of Disaster management through: -

- (a) setting up of organization of NIDM, construction of NIDM building complex, establishment of a library and Disaster Information Resource Center (DIRC) specialized for disaster management and promotion of research in the field of disaster management.
- (b) Capacity of governmental staff who are in charge of DRM to be enhanced through implementation of DRM training courses for F/G/S/PDMAs and DDMA's staff, capacity enhancement of urban search and rescue teams, implementation of regular refresher trainings for district fire brigades and Implementation of DRM workshops for TMA staff.
- (c) Capacity of staff of government offices related to disaster management to be enhanced for mainstreaming DRR activities for their implementation including implementation of DRM workshops for relevant ministries, implementation of DRM workshops for relevant departments of provincial governments and state governments, implementation of DRM workshops for district governments, capacity of staff of government offices related to disaster management is enhanced for mainstreaming DRR activities for their implementation and Incorporation of DRM subjects into curriculum of government training institutes.

- (d) **Capacity of communities to be enhanced to cope with disasters** through implementation of DRM workshops for community leaders and search and rescue trainings for members of community emergency response teams
- (e) **Making Individuals Aware of DRM** through implementation of awareness campaigns for the general public, promotion of disaster education at schools and implementation of DRM workshops for university students.

d. NIDM Perspective:

NIDM Act- 2010 stipulates the responsibilities of NIDM as “NIDM shall be responsible for planning and promoting training and research and developing core competencies in the area of disaster management, documentation and development of national level information base relating to disaster management policies, prevention mechanisms and mitigation measures.” (Chapter -VII, 26, (2)). The activities are categorized into following four categories: -

(1).Education:

- Incorporation of disaster management subjects into curriculum of governmental staff general training.
- Promotion of disaster education in basic education.
- Promotion of disaster education in higher education.

(2).Awareness:

- Holding of national disaster management exhibition, seminars, workshops, conferences etc.
- Awareness campaign through media.

(3).Training

- Training of NDMA staff
- Training of F/G/S/PDMA staff
- Training of DDMA staff
- Training of TMA staff through DDMA
- Training of Staff of Federal Ministries
- Training of university students

(4).Promotion of Comprehensive HRD:

- Enhancement of coordination among organizations which conduct capacity building in the field of disaster management
- Technical advisories and assistances for human resource development activities in the field of disaster management.

CHAPTER # 03

RESEARCH PLAN

3.1. Theme of the Study:

Disaster Education and Awareness as a Tool for Disaster Risk Reduction-Comparative Study of Japan and Pakistan.

3.2. Background and Significance of the Theme:

- a. Pakistan is disaster prone country. The country, after the Kashmir Earthquake-2005 has promulgated / adopted new disaster management system. Under the new system, NDMA is declared as the federal lead agency to manage the whole spectrum of disaster management in the country.
- b. Promoting awareness through education, hazard mapping, campaigning, training and participation at grassroots is indispensable to ensure disaster preparedness and effective response in at all tiers in wake of any disaster. It enhances community compliance to early warnings, timely evacuation and participation in pre-disaster and post-disaster activities. Moreover, like other pre-requisite DRR measures, disaster resilience of the country/ communities is also directly proportionate to the level of education, awareness and training imparted at various tiers.
- c. Besides, other assigned mandates, disaster management organizations are also required to promote disaster awareness, education and training etc. at national and provincial level in Pakistan.
- d. Various segments of the society possess the requisite potential at varying level to promote general awareness and education in disaster risk reduction in the country. However, education institution and disaster related organizations are considered to be the most effective for promoting disaster risk culture through effective education and awareness campaigns.
- e. Japan is one of the most disaster-prone country in the world. The country has developed and adopted well-articulated system for disaster management and has achieved vast experience in disaster management, especially in the disaster risk reduction measures, including effective education and awareness system at grass root.
- f. The Sendai Framework for Disaster Risk Reduction-2015-2030 vide achievable actions under its Priority-1 stipulates that“ understanding disaster risk to build the knowledge of

government officials at all levels, civil society, communities and volunteers, as well as the private sector, through sharing experiences, lessons learned, good practices and training and education on disaster risk reduction, including the use of existing training and education mechanisms and peer learning “ and to “ promote national strategies to strengthen public education and awareness in disaster risk reduction, including disaster risk information and knowledge, through campaigns, social media and community mobilization, taking into account specific audiences and their needs” .

3.3. Specific Aim:

- a. As per NDM Act 2010, NDMA being the federal lead agency is mandated to “**promote general education and awareness in relation to disaster management**” in the country. Similarly, the Provincial Disaster Management Authorities are also required to “**promote general education, awareness and community training**” at their respective provinces / regions. Therefore, the study will highlight initiatives so far taken by the disaster management institutions for promoting education, awareness and training in disaster management.
- b. The role of education institutions in promoting disaster risk reduction via effective disaster education and awareness programs to be explored in both countries.
- c. To correlate / compare experiences of Japan in promoting disaster education and awareness for disaster risk reduction.

3.4. Proposed Research Activities:

Research theme warrants descriptive studies and therefore involved extensive desk work with few field visit / interviewing / participation / discussion, internet, websites and collecting some relevant data through pre-designed questionnaires at home & host country. Field visit to various key organizations and institutions by ADRC in Japan was carried out to make observation and obtain relevant data in a benefitting manner. Based on the assembled information via given ways and means, a comparative analysis of disaster management systems, disaster education and awareness of both countries with future recommendations was concluded and compiled.

3.5. Methodology-Data Collection / Required Information:

Necessary information and data was collected in both countries by adopting following methods: -

- a. **Primary Sources:** Following methods were utilized for collecting primary data: -
- (1) Pre-designed questionnaires for DM institutions.
 - (2) Pre-designed questionnaire for Academia.
 - (3) Field visits.
 - (4) Observations.
 - (5) Oral interview and discussion during course of action etc.
 - (6) Presentations and lectures.
 - (7) Participation in various fora.
 - (8) Participation in exercises and drills in Japan.
- b. **Secondary Source:** Secondary data was collected through following methods: -
- (1) Websites of relevant organizations.
 - (2) Publications
 - (3) Progress and annual reports.
 - (4) Research paper of previous ADRC Visiting Researchers.
 - (5) Library of DRI-Japan etc.
- c. Sequel to above, primary and secondary data was collected / provided by following DM institutions, organizations and academia **in Pakistan:** -
- (1) National Disaster Management authority(NDMA), Islamabad.
 - (2) Earthquake Reconstruction and Rehabilitation Authority(ERRA), Islamabad.
 - (3) National Institute of Disaster Management Islamabad.
 - (4) FATA Disaster Management Authority(FDMA), Peshawar.
 - (5) Gilgit Baltistan Disaster Management Authority(GBDMA), Gilgit.
 - (6) State Disaster Management Authority(SDMA), Muzaffarabad.
 - (7) Provincial Disaster Management Authority(PDMA), Balochistan.
 - (8) Provincial Disaster Management Authority(PDMA), KP.
 - (9) Punjab Emergency Service Academy 1122, Lahore.
 - (10) Secretariat Training Institutions(STI), Islamabad.
 - (11) Higher Education Commission(HEC), Islamabad.
 - (12) Pakistan Computer Bureau (PCB), Islamabad.
 - (13) National Centre for Rural Development NCRD), Islamabad.
 - (14) National Humanitarian Network (NHN), Islamabad.
 - (15) Capital Development Authority(CDA), Islamabad.
 - (16) Civil Defence, Islamabad.

- (17) National University of Modern Languages (NUMAL), Islamabad.
- (18) National University of Science and Technology (NUST), Islamabad.
- (19) Preston University (PU), Islamabad.
- (20) Riphah University (RU), Rawalpindi.
- (21) Fatima Jinnah Women University (FJWU), Islamabad.
- (22) Institute of Space & Technology (IST), Islamabad.
- (23) Centre of Disaster Preparedness & Management (CDPM), University of Peshawar.
- (24) Military College of Engineering (MCE), Risalpur, Nowshera.
- (25) Abdul Wali Khan University Mardan (AWKUM), Nowshera Mardan.
- (26) University of Swat, (US), Kanju Township Swat.
- (27) Government College University Lahore (GCUL), Lahore.
- (28) University of Balochistan, Quetta.
- (29) University Engineering and Technology(UET), Pakistan.,

d. In Japan, data / information via aforementioned primary and secondary sources was obtained from following disaster management institutions, organizations and education institutions: -

- (1) Hyogo Prefecture Disaster Management Centre, Hyogo.
- (2) Hyogo Prefecture Police, Hyogo.
- (3) NADA Municipal Ward Office, Kobe.
- (4) Participation in “Great Hanshin-Awaji Earthquake Memorial Day -17 Jan) Kobe.
- (5) DRI Museum at Kobe.
- (6) Japan Meteorological Agency, HAT, Kobe.
- (7) Japan Meteorological Agency, HQ Tokyo.
- (8) Tsunami Storm Surge Prevention Station, Osaka Prefecture.
- (9) Presentation on “Sentinel Asia” ADRC HAT, Kobe.
- (10) Participation in International Disaster Reduction Alliance Forum(DRA), Kobe.
- (11) Participation in International Recovery Forum(IRF), Kobe.
- (12) Presentation by OSASI TECHNOS INC on “Voice of Earth).
- (13) Research Centre for Urban Safety and Security, Kobe University.
- (14) Presentation and visiting Kamenose Land Slide, Nara Prefecture.
- (15) Participation in Iza! Kaeru Caravan at JICA, HAT Kobe.
- (16) Visiting National Museum of Ethnology, / Life Beyond the Tsunami Osaka Prefecture

- (17) DRI Library, HAT Kobe
- (18) Honjo Life Safety Learning Centre, Tokyo.
- (19) Visit and brief by NIED, Tsukuba City.
- (20) Development Bank of Japan(DBJ) brief on Disaster Financing System, Tsukuba city.
- (21) Brief on BCP by Mitsubishi Corporation Insurance Co Ltd, Tokyo.
- (22) Disaster Management Bureau, Cabinet Office, Tokyo.
- (23) Visit and brief by Tokyo Rinkai Disaster Prevention Park, Tokyo.
- (24) Osaka City Abeno Life Safety Learning Centre, Osaka Prefecture.
- (25) Lecture on Best Practices for Reducing Flood Disaster in Japan, Kobe University
- (26) Visit / brief about Dondo Dam by MoAFF, Miki City Hyogo Prefecture.
- (27) Visiting Miki Disaster Management Park Stadium, Miki City, Hyogo.
- (28) Hyogo Prefecture Emergency Management and Training Centre, Kiki City.
- (29) E-Defense, NIED, Miki City.
- (30) Lecture on DM System and Education by Hyogo Prefectural University.
- (31) Lecture on Disaster Education by Hyogo Prefectural University.
- (32) Presentations (5 Nos) by ADRC on Japan disaster management system.
- (33) Lecture on Landslide by Kobe University.
- (34) Community Based Town Watching and Hazard Mapping by BOKOMI
- (35) Participation in Community drills
- (36) Presentation by BOKOMI, Kobe.
- (37) Visit and brief by Rukko Sabo Office, MLIT, Kobe.
- (38) Visiting Hokudan Earthquake Memorial Park. Awaji Island. Hyogo Prefecture.
- (39) Visiting Fukura Port Tsunami Disaster Prevention Station(Uzumaru), Awaji Island.
- (40) Participation in 3rd Global Summit of RIDRR by GADRI, Kyoto Prefecture.
- (41) Visit and brief on Tsunami Evacuation Tower by CMD, Sendai City, Miyagi Prefecture.
- (42) Visit and brief by Ishinomaki Community Centre, Ishinomaki, Miyagi Prefecture.
- (43) Lecture by IRIDeS, Tohoku University, Tohoku Region.
- (44) Briefing by Sendai City Hall / CMD, Sendia, Miyagi Prefecture.

3.6. Expected Results:

- a. To highlight initiatives so far taken by disaster management organizations and identify gaps / grey areas in promoting education, awareness and training in disaster management in Pakistan.

- b. Expected role of education institutions and their contribution level in promoting disaster education and awareness.
- c. Experience and best practices adopted by Japan for awareness and disaster education which could be incorporated and aligned with prospective needs of disaster management institutions in Pakistan.
- d. It will pave way in bridging together education / research/ and disaster management institution in a more concerted and collaborative manner.
- e. Being part of its assigned mandate, the findings of the research will facilitate DM institutions in formulating and implementing an effective campaign on disaster education and awareness to achieve the ultimate goal of disaster resilience.
- f. The finding will specially facilitate National Institute of Disaster Management (NIDM) Pakistan to impart education, training and awareness in disaster management with more concerted approach.
- g. Will provide insight for education / academia / research institutions a to come forward and engage in various disaster related research and other awareness activities.
- h. Will provide vision for donors, financier, investors and other government / Non-governmental organizations for pledging various projects in the country.
- i. The finding will highlight major issues, gapes and some future recommendations for the quarter concerned.
- j. Finally, the Research will facilitate a sustained coordination, confidence, thrust, mutual understanding and knowledge sharing experience between Pakistan and ADRC.

3.7. Limitation of the Study:

Though efforts were made to collect data from relevant institutions and organizations. However, owing to number of constraints including time, resources, bureaucracy, and tight schedule at host country, data was gathered through limited primary and secondary sources from relevant institutions and organizations. Moreover, comparative analysis and interpretation is mainly descriptive in nature rather than scientific. Research theme is relatively new as compared to other disaster risk themes like response, recover and mitigation etc. Moreover, scarcity of centralized database in both countries, where requisite information was available in detach form with several organizations of varying mandates and thus resulted less footage for analysis. Owing to the nature and scope of the study, a full pledged study is required to be conducted in more holistic approach.

CHAPTER # 04

PRESENT POSITION-DISASTER EDUCATION AND AWARENESS

Education and Awareness is the foremost important initiatives for disaster risk reduction and preparedness. The most systematic public education and awareness efforts are often built around widespread campaigns and collaborations. The chief features of these campaigns and collaborations are a series of Program, events, messages, seminars, workshops and materials that are shared and distributed through a wide variety of sources including education institutions, media like print, radio, television and internet outlets, as well as sometimes through performing and cultural arts. They also involve mass distribution of messages and typically involve partnerships between government, civic organizations, mass media outlets, and private sector sponsors. To be effective, education and awareness campaigns should ensure that the public receives consistent messages repeated over an extended period of time and from multiple sources. Preparedness events must be repeated annually, so as to create public recognition, anticipation and to reinforce what was learned during previous events. Sequel to this, some prudent efforts taken at national level is highlighted in the proceeding paras.

4.1. Initiatives by the National Authority:

As illustrated in the preceding sections, the government, beside international obligations, is mandated to take necessary steps for establishing research institutions, promoting education, training, awareness and developmental programs in the field of disaster management. Owing to its assigned mandate, the NDMA at federal level, has taken number of initiatives for promoting disaster education, awareness and training including following: -

4.1.1. Establishment of National Institute of Disaster Management (NIDM):

Owing to national and international obligations, there was a dire need to establish and function NIDM. Despite several challenges, including legal, financial and technical facilities, the institute though was established in 2008 but it has started functioning in 2010. It is a premier institute of training and capacity development programs for managing natural disasters occurring in Pakistan.

Human Resource development and capacity building is the building factors for the organizations playing a part in preparedness, prevention, recovery and relief, welfare

agencies, NGO's, community development as well as general public. It is an integral part of Disaster Risk Management (DRM). Structural and / or engineering interventions yield far less dividends if general education, research, training and awareness components are undermined.

In South Asia, DRM is relatively a new subject but owing to the region's exposure to a number of natural and human-induced threats, different countries have started taking a holistic approach by establishing dedicated institutes for public awareness and capacity building purposes. It is widely argued by disaster experts that knowledge/education, information and appropriate awareness make a community more resilient against the consequences of hazards.

In the context of global warming and climate change, the frequency of nature hazard has considerably increased, which stressed upon the need of adopting a proactive approach by taking disaster risk reduction options to safe guard lives and properties. However, there was a growing realization that in the absence of a full-fledged academic institute dedicated for providing research and training services, it would have been difficult to achieve the objectives of DRM. On the other hand, the utility of existing training facilities had been marred over the years due to lack of resources, commitment, the quality of contents and delivery.

In this backdrop, National Institute of Disaster Management (NIDM) was established with following aims for effectively catering to research and training needs of the public and private sectors on DRR: -

- To develop curriculum on various facets of disaster management;
- To undertake training, research and other related activities on disaster management.
- To develop linkages and build partnerships with national and international academic institutions;
- To develop network of disaster management professionals and master trainers working in various disciplines in the country and abroad;
- Publish newsletters, books, research journals, and audiovisuals to raise disaster risk awareness among general public;
- Liaison with the NIDM and NDMA alumni and engage them in different activities i.e. trainings, workshop and technical assistance;

- Establish and maintain database on disasters in the country and give regular updates through NIDM website.

Some tangible work done by NIDM is elaborated in the following lines: -

a. Disaster Related Publications:

NIDM in collaboration with other relevant sections has publicized numbers of books on various disaster related fields as detailed under: -

Table 4.1(a) Statistics of Publication in the Field of Disaster

Sr. #	Area of Publications	No of Publications
1	Policy Documents and Plans	12 Nos
2	Assessment / Survey (All Types)	24 Nos
3	Manuals, Guidelines and Booklets	22Nos
4	Various Reports	06 Nos
5	Disasters Preparedness, DRR/DRM and Response	08 Nos
6	Gender and Other Vulnerable Groups	03 Nos
7	Floods, Cyclone, Tsunami and GLOF	04 Nos
8	Earthquake, Landslide and Avalanche	01 Nos
9	Education and School Safety	06 Nos
10	Recovery and Rehabilitation/Reconstruction	04 Nos
11	Miscellaneous	02 Nos

b. Establishment of Disaster Information Resource Center(DIRC):

The Disaster Information Resource Centre (DIRC) is a hub of disaster-related information for the consumption of public-sector departments and organizations, print and electronic media, students, development professionals, and academicians. Apart from books, research papers, training material, and documentaries, the DIRC will also provide on-line information on disaster statistics, news, briefs and soft copies of important or requested materials.

Once established and subject to the availability of financial resources, the DRC may start publishing a quarterly bilingual magazine on Disaster Risk Management, which will disseminate national disaster updates (activities of government and NGOs), a couple of lead articles, selected interviews and good practices (national or international) on Disaster Risk Management. DRC consist of various publication either made by NDMA,

PDMAs, DDMAAs, UN Agencies, Government Department, NGOs and other research studies in the field of disaster.

c. Training and Awareness Courses Conducted by NIDM:

National Institute of Disaster Management (NIDM) has started developing the database of Disaster Management related capacity building and training initiatives being carried out by public, private and humanitarian community, in Pakistan. The initiative is aimed at providing the stakeholders a common platform where they could share their contributions towards making the country resilient against disasters, through capacity building programs.

The organizations interested in showcasing their training activities may register, through a simple process, which will enable NIDM to update their activities. Organizations registered with NIDM will be given online access to the system for updating their respective capacity building activities at NIDM website.

Training courses and workshops facilitated by the National Institute of Disaster Management (NIDM) are encompass all phases of Disaster Management Cycle. Major categories of the training courses are: -

- Hazard Mitigation Courses
- Preparedness and Response
- DRR Mainstreaming
- Mainstreaming Gender and other Vulnerable Groups

Since the NIDM are striving to build the capacities of various segments of society aimed at preparing the fellow countrymen and the institutions to prevent, mitigate and respond to various disasters by strengthening their coping capacities. Training of NIDM is open to all segments of the society including government departments, humanitarian community academia, media, private sector and civil society.

Table. 4.1(c-a) Statistics of Training Courses by NIDM since 2010

Category	Male	Female	Total
Government Department	3479	340	3,819
Academia	658	220	878
NGOs	491	199	690
UN / INGOs	170	78	248
Media	107	11	118
Industry	75	3	78
Others	35	21	56
Foreigners	24	0	24
Total	5039	872	5,911

Table. 4.1(c-b) Statistics of Training Courses -Year wise since 2010

Year	Detail of Courses	Number of Participants
2010	27 Courses	845
2011	24 Courses	946
2012	5 Course	295
2013	25 Courses (WFP-15)	1,136
2014	47 (WFP-32 and UNDP-15)	1,443
2015	25 Courses (UNDP)	769
2016	11 Course (WFP/UNDP)	477
Total	164 Courses	5,911

Table 4.1(c-c) Government Official Emergency Response Exercise (GOERE)

Year	Date	Course	No Participants
2016	Mar 7 - 11	Government Officials Capacity Building Training/Exercise (Peshawar Division)	33
	Apr 11 - 15	Government Officials Capacity Building Training/Exercise (D G Khan Division)	41
	Apr 18 - 22	Government Officials Capacity Building Training/Exercise (Naseerabad Division)	37
	May 16 - 18	Government Officials Capacity Building Training/Exercise (Gilgit/Astore Divisions)	40
	May 25 - 27	Government Officials Capacity Building Training/Exercise (Muzaffarabad Division)	48
		Total	199

d. Training conducted via Joint Initiatives:

NIDM with collaboration of some international agencies has undertaken joint trainings in the areas mentioned below: -

- (1).NIDM with collaboration of Help Age International conducted a joint training of trainers on CBDRM at Jacobabad (Sindh)in November 2014. Where twenty-seven (27) master trainers from various organizations were trained.

- (2).NIDM with collaboration of UNOCHA conducted four regional trainings(December 2014) at Quetta, Lahore, Gilgit and Peshawar.
- (3).NIDM with collaboration of DIPECHO conducted 7th Action (CBDRM ToT for 5 days) in September 2014 on Community Based Disaster Risk Management (CBDRM) for the government officers from the selected districts of Sindh and KP provinces.
- (4).NIDM with collaboration of IOM/PDMA KP conducted five trainings on Camp Coordination and Camp Management (CCCM) in 2014.

3.1.2. Activities / Initiatives Undertaken by NDMA Media Section on Education and Awareness:

Media Section of NDMA is also paying a productive role in promotion of disaster related education and awareness. The Section, despite its limited resources has contributed a lot in compliance of national and international obligations. The mass distribution of printed material outlining major hazards, appropriate emergency responses, airing public service messages, press releases, workshops etc. are very effective education and awareness techniques / activities, which always add in disaster risk reduction of the communities. Some relevant activities of media section are highlighted below: -

- a. Conducted Training workshop to highlight the role of media in dissemination of Tsunami Early Warning. Participants of the workshop included 18 x media professionals from renowned news channels, daily newspapers and radio while 12 x staff members of PMD were also trained to liaison with media
- b. Press Releases-(Since 2013): Total 205 x Press Releases were published in 1,880 x newspapers on various themes of disaster.
- c. Press Conference (Since 2013): Total 10 x Press conference were arranged to update the media and public regarding various disaster in the period.
- d. Preparation and Issuance of monsoon / event wise Public Service Messages: PSM on Monsoons awareness, preparatory measures, earthquake and other events were disseminated via Print & Electronic media.
- e. TV /Radio Talk Shows/Program: Media Section is keeping NDMA presence and visibility in both pre-and post-disaster situations via TV / Radio Talk programs. Moreover, with theme Tayyar(Prepared) Pakistan, 6x TV programs prepared for public

awareness including Heat wave, Floods, Earthquakes, Drought, Vulnerable, Groups, Fire Safety, School Safety and Flash Floods.

- f.** Conducted Media Workshop on Disaster Reporting.
- g.** Arranging visit of Media Teams to affected areas.
- h.** National Consultative Media Dialogue - To involving prominent media anchors, journalists, analysts, rep from print media and civil society experts for active participation during pre-disaster preparedness and early warning to the public especially vulnerable communities.
- i.** Conducted 3x Media Workshops for capacity building of NDMA beat reporters' one each at Karachi, Lahore & Islamabad, aimed at sensitizing local media community on country's national disaster management system and role of different stakeholders of society, especially the media.
- j.** First ever NDMA Calendar-2016 was published carrying awareness messages and to promote concept of Disaster Resilient Pakistan.
- k.** Animated TVC on School Safety during Flood (Pre-during-post), Fire Safety Story books based on videos Posters Flood & Fire.
- l.** First ever NDMA documentary with theme 'Towards a Disaster Resilient Pakistan' has been prepared which was also aired first time during World Humanitarian Summit in Istanbul, Turkey May 2016.
- m.** A special Supplement about NDMA achievements during last 3 years was printed in special edition of Pakistan Observer. on 11 July 2016.
- n.** NDMA Stall at World Humanitarian Summit (WHS), showcasing its achievements exhibited theme of Disaster Resilient Pakistan through, glance of pictures, NDMA publications& Special Documentary.
- o.** First ever NDMA brochures were prepared on various disaster management themes.
- p.** NDMA collaborated with Radio Pakistan to Broadcast NDMA recorded. programs on general awareness raising on weekly basis from July till August.
- q.** 12x Live programs aired on weekly basis from July till September,2016.
- r.** Aired program on heat wave and floods in June-July2016.

3.1.3. Disaster Education and Awareness by NDMA Response Section:

- a. NDMA Response Directorate besides ensuring timely and effective response in time of disaster, also initiated capacity building program in collaboration with UNOCHA for DM officials in the following areas: -

- (1) Camp Management
- (2) Contingency Planning

Table 4.1.3(a). Capacity Building Training Program by NDMA and UNOCHA

Phase	No. of Trainings	No. of Participants	Districts
Phase 1	11	460 (Government Officials)	43
Phase 2	16	488 x Government Officials	30

b. Disaster Simulation Exercises (SE-2014):

As part of Preparedness and Contingency Planning Process for Monsoon and Flood Control, NDMA in collaboration with PDMA Punjab and World Food Program (WFP), organized a Simulation Exercise to identify gaps in planning and enhance the response capacities of the stakeholders. The simulation was based upon a realistic flood scenario in Punjab Province, split into two phases of Early Warning & Preparedness and Initial Rapid Response. The areas selected for exercise included the Districts of Sialkot, Sheikhpura and Narowal.

c. Facilitator Training for Disaster Simulation Exercise – 2014:

NDMA and WFP organized three days training from 3-6 June 2014 in Islamabad to simulate a real time flood based situation and impart training to stakeholders to practice Sops, contingencies simulated for Districts Narowal, Sialkot and Sheikhpura, validate response mechanism, decision-making procedures, analysis of capacity level and improve coordination. Participants were included officials from NDMA, PDMA Punjab, DDMAAs (Narowal, Sheikhpura and Sialkot), the UNHCT and INGOs.

Year	Name of Training	No. of Participants
2014	Facilitators Training for Disaster Simulation Exercise (3 – 6 June 2014)	Approximate 35
2014	Disaster Simulation Exercise (18 – 20 June 2014)	Approximate 75
2015	Facilitators Training for Disasters Simulation Exercise (15-17 April 2015)	Approximate 30
2015	Disaster Simulation Exercise (28-30 April 2015)	Approximate 95

d. Civil Military Coordination Workshop:

In coordination with UNOCHA, NDMA arranged a training workshop on Civil-Military coordination from 20-23 March 2014 at Islamabad. The workshop was intended to enhance Civil-Military coordination in Pakistan during disasters and complex emergency situations.

e. Mock Industrial Disaster Simulation Exercise – 2016:

Industrial Hazards Simulation Exercise was conducted on 29 March 2016 at Dherki in which all relevant stakeholders participated. Missing links observed in response against industrial disasters have been documented and shared with all concerned. Officials from 32 different departments participated in the simulation exercise.

f. Multi-Sector Initial Rapid Assessment Trainings (MIRA):

NDMA and UN-OCHA, in July 2012, jointly devised a tool called Multi Sector Initial Rapid Assessment (MIRA) for assessing the severity of a disaster. The tool was piloted in five flood affected districts namely Jaffarabad, Naseerabad, Rajanpur, Jacobabad and Kashmore in September 2012. In 2013, NDMA further refined this tool by revisiting the Questionnaire and setting up Joint Assessment Roster. NDMA and UNOCHA jointly conducted training sessions on MIRA at Islamabad, Karachi, Peshawar, Quetta, Multan, Naseerabad and Sukkur from 20-22 August 2013. Further details from R&R directorate.

g. Program for Enhancement of Emergency Response (PEER) Trainings before 2016

Name of Course	Participants Trained
Community Action for Disaster Response (CADRE)	299
Hospital Preparedness for Emergencies (HOPE)	398
Medical First Responder (MFR)	395
Collapsed Structure Search and Rescue (CSSR)	285

h. Effective SMS based Early Warning System put in place with the assistance of PTA since 2014. Over 58 million SMS Alerts disseminated to public for Flood Warning and Public Service Messages for Earthquake in 2014 and 2015. Over 300,000 persons

evacuated through early warnings. Consolidation of mechanism is being pursued for inclusion in PTA Regulation.

i. Disaster Management Exhibition and Conference (DMEC 2009):

The Disaster Management Exhibition and Conference was inaugurated by the Syed Yousaf Raza Gilani, Prime Minister of Pakistan, at the Prime Minister's Secretariat on 8 October 2009. The program of events included:

- (1) National Disaster Management Conference: "Working Together for Disaster Risk Reduction" (8 October, 2009)
- (2) Exhibition on Disaster Management, Fire Rescue, Safety & Security (8-9 October, 2009)
- (3) SAARC Regional Workshop on Earthquake Risk Mitigation & Management, (8-9 October, 2009).
- (4) The Exhibition and SAARC Regional Workshop was inaugurated by Nawabzada Malik Amad Khan, Minister of State for Foreign Affairs. He also witnessed the simulation / drill conducted by the Urban Search and Rescue Team of CDA.

The Exhibition on Disaster Management, Fire Rescue, Safety & Security showcased DRM initiatives by different organizations, latest technologies and services with displays of leading brands of ambulances, bullet proof vehicles, firefighting equipment, health and safety products, policing and anti-terrorism equipment, surveillance systems, state of the art security services, etc. Some 65 exhibitors, including the armed forces, NDMA, ERC of the Cabinet Division , CDA, NLC, UN, academic institutes and different local and international non-governmental organizations, took, part in the exhibition. **The Exhibition was visited by 5,000 people from different walks of life.**

- j. The National Disaster Risk Management Conference was held on** October 08, 2009 at the Convention Centre, Islamabad and was attended by 350 participants, represented different key stakeholders of disaster risk management. The theme of the Conference was "Working Together for Disaster Risk Reduction". The purpose of the Conference and Exhibition was to provide a forum to the policy makers, DRR practitioners, academia and private sector for knowledge and skills sharing on disaster risk reduction. It also provided an opportunity to enable the NDMA and other stakeholders to suggest measures to reduce the risks of potential disasters and to

k. Policy Dialogue on DRM with Parliamentarians (2009-2010):

To sensitize the parliamentarians and engage them in a debate on the issues related to disaster management in Pakistan, 06 seminars were organized in Islamabad, Sindh, Balochistan, Azad Jammu and Kashmir (AJK), Punjab and KP. The national level seminar was conducted on 13 October, 2009 at Islamabad, with Members of National Assembly and Senators in attendance.

l. Tsunami Evacuation Drills (2009):

In order to raise public awareness of the vulnerable communities of coastal areas and to test capacity building processes of all the stakeholders about Tsunami Risk, the NDMA conducted five Tsunami Evacuation Drills in partnership with the District Governments, civil society and response agencies at Gawadar, Pasni, Jewni, Ormara and Thatta in which more **than 5000 people** including women, children and elderly persons participated. During the evacuation drills the real life scenarios were created and the communities were trained in camp management, evacuation procedures, handling of health and food during emergencies.

m. DCOs Conference (2008):

In order to create education and awareness about the newly established DM system especially in the highly risk districts of Pakistan, DCOs from 37 x Districts of Punjab, Sindh, Balochistan, Khyber Pakhtunkhwa(NWFP), AJK and GB were invited, educated and made aware of the new DM system.

3.1.4 HR / Coordination Sections Initiatives on Education, Awareness and Capacity Building of DM Personnel through Foreign Training/Courses/Seminars/ Workshops etc:

In order to acquaintance with latest global trends, ensure good coordination with international partners, gain an oversight of international best practices, enhance education and awareness level of DM personnel in compliance of international commitments and to add country voice in international awareness programs etc, NDMA is closely working with other international organizations for building capacity of various disaster management institutions in the country via foreign training, courses, seniors, workshops, exhibitions and symposiums etc. Though, NDMA does not possess dedicated funds for such activities, however these arrangements are usually made with

foreign / UN /NGOs assistance. Brief summary of data compiled from 2009-2016 is given below: -

Table:4.1.4 (a) Summary of Foreign Training / Courses

Year	No Courses	No Days	No Participants	Name of Countries(excl repetition)
2008-9	37	385	46	USA, China, Japan, India, Bhutan, Tehran, Geneva, Thailand, Bangkok, Turkey, Indonesia Singapore, Malaysia, Srilanka, Korea , Nepal.
2010	47	774	60	Austria, Japan, Thailand, Switzerland, India, Singapore, Korea, Germany, Nepal, USA, Bhutan, Egypt, Uzbekistan, Kazakhstan, Bangkok, Malaysia, Egypt, China.
2011	45	326	77	Indonesia, Philippines, Korea, Jordan, Indonesia, USA, Geneva, Thailand, Sri Lanka, India, Hawaii, Austria, South Korea, Geneva, Thailand, UK, Nepal, Singapore, Turkey, Germany.
2012	01	180	04	Japan
2013	25	180	28	Thailand, Japan, USA, Azerbaijan, Afghanistan, Mongolia, Turkey, India, Switzerland, Germany, China.
2014	31	163	35	Australia, India, England, Ethiopia, Nepal, UK, Japan, Thailand, China, Zambia, Azerbaijan, Kazakhstan, China, Tehran, UK, Afghanistan, Philippines, Peru.
2015	27	126	36	France, Nepal, Bhutan, USA, Japan, Thailand, Oman, Afghanistan, India, China, Tajikistan, Thailand, Malaysia.
2016	69	687	85	Thailand, Nepal, Turkey, USA, Germany, Iran, Marrakesh, India, Kazakhstan, Japan, China, Korea, Philippines, UK, Indonesia, Sri Lanka, Austria, Vietnam, Singapore, Geneva, Switzerland, Mozambique, Pakistan, Zambia.
Total	351	2,182	371	122

The aforementioned courses/training/ workshops also included regional and global commitments (SAARC / ADRC / ECO / UNESCAP / CDKN / GPDR etc.) and have covered various areas of disaster management like: -

- Disaster Risk Reduction
- Climate Change
- Tsunami Warning
- Tsunami Risk Assessment
- Disaster Response and Recovery
- Crisis Management
- Emergency Relief Management
- Earthquake Disaster Emergency Response
- Earthquake Risk Mitigation
- Satellite Remote Sensing
- USAR Training
- Mainstreaming DRR
- Making Cities Resilient
- Civil-Military Emergency Preparedness
- Public information and Media Communication
- Flood Control and Disaster Risk Reduction
- Chemical Safety and Security
- Geo-informatics and Disaster Management
- Civil Defense and Preparation of Civil Societies.

3.1.5 NDMA Initiatives on School Safety:

NDMA has recently achieved a milestone by taking a lead role through launching of pilot project of Pakistan school safety Framework in 68 selected public and private schools across the country. Pakistan School Safety Framework pilot program aims to implement school safety in all schools of Pakistan in order to prepare effectively against natural or man-made hazards. These schools were selected with the involvement of the education departments and secretariats of the private school systems and are based at Peshawar-Kp, Lahore-Punjab, Karachi-Sindh, Quetta-Balochistan, Islamabad-Federal Capital, Muzaffarabad-AJK and Gilgit-Gilgit Baltistan.

The Gender and Child Cell (GCC) of the NDMA, with the support of UNICEF and British Council has already completed the first phase of Pakistan School Safety Pilot Program in which 30 master trainers were trained at Lahore. In the Second Phase, 209 teachers from each of the nominated 68 schools were trained by the Master Trainers and equipped with thorough knowledge and practical exercises pertaining to school safety. The third phase of the Pilot Program was held in January 2017 in which the trained teachers have further developed respective school safety plan, raise School Safety Organizations, undertake the self-assessment of the School Safety Standards in accordance with Pakistan School Safety Framework and also prepared school community for response against disasters in respective schools.

The Pakistan School Safety Framework is developed after a series of National level consultative meetings with government and private sector stakeholders and it was also reviewed by international consultants. The Comprehensive School Safety Framework when finalized will provide a much needed direction for disaster risk management, especially to be prepared for effective and efficient response against natural or man-made. It is one of the effective tool to create education and awareness against disaster and will provide contribution in disaster risk reduction at grass route level.

3.2 Initiatives by Provincial Authorities(PDMAs):

Like National Authority, Provincial Disaster Management Authorities(PDMAs) as per law are also mandated to take necessary steps for promotion of education, training, and awareness in the field of disaster. Though, PDMAs are still passing through it evolutionary period in context of DM System in Pakistan, however, their contribution in education, training and awareness is progressing. They have generally contributed in: -

a. Preparation of Plans:

Necessary plans and documents like response plans, monsoon, flood and cyclone contingency plans and some other publications have been prepared at provincial level by PDMAs. While provincial disaster risk management plans are yet to be prepared. Moreover, some districts have also prepared their plans under One UNDRM initiatives at Punjab, KP, Balochistan, Sindh, AJK and Gilgit.

b. Celebration of National Disaster Awareness Day 8th October:

National Disaster Awareness Day 8th October is regularly celebrated by PDMAs at their respective provincial headquarters. Celebration of awareness day usually get wide attention of masses , especially from academia via print, electronic and social media and participation etc.



c. Hazard Specific Publication and Studies:

Hazard specific publications, material and studies like heat waves, earthquake and landslide etc. prepared by PDMAs and distributed among the relevant organizations.

d. Collaboration with Academia:

Some PDMAs have established collaboration with academia and education institutions for promotion of disaster risk reduction and have also signed MoU for disaster training, degree and certification courses in disaster management.

e. Media Interaction:

Provincial Disaster Management Authorities are actively engaged media, especially the local media for dissemination of disaster information and updates. Sequel to this, number of press releases and news items have been published with wide coverage.

f. Community Awareness Activities:

PDMAs have also organized number of community awareness programs on various disaster themes like drought, tsunami, heat waves, avalanches, be-volunteer, epidemic and earthquake etc.

g. Simulation and Disaster Drills:

Usually PDMAs organize simulation and disaster drills with collaboration with NDMA and other donors organizations, which has created good amount of disaster education and awareness among the general public.

h. Disaster Management Exhibition:

PDMA, Khyber Pakhtunkhwa in collaboration with Centre for Disaster Preparedness and Management(CDPM), University of Peshawar organizes Disaster Management Exhibition on yearly basis at the university campus to aware students of the university, general masses, public & non govt. organizations working in disaster management about disaster risk reduction. The Authority has also undertaken following soft measures for disaster risk reduction: -

- (1) Strengthened capacity of civil defense department in 16 Districts.
- (2) Rescue 1122 & Civil Defence has been placed under RR&S Department.
- (3) Capacity Building of DDMUs, Line Departments & Districts
- (4) Training of Boats operators of Police, Rescue 1122, Irrigation and Civil Defence.

i. Similarly, PDMA Punjab has organized number of workshops on different disaster themes like: -

- (1) Contextualization of Global Minimum Standards for Child Protection in Humanitarian Action (2015)
- (2) Child Protection in Disasters (2012).
- (3) DRM Needs and Plans (2012), They have also published a book on “Dengue, Prevention & Control. Publication of this book is one of the commendable effort by PDMA Punjab to creating mass awareness for precautionary and preventive measures against the outspread of dengue through the exemplary Lahore Model of saving precious lives.

3.3. Initiatives by Education Institutions / Academia:

- a.** One of the key aim of education is to give all citizens the necessary skills and values to improve their quality of life. Education is considered a driven force for any societal change and shaping innovative ideas. The role of education institutions in promoting disaster education and awareness for disaster risk reduction is internationally admitted fact.

Education institutions and academia, through number of initiatives including curriculum development, imparting of knowledge, creating mass awareness and conducting quality research and drills etc. contribute a lot in promoting disaster risk reduction. Besides, others functions, these institutions can contribute in: -

- (1) Education& promotion of research in DRR
- (2) Policy advice to the Government

- (3) Capacity building of line agencies and organizations
- (4) Serve as evacuation and safe shelters.
- (5) Disaster management information center where data base could be maintained on population, health, institutions etc.
- (6) A Centre for learning and counseling.
- (7) Training for DRM volunteers, village council members, teachers, govt. officials etc.

b. Disaster awareness education is also helpful for educational institutions and academia itself on account of various reasons including: -

- (1) It helps to safeguards institution against disaster
- (2) It creates sense of protection among students, teachers and parents.
- (3) It provides contemporary and relevant information about local environments.
- (4) It prepares for participation in both pre and post disaster activities of the affected/vulnerable community on a wider scale.
- (5) It contributes past experience with recent developments in technology to combat disaster.
- (6) It promotes informed decision-making in the event of a disaster.

c. In Pakistan, though disaster education is not yet adopted in the curriculum, especially at schooling level, however, at academia level, some universities have already been started disaster management courses like: -

- a. MS. / M.Phil. In Disaster Management.
- b. Graduate / Honors level Degree in Disaster Management.
- c. Postgraduate Diploma (PGD) in Disaster Preparedness and Management (DPM).
- d. Honor degree(MBAs)
- e. Certification courses.
- f. Demand oriented courses.
- g. Training courses etc

d. Presently more than 7 x universities, including following are offering courses in disaster management: -

(1) Centre for Disaster Preparedness and Management(CDPM):

Keeping in view the plethora of natural hazards in Pakistan in general and the Province of Khyber Pakhtunkhwa in particular, the University of Peshawar established the Centre for Disaster Preparedness and Management (CDPM) in 2008 in collaboration with the

German Technical Cooperation (GTZ) and ICIMOD. The Centre has been established under the faculty of Life and Environmental Sciences. The mandate of the CDPM is disaster management education, research and policy advice to the government. The CDPM, University of Peshawar, has the honor to stand as the first ever institution in the public sector, solely dedicated to disaster management education and research. The Centre within a record short span of time has to its credit the initiation of multifarious programs including trainings and workshops for students, managers, practitioners, and administrators to equip them with the knowledge and skills in the field of disaster management. After successfully launching the first ever Post Graduate Diploma in Disaster Preparedness and Management in Pakistan in 2009, the CDPM has now taken the lead to offer BS, M.Sc., M.S./M.Phil. and Ph.D. programs in Disaster Management. The CDPM has the privilege to offer these courses and degree programs for the first time not only in Pakistan but in the whole of South Asia. **Currently, a total of 295 students are enrolled in various programs at the Centre. Besides,** CDPM has successfully organized as many as seven consecutive Disaster Management Exhibitions in the past seven years. Similarly, the CDPM has to its credit the organization of two International Disaster Management Conferences i.e. IDMC-2009 and 2010. The Centre has also organized more than 50 tailor-made courses on Community Based Disaster Risk Reduction, Emergency Response Management, Disaster Risk Reduction, Application of GIS and Remote Sensing in Disaster Management, Disaster Risk Assessment, Climate Change Adaptation, Disability and Disaster, Triage and Ethics in Disasters, Child Friendly Disaster Management, Mainstreaming DRR into School Curriculum, Gender and Disaster Management, First Aid and Fire Fighting for various professionals, academicians, Disaster Managers, community members, district administration and volunteers of various national & international organizations.

(2) Military College of Engineering(MCE), NUST, Risalpur Nowshera KP:

As Pakistan started working on formulation of its national disaster management policy after Kashmir Earthquake of 2005. Establishment of National Disaster Management Authority (NDMA) and its subsidiary organizations at provincial and district level have brought the paradigm shift from relief oriented approach to prevention, mitigation, and preparedness. Sequel to this, NUST has initiated launching of vertically tiered Post Graduate (PG) programs in Disaster Management in MCE in August 2012. NUST has

recently signed a MoU with AIT Thailand for collaboration in Disaster Management which will help in making the program more useful and acceptable at international level.

Admission of 23 students with variety of backgrounds ranging from engineering to business administration and basic/social sciences in the first year shows the popularity and success of newly launched programs. MCE offering following programs: -

- (a) PG Certificate of one semester duration or completion of nine credit.
- (b) PG Diploma of two semester duration or completion of 18 credit hours.
- (c) MS Degree of 1.5-year duration on completion of 24 credit hours of coursework and 6 credit hours of research. Maximum time for completion of MS is five years.

(3) Disaster Research Institute(DRI), Preston University, Islamabad:

The Disaster Research Institute (DRI), Preston University was established in November 2005, with a view to deal with acute humanitarian and social problems arising out of natural disasters such as the devastating earthquake of October 2005 that hit Northern Pakistan. DRI is actively involved in research in various areas related to Disaster Risk Mitigation and Management. It has also mandated itself to impart professional training to employees of institutions engaged in Disaster Mitigation, Disaster Risk Reduction and Disaster Risk Management, and also to individuals keen to enter this important field. The program aims to address the important aspects of Disaster Risk Mitigation, Disaster Risk Perception and Preparedness which is being achieved through mass awareness campaign, trainings, workshops and seminars. Research is a main focus of DRI and a lot of emphasis is being placed on this area. DRI of Preston University is presently offering following disaster related programs:

- (a) MSc in DRM (66 x credit hours).
- (b) Diploma in DRM (25 x credit hours).
- (c) MSc. In Occupational Health and Safety (66 x credit hours).
- (d) MSc. In Environment Management (66 x credit hours).
- (e) Certification Courses.

Since its establishment, DRI has **awarded 212 x degrees, 169 x diplomas and 400 x certification courses** in disaster risk management to various student from different parts of the country.

- e. Brief summary of data collected from more than 7 x universities and institution is consolidated as below: -

Sr	Category	Nos
(1)	No Universities / institution offering Master Degree /Courses / diploma/certificates.	07+
(2)	No student awarded Degree in Disaster Management	640+
(3)	No student awarded Graduate Degree in Disaster Management	500+
(4)	No student awarded Certificates etc. in Disaster Management	356+
(5)	No of Seminars conducted on disaster	100+
(6)	No of yearly based seminars/exhibitions	25+
(7)	MoU/Agreement with DM Institutions	07+
(8)	No of Awareness drills/courses conducted	100
(9)	No of Outreach activities in Communities	10+
(10)	No of research work /studies conducted on disaster	320+
(11)	No of planned activities	40+
(12)	Academia involved in Assessment of Earthquake Preparedness, Community with Flood Risk, Natural and Urban Hazard Study, Translation, Hazard Specific Study, and post disaster impact etc.	05+

Note: + sign indicates that the actual data might be more as all information from all institutions could not be obtained.

4.1. Initiatives by other Relevant Federal and Provincial Departments / Institutions:

There are certain organizations, which are also actively engaged in promoting disaster education, training and awareness. It is felt that their role and contribution may also be highlighted in the subject study.

4.1.1 Earthquake Reconstruction and Rehabilitation Authority (ERRA):

Earthquake Reconstruction and Rehabilitation Authority (ERRA) was established on October 24, 2005 to take up the mammoth task of rebuilding in the earthquake affected regions spread over 30,000 square kilometers of nine districts of Khyber Pakhtunkhwa and AJ&K. ERRA's mission is to "Convert this Adversity into an Opportunity" by reconstructing the lost and destroyed facilities, while following highest standards of reconstruction and rehabilitation with the obligation to "Build Back Better". ERRA has intervened in 12 different sectors, 3 cross-cutting programs, and is required to

reconstruct over 14,000 projects, (at the cost of over US \$ 5 billion). Beside the assigned mammoth reconstruction task, the Authority has also contributed in earthquake education and awareness as illustrated below: -

Sr	Category	No	No Participants
a.	Courses**	05	60
b.	Training all types	50	15,000
c.	Training of emergency responders	01	40
d.	Community Training	303	19,276
e.	Awareness campaign / program	80	15,000
f.	Mock exercises / Drills / Walks	150	8,122
g.	Seminars / exhibitions	04	1,000

Sr	Area of Publications	Total No
1	Policy Documents and Plans	18
2	Assessment / Survey (All Types)	05
3	Manuals, Guidelines and Booklets	15
4	Various Reports	26
5	Disasters Preparedness, DRR/DRM and Response	1
6	Gender and Other Vulnerable Groups	2
7	Floods, Cyclone, Tsunami and GLOF / heat wave	3
8	Earthquake, Landslide and Avalanche	5
9	Education and School Safety	2
10	Recovery and Rehabilitation/Reconstruction	4
11	Miscellaneous	28

ERRA has also signed MoU with Universities for promoting disaster education. They have also conducted CBDR activities in various school and colleges. They have also portrayed earthquake resilience imitative ad structure through seismic re-construction of damaged building.

4.1.2 Punjab Emergency Service - Rescue 1122 /Service Academy Lahore:

The Punjab Emergency Service (Rescue 1122) is the leading emergency humanitarian service of Pakistan with infrastructure in all 36 districts of Punjab and is providing technical assistance to other provinces. Rescue 1122 has rescued millions victims of

emergencies through its Emergency Ambulance, Rescue & Fire services and Community Emergency Response Teams while maintaining its average response time of 7 minutes and standards in all districts of Punjab province with an estimated population of over 100 million.

In order to ensure sustainable human resource development in this long neglected field of emergency management, Emergency Services Academy was established in accordance with section 14 of the Punjab Emergency Service Act 2006. This Academy

was started with extremely limited resources in 2006 at Lahore.

This Emergency Services Academy is not only training staff for all Districts of Punjab but has become a national center for training



and has also training to Emergency staff from other provinces including Khyber Pakhtunkhwa, Gilgit Baltistan, AJK, Sindh and Balochistan.

The Instructors for this Academy were trained through the Enhancement of Emergency Response (PEER) program of USAID to conduct Medical First Responder (MFR), Collapsed Structure Search & Rescue (CSSR) courses, Training for Instructors (TFI) and Community Action for Disaster Response (CADRE) courses. The training of Instructors for Fire training was achieved as a result of the MoU between the Strathclyde Fire & Rescue Service of Scotland, United Kingdom and the Punjab Emergency Service. At present, the Academy is mainly conducting a six months Basic Rescue Course which includes emergency Medical, Rescue, Fire and physical fitness training. The Academy also conducts specialized courses like Medical First Responder, Collapsed Structure Search & Rescue, Training for Instructors, several short courses and refresher courses for the career development of Rescuers.

Emergency Service Academy, with more than 10,000 personnel, has conducted numbers of emergency trainings and community awareness campaigns in all district of the Punjab. Brief summary of their activities includes: -

- a. Conduct 14 x courses with participation of more than 7,000 officials.
- b. Conducted 11 x training with participation of more than 10,000 officials.
- c. Conducted 12 x training on emergency responders (ambulance, fire, rescue etc) with more than 10,000 participations.
- d. Conducted community training in all over the province.
- e. Conducted numbers of community awareness campaigns.
- f. Regularly conducting drills and exercises.
- g. Celebration of World Fire Day.
- h. Also prepared various ICT material for use in emergencies.

4.1.3 Secretariat Training Institute (STI), Establishment Division:

Secretariat Training Institute (STI) is established in January 1956 with primary mandate to build capacity of Federal Government Employees. The training has two main stream i.e. Specialized Trainings and General Capacity Building. STI is the specialized training academy for CSS probationers belonging to Office Management Group (OMG); whereas different capacity building courses are designed and held round the year for officials and officers in BS-17 to BS-19 belonging to federal government.

Though, STI is providing very useful training to the government employees on various aspects, excluding courses on disaster management. However, in view of its importance, they have recently (2016) taken the initiatives and has conducted 2 x courses in disaster management with 77 x participation. They have also planned courses on disaster management in future which will be helpful, especially for federal government employees to add their voice in disaster risk initiatives in their respective circles.

4.1.4 Emergency and Disaster Management Directorate of CDA:

Capital Development Authority(CDA), is the Metropolitan Secretariat of the federal capital at Islamabad Capital Territory(ICT). Sequel to 2005 Earthquake, Emergency and Disaster Management Directorate was established in 2008. The EDMD is mandated to Ensure Safety of all Residents of Islamabad from any Natural and Human Made Disaster through “Disaster Risk Reduction Measures” and “Immediate and Effective

Response” in case of disaster to minimize loss to life and property. The Directorate with a strength of 559 persons comprises of a well-equipped fire brigade, well trained team of “Searchers and Rescuers”. EDMD activities include: -

- a. Safety audits of public use building to reduce risk
- b. Short response time of 5-8 minutes for fire vehicles to reach the site of incident.
- c. Raising of dedicated Urban Search & Rescue Team (USAR) in support of NDMA.
- d. Establishment of Emergency & Disaster Management Academy (Ad hoc basis) at Islamabad, which upon, completion will serve as training facility against all types of disaster.
- e. A rubble field has already been built for training of USAR team. A temporary structure has been built where training has already started, over 150 firemen and 27 wireless operators have successfully completed their training from the academy.

4.1.5 Civil Defence:

Civil Defence is also one of the effective organization which play an important role in protecting of people, property and other assets during emergencies. The aim of civil defence is to:

- a. To reduce to the minimum, the number of casualties in the people
- b. To minimize damage and dislocation to essential services.
- c. To ensure uninterrupted production in mills and factories.
- d. To provide active civilian support to war efforts.
- e. To maintain in the people a high standard of morale and a strong " will to win".

Since, civil defence measures could not be taken anywhere, as it requires tremendous resources and expense, therefore General public are usually involved in a disciplined manner / on voluntarily basis to take full civil defence measures during war/ peace times. In order to make a strong Civil Defence structure, there is an urgent need to make awareness among the students of schools, colleges and of other such institutions with regard to existence of Civil Defence and its important / unavoidable role in disaster management. Civil Defence has following training academy and training centers across the country: -

- (1).National Institute of Fire Technology, Islamabad.
- (2).Civil Defence Training School Faisalabad.
- (3).Civil Defence Training School Lahore

- (4).Civil Defence Training School Karachi.
- (5).Civil Defence Training School Quetta.
- (6).Civil Defence Training School Peshawar .
- (7).Civil Defence Training School Muzaffarabad_.
- (8).Civil Defence Academy Lahore.

The aforementioned training schools / academy are providing training and courses on various themes of disaster especially on fire safety and protection. **During the year 2012-2016, Civil Defence has trained more than 23,000 people.**

4.1.6 Similarly, other institutions like Pakistan Computer Bureau(PCB), Ministry of Information Technology, Islamabad, CDA Training Academy (CTA), Islamabad, National Training Bureau(NTB), National Centre for Rural Development (NCRD), National School of Public Policy (NSPP) and some other provincial institutes are doing contributing in disaster education and awareness in limited extent, however, they may include disaster related courses in their manual.

CHAPTER # 05

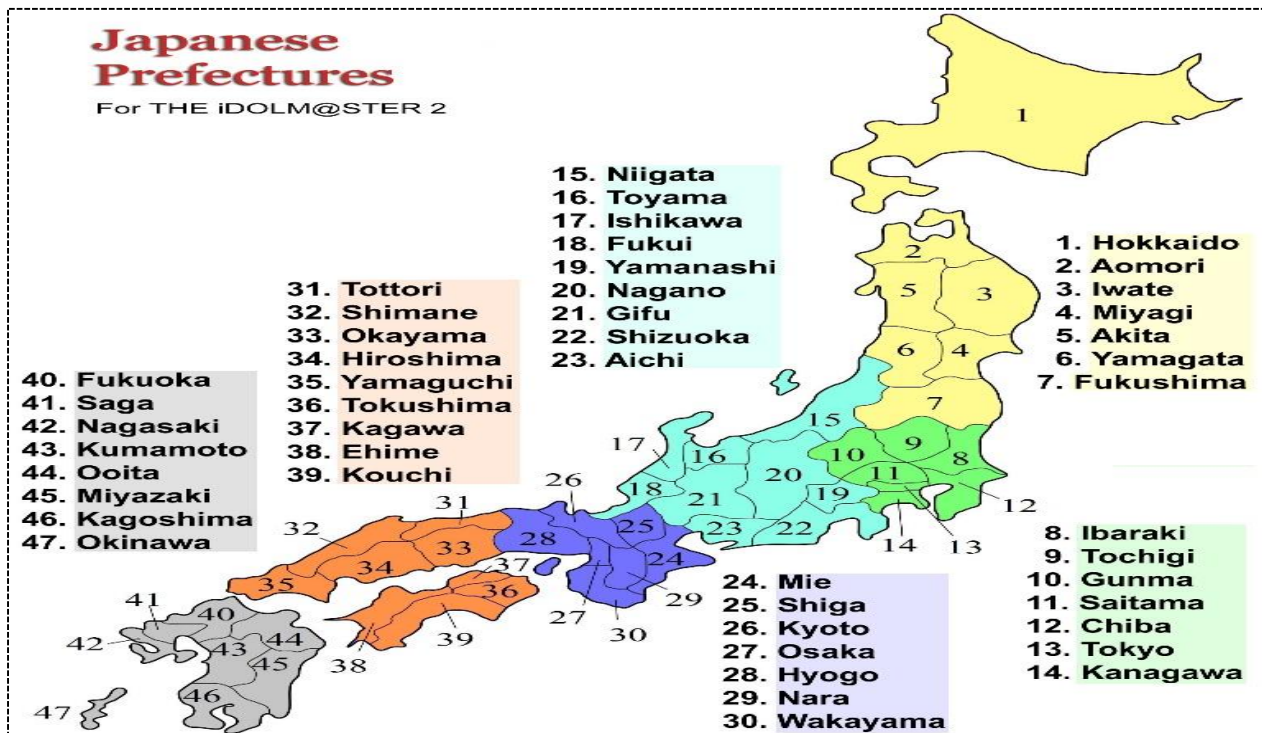
JAPAN DISASTER MANAGEMENT MODEL

FOCUS ON DISASTER EDUCATION AND AWARENESS

5.1. General Information:

Japan is an island nation in East Asia. Located in the Pacific Ocean, it lies to the east of the Sea of Japan, People's Republic of China, North Korea, South Korea and Russia, stretching from the Sea of Okhotsk in the north to the East China Sea and Taiwan in the south. With over 127.77 million populations, Japan has the world's 11th largest populated country.

Japan consists of 8 x Zones and 47 x Prefectures, each overseen by an elected governor, legislature and administrative bureaucracy. Each prefecture is further divided into cities,



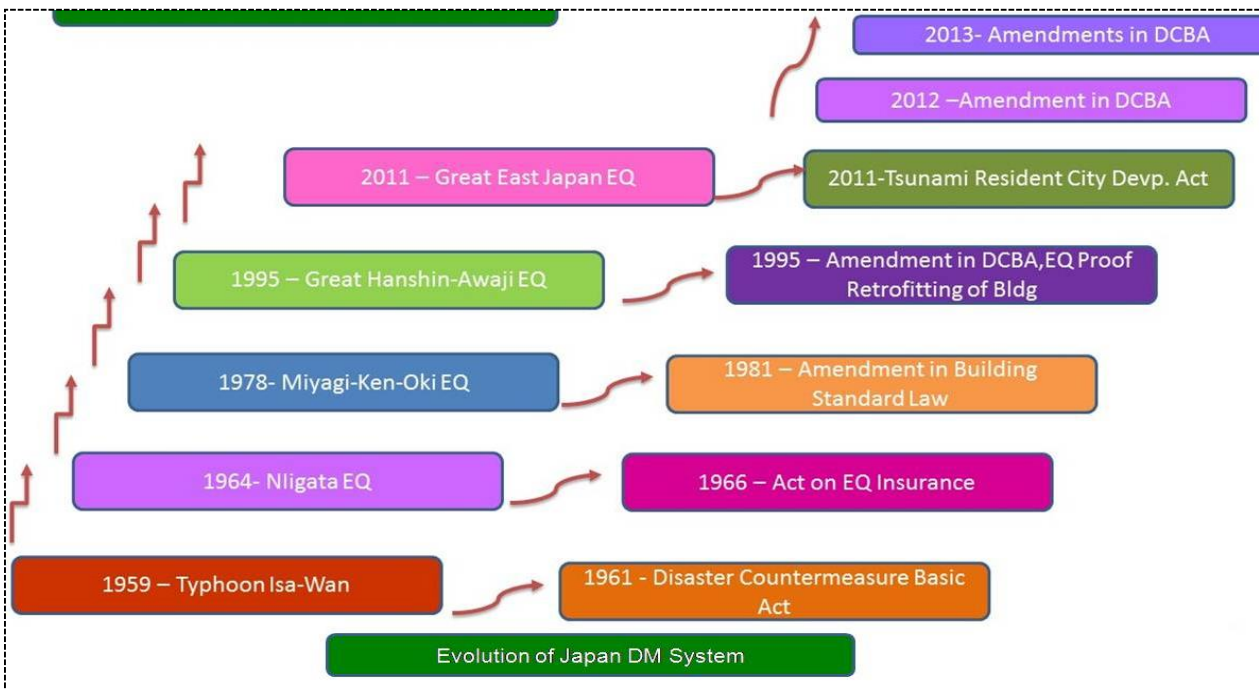
towns and villages. About 73 percent of Japan is forested, mountainous, and unsuitable for agricultural, industrial, or residential use. As a result, the habitable zones, mainly located in coastal areas, are highly populated. A number of factors contribute to the high incidence of natural disasters in Japan. First, the country is subject to extreme climatic variations, such as seasonal rain fronts and typhoons, as well as heavy snowfall on the Sea of Japan side of the archipelago. Second, Japan's topography is rugged and there are many faults and steep inclines. Third, Japan is located in the Pacific earthquake belt and

is frequently struck by earthquakes, while its complex coastline is vulnerable to tsunamis. And fourth, Japan is located in the circum-Pacific zone, in which almost all the volcanoes of the world are concentrated, and has 67 active volcanoes-one-tenth of the world total. The country has experience number of unpredicted events of natural disaster such as: -

- Earthquakes
- Tsunamis
- Volcanic Eruptions
- Typhoons (July – October)
- Heavy Monsoon Rains (May)
- Floods
- Landslides
- Snow Avalanches

5.2. Evolution of Disaster Management System in Japan:

In Japan, the DM system has been developed and strengthened following the bitter experience of large-scale natural disasters and accidents over the years. The turning point for strengthening disaster management system came into effect in response to the immense damage caused by the Typhoon Ise-wan in 1959, which lead to the enactment of the o Disaster Countermeasures Basic Act in 1961.



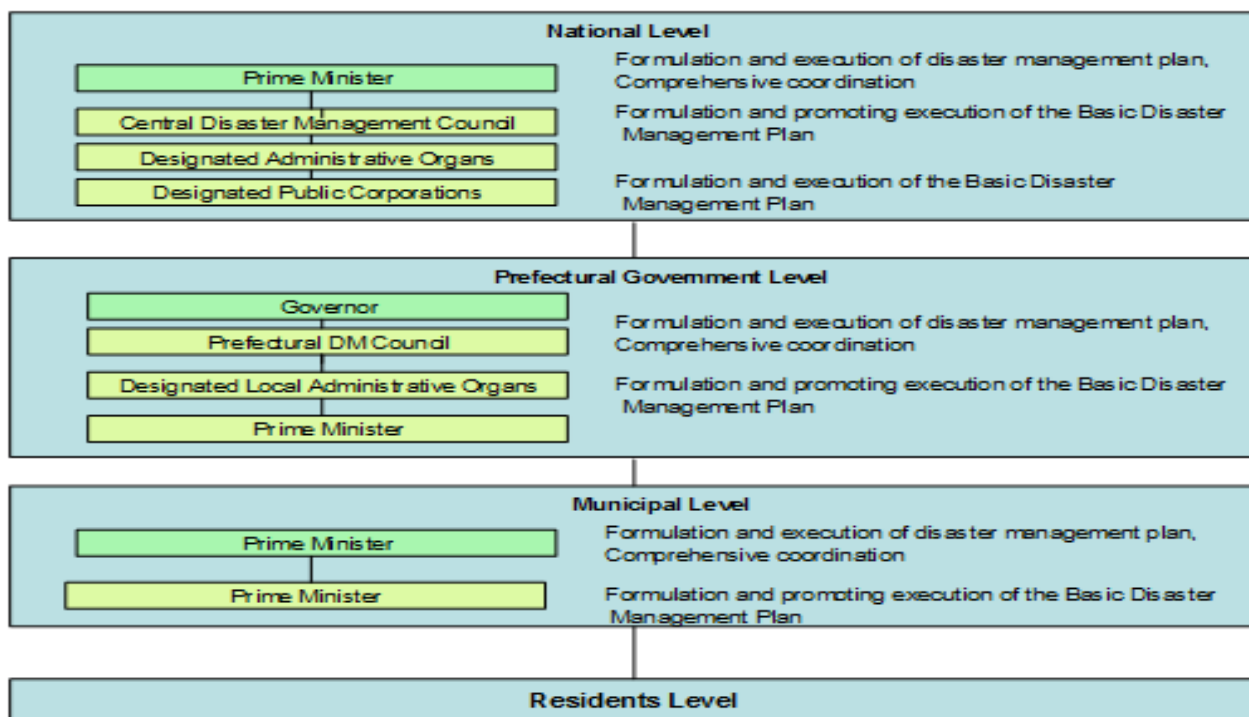
Thereafter every disaster led to learning and experience and it led to passing of new legislation. There is almost a separate legislation for each disaster and separate legislation

for every aspect of disasters such as prevention, preparedness, response, rehabilitation and recovery, building standard, financial measures, earthquake insurance, etc.

The DM system has further been strengthened following the lessons learnt from large-scale disasters such as the Great Hanshin-Awaji Earthquake, 1995. The learning of the 2011 Great East Japan Earthquake and Tsunami (GEJET) and nuclear disaster has been incorporated in the Disaster Countermeasures Basic Act by amending it in June, 2012 and by making changes in Basic Disaster Management Plan in December, 2011. The most notable piece of legislation is the Act passed in 2002 namely ‘Act on Special Measures for Promotion of Tonankai and Nankai Earthquake Disaster Management’. The country is expecting big earthquake which may arise out of Tonankai and Nankai troughs and this legislation aims at reducing possible impact from these earthquakes and preparing the country to face them.

Japan has three (3) administrative levels of governance; national, prefectural and municipal. Each level of governments has its own disaster management organizations, policy frameworks and budgets. When disasters occur, municipalities respond first. In case

Responsibilities by Administrative Level



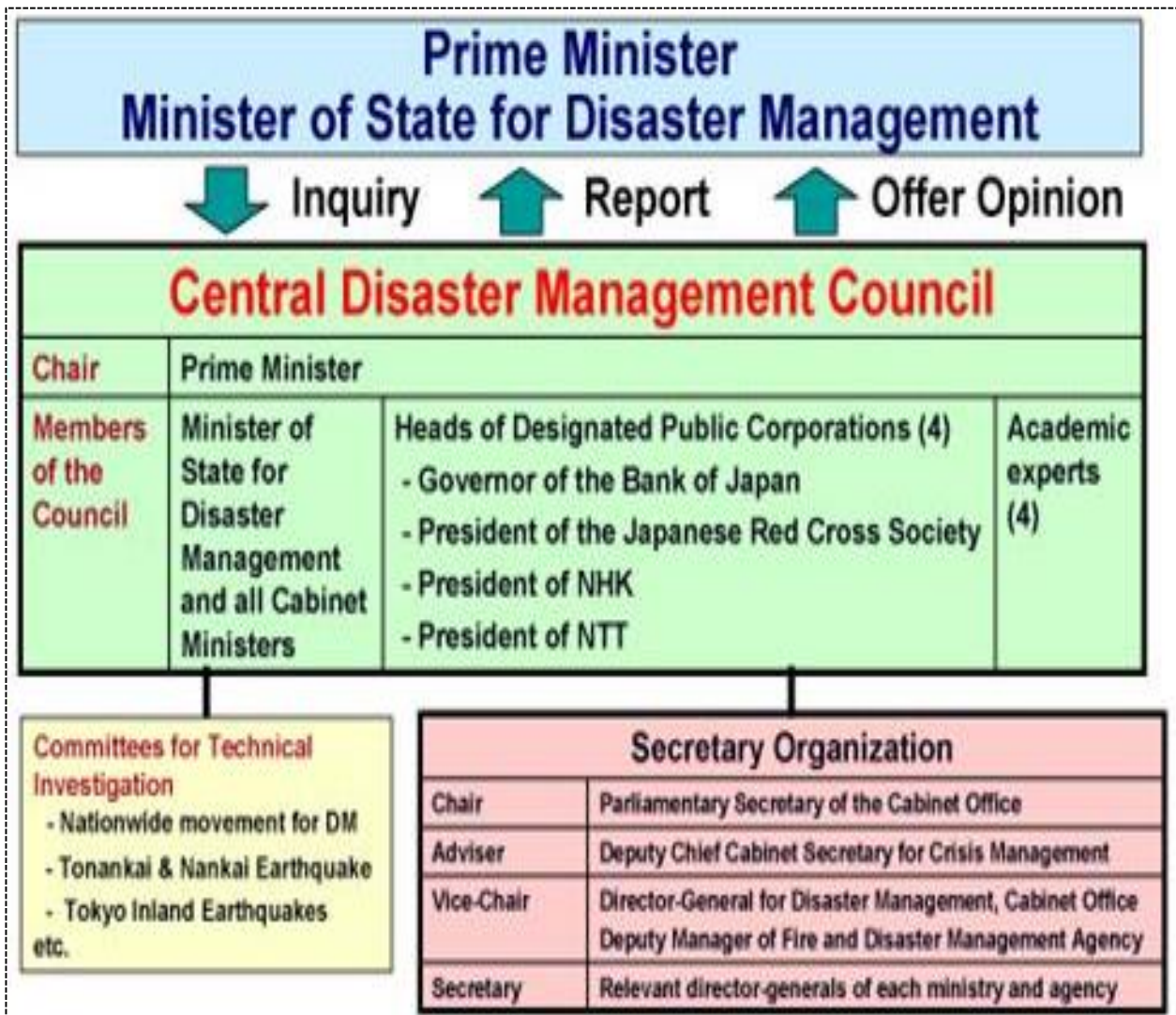
disasters are large in scale beyond their capacity, national and prefectural governments provide every possible support.

a. National Platform for Disaster Risk Reduction:

Under the Disaster Countermeasures Basic Act, the Central Disaster Management Council was formed, its brief being to ensure the comprehensiveness of disaster risk management and to discuss matters of importance with regard to disaster management.

The council consists of the Prime Minister, who is the chairperson, Minister of State for Disaster Management, all ministers, heads of major public institutions such as the Bank of Japan, the Japanese Red Cross Society, NHK (public broadcasting corporation) and NTT (telecommunication company) and some academic experts.

Structure of Central Disaster Management Council



The duties of the Council are: i) formulation and promotion of implementation of the Basic Disaster Prevention Plan and Earthquake Countermeasures Plans; ii) Formulation and promotion of implementation of the urgent measures plan for major disasters; iii) Deliberating important issues on disaster reduction according to requests from the Prime Minister or Minister of State for Disaster Management (basic disaster management policies, overall coordination of disaster countermeasures and declaration of state of disaster emergency), and iv) Offering opinions regarding important issues on disaster reduction to the Prime Minister and Minister of State for Disaster Management.

The Council organizes the Committees for Technical Investigation on the themes as listed below for carrying out the duties: -

- (1). On countermeasures for the Tonankai and Nankai Earthquakes (Oct 2001).
- (2). On lessons learned from past disasters (July, 2003).
- (3). On the promotion of Nationwide Movement of DM (Dec 2005).
- (4). On evacuation measures for the Tokyo Inland Earthquake (Aug 2006).
- (5). On large-scale flood countermeasures formed (Aug 2006).
- (6). On countermeasures for the Tokai Earthquake (March 2002/ May 2003).
- (7). On information sharing for disaster management (Oct 2002/July 2003).
- (8). On the promotion of DR activities by the private sector (Sept 2003/Oct 2005).
- (9). On countermeasures for the Tokyo Inland Earthquake (Sept 2003 /July 2005).
- (10). On countermeasures for the Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches October 2003 / January 2006).

b. National Level Organizations for Disaster Management:

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.

Within the Cabinet Office, which is the secretariat for the Central Council, the Minister of State for Disaster Management has been assigned as the Minister State for Special Missions to take lead in the responsibilities for disaster reduction in the Natural Government.

The Minister is assisted by the department of the Cabinet Office Director-General for Disaster Management. The Director-General has mandated to handle planning and central

d. Disaster Management at Municipal Level:

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

e. DM Planning System:

Japan has adopted well defined planning system for disaster management in the country likely: -

(1) **National Level: Basic Disaster Management Plan** - This plan is a basis for disaster reduction activities and is prepared by the Central Disaster Management Council based on the Disaster Countermeasures Basic Act, 1961. The Basic Disaster Management Plan states comprehensive and long-term disaster reduction issues such as disaster management related systems, disaster reduction projects, early and appropriate disaster recovery and rehabilitation, as well as scientific and technical research.

The first Basic DMP was prepared in 1963 followed by routine updating, however it was entirely revised in 1995 based on the experiences of the Great Hanshin-Awaji Earthquake. The plan was more refined in December, 2011 based on the recommendations from the Central Disaster Management Council's Technical Committee for reviewing earthquake and tsunami measures based on the lessons from the GEJET. The plan, it has been decided, shall be continuously revised in future in order to reflect further policy development based on the GEJET and other disasters.

(2) **Department/Organizational Level: Disaster Management Operation Plan** - This is a plan made by each designated government organization and designated public corporation based on the Basic Disaster Management Plan.

(3) **Prefectural/Local Level: Local Disaster Management Plan** - This is a plan made by each prefectural and municipal disaster management council, subject to local circumstances and based on the Basic Disaster Management Plan.

The plans at all levels have been prepared and regularly revised and updated, incorporating the lessons learnt and changes made in the Basic DMP prepared at the national level. DMP is the main document which is referred to for disaster management and emergency response.

5.3. Disaster Education and Awareness in Japan:

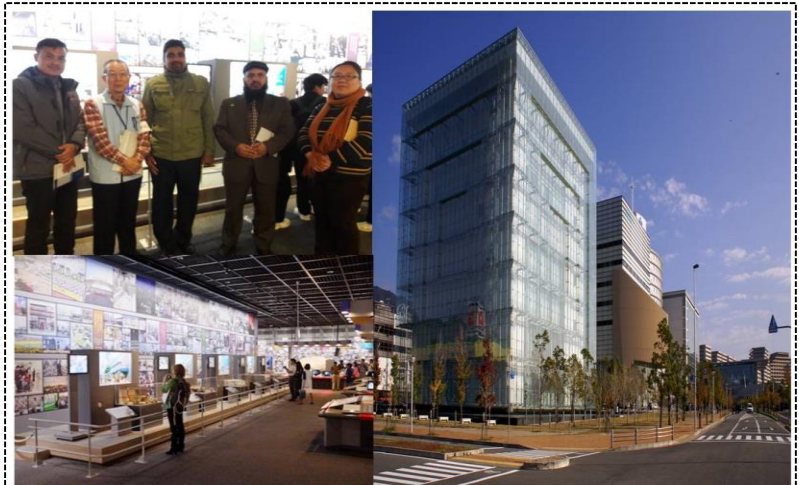
In Japan there are number of organizations and institutions, who really contributing in the overall disaster education and awareness. Some of them are highlighted as under: -

a. **The Great Hanshin-Awaji Earthquake Memorial/ Disaster Reduction and Human Renovation Institution(DRI):**

The DRI, established in Hyogo Prefecture in April 2002 with the support of the central government, is operated by the Hyogo Earthquake Memorial 21st Century Research Institute. The mission is to mold a culture of disaster awareness, enhance local capacity for disaster management, support the development of disaster management policies, and contribute to creating civic collaboration on safety and security as well as a society with reduced disaster-related risks. The facility providing six functions namely: -

(1) **Museum exhibits** - The exhibits provide accessible information on experiences and

lessons learned from the Great Hanshin-Awaji Earthquake. The facility is frequently used by common people, survivors, researcher, city residents, international participants, school/college students and volunteers.



(2) **Collection and preservation of source documents and materials** - The facility has preserved real scenario from memories of the Great Hanshin-Awaji and showcased number of memorial posts and events. DRI continuously enhancing collection and materials pertaining to earthquake disaster.

(3) **Training of Disaster Management Practitioners** - In order to train local government's disaster management officials and other key personnel working in disaster response, DRI provides specific information on experiences from the Great Hanshin-Awaji Earthquake. DRI also systematically and comprehensively provide practical knowledge and techniques for disaster management that are based on the latest research findings.

- (4) **Research on disaster reduction and development of disaster reduction professionals** - DRI conduct practical disaster management research that helps the national and local government, communities, companies and others to formulate and implement disaster management policies and disaster response measures.
- (5) **Head quarter's assistance in disaster response** - Upon the occurrence of disaster, DRI dispatches personnel with practical experience and knowledge to disaster response centers and other locations. It also serves to provide appropriate information and advice on a disaster response, damage mitigation, restoration, and reconstruction etc.
- (6) **Exchange and Networking:** DRI provide an opportunity to improve society's disaster management capabilities through diversified network that includes government officials, researchers, citizens and companies involved in the Great Hanshin-AWAJI Earthquake or in disaster management, as well as by providing a venue for international cooperation.

b. Hyogo Prefectural Emergency Management and Training Center:

The prefecture has set-up Hyogo Wide-Area Emergency Management Network at four different locations of the prefecture to stock-pile essential relief material and Hyogo Prefectural Emergency Management and Training Centre located at Miki General Disaster Prevention Park, few kilometers away from DMC, an area which was not affected during the 1995 earthquake. It acts as a back-up center for DMC too. This facility, in normal times, is a center of training for staff on emergency management, a sports complex and storage facility for relief material. The center has the same communication and network facility as the DMC. Interestingly, the ground floors below the sitting areas of sports stadium are being used as storage spaces for relief goods. During emergencies, the entire sports stadium is converted into a central place for dispatch of relief material to the affected area of the prefecture.

c. Disaster Management Days / Weeks:

In order to promote disaster risk reduction culture, gain people confidence and cooperation, various DRR centric activities are conducted every year for active participation of masses like: -

- Japan Disaster Prevention Day - September 1
- Disaster Prevention Week - August 30 to September 5

- Disaster Management and Volunteer Day January 17
- Disaster Management Volunteers Week, January 15-21
- World Tsunami Awareness Day - November 5

The aforementioned events are very comprehensive in nature. For example, during the Disaster Reduction Day (1 Sep), an exercise by the Central Government Headquarter i.e. at the Prime Minister's Office is usually held. Where the Prime Minister and his Cabinet conducted drills by simulating response to the anticipated Major Nankai Trough Earthquake. As part of exercise, they hold meeting of Extreme Disaster Management Headquarters, extraordinary Cabinet meeting, report from Governors of affected prefecture, press conference by Prime Minister and Minister of State for Disaster Management.

During celebration of the aforementioned days and weeks and other casual events, central and local governments are usually conducting a series of activities, such as disaster prevention and exhibitions, disaster prevention seminars and disaster drills race etc. Celebration of these days / weeks divert public attention towards DRR primarily by participation of key parliamentarian and senior government officers, community involvement and wide coverage by national and local media etc.

d. Disaster Drill:

Japanese societies are moving from safer towards resilience. Most of the public and private sectors and communities as part of their disaster preparedness, regularly conducting disaster drills on various themes. During the field visit and city seeing, number of such drills were observed. Education and awareness through these drills leads towards disaster risk reduction. Such drills and exercises usually conducted on themes like: -



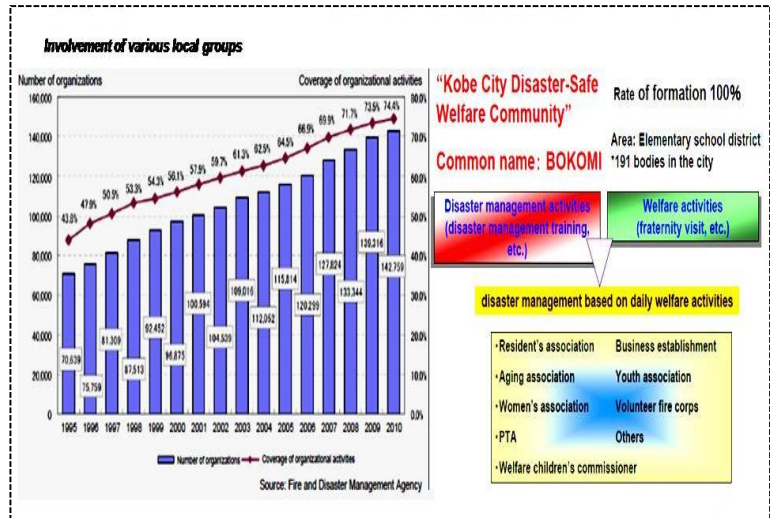
- (1) Firefighting training (bucket brigade)

- (2) Firefighting training (fire extinguishers)
- (3) Water-discharge exercises
- (4) Sandbagging training
- (5) Training on how to shut iron flood barriers
- (6) Emergency evacuation drills (for those vulnerable to disasters)
- (7) First Aid with indigenous method
- (8) Preparation of emergency latrines, rescuing from debris, victim identification, disposal pack, soap preparation and treatment of stressed people by massaging.
- (9) Ordinary life-saving training
- (10) CPR training
- (11) Injury treatment course

e. Volunteer DRR Organization / BOKOMI:

Japan Disaster Management Planning has made provision for promotion of volunteer education on a regular basis, cultivation of specialized human resources in support of volunteer activities, networking of volunteer organizations, improvement of volunteer

activity support systems and activity conditions in disasters, etc. Japanese voluntarism is one of the best DRR practice which worth replication by communities. On the occurrence of any disaster, these local volunteer/ residents forward for actions like firefighting, flood fighting,



search and rescue and first aid etc. These organizations are generally equipped with appropriate materials, equipment and with requisite skill in various aspect of disaster. The central government and local governments encouraged these groups and provide them necessary information through public relations and education and to some extent with financial subsidy (140,000 yen / year).

After the Great Hanshin-Awaji Earthquake and Kobe City Lessons from the Earthquake, the city government has focused on establishing and developing voluntary organization

for disaster prevention in communities. These Volunteer DRR organization is called Kobe Disaster Safe Welfare Community or BOKOMI (Japanese name "Bosai Fukushi Komyunithi "). The main member of these group are people from local resident association, women's association, senior citizen association, PTA members, business and member of local volunteer fire bridge. BOKOMI board members are selected from the board members of these groups and they plan BOKOMI activities. Presently only Kobe City Government has



achieved target of 75% area coverage through 191 BOKOMI organizations. Kobe City Government provide various support measure to these organizations like: -

- (1) Provide Disaster Reduction Machinery and Material (have to choose item out of pre-designated 54 items)
- (2) Partial Aid for Activities Expenses.
- (3) Training of trainers
- (4) Other support measures including dispatches of fire fighter, fire engines to disaster drills, loan of equipment, distribution of training manual etc.

Every year BOKOMI plays a central role in approximately 800 activities such as disaster reduction drills, first aid training courses, rescue drills, evacuation drills, lectures, hazard mapping, flood control drills, patrols in various areas around the city etc.

f. The Osaka City Abeno Life Safety Learning Center:

Osaka City Abeno Life Safety Learning Center located at business city of Osaka Prefecture as established after the Great Hanshin-Awaji Earthquake and Great East Earthquake. The facility is playing an important role in disaster risk reduction through education, awareness and training. People from different walk of life, business community, education sector, disaster management organization and volunteer's

organization etc. come here and get training in areas like firefighting, evacuation of people from debris, earthquake shaking, use of water pumps and smoke escape etc.

At the Centre they create real scenario of disasters like EQ magnitude 7 and then trained the participants on various possible areas of emergency like: -

- (1) Virtual Earthquake Corner - where disaster information is presented as a newscast.
- (2) Fire Prevention Corner - where they simulate various things in home and business setting that could get fire easily
- (3) Smoke Corner - Place where they simulate real smoke with escape route.
- (4) Fire Extinguisher Corner – Where the practically experience the firefighting procedure by fire extinguisher.
- (5) 119 Practical Call Corner – Where they practically experience making and receiving call.
- (6) Community Fire Fighting by Water pumps - were they simulate uses and procedure use of community water pumps.
- (7) Hazards Corner - where they simulate various possible hazard.
- (8) Experience a Magnitude 7 Earthquake- Where they passed the visitors to experience magnitude 7 earthquake intensity and shaking
- (9) Multipurpose Safety Training Room - This room has many potential uses, such as showing disaster-related films and holding lectures, orientations, and first-aid training.
- (10) First Aid Corner - The visitor will learn useful skills, such as how to stop bleeding, and set the broken bones by using available resources.
- (11) Multimedia Learning Corner - Visitor can use computers and graphic panels to look up all sort of information about earthquakes, fires, wind and flood damage.
- (12) Life Safety Equipment Room - Safety equipment of various type used in emergency situation is displayed here



This center also provides regular one-day training certification courses on monthly basis to people from different walk of life.

g. Disaster Research Institutes:

Japan is one of the most disaster prone country. They have developed well good system to promote disaster resilience in the country. The country has achieved mile stone in various areas of disaster management especially in disaster risk reduction and preparedness through specialized and focused based scientific research. Owing to its vast experience, the government of Japan is enthusiastic to impart its experience and best practices to rest of the world. Disaster Research Institutions in Japan usually cover following areas like: -

- (1) Earthquake shaking model for various structure both for public and private sector.
- (2) Liquefaction model for various structure for both public and private sector.
- (3) Earthquake sound systems for landslide.
- (4) Buoys for tsunami detections and other sea disturbance.
- (5) Lighting and metrological affect.
- (6) Disaster management support system.
- (7) Tsunami control measures.
- (8) Advanced road traffic system.
- (9) Road, sea, air traffic safety countermeasures.
- (10) Social infrastructure aging countermeasures.
- (11) The harmful hazardous material security countermeasures and social crime.
- (12) Structure measures for seismicity etc.
- (13) GIS based advance information and Early Warning etc.

h. Disaster Prevention and Business Continuity Planning:

In Japan both public and private sector doing disaster prevention by business continuity pans. A BCP (Business Continuity Plan) is a plan that lays out the actions to be taken during normal periods and the means and methods by which business continuity can be ensured in the event that the company is struck by a natural disaster or other emergency situation, so that core business operations can continue or swift recovery is enabled while minimizing the damage to the company's assets. Sequel to this Ministry of Economy, Trade and Industry, Japan has already issued guidelines for making BCP.

Through these BCPs, the employees are very much educated and aware about possible disaster risk and its mitigation and preparedness. For the very reason, they

also conduct exercises and drills. Being motivator of the idea, insurance companies also play an important role.

h. Easy Public Access to Information on Disaster and its Preventive Measures:

In Japan almost all department are mandated to provide easy access to public for any relevant information. Beside their core business, professional departments also have also their own disaster plan on their websites which are easily accessible to everyone. Moreover, Japan weather forecast page is a comprehensive disaster information publishing platform, contains meteorological information to the earthquake, volcanic eruption, marine disasters, disaster information and early warning information. The general public usually trusted it and frequently access website for various information and references.

i. Disaster Prevention Awareness and Publicity Materials:

Various awareness and publicity material are published every year by central, prefecture and city governments usually containing cartoon image, stories, graphics containing etc. to get informed masses about disaster risk reduction and necessary actions. These materials were proved more helpful for education and awareness, especially for school children.



j. Nojima Fault Museum in Hyogo Prefecture

Nojima Fault Preservation Museum is located in Awaji city in Awaji Island. It is near the northwest coast of the island, and is located about 10 km southwest of the north end of the island. The Great Hanshin Earthquake of 1995 also caused considerable damage in the south part of Hyogo Prefecture. An active fault runs from the northwest coast, through Kobe city, to Itami city at the north of Osaka city. Because the fault shifted, this great



earthquake was occurred. When the earthquake occurred, the real fault appeared on the surface of the ground at Nojima district in Awaji city. Two parts of the ground slipped about 1-2 meters each other, and one part raised 0.5-1.2 meters. Then this fault was designated as a natural monument. And the museum has been built on a part of the fault. In the museum, we can see the real fault about 140 meters long. And many photos and restored models about the earthquake are displayed. Additionally, we can experience the same quake as the Great Hanshin Earthquake in a model room. This facility is serving a great source for disaster education and awareness of people from all walk of life.

k. Community-Based Disaster Reduction Activities (Hazard Mapping):

Disaster Risk Reduction at community level is very important. Japan has established a good network of community based organizations. Usually hazard map is made with participation of the community organizations with premise to ensure that the residents must understand the hazards in their area and to take the appropriate actions when a

disaster strikes. Community leader designate various group within the community member with task to conduct “town watching” and to identify possible hazard, good and bad points for DRR, take



photos, conduct workshops and then chalk out all possible hazards with disaster risk reduction measures. Such activities not only raise local resident’s awareness capacity, knowledge of hazards, commitment of communities but also become source of feedback for governmental organization to incorporate the real experience and knowledge of communities in their detailed technical maps.

l. The Iza! Kaeru Caravan! Program:

The “Iza! Kaeru Caravan!” is a disaster prevention education event that combines local disaster drill program and “Kaekko Bazaar,” a toy exchange bazaar, created by artist Hiroshi Fuji. In this event, children learn about disaster prevention as a

continuation of play. Started in 2005, this event has been held nationwide in cooperation with various enterprises and organizations. It is basically a disaster drill program, where participants can obtain the knowledge and skills necessary for disaster preparedness, while enjoying the program. It was first conducted as an event in the Message from Kobe- Ten Years after the Earthquake project commemorating the recovery from the earthquake, which was carried out over six months from April 2005, with Hyogo Prefecture and Kobe City as the secretariat. More than 3,000 parents and children came to the Green Arena Kobe Stadium, one of the venues for the program, to participate. The number of participants exceeded the expectations of those involved, and there were large crowds of people even outside the stadium.

The iza! Kaekko Bazaar is a system in which children bring toys that they do not want any more to an event venue and exchange them for “Kaeru points”, which are a kind of children’s money unique to the event. Children can exchange their points for other toys. In the event, workshops and play corners are also set up, where “Kaeru points” are issued, aiming at promoting voluntary activities for children. The event has already been held in various areas, gaining much popularity among children.



In the iza! Kaeru Caravan! program, the Kaekko Bazaar was combined with a disaster drill program, where children could acquire wisdom and skills concerning fire extinguishing and rescue and relief, while enjoying the program as though they were playing games. This has led to the establishment of a disaster drill that children experience in a positive manner.

The Iza! Kaeru Caravan! program has been conducted more than 150 times in 20 prefectures throughout Japan, under the sponsorship of NPO Plus Arts and the joint sponsorship of NPO Plus Arts and companies and local governments, as well as by

local organizations with support from NPO Plus Arts, in ten countries overseas. There are a total of 22 programs, such as hands-on programs, quizzes, and card games. This provides organizers with many options when holding an event and can include program like: -

- (1) Toys exchange
- (2) Kaeru Points collection
- (3) Auction Participation
- (4) Disaster drills
- (5) Targeting shooting
- (6) Challenge bucket relay
- (7) Jack-up game
- (8) Picture story
- (9) First aid workshop
- (10) Soap preparation
- (11) Let's make paper plate
- (12) Quiz -which item to take
- (13) Blankets stretchers time-trial
- (14) What's in disaster prevention warehouse
- (15) Emergency toilet preparation
- (16) Disaster prevention card game
- (17) Education tools for disaster
- (18) Making flowers with message for disaster victims
- (19) Making emergency route through map etc.

The facilities and programs mentioned above are very useful for preparing the community for disaster risk reduction. During interaction with people from different walk of life during various events, field visits, training etc. they mentioned that education and awareness about disaster are very much essential to create culture of disaster risk reduction, especially resilience of community.

5.4. Role of Education Institutions in Japan:

Education institutions are considered as breeding center for innovation and sustainable changes in the societies. Moreover, students are not only vibrant source to extend learning

to their families and communities but from future point of view their capacity building and active participation in DRR related activities is very much required. Disaster education for DRR is also one of the focus point for both national and prefecture government. Due to various constraints including paucity of time and limited stay at Kobe Hyogo Prefecture, few education facilities located mainly at Kobe is focused. Some distinctive work done is highlighted below: -

a. **Role of School in Disaster Risk Reduction:**

In Japan " disaster education " is not a specific single subject unlike "arithmetic or Japanese". Disasters prevention education in Japan includes: learning about the mechanism of volcanic eruption and earthquake, the weather, etc. in "nature study" lessons; learning about natural disaster prevention, the role of police, the fire service and community-based disaster prevention activities, etc. in "social studies" lessons; and learning about the importance of lives and spirit of mutual help in "ethics" lessons and "integrated learning" lessons. In addition, students typically learn about disaster prevention through emergency drills which prepare them for disasters and fires, together with evacuation drills which schools are required to conduct by law in Japan. In Kobe City being functioning at school, local BOKOMI assist these activities in a productive manner.

(1).**KOBE City Disaster Prevention Education Support Programs:**

Kobe City Board of Education(KCBE) and Kobe City Fire Bureau(KCFB) with support of BOKOMI has jointly developed a series of disaster prevention education program which can be used at school (especially at elementary level) and other education institutions. These programs are compiled in booklet. This booklet includes a host of education programs through which children can obtain knowledge including techniques for

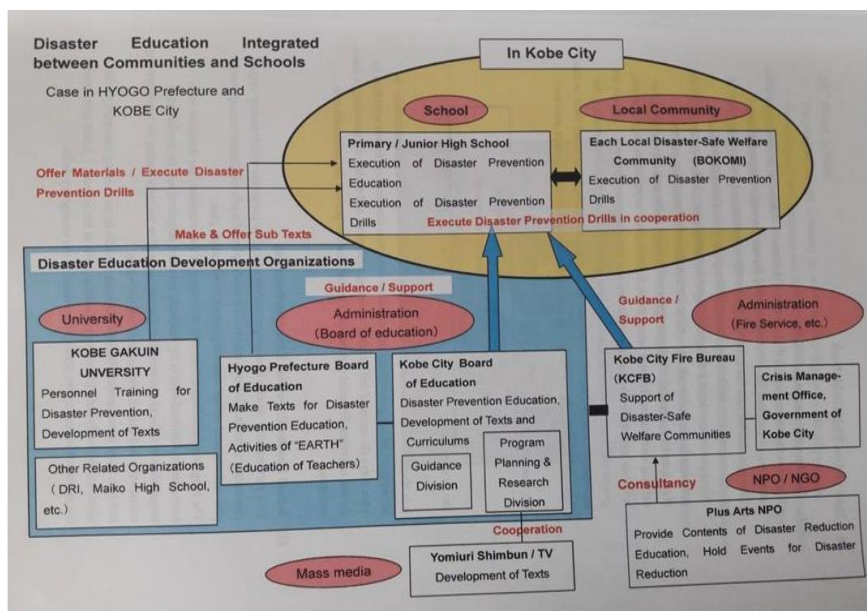


Figure - Cooperative Framework Among Various Sectors

disaster prevention while thinking on their own and enjoying at the same time. This book is distributed to BOKOMI and school with aim of promoting integrated disaster prevention education activities by communities and schools. Hyogo Prefecture and Kobe City through over 15 years of experience, adopted cooperative framework, where various sectors are supporting the activities of communities and children in a more horizontal level as shown in the given figure.

(2).Awareness and Funds Raising by Student Committees:

Immediately after the earthquake report, the students of Kobe City began to discuss, “What can we do to support the victims?” Surprisingly, student committees of all 82 junior-high schools in the City decided to perform fundraising activities. The students conducted these activities at stations and in the streets, they held charity concerts, and consequently, they managed to gather a contribution of more than 10million yen. They then started a variety of support activities for the disaster-affected areas and various exchange activities with the students in such areas.



(3).EARTH Association:

Towards disaster risk reduction, Hyogo Prefecture Board of Education(BOE), established EARTH, abbreviated from Emergency and Rescue Team by school staff in 2000 to promote school disaster management. EARTH has following three principles: -

- (a) Knowledge about mechanism of hazard and disaster
- (b) Disaster reduction and evacuation after the occurrence of hazard.
- (c) Foundation of Wellbeing and symbiosis.

The EARTH consist of the following five groups: -

- (a) school education group
- (b) psychological care group
- (c) evacuation place management group
- (d) school meals group &
- (e) research & planning group

The EARTH association usually trained teachers and conduct different drills and exercise.

(4).Others activities for disaster education and awareness includes, awareness drills, publicity of education and awareness materials, hazard mapping, town watching, visiting DRR Museums and participation in various government and community based disaster risk awareness events.

b. Role of Research Institution in DRR:

In Japan role research institutions in disaster risk reduction is quite strong. Beside scientific studies and measures for disaster risk reduction, research institutions are also involved in number of awareness activities for DRR. For instance, brief introduction of three research institutes is given below:

(1).International Research Institute of Disaster Science (IRIDeS):

Having experienced the catastrophic disaster in 2011, Tohoku University has founded the International Research Institute of Disaster Science (IRIDeS). Together with collaborating organizations from many countries and with broad areas of specializations, the IRIDeS conducts world-leading research on natural disaster science and disaster mitigation. Based on the lessons from the 2011 Great East Japan (Tohoku) earthquake and tsunami disaster, IRIDeS aims to become a world center for the study of the disasters and disaster mitigation, learning from and building upon past lessons in disaster management from Japan and around the world. Throughout, the IRIDeS will contribute to on-going recovery/reconstruction efforts in the affected areas, conducting action-oriented research, and pursuing effective disaster management to build sustainable and resilient societies, the IRIDeS innovates the past paradigm of Japan's and world's disaster management to catastrophic natural disasters, hence to become a foundation stone of disaster mitigation management and sciences.

The IRIDeS creates a new academia of disaster mitigation that subsumes the lessons from the 2011 Tohoku earthquake and tsunami disaster and the findings of the world-leading research into our societies with the aim of establishing the social systems responding promptly, sensibly and effectively to natural disasters, withstanding the adversities with resiliency, passing and exploiting the lessons to the forthcoming disaster management cycles. Enhancing the cooperation with the local municipalities and governments in the affected areas, and contributing to their recovery and reconstruction efforts, the IRIDeS conducts the action-oriented research. They aim to create the disaster-resilient societies that enable to overcome the complex and diverse processes

of forthcoming natural disasters, not only by preventing but also preparing and responding to them, and achieving recovery and renovation, hence to engender the culture of disaster-resiliency incorporating into our social systems. The Institute has so far conducted number of DRR related programs like: -

(a) Workshop on Building Disaster Resistant Universities:

A special workshop focusing on preparedness for natural disasters was organized at Tohoku University in Japan Feb 2016 under the APRU Multi-Hazards Program. Learn how to develop and maintain an effective university emergency plan that will help your university recover following a natural. Twenty-two APRU member universities responded to a campus safety survey. While many strengths were recognized, there were also areas identified as needing further development. This workshop aimed to discuss common challenges and issues, lessons learned from other universities, and tools to develop an effective emergency plan that will address areas needing improvement and enhance overall university preparedness.

During the workshop themes given below were presented: -

- What does campus safety regarding natural disasters really mean?
- Disaster preparedness case studies, participants shared their challenges and successes.
- steps to develop an effective emergency plan.
- Developing an effective plan –group activity
- Simulation exercise.
- Site visit to the affected areas of the 2011 earthquake and tsunami in Miyagi-prefecture.

Many Universities addressed challenges in financial constraints, human resources, understanding risks and safety issues, and getting participation by faculty and staff.

(b) A Memorial Symposium on the 2011 Great East Japan Earthquake & a screening of the 3D documentary (Mar 2015):

The IRIDeS, Tohoku University and NHK Media Technology has jointly organizing a disaster risk reduction event in commemoration of the 4-year anniversary of the Great East Japan Earthquake and Tsunami. World-class disaster risk reduction researchers and practitioners were gathered from various countries and held discussion on how

to bridge gaps between academia and societal needs, and report on the recovery status since the 2011 Great East Japan Earthquake.

- (c) The Research Group on Disaster Prevention and Management carried out "The Great East Japan Earthquake disaster report sessions (2012) from Tohoku University" based on the disaster related survey and research, in order to widely report to the society our findings.
- (d) 400-year Anniversary of the 1611 Keicho earthquake tsunami symposium (2011) was held to examine relation of this earthquake and tsunami with some others in Hokkaido and development / reconstruction challenge of the areas.
- (e) Seminars -Conducted numbers of Seminars in the Disaster Control Research Center to explain about natural disaster and research results in an easy-to-understand level for public in general.
- (f) Hazard and Risk Evaluation Research Division-Conducted number of research in the areas like: -
 - Earthquake Engineering
 - Tsunami Engineering
 - Disaster Potential Study
 - Remote Sensing and Geo-informatics for Disaster Management
 - Technology for Optimum Mitigation
 - Science and technology for low-frequency Risk Evaluation
 - Technology for Global Disaster Risk

(2).National Research Institute for Earth Science and Disaster Prevention(NIED):

NIED aims to protect people's lives and properties from natural disasters and to prepare society to be resilient to natural disasters, through research on disasters caused by earthquakes, volcanoes, floods, landslides, meteorological changes, snow and ice damages. The mission of NIED is "to conduct comprehensive fundamental basic study and fundamental research and development in order to increase the level of science and technology for disaster risk reduction" as stipulated in the "National Research Institute for Earth Science and Disaster Resilience Law."

Beside other assigned roles, NIED is working to Promote industry-academic-government cooperation as a core institution and contribute to administration of disaster risk reduction. NIED is promoting R&D projects with following three research targets: -

- (a) R&D for real-time observation and prediction of disasters
- (b) R&D aimed at improving prevention and mitigation capabilities of social infrastructure, and
- (c) Foundational R&D aimed at improving capacities for effective response and build-back-better.

NIED has instituted 7 research divisions and 6 foundational R&D centers at various areas including following: -

- (a) Earthquake Research Department.
- (b) Hyogo Earthquake Engineering Research Center.
- (c) Volcano Research Department.
- (d) Disaster Prevention System Research Centre.
- (e) Storm, Flood, and Landslide Research Department.
- (f) The Snow and Ice Research Center.

NIED has established state of the art experimental facilities including: -

- Large Scale Earthquake Simulator
- Large Scale rain fall Simulator
- Cryospheric Environment Simulator(CES)
- 3-D Full Scale Earthquake Testing Facility.

NIED is collecting and conveying information related to disasters and disaster prevention. and actively involved in number of disaster risk related activities and awareness campaigns

(3).Disaster Prevention Research Institute(DPRI), Kyoto University:

Kyoto University is also playing an important role in DRR. In university, there are many interesting places such as Research center for Landslides, Debris avalanche Research center, Water resources research center, Strong earthquake response center, Wind research center, Earthquake disaster research center, and Supercomputer. Many young people and many adult people can get knowledge not only disaster awareness but also impacts of disaster due to experiments in future. The University has organized Workshop on “Tools for Natech Risk Management on Monday 13 March” to feature hands-on practical demonstrations of some of the available tools for Natech (natural hazard-triggered technological accidents) risk assessment and mitigation as well as for emergency operations planning for various types of natural hazards.

(a) Global Alliance for Disaster Research Institutes(GADRI):

Building on the initiatives presented at the Sendai Framework for Disaster Risk Reduction 2015-2030 and the work of the Science and Technical Advisory Group of the United Nations Office for Disaster Risk Reduction (UNISDR), a new international organization called the Global Alliance of Disaster Research Institutes (GADRI) was established in March 2015. Basically, GADRI is a forum for sharing knowledge and promoting collaboration on topics related to disaster risk reduction and resilience to disasters. GADRI facilitates discussions on: -

- Planning and organization of disaster risk research.
- Formation of international research groups to investigate current global disasters, and implement new research methodologies, and emphasizing trans-disciplinary approaches.
- Establishment of an international network for timely communication related to disaster research and collaborations with other networks.
- Other issues relating to the promotion of disaster risk reduction, such as engaging with policy makers and practitioners.

GADRI has currently 130 member organizations from 35 countries of the world. DPRI, Kyoto university is the secretariat of GADRI. The 3rd Global Summit of Research Institutes for Disaster Risk Reduction: Expanding the Platform for Bridging Science and Policy Making (GSRIDRR 2017) was held at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus from 19 to 21 March 2017. The investigator got opportunity of participation in the subject event and found it one of the best DRR tools for policy and decision making. Beside, contribution in DRR through scientific research, GADRI has also added to promote disaster education and awareness through number of approaches and programs in a more scientific manner.

5.5. Role of Regional Bodies in Japan:

Beside national and local DRR activities, Japan has also hosted number of International and Regional Organization, whose contribution to the overall resilience of the country is admitted fact. These organizations beside, international and regional DRR endeavors, also contribute in the overall education and awareness campaigns both at national and prefecture level. Beside others, following organization are doing number of activities on

various themes of disaster like DRR, Research, Resilience, Cooperation, Build Back Better, Early warning, disaster technologies awareness etc.: -

a. Japan International Cooperation Agency(JICA):

JICA was established as an Incorporated Administrative Agency under the Act of the Incorporated Administrative Agency - Japan International Cooperation Agency (Act No. 136, 2002). JICA aims to contribute to the promotion of international cooperation as well as the sound development of Japanese and global economy by supporting the socioeconomic development, recovery or economic stability of developing regions. JICA mission include addressing the global agenda, reducing poverty through equitable growth, improving governance, achieving human security through strategies of integrated and seamless assistance, promoting development partnerships, enhancing research and knowledge-sharing. Besides its international and regional endeavors, JICA contributed a lot in the promotion of DRR including its active role in disaster education and awareness in Japan. During the previous year, JICA has facilitated training of more than 15,000 officials from abroad.

b. Asian Disaster Reduction Centre(ADRC)

The Asian Disaster Reduction Center was established in Kobe, Hyogo prefecture, in 1998, with mission to enhance disaster resilience of the member countries, to build safe communities, and to create a society where sustainable development is possible. The Center works to build disaster resilient communities and to establish networks among countries through many programs including personnel exchanges in this field. The Center addresses this issue from a global perspective in cooperation with a variety of UN agencies and international organizations. ADRC has currently 30 member countries. Beside, international and regional forum, the Centre also actively participating in local and national DRR activities including awareness campaign and research activities. ADRC has so far facilitated more than 90 visiting researchers, who conducted short period research in various themes of disaster risk reduction.

c. International Recovery Platform(IRP):

The International Recovery Platform (IRP) was established following the Second UN World Conference on Disaster Reduction in Kobe, Hyogo, Japan, in 2005 to support the implementation of the Hyogo Framework for Action (HFA) by addressing the gaps and constraints experienced in the context of post-disaster recovery. After a decade of

functioning as an international source of knowledge on good recovery practice IRP is focusing on more specialized role as an “international mechanism for sharing experience and lessons associated with build-back-better”. IRP works towards supporting greater advancements in the field of resilient recovery and build-back-better by (i) periodically bringing together a broad range of senior policy makers and practitioners to exchange experiences and facilitate discussion on resilient recovery challenges and build-back-better opportunities at the annual International Recovery Forum; (ii) advocating for closer cooperation with development partners, regional intergovernmental organizations, regional organizations, and regional platforms for disaster risk reduction in promoting and building capacity for achieving effective build-back-better outcomes; and (iii) sharing of information through its inter-active website. Besides its, international mandate, IRP also contributed in the promotion of DRR culture at national and local level through active participation in various programs.

5.6. Hosting International and Regional Events:

Local people particularly the youth from universities and schools are usually acquired disaster awareness and necessary education via hosting various international events like:-

- a. World Conference on Natural Disaster at Yokohama in 1994.
- b. World Conference on Disaster Reduction at Hyogo Kobe 2005.
- c. World Conference on Disaster Risk Reduction at Sendai 2015.
- d. Asian Conference on Disaster Reduction 2015.
- e. Disaster Reduction Alliance Forum(DRF).
- f. Global Alliance of Disaster Research Institutes (GADRI March 2017).
- g. World Bosai Forum/IDRC (Sendai Nov 2017)
- h. International Recovery Forum 2017 and other such events.

These conferences and events not only highlights and promote international and regional issues but at the same time also create DRR related awareness in the local public through participation, TV, Radio news, Interview and statements etc.

The facilities and programs mentioned above are very useful for preparing the community for disaster risk reduction. During interaction with various people in different events, they mentioned that education and awareness about disaster are very much essential to create culture of DRR, especially resilience of community.

CHAPTER # 06

COMPARATIVE ANALYSIS BETWEEN JAPAN AND PAKISTAN

It is worth mentioning that comparison between developed country like Japan with developing country like Pakistan would not be rational at so many ground. However, for the purpose of generality, following paras will highlight analytical view of disaster management systems, disaster education and awareness in both countries.

6.1. Comparative Analysis of Disaster Management Systems:

Again it is very difficult to draw sharp line between the disaster management system of both countries, especially in the life span and quality of deliverance. However, owing to number of challenges and amount of journey made, Pakistan disaster management system is moving in the right direction and has achieved some milestone as well. Following table describe some typical areas of disaster management system of both countries: -

Subjects / Area	Japan	Pakistan
Area in Sq km	377,915	790,000
Population	127.77 million	190 million
Administrative Unit	47 x Prefectures	4x Provinces & 3 Regions
Natural Disaster like Riverine flood, flash flood, tsunami, cyclone, landslide, Typhoon ,earthquake, volcano, drought & avalanches etc.	Common natural disaster except drought and avalanches	Common natural disaster except volcanic eruption
Death ration due to natural disaster	Low as compared to Pakistan	High as compared to Japan
Ranking in top 10 x countries w.r.t number of disaster	9 th	10 th
Ranking in top 10 x countries w.r.t economic losses due to disaster damages	3 rd	6 th
DM System /Basic Act adopted	Since 1961	Since 2007
Periodic review / changes in DM Act	Updated several times	Not yet
DM Response Tiers	3x Tiers approach	3 x Tiers approach
DM Council Head-Central	Prime Minster	Prime Minister

DM Council Head - Provincial/Prefecture	Governor	Chief Minister
DM Head - District / Municipal	City Mayor	District Nazim
Involvement of Parliamentarian in drills /exercise.	Strong participation	Week participation
Conduct of Council Meetings	Regularly	Partially
Disaster approach	More focus on preparedness/DRR	Relative more focus on response.
Existence of disaster management plan at national level	Yes	Yes
Existence of disaster management plan at prefecture /provincial level	Yes	No/only KP&AJK launch DRM road map**
Existence of disaster management plan at city / district level	Yes	No**

** Only rely on response and contingency plans but no detailed DRM plans.

6.2. Disaster Education:

Disaster management education is the wholesome of effective education governess, quality contents, hazard based activities, adoptive policy and approaches, which not only improve the resilience of students, teachers and education facilities but at the same time also paving way for resilience of community and national society with long run perspective. Following the HFA, disaster education is also considered as crosscutting issue in all four priorities of SFDRR. Sequel to this, Japan is playing the lead role in disaster education. However, curriculum based disaster education is still awaited for adaptation.

Subjects / Area	Japan	Pakistan
Curriculum for disaster management at schooling level	Nil	Nil
DRR subjects / topic at schooling level	Yes	No
Adaptation of disaster manual at schooling level	Yes	No
Involvement of school in DRR activities	Yes	No
Disaster related drills by education institution.	Regularly by all schools	Rarely by few schools

Institutionalized participation of school children in various drills	Yes	No
Iza! Kaeru Caravan participation	Yes	Concept not yet adopted
Participation of children in awareness days	Active	Passive
Curriculum for disaster management at University level	Nil	Yes
University Offering Ph.D.in DRM	Yes	Yes(2 Nos)
DM Faculty in Universities	Not yet started	Yes (4+)
Disaster drills at university level	Regularly held	Rarely held
Disaster related seminar / workshops by universities	Yes	Yes
Disaster specific research	Yes	Partially
Role of research institutions in DM	Strong	Weak
Dedicated Research institutions for DRR	Yes	No
Collaboration of DM with Universities	Strong	Weak
Active Role of Education Ministry for DM Planning	Yes	Ministry established in 2011
DM Planning by Education Ministry	Yes	Not yet prepared
Training in DM by Education Ministry	Yes	Not yet started
Availability of dedicated disaster learning centers	Every prefecture and almost every city	Even not at national level /only training facility with rescue 1122& Civil Defence
School-Community partnership for DRR	Yes	Not yet started
School safety initiatives	Yes	Started in year 2017
Efforts for disaster education at national level	Strong	Partially started in shape of NIDM
Efforts for disaster education at prefecture / provincial level	Strong	Weak
Efforts for disaster education at city / district level	Strong	Negligible due to absence of DDMA's

6.3. Disaster Awareness:

Subjects / Area	Japan	Pakistan
Community Awareness in DRR	Yes	Negligible
Role of Voluntary Organization in DRR	Yes	Negligible
National Disaster Awareness Days	Yes	Yes
National level drills with participation of PM	Yes	Not yet held
Awareness activities at national level	Yes	Yes
Awareness activities at Provincial/prefecture /district level	Yes / strong	Partially /week
Community Based DRR Organizations	Yes	Negligible
Distribution of hazard maps at to the communities	Yes	Nil
Disaster Games show	Yes	Being adopted at national level only
Disaster drills / exhibition	Yes	Yes with few no
Role of education in awareness	Yes	Negligible
Role of masses participation in DRR related activities	Strong	Week
Concept of Iza! Kaeru Caravan for awareness	Yes	Not adopted yet
Role of private sectors in disaster awareness initiatives	Yes but not significant.	Negligible
Role of social media	Yes	Yes
Disaster stalls in national /regional museums	Yes	Not yet
Display of hazard maps at different corners	Yes	No
Hosting Intl / Regional events on DRR	Yes	Only two
Awareness by community based hazard mapping	Yes	No
Media coverage to DRR events	Yes	Yes
Utilization of trains, bus stops, public building etc. for DRR awareness.	At significant level	Not yet adopted the idea
Community DRR Centers	Partially	No

6.4. **Uniqueness /Best Practices Adopted by Japan:**

a. A culture of Preparedness:

Japan has adopted a culture of preparedness, where training and evacuation drills are systematically practiced at the local and community levels and in schools and workplaces.

b. Stakeholder Involvement:

Effective stake holder's involvement, where the national and local government, communities, NGOs, and the private sector all know their role and feel pride for their involvement in various DRR related activities.

c. Investments in Structural Measures:

Investment in structural measures including reinforced buildings and seawalls, cutting-edge risk assessments, early-warning systems, and hazard mapping, all supported by sophisticated technology for data collection, simulation, information, and communication, and by scenario building to assess risks and to plan responses (such as evacuations) to hazards.

d. Extensive Use of Social Media:

The 11th March, 2011 Great East Japan Earthquake (GEJE) caused immense damage and congestion especially to communication network. However, beside others, as matter of fact, social media such as twitter, face book, mixi, Webpage's or blogs, etc. were used extensively during the GEJE for various purposes, such as search, rescue, and fundraising. Social media and the internet were found to be highly reliable regardless of the users' role, location, or the extent to which they were affected by the disaster. Users found social media extremely beneficial in general to an overwhelming degree. For directly affected individuals and people in the affected areas, the strongest reasons for using social media were convenience and their mass dissemination capacity.

e. Hazard Mapping as Tool for DRR:

Japanese municipalities generally create and distribute hazard maps that show the area most vulnerable to earthquakes, tsunamis, volcanic eruptions, floods, and landslides, as well as evacuation information. Community volunteer organizations also conducting hazard map drills and exercises. One can find hazard map almost in all public places. General masses usually know their hazard and required preparedness.

f. Private Sector Contributions in Disaster Risk Reduction Activities:

Corporate sector in Japan is enthusiastic and conscious about disaster risk reduction. Big organizations have mostly prepared their hazard maps and business continuity plans. They also support and finance various disaster reduction activities in lieu of Corporate Social Responsibility(CSR).

g. Documentation of Experiences of Major Disasters:

Japan has documented experiences of major disasters in various museums through photographs, movies, messages, carton, graphic, games, memorial remains etc. Besides an important tool for learning for the current generations, it can serve knowledge transformation to future generations in more real sense, especially those who have not yet experienced any major disasters in their life. It could encourage the younger generations to be prepared or face dire consequences. It was amazing to see old photographs (1891, 1931), black and white video movies (amateur) preserved for public education.

h. The Concept of Iza! Kaeru Caravan! Program (2005):

The “Iza! Kaeru Caravan!” is a comprehensive educative and awareness program on DRR that comprises more than 22 programs on various themes and held regularly nationwide in cooperation with various enterprises and organizations. In this program participants can obtain knowledge and skills necessary for disaster preparedness, while enjoying the program as well.

i. Hosting International and Regional Events:

Hosting international and regional events is also one of the good source for Japan to create necessary education and awareness in local people particular in the youth from universities and schools and to make them acquaint with disaster related themes.

j. Existence of Regional Bodies and Forums:

Regional bodies and forum like JICA, ADRC and IRP, GADRI etc. also contributed in the overall promotion of DRR in Japan. Since these organizations are hosted in Japan and undertaken number of initiatives for DRR. Besides the international and regional consumption, these activities are also helpful for the native in number of ways and thus enhancing the education and awareness level of local communities as well.

k. Political dedication:

Political dedication and huge spending on DRR initiatives (64 % of the world among bilateral donors) also made Japan unique with other countries, especially with Pakistan where spending on DRR is not comparable to the required preparedness and mitigation level.

l. High Education Ratio:

High education ratio / literacy (99 %) as compare to Pakistan (around 60 %) also one of the contributing factor in disaster risk preparedness, education and awareness. Citizen usually understand the new trends and technology in DRR. They usually know their specific hazards and required preparedness level.

m. Positive Role of Ageing Society:

Japan is ageing society which also pose various challenging for disaster managers. However, by large, the old people possess vast amount of indigenous knowledge, courage, patience, experience and resilience as compared to youth. Aged and retired people in Japan are very enthusiastic and hard workers as compared to others people of the world, especially Pakistan, where involvement of aged people in volunteer activities is almost negligible. In Japan aged and retired employees are usually spent their time in more meaningful voluntary activities including DRR.

n. High Coverage through Community /BOKOMI Organizations (74 % for Kobe):

Japan existed well-structured system of BOKOMI/ DRR Voluntary organizations. Most of the DRR activities are conducted by these organizations. Even these organizations also maintain stocks of necessary lifesaving items at their respective community level.

o. Role of Disaster Research Institutions in DRR:

In Japan disaster research institutions like IRIDeS, NIED, DPRI are playing very important role for disaster risk reduction via hazard specific scientific research and innovations. Government support in this regard is also notable.

p. DRR Activities at Schooling Level:

In Japan education institutions are quite active for disaster risk reduction activities. As per education manual, student participate in number of drills, exercises and other related programs either arranged by school administration, government departments or community DRR organizations.

CHAPTER # 07

ISSUES AND GAPS

This section describes various issues and gaps noted during the study. Though, some issues are generic in nature and need further investigations, however, will be helpful to understand the basic idea. Moreover, the real issues and gaps may be beyond the below listed one: -

7.1. Adhoc Functioning of NIDM:

NDM Act envisage establishment of National Institute of Disaster Management (NIDM) ,whose responsibility includes but not limited to planning and promoting training-research , assistance to the training and research institutes for development of training and research programs , assistance to the Provincial Governments for capacity-building of stakeholders including government , civil society members, corporate sector , people's elected representatives and to develop educational materials for disaster management including academic and professional courses etc. Though, the Institute has been started since 2010 on adhoc basis, but its functioning on permanent footing is yet to be started. The Institute, due to non-availability of its own building, permanent staff, trained and experienced human resource, and dedicated financial resources could not deliver as per mandate envisage in the NDMA Act 2010, and NDMP.

7.2. Establishment and Functioning of DDMA's:

Since disaster management is devolved subject which required implementation of DRR policies at grass route level. Though the NDM Act 2010 envisaged establishment ad functioning of District Disaster Management Authorities(DDMA's) at district levels, however, establishment of DDMA's as per the spirit of Act is yet to be achieved. Presently, DDMA's are functioning on adhoc mechanism via District Coordination Officers(DCO) of respective district. Due to non-existence of dedicated DDMA's, DRR related policies and programs were neither given priority nor implemented.

7.3. High Turnover of DM Employees:

Disaster management organizations both at national(NDMA) and provincial level(PDMA's) are mostly running through deputationist or contractual employees. However, DRR related policies and programs are usually made for long run implementation which require enduring personnel. Also prudent disaster decisions are

more associated with experience, institutional memory and past practices. Further, investment on adhoc employees some time leads toward wastage of resources. Sometime posting-transfer of deputationist / secondment / contractual employees are made on political basis which can influence their productivity in disaster management. The investigator, being from national organization (since 2009), has witnessed dozens of frequent transfer of key post holders in DM organizations, especially at district level, which has greatly hampered the implementation of overall DRR initiatives.

7.4. Technical Expertise:

Disaster Management Institutions as a whole is lacking technical experts and professional disaster management specialists especially in the areas like Planning, DRM, Engineering, Earthquake, Flood, Recovery and Research etc. Generalist often take much time to understand and familiar with basic concept of disaster management. etc.

7.5. Political Will / conduct of NDMC / PDMC:

Strong political will is always required for planning, implementation and sustainably of disaster risk reduction measure where time and cost matter a lot. Without active participation of political leadership in disaster risk reduction initiatives, dream of safer and resilient societies could not be visualized parallel to international commitment. Moreover, lack of DRM orientation, often leads towards fictitious criticism by politicians specially during disaster. Holding NDMC / PDMC with lapse of more than one year propagate the issue as well.

7.6. Non-availability of Disaster Museums:

Owing to the international best practices in disaster risk reduction, availability and establishment of Disaster Museum is very important to showcase past disaster memories in pictorial form, videos, lesson learnt and future challenges etc. in a meaningful manner. Availability of such museum can play an important role in disaster education, advocacy, resilience and awareness.

7.7. Non-existence of Disaster Library:

There is a need to established a dedicated library on disaster management. This Resource Center will be not only helpful for the employees and professional of disaster management but could also facilitate various research work on disaster risk reduction.

Beside others, it will serve as knowledge bank for disaster management. So far no dedicated resource center is established on DRM.

7.8. Mainstreaming of Voluntarism for Disaster Awareness:

Volunteers can play a big role in all stages of disaster. They can also enhance education and awareness level of societies and communities. Integration of volunteers in to DRM initiatives, especially for disaster education and awareness is very much important for prompting disaster resilience society.

7.9. Access to Information by Common Public:

Despite having good source of information, the authorities are reluctant to provide such information for the common use of general public. Moreover, Individuals and organization don't want to publicized its basic information for the use of general public on various grounds. During the study, though the investigator, despite repeated request, could not get the required data from the quarter concerned. Moreover, most of the website of organizations are devoid of basic information on the subject.

7.10. Lack of Dedicated Training and Awareness Section in DM Institutions:

Disaster management institutions in general are lacking dedicated section or even an OFFICER dedicated for training and awareness. Due absence of dedicated section for education and awareness, no central record on the subject is available. Even at national level, data was collected from detached section.

7.11. Lack of Coordination Between NDMA, PDMA and DDMA:

Since, disaster management is devolved subject, where implementation issues and disconnect between federal, provincial and district bodies can case hindering in the sooth transmission of DRM concept. There is a lack of coordination between NDMA, PDMA and DDMA. Even in some cases, collection of information from provincial and district authorities are difficult, whereas, uniformity and synergy between DM organization is important for compliance of international and regional commitments and obligations on DRR.

7.12. Passive Role of Education Sector:

In view of the best practices especially, in Japan, where education sector is quite active in promoting disaster education and awareness. However, the case in Pakistan is otherwise, where contribution of education sector including Ministry of Federal Education and Professional Training, Departments of Education, various boards at

intermediate and university level, Private Institutions via APPSF etc. is negligible. No concrete efforts are so far made for inclusion of dedicated curriculum on disaster management and even short courses and drills for safety and preparedness. Lesson learned from 2005 earthquake in context of education system is still need priority, especially in the seismic belt of the country.

7.13. Lack of Coordination Between Education Sector and DM Institutions:

There is no proper mechanism existed between education sector including education ministry, education boards, Higher Education Commission and Academia. Though some efforts at national level and provincial level has been taken. However, owing to the mandate, need and quantum of populations, DM institutions must enhance its delicate coordination with academia to promote disaster resilience through education and awareness activities.

7.14. DM Posts Filled with Non-Disaster Professionals:

Acquiring disaster management professional is not yet the priority of DM institutions. Most of the vacant post are filled through non-disaster professionals. Disaster management qualification like master or bachelor degree in DRM, DRR, DM, EM etc. need to be part of basic qualification, while hiring personnel for disaster management institutions. Though with exception, right and relevant personnel can contribute in the right direction in more sustainable way.

7.15. Role of Higher Education Commission

Higher Education Commission, through number of initiatives including research, seminar, active participation, promoting exhibition and developing quality curriculum etc., can contribute in the over resilience of the country. However, role of HEC in this regard is still passive.

7.16. Lack of Research Initiatives in the Field of Disaster Management

Research Institutes can play vital role in identification, mitigation and risk reduction of natural hazards. Like other countries of the world, Pakistan is lacking quality research institutes, especially those dealing with disaster risk reduction.

7.17. Lack of Community Based DRR Organizations:

Since disaster risk regime is devolved subject. It starts from individual and community first. Existence of community based disaster risk reduction organization is key to implement DRR initiatives. Moreover, all such efforts require ownership by community.

Lack of community based DRR organizations is also one of the issue in promoting disaster education and awareness at grass root.

7.18. Lack of Awareness and Non-responsiveness by Key Stakeholders:

Although a paradigm shift has been effected through adoption of prevention, mitigation and preparedness approach in place of traditional Emergency and Response oriented approach, the implementing partners at the Government and Community level suffer from lack of awareness about the newly adopted approach. The Government Ministries / Departments have been practicing the traditional approach and their capacities developed over the decades are not compatible with the requirements of the new approach. This predicament is having an advance impact on the performance of roles and responsibilities by the relevant Ministries/Departments and Institutions as envisaged under the Framework. Lack of awareness coupled with deficit in DRM capacities continued to be one of the major challenges for the NDMA as the desirable response has not been as comprehensive from the relevant stakeholders in the implementation of National Policies and Strategies in the field of disaster risk reduction.

7.19. Non-availability of Relevant Data on Education and Awareness:

During the investigations, non-availability of relevant data on education and awareness was very much realized. There is no central data base in DM institutions where information pertaining to education and awareness activities could available especially the past record on the subject. Most of the organizations, though conducted relevant activities in the past but were not recorded in proper database.

This chapter highlights some recommendation and way forward for relevant organizations and institutions in both countries.

7.1. Functioning of NIDM as per the Spirit of NDM Act-2010:

As per scope and mandate defined in NDM Act 2010, DRR Policy & NDMP, National Institute of Disaster Management (NIDM) to be made fully functional on permanent footing. Owing to the vast experience in multi disaster management and to extend benefits to other developing countries, Government of Pakistan can take a lead role in disaster management. Necessary human and financial resources including separate budget and construction of building at the allocated land in G-5 Islamabad need to be provided for the establishment of NIDM on permanent footing.

7.2. Establishment and Functioning of DDMA's:

As stated above, DDMA's are not yet established as per the spirit of NDM Act 2010. Adhoc functioning of DDMA's cannot achieve the ultimate goals of resilient societies via DRR initiatives. Therefore, it is strongly recommended that DDMA's may be fully established and functioned with requisite resources.

7.3. Improving Coordination Between NDMA, PDMA's and DDMA's:

As mentioned in issues and gaps above, there is lack of coordination between NDMA, PDMA's and DDMA's. DRR always relay coordinated efforts for implementation. Beside compliance of national commitment, international and regional obligations also require good coordination between DM institutions. It is therefore, strongly recommended that existing level of coordination may be improved.

7.4. Coordination with Various Training Institutions Working Either in Provincial or Federal Boundaries:

DM institution can utilize the already established setup of various training institutions in the federal and provincial boundaries for disaster education and awareness. It will be more appropriate to establish well connected coordination mechanism with these institutions. NDMA / PDMA can induce their attention to include some basic and common disaster related themes in their yearly plan or manuals. For example, training

facilities of following institutions at federal /provincial level could be utilized for disaster education, training and awareness: -

- a. Secretariat Training Institution(STI), Establishment Division Islamabad.
- b. Pakistan Computer Bureau(PCB), Ministry of Information Technology, Islamabad.
- c. CDA Training Academy (CTA), Islamabad.
- d. National Training Bureau(NTB), Ministry of Federal Education and Professional Training Islamabad.
- e. National Centre for Rural Development (NCRD), Establishment Division Islamabad.
- f. National School of Public Policy (NSPP), Pakistan.
- g. Civil Defence Training Schools in Pakistan etc.

7.5. Establishing Disaster Corners / Stalls in the Existed National /Provincial Museums:

Learning from the disaster risk reduction experience of other countries, especially Japan, there is a need to established dedicated / separate corner / stalls at the historic Museums of the country at both national and provincial level. Through these museums, DM institutions could visualize, propagate and showcase the disaster risk profile of the country and sensitize citizens about various impending risks. Though, the task is little bit hectic but could bring fruits for long time without recurring expenditure. Beside conveying the message at national level via these facilities, we can also propagate our message to international community, while visiting these facilities.

7.6. Establishment of New Disaster Museum:

Learning from the best practices for DRR, especially adopted by Japan, there is a need to established a dedicated museum for disaster risk reduction. In this context, model of disaster museum(DRI), established by Hyogo Prefecture Japan could be adopted. The stimulus for establishment of dedicated museum is the vulnerability ranking of Pakistan (among top 10 countries of the world). Though, Pakistan has experienced a lot of disasters but unfortunately, could not preserved any memorial thing for the next generations. Moreover, this sort of museum could be utilized for multipurpose disaster risk initiatives including sharing experiences, lesson learned from past disasters, education and awareness, research and exhibition etc. Preserving disaster heritage is much important like cultural heritage and it should be transferred to future generation not only as heritage but also for making intelligent decision in DRR.

7.7. Making Disaster Awareness Day (8 October) for All:

Though 8th October is announced as national disaster day by the government and to be used for awareness of disasters. However, the day is mostly celebrating at national and provincial level by NDMA and PDMA's only. Owing to the best practices of the advanced countries, there is need to celebrate the 8th October as national disaster awareness day by all stake holders including government functionaries and education sector especially.

7.8. Mapping of Education and Awareness Database:

During the investigation, it was felt that there must be some section responsible to ensure visibility, compilation and databasing of all education and awareness activities conducted by various actors in the country. While asking such information for the study, most of the organizations did not know the ownership and availability of such information. Even at NDMA level, information was scattered among various sections. Establishing dedicated section for education and awareness or at least designating an Officer will be very much helpful, especially, while justifying compliance against international commitments and national obligations for the very cause. Moreover, establishing database is not enough, there must be some threshold (coverage targets) in both countries for mapping of disaster education and awareness activities and it must be both qualitative and quantitative.

7.9. Disaster Education to be Included in Curriculums, Especially up to SSC Level:

Children are best source to transform disaster learning and experience to their families and communities. It is a common saying that "educating a child is educating a family". Vulnerability of Pakistan to multi disasters validate need to protect and aware the younger generation against disaster and to get them better prepared for combating any eventualities in future. Government may therefore, take necessary steps to prepare and adopt basic curriculum on Disaster Management for School Children. **However, disaster preparedness education may not be restricted to the school environment only, rather it has to be established for various tiers of society.**

7.10. Adoption of Disaster Manual:

Since curriculum development is time consuming process which warrants good level of consensus among the stakeholder. But owing to the frequency of disaster, we cannot wait for long time, it is therefore, recommended that as an interim approach, some basic disaster manual to be adopted by each individual school / institutions including conduct

of basic emergency drills, exercise, walks, essay competitions, and lectures etc. preferably on monthly and quarterly basis.

7.11. Coordination with Higher Education Commission(HEC):

Coordination with HEC may be enhanced for inclusion and refinement of disaster management curriculum at higher level. HEC can also play its role in the conduct of quality hazard based research in the disaster related field through its various programs and initiatives. NDMA with collaboration of HEC can conduct research in various fields through various universities. In order to ensure uniformity, refinement of the existing disaster management curriculum from time to time may also be taken with proper coordination ideally by NIDM.

7.12. Enhancement of Political Will Via Sensitization Programs:

Tough involvement of politicians in disaster risk activities is quite challenging. However, their involvement in the disaster risk activities is very much required for sustained policies, ownership by the communities and wise decisions. It could be started via short period sensitization programs for parliamentarians and local elected bodies. Some time, minor attention by local elected bodies in preparedness related issues can save and secure communities from major impending disaster situation.

7.13. Making Disaster Management Degree Compulsory for DM Posts:

In order to attract and inspire student in disaster related courses, Master or equivalent degrees in disaster related courses / subjects may be made compulsory or at least be awarded with some special / grace marks for filling all posts in the disaster management organizations. Moreover, to keep abreast the existence staff with new development & trends in DRR regimes, On Job Training (OJT) is recommended at regular interval to all staff of DM organizations.

7.14. Creating Permanent Cadre of DM Employees in DM Organizations:

In order to ensure sustainability, consistency and ensure institutional memory in DRR policies and decisions, creation of permanent employment cadre in the NDMA /PDMA is very much needed. Moreover, adhoc assignments and contract in DM institutions need to be discouraged while frequent posting transfer, especially in PDMA's need to be minimized.

7.15. Engagement of Corporate Sector in DRR Activities:

Since corporate sector possess numerous resources like financial, technical, research, skill, HR, equipment's etc. which could be utilized for disaster risk reduction. They may be involved via CSR to contribute in the overall resilience of the country, especially through education and awareness campaigns and activities. Moreover, DRR and preparedness related activities of all such entities may also be compiled via central data base and be publicized for replication and awareness by others.

7.16. Preparedness Events Must Be Repeated: -To be effective, education and awareness campaigns should ensure that the public receives consistent messages repeated over an extended period of time and from multiple sources. Preparedness events must be repeated monthly / quarterly / annually, so as to create public recognition, anticipation and to reinforce what was learned during previous events.

7.17. Media Involvement in DRR:

Usually preparedness related activities lacking thrill and excitement, especially for media, where attention of general masses could not be easily secured. Moreover, media is usually more proactive in disaster response phase. So there is a need to engage media organizations in a more sustained manner in disaster risk activities. Role of media in disaster education and awareness is very much important. All awareness campaigns and activities must ensure active involvement and wide coverage by media. Beside this, media organization can also add some special programs in form of short message, drama, film, games, cartons etc. in their regular schedule on monthly or quarterly basis for the benefits of general masses.

7.18. Coordination with National School of Public Policy (NSPP):

There is need for better coordination with National School of Public Policy (NSPP) for the integration of DRR into the training modules for in-service training of civil servants. Moreover, NSPP can also be sensitized for arranging disaster drills or short time simulation (injecting scenario) exercise for the in-service training of civil servants.

7.19. Increased Awareness of Natural Hazards and Appropriate Risk Reduction Measures can encourage voluntary risk reduction activities, including such key measures as safe construction, retrofitting, and household preparedness. Moreover, adequate disaster education and public risk awareness can strengthen public support for the investment of public funds in risk prevention activities and for the implementation

of compulsory risk reduction measures such as land use planning, building codes, environmental stewardship and, where applicable, disaster insurance schemes.

7.20. Structural and / or Engineering Interventions yield far less dividends if general education, research, training and awareness components are undermined. While designing structural measures for mitigation, enough resources to be kept reserved in the project budget for its promotion and awareness campaigns.

7.21. Some useful techniques identified during the course of action for disaster education and awareness are given below: -

- (1). Public awareness campaigns and events
- (2). Various disaster related publications
- (3). Disaster management plans
- (4). Distribution of pamphlets and brochures
- (5). Annual reports of DM institutions
- (6). Newsletters on various hazards
- (7). Simulations and drills
- (8). Disaster parks
- (9). Disaster museums
- (10). Training courses
- (11). Workshops
- (12). Seminars & conferences
- (13). Exhibitions
- (14). Symposium
- (15). Mobile SMS and alerts
- (16). Paints on DRR
- (17). Social media, Facebook, websites, WhatsApp etc.
- (18). Cartons & comics
- (19). Cultural arts
- (20). Mascots
- (21). Appealing graphics and
- (22). Iconography
- (23). Banners / sign boards
- (24). Memorial walks
- (25). Streamers, standees, leaflets, stickers,
- (26). Videos & audio messages through print, radio, television and internet outlets
- (27). Mapping, social mapping, resource mapping, vulnerability / safe mapping
- (28). Rehearsal of various hazards
- (29). Quiz competition
- (30). On site visit etc.
- (31). Games & Sports
- (32). Town watching and field visit

- (33). Voluntary organization
- (34). TV Programs
- (35). Radio Programs
- (36). Drama
- (37). Story telling
- (38). Art & Music
- (39). Play and learn
- (40). Museum
- (41). Building blocks
- (42). Learning centers
- (43). Research
- (44). Curriculum
- (45). DIG-disaster Imagination Game

7.22. Donors, financier, investors and other government / Non-governmental organizations are strongly invited to make sound investment for disaster risk reduction and resilience via promoting disaster education and awareness programs and campaigns.

7.23. It is better for similar future researchers to do a through an in-depth study of the subject by analyzing non-structural disaster risk reduction and preparedness activities including role of disaster education and awareness at various levels and to thoroughly identify and evaluate efforts made by various organizations working in disaster management at national, provincial and district level.

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