Disclaimer

This report was compiled by an ADRC visiting researcher (VR) from ADRC member countries.

The views expressed in the report do not necessarily reflect the views of the ADRC. The boundaries and names shown and the designations used on the maps in the report also do not imply official endorsement or acceptance by the ADRC.

Factors Contributing to the High Resiliency and Capacity of Japan to Natural Hazards in the Context of Social Institutions

A Paper
Presented to the
Asian Disaster Reduction Center (ADRC)
Kobe, Hyogo, Japan
under the Visiting Researcher Program
(Term: FY 2016 A)

by
Ms. Lorene Sia-Catedral
Civil Defense Officer III
Office of Civil Defense-Department of National Defense
Republic of the Philippines

November 16, 2016

ACKNOWLEDGMENT

The researcher wishes to acknowledge wholeheartedly, everyone who contributed to the successful completion of this research paper.

First of all, the researcher would like to thank the Almighty Father for His unconditional love, wisdom and blessings He showered in her life;

The Asian Disaster Reduction Center and the Government of Japan for the opportunity to learn and experience the best practices and exceptional innovations in the field of DRR in Japan and to personally get a glimpse of Japan's incredible resilience;

The Office of Civil Defense-Department of National Defense (OCD-DND) whose commitment to provide leadership and administration of a comprehensive civil defense and DRRM Program in the country allowed to be in Japan as a Visiting Researcher;

The colleagues of OCD Caraga Regional Office and ADRC for their unflinching support;

The DRR experts of various institutions she visited for sharing their valuable time and expertise;

Co-Visiting Researchers from Armenia and Indonesia, her Japanese Teacher, Mr. Kawahara Sensei for the gift of friendship which made her three-month journey in Japan more enjoyable; and

Family and friends for their prayers, love and inspiration;

To all of you, the researcher can never say thank you enough.

LSC

DEDICATION

This study is dedicated to:

My dearest husband and prayer partner, Bong, and my children Malikh, Gaya, Keane, Tobey and Zip who are the cause of my smiles and joys;

My Mama Lolit & Mommy Madeline;

My sisters, Ethel and Cookie;

My Tatay Natong, who is my angel in heaven; and

Above all, to my Almighty Father.

LSC

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1

THE PROBLEM

Background of the Study

Japan and the Philippines are highly vulnerable to a variety of natural hazards including earthquakes, tsunamis, volcanic eruption, typhoons, storm surges, floods, landslides and others because of their geographic location. Climate change further exacerbating the frequency and magnitude of climate/weather-related hazards that may continue to rise for the foreseeable future.

Although Japan has suffered enormous damages due to repeated mega disasters since ancient times, at present the country is considered to be the leader in disaster management because it has increased its resilience every time a large-scale disaster is experienced. With this, countermeasures against disasters have been strengthened based on lessons learned. "DRR is our DNA", is important precept in Japan shared with the international community during the Third UN World Conference on Disaster Risk Reduction (WCDRR) which was held in Sendai in March 2015 (White Paper on Disaster Management in Japan 2015 – Summary).

Typhoon Ise-wan in 1959 was the turning point for strengthening the disaster management system and led to the enactment of the Disaster Countermeasures Basic Act in 1961, which formulates a comprehensive and strategic disaster management system. Likewise, the Great-Hansin Awaji Earthquake in January 1995 and the Great East Japan Earthquake in March 2011 prompted the nation to continuously review and revise its Disaster Management (DM) system and strongly pursue building national resilience.

On the other hand, Philippines similar to Japan, has a long history of dealing with risks and hazards. The impacts of natural as well as human-induced

disasters created havoc in the country. According to the study by the United Nations (UN) University Institute for Environment and Human Security, the Philippines is currently the 3rd country at risk to disasters worldwide based on the World Risk Index Report 2015. It is based on the Philippine's risk profile that the country took the paradigm shift to disaster risk reduction and management or DRRM. The paradigm shift to DRRM is brought about by the enactment of Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010.

Resilience of Filipino communities has been the framework of the Philippines in the implementation of the PDRRM Law. However, the country is confronted with various challenges when it comes to implementing DRRM. First, there is a need for the cooperation and buy-in of the stakeholders. Sapirstein (2006) states that one can efficiently and cost-effectively enhance the ability of communities to "bounce forward" after a potentially devastating event as long as there is buy-in from organizations in the community – employers, businesses, faith-based organizations, community groups, and other stakeholders. Further, there is a need to correct the notion that DRRM is only a government concern. Rather, it requires the whole-of-society approach because the safety of the nation is not solely the job of the government but rather it is a shared responsibility. Increasing the strength of a society is about increasing the strength and scope of the internal connections between the people, organizations and environment which form that society (Sapirstein, 2006). It is also important to consider DRRM as a way of life. DRRM must be part of day to day living and decision-making. The national and local officials have to prioritize DRRM. Lastly, there is a need for continuous development, review and improvement of the country's DRRM policies, plans and programs in view of the "new normal." This new normal is the acknowledgement of the fact that disasters nowadays are increasing in terms of scope, magnitude, frequency and complexities.

As defined in the Republic Act 10121, "*Resilience*" is the ability of the system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions; while "*Capacity*" is a combination of all strengths and resources available within a community, society or organization that can reduce the level

of risk, or effects of a disaster. Capacity may include infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills, tools, systems, processes, appropriate technologies and collective attributes such as social relationships, leadership and management. Capacity may also be described as capability.

Hence, the researcher believes that a study on the factors contributing to the high resiliency and capacity of Japan to natural hazards in the context of social institution would be useful information to improve the institutional mechanisms, plans and approaches in the various DRRM-related institutions (i.e. government institutions, educational/learning institutions, health care institutions and community/volunteer organizations) in the Philippines especially in Caraga Region as the area of concern of the researcher.

Statement of the Problem

This study aimed to examine the factors contributing to the high resiliency and capacity of Japan to natural hazards in the context of social institutions.

Specifically, it sought answers to the following questions:

1. What is the Disaster Management System in Japan and the Philippines?

2. What are the examples of DM-related social institutions that promote resiliency and enhance capacity to natural hazards in Japan particularly in Kansai Region and the Philippines particularly in Caraga Region as the researcher's area of concern, in terms of:

2.1 Government Institutions;
2.2 Educational/Learning Institutions;
2.3 Health Care Institutions; and
2.4 Community/Volunteer Organizations?

3. What are the institutional factors that contribute to resiliency and capacity of Kansai Region and Caraga Region as lessons learned from the past disasters as well as good practices and innovations, in terms of the following:

3.1 Institutional Mechanisms;
3.2 DRRM-related Plans; and
3.3 Approaches

Significance of the Study

The result of this study provides a better understanding on the institutional factors that influence Japan's resiliency and capacity against natural hazards as lessons from past major disasters. Further, the findings may give clear view of the disaster management system of Japan and Philippines. Likewise, the result of the study will enable better appreciation of the institutional factors in terms of mechanisms, plans and approaches as lessons from past disasters, as well as good practices and innovations in DRRM in Japan for possible replication/adoption in the Philippines especially in Caraga Region to further promote resiliency and enhance capacity. The information is not only valuable for the researcher in performing her duties and responsibilities as Civil Defense Officer and DRR practitioner/advocate but also to partner-stakeholders in the Philippines.

Scope and Limitation of the Study

This study is focused on the factors contributing to the high resiliency and capacity of Japan to natural hazards in the context of social institutions. The primary sources of data are the actual experiences and learning that the researcher has gained and accumulated through the various field visits to DM-related institutions/offices across Japan, orientations/briefings/lectures with local and international experts and interview with key officials in the period of three (3) months as a Visiting Researcher. Likewise, secondary data include online/electronic sources and personal readings of reference materials provided during the term under the Visiting Researcher Program of the Asian Disaster Reduction Center (ADRC) on August 23-November 18, 2016. The study does not include other factors such as physical, social, economic, motivational/attitudinal aspects.

Definition of Terms

To facilitate a better understanding of the study, the following terms are defined:

Resilience. This term refers to the ability of the system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Capacity. This term is defined as a combination of all strengths and resources available within a community, society or organization that can reduce the level of risk, or effects of a disaster. Capacity may include infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills, tools, systems, processes, appropriate technologies and collective attributes such as social relationships, leadership and management. Capacity may also be described as capability.

Social Institution. This consists of a group of people who have come together for a common purpose. These institutions are a part of the social order of society and they govern behavior and expectations of individuals.

Institutional Mechanism. This term refers to the procedures laid down in the constitution for a particular task. The procedure (as per law) by which a particular task is undertaken is its institutional mechanism. It also refers to the technical aspects of doing something incorporated into a structured and usually well-established system.

DRRM-related Plans. These refer to plans which serve as guide on the activities aimed at strengthening the capacity of the national government and/or the local government units (LGUs) together with partner stakeholders, to build the disaster resilience of communities and to institutionalize arrangements and measures for reducing disaster risks, including projected climate risks and enhancing disaster preparedness and response capabilities at all levels. These

plans include National/Regional/Local DRRM Plans, Contingency Plan, Disaster Mitigation/Prevention Plan, Disaster Preparedness Plan, Disaster Response Plan, Disaster Rehabilitation and Recovery Plan, Pre-Disaster Recovery Plan, and others.

Approach. This refers to the method used or steps taken in setting about a task, problem, and others.

CHAPTER 2

REVIEW OF LITERATURE

This chapter presents a review of the literature related to the study. The purpose is to give the researcher a good frame of reference in topic area.

Related Literature

Japan's Basic Act for National Resilience Contributing to Preventing and Mitigating Disasters for Developing Resilience in the Lives of the Citizenry (abbreviated to the Basic Act for National Resilience) was enacted on December 11, 2013. It aims to build national resilience, which means to build a country that has the toughness and flexibility to survive large-scale natural disasters in the future, with four goals: protect human lives; avoid critical damage to important functions of the nation and society; minimize damage to the property of the citizenry and public facilities; and contribute to swift recovery and reconstruction.

Based on Article 10 of the Basic Act for National Resilience, the Fundamental Plan to Promote Measures for National Resilience (abbreviated to the Fundamental Plan for National Resilience) was adopted by the Cabinet on June 3, 2014. It provides for policies to promote measures in each of 15 sectors, such as administrative functions/police and fire services, housing and cities, and energy.

The supplementary provision of the Basic Act for National Resilience includes the following: "It is indispensable that not only the national and local governments but also other entities including local residents, business entities, and relevant parties share information on the status of damage and others,

prepare for large-scale disasters even in ordinary times, and utilize leading-edge technology and devices based on new technology innovation," indicating that public and private partnership and companies' cooperation are important.

The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 as the successor to the Hyogo Framework for Action 2005-2015 was adopted on March 18, 2015 at the Third UN World Conference on Disaster Risk Reduction (WCDRR) in Sendai, Japan. This framework is a call to action of the next fifteen years to make the world a safer place and to reduce the risk of human-made and natural hazards. It is designed specifically to achieve the substantial reduction of disaster risks and losses in lives, livelihoods and health. Among the four (4) priorities under the first goal on preventing new and emerging risk and reducing existing risk include Priority 2: strengthening disaster risk governance which means having a clear strategy, strong institutions, laws and budget to ensure the efficient management of disaster risk; and Priority 3: investing in disaster risk reduction for resilience which includes public and private investment and measures which would prevent and reduce disaster losses.

Winderl (2014) cited UNDP's definition of building resilience as a "*transformative process of strengthening the capacity of men, women, communities, institutions, and countries to anticipate, prevent, recover from and transform in the aftermath of shocks, stresses and change.*"

Resilience is frequently described as a 'system' or a 'system of systems'. A systems approach usually refers to a view of resilience as a self-regulating system or cluster of systems that are self-correcting through feedback. Such complex adaptive systems create resilience share synergies, linkages and interactions across spatial and temporal scales (*Gall 2013, p.18*).

Likewise, Cutter, et. al. (2008) defined resilience as the ability of a social system to respond and recover from disasters and includes those inherent conditions that allow the system to absorb impacts and cope with an event, as

well as post-event, adaptive processes that facilitate the ability of the social system to re-organize, change, and learn in response to a threat.

In an article of JICA's Cooperation on Disaster Management, entitled Building Disaster Resilient Societies, it was emphasized that controlling natural hazards is difficult and, thus, enhancing social capacity to cope with disasters is one of the most effective ways to manage and reduce disaster risks. Further, enhancing the capacity to cope with disasters and reduce damage caused by disasters requires capacity to take adequate actions in the phases of disaster prevention (mitigation and preparedness), response, and recovery and reconstruction.

Ross (2015) explained that disasters are reminders of the constant need for communities, cities, and nations to enhance prevention and preparedness, to ensure that response systems are efficient, and communities should build their resilience to withstand and cope with any future disaster.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter discusses the research design used in this study, the research locale and data gathering procedure.

Research Design

This study used the descriptive research design utilizing the list of guide questions to collect the relevant data for the study. Interviews were conducted to validate and further expound the data gathered. This method is preferred for this kind of research because the expected responses and results are best presented by descriptions.

Research Locale

The **Kansai region** or **Kinki region** is one of the eight (8) regions in Japan situated at the heart of the Japanese archipelago, between the Sea of Japan in the north and the Pacific Ocean in the south as it lies in the southern-central region of the country's main island Honshū. The region is consists of six (6) prefectures, namely: Hyogo, Osaka, Kyoto, Nara, Wakayama and Shiga. However, in larger classification Mie and Fukui are also included. The region comprises of eight (8) major cities, namely: Osaka City and Sakai City in Osaka Prefecture, Kobe City in Hyōgo Prefecture, Kyoto City in Kyoto Prefecture, Tsu City in Mie Prefecture, Wakayama City in Wakayama Prefecture, Nara City in Nara Prefecture, and Ostia City in Shiga Prefecture.

This research was conducted in the various disaster management-related institutions in Kansai Region.

Figure 1. Map showing the location of examples of DM-related Social Institutions in Kansai Region

Data Gathering Procedure

In the gathering of the data, the researcher visited the various DRRM-related institutions in the identified prefectures and attended briefings/orientations. The questions were raised during the field visits/orientations/lectures to further to clarify and extract more relevant issues and information relative to the research topic. The data is described based on the observation and perception of the researcher and substantiated by related literature and studies.

CHAPTER 4

PRESENTATION AND INTERPRETATION OF DATA

This chapter presents and interprets the data gathered. The presentation of results corresponds to the problems this study identifies.

1. What is the Disaster Management System in Japan and the Philippines?

- **Disaster Management System in Japan**

A. Disaster Countermeasures Laws and Acts

The Disaster Countermeasures Basic Act is the legal basis for the establishment of a comprehensive and strategic Disaster Management System in Japan which addresses all of the disaster phases of prevention, mitigation and preparedness, emergency response as well as recovery and reconstruction, clearly defines the roles and responsibilities among the national and local governments, and cooperation of the relevant entities of the public and private sectors in implementing various disaster countermeasures.

Furthermore, the Disaster Countermeasures Basic Act has been constantly reviewed and amended since its first enactment and from the lessons of Great East Japan Earthquake additional provisions are included as follows:

- Enhancement of the measures concerning support activities mutually done by the local governments in 2012;
- Measures for ensuring smooth and safe evacuation of residents and improving protection of affected people in 2013; and
- Strengthening measures against unattended cars in order to promptly clear them from the roads for emergency vehicles in 2014.

B. Mission of the Cabinet Office

The Minister of State for Disaster Management was established in 2001 to integrate and coordinate disaster risk management policies and measures of ministries and agencies. The Cabinet Office is responsible for securing cooperation and collaboration among related government organizations in wide-ranging issues, the Director-General for Disaster Management is mandated to undertake the planning of basic disaster management policies and response to large-scale disasters, as well as conduct overall coordination. Furthermore, the Cabinet Office is engaged in the collection and dissemination of accurate information, reporting to the Prime Minister as the Chair of the Central Disaster Management Council, the establishment of the emergency activities system including the Government's Disaster Management Headquarters, overall area coordination concerning disaster response measures in the event of large-scale disaster.

The Central Disaster Management Council decides the national government's disaster management policies which are implemented by the respective ministries and agencies.

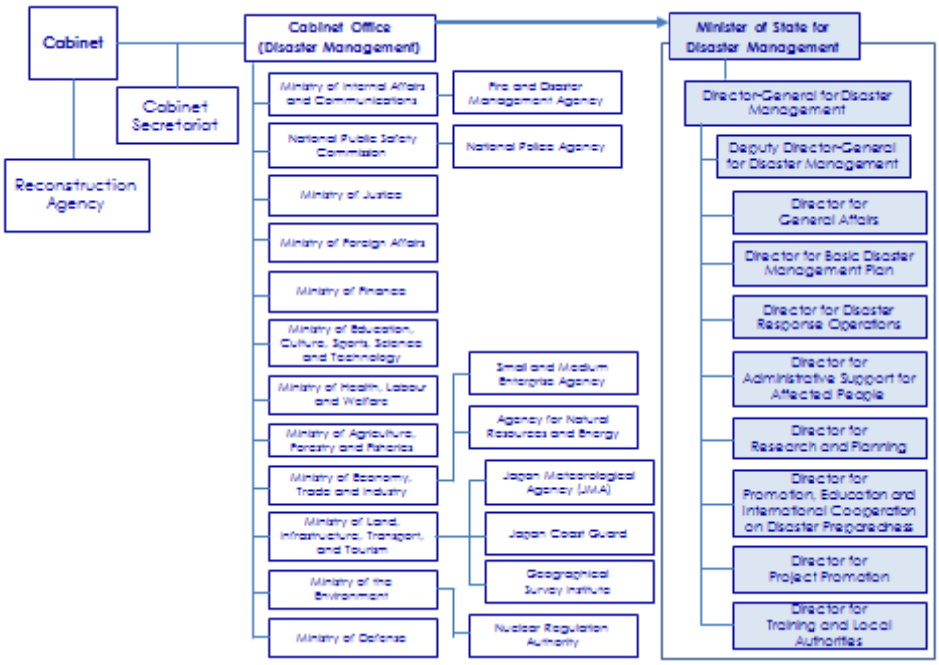


Figure 2: Organizational Chart of the National Government of Japan

(simplified from the real)

C. Central Disaster Management Council

Pursuant to the Disaster Countermeasures Basic Act, the Central Disaster Management Council is one of the councils that deal with crucial policies of the Cabinet Office. The council is established in the Cabinet Office and consists of the Prime Minister as the chairperson, all members of the Cabinet, head of major public corporations and experts.

The council develops the Basic Disaster Management Plan and established basic disaster management policies, and plays a role of promoting comprehensive disaster countermeasures including deliberating important issues on disaster management upon request from the Prime Minister or Minister of State for Disaster Management.

D. Disaster Management Plans

The disaster management planning system in Japan includes the development of the following:

- Basic Disaster Management Plan. This plan is the highest level of plan and constitutes the basis for disaster management activities prepared by the Central Disaster Management Council based on the Disaster Countermeasures Act. This is a comprehensive and long-term disaster management plan forming a foundation for the Disaster Management Operations Plan and Local Disaster Management Plan. It also provides for the establishment of the disaster management system, promotion of disaster management measures, and promotion of scientific and technological research on disaster management;

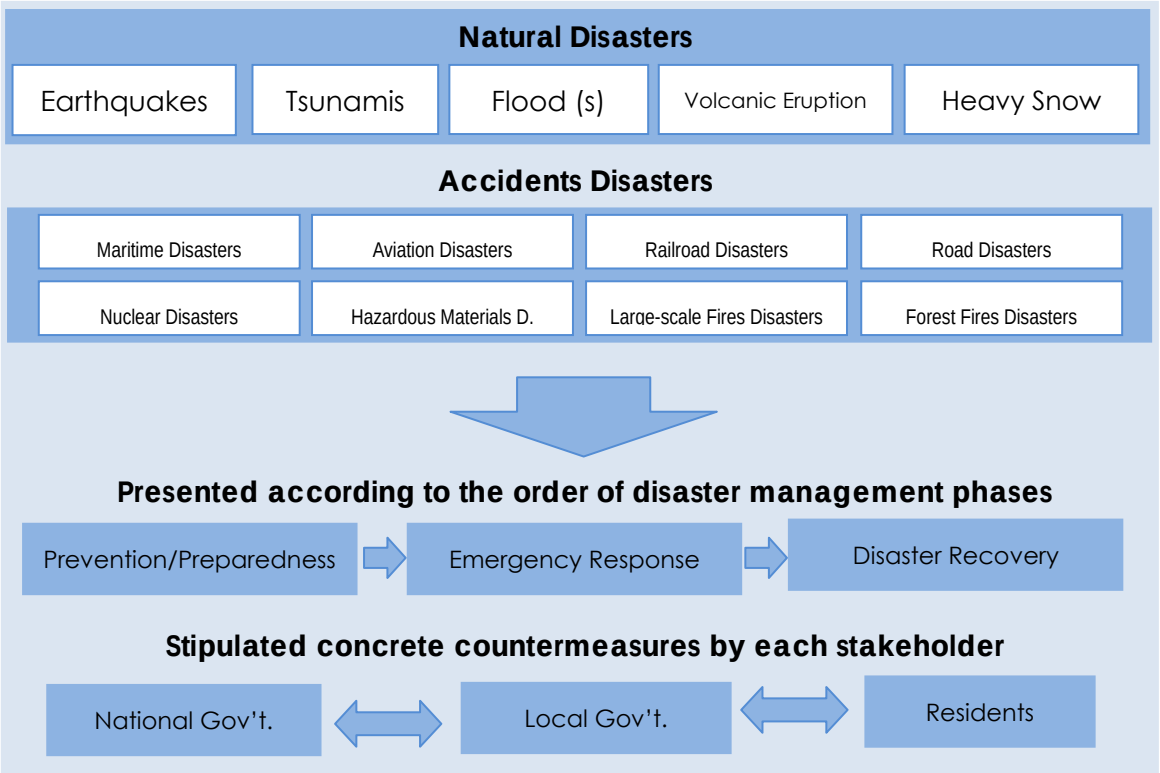


Figure 3: Structure of Basic Disaster Management Plan

- Disaster Management Operation Plan. This is a plan prepared by every designated government organization and public corporation based on the Basic Disaster Management Plan;

- Local Disaster Management Plan. This is a plan prepared by every Prefectural and Municipal Disaster Management Council, subject to local circumstances and based on the Basic Disaster Management Plan;

- Community Disaster Management Plan. This plan contains disaster management activities at the community level jointly established by residents and businesses on a voluntarily basis.

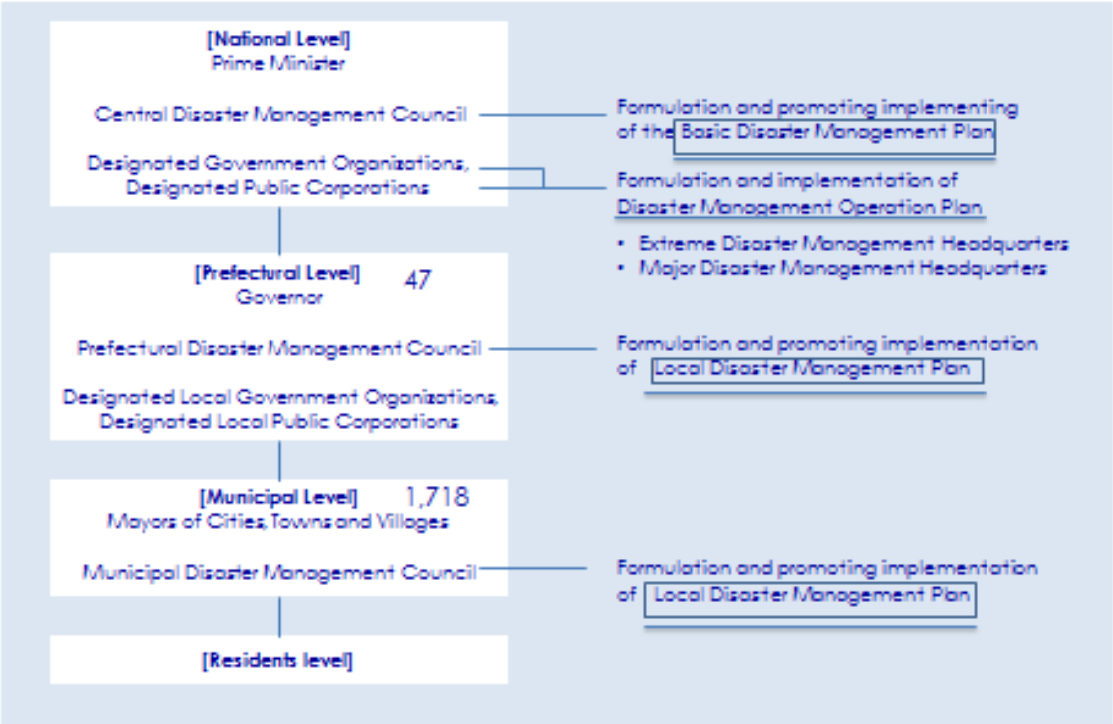


Figure 4: Outline of Disaster Management System

E. Emergency Response to Disaster

In the event of a disaster, the national and local governments quickly collect and share disaster and information, and secure communications to carry out effective emergency activities such as emergency rescue and medical operations.

Based on such information, local governments set up disaster management headquarters and related organizations establish their own operation mechanisms.

The national government collects disaster information at the Cabinet Information Collection Center 24 hours a day. When a large scale disaster strikes, an emergency team composed of the director-generals of the respective ministries and agencies gather immediately at the **Crisis Management Center** in the Prime Minister's Official Residence to grasp and analyze the disaster situation, and report the results to the Prime Minister. Disaster Management meetings at the ministerial or high-ranking senior official

level are held, as necessary. Depending on the level of damage, the government may establish the Headquarters for Major Disaster Management (headed by the Minister of state for Disaster Management) or the Extreme Disaster Management Headquarters (headed by the Prime Minister), to establish the policies for the disaster countermeasures, and to coordinate various emergency measures to be taken by various organizations.

Further, in order to grasp the situation on the disaster-affected area, a government investigation team headed by the Minister of the State for Disaster Management may be dispatched, or if quick and swift actions are needed to be taken with overall coordination of emergency activities on site, the government may establish the onsite headquarters for disaster management.

In case of large scale disasters that exceed the response capabilities of the affected local government, various **wide-area support mechanisms** are mobilized by the National Police Agency (Disaster Response Units), Fire and Disaster Management Agency (Emergency Fire Rescue Team), and Japan Coast Guard.

Furthermore, the Self-Defense forces can be dispatched for emergency response activities upon request from the governor of the affected prefecture. Also, the Disaster Medical Assistance Team (DMATs) are dispatched to provide wide-area medical services. These teams transport severely injured persons via Self-Defense Forces vehicles and aircrafts to hospitals outside the disaster stricken zone.

In the event of disaster, municipalities will primarily be engaged in emergency countermeasures as they are the closest to residents. Prefectural administration will get involved when the comprehensive wider-area measures are necessary. A disaster-affected local government may initially face difficulties in promptly procuring the necessary supplies by itself, since it takes time to gather accurate information and private logistics facilities will have limited capacity. Accordingly, in a system called "push-type support," the central government takes responsibility for the procurement and emergency transportation of necessities, mainly for supporting shelters and evacuees, without waiting for requests from the local governments of disaster-affected

areas. In the 2016 Kumamoto Earthquake, the cost of emergency transportation to the disaster-affected areas was approximately 2,340 million yen.

In the event of a large-scale disaster beyond the capability of local public entities, the national government will intervene and step in to support the local entity and coordinate mutual support among local entities.

At the national level, the Extreme Disaster Management Headquarters or the Major Disaster Management Headquarters is set up to promptly collect the disaster information from relevant ministries and local public entities struck by the disaster, and overall coordination is provided for rescue, first aid, medical and emergency supplies as necessary and appropriate. Also, an on-site disaster management headquarters may be set up to coordinate promptly among the affected local entities and collect information and request from relevant prefectures and to properly conduct the emergency response activities in consideration of the needs of the affected people.

F. Main Elements of Japan's DRM System

As cited by Ranghieri and Ishiwatari (2014), in coping with the Great East Japan Earthquake (GEJE), Japan's advanced DRM system, built up during nearly 2,000 years of weathering natural risks and hazards, proved its worth. As mentioned the loss of life and property could have been far greater if the country's policies and practices had been less effective.

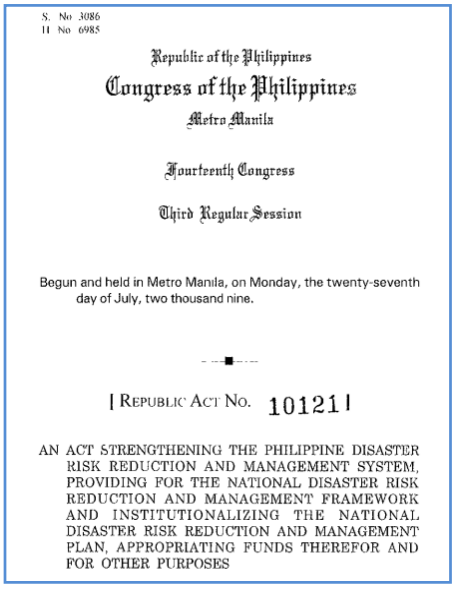
The main elements of the country's DRM system include: 1) Investments in structural measures (such as reinforced buildings and seawalls), cutting edge risk assessments, early- warning systems, and hazard mapping— all supported by sophisticated technology for data collection, simulation, information, and communication, and by scenario building to assess risks and to plan responses (such as evacuations) to hazards; 2) A culture of preparedness, where training and evacuation drills are systematically practiced at the local and community levels and in schools and workplaces; 3) Stakeholder involvement, where the national and local government, communities, NGOs, and the private sector are all aware of their roles; 4) Effective legislation, regulation, and enforcement—

for example, of building codes that have been kept current; and 5) The use of sophisticated technology to underpin planning and assessment operations.

- **Philippine Disaster Risk Reduction and Management (DRRM) System**

A. Salient Features of PDRRM Law

Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 is entitled, *"An act strengthening the Philippine Disaster Risk Reduction and management system, providing for the National Disaster Risk Reduction and Management Framework and institutionalizing the National Disaster Risk Reduction and Management Plan, appropriating funds therefor and for other purposes"*. This was signed into law on May 27, 2010 and the Implementing Rules and Regulation (IRR) was approved three months later on September 27, 2010. This revolutionary law defines the disaster management system in the Philippines. Salient features of the PDRRM Law include:



S. No. 3086
H. No. 6985

Republic of the Philippines
Congress of the Philippines
Metro Manila

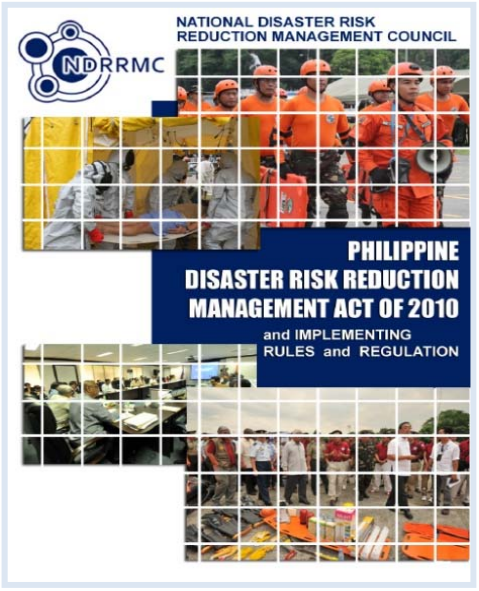
Fourteenth Congress

Third Regular Session

Begun and held in Metro Manila, on Monday, the twenty-seventh day of July, two thousand nine.

[REPUBLIC ACT NO. 10121]

AN ACT STRENGTHENING THE PHILIPPINE DISASTER RISK REDUCTION AND MANAGEMENT SYSTEM, PROVIDING FOR THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT FRAMEWORK AND INSTITUTIONALIZING THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT PLAN, APPROPRIATING FUNDS THEREFOR AND FOR OTHER PURPOSES



- The creation of the **National Disaster Risk Reduction and Management Council (NDRRMC)** formerly known as the National Disaster Coordinating Council as provided for in Section 5. NDRRMC's membership and functions have increased to cope with complexities of disasters at present times.

The NDRRMC is headed by the Secretary of the Department of National Defense (DND) as Chairperson with the Secretary of the Department of the Interior and Local Government (DILG) as Vice Chairperson for Disaster Preparedness, the Secretary of the Department of Social Welfare and Development (DSWD) as Vice Chairperson for Disaster Response, the Secretary of the Department of Science and Technology (DOST) as Vice Chairperson for Disaster Prevention and Mitigation, the Director-General of the National Economic and Development Authority (NEDA) as Vice Chairperson for Disaster Rehabilitation and Recovery, and Office of Civil Defense (OCD) as the Executive Director, and 39 members as shown in Figure 8.

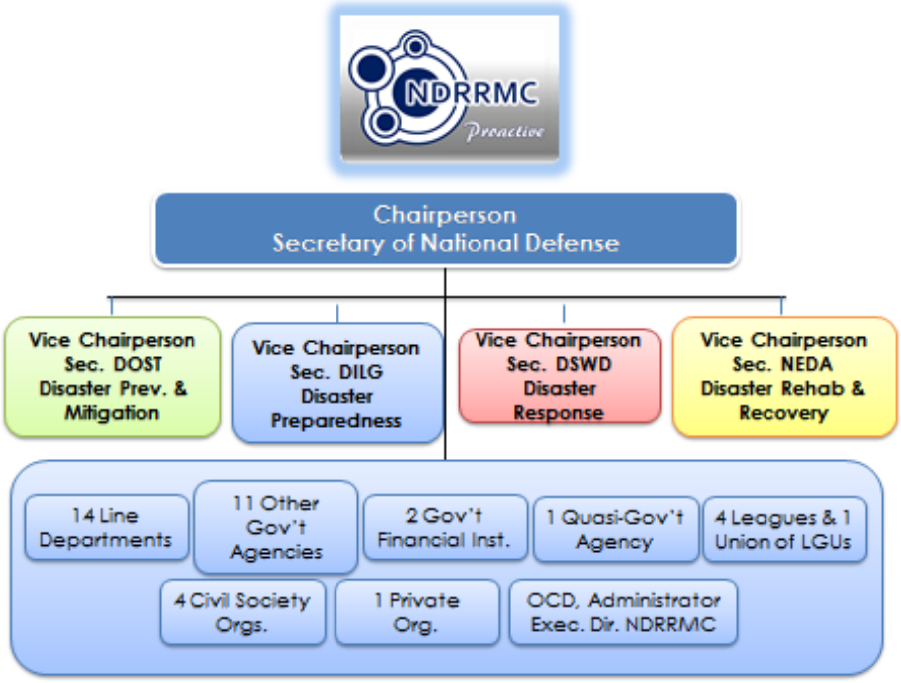


Figure 5. Organizational Chart of NDRRMC

The members of the NDRRMC are composed of fourteen line departments (DA, DBM, DENR, DEP ED, DOE, DOLE, DFA, DOF, DOH, DOJ, DPWH, DOT, DTI, DOTC), Office of the Executive Secretary, Office of the Presidential Adviser on Peace Process (OPAPP), Chairman of the Commission on Higher Education (CHED), Chief of Staff of the Armed Forces of the Philippines (AFP), Chief, Philippine National Police (PNP), The Press Secretary, the Secretary General of the Philippine Red Cross

(PRC), Commissioner of the National Anti-Poverty Commission-Victims of Disasters and Calamities Sector (NAPC-VDC), Chairperson of the National Commission on the Role of Filipino Women, Chairperson of the Housing and Urban Development Coordinating Council (HUDCC), Executive Director of the Climate Change Office of the Climate Change Commission, two government funding institution namely PHILHEALTH and Government Service Insurance System (GSIS) together with Social Security System (SSS) which is a private insurance entity, five (5) local leagues such as Union of Legal Authorities of the Philippines (ULAP), League of Provinces of the Philippines (LPP), League of Cities of the Philippines (LCP), League of Municipalities of the Philippines (LMP) and League of Barangays (LMB), four representatives from the Civil Society Organizations who will focus on Preparedness, Response, Prevention and Mitigation and Rehabilitation and Recovery. There is also one member who will represent the private sector.

The NDRRMC being empowered with policy-making, coordination, integration, supervision, monitoring and evaluation functions shall carry out seventeen (17) responsibilities as stipulated in the law. The NDRRMC Chairperson may call upon other instrumentalities or entities of the government and nongovernment and civic organizations for assistance in terms of the use of their facilities and resources for the protection and preservation of life and properties in the whole range of DRRM. This authority includes the power to call on the reserve force as defined in Republic Act No. 7077 to assist in relief and rescue during disasters or calamities.

- The **Office of Civil Defense (OCD)** as stipulated in Section 8 shall have the primary mission of administering a comprehensive national civil defense and disaster risk reduction and management program by providing leadership in the continuous development of strategic and systematic approaches as well as measures to reduce the vulnerabilities and risks to hazards and manage the consequences of disasters.

The Administrator of the OCD serves as the Executive Director of the National Council and, as such, shall have the same duties and privileges of a department undersecretary. All appointees shall be universally acknowledged experts in the field of disaster preparedness and management and of proven honesty and integrity. The National Council shall utilize the services and facilities of the OCD as the Secretariat of the National Council. The OCD has nineteen (19) functions, duties and responsibilities as stipulated in the law.

It is further provided for in the law that the **NDRRMC** shall establish an **Operations Center**. This is the 24/7 facility for monitoring and coordination. It is where situation reports, alerts and communications are disseminated to all Council members and various stakeholders. It is also a venue to facilitate effective management of the consequences of disasters.

- The creation of the **Regional Disaster Risk Reduction and Management Council (RDRRMC)**, formerly known as Regional Disaster Coordinating Council (RDCC) is provided for in Section 10 of RA 10121. RDRRMC coordinates, integrates, supervises, and evaluates the activities of the local Disaster Risk Reduction and Management Councils (LDRRMCs). The RDRRMC is responsible for ensuring disaster sensitive regional development plans, and in case of emergencies, RDRRMC shall

convene the different regional line agencies and concerned institutions and authorities.

Under the law, the RDRRMC shall establish an operating facility known as the **Regional Disaster Risk Reduction and Management Operations Center (RDRRMC OpCen)** whenever necessary.

The civil defense officers of the OCD who are or may be designated as Regional Directors of OCD serves as chairpersons of the RDRRMCs. Its Vice Chairpersons shall be the Regional Directors of DSWD, the DILG, the DOST, and the NEDA. The existing regional offices of the OCD shall serve as secretariat of the RDRRMCs. The RDRRMCs are composed of the executives of regional offices and field stations at the regional level of the government agencies.

- The organization at the Local Government Level is stipulated in Section 11. **The Provincial, City, Municipal Disaster Risk Reduction and Management Councils** are mandated to be organized at the local levels. In the case of the Barangays, a Barangay Disaster Risk Reduction and Management Committee shall be organized and shall operate under the Barangay Development Council (BDC).

The local chief executives chairs the Local DRRMCs, the Governor for the provincial level, the mayor for the city and municipal levels and the barangay captain for the barangay level. The members are the heads of various offices assigned at the local levels together with the four (4) members from the CSOs and one (1) private sector representative.

The LDRRMCs have the following tasks to fulfill: 1) approve, monitor and evaluate the implementation of the local DRRM Plans and regularly review and test the plan consistent with other national and local planning programs; 2) ensure the integration of disaster risk reduction and climate change adaptation into local development plans, programs and budgets strategy in sustainable development and poverty reduction; 3) recommend the implementation of forced or preemptive

evacuation of local residents, if necessary; and 4) convene the local council once every three (3) months or as necessary.

Figure 6. DRRM Network

Hence, to bring DRRM down to the grassroots, RA 10121 further provides for the establishment of the "DRRM Network", or the replication of the NDRRMC from the national down to the regional, provincial, city, municipal and barangay levels as shown in Figure 6.

- The **Local Disaster Risk Reduction and Management Office (LDRRMO)** is also provided for in Section 12. It is also mandated that the local government units shall establish a LDRRMO in every province, city, and municipality, and a Barangay Disaster Risk Reduction and Management Committee in the case of the barangay. The LDRRMOs shall be responsible for setting the direction, development, implementation and coordination of disaster risk management programs within their territorial jurisdiction. The LDRRMOs are permanent offices under the office of the governor, mayor and the punong barangay (barangay captain). The LDRRMOs have twenty-five (25) functions, duties and responsibilities under this law given that the local government units are the first line of defense in every disaster or emergency. Thus, they shall be at the frontline of all disaster risk reduction and management plans, programs, projects and activities.

- **Coordination during emergencies** is stipulated in Section 15. The LDRRMCs are mandated to take the lead in preparing for, responding to

and recovering from the effects of any disaster based on the following criteria: (a) The BDC, if a barangay is affected; (b) The city/municipal DRRMC, if two (2) or more barangays are affected; (c) The provincial DRRMC, if two (2) or more cities/municipalities are affected; (d) The regional DRRMC, if two (2) or more provinces are affected; and (e) The NDRRMC, if two (2) or more regions are affected.

- The **Local Disaster Risk Reduction and Management Fund (LDRRMF)** as provided for in Section 21 is not less than five percent (5%) of the estimated revenue from regular sources shall be set aside as the LDRRMF to support disaster risk management activities such as, but not limited to, pre disaster preparedness programs including training, purchasing life-saving rescue equipment, supplies and medicines, for post-disaster activities, and for the payment of premiums on calamity insurance. The LDRRMC shall monitor and evaluate the use and disbursement of the LDRRMF based on the LDRRMP as incorporated in the local development plans and annual work and financial plan. Upon the recommendation of the LDRRMO and approval of the sanggunian or council concerned, the LDRRMC may transfer the said fund to support disaster risk reduction work of other LDRRMCs which are declared under state of calamity.

  Of the amount appropriated for LDRRMF, thirty percent (30%) shall be allocated as Quick Response Fund (QRF) or stand-by fund for relief and recovery programs in order that situation and living conditions of people in communities or areas stricken by disasters, calamities, epidemics, or complex emergencies, may be normalized as quickly as possible. Unexpended LDRRMF shall accrue to a special trust fund solely for the purpose of supporting disaster risk reduction and management activities of the LDRRMCs within the next five (5) years. Any such amount still not fully utilized after five (5) years shall revert back to the general fund and will be available for other social services to be identified by the local sanggunian.

- The **National Disaster Risk Reduction and Management Fund (NDRRM Fund)** is also stipulated in Section 22. The present Calamity Fund appropriated under the annual General Appropriations Act shall

henceforth be known as the National Disaster Risk Reduction and Management Fund (NDRRM Fund) and it shall be used for disaster risk reduction or mitigation, prevention and preparedness activities such as, but not limited to, training of personnel, procurement of equipment, and capital expenditures. It can also be utilized for relief, recovery, reconstruction and other work or services in connection with natural or human-induced calamities which may occur during the budget year or those that occurred in the past two (2) years from the budget year. The specific amount of the NDRRM Fund and the appropriate recipient agencies and/or LGUs shall be determined upon approval of the President of the Philippines in accordance with the favorable recommendation of the NDRRMC. Of the amount appropriated for the NDRRM Fund, thirty percent (30%) shall be allocated as Quick Response Fund (QRF) or stand-by fund for relief and recovery programs in order that situation and living conditions of people in communities or areas stricken by disasters, calamities, epidemics, or complex emergencies, may be normalized as quickly as possible.

All departments/agencies and LGUs that are allocated with DRRM fund shall submit to the NDRRMC their monthly statements on the utilization of DRRM funds and make an accounting thereof in accordance with existing accounting and auditing rules.

All departments, bureaus, offices and agencies of the government are authorized ·to use a portion of their appropriations to implement projects designed to address DRRM activities in accordance with the guidelines to be issued by the NDRRMC in coordination with the DBM.

- The **funding of the OCD** *a*s lead agency to carry out the provisions the PDRRM Law is specified in Section 23. The OCD shall be allocated a budget of one billion pesos (PhP1,000,000,000.00) revolving fund starting from the effectivity of this Act.

Likewise, as stated in Section 24, the National Council, through the OCD, shall submit to the Office of the President, the Senate and the House of Representatives, within the first quarter of the succeeding year,

an **annual report** relating to the progress of the implementation of the NDRRMP.

B. The National DRRM Framework (NDRRMF)

On June 16, 2011, the National Disaster Risk Reduction and Management Framework (NDRRMF) as shown in Figure 7, was approved by the executive committee of the National Disaster Risk Reduction and Management Council (NDRRMC). The framework is in conformity with and captures the essence and priorities of Republic Act 10121.

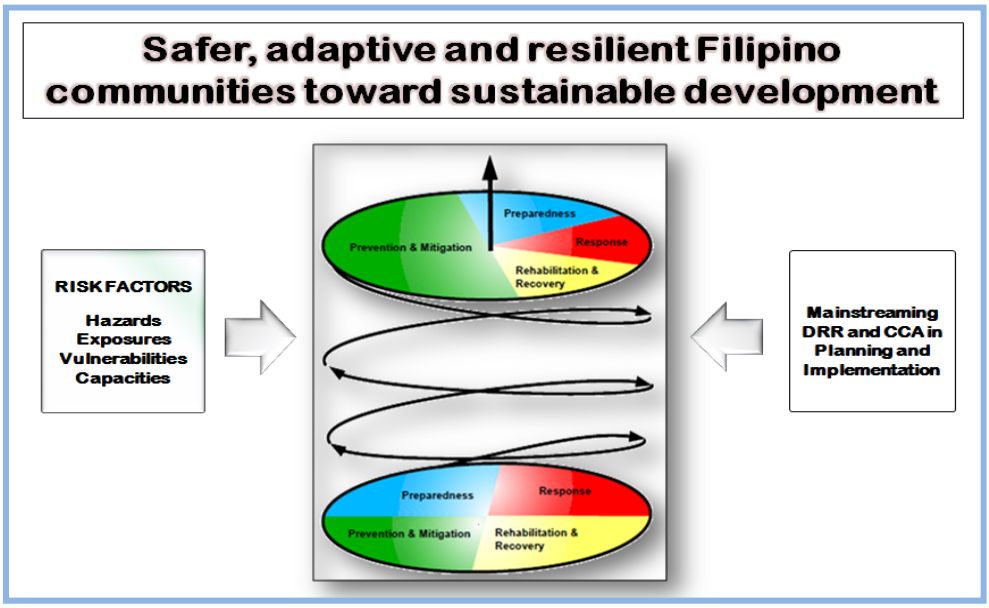


Figure 7. Diagram showing the National DRRM Framework (NDRRMF)

The Framework envisions a country which have ***"safer, adaptive and disaster-resilient Filipino communities toward sustainable development."*** The goal is to have a paradigm shift from reactive to proactive DRRM wherein men and women have increased their awareness, understanding on DRRM with the end in view of increasing people's resilience and decreasing their vulnerabilities. The country aims to empower leaders and communities and to develop the "right" mindset and positive behavioral changes towards reducing and managing risks and lessening the effects of disasters. This term is about building back better or building on from the learning, good practices, research and experiences to address the underlying causes of people's vulnerability and

increasing their ability to adjust to the situation before them. By being adaptive, Filipinos learn to innovate and go to the next level.

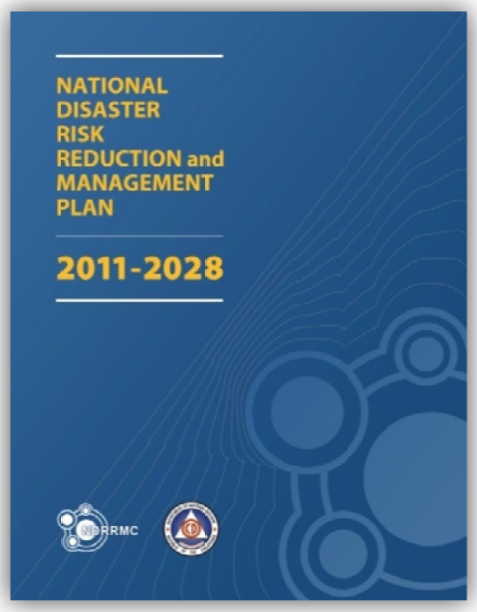
Disaster-resilient communities are achieved when the risk reduction efforts have been successful and have made the people stronger (in a positive way and not just in terms of their coping mechanism), increasing their ability to bounce back after a disaster. It is important to instill the culture of safety by increasing people's capacity to bounce back and decrease disaster losses and impact. In the end, DRRM is all about addressing the underlying causes of people's vulnerability; building their individual, collective and institutional capacities and building back better wherein people's lives become sustainably better.

The country is challenged by increasing disaster and climate risks caused by dynamic combinations of natural and human-induced hazards, exposure, and people's vulnerabilities and capacities. There is an urgent need for the country to work together through multi-stakeholder partnerships and robust institutional mechanisms and processes so that Filipinos will be able to live in safer, adaptive and disaster resilient communities on the path to developing sustainably.

This DRRM framework emphasizes that through time, resources invested in disaster prevention, mitigation, preparedness and climate change adaptation will be more effective towards attaining the goal of adaptive, disaster resilient communities and sustainable development. The Framework shows that mitigating the potential impacts of existing disaster and climate risks, preventing hazards and small emergencies from becoming disasters, and being prepared for disasters, will substantially reduce loss of life and damage to social, economic and environmental assets. Likewise, it highlights the need for effective and coordinated humanitarian assistance and disaster response to save lives and protect the more vulnerable groups during and immediately after a disaster. Further, building back better and building better lives after a disaster will lead to sustainable development after the recovery and reconstruction process.

C. The NDRRM Plan

To implement all the country's DRRM targets, the NDRRMC formulated the NDRRM Plan, approved on February 7, 2012. The NDRRM Plan enumerates 4 priority areas with 4 long term goals, 14 objectives, 24 outcomes, 56 outputs and 93 activities.



The plan adheres to the principles of good governance within the context of poverty alleviation and environmental protection. It is about partnerships, working together and all of government/community approach– engaging the participation of CSOs, the private sector and volunteers in the government's DRRM programs towards complementation of resources and effective delivery of services to the citizenry.

- **Four (4) DRRM Thematic Areas**

In accordance with the NDRRMF, through the NDRRMP, the country's vision of ***"Safer, adaptive and disaster resilient Filipino communities towards sustainable development"*** will be achieved through the four distinct yet mutually reinforcing priority areas, namely, (a) Disaster Prevention and Mitigation; (b) Disaster Preparedness; (c) Disaster Response; and (d) Disaster Recovery and Rehabilitation. As shown on Figure 8, each priority area has its own long term goal, which when put together will lead to the attainment of the country's overall goal/vision in DRRM.

Figure 8. Four DRRM Thematic Areas

These priority areas are not autonomous from the other nor do they have clear start and end points. The 4 priority areas are NOT seen as a mere cycle which starts in prevention and mitigation and ends in rehabilitation and recovery. They...

(a) ***Mutually reinforce each other and are interoperable***. This means that whatever is done in one aspect will have a direct or indirect effect on the activities identified under the other aspects. Furthermore, this means that it is assumed that the level of preparedness and intensity of response activities conducted are lessened because proper prevention and mitigation activities have been done already.

(b) ***DO NOT, SHOULD NOT and CANNOT stand alone***. Because they are inter-linked, one cannot just focus on one aspect without considering the others aspects.

(c) ***Have no clear starting nor ending points between each of the aspects and overlaps are to be expected***. There are some areas which are divided very thinly by gray areas. These are activities which need to be smoothly integrated into two aspects. The overlapping activities were

put into the specific aspect which could better capture its essence using the lens of that specific DRRM area and to correspond to the given parameters within which these aspects focus on.

There are significant activities under the four (4) thematic areas. For Disaster Prevention and Mitigation, the activities include early warning systems, flood forecasting and monitoring, hazard and risk mappings and structural and non-structural interventions. Likewise, for Disaster Preparedness include contingency planning, prepositioning and stock-piling, capacitating and organizing responders, training, drills and exercises and Pre-Disaster Risk Assessment (PDRA). In terms of Disaster Response, the activities include Rapid Damage Assessment and Needs Analysis (RDANA), issuance of advisories and situation reports, activation of Response Clusters and Incident Command System (ICS), mobilization of responders, humanitarian assistance (e.g. relief distribution), provision of financial assistance and management of evacuation centers. For Disaster Rehabilitation and Recovery, the activities include Post-Disaster Needs Assessment (PDNA), enhancement of policies and plans, reconstruction using "build back better" approach, resettlement, provision of new sources of livelihood.

2. What are the examples of DRRM-related social institutions that promote resiliency and enhance capacity to natural hazards in Japan particularly in Kansai Region and the Philippines particularly in Caraga Region as the researcher's area of concern, in terms of government institutions, educational/learning institutions, and community/volunteer organizations?

In Kansai Region, there are excellent examples of DM-related social institution in terms of **government institutions**. These include the following:

- **Hyogo Prefecture Disaster Management Center**

The **Hyogo Prefecture Disaster Management Center** established in August 2000 is the first local government office dedicated to disaster management in Japan**.** This facility serves as the central base for the preparedness and information collection and the regional hub/headquarters for Disaster

Management activities. It is capable of functioning even when lifelines have been disrupted in the aftermath of a major disaster. The facility is earthquake resistant, equipped with backup functions with various lifelines and houses administrative office of the emergency relief headquarters, exclusive well for drinking during disasters, independent power generator, underground safe and secured pathway for close cooperation between departments of the government, emergency headquarters control room, waiting room, night duty room, broadcasting room, network control room, and cooperation organization staff room. As the base for rescue activities, the Center utilizes the **Phoenix Disaster Management System** where functions for collection of observation data, prompt damage forecasts, the collection of damage information, map information, image information, estimation of supply and demand of personnel goods and others. Likewise, the center cooperates with the Hyogo Prefectural Emergency Management and Training Center and other related organizations.

Visit to Hyogo DM Center on September 14, 2016

Hyogo's Disaster Management focuses on seven priorities. The first priority is the **Improvement of an Initial Response System**. The *Emergency Relief Headquarters Control Room* serves as the central base for disaster management activities and is where disaster relief-related organizations would gather and hold conferences whenever a large-scale disaster occurs. The room layout is functional and highly flexible with spacious desks to ensure efficient emergency activities. Likewise, the *Administrative Office of the Emergency Relief Headquarters* is used as the office of the Disaster Management Division in peacetime or under normal circumstances to collect disaster management-related information when a disaster strikes. Further, the *Cooperative Organization Staff Room* has enough working spaces for disaster-relief organizations, members of the press and an increased number of staff in-charge of keeping the headquarters operational. *Press Conference Room/Broadcasting Room* conveys information directly to residents during disasters. The center provides *Night Duty Room* for night duty-staff to render 24-

hour surveillance and full readiness. The Phoenix DM System works at the core software in the center which is a comprehensive disaster information system that responds promptly not only to earthquakes but also to various other disasters. The *Network Control Room* is where information and communication devises are being installed including the server, the heart of the Phoenix, and radio communication devices that utilize satellite communication networks.

The second priority focuses on **Improvement of Disaster Management Infrastructure**. In Hyogo Prefecture, disaster management facilities have been prepared to cover the entire prefecture. The *Regional Emergency Management Bases* include Tajima Airport, Harima Science Garden City, Awaji Fureai Park, Hyogo Prefectural Office, Kaibara Branch, Miki Disaster Management Park and Koshienhama Seaside Park. The Emergency Management and Training Center functions as a core facility. Each facility has a stock of materials for the victims and equipment for the rescue teams. It is located in Miki Disaster Management Park. Normally, the park is used for sports and recreation as well as education and training for DRR. In the event of large-scale disaster, it supports the affected area as the *Regional Emergency Management Base* for the whole prefecture.

The third priority is **Strengthening the cooperation with disaster-related organizations**. In Hyogo Prefecture, Police, Fire, Self-Defense Forces, Medical Institutions and other disaster-relief organizations hold regular disaster discussions and joint disaster relief training exercises such as cooperative trainings, Civil Protection Training to help strengthen their ability to communicate. In addition, the Kobe based Air Rescue Team saves lives by responding to over 200 incidents a year including forest fires. Disaster assessment committees have been established to compile proposals on how to prepare for various disasters such as typhoons and new strain of flu in the future. Each time a disaster occurs that could not be dealt with the existing local disaster prevention plan, the plan is being reviewed to help strengthen the disaster management schemes. *Regional Disaster Management Plans* are prepared not only for natural disasters such as earthquakes or typhoons but also for epidemics, serious accidents and arm strikes against Japan. Hyogo Prefecture performs joint training along with national and other related organizations to protect its citizens.

The fourth priority is focused on **Countermeasures against Tonankai/Nankai Earthquake, ground corrosion and flooding.** The probability of a Tonankai/Nankai Earthquake within thirty (30) years is predicted at about 60% to 70%. Hyogo Prefecture has created a map showing areas likely to be affected by a Tsunami. In such areas, a computer-generated (CG) movie simulating the tsunami has been made to educate citizens on how to prepare for this type of disaster. Also, Research and promotion of DRR and buildings such as the 3-D Full Scale Earthquake Testing Facilities (E-defense) have been established.

The fifth priority is the **Improvement of Community Disaster Management Capabilities**. Immediately after the Great Hanshin-Awaji Earthquake many of the survivors were rescued by their neighbors or local voluntary disaster management organizations. Hyogo Prefecture in cooperation with cities and towns comprehensively support the projects to improve and strengthen voluntary disaster management activities. As of 2010, about 95.9% of households are covered by voluntary disaster management organizations in Hyogo Prefecture. Furthermore, the campaign is run by Hyogo Disaster Management actions through its citizens, schools and companies voluntarily enhance their ability to deal with disasters. Lectures are held to people in-charge of local disaster management such leaders of voluntary disaster management organizations so that they can acquire systematic and practical knowledge and techniques related to disaster management.

Hyogo Prefecture has established the Hyogo Disaster Information Network to announce emergency information quickly during disasters and provides citizens disaster-related information. During the Great-Hanshin Awaji Earthquake, about 80% of the victims were crashed to death by destroyed houses. Thus, Hyogo Prefecture is trying to promote thorough in-house safety countermeasures such as seismic retrofitting of houses and mechanisms to prevent furniture from toppling. Besides, Hyogo Prefecture established the first ever Mutual Aid System for Housing Reconstruction (Phoenix Mutual Aid) to assist victims in purchasing and rebuilding their homes damaged during the disaster.

The sixth priority focuses on the **Promotion of Region-wide Disaster Risk Reduction Cooperation.** The Union of Kansai Governments was created to work on issues across the Prefectures within Kansai Area. In Hyogo Prefecture, the Region-wide Disaster Preparedness Office has been set up and plays an important role in considering how disaster management policies should be implemented in the future. The agenda include the establishment of a Region-Wide Emergency Medical System using medical helicopters and disaster management system in preparation for the possibility of Tonankai/Nankai Earthquake. Also, during the Great East Japan Earthquake occurred in March 2011, an emergency statement was issued two (2) days after the disaster and started to support the affected areas immediately. The GEJE Minamisanriku Town supported headquarters of the Union of Kansai Governments. In the event of a large-scale disaster anywhere in the world Hyogo Prefecture cooperates for recovery, rehabilitation and reconstruction by sending relief aid and expert staff to affected areas. The Hyogo Prefecture was able to extend donation during the Haiti Earthquake.

Finally, the seventh priority is focused on **Inheritance and development of Earthquake Lessons.** The Hyogo Prefecture promotes the improvement of infrastructure as part of disaster risk reduction as well as the local community's capability to deal with disasters. Disaster management in Hyogo Prefecture is pursuing disaster reduction based on the experience and expertise it has gained through the years especially after the Great Hanshin-Awaji Earthquake. Lessons of this Earthquake for Hyogo Prefecture and the entire Japan include the importance of preparedness and building a disaster management system that could respond to any disaster. This emphasizes the importance of cooperation among disaster management organizations together with the community and regional disaster-response capability as well as the importance of making cities resilient where the need for urban planning takes space and safety into careful consideration.

- **Kobe City Hall Crisis Management Center**

Another good example of a government institution at the city level is the **Kobe City Hall Crisis Management Center** located in Kobe City, Hyogo Prefecture. The establishment of Crisis Management Office in April 2002 is one

of the policy measures that build upon the history of earthquakes in the city. The Kobe Crisis Management Center is dedicated as a central facility in coordinating a range of emergency response systems and procedures that enable the city to respond to all forms of disaster including wind, flood and earthquakes. The key operational objectives of the center are the following: 1) Better initial response; 2) More sharing of emergency information; and 3) Improved disaster prevention at the regional level.

One of key principles of facility design is the **central crisis management facility with high level of disaster protection**. The Crisis Management Center features *seismic reinforcement* which is a base-isolated structure designed to prevent disruption to operations in the event of a major earthquake and ensure an uninterrupted initial emergency response. The anti-earthquake structure, designed to reduce the seismic force of a major earthquake by about one-third compared to conventional seismic damping prevents any impact on computer systems and other systems. Another feature is the *emergency power supply and others.* The center is equipped with a dedicated *emergency power generator* on the ninth floor that operates for a period of three days. This generator complements the power source for the municipal offices to create a reliable power supply network for computer systems and other systems. Separate underground tanks hold drinking water and well water (non-drinking purposes) and also provide emergency wastewater storage. Emergency food and water supplies for three (3) days and other emergency supplies for employees are also stored in the building. The Disaster Prevention Exhibit and Training Room (press corner) located at the first floor is based on two key concepts: 1) earthquake and tsunami protection; and 2) wind and flood damage mitigation. It is dedicated to raising public awareness and disaster prevention, improving disaster preparedness at the local level, and providing earthquake training drills and programs. The permanent exhibit is divided into seven (7) sections, namely: 1) disaster prevention games and teaching materials; 2) disaster

prevention goods; 3) liaison structures and first aid in a disaster; 4) ways to minimize the impact of an earthquake and keep furniture from shifting; 5) floor hazard maps, 6) disaster prevention training manuals and publications; and 7) panel displays and information.

The *Operations Center* located at the second floor performs a variety of roles in a disaster including gathering information, formulating and directing response strategies, liaising with relevant authorities and providing updates to the public. The Operations Center also collaborates with agencies such as fire and police services as the need arises. It also houses the Crisis Management System, a tool for assessing damage reports and formulating response strategies, as well as large screen for displaying video from fire service monitoring cameras, televisions used to source information and telephones, fax machines and wireless devices for liaising with relevant authorities.

The *Radio Control Room* is designed for the Emergency Services Digital Radio Service, a vital service that provides the public with evacuation warnings and other important disaster information. The *Fire Services Control Room* handles emergency 119 calls and coordinates on the dispatches of ambulances and fire trucks. All 119 calls made within the Kobe City are directed to the Fire Services control Room. The Fires Services Control Room is a large space with high ceilings. It is equipped with large video screens that provide good visibility of important information, and also features the *New Fire Services Management System* which is designed to help fire-fighters to perform more efficiently.

Visit to Kobe Crisis Mgt. Center on September 1, 2016

The *Offices of the Waterworks Bureau* is responsible for the water supply network which constitutes a key piece of infrastructure in the city considered as vital to everyday life as well as industrial and commercial operations. The office floors feature a long-span design with fewer columns to provide an expansive

office space with extra flexibility in layout configurations of desks, shelves and other elements. External vertical louvers help to block the afternoon sun to ensure a pleasant working environment.

Another key principle of facility design is **environment friendly and people friendly design**. The building features a number of people-friendly design elements including wide stairways with gentle inclination, elevators suitable for people with physical disabilities, barrier-free flow paths, naturally intuitive signage, and Kobe Universal Toilets. The building also features a number of energy-saving initiatives including maximum usage of natural light and ventilation, thermal insulation incorporated into the building structure, high-efficiency heating and cooling systems, and LED lighting. The Operations Center, Fire Services Operations Center, meeting room and office floors are designed to maximize the flexibility of the layout configuration and also facilitate replacement of equipment and fittings. Alternative emergency and energy-saving initiatives are employed at the Crisis Management Center which include solar power system, water-saving toilets, sensor-operated taps, well water, high-efficiency transformers movement sensors, maximum use of natural light, high-efficiency LED lighting, rooftop landscaping, sunlight eco-louvers and external intake heating/cooling systems.

The last key principle of facility design is **Urban design consistent with Design City Kobe philosophy**. The building is located within the former foreign settlement area of Kobe, which is subject to special regulations on design aesthetics. As such, the building exterior acknowledges the historical nature of the area while at the same time imparting a modern and artistic sensibility commensurate with the commercial heart of the city. Meiji-era brick structures discovered during initial excavation on the site have been used to create a monument. This exemplifies the city's commitment to provide an appealing and functional space in the heart of the city in line with the Design City Kobe philosophy. The main square facing the roadway successfully fuses the interior and exterior of the glass-clad first floor by creating a busy and popular public area. The glass wall features a deformation-style graphic design of street and block names. It is lit up at night to form an attractive display.

The Crisis Management Council as the supreme decision-making body

when a disaster countermeasures committee has been established is responsible for determining the response taken by the Kobe City. The council has around forty (40) members including the Chairman who is the City Mayor and Vice Chairman who is the Deputy Mayor, the Crisis Management Monitor and heads of relevant departments and agencies. The Crisis Management Council Room is equipped with a large video screen used to display damage reports and other information.

The Kobe City Government has developed a system to ensure a prompt and appropriate response to large scale disasters and other crises, based on the experiences and lessons learned from the Kobe Earthquake. Currently, the Kobe City Crisis Management Basic Policy classifies emergency cases that require the city's prompt response as 1) a natural disaster, including an earthquake or typhoon, 2) a large-scale accident, or 3) another type of crisis such as a health crisis or major terrorist incident. This policy outlines the measures and procedures to be taken in the case of each of these emergency situations.

The *Kobe Crisis Management Structure* is composed of Chief Officer for Crisis Management and Crisis Management Office. In case of large-scale disaster, initial response is vital. The government is required to obtain and analyze the disaster situation promptly and distribute information to citizens and related organizations accurately.

When a large scale disaster occurs, in the absence of the Mayor, the Chief Officer for Crisis Management will direct and supervise all the departments of the government in behalf of the Mayor. In ordinary times, the Chief Officer works in the Crisis Management Office to reinforce the disaster management system within the local government and to build partnership with other disaster-related organizations to ensure prompt and accurate response to various crises may threaten the safety of citizens.

In addition, the city government concurrently appointed executive officers in the departments that will take key roles in emergency response activities including operations at the devastated sites (Public Relations Division, Public Health and Welfare Bureau, Public Construction Projects Bureau, Port

and Urban Projects Bureau, Fire Bureau, Ward Offices, etc.) as staff members of the Crisis Management Office in order to achieve a concerted and united emergency response.

- **Tsunami/Storm Surge Disaster Prevention Station, Osaka City**

Another, good example of government institution is the Tsunami/Storm Surge Disaster Prevention Station completed in June 2007. Osaka is known to be a city with high risk to flooding as it lies on land which is below sea level during high tide.

The Tsunami/Storm Surge Disaster Prevention Station is considered to be a disaster prevention base responsible for the Osaka area. Flood barriers are installed inside the Disaster Prevention Station. The mechanism of these flood barriers is vital to prevent flooding. The station displays exhibits regarding tsunami and storm surges in Osaka. The booths primarily educate the audience of the causes of tsunami and storm surge, history of flooding in Osaka, and disaster preparedness and risk management in the event of a tsunami and storm surge. A movie theatre is also set up to show simulation of a high-magnitude earthquake.

The station comprises the *Disaster Prevention Building* and *Display Building*. The *Disaster Prevention Building* provides collective control for tsunami and tidal surge protection facilities such as seawalls and gates, administered by the Nishi Osaka Flood Control Office. The *Display Building* seeks to enhance awareness of disaster prevention among Osaka residents. This building is open to the public to help people gain right knowledge of tidal surges that struck Osaka in the past as well as the Tonankai/Nankai Earthquakes and tsunamis which are anticipated to hit Osaka in the near future. The building also enables the visitors to learn about how to react when an earthquake or tsunami occurs.

During the researcher's visit, a short documentary film was shown as a reminder that people need to look, learn and prepare. By "looking, listening

and touching," people will learn and realize the importance of preparing for disasters. The film conveys a powerful message that it is of vital importance that people learned from past disasters and that natural disasters have a habit of exceeding people's predictions. Learning from the past major disaster occurrences in Japan particularly in Osaka also known as the City of Water where many residents are living below sea level, it was emphasized that people need to prepare for water-related contingencies. While the station's Director General, Engr. Koichi Yamamoto explained intensively the different photos, replicas of cenotaph as memories of the past disasters as well the structural and non-structural countermeasures against tsunami/storm surges showcased in the station, the researcher was impressed by how the institution preserved and displayed aesthetically these items to educate people.

Visit to Tsunami/Storm Surge Disaster Prevention Station on September 12, 2016

Osaka Prefecture is developing a collective management (remote monitoring, control motorization, etc.) of tide gates and (iron) tide protection gates for opening/shutting operations. As a disaster prevention center in western Osaka for such a sophisticated development, the Tsunami/Storm Surge Disaster Prevention Station seeks to further enhance public awareness of tsunami and tidal surge disasters. Considering countermeasures against tsunamis due to Tonankai/Nankai Earthquake, the station systematically manages western Osaka's flood control, disaster prevention and water environment development. The Observation and Operation Room of the building is a central control room for tide gates and iron gates. During emergencies, the room serves a flood prevention center for liaison with relevant organizations.

The station features the different sections. One is the ***Osaka below Sea Level Section*** which helps the audience realize the characteristics of Osaka Prefecture, where some downtown areas lie below sea level, posing potential

tsunami, tidal surge and other water damage risks. This model exhibition section, with the floor regarded as sea level enables one to keenly realize that Osaka is a city below sea level potential risks. Integrated use of film, sound and illumination stirs one's imagination on what would happen when a typhoon hits the city. Using a model of Osaka Prefecture, a film offers a visible explanation on the prefecture's characteristics, where people and properties are concentrated in coastal areas below sea level.

Another feature is *Overcoming Disasters, Reliable Countermeasures against Tidal Surges.* The Tidal Surge Disaster Tunnel provides information on Osaka's three largest typhoons to date. Displayed in the tunnel are typhoon pictures and news films, as well as a diorama of submerged city. The tunnel is a symbolic space allowing one to feel as if he/she is lost in a disaster area, stirring up anxieties. *The functions of Tidal Surge Protection facilities is also showcased at the station. Tidal surge disasters due to large typhoons,* such as the Muroto Typhoon, Jane Typhoon and Second Muroto Typhoon, claimed and devastated the lives of many people. Based on the lessons from past disasters, tidal surge protection facilities are now established along seashores, on riversides and in other areas below sea level, in order to prevent the areas from being submerged. As a symbol of facilities to protect people in Osaka from tidal surge disasters, a real iron gate is set up inside the building, helping people to learn about reliable countermeasures against tidal surges with an explanation of the functions and mechanisms of various disaster protection facilities. Using a movable model, explanation is also offered on an arched flood gate, which is rare in the world. Most of the gates are actually shut by Flood Prevention Teams. To deal with such emergencies, flood prevention teams work very hard to protect community's daily life.

Likewise, another enriching feature is showcased as *Tsunami Dangers Different from Tidal Surge Dangers.* Tidal surges and tsunamis are quite different in terms of how they occur, their cycles and characteristics. While it is possible to predict in advance the occurrence of tidal surges, it is impossible to make detailed predictions of tsunamis. Large tsunamis often strike disastrously when people forget how terrifying previous disasters were. The *Dynacube (Tsunami Disaster Experience Theater)* is where dynamic images are displayed seamlessly on the front, right and left sides, even on the floor. The use of sound effects

generated by a floor vibro-acoustic speaker further make the audience feels as if they are caught by a real tsunami. This facility helps the audience experience the fear of tsunamis in an overwhelming, dynamic atmosphere. *Preparation for Tonankai/Nankai earthquakes: Tsunamis and Shakes* is another remarkable feature of the station. Tsunamis generated by the Tonankai/Nankai Earthquakes are believed to hit Osaka coastal areas in the near future. This section provides information on recent research results, such as earthquake and tsunami occurrence mechanisms and expected disaster scales and areas. A wide variety of exhibits aerial photographs are displayed on the section floor along with a 3-D hazard map, films, and panels depicting actual tsunami height. The 3-D Hazard Map is a disaster prevention map created based on aerial photographs. By touching the map monitor panel and choosing an area, the audience can view a focused and enlarged image of the area with disaster prevention information for the area (such as evacuation sites and expected submersion depths). In 2003, Osaka Prefecture conducted a tsunami simulation on the assumption that the largest-scale Nankai Earthquake would occur (also examining tsunamis expected to hit coastal areas in terms of height, arrival time and current speed.) The tsunami heights indicated here are expected maximum heights based on the assumption that earthquakes occur at high tide. (Earthquake Scale: M8.4; Epicenter: Shikoku – Wakayama Offshore)

Hence, the Tsunami/Storm Surge Disaster Prevention Station in Osaka is an institution that helps to remind people the importance of preparedness in minimizing the casualties caused by disasters. It is also important for people to realize that the occurrence of these natural phenomena cannot be controled, but the devastating effects through research and education can be minimized.

On the other hand, the following institutions are outstanding examples in terms of **educational/learning institutions.**

- **Disaster Reduction and Human Renovation Institution (DRI)**

The Disaster Reduction and Human Renovation Institution (DRI) also known as the Great Hanshin-Awaji Earthquake Memorial was founded by Hyogo Prefecture in April 2002 with the support of the Japanese government. It is located in Kobe City and being supervised by the Hyogo Earthquake Memorial 21st Century Research Institute. Hyogo co-manages the DRI in cooperation with the national government as a base for sharing the experiences and lessons learned from the earthquake.

The DRI aims at cultivating disaster prevention culture, mitigating social vulnerability, and developing policies for disaster reduction by transferring experiences of the Great Hanshin-Awaji Earthquake and applying lessons learned from the Earthquake for a better future, thereby contributing to realizing a safer and more secure civil society along with education regarding the value of life and the preciousness of co-existing. Likewise, the DRI also aims to be an international research and study hub, which contributes to disseminating information on effective measures for all types of disasters. It receives many visitors, both domestic and international. Along with its role of an earthquake museum by collecting, preserving, and exhibiting earthquake-related resources, DRI conducts practical research on DRR using its unique research and survey functions. The institution trains DRR practitioners and deploys specialists to disaster-affected areas both at home and abroad to provide advice on disaster response activities. DRI takes advantage of the experiences and lessons learned from the earthquake in on-site disaster management and acts as an international hub for DRR activities.

The DRI established the *Museum Exhibits* which features actual experiences and lessons learned from the Great Hanshin Awaji Earthquake. This is in collaboration with disaster victims themselves, local citizens and volunteers.

Visit to DRI on August 30, 2016

The museum is open for the rest of the world to learn from, especially for the children who are to create a safer future. The knowledge gained from this is for the children to consider in every decision they make so as to contribute in making a resilient society. Through this institution, DRI motivates citizens and visitors to take a sincere interest in, deliberate upon, and understand the importance of disaster reduction, precious human life, and the value of mutual dependence of people.

DRI adequately understands the challenge for public entities based on the experiences of the Great Hanshin-Awaji Earthquake as well as on academic research achievement. DRI conducts Action *Research on Disaster Reduction and Development of Disaster Reduction Professionals* that contributes to the formulation and implementation of disaster reduction policies and management actions by central and local governments, communities, and business enterprises. In addition, DRI takes a lead role in promoting and increasing the value of such practical research approaches within the academic arena. Further, DRI provides practical research for the improvement of disaster reduction abilities for a widespread disaster reduction awareness within society, Among the research fields identified include: Governmental disaster management, Emergency evacuation measures, Secondary disaster measures, Logistics of material resource, Information measures, Volunteer, Infrastructure, Care for and Local economy.

The DRI considers important areas for research while attempting to plan for the next 30 years. The institution takes into account the present social demands along with its overall mission statement. This is often done by continuous and systematic updating of the organizational roadmap every five

(5) years to reflect important areas for research and the research that should be addressed. Significant areas of research are also focused on the optimization of post disaster response as it relates to individuals and society; improvement of inter-organizational cooperation policies to cover disasters that span wide areas, and building strategies for restoration and revitalization of regional communities. The Institute has also established "improving Society's Ability to cope with Large-scale disasters" as the Institute's core research theme which is to be continued over a fixed term. "Special Research Projects" flexible and mobile research themes established to dig deeper into the development of related areas of the "Important Areas of Research". Groups or all full-time researchers are involved in this project over fixed terms. In fostering full-time researchers, the institution encourages candidates with a Masters or Doctors degree as eligible for employment for 3-5 years as full-time researchers. Under the direction of senior researchers, they are then able to work on practical disaster prevention research and participate in the various other businesses of the center which is also a part of their training to become practical disaster prevention experts.

DRI works in association with local citizens and communities for the continuous *Collection and Preservation of Source Documents and Materials*. It collects information on the Earthquake and disaster reduction, as well as in the development of its database. This is primarily aimed to ensure that the profound feelings of disaster victims and the lessons of the Great Hanshin-Awaji Earthquake do not fade from people's memory. DRI in turn displays and disseminates this information in a manner which is a lot easier to understand especially for ordinary citizens.

With respect to the provision of *Headquarters Assistance in Disaster Response*, DRI also dispatches experts with practical and systematic knowledge in disaster response especially in case of large-scale disasters. These dispatched experts will provide appropriate information and advice to headquarters managers, thereby contributing to mitigation of further damage as well as in preparation for recovery and reconstruction.

The DRI also provides *Training of Disaster Managers and Practitioners*. It conducts training of local government practitioners who play central roles in

disaster management. In these training programs, DRI share the experience of the Great Hanshin-Awaji Earthquake. It has a systematic and comprehensive program on practical knowledge and skills in disaster reduction with reference to the latest research result. Through this training program, DRI aims to contribute to the upgrading of emergency management capacity of the local governments. There are two kinds of training programs being offered namely, Intensive Course and International Training Course. Intensive Course is focused on specific theme and central purpose. This is being conducted several times a year and is specifically designed to improve the ability of individuals to deal with disaster situations. The International Training Course is a course wherein participants learn knowledge on disaster management using Japanese system as a practical model and know-how learnt from the Great Hanshin Awaji Earthquake. It is entrusted by the Japan International Cooperation Agency (JICA) targeting various countries and regions in the world. There are four (4) types of courses being offered, namely Top Forum, Management Course, Basic, Management Course, Expert, and Management Course, Advanced. The Top Forum Course is specifically designed for governors and directors of local governments. The heads of local governments discuss the required responses for future major disasters and review how local government crisis management ought to be based on the latest research results and information on national disaster prevention measures. The Management Course, Basic is designed for personnel of regional public entities responsible for disaster management with less experience. This course provides systematic learning of basic disaster countermeasures and the like for each department focusing on disaster mechanisms and the experiences of the Great Hanshin-Awaji Earthquake. The Management Course, Expert is designed specifically for personnel of regional public entities responsible for disaster management. This course is conducted through exercise and concrete examples of disaster reduction to strengthen the capability to understand ways to cope with large scale disasters comprehensively where various countermeasures should be taken. The Management Course, Advanced is designed for personnel of regional public entities responsible for disaster management and who are expected to maintain the effective management of their divisions. This course is aimed at improving the ability of individuals to assist managers of regional public entities. Based on the experiences and lessons learnt from the Great Hanshin-Awaji Earthquake, DRI hopes to teach courses about policy oriented decision-making

issues that may arise when future large-scale disasters strike.

DRI considers itself as an institution which functions as a cross-road of government practitioners, researchers, citizens and business enterprises with experiences and interest in the Earthquake and disaster reduction. In its effort on *Exchange and Networking*, DRI provides a venue for encounters of various disciplines and people, as well as for domestic and international cooperation, so as to promote diverse initiatives for mitigating social vulnerability.

International DRR organizations such as the united Nations Office for the coordination of Humanitarian Affairs (OCHA), the United National International Strategy for Disaster Reduction (UNISDR), the International Recovery Platform (IRP), the Asian Disaster Reduction Center (ADRC), the Japan International Cooperation Agency (JICA) and other were invited by Hyogo to form the Disaster Reduction Alliance (DRA) to strengthen the relationships between these organizations. Furthermore, Hyogo supported the establishment of the Bursa Disaster Learning and Training Center, which is modeled after the DRI, in the Bursa Province of Turkey. With these, the lessons that Hyogo learned from the earthquake and subsequent reconstruction activities are being widely applied internationally (White Paper on Disaster Management in Japan 2015 – Summary).

- **Osaka City Abeno Life Safety Learning Center**

The **Osaka City Abeno Life Safety Learning Center** is another remarkable educational institution established by the City Government of Osaka. Since

the 1995 Great Hanshin-Awaji earthquake and the 2011 Great East Japan earthquake, more earthquakes have been predicted for Kansai as well as the southeast and south seas. This center helps people prepare against natural disasters such as earthquakes, urban flooding and severe rainstorms by simulation.

The facility provides realistic experience of terrible shaking and destruction as it recreates earthquakes with intense videos and shaking motion. People can also learn and practice what to do after an earthquake, both indoors and on the streets, including how to put out fires, evacuate, rescue others, and a series of other necessary disaster preparedness training activities.

The center provides two (2) training areas, namely: Practical Disaster Training Area and Safety Training and Practice Area.

The Practical Disaster Training Area has different corners as follows: 1) *Virtual Earthquake Corner* provides an introduction to the Earthquake Disaster Experience Zone wherein the earthquake information through a newscast is shown in a clear big-screen video with full vibration realistically recreating a major earthquake around a person; 2) *Fire Prevention Corner* is where visitors are taught on what to do right after an earthquake since several things can cause fires; 3) *Smoke Corner* where visitors are taught on how to evacuate properly when there is smoke; 4) *Early Extinguishing Corner* where visitors are taught how to properly extinguish fire; 4) *119 Practice Call Corner* provides important instructions on how to call 119 and provide details in case of fire or emergency situations; 5) *Fire Extinguisher Corner* where visitors can learn all the steps involved in using a portable pump to put out fires; 6) *Rescue Corner* where visitors are taught how to rescue using a jack if somebody is trapped under a toppled furniture of a damaged house; 7) *First Aid Corner* where someone can learn useful skills on basic bandaging to stop bleeding and set broken bones in case someone needs first aid; 8) *Hazards Corner* is where visitors can learn how to avoid dangers of fallen sign, exposed gas pipes, and broken electrical wires; 9) *Learn to Media Deck* where a certificate of completion is given to visitors after the experience; 10) *Experience a Magnitude 7 Earthquake Simulator* is a room equipped with technology to recreate an actual earthquake as intense as the Great Hanshin-Awaji Earthquake; 11) *Multimedia Learning Center* provides the use of computers and graphic panels to look up all sorts of information about earthquakes, fires, wind and flood damage; 12) *Multipurpose Safety Training Room* is where many potential uses, such as showing disaster-related films and holding lectures, orientations and first–aid training; 13) *Life Safety Merchandise Shop* is where emergency kits and tip-resistant furniture plating, various goods that might be needed someday are

available.

On the other hand, the Safety Training and Practice Area has three (3) designated rooms as follows: 1) *General Training Room where* simulations can be held covering the necessary actions during an emergency and where can realistically practice putting out fires and leading evacuations; 2) *Safety Training Room* provides practical learning on the basics of fire and disaster prevention, and reducing damage and preventing fires from spreading; 3) *Life Safety Equipment Room* is where safety equipment of every type is displayed to be used in actual buildings. The visitors can learn about these structures and how to run them. Also, sprinklers and other fire prevention systems are set up so that visitors can easily understand how they work.

Osaka City Abeno Life Safety Learning Center on September 12,

The researcher who personally experienced the training was impressed with such innovation not only because of its state of the art technology but because it provides invaluable learning and practical skills to young and old people alike on saving lives and property as well as minimizing damage during an emergency and disaster. What made her more impressed is the fact that a group of senior citizens, youth and children willingly participated and experienced the various practical disaster training areas during the visit.

- **Inamura-no-Hi no Yakata Tsunami Educational Center, Hirogawa Town, Wakayama**

In order to enhance education on disaster prevention for children Inamura-no-Hi no Yakata located in Hiro Hirogawa-cho Arida-gun, Wakayama was established by the Association of Inamura-no-hi. This consists of the Hamaguchi Goryo Archives and the Tsunami Educational Center. The construction process commenced when Hamaguchi Fund was established in

1988. The facility was opened in April 2007 where the virtues of the great local pioneer of "Hamaguchi Goryo" and the danger of tsunamis could be handed down for posterity and for visitors to also learn about the mechanism of and best response to tsunamis. Inamura-no-Hi no Yakata is positioned as a central base facility for the nationwide PR activities of Hirogawa-cho as the "town of the fire of rice sheaves" in the future.

The history of Hirogawa-cho reveals the importance of fostering daily preparation while handing down the inspiration of Goryo Hamaguchi, a village headman who set fire to inamura (rice sheaves) as a mark to help villagers escape to a safe place when a huge tsunami caused by the Ansei-Nankai Eathquake hit Hiro-mura in the Kishu Domain (presently Hirogawa-cho, Wakayama) on November 5, 1854.

The Tsunami Educational Center provides learning on how to protect lives and livelihoods from any future tsunami disasters on the basis of Hamaguchi Goryo's spirit of disaster prevention and the respect for human life shown in "the fire of rice sheaves".

The center has different facilities as follows: 1) *Disaster Simulation Room* where the three piece of wisdom, namely "emergency action", "recovery" and "prevention" provides information to protect lives from tsunami. Several senryu (witty poems) on disaster prevention, explanatory graphic, simulation videos and the game are displayed to provide important information/knowledge on disaster preparedness; 2) *3D Tsunami Video Theater* where a short film is shown to provide the viewers the information on the danger of earthquake and tsunami. 3) *Tsunami Simulation* is set up to show the propagation mechanism of tsunamis with the 16-meter long tank used for tsunami experiments; 4) "*The Fire of Inamura" Gallery* where the history of tsunami disaster prevention in Hirogawa-cho is displayed. Goryo's "fire of rice sheaves" as a model of emergency action, recovery and prevention, the basis of modern disaster prevention can be found in this area; 5) *Path of Inheritance*

shows how people inherited the spirit of tsunami disaster prevention using the history of repeated tsunami attacks on Hirogawa-cho from the Keicho earthquake in 1605 up to the present; 6) *Tsunami Library* is the corner for studying earthquake-tsunamis and learning about evacuation from a tsunami with the tsunami evacuation simulation and 3D hazard map; 7) *Special Exhibition Gallery* where special exhibitions such as event-related displays, research presentations and up-to-date information are displayed. This room and the guidance room serve as temporary shelters in times of disaster; 8) Guidance Room where a guidance video is shown prior to the tour. The room can be used as a site for lectures and events. It also functions as a temporary shelter and stockpiling site in times of disaster.

In 2011, the year of the Great East Japan Earthquake, Tsunami Preparedness Day was enacted based on law, and training exercises and education initiatives were launched throughout the country in order to raise public interest and understanding of tsunami countermeasures. Furthermore, the United Nations General Assembly established November 5 as the World Tsunami Awareness Day in December 2015. It is emphasized that early warning systems can save lives. Community and individual understanding about how and where to evacuate before a wave strikes are equally important.

- **Emergency And Rescue Team by School Staff in Hyogo (EARTH)**

The Great Hanshin-Awaji Earthquake was the turning point in the history of school disaster education and school disaster management in Japan. Many good practices on school disaster education have been developed. Shiwaku et.al (2016) cited the **Emergency And Rescue Team by school staff in Hyogo (EARTH)**, which is the system led by Hyogo Prefecture Government in order to promote school disaster education and improve school disaster management through training professional teachers and staff. EARTH is a knowledge sharing platform to enhance disaster preparedness in Hyogo. According to Ito (2002), the establishment EARTH aims to make the best use of Hyogo's experience and to reciprocate the vast amount of assistance it received from other prefectures during the earthquake. It is also an organization with the purpose of supporting education recovery in disaster-stricken areas. With this, it is recognized that efforts by local government contributed to enhancing school disaster education

and disaster management.

In April 1, 2000, the Hyogo Board of Education established the EARTH in order to promote school disaster management (Education Board of Hyogo Prefecture 2006). EARTH consists of five (5) groups, namely: School Education, Psychological Care, Evacuation Place Management, School Meals, and Research and Planning. The members of four groups other than research and planning group are trained teachers. As of 2011, the team is comprised of 150 school personnel and other members.

There are three (3) principles of disaster education adopted by EARTH as emphasized on the lecture presentation by Dr. Michiko Banba, Education and Research Center, University of Hyogo attended by the researcher. These principles are: 1) Knowledge about mechanism of hazard and disaster; 2) Disaster reduction actions and evacuation after the occurrence of hazard; and 3) Foundations of Wellbeing and symbiosis.

Based on the EARTH Handbook, there are four (4) pillars of disaster education. One of these is the foundations of well-being which include respect for lives, compassion for people and volunteerism. Another is the understanding of natural and social factors both the natural phenomena and social phenomena. The third pillar is the development of systems for disaster reduction which focuses on the regional characteristics of disaster and system development. Lastly, the preparation and reaction to reduce disaster emphasizes disaster reduction actions.

Members of EARTH have provided support to the school shelters in the area damaged by the eruption of Mount Usu in Hokkaido and psychological care for the children in the quake-stricken schools in western Tottori Prefecture.

They have also participated in seminars for school faculty and local disaster prevention drills to share what they have learned from the Earthquake. Likewise, in response to a request from Miyagi Prefecture Board of Education in the aftermath of the Great East Japan Earthquake of March 11, 2011, EARTH members were sent three times between March and April and between July through August. The first group worked to support for schools that have been used as shelters in the town of Minamisanriku, five (5) days after the earthquake occurred. During that period, EARTH generated a checklist of necessary tasks for the resumption of school following the earthquake in cooperation with the Miyagi Prefecture Board of Education. EARTH members including school counselors sought to provide training about the mental health care of children for local school personnel who were preparing to resume school. The EARTH members were presented various questions/challenges, such as helping to determine the trade-off between efforts to resume school and continuing support in operating the shelters, the best way to conduct delayed graduation ceremonies, the best way to interact verbally with children and the way to carryout future evacuation drills. The members shared what they experienced and learned through the Great Hanshin Awaji Earthquake, and provided EARTH handbooks and mental health care materials. The teachers of schools being used as shelters were also evacuees themselves; however they focused on shelter operations and preparing for the resumption of school. The Hyogo Prefecture of Board of Education will continue their support activities, responding to requests from the damaged area their highest priority.

- **Health Care Institutions**

In terms of **health care institutions**, one commendable example is the establishment of **Hyogo Institute for Traumatic Stress (HITS)**.

HITS was opened on April 1, 2004 in order to address mental health issues of trauma survivors and those who suffer from Post-Traumatic Stress Disorder (PTSD), a type of mental illness that was not yet well known to the public before. Since the Great Hanshin-Awaji Earthquake in 1995, Hyogo Prefecture has been paying special attention to issues faced by victims of disasters and crimes. This 3-storey building with a construction cost of 1.8 billion yen funded by the national government and operated by the Hyogo Prefectural Government, is

the first research institute ever established in Japan which focuses primarily on traumatic stress and PTSD. The institute has multi-function such as research, training, and consultation/counseling.

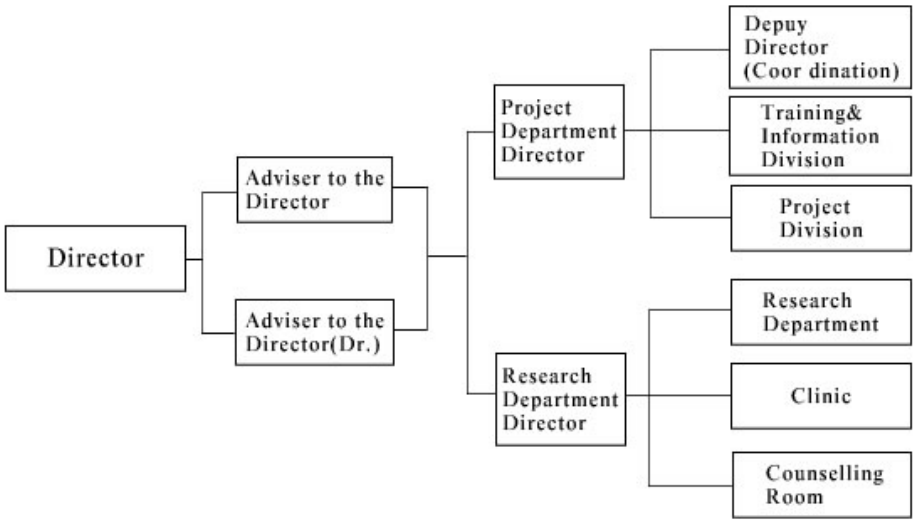


Figure 9: Organizational Structure of HITS

HITS multi-functioned facility includes the following:

1) **Research Department**. Both psychiatrists and clinical psychologists conduct practical research on mental health. There are four (4) Divisions, namely: Division 1 focuses on Research on trauma and PTSD among groups of survivors who experienced disasters and traumatic incidents; Division 2 is the Research on trauma and PTSD among groups of survivors who experienced one-time traumatic incidents; Division 3 is concerned on Research on trauma and PTSD among individuals who experienced repetitive traumatic incidents; and Division 4 is focused on Research on prevention of stress-induced mental disorders.

2) **Clinic & Counseling**. This facility offers specialized counseling for mental health, and also operates a treatment clinic. In Counseling, Psychiatric Social Workers and Clinical Psychologists are on staff to listen to patients. The counseling office works closely with the clinic, and coordinates with medical and other related institutions in the region according to necessity. In 2015, the facility recorded a total of 1,445 persons who sought for counseling. Likewise, in Clinic, Clinical Psychologists are available to see those who need psychological counseling. Psychiatrists will provide consultation, and run tests when necessary. The clinic conducts treatment such as psychological therapy and drug therapy once an appropriate treatment method has been determined. The facility recorded a total of 2,746 cases based on the latest data.

3) **Liaison & Networking**. Liaison with other organizations involved in mental health in order to create a broad network. The activities include holding of research promotion conference, holding of training coordination meetings and setting up community support activities. With regards to community support efforts, in the event of disasters and accidents requiring urgent and intensive intervention, HITS will provide appropriate advice and guidance on trauma and PTSD, and will dispatch a support team when deemed necessary.

4) **Training and Lectures**. Training seminars for individuals active in the field of health, medicine, and social welfare are conducted. Basic Training seminars are designed to deepen knowledge and understanding of mental health issues, while Specialty Training focuses on specific areas treatment methods.

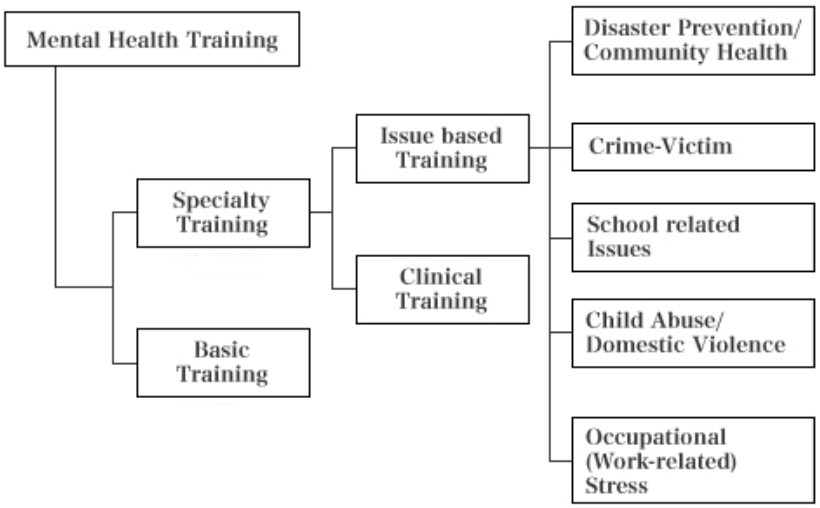


Figure 10: Schematic diagram of Mental Health Training of HITS

According to Mr. Hirata, In-charge of Training and Lectures HITS became well-known all over Japan since this facility has been offering training programs on mental health. In 2015, there were fourteen (14) training courses conducted to a total of 632 participants.

5) **Information on Traumatic Stress**. HITS collects the latest information on traumatic stress both domestically and internationally and disseminates this information along with its own research results to the public. Other activities include holding of symposia, exhibiting panels on traumatic stress, webpage operation and publishing brochures, pamphlets, and others.

- **Community/Volunteer Organizations**

In terms of **community/volunteer organizations**, an excellent example is the **Disaster-Safe Welfare Communities or "BOKOMI".**

BOKOMI is Kobe City's Community-based voluntary organizations for disaster risk reduction "Disaster-Safe Welfare Communities which also an abbreviation of its Japanese term "***Bo****sai Fukushi* ***Kom****yunithi*". The establishment of Bokomi was promoted from the lessons learned from the 1995

Great Hanshin-Awaji Earthquake. According to the Bokomi Guidebook, model organizations were established in 11 districts in the city starting from 1995. The total number of municipal elementary schools is 191. The number of BOKOMI steadily increased and reached 100 % coverage in 2008.

BOKOMI is established in every municipal elementary school district by the residents. The reason why BOKOMI is based on all elementary school districts is that there is an existing "Welfare Community" organization established for welfare purposes in each elementary school district and a disaster-prevention (bosai) organization integrated into the existing organization. Also, elementary schools serve as evacuation sites for communities in emergencies (such as disasters and crimes) in Japan. This is another reason why BOKOMI is established in each elementary school district so that each BOKOMI can operate their evacuation site in case of an emergency.

The process of establishing BOKOMI in a district is based on multi-stakeholder consultation in the district. Firstly, the establishment of a BOKOMI is discussed and agreed by local government organizations, including the local city office (ward office) and local fire station, together with leaders of local residents' associations, women's association, elderly associations, volunteer fire corps, PTAs and other local stakeholders. Once the establishment of BOKOMI is decided on, the equipment and materials needed for the activities are distributed from local government (Kobe City) and storehouses are installed in local parks, in preparation for emergencies.

BOKOMI is a community-based organization comprised of local residents' associations, women's associations, elderly associations, child committee member, youth associations, PTA, local fire station, and local business entities. In order to sustain activities of BOKOMIs, the Kobe City Government provides various support measures like small funding, materials for community activities, rescue tools, training by fire professionals, etc.

During normal times, each BOKOMI conducts various emergency drill programs including how to use the provided equipment and materials, as part of the activities in preparation for major disasters. Shaw (2014) cited that the main activities by BOKOMIs have two perspectives: disaster prevention and risk

reduction activities and welfare related activities. These activities are combined and carried out together. Disaster-prevention and risk reduction activities by BOKOMI include Disaster drills and training, DRR education program with schools, BOKOMI junior team (fostering children's teams to lead and work on DRR activities), Public awareness event, First-aid seminar, checking emergency materials and equipment, Town watching and preparation of community safety map, risk reduction activities with rescue workers and fire fighters (identification evacuation root, removal of object blocking these roots, fixing furniture etc.)

To enable the utilization of people's networks in case of emergency, BOKOMI also conduct welfare activities (such as keeping in touch with and holding lunch gatherings for the elderly who live alone) as an effort to cover both community welfare activities and community disaster risk reduction activities. Shaw (2014) also cited that combining with welfare activity include regular communication within communities to form their unity, so that they can take action, when emergency/disaster happens, considering needs of vulnerable groups such as elderly and disabled people, as well as learning how to support the people with special needs during disasters (elderly people and handicapped people).

Figure 11 shows the characteristic feature of the community-based disaster prevention organizations in Kobe City which were established based on the lessons learned from the Great Hanshin-Awaji Earthquake.

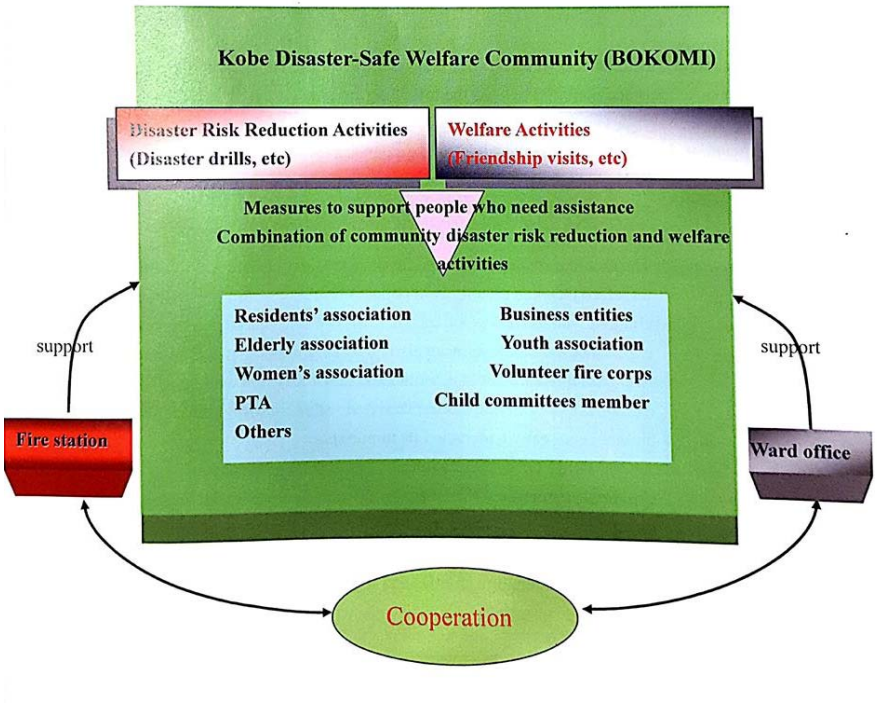


Figure 11: Characteristic Feature of the Community-based voluntary organizations for disaster risk reduction

According to the Kobe Mayor Tatsuo Yada in the book entitled, "Comprehensive Strategy for Recovery from the Great Hanshin-Awaji Earthquake" (March 2010), BOKOMI also plays an important role in passing on the experiences of the earthquake disaster to the next generation. In this sense, BOKOMI's active involvement in disaster education helps develop disaster-education programs that make an impression on those children who will one day be responsible for the future of Kobe.

In chapter five of the Kobe City Disaster Management Plan entitled "Awareness-raising and Human Resources Cultivation on Development of Safe and Secure Communities," enhancement of local capabilities for disaster reduction through activities such as ones led by BOKOMI is advocated.

Accordingly, BOKOMI is promoted in cooperation with parents and local communities. Various disaster drills such as fire drills, evacuation drills, soup-run drills, and handover drills are conducted jointly with parents and local BOKOMI at many elementary and junior-high schools. With regards to the method of the

drills, more and more schools conduct drills for emergency response without notifying the participants in advance.

The researcher who personally witnessed and participated in the Bosai Tsunagari Fiesta at Kobe Gakuin University held on August 28, 2016 believes that "Bokomi" is a commendable practice in Japan because the people themselves especially school children, teachers, parents, etc. are given the right training such as fire suppression, basic life support, evacuation, and other skills, as well as the use of equipment and other materials to respond immediately to disasters that might occur in their community.

Bosai Tsunagari Fiesta at Kobe Gakuin University on August 28, 2016

The city government also has created a training course on community-based disaster management jointly with JICA Hyogo as a means of conveying its knowledge overseas and accepts participants from foreign countries to introduce BOKOMI and other efforts in Kobe. The city government will continue this activity, expecting that the training will contribute to disaster reduction in other countries.

If another large-scale earthquake may hit Kobe in the future, the city government has high hopes that children who received disaster education led by BOKOMI will become disaster-reduction leaders in the next 10 to 20 years.

Government Institutions

In Caraga Region, there are good examples of DM-related social institution in terms of **government institutions**. These include the following:

- **Provincial DRRM Council/Office of Province of Dinagat Islands**

The Province of Dinagat Islands (PDI) located along eastern seaboard of the Philippine archipelago facing the Pacific Ocean is the 81st province of the Philippines by virtue of Republic Act 9355 last October 2, 2006 and one of the five (5) provinces of Caraga Region. The Provincial Disaster Risk Reduction and Management Council (PDRRMC) through its Provincial DRRM Office focuses its efforts in disaster resilience from governance, administration, leadership from top to bottom, and community-based Disaster Risk Reduction-Climate Change Adaptation.

PDRRMC Dinagat Islands is consistent in sustaining DRRM programs, projects and activities making it excellent beyond the standard. To highlight its initiatives in the aspect of *Disaster Prevention and Mitigation*, the Sangguniang Panlalawigan adopted and passed an Ordinance for Public Safety Measures for Public Road in the Territorial Jurisdiction of Dinagat Islands and Providing Penalties for Violation Thereof. Likewise, PDRRMC initiated a Response Sectoral Conference with Maritime Industry Authority and Boat Operators in the Province to ensure safe and sound maritime commerce anchored to protecting the lives of seafarers and tourists while preserving the maritime environment in the province, thereby crafted the Local Maritime Safety Protocol passed through a Sangguniang Panlalawigan Ordinance No. BBE-101. Furthermore, information awareness was conducted by the PDRRMC Team for the Management of Communities Subject for Resettlement composed of Provincial Social Welfare and Development, Provincial Veterinary, Provincial Agriculture, Provincial Labor Employment and Management, Provincial Cooperative and Development, TESDA, DTI and DSWD. Relocation Livelihood Project was also provided to migrants and affected families of past disasters like Super Typhoon Yolanda and Tropical Depression Agaton. Also, the PDRRMC in its continuing strong support to the National Greening Program of the government recently launched its Verde Dinagat Highway Project and Luntiang Paaralan, a component of Verde

Dinagat Program of PENRO-LGU. Around 325,037 industrial and indigenous tree seedlings are cultured at the PENRO-LGU Plant Nursery. To date PDI stakeholders have planted and grown up 231,694 seedlings in various areas. Another innovation of the Province is the launching of TAMING Dinagatnon Project that will lead to household DRR-CCA identification and resiliency profiling while gaining communities commitment towards DRRM-CCA. TAMING stands for ***T***ahanang ***A***listo ***M***alayo sa ***I***nsedente't ***N***amumuhay na may ***G***aling. This is a PDRRMC program for sustainable and inclusive DRRM mechanisms. One of the mechanisms of the project is an hour **TAMING Dinagatnon Radio Program** every Mondays and Wednesdays at 100.9 DXDI Mystical FM.

In the aspect of Disaster Preparedness, the PDRRMC has adopted Local Climate Change Action Plan (LCCAP). Also, the PDRRMC conceptualized a new dynamics in the implementation of Gawad KALASAG Search for DRRM Excellence and Humanitarian Assistance in the province through the provision of Gawad KALASAG DRRM Excellence Seal. It is aimed at assessing the level of capacity of the Local Government Units and other DRRM stakeholders encouraging them to be more innovative and result-oriented based on the criteria and standard set by the PDRRMC. There are three (3) different seals as follows: 1) *Bronze Marker* for ratings ranging from 85% to 90%; 2) *Silver Marker* for ratings ranging above 90% to 95%; 3) *Gold Marker* for ratings ranging above 95% to 100%. The province through its Dinagat Islands Search and Rescue (DISAR) Pool of Instructors continues to cascade various response skills at the community level. To professionalize competencies of trained responders and volunteers as basis in categorizing level of capacities towards local and even overseas employment, a resolution was endorsed requesting the Technical Skills and Development Authority (TESDA) National Board through the RDRRMC and Regional Development Council to Initiate effort for the creation/opening of National Competency II for Emergency Response Skills Competencies. Further, through the Office of the Civil Defense and Philippine Air Force – 505th Search and Rescue Squadron, a 15-day Water Search and Rescue Training was conducted to DISAR. DISAR's membership has increased over the past eight (8) years. Thus, the PDRRMO initiated to categorize its response skill competency as DISAR Specialized Team. Specialized Team includes DISAR Basic SAR Unit, DISAR Medical First Response Unit, DISAR Scuba Unit and DISAR Water SAR Unit. Likewise, since 2012, Annual Rescue Summit is done to highlight the DISAR

Anniversary. The Incident Command System (ICS) was applied to the 2015 Rescue Summit and Response Exercises. This activity involved the National Line Response Agencies in the Simulation of Response from different scenarios. The four components of Operation LISTO of the Department of Interior and Local Government (DILG) were launched in the province in 2015. The sharing of learning agenda on Operation LISTO during the Local Government Agency (LGA) Learning Conferences and the sharing in the Galing Pook 2015 have paved the way for LGA's intervention on the Community-Based DRRM activities such as tsunami drill in the different municipalities of the province. PDI is the pilot province of the Alert Ready Communities Project of DILG-LGA-Save the Children Philippines and International Humanitarian Academy. ARC is a quality-driven project for inclusive CBDRRM. Also, the Provincial Mental Health and Psychosocial Support Services Team (PMHPSST) was capacitated on Expressive Arts in Psychosocial Processing (an advance psychosocial support) skill. The Province of Dinagat Islands is the first province in the Caraga Region with organized Municipal MHPSSTs. Another capacity development of province is the provision of proper camp management and trained camp managers. The province is the first in Caraga to organize Barangay-based Camp Coordinators and Camp Managers.

In the aspect of Disaster Response, PDRRMC Operations Center provides 24/7 Monitoring and Response Operations to various emergencies and threats. The PDRRMC applied the ICS during Typhoon Yolanda (Haiyan) in November 2013 resulting to zero casualty. PDRRMC extended financial and humanitarian aid as well as voluntary response services to the Province of Northern Samar devastated by Typhoon Nona to augment the recovery effort to the affected schools, and to the Internally Displaced Persons (IDPs) in Tandag City, Province of Surigao del Sur through its PMHPSST.

Finally, in the aspect of Disaster Rehabilitation and Recovery, the immediate restoration of the horizontal infrastructure damaged by intermittent heavy rain through build-back-better principle was addressed by the Sangguniang Panlalawigan.

- **Municipal DRRM Council/Office of Hinatuan, Surigao del Sur**

The MDRRMC of HInatuan in Surigao del Sur is banking on planning and political will to keep its constituents safe during extreme weather events. The MDRRM Office was established in 2011 as mandated by Republic Act 10121.

The 42,000-hectare municipality facing the Pacific Ocean in the southeastern part of the country is composed of 24 barangays, with approximately 40,000 residents. Agriculture and fishery are the primary sources of livelihood in the municipality whose name comes from "hato," a pre-colonial practice of fish preservation. It is exposed to natural hazards such as storm surges, tsunamis, floods, landslides, earthquakes, and liquefaction.

When Tropical Storm Sendong (Washi) struck the municipality in 2011, at least P56 million worth of property, agriculture, and infrastructure was damaged. Preemptive evacuation was done incorrectly. The barangay disaster risk reduction and management offices were not functional. The residents did not know how to react. The relief distribution was chaotic. However, the local government took Sendong as its teacher. Since then, every tropical cyclone that visited the municipality served as lessons that spurred the government to develop more effective ways to prepare for disasters. The MDRRMC had institutionalized a number of good practices on DRRM that contributed to a zero-casualty when Typhoon Pablo struck in 2012. With this, MDRRMC Hinatuan was the 2015 national winner of the NDRRMC's Gawad KALASAG Search for Excellence in DRRM and Humanitarian Assistance which recognizes outstanding accomplishment of Local DRRMCs and other stakeholders.

In 2012, the MDRRMC through its MDRRMO launched a competition to recognize the most compliant, disaster-resilient barangay. The barangays are judged according to two (2) categories which include documents and drills. Under the documents category, each barangay should have the following: a spot map and hazard map that would enable officials to identify areas at risk from certain natural hazards, signage of evacuation routes to the evacuation areas; and data banking specifically list of members of family to include the children, senior citizens, or pregnant women. Such lists are usually requested by non-governmental organizations in conducting relief operations.

Memorandum of Agreement (MOA) are forged between the local government and stakeholders such as the following: 1) transport groups for availability of private vehicles for the government's use in times of emergency; 2) business groups allowing the government to have an inventory of goods and prevent price increases during disasters; 3) homeowners groups for accreditation of structurally sound houses as inspected by building officials to be used as evacuation centers during typhoons; and 4) chainsaw operators and chainsaw owners to facilitate clearing of roads after disasters.

Under the drills category, each barangay had to do an earthquake drill, a fire drill, and a third drill depending on the type of hazard the barangay is exposed to. Likewise, firefighter volunteers were trained.

When Typhoon Pablo struck the municipality, the municipality was able to properly conduct preemptive evacuation. The barangay DRRM offices were functional and were the first to serve food to the evacuees. All groups covered by the MOA provided support in disaster response. Although the damage was pegged at Php 39 Million, there was no casualty. Further, when Super Typhoon Yolanda hit the Philippines in 2013, although Hinatuan was not in its path, being aware of its impact on other areas, the MDRRM officials realized the urgency to do more.

Such scenario prompted the Hinatuan MDRRM to come up with a *Family Disaster Plan*. As emphasized by the MDRRM Office, the family has to work together as a team. Their knowledge on what to do is their best protection and primary responsibility. The government cannot do everything except to provide guidance. The family disaster plan, written in the local dialect, contains information such as the name of head of family and their address, names of the rest of the family members and their contact details, the children's educational level, and the places they frequently visit. Each family member is assigned specific tasks such as preparing for a medical kit, updating of information in the plan, among others. Livestock was also taken into consideration. The family disaster plan also contains relatives whom they can contact outside the town, province and region. The plan also acquaints residents with the hotlines they can call.

The MDRRMO also conducts orientations and coordination efforts to schools regarding the identified safe area where the school can take their

students during a specific disaster. It is working closely with the schools in the preparation of their disaster plans since these are usually utilized as evacuation centers.

Every time storm signal no. 1 is raised, the municipality has a standard operating procedure which includes the evacuation of residents from the Hinatuan's island. As soon as a low-pressure area is forecasted, the MDRRMC immediately convenes for a meeting.

The government has installed early warning devices, planted 695 hectares of healthy mangrove forests managed by various people's organizations, and installed solar bulbs in unventilated residential houses to conserve energy. It has a solid waste management program, and places a huge chunk of its budget into disaster preparedness. According to the Municipal Mayor Candelario Viola, he would rather spend millions of pesos for prevention, mitigation, and preparedness to ensure the safety and progress of his people, rather than spend it for search and rescue.

Educational/Learning Institutions

In Caraga Region, as of this research, there is yet no existing educational/learning institution solely dedicated to DRRM that is being established and operated by the local government unlike Japan. However, the Department of Education issued Department Order 37, s. 2015 dated August 12, 2015 regarding the Comprehensive DRRM in Basic Education Framework. This is to guide DRRM efforts in the basic education sector towards resilience-building in offices and schools, and to ensure that quality education is continuously provided and prioritized even during disasters and/or emergencies. This Framework shall institutionalize DRRM structures,

systems, protocols and practices in DepEd offices and schools. Further, this shall provide common understanding and language in the implementation of DRRM in basic education at all levels. DepEd has created the Comprehensive DRRM in Basic Education Framework, which underscores the following three pillars or areas of focus: 1) Safe Learning Facilities; 2) School Disaster Management; and 3) DRR in Education.

According to Assistant Secretary Reynaldo D. Laguda as he addressed participants of the 3rd UN World Conference on Disaster Risk Reduction in the city of Sendai, Japan on March 14, 2015 that the Philippines, through the DepEd recognizes that schools are at the heart of Filipino communities, therefore the agency commit to keep its schools safe. DepEd now uses Comprehensive Framework for DRRM in Basic Education to guide school-based DRRM planning and preparation. It was also stressed that education helps achieve DRR outcomes and conversely, DRR helps achieve its education outcomes of access, quality and governance. Partnerships with different stakeholders are crucial in achieving the common goal of safer schools and resilient communities.

Recognizing the need for inclusivity and noting the importance of community-led efforts at building resilience, DepEd stressed the need to engage with host communities in ensuring the success of projects. Infrastructure alone does not guarantee strength or safety.

The School Disaster Risk Reduction and Management (DRRM) Manual has been developed by the DepEd to serve as a common template for localization, contextualization, and adaptation at the sub-national context. It is expected that the content will be reviewed by education and disaster management authorities, and education sector partners working on disaster and risk reduction and who have adapted policy and practices for the school environment. This manual provides guidance to division coordinators and schools in the implementation of the Comprehensive DRRM in Basic Education Framework.

To enable focused, effective and strategic implementation, DepEd has established the **office of the Disaster Risk Reduction and Management Service (DRRMS)**, with regular full time staff in its central, regional and division offices. The division offices are responsible for ensuring that schools have a functioning disaster management team.

The School DRRM Team has core functions as it facilitates the harmonization of various efforts of DRRM in Education, externally and internally. The Team should ensure the following: the engagement of various DepEd offices, relevant government agencies, and education partners in building resilience and coordination among stakeholders; the availability of validated education information and monitoring and evaluation (M&E) results which would expand the analysis on various vulnerabilities of DepEd schools, personnel and students and how DepEd programmatically responds to DRRM issues and concerns; and weather advisories and emergency updates are communicated to and from field offices and that immediate and appropriate feedback is provided. This Monitoring and Evaluation (M & E) also tracks the actions taken, support services provided to affected areas and interventions from other government agencies and education partners.

Furthermore, the School DRRM Team also focuses on systems, standards, and processes that should be established to improve the implementation of DRRM in Education and ensure education in emergency interventions are appropriately implemented (e.g. psycho-social support, temporary learning spaces, ensuring protected and safe spaces for children, reunification). Likewise, it ensures the availability of resources and/or interventions to support affected areas and establish the mechanism to guide education partners in channeling their assistance during disaster response and recovery.

The researcher would like to cite the Agusan National High School DRRM Committee in Butuan City that is dedicated in the implementation of DRRM Program in School. The school established its DRRM Office and Operations Center, and designated a School DRRM Coordinator. It has been providing capacity-building activities to its students, faculty and staff to be better equipped with the necessary knowledge and skills along with DRRM. It has been consistently earning national and regional recognition during the Annual

Gawad KALASAG Search for Excellence in DRRM and Humanitarian Assistance for Public School Category as well as for Heroic Act on Humanitarian Assistance Group Category due to its invaluable acts of service in Camp Coordination in Camp Management during disasters. The school has been used as evacuation facility of flood victims in urban barangays almost every year.

Likewise, for higher education, the Caraga State University organized its DRRM Unit. Apart from the conduct of yearly fire and earthquake drills, capability development activities on DRRM are initiated by the University's DRRM Focal Officer. Recently, the 5-day DRRM seminar training has been rolled-out/cascaded with its Campus Emergency Management Group. Since the establishment of the unit, it has spearheaded several trainings on Basic Bandaging, Cardiopulmonary Resuscitation (CPR) and Basic Life Support (BLS). The university organized a response team among its National Service Training Program (NSTP) students. Furthermore, a research program on DRRM is also led by the Focal Officer and research projects are done by the students along disaster preparedness of flood vulnerable households.

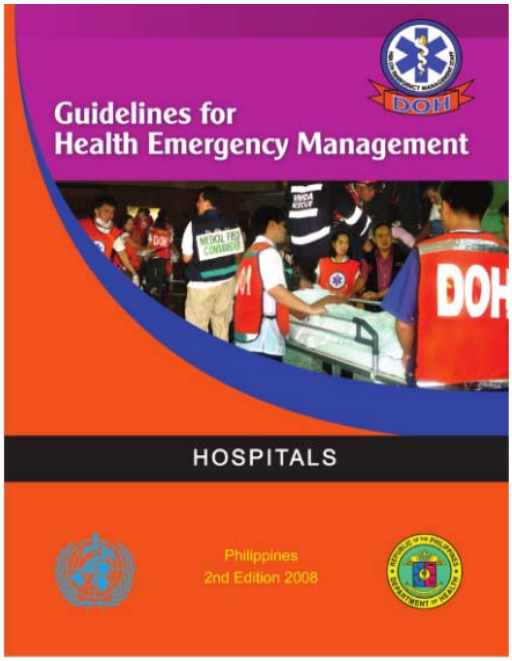
Saving lives and properties is a challenge accepted by all stakeholders in private and governmental entities. As such, aside from the business of providing basic education, the DepED is responsible for providing safe teaching-learning facilities and hazard-free environment to the schoolchildren.

According to Vanessa J. Tobin, Representative of the United Nations Children's Fund Philippines Country Office, schools, however, should not only offer safety after a disaster has struck. School should also be ready even before any disaster strikes. Teachers, school officials, and school children should learn basic life-saving tips. Schools should be a beacon of safety, and should be an example to the communities which they serve.

b.3 Health Care Institutions

In the case of Caraga Region, the Health Emergency Management Staff (HEMS) under the Department of Health (DOH) of Caraga is cited as an example. HEMS as the health emergency management arm of the DOH had a

long history of institutionalization. Executive Order 102 of 1999 marked the creation of HEMS with its mission to ensure a comprehensive and integrated Health Sector Management System to prevent or minimize the loss of lives during emergencies and disasters in collaboration with government, business and civil society groups.



The functions of HEMS are as follows: 1) Act as the DOH coordinating unit and Operations Center for all health emergencies and disasters, as well as incidents with the potential of becoming an emergency, and coordinate the mobilization and sharing of resources; 2) Provide the communication linkage among DOH Regional Offices and other concerned agencies, including the hospitals and the regions, during emergencies and disasters; 3) Maintain updated information of all health emergencies and disasters (except epidemiological investigation reports) and provide such information to other offices and agencies in accordance with existing protocols; 4) Maintain a database of all health emergency personnel, technical experts, and resource speakers, and maintains a database of capabilities of health facilities; 5) Lead in the development of Regional Health Emergency Preparedness and Response Plans, and the development of protocols, guidelines and standards for health emergency management; 6) Provide technical assistance in the development of programs and planning activities for HEM for other government and nongovernment organizations; 7) Lead advocacy activities, including simulation exercises; 8) Develop and implement an Integrated Human Resource Training Agenda for the Health Sector for emergencies and disasters; 9) Lead in the networking of hospitals and health sector organizations responding to emergencies and disasters; and 10) Monitor and evaluate the enforcement of and compliance to policies, and recommend the formulation or amendment of policies related to health emergency management.

Since HEMS operates on a 24-hour basis, the facility closely coordinates with the OCD Regional Office and RDRRM Operations Center, and concerned agencies of the health sector such as PAGASA, Philippine Institute of Volcanology and Seismology (PHIVOLCS); Department of Social Welfare and Development (DSWD), Philippine Red Cross (PRC) among others.

HEMS has been providing services on Health, Water, Sanitation and Hygiene (WASH), Nutrition, Mental Health and Psychosocial Support (MHPSS), Medical Consultation & Rapid Assessment in and outside the region during the emergencies/disasters. These include the Zamboanga Siege in September 2013, Earthquake in Central Visayas (Bohol) Earthquake in October 2013, Super Typhoon Yolanda in November 2013 in Region 8, Maritime Incident involving MV Maharlika in 2014, and Internally Displaced Persons (IDPs)/Mass Evacuation in Tandag due to arm conflict in 2015.

b.4 Community/Volunteer Organizations

In Caraga, a good example of volunteer organization is the **Rescue and Emergency Service Provider On Disaster (RESPOND)**, Incorporated. RESPOND, Inc. is identified as the only active and sustaining community volunteer group in Caraga in the line of DRRM and CCA programs. It was founded on August 16, 2003 which aims to help the community to be prepared and resilient by providing disaster risk reduction and response services as well as humanitarian assistance. It started among friends and called "Respond 366"catering local rescue in Nasipit & adjacent zones. The organization operates 24/7assiting road emergency and natural and human-induced disasters in cooperation with Philippine Red Cross, Local Government Units, local hospitals, concerned national government agencies and significant authorities like Bureau of Fire Protection (BFP), Philippine National Police (PNP) and Regional Public Safety Battalion (RPSB) Caraga.

RESPOND, Inc. has increased the number of its members which was opened to other professionals, youth and various workers in the government and private organizations. Since its existence, it continues to enhance and increase related skills of members which are shared to other groups and offices as to demands. Regular community services and activities like medical missions, environmental or

ecology protection, support to local events, health information drive, school-based endeavours, and trainings have been institutionalized by the group. It have been actively involved and engaged training of trainers and policy making especially with Local Government Units and National Government Agencies in and outside the area of responsibility. Building partnership and networking has become the asset of the organization which provided opportunities for other members to be hired and employed in DRRM related agencies.

The organization's operational objectives are as follows: 1) Increase awareness of the community on disaster & emergency preparedness & response through local schools, youth organizations and key sectors; 2) Substantial services and assistance to particular vulnerable groups, institutions, as well as to enablers (eg, teachers, parents associations, barangay youth councils, BSP) at the same time to market DRRM-CCA programs; 3) Build and expand new committed members or stakeholders, and train; 4) Network with other existing potential individuals and enjoined them to be a member; 5) Increase & maintain environmental protection /CCA actions by initiating locally-inherent and doable activities that can be easily followed by the community.

The strategies and processes of the group include: 1) Acquired more new skills from the different, right and appropriate sources /partners in the region; 2) Partnership is its main ingredient to success, so continued investment and active on partnership/networking style set by stakeholders; 3) Started participating in policy, standard Operating Procedures (SOP) and plan formulation conducted by key agencies; 4) Visibility by attending to all calls & invitations by all means; 5) Reaching out the community through and by joining the DRRM councils; 6) Act as an agent/catalyst to aid the government in delivering services during response as well as preparedness programs to attain resiliency right at the bottom; and 7) Help train local rescuers and first responders especially at the municipal and barangay level;

The organization is one of the active pool for human resources in training and other capability development in the region like drills and first aid. It brings members and youth to be trainers and future leaders in emergencies and disaster management and set as a model group in the locality on CCA activities and in seriously addressing gaps in environmental protection undertakings. Its commitment to provide voluntary services has given them the opportunity to join in the response

efforts to other areas in Caraga and outside the region like Tropical Storm Seniang, Super Typhoon Yolands and Tropical Storm Ruby. It is known in the local as champion in mitigation information drive by consistently providing locally driven social services in order to market DRRM awareness. It has earned the Hall of Fame Award in Regional Gawad KALASAG 2015 and Second Place National GK in 2013.

The group continues to encourage potential volunteers including local professionals that can help fill important gaps both for preparedness and response and other social endeavors of the group. It also creates plan and proposal for fund acquisition from established partners like DRRM offices/councils, projects and others to sustain activities as well as mainstreams or fund inclusion of activities during DRRM planning that has attended by the group.

In terms of motivation and philosophy, its members seek to adhere to its branding message, "Volunteering, A Genuine Service through Community-Based DRRM Approach". With this, the group strongly upholds and continually lives with its dictum, **"***RESPOND in the name of service".*

2) What are the institutional factors that contribute to resiliency and capacity of Kansai Region and Caraga Region as lessons learned from the past disasters as well as good practices and innovations, in terms of the following:

2.2 Institutional Mechanisms;
2.3 DRRM-related Plans; and
2.4 Approaches

In Kansai Region, one exceptional example of institutional mechanism is the Union of Kansai Government (UKG).

According to Japan's Disaster Countermeasures Basic Act, municipalities have the primary obligation to deal with disasters. With this, affected municipalities are expected to perform many tasks in emergency response. In case of serious disasters, local governments provide support at the request of the affected municipality (partly reformed in 2013). Smooth coordination between the affected municipality and other local governments is essential for

the effective emergency response. However, there is no explicit mechanism of support coordination among local governments. To reduce uncertainty concerning cooperation, many mutual aid agreements are arranged among local governments on their own initiative.

Region-wide Union is stipulated in Article 284 of the Local Autonomy Act. The union is a special local public entity with an assembly and administrative commissions. The union can meet multiple cross-prefectural, region-wide, administrative needs flexibly. The central government can delegate authority as well as administrative and clerical tasks under the law to the Union.

The Union of Kansai Governments is a local public entity established in December 1, 2010. As Japan's first cross-prefectural union of local governments, the union was founded jointly by Kansai's seven prefectures, namely: Shiga, Kyoto, Osaka, Hyogo, Wakayama, Tottori and Tokushima with common intention to create a new Kansai-based era. The present Governor of Hyogo Prefecture, Toshizo Ido is the concurrent President of the union and the Governor of Wakayama Prefecture, Yoshinobu Nisaka is the Vice President. The *Committee of the Union of Kansai Governments* comprises the governors of all member prefectures, was established to properly reflect the diverse range of views of all members. The *Assembly* comprises 20 members elected from each member's prefectural assembly. The assembly establishes and abolishes ordinances, and approves budgets. The *Council of the Union of Kansai Governments* seeks a wide range of opinions from stakeholders including local residents. The Council will discuss not only the Union's projects, but also the future direction of the Union. The Secretariat has the primary responsibility of performing administrative and clerical tasks in member prefectures. The Main Office takes charge of general affairs and planning, as well as administrative and clerical tasks related to certification exams, licensing, and others. Field Offices are located in the prefectures of the committee members in charge, and perform administrative and clerical tasks in each specialized subject matter.

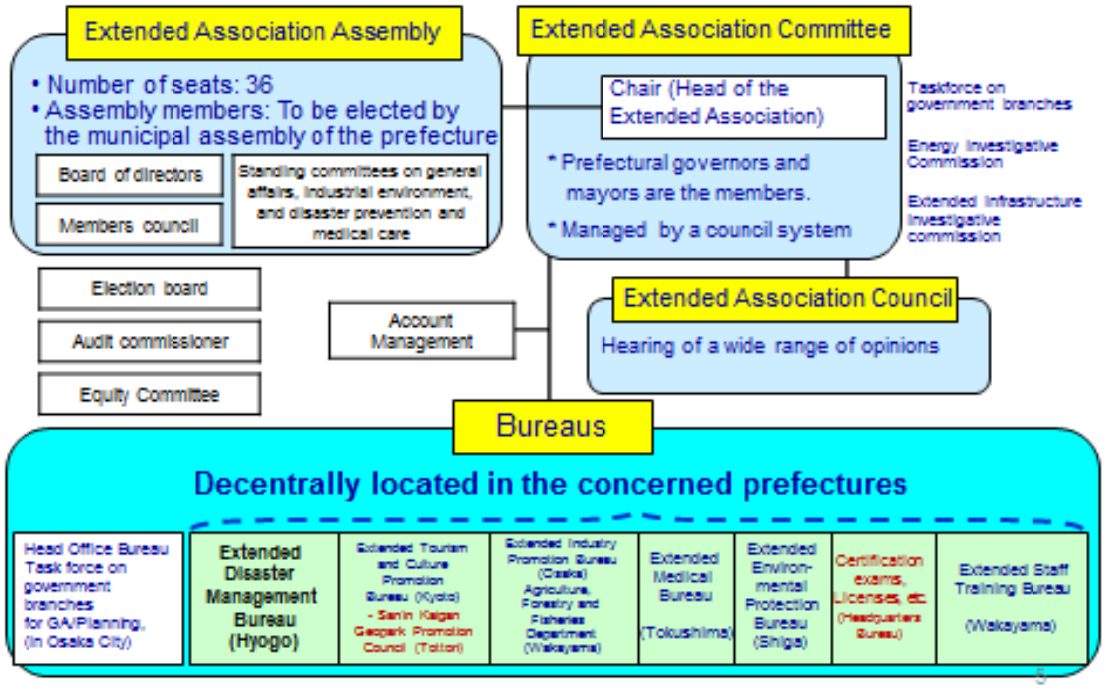


Figure 12: Organizational Structure of the Union of Kansai Governments

The UKG aims to address issues such as regional disaster prevention that are difficult for one prefecture alone to deal with. The Union aims to tackle inter-prefectural area-wide issues, making a breakthrough for greater decentralization, as well as to transfer Japan into a multi-polar structured country. Initially, the Union commenced its operation with seven area-wide administration items comprising *disaster prevention, tourism* and *culture development, industrial promotion, medical services, environmental conservation, certification exams and licenses, etc., and staff training*. In the future, as a growing extended association, the Union intends to widen its scope of business to integrated bay area management, as well as unified planning, improvement, administration and other procedures concerning national roads and rivers.

As of October 10, 2016, the UKG is composed of eight (8) Prefectures, namely: Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama, Tottori and Tokushima. The response of the Union of Kansai Governments attracts attention as a new way of cooperation to deal with wide area disasters.

The administrative matters relating to wide-area disaster prevention (including the administrative work regarding emergency involving the spread of infection and other non-natural disaster) include *disaster prevention drills* stipulated in the Paragraph 1 of Article 48 in the Basic Act on Disaster Control Measures, *stockpile of materials and supplies* necessary for disaster prevention stipulated in Article 49 in the Act, *support and arrangement to conduct administrative work relating to disaster management* at the time of disaster outbreak, *training of personnel* contributing to disaster prevention, *cooperation and coordination of the affiliated body in emergency involving* the spread of infection and other *non-natural disaster*, and *research and investigation* related to disaster prevention.

The methods of the Union of Kansai Governments are the following:

1) One to One Support. This method is assigning each member of the Union the role of support to a specific affected local government. This is taking a balance of support among affected regions and reducing the number of communication routes and securing counterpart for smooth communication between the supporting side and the supported side.

2) Grouping local governments on the supporting side. This features the allocation of two or three prefectures for the support to one prefecture. Prefectures on the supporting side coordinated the support from municipalities in their area, taking into consideration of their ability to extend support. This promotes in improving the supporting side's capacity and helping them to conduct continuous support. For instance, when some supporters have to withdraw support for some reasons, shortfalls will be covered by other members. Small municipalities were able to participate in the support more easily because they did not need to bear the burden alone.

3) On-site contact centers and Active Support. This method is establishing on-site contact centers in affected areas and using them as bases for directly collecting information and communicating it to the supporting

side. Without detailed request from affected local governments, providing support and advice along the judgment of the supporting side. The supporting side got timely information even when affected local governments were overwhelmed by serious damages. The supporting side could provide effective support suited to situations of affected areas though the affected local governments sometimes could not determine what they needed in the confusion.

In the Great East Japan Earthquake on March 11, 2011, the cooperation of local governments played an important role in emergency response. However, there were problems revealed with respect to cooperation. Heavily damaged municipality had difficulties in grasping situations and communicating the need of support to other local governments. Further, mutual aid agreements were sometimes nullified when all the concerned were damaged by the disaster. It took time for the national government or nation-wide associations to start coordination systems among local governments.

Ranghieri and Ishiwatari (2014) stated that the weakness of coordination observed on the ground during the GEJE demonstrates that coordination mechanisms should be established through advance agreements and clear definitions of responsibility.

Although there is no explicit mechanism of support coordination among local governments as far as Disaster Management System in Japan is concerned, to reduce uncertainty concerning cooperation, many mutual aid agreements are agreed among local governments on their own initiative. One good example is the Union of Kansai Government (UKG).

During the earthquake the Union of Kansai Governments rapidly and voluntarily arranged support to affected areas on the basis of the "counterpart method". In March 13, two (2) days after the disaster, the "First Emergency Statement**"** regarding supporting measure was issued. The Kansai region was in full force to support the affected areas and victims in response to the on-site need through countermeasures for affected areas, provision relief materials, dispatching of supporting personnel and accepting the evacuees. The Union decided to establish the framework for supporting on the basis of the

counterpart method on-site contact center. On-site contact centers were set out in Iwate and Miyagi Prefecture. The "counterpart method" is devised with reference to "Pairing Support" method that has been adopted in China for purposes of including the recovery from disasters. As defined by Science Council of Japan, "Pairing Method" is a specified local government that is not affected by the disaster establishes a cooperative relationship with a specified local governments in a disaster affected area and conducts continuous and personalized support of that local government. Features of the method are "One to One" Support, Grouping local governments on the supporting side and On-site contact centers and Active Support.

In March 29, the "Second Emergency Statement" regarding supporting measure was issued. The Union provided proactive and continuous support, and expected the network of aid spread nationwide. It also dispatched supporting personnel to affected prefectures and municipalities, provided advice and direction based on the lessons and experiences from the Great Hanshin-Awaji Earthquake and improved systems to accept disaster victims.

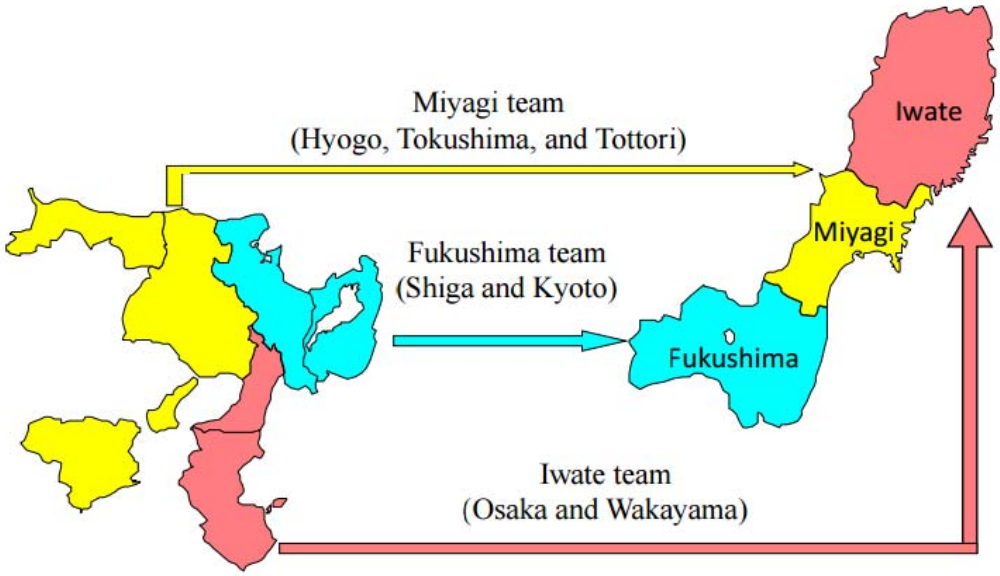


Figure13: Map showing the Location of the Union of Kansai Governments and disaster affected area

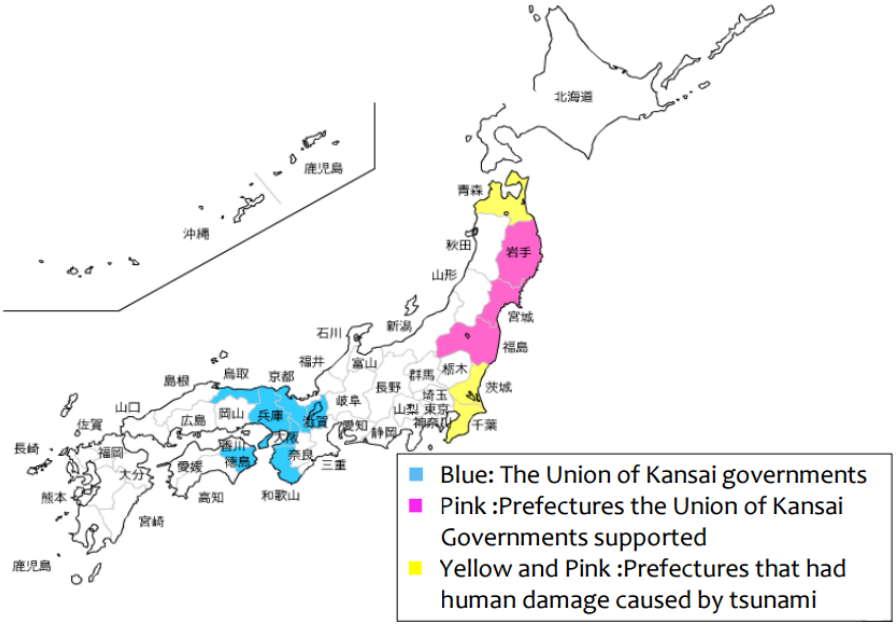


Figure 14: Map showing the Combination of the supported and supporting Prefectures

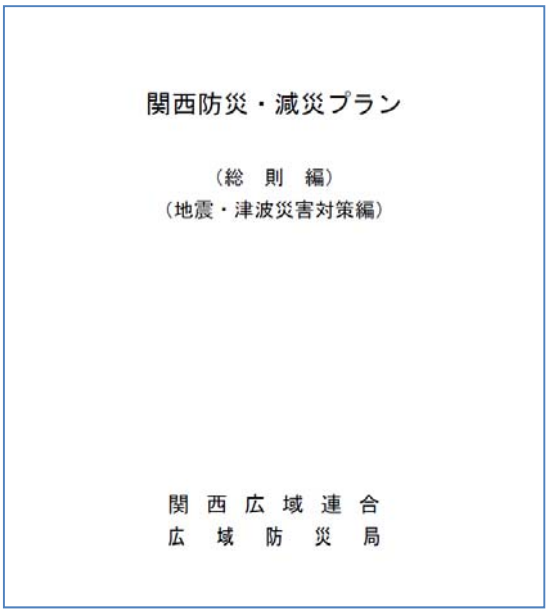
The UKG's support on the basis of the "counterpart method" has advantages as a good alternative when prepared mutual aid systems fail to work. One advantage is to avoid the confusion with respect to support coordination. Another is to take the balance of support among affected areas, and to reduce the burden on the supporting side. Each affiliated body was assigned to an affected area under the coordination of the Union of Kansai Governments. The affiliated body immediately performed continuous and agile support in a responsible manner.

The supporting prefectures of Osaka and Wakayama supported Iwate Prefecture. Likewise, Hyogo, Tottori, Tokushima supported Miyagi. Further, Shiga and Kyoto supported Fukushima. Among the supported extended by the Union include the sending of goods (as of March 2012) such as Alpha rice (about 260,000 cups), drinking water (about 460,000 bottles), blankets (about 64,000), and portable toilets (about 21,000 units), and others, dispatch of staff (as of May. 2) with a total of 183,900 people, 210 people a day (387 people a day at the peak) excluding police, fire, DMAT, and municipal personnel, and acceptance of evacuees (As of May 2) with around 3,748 people through Municipal housing, and others.

One of UKG's major targets in the area of disaster prevention is the development of a region-wide disaster contingency scheme to prepare for earthquakes and establish a cross-prefectural emergency medical service system using helicopters. The Union is planning to bring all transportation and logistics infrastructure in the Kansai region under the single management in the future.

DRRM-related Plans

The **Kansai Disaster Prevention and Mitigation Plan** stipulates responses and procedures to be taken by the Union of Kansai Governments (UKG) at the time of the occurrence of massive wide-area disasters such as Tonankai and Nankai earthquakes. The policies for establishment of the Plan are as follows: 1) Plan should be based on the lessons and problems in the past disasters including the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake; 2) Plan should be easily understandable to residents in prefectures; and 3) Plan should be substantially developed with potential development.



The main operations for wide-area disaster prevention planning of the Union of Kansai Governments from FY2014 to 2016 entail priority policies, to wit:

- Create a scenario of specific countermeasures against possible disasters such as the Nankai Trough Gigantic Earthquake
- Conduct extensive evacuation drills, and develop the necessary structure for nuclear disaster
- Review the measurement guideline for whole Kansai region, the Kansai Disaster Prevention and Mitigation Plan and the Implementation Outline of Providing/Receiving Extensive Support in the Kansai Region
- Develop extensive and essential infrastructure for stockpile, collection, and distribution of emergency supplies
- Promote companies' individual approach for disaster prevention and measures for people with difficulty returning home
- Continuously conduct extensive drills to provide support in the Kansai region
- Conduct trainings for personnel related to disaster prevention, and research and investigation regarding wide-area disaster prevention

The planning committee on Kansai Wide-area Disaster Prevention Measures was firstly organized by the Union of Kansai Governments and the said committee formulated the plan. The planning committee is composed of experts, representative of NGO and private sector. The national governmental organization including Defense Force and Coastal Guard joined the formulation of the plan as observers. Further, the working group is organized under the planning committee that gathers the directors in charge of disaster risk reduction of the respective member-organizations. The working group considers the contents of the plan.

The Plan is the nation's first full-scale plan for large-scale disaster prevention and mitigation. Another feature of the plan is that it steps into the appropriate ways of receiving support. The Plan contains a scenario of the process of "recovery and reconstruction", in addition to "the initial response" and "emergency response". It covers the measures of both organizations relating to disaster prevention and the Union of Kansai Governments, and clarifies overall operational structure to respond disaster. It also promotes cooperation and mutual support not only among the affiliated body and municipalities, but also among companies, voluntary organizations, residents of prefectures. Likewise, it incorporates the lessons obtained from two unprecedented earthquakes.

In order to manage a massive wide-area disaster, the Union of Kansai Governments institutionalized systematic disaster countermeasure guidelines and measures for disaster prevention and mitigation in cooperation with the affiliated body and the aligned organizations.

In 2012, the implementation Outline of Providing/Receiving Extensive Support in the Kansai Region was created. In order to strengthen the wide-area support systems in the event of a massive wide-area disaster, the Outline standardizes specific procedures for the wide-area support based on the countermeasure formation and operation in the "Disaster Prevention and Mitigation Plan". The Outline will be created by category such as the supply of goods, dispatch of personnel, evacuation, and temporary housing construction. The effectiveness was verified in Kansai wide-area support drills conducted in February and December, 2013.

The Kansai Disaster Prevention and Mitigation Plan includes measures concerning earthquake and tsunami disaster. In preparation for massive wide-area disaster, preparedness measures involve cooperation with related body and organizations at normal time. This promotes the agreements for support to engage immediate disaster response. Another measure is the development of disaster prevention and mitigation operations. This comprehensively facilitates the system improvement, training, personnel management, promotion to residents. Furthermore, disaster response measures involve three (3) phases. First is the initial response which is roughly 3 days after a disaster occurs. The activities include information gathering, dispatch of emergency response team, establishment of disaster countermeasure (support) headquarters and establishment of on-site support headquarters. Second is the emergency response or the evacuation period. This phase involves support disaster victims, arrangement of demand and supply of relief goods, coordination to accept and dispatch supporting personnel and arrangement of an extensive evacuation. The last phase is the recovery and reconstruction which is the medium- and long-term temporary housing period. This involves the provision of support to construct emergency temporary housing and assistance to affected municipalities for reconstruction. The use of Operation Map is vital in all of these phases. The map shows actions by item to be taken by affected

municipalities, affected prefectures, prefectures supporting the Union of Kansai Governments, other prefectures, the national government, an outpost agency and an actual wide-area operating agency in a mutual cooperation at the time of a massive wide-area disaster.

Kansai Disaster Prevention and Mitigation Plan also includes measures concerning wind and flood disaster. Based on the lessons and experiences from the recent major wind and flood disasters in the Kansai region, the plan aims to share the integrated philosophy of erosion and flood control among watersheds as a whole, promote the town development to create municipalities that are resistant to the wind and flood disasters, improve the effectiveness of resident evacuation, and strengthen the disaster response system, as well as establish the initial response system at the time of disaster, and summarize the common response system policies in the Kansai region to smoothly conduct providing and receiving support. Possible wind and flood disasters include flood of main reservoirs such as the Yodo River, storm surge along Osaka Bay caused by an approach of massive typhoons and a large-scale sediment disaster caused by record rainfall. Disaster Preparedness Measures during normal time involves the following: First is *strengthening the cooperation with related organizations*. Cooperate with experts, and conclude agreements with related organizations and private business operators to enable immediate disaster response. Another measure is the development of system for providing and receiving support. This is done through the following: 1) develop information systems for wide-area disaster prevention which contributes for smooth information gathering/sharing; 2) facilitate conclusion of agreements for mutual support among municipalities over prefectures; 3) establish an emergency goods smooth supply system and a stockpile system in whole Kansai region; 4) Develop an extensive evacuation system; 5) Analyze preliminary response plans (Timeline); 6) Conduct wide-area support drills and joint employee training. Furthermore, preparedness measures also focus on the development of water and flood resistant town. This encourages the watershed areas to take integrated actions together for erosion and flood control by providing leading examples. Improving the effectiveness of resident evacuation is another important measure. This is done through the provision of support to create a well-developed hazard map, distribution of information to support issuing an evacuation order, etc., setting/improving the standard of

issuing and lifting an evacuation order, etc., effective distribution of information to residents and dissemination of information on countermeasure actions to ensure safety in the event of anomalous weather such as tornado and local heavy rain. Another important measure is the improvement of local structures for disaster prevention. The activities include the development of a structure for flood prevention activity, improvement of disaster prevention systems for underground mall and other areas, establishment supporting systems for people requiring support for evacuation and development of supporting systems for people with difficulty returning home.

With regards to the emergency response during disaster, the measures involve the establishment of systems Preparation system (for information gathering from Disaster preparedness office to Disaster surveillance headquarters, as well as system for providing and receiving support which emanate from coordination office for support to Disaster countermeasure headquarters. The measures before disaster include information gathering/sharing on weather, actions based on the preliminary response plan, issuance of an evacuation order at the early stage, taking actions to ensure the residents' safety and encouraging business operators to take actions to ensure safety at an early stage. Finally, the measure also focuses on the provision and receipt of support by dispatching supporting personnel, conducting medical activity, conducting extensive evacuation, supplying water and daily commodity, supporting disaster victims to maintain their health, arranging emergency temporary housing, emergency measure and reconstruction of social infrastructure and disposal of disaster waste, among others.

The Kansai Disaster Prevention and Mitigation Plan also include measures concerning nuclear disaster, infectious disease such as new strain of influenza, bird flu and foot-and-mouth disease and others.

The disaster reduction drill is conducted every year. Based on the assessment, the plan is subject for revision when deemed necessary. The majority of prevention plan, namely constructional countermeasures is implemented by individual member organization. Accordingly, the UKG formulates the actual wide-area's plan and guidelines and makes wide-area arrangement during the occurrence of disaster. Hence, the number value

goals are not established. The individual edition of the plan such as General Rule, Earthquake, Wind-Water related disaster and Nuclear will be revised this year. That reconsideration work will be done by the aforementioned working group. The committee will make an assessment about the initiatives of national government after the Great East Japan Earthquake and the response to Kumamoto Earthquake. Further, as suggested the reconsideration of plan shall be made based on evaluation.

Approaches

- **Self-Help, Mutual Help and Public Help**

One of the lessons of the Great Hanshin-Awaji Earthquake is the importance of combination of public help (i.e., government help), mutual help, and self-help.

"Self-help' refers to safeguarding one's own life. People should take care of their own affairs. This occurs between friends and families. Preparing emergency kits or making suitable arrangements to ensure their family members' safety in times of disaster, stockpiling of supplies in anticipation of disasters and taking the appropriate action for evacuation by one's personal judgment are examples of self-help.

"Mutual help" refers to helping each other and protecting their community. Workplace or community members should mutually help each other. The core idea of the mutual help principle saved many people's lives during the Great East Japan Earthquake. People urged their next-door neighbors to rapidly evacuate to higher ground for safety. Lessons from the earthquake are being transmitted through the concept of "*kizuna*" (human bonds). Mutual help is considered a humanitarian or philanthropic aid which can be in a form of volunteering such as rescue activities, as well as charitable activities which include supervising the evacuation of children and people with special needs, or other kinds of mutual assistance within a regional community.

The importance of mutual help has the needed social-based contents and approach in education. As pointed out by Shaw (2015) education had

changed from engineering to social-based solutions. Disasters cannot be prevented only by tangible measures such as the construction and improvement of facilities. During the Great East Japan Earthquake, preparedness of residents in their own daily affairs as well as mutual support between members of the community played an important role in minimizing damage brought about by the earthquake. This underscores the importance of consensus in a society and implementation of disaster measures at the community level since it is difficult for government to undertake all the necessary measures. Strong ties or connectivity among communities developed in ordinary times were particularly useful in times of disaster and in disaster drills in communities have fundamentally changed.

"Public help" refers to public support at the hands of administrative bodies, as seen in education, preparation and maintenance in anticipation of a disaster occurring, as well as disaster response measures such as information provision and operating evacuation centers. Public help is mostly provided by governments, and typically includes institutional arrangements and infrastructure. The government should protect people's lives and property. The services provided by fire fighters and police officers on duty in disaster stricken areas as examples of public help.

Citizens play a leading role in the other two: self-help is for citizens to protect themselves and their families, while mutual help is for people to help each other in a community or to help others as volunteers.

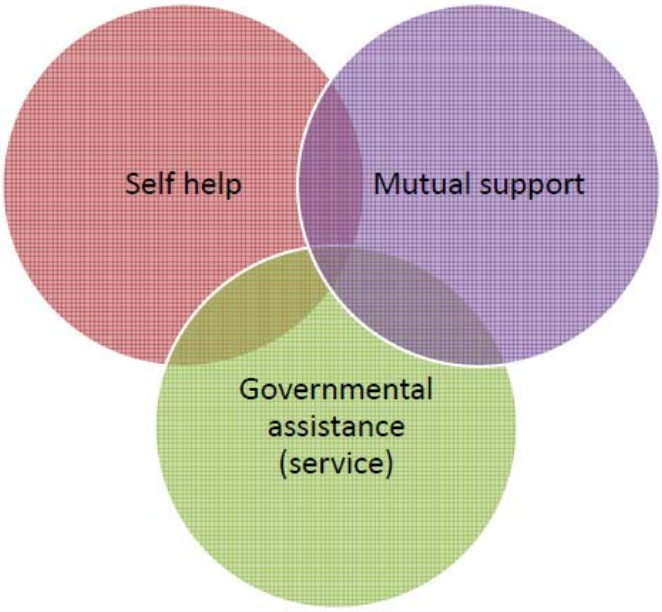


Figure 15: Diagram showing the concept of "Self-help, Mutual help and Public help"

These three major factors are considered essential to disaster management in Japan to ensure that damage from natural disasters is kept to a minimum. As the stated in the 2014 White Paper on Disaster Management in Japan, "The disaster of the Great East Japan Earthquake revealed that the government's capacity was limited in reaching out to each victim and also that the public's help was insufficient. In order to reduce the resulting damage from similar massive disasters, such as the earthquake anticipated to occur directly beneath the Tokyo Metropolitan Area or Nankai Trough that lies widely under the coast of Tokai areas, it is essential to increase manpower which in turn encourages self-help and mutual-help by local communities." Accordingly, the Minister of State for Disaster Management of Japan, Eriko Yamatani proactively requested all citizens of Japan to maintain a reasonable awareness of natural threats, be well prepared in advance for the hazards they face, refuse to react to false alarm, and take actions to protect themselves from disasters (Foreword, White Paper, Disaster Management in Japan 2015, Summary).

Nogra (2012) affirms that Japan has become the champion of disaster risk reduction as a country because it has long institutionalized the combination of self-help efforts rooted in the awareness of the people and business corporations with the mutual-help efforts of various community-based organizations supported by the public-help efforts of the national and local governments.

Caraga Region

- **Regional Disaster Risk Reduction and Management Council (RDRRMC)**

In Caraga Region, **Regional Disaster Risk Reduction and Management Council (RDRRMC)** is institutional mechanisms established as mandated by the Philippine DRRM Law.

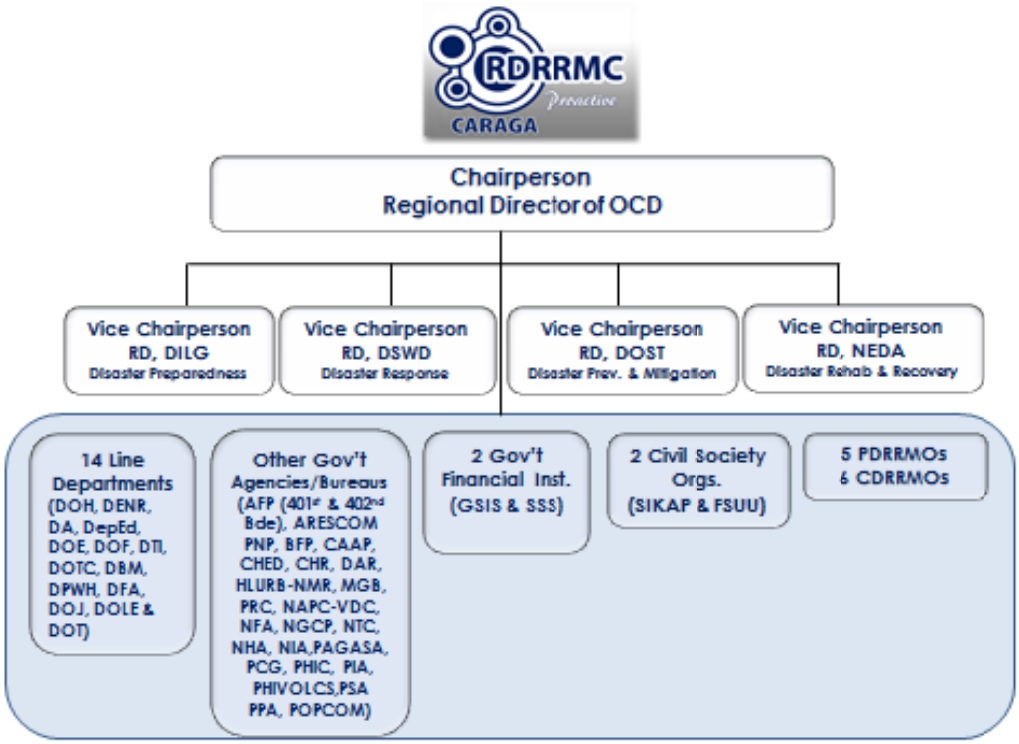


Figure 16: Organizational Structure of the Regional Disaster Risk Reduction and Management Council

The RDRRMC coordinates, integrates, supervises, and evaluates the activities of the local Disaster Risk Reduction and Management Councils (LDRRMCs). It is composed of fifty (50) members from national-line agencies, civil society organizations and Local DRRM Officers in the region. Likewise, it constitutes a technical working group composed of representatives of the member-agencies that coordinates and meet as often as necessary to effectively manage and sustain regional efforts on DRRM. Regular Quarterly Full council meeting are held in a year. The Chairperson of the Council also calls for a special meeting as the need arises. OCD serves as secretariat of the RDRRMC. The RDRRMC is Chaired by the Regional Director of OCD with four (4) Vice Chairs for the DRRM Standing Committees, namely: Regional Director of the Department of Science and Technology (DOST) for Disaster Prevention and Mitigation; Regional Director of the Department of the Interior and Local Government (DILG) for Disaster Preparedness; Regional Director of the Department of Social Welfare and Development (DSWD) for Disaster Response; and Regional Director of the National Economic and Development Authority (NEDA) for Disaster Rehabilitation and Recovery. The RDRRMC Chairman may also tap the facilities and resources of other government agencies and private sectors, for the protection of life and properties in pursuit of disaster risk reduction and management.

Aside from the regular quarterly RDRRMC Full Council Meeting, the four (4) Standing Committees also hold regular quarterly Committee Meetings effective as per RDRRMC Memorandum No. 4 series of 2016. The committee meetings are held prior to the schedule of the Quarterly RDRRMC Full Council Meeting and are convened simultaneously or separately depending on the concerned committee as the need arises. A regular technical sharing/update on DRRM and CCA is done during Quarterly RDRRMC Full Council Meetings in pursuit of enriching the level of awareness on DRRM and Climate Change Adaptation (CCA) among RDRRMC members and Local DRRMCs. This is also done to promote knowledge sharing especially on the prevailing topic relative to DRRM and CCA.

Further the RDRRMC Caraga has established an operating facility on a 24-hour basis, known as the **Regional Disaster Risk Reduction and Management Operations Center (RDRRMOC)**. Likewise, every member of the RDRRMC is also

mandated to establish its respective Emergency Operations Center (EOC) and to designate a focal officer for DRRM. The RDRRMOC is operated and maintained by OCD personnel during normal situation and with Detailed Duty Officers (DDOs) from concerned member-agencies of the council during Emergency Condition (Blue or Red Alert). The RDRRMOC serves as the *nerve center for alert and monitoring, multi-agency and multi-level operational coordination, response and resource mobilization and information management.* It utilizes support systems such as early warning and emergency broadcast system, geographic information system and other space-based technologies, incident command system, rapid damage assessment and needs analysis, emergency logistics management, public-private partnerships for emergency response, and humanitarian assistance coordination mechanisms. The Emergency Operations Center (EOC) brings together the vital aspect of Situation Monitoring, Dissemination of warning, Situation assessment and monitoring, Activation of responders, Coordination and communication, Information collection and analysis, Resource dispatch, tracking and request Task allocation, Action priorities, Media/public information among other related functions.

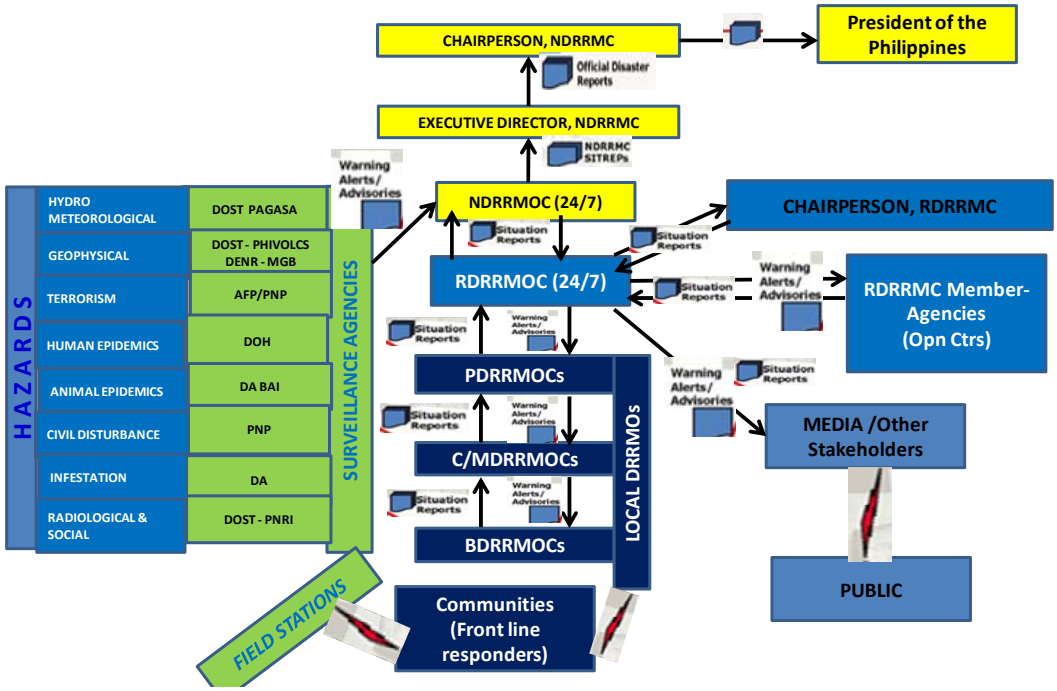


Figure 17: RDRRMOC Information Flow

(Communication Flow and Warning Dissemination)

The warning dissemination is takes place upon the receipt of any information from warning/surveillance agencies or NDRRMOC of which RDRRMOC shall process and issue warning advisories to all stakeholders. As a protocol, dissemination should be done using all available means of communication such as Short Messaging System (SMS), facsimile, electronic mail, phone call, social media and the official website. Advisories can be accessed through NDRRMC and RDRRMC websites. These advisories receive from surveillance agencies include 24-hour Public Weather Forecast, Weather Advisory, Gale Warning, Rainfall Advisory, General Flood Advisory Bulletin, Thunderstorm Advisory, Weather Outlook, El Nino/La Nina Advisory, Dam Monitoring, Tsunami Alert/Warning, Volcano Bulletin, Earthquake Information.

The RDRRMOC is the repository of all disaster information as far as disaster reporting system is concerned. These data are coming from the RDRRMC member-agencies and Local DRRMCs in the region. Any data/information received from other sources is subject for verification and validation from Local DRRMCs and/or RDRRMC member agencies concerned. Once data are validated and verified, said data are processed by the RDRRMOC into an Official RDRRMC Situational Report for submission to NDRRMC and information of concerned stakeholders.

The reporting system is necessary to ensure proper monitoring and documentation of disaster occurrence and its effects on the population, properties, and environment. The objectives include:

- To process information received from various sources and provide an analysis so that stakeholders get a clear picture of the magnitude of the situation as well as identify the gaps and emergency needs in addressing the requirements of the affected population;
- To reduce the risks and effectively manage the consequences of disasters and ensure "near/real-time reporting";
- To recommend appropriate actions to be undertaken in order to expedite the decision-making process;
- To capture and store useful and valuable data/information in various forms for statistical purposes and to serve as a basis for decision-making by responsible authorities, readily-available for sharing and

dissemination to all concerned.

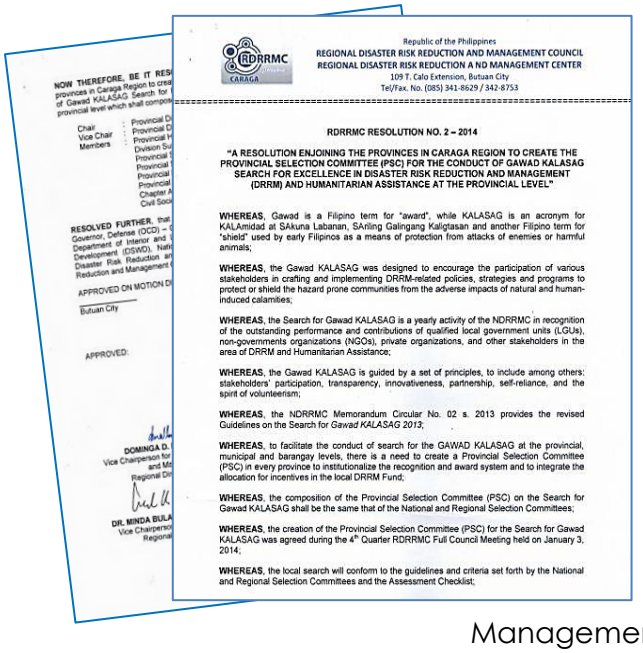
In other to further strengthen collaboration and support system, and recognize initiatives pertaining to DRRM efforts in the region, the RDRRMC is also reinforced by the organizations of the following:

1) **Regional Selection Committee (RSC)** for Gawad KALASAG Search for Excellence in DRRM and Humanitarian Assistance in adherence to the national guidelines.

The Search for Gawad KALASAG is a yearly activity of the National DRRM Council in recognition of the outstanding performance and contributions of qualified local government units (LGUs), non-government organizations (NGOs), private organizations, and other stakeholders in the area of DRRM and Humanitarian Assistance. This recognition scheme is guided by a set of principles, to include among others: stakeholders' participation, transparency, innovativeness partnership, self-reliance and the spirit of volunteerism.

Gawad is a Filipino term for "award", while KALASAG is an acronym for **KALA**midad at Sakuna Labanan, **SA**riling **G**aling ang Kaligtasan and another Filipino term for "shield" USED BY EARLY Filipino as a means of protection from attacks of enemies or harmful animals. It was designed to encourage the participation of various stakeholders in crafting and implementing DRRM-related policies, strategies and programs to protect or shield the hazard prone communities from the adverse impacts of natural and human-induced hazards.

In order to facilitate the conduct of search for the Gawad KALASAG at the provincial, municipal and barangay level, the **Provincial Selection Committee (PSC)** is also created in every province to institutionalize the recognition and award system and to integrate the allocation for incentives in the local DRRM Fund.



Republic of the Philippines
REGIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL
REGIONAL DISASTER RISK REDUCTION A ND MANAGEMENT CENTER
109 T. Calo Extension, Butuan City
Tel/Fax. No. (085) 341-8629 / 342-8753

RDRRMC RESOLUTION NO. 2 – 2014

"A RESOLUTION ENJOINING THE PROVINCES IN CARAGA REGION TO CREATE THE PROVINCIAL SELECTION COMMITTEE (PSC) FOR THE CONDUCT OF GAWAD KALASAG SEARCH FOR EXCELLENCE IN DISASTER RISK REDUCTION AND MANAGEMENT (DRRM) AND HUMANITARIAN ASSISTANCE AT THE PROVINCIAL LEVEL"

WHEREAS, Gawad is a Filipino term for "award", while KALASAG is an acronym for KALAmidad at SAkuna Labanan, SAriling Galingang Kaligtasan and another Filipino term for "shield" used by early Filipinos as a means of protection from attacks of enemies or harmful animals;

WHEREAS, the Gawad KALASAG was designed to encourage the participation of various stakeholders in crafting and implementing DRRM-related policies, strategies and programs to protect or shield the hazard prone communities from the adverse impacts of natural and human-induced calamities;

WHEREAS, the Search for Gawad KALASAG is a yearly activity of the NDRRMC in recognition of the outstanding performance and contributions of qualified local government units (LGUs), non-governments organizations (NGOs), private organizations, and other stakeholders in the area of DRRM and Humanitarian Assistance;

WHEREAS, the Gawad KALASAG is guided by a set of principles, to include among others: stakeholders' participation, transparency, innovativeness, partnership, self-reliance, and the spirit of volunteerism;

WHEREAS, the NDRRMC Memorandum Circular No. 02 s. 2013 provides the revised Guidelines on the Search for *Gawad KALASAG 2013*;

WHEREAS, to facilitate the conduct of search for the GAWAD KALASAG at the provincial, municipal and barangay levels, there is a need to create a Provincial Selection Committee (PSC) in every province to institutionalize the recognition and award system and to integrate the allocation for incentives in the local DRRM Fund;

WHEREAS, the composition of the Provincial Selection Committee (PSC) on the Search for Gawad KALASAG shall be the same that of the National and Regional Selection Committees;

WHEREAS, the creation of the Provincial Selection Committee (PSC) for the Search for Gawad KALASAG was agreed during the 4th Quarter RDRRMC Full Council Meeting held on January 3, 2014;

WHEREAS, the local search will conform to the guidelines and criteria set forth by the National and Regional Selection Committees and the Assessment Checklist;

This mechanism is institutionalized through RDRRMC Resolution No. 2–2014 entitled, "A Resolution Enjoining the Provinces in Caraga Region to Create the Provincial Selection Committee (PSC) for the Conduct of Gawad KALASAG Search for Excellence in Disaster Risk Reduction and Management (DRRM) and Humanitarian Assistance at the Provincial Level".

The composition of the PSC is in conformity with the National and Regional Selection Committees. The PSC is composed of the Provincial Heads of Offices/Agencies such as the DILG as Chair, PDRRMO as the Vice-Chair and PHO, DepEd, PSWDO, DOST, PPDO, PIA, PRC and Civil Society Organization.

The local search conforms to the guidelines and criteria set forth by the National and Regional Selection Committees and the Assessment Checklists for the following categories of award:

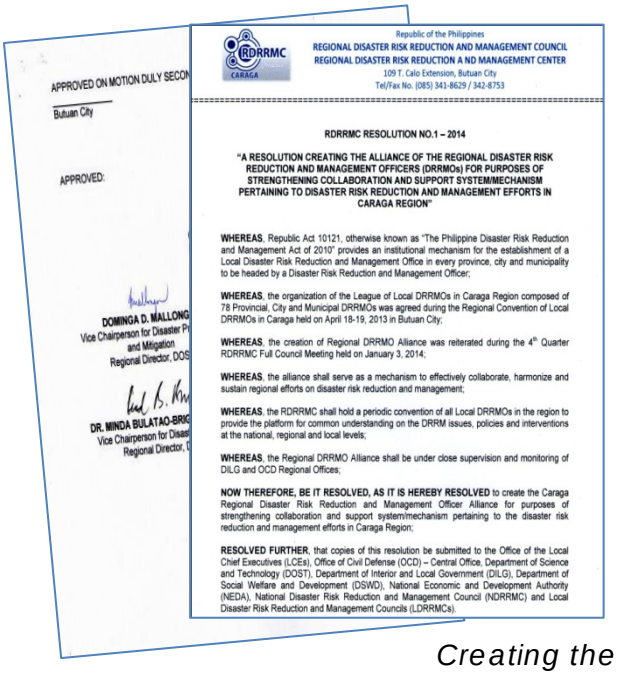
a) Local Disaster Risk Reduction and Management Councils (LDRRMCs)
- Provincial
- Highly Urbanized City (HUC)
- Component/Independent Chartered Component Cities
- Municipalities – 1st to 3rd class LGUs and 4th and 6th class LGUs

b) Barangay DRRMCs – urban and rural
c) Schools – public and private
d) Hospitals – government, private and specialty
e) Civil Society Organizations (CSOs)
f) People's Organizations (POs)

g) Volunteer Organizations
h) Government Emergency Response Managements – Basic SAR and Urban SAR
i) Early Learning Center – Urban and Rural
j) Heroic Act in providing humanitarian assistance – Individual and Group (living/posthumous)
k) Special Recognition Awards – Individual and Group

2) Caraga Regional Alliance of Local DRRM Officers (CADRRMOs).

The Philippine DRRM Law provides an institutional mechanism for the establishment of a Local DRRM Office in every province, city and municipality to be headed by a Disaster Risk Reduction and Management Officer. The organization of the League of Local DRRM Officers in Caraga Region composed of 78 Provincial, City and Municipal DRRM Officers in the region was agreed during the Regional Convention of Local DRRMOs in Caraga held on April 18-19, 2013.



Republic of the Philippines
REGIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL
REGIONAL DISASTER RISK REDUCTION A ND MANAGEMENT CENTER
109 T. Calo Extension, Butuan City
Tel/Fax No. (085) 341-8629 / 342-8753

RDRRMC RESOLUTION NO.1 – 2014

"A RESOLUTION CREATING THE ALLIANCE OF THE REGIONAL DISASTER RISK REDUCTION AND MANAGEMENT OFFICERS (DRRMOs) FOR PURPOSES OF STRENGTHENING COLLABORATION AND SUPPORT SYSTEM/MECHANISM PERTAINING TO DISASTER RISK REDUCTION AND MANAGEMENT EFFORTS IN CARAGA REGION"

WHEREAS, Republic Act 10121, otherwise known as "The Philippine Disaster Risk Reduction and Management Act of 2010" provides an institutional mechanism for the establishment of a Local Disaster Risk Reduction and Management Office in every province, city and municipality to be headed by a Disaster Risk Reduction and Management Officer;

WHEREAS, the organization of the League of Local DRRMOs in Caraga Region composed of 78 Provincial, City and Municipal DRRMOs was agreed during the Regional Convention of Local DRRMOs in Caraga held on April 18-19, 2013 in Butuan City;

WHEREAS, the creation of Regional DRRMO Alliance was reiterated during the 4th Quarter RDRRMC Full Council Meeting held on January 3, 2014;

WHEREAS, the alliance shall serve as a mechanism to effectively collaborate, harmonize and sustain regional efforts on disaster risk reduction and management;

WHEREAS, the RDRRMC shall hold a periodic convention of all Local DRRMOs in the region to provide the platform for common understanding on the DRRM issues, policies and interventions at the national, regional and local levels;

WHEREAS, the Regional DRRMO Alliance shall be under close supervision and monitoring of DILG and OCD Regional Offices;

NOW THEREFORE, BE IT RESOLVED, AS IT IS HEREBY RESOLVED to create the Caraga Regional Disaster Risk Reduction and Management Officer Alliance for purposes of strengthening collaboration and support system/mechanism pertaining to the disaster risk reduction and management efforts in Caraga Region;

RESOLVED FURTHER, that copies of this resolution be submitted to the Office of the Local Chief Executives (LCEs), Office of Civil Defense (OCD) – Central Office, Department of Science and Technology (DOST), Department of Interior and Local Government (DILG), Department of Social Welfare and Development (DSWD), National Economic and Development Authority (NEDA), National Disaster Risk Reduction and Management Council (NDRRMC) and Local Disaster Risk Reduction and Management Councils (LDRRMCs).

The Regional DRRM Council of Caraga issued RDRRMC Resolution No.1 – 2014 , entitled *"A Resolution Creating the Alliance of the Regional Disaster Risk Reduction and Management Officers (DRRMOs) for Purposes of Strengthening Collaboration and Support System/Mechanism pertaining to Disaster Risk Reduction and Management Efforts in Caraga Region".*

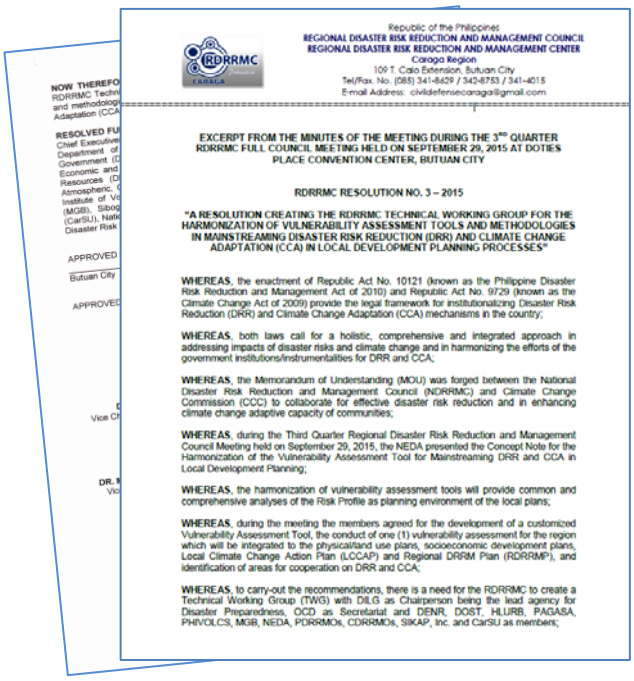
The alliance serves a mechanism to effectively collaborate, harmonize and sustain regional efforts on disaster risk reduction and management. It is responsible for holding a periodic convention of all Local DRRM Officers in the region to provide the platform for common understanding of the DRRM

issues, policies and interventions at the national, regional and local levels. It is also under close supervision and monitoring of the DILG and the OCD Regional Offices.

The alliance is composed of committed LDRRM Officers in the region. This general membership constitutes the General Assembly.

3) Technical Working Group for the Harmonization of Vulnerability Assessment Tools

The RDRRMC also created a Technical Working Group for the Harmonization of Vulnerability Assessment Tools through the issuance of RDRRMC Resolution No. 3 – 2015 entitled **"**A Resolution Creating the RDRRMC Technical Working Group for the Harmonization of Vulnerability Assessment Tools and Methodologies in Mainstreaming Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) In Local Development Planning Processes**"**



Republic of the Philippines
REGIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL
REGIONAL DISASTER RISK REDUCTION AND MANAGEMENT CENTER
Caraga Region
109 T. Calo Extension, Butuan City
Tel/Fax. No. (085) 341-8429 / 342-8753 / 341-4015
E-mail Address: civildefensecaraga@gmail.com

EXCERPT FROM THE MINUTES OF THE MEETING DURING THE 3RD QUARTER RDRRMC FULL COUNCIL MEETING HELD ON SEPTEMBER 29, 2015 AT DOTIES PLACE CONVENTION CENTER, BUTUAN CITY

RDRRMC RESOLUTION NO. 3 – 2015

"A RESOLUTION CREATING THE RDRRMC TECHNICAL WORKING GROUP FOR THE HARMONIZATION OF VULNERABILITY ASSESSMENT TOOLS AND METHODOLOGIES IN MAINSTREAMING DISASTER RISK REDUCTION (DRR) AND CLIMATE CHANGE ADAPTATION (CCA) IN LOCAL DEVELOPMENT PLANNING PROCESSES"

WHEREAS, the enactment of Republic Act No. 10121 (known as the Philippine Disaster Risk Reduction and Management Act of 2010) and Republic Act No. 9729 (known as the Climate Change Act of 2009) provide the legal framework for institutionalizing Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) mechanisms in the country;

WHEREAS, both laws call for a holistic, comprehensive and integrated approach in addressing impacts of disaster risks and climate change and in harmonizing the efforts of the government institutions/instrumentalities for DRR and CCA;

WHEREAS, the Memorandum of Understanding (MOU) was forged between the National Disaster Risk Reduction and Management Council (NDRRMC) and Climate Change Commission (CCC) to collaborate for effective disaster risk reduction and in enhancing climate change adaptive capacity of communities;

WHEREAS, during the Third Quarter Regional Disaster Risk Reduction and Management Council Meeting held on September 29, 2015, the NEDA presented the Concept Note for the Harmonization of the Vulnerability Assessment Tool for Mainstreaming DRR and CCA in Local Development Planning;

WHEREAS, the harmonization of vulnerability assessment tools will provide common and comprehensive analyses of the Risk Profile as planning environment of the local plans;

WHEREAS, during the meeting the members agreed for the development of a customized Vulnerability Assessment Tool, the conduct of one (1) vulnerability assessment for the region which will be integrated to the physical/land use plans, socioeconomic development plans, Local Climate Change Action Plan (LCCAP) and Regional DRRM Plan (RDRRMP), and identification of areas for cooperation on DRR and CCA;

WHEREAS, to carry-out the recommendations, there is a need for the RDRRMC to create a Technical Working Group (TWG) with DILG as Chairperson being the lead agency for Disaster Preparedness, OCD as Secretariat and DENR, DOST, HLURB, PAGASA, PHIVOLCS, MGB, NEDA, PDRRMOs, CDRRMOs, SIKAP, Inc. and CarSU as members;

The harmonization of vulnerability assessment tools provides common and comprehensive analyses of the Risk Profile as planning environment of the local plans.

The development of a customized Vulnerability Assessment Tool is initiated to conduct of one (1) vulnerability assessment for the region which will be integrated to the physical/land use plans, socioeconomic development plans, Local Climate Change Action Plan (LCCAP) and Regional DRRM Plan (RDRRMP), and identification of areas for cooperation on DRR and CCA. To carry-out the recommendations, there is a need for the RDRRMC

to create a Technical Working Group (TWG) with DILG as Chairperson being the lead agency for Disaster Preparedness, OCD as Secretariat and DENR, DOST, HLURB, PAGASA, PHIVOLCS, MGB, NEDA, PDRRMOs, CDRRMOs, SIKAP, Inc. and CarSU as members.

4) Regional Disaster Response Teams

The RDRRMC has also organized its Regional Disaster Response Teams such as Rapid Damage Assessment and Needs Analysis (RDANA) Team, Post Disaster Needs Assessment (PDNA) Team, Regional Incident Management Team (RIMT) and Rapid Emergency Telecommunications Team (RETT) of Caraga. The Regional IMT together with the Provincial Response Teams was deployed to Region 8 (Eastern Visayas Region) to provide humanitarian response services during Typhoon Yolanda in November 2013 and Typhoon Ruby in November 2014.

5) Disaster Preparedness Committee's Disaster Capability Preparedness Assessment

The Disaster Preparedness Committee of the RDRRMC headed by the Department of the Interior and Local Government (DILG) initiated a self-assessment checklist tool to evaluate the disaster preparedness capability of all RDRRMC member-agencies, associations and organizations.

The capability Assessment checklist is a form of pre-emptive measure to identify vulnerabilities and gaps to enhance the capabilities of each stakeholder. Basic yet substantial tool that covers most of the important aspects in preparing a community against the impact of a calamity will be used in this endeavor. The result will serve as input in crafting policies, formulation of plans and allocation of budget for disaster risk reduction and management activities and intervention of every participating agency/organization. This also facilitates clear direction, strategic planning and decision-making, and establishes accountability for all stakeholders.

The endeavor is believed to be of great significance to encourage and enhance the enthusiasm, as well as, awaken the consciousness of all

government and non-government institutions in the region to take part in building a disaster-resilient community through starting it within their own institution.

Being a member of the RDRRMC that is delegated with the task to carry out the coordination, integration, supervision, monitoring and evaluation covering all DRRM stakeholders in the region, it is imperative that such responsible entity should create a role model of themselves in having a disaster resilient community.

The RDRRMC of Caraga during its first quarter Full Council Meeting held on April 8, 2015 agreed on the implementation of the Disaster Preparedness Capability Assessment to all member agencies, associations, and organizations using the self-assessment checklist tool. It was further agreed that all RDRRMC member agencies, associations, and organization shall be enjoined to implement the said endeavor and undertake the self assessment and submit the result to the council through the Office of Civil Defense at least two weeks before the 2015 4th Quarter RDRRMC Full Council Meeting for validation of eligible results for possible citations and awards.

The methodologies include the following:

- The assessment shall be done in an annual basis employing a scaled up checklist each year. The RDRRMC TWG shall formulate and agree on the guidelines to be adopted for every round of assessment;
- RDRRMC TWG members shall conduct an orientation of the assessment tool and its guidelines prior to its administration;
- The assessment shall be administered by the respective DRRM Focal Persons or DRRM Team of each member agencies.
- Each item constitute a single point (1 point)
- An agency that gained a score above 80% shall be eligible to an award of citation from the RDRRMC of the first round (first assessment year). A separate enhance criteria shall be used for the succeeding years of the assessment,
- Duly signed checklist by the administering authority noted by the respective head of office will be consolidated by the RDRRMC Technical working Group. The TWG shall subject an eligible agency

for an award to a validation prior to the conferment of award by the OCD and RDRRMC.

The delineation of responsibilities include:

DRRM Focal Person or DRR Team of the concerned agency creates a team or TWG to assess the current preparedness state of the agency; documents the process; initiate activities to improve weak areas; conduct exit conference with the rest of the members of the organization; make policy recommendations based on the result of the validation; and make the supporting documents available for the other member agencies to replicate or benchmark.

The RDRRM TWG Member formulates and rescales the DRRM Preparedness checklist; discuss and enhance the guidelines in implementing the assessment; assist member agency in the conduct of the assessment and conduct validation to the prospect agency.

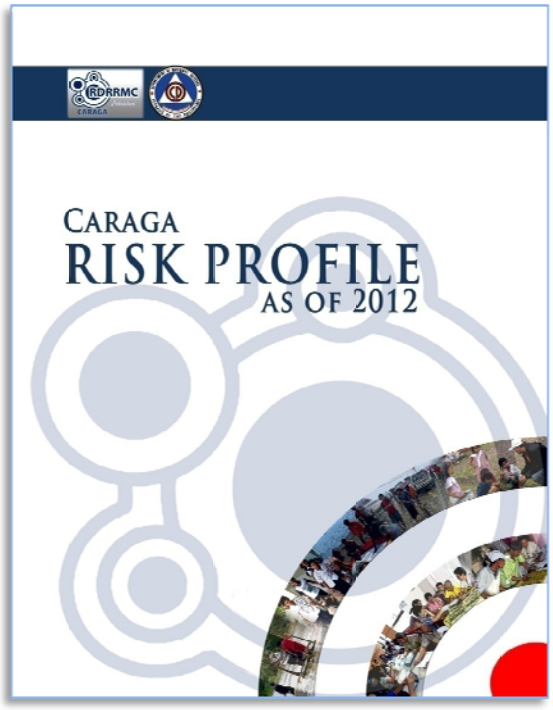
The RDRRMC confer the award of citation to the qualified agency.
The implementation Schedule is as follow:

- The assessment shall be done every 1st month of the 2nd quarter of each year;
- Validation of scores to the qualified agencies shall be done two weeks prior to the conduct of the 2nd quarter RDRRMC Full council Meeting in preparation for the conferment of the award of citation;
- The first round of implementation, also considered as the pilot phase of execution, shall be done this year which will commence right after the receipt of the issuance from the RDRRMC until two weeks prior to the conduct of the 4th Quartet Full Council Meeting for the conferment of eligible agency for possible citation and/or award during the last Full council Meeting for the year 2015.

The Conferment of Citation shall be done as one of the highlights during the region's culmination program for the Observance of the National Disaster Consciousness Month (NDCM).

- **DRRM-related Plans**

In Caraga Region, one of the important documents prior to the development/formulation of a Regional DRRM Plan is the Caraga Regional Risk Profile (CRRP). Approved by the RDRRMC on June 11, 2013, the CRRP is consistent with the framework stipulated in the Philippine DRRM Law.



The Risk Profile is a complementary document of the Caraga Regional Disaster Risk Reduction and Management Plan (CDRRMP) 2013-2017. This serves as the planning environment of the plan as it provides information on the types of risks (natural and human-induced) and impact of risks affecting the region in the last ten (10) years. As a supplemental document of the CDRRMP, this serves as guide in the identification of strategies, programs, projects and activities relative to DRRM towards the goal of reducing the impact of hazards.

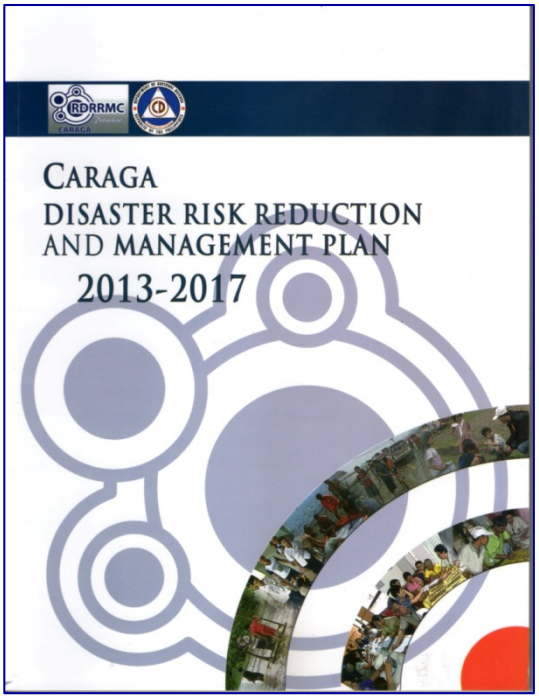
This document can be used as a reference material for incorporating DRRM in the local planning processes. However, the presentation of the information in the document is not comprehensive and due to the inadequate data and non-documentation of some events, the risk profile is just limited to the provincial and municipal levels.

The main parts of the Regional Risk Profile include: 1) *Introduction*. The section contains the general assumption underlying the preparation of the risk profile and its link with the Regional Disaster Risk Reduction and Management Plan. The rationale and objective as well as the arrangement of the contents of the risk profile are also included in this section. 2) *Background of Caraga*. The section provides a brief history of the region including location, political

subdivision, population, economy, and others. 3) *Risk Profile of Caraga*. Being considered as the main component of the document, the section provides historical accounts of all risks which struck the region including the vulnerable elements and other resources at risk.

- **Caraga Regional DRRM Plan 2013-2017**

The RDRRMC spearheaded the crafting of the Caraga Regional Disaster Risk Reduction and Management Plan 2013-2017. The RDRRMP serves as a blueprint for all local government units, line agencies and local communities in mitigating the effects of disasters in the region.



The Caraga RDRRMP 2013-2017(RDRRMP) provides strategic direction for effective disaster risk reduction and management at the local level in the next five years. The RDRRMP is guided by the framework adopted by the National Disaster Risk Reduction and Management Plan 2011-2028 (NDRRMP) and is consistent with the Philippine Development Plan 2011-2016 (PDP) and the Caraga Regional Development Plan (RDP 2011-2016).

The framework which envisions a country of **"safer, adaptive and disaster-resilient Filipino communities toward sustainable development",** conveys a shift from reactive to proactive DRRM. This entails embracing awareness of disaster risk reduction and management with the goal of increasing people's resilience and decreasing their vulnerabilities. The realization of this vision calls building the adaptive capacity of communities, optimizing disaster mitigation and strong partnership mechanism from the private and government sectors.

Given the Risk Profile of the region, the RDRRM Plan aims to make Caraga's

communities safer, adaptive and disaster resilient towards sustainable development. The plan is anchored on the following themes:

Theme 1: Disaster prevention and mitigation, with the Department of Science and Technology (DOST) as the overall responsible agency. This theme focuses on avoiding hazards and mitigating their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities.

Theme 2: Disaster preparedness, with the Department of Interior and Local Government (DILG) as the overall responsible agency. This theme focuses on establishing and strengthening capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters.

Theme 3 on Disaster Response, with the Department of Social Welfare and Development (DSWD) as the overall responsible agency. This theme focuses on providing life preservation and meeting the basic needs of affected population based on acceptable standards during or immediately after a disaster.

Theme 4 is focused on disaster rehabilitation and recovery, with the National Economic and Development Authority (NEDA) as the overall responsible agency. Theme 4 focuses on restoring and improving facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the "building back better" principle.

These four thematic areas overlap with no clear distinctions over time. Essentially, they: mutually reinforce each other and are interoperable; do not, and should not and cannot stand alone; have no clear starting nor ending points between each of the priority areas and overlaps are expected; are centered on problem-needs and asset-strengths; and all point to one direction, such as reducing people's vulnerabilities and increasing their capacities.

Adherence to these themes will provide safer, adaptive and disaster-resilient communities towards sustainable development.

The RDRRMP which covers four thematic areas also correspond to the structure of the RDRRMC. The OCD Regional Director, who sits as the Chairperson of the RDDRMC, formulates and implements the RDRRMP and ensures that the physical framework, social, economic and environmental plans of communities, cities, municipalities and provinces are consistent with such plan. The RDRRM Plan accumulated a total of twenty two (22) outcomes, forty nine (49) outputs and one hundred thirty seven (137) activities.

The RDRRMP spells out the expected outcomes, outputs, key activities, indicators and implementing partners and timelines in each of the four distinct yet mutually reinforcing thematic areas. The regional goals of each thematic area contribute to the attainment of the country's overall DRRM vision.

The following strategies which are identified in the NDRRM Framework shall be employed to contribute in the achievementof the desired key result areas under each DRRM aspect:

- **Advocacy and Information, Education and Communication (IEC).** Mobilize and harness the print and broadcast media to regularly communicate, warn and educate people nationwide about DRRM.
- **Competency-based capability building.** Customized training programs should be developed to ensure that people are trained based on the needed skills in the different DRRM aspects.
- **Contingency Planning.** More commonly used before as only part of disaster preparedness activities, contingency planning is now a living document which is updated and used in all the different aspects of DRRM.
- **Education on DRRM and CCA for ALL.** Education through the integration of DRR concepts in the curriculum (i.e., basic education, NSTP, bachelors' degree) and for the public sector employees.
- **Institutionalization of DRRMCs and LDRRMOs.** Creation of permanent local DRRM offices and functioning councils at the local level are some

of the ways to ensure that all DRRM-related activities, plans and programs will be implemented and sustained.

- **Mainstreaming of DRR in ALL plans.** In all 4 aspects, we need to ensure that DRRM (and CCA) is mainstreamed in the various programs, plans, projects of either national or local government units, including the private sector groups and other members of the community.

- **Research, Technology Development and Knowledge Management.** With the changes in the climate and technological advances, we need research to help us innovate, adapt and maximize the use of our resources to help our people reduce and manage the risks of disasters.

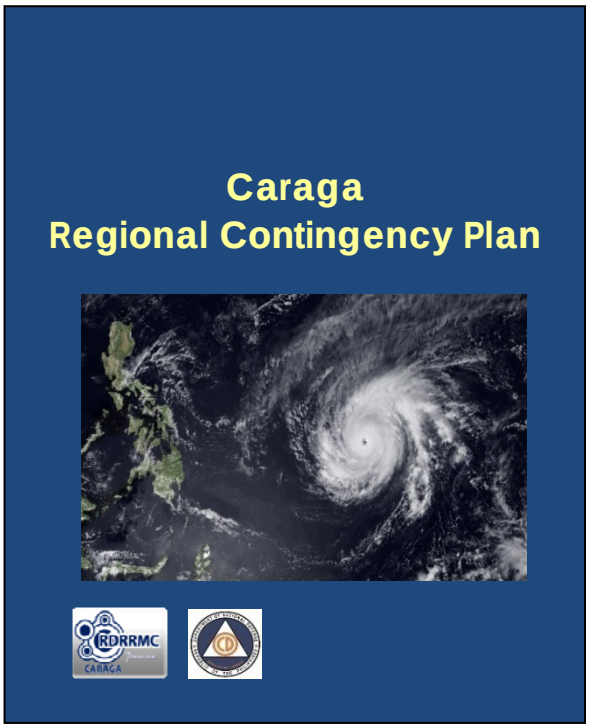
- **Monitoring, evaluation and learning.** Feedback mechanisms are important aspects of gauging performance targets and learning from our experiences on the ground.

- **Networking and partnership building between and among stakeholders, media and tiers of government.** Building effective and mutually reinforcing parterships and evolving networks ensure the multi-stakeholder and multi-sectoral participation of the different players in DRRM.

There are major accomplishments of the public sector towards disaster risk reduction and management. One is mainstreaming of disaster risk reduction and management and climate change adaptation in local developments plans, policies and budgets. Another milestone is increased disaster resilience of infrastructure systems. Likewise, provision of effective and applicable disaster risk financing and insurance is a significant accomplishment. Furthermore, accomplishments are trained communities on disaster preparedness and response, increased DRRM and CCA capacity of Local DRRM councils and offices at all levels, including the barangays and communities, establishment of fully-functioning local DRRM offices, adequate and prompt assessment of needs and damages among others.

- **Regional Contingency Plan for Typhoon**

The Regional Contingency Plan for Typhoon is a scenario-based plan for typhoon. It aims to address the impacts of typhoon to people, properties, and environment as well as to prevent the occurrence of the emerging threats through the arrangement of timely, effective, appropriate, and well-coordinated responses as well as the efficient management of resources.



The plan was formulated by the RDRRM member-agencies, Local DRRM Officers and international organizations. The workshop for the formulation of the plan was funded by the United Nations Office for the Coordination of Humanitarian Affairs (OsCHA) in September 2014.

As basis for strategic response during emergency, the event described in this plan is a worst-case scenario similar to Super Typhoon Yolanda.

The overall goal of the plan is to provide effective, efficient, timely and coordinated response needed in order to save lives and alleviate impact of disaster in the affected communities. The objectives are as follows: 1) To define specific roles and tasks of clusters involved in disaster operation; 2) To conduct inventory of resources available among RDRRMC member-agencies including NGOs; 3) To establish proper coordination through efficient communication and linkage among stakeholders; and 4) To reinforce the standards of reporting system set by the NDRRMC.

It is also expressly articulated in the law that the NDRRMC and intermediary Local DRRMCs shall always act as support to LGUs which have the primary responsibility as first disaster responders. Private sector and civil society

organizations shall work in accordance with the coordination mechanism and policies set the NDRRMC and concerned LDRRMCs.

With these, the principle of augmentation and complementation of resources is espoused by this Contingency Plan. The augmentation shall be based on the requests coming from the Local DRRMCs that have determined their diminishing levels of capacity and capability to provide adequate assistance to their respective provinces, cities and municipalities affected by disaster.

Hence, the RDRRMC adopts an institutional arrangement with concerned stakeholders whose facilities and resources are available in preparing for, responding to and recovering from the effects of disaster. Since the response mechanism of the Contingency Plan is based on the Cluster System with interoperability of the Incident Command System (ICS) through the RDRRMC Operations Center/Emergency Operations Center which serves as the Command Center.

The different clusters in the Contingency Plan under the Disaster Response Committee of the RDRRMC shall have the following functions, to wit:

1) **Education Cluster** (the Department of Education and UNICEF & Save the Children as Co-Leads)
   This Cluster led by aims to ensure safety of learners and DepEd personnel. It also aims to provide continued access to quality of education to all affected learners.

2) **Camp/IDP Management, Emergency Shelter & Protection Cluster (**DSWD as lead, IOM, UNHCR, UNFA, UNICEF, IFRC as Co-leads and DepEd, DILG, AFP, PNP and CHR as members)
   This Cluster aims to provide assistance and augment all requirements for the management of evacuation of individual's families affected by disasters.

3) **Food and Non-Food Items Cluster** (DSWD as lead and NFA, WFP as Co-Leads)
   This Cluster aims to provide augmentation of food and non-food items to the

affected LGUs in cases where pre-positioned resources are used up during disaster period.

4) **WASH, Health, Nutrition, Psychosocial Services Cluster** (DOH as lead, UNICEF, WHO and co-leads and BFP, DOST, PRC as members)
The Sub-clusters include Water, Sanitation and Hygiene (WASH), Health, Nutrition Sub-Cluster and Reproductive Health Sub-Cluster.

This Cluster aims to provide support for a timely and appropriate public health services to the affected population. This cluster is composed of the Medical and Public Health, Mental Health and Psycho-social Support (MHPSS), Nutrition and WASH sub-clusters of the DOH-Health Emergency Management System (HEMS).

5) **Permanent Shelter and Livelihood Cluster** (DSWD as lead, IFRC, IOM, ILO as Co-leads and DTI, NHA, DPWH as members)
There are two (2) Sub-Clusters namely, Permanent Shelter and Livelihood Sub-Cluster.

This cluster aims to restore and improve shelters, facilities, livelihood and living conditions and organizational capacities of affected communities.

6) **Logistics & Emergency Telecommunications Cluster** (OCD as lead and WFP as Co-Lead and DILG, DOTC, AFP, PNP, DPWH, PCG, PIA and PAGASA as members)

The Logistic Cluster aims to provide an efficient and effective logistics coordinating structure that will harmonize the activities of all clusters and encourage regular info-sharing among all stakeholders and other partners. The Cluster also formulates, updates, implements and monitors logistical policies, plans, programs and procedures that will harmonize the activities of each cluster.

The Logistics Cluster through coordination, monitoring, identification and deployment cover transportation (emergency road network, land sea and air) which includes road clearing and provision of equipment and machines

(and its required fuel) to provide the needed access and mobility for all cluster operations; warehousing; inventories (consolidation of resources available among partners and cluster members) and tracking of deployed items

The Emergency Telecommunications Cluster also led by the OCD aims to strengthen Information and Communications Technology (ICT) capacities at the national level down to local levels to prepare for, respond to and recover from the impacts of disasters by providing a timely, resilient and predictable ICT support to improve the following: Response and coordination among response organizations; Decision-making through timely access to critical information; Common operational areas for disaster response; Common system standards and operating procedures; Standards based architecture for HADR Operations; and System architectures for compliance and interoperability.

7) **Agriculture Cluster** (DA Lead and WFP, FIO as Co-Leads)

This cluster led by the DA aims to provide immediate resources in terms of agricultural requirements in response mechanism.

8) **Early Recovery Cluster** with NEDA as Lead**,** UNDP as Co-Lead and DENR, DTI, DPWH, DILG as members

This Cluster aims to bring back initial signs of 'normalcy' to the affected areas.

9) **Management of the Dead and Missing Cluster (**DILG as Lead and DOH as Co-lead)

This cluster aims to provide assistance in the proper identification and disposition of the remains in a sanitary manner with cautions to prevent negative psychological and social impact on the bereaved and the community.

10) **Search, Rescue and Retrieval Cluster**

This cluster aims to provide support for an effective, timely, organized and

systematic search, rescue and retrieval operations to affected areas in all emergencies to further minimize loss of lives and casualties, including the hand-over of casualties to the Health Cluster for proper treatment and management. The SRR Cluster is the national organization that will coordinate and deploy all available search and rescue teams from the government, civil society, private sector and the international community.

As provided for in the PDRRM law, the RDRRMC Chairperson may tap the facilities and resources of other government agencies and private sectors, for the protection of life and properties in pursuit of disaster risk reduction and management. Thus, the implementation of this plan can be effectively materialized if the support from these concerned stakeholders is appropriately tapped.

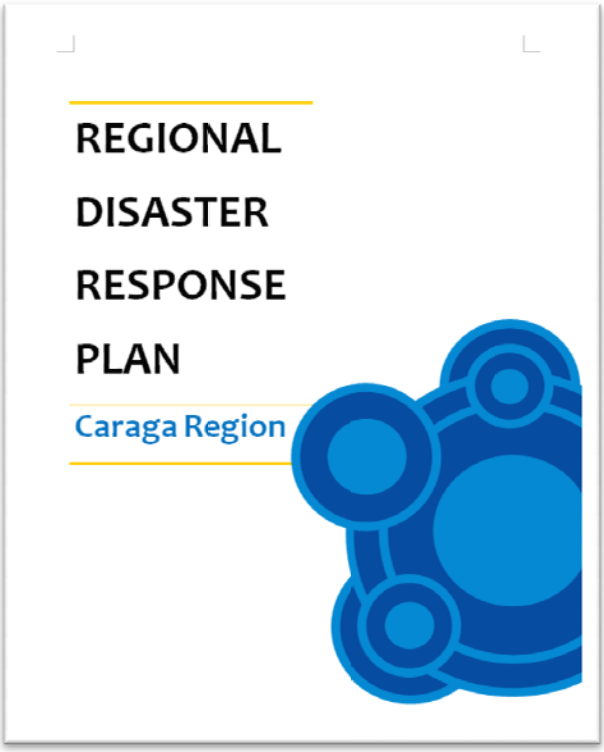
Monitoring and evaluation serve as feedback mechanism on the necessary changes and revisions of activities in the Contingency Plan. These M and E activities shall be led by the OCD as Secretariat of the RDRRMC. The monitoring and assessment of activities in the Contingency Plan as well as the after-action review/lessons learned of the disaster occurrence shall be done annually using the Monitoring and Evaluation Tool formulated by the RDRRMC Technical Working Group (TWG).

The RDRRMC shall facilitate any request for possible funding support from humanitarian aid agencies/organizations to implement the activities of the Contingency Plan in adherence to the existing national guidelines. Likewise, it shall coordinate with the NDRRMC and other Regional DRRMCs for resource mobilization and augmentation.

- **Regional Disaster Response Plan**

The Regional Disaster Response Plan (RDRP) was prepared in collaboration with the different government agencies in September 2014. A highly productive workforce helps to ensure the delivery of services by all agencies involved along disaster response and strengthen the collaborative efforts of each agency during disaster.

The creation of this plan is timely as the country continues to face the challenge of the "new normal" where the calamities are stronger and wider in magnitude and scope, the challenges of coping with the new phenomenon is something that the entire agencies should contend with. Hence, these Protocols are of paramount importance as they serve as guidance document for disaster response involved agencies.



The Regional Disaster Response Committee created a Technical Working Group to craft the said plan. It was participated by the member agencies of Response Committee discussing the experiences, gaps and challenges encountered along disaster response.

The activities were further supported by meetings of the committee composed of the following regional agencies, namely: Department of Social Welfare and Development (DSWD), Office of the Civil Defense (OCD), Department of Education (DepEd), Department of Health (DOH), Department of Science and Technology (DOST), Philippine National Police (PNP), Philippine Army (PA), Philippine Cost Guard (PCG), Department of the Interior and Local Government (DILG), Department of Public Works and Highways (DPWH), National Bureau of Investigation (NBI), Department of Trade and Industry (DTI), Department of Agrarian Reform (DAR), Department of Agriculture (DA), Philippine Ports Authority (PPA), Department of Transportation and Communications (DOTC), Philippine Information Agency (PIA), Bureau of Fire Protection (BFP), Department of Labor and Employment (DOLE), Civil Aviation Authority of the Philippines (CAAP), National Food Authority (NFA), National Housing Authority (NHA)/Housing and Land Use Resgulatory Board (HLURB), Civil Society Organization –Adventist Development and Relief Agency (ADRA) and Father Saturnino Urios University (FSUU).

The Response Clusters will augment or assume the response operations given the different trigger points for each disaster phase. The eight Response Clusters each have their own Lead Agency that will primarily supervise, coordinate and report all activities of their cluster members during disaster.

The RDRP is crafted as reference for strategic action in providing response assistance for all natural disasters. The RDRP is designed to develop mechanisms and identify activities to attain a coherent and coordinated implementation of the disaster response policies; provide guidance to all agencies in times of disaster; Strengthen the collaborative efforts of each agency during disaster response; Harmonize and synchronize all efforts during emergency situations to efficiently respond to the needs of the affected areas; Maximize utilization of available resources; Delineate roles and tasks of clusters involved in disaster operations; and Establish an efficient, effective, systematic means of direction, supervision, control, coordination and other communication in all disaster relief and rehabilitation activities

The RDRP contains the following**:** 1) Regional structure adopting the eight Response Clusters to have a focused response operations on the field; 2) Tasks and functions of each member agency according to the three phases of disaster; 3) Establish operation protocols to fortify collaboration, coordination and communication of all concerned agencies and stakeholders.

RDRP Activities include Pre-Disaster, During Disaster and Post Disaster. The Operations Protocol of the Regional Disaster Response Cluster covers the following:

Cluster 1 - Food and Non-food Items (NFI)
Cluster 2 - WASH, Health, Nutrition and Psychological Services (HEALTH)
Cluster 3 - Camp Coordination, Management and Protection (CCCM)
Cluster 4 - Logistics
Cluster 5 - Emergency Telecommunications (ETC)
Cluster 6 - Education
Cluster 7 - Search, Rescue and Retrieval (SRR)
Cluster 8 - Management of Dead and Missing (MDM)

According to the DSWD Caraga Regional Director and Vice Chairperson for Disaster Response Committee, Dir. Minda Brigoli, as the lead agency for response, the Department of Social Welfare and Development must at all times be equipped and ready in providing technical assistance and resource augmentation to all stakeholders in the implementation of the disaster risk reduction and management programs, activities and projects so that when disasters occur, lesser impact will be felt by the affected population.

Furthermore, in order to ensure the delivery of resources augmented are provided, this Regional Disaster Response Plan (RDRP) was crafted and prepared in collaboration with the different member agencies to establish an efficient, effective, systematic means of direction, supervision, control, coordination and other communication in all disaster relief and rehabilitation activities.

The former OCD Regional Director and RDRRMC Chairperson, Dir. Liza R. Mazo stated that the RDRP is indeed a working document that serves as a blueprint to perform the government's mandates and responsibilities during emergencies and disasters in order to better serve the people.

- **Approaches**

A paradigm shift from reactive to proactive risk reduction and management of disasters is required, mindful of the end view of increasing the peoples' resilience and decreasing their vulnerabilities to disasters. The paradigm shift provides a better perspective in the way people, communities and governments think, act and respond to the current and emerging risks that continually face them.

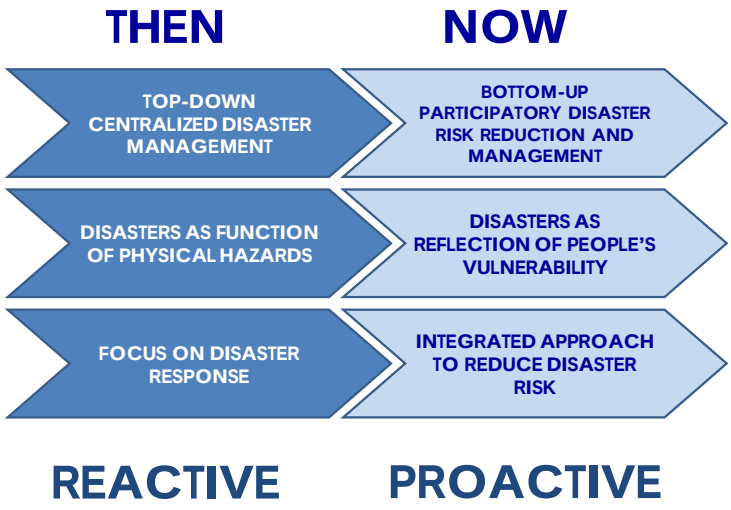


Figure18: Summary of the Paradigm Shift from Reactive to Proactive DRRM

Figure 18 shows the summary of the paradigm shift brought about by the law. Prior to the law, a top-down centralized approach to disaster management system was applied. Now, a bottom-up participatory DRRM approach has been adopted. Also, disasters were considered before as function of physical hazards. Now, disasters are viewed as a reflection of people's vulnerability. Before, efforts were focused more on disaster response. Now, apart from looking at response, the government and other stakeholders take an integrated approach by looking at all aspects to reduce disaster risk. This proactive stance in DRRM has been adopted by the region and the entire country.

The paradigm shift gave equal emphasis to vulnerabilities and capacities aside from hazard. The shift in focus from hazards to vulnerabilities had emphasized the varying exposure of population groups living in the city, the poorly constructed buildings, the informal settlements, incorrectly sited developments, and the inadequacy of open spaces, among others, and capacities of people and institutions to cope with and adapt to natural hazards. It provided opportunities for land use planning to be promoted as a tool for disaster risk reduction to encourage the use of land use policies. Other non-structural and non-engineering measures which include community-based disaster preparedness and early warning, the use of indigenous knowledge are also promoted in disaster risk reduction and management.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings of the study and recommendations.

Summary

The study aimed to determine the factors contributing to high resiliency and capacity of Japan to natural hazards in the context of social institutions.

Specifically, the study explored the following: the Disaster Management System of Japan and Philippines; the examples of DM-related social institutions that promote resiliency and enhance capacity to natural hazards in Japan particularly in Kansai Region and the Philippines particularly in Caraga Region as the researcher's area of concern, in terms of government institutions; educational/learning institutions; health care institutions; and community/volunteer organizations; and, the institutional factors that contribute to resiliency and capacity of Kansai Region and Caraga Region as lessons from the past disasters as well as good practices and innovations, in terms of institutional mechanisms, DRRM-related plans, and approaches. The study used the descriptive research design involving various DM-related institutions in Kansai Region.

Findings

The following are the salient findings of the study:

1) The establishment of a comprehensive and strategic Disaster Management System in Japan is brought about by the enactment of the Disaster Countermeasures Basic Act which addresses all of the disaster phases of prevention, mitigation and preparedness, emergency response as well as

recovery and reconstruction. Likewise, the law clearly defines the roles and responsibilities of the national and local governments for disaster management. Revisions and amendments of laws, plans and system are made after every disaster based on lessons learned for further improvement. Major amendments of the Disaster Countermeasures Basic Act were made due to Typhoon Isewan in 1959, the Great-Hansin Awaji Earthquake in January 1995 and the Great East Japan Earthquake in March 2011.

On the other hand, Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 is the legal basis for the paradigm shift from just disaster preparedness and response to disaster risk reduction and management. The law is paving the way for the need to "adopt a DRRM approach that is holistic, comprehensive, integrated, and proactive in lessening the socio-economic and environmental impacts of disasters including climate change, and promote the involvement and participation of all sectors and all stakeholders concerned, at all levels, especially the local community.

Japan and the Philippines embrace a bottom-up disaster management systems that place the primary obligation to deal with disasters at the local government level and both DM systems mandate a multi-tiered, multi-stakeholder approach needing coordinated action across sectors and levels.

2) In general, DM-related institutions in Kansai Region are built upon the history of major earthquakes in the region. These institutions are established and operated by the Local Government Units as lessons from past mega disasters. Because of this, these institutions have developed an exceptional system through research using highly sophisticated technology to promote the importance of preparedness, cooperation among DM-related organizations and communities, regional disaster-response capability as well as the importance of building resilience against large-scale disasters.

In the case of Caraga Region, DM-related institutions are created in fulfillment to the requirement of the PDRRM Law. These institutions play critical roles as they work collaboratively with concerned stakeholders in achieving the goal of resilience and enhancing capacity of communities.

3) There are peculiarities to some extent in the institutional factors such as institutional mechanisms, DRRM-related plans and approaches between Kansai Region in Japan and Caraga Region in the Philippines.

In the case of Kansai Region, the UKG is a mutual-aid agreement decided among local governments in their own initiative. Although the region-wide union is stipulated in Article 284 of the Local Autonomy Act, there was no explicit mechanism of support coordination among local governments. Further, the UKG formulated the Kansai Disaster Prevention and Mitigation Plan, as the nation's first full-scale plan for large-scale disaster prevention and mitigation with clear guidelines and wide-area arrangement during the occurrence of massive wide-area disasters such as Tonankai and Nankai earthquakes and other threats.

In the case of Caraga Region, the RDRRMC is established as an institutional mechanism and replication of the NDRRMC at the regional level as mandated by PDRRM law. The roles and responsibilities of the regional council, local DRRM council and other concerned stakeholders in DRRM are explicitly provided in the law. The RDRRMC is further reinforced with several institutional mechanisms to strengthen collaboration and support system, and to recognize initiatives pertaining to DRRM efforts in the region. Likewise, the regional council formulated varied plans in its pursuit to reduce risk and make disaster response and rehabilitation more effective.

In terms of approaches, Japan's Self-help, Mutual help and Public help and Philippine's paradigm shift from reactive to proactive stance in DRRM

provide a better perspective in the way people, communities and governments think, act and respond to the current and emerging risks that continually face them.

Conclusions and Recommendations

Based on the findings of the study, the following conclusions and recommendation are drawn:

1) The ability to deal with natural hazards, and the potential disasters associated with them differs considerably from each country. Japan has stored a lot of experiences and lessons at various levels in different fields. Thus, social institutions play important roles to transfer these lessons, and experience of good practices to present and future generations. For the Government of Japan, disaster countermeasures are never "costs", but rather investments in the future in achieving safe and secure living (White Paper, DM in Japan 2015 – Summary). Because of this, Japan is resilient as a nation as far as its institutional capacity is concerned since it has largely invested on research and infrastructure to combat the effects of natural disasters. "DRR is our DNA", is an important precept in Japan evident in the Japanese way of life. With this, DRR is mainstreamed in their education system, health, infrastructure development, private sector and environment as a result of the past disasters.

2) In the case of the Philippines, Republic Act 10121 is paving the way for the mainstreaming of DRR in all aspects of the Filipino way of life. Implementing the provisions of the PDRRM Law and its possible amendments after the sunset review done in 2015, remains to be a challenge for the country in its pursuit of safer, adaptive and disaster-resilient communities towards a sustainable future. Clear definition of roles and tasks of national and local government, appropriate budget allocations, mutually supportive institutions, strong partnerships and engagements with society, the private sector and the community can contribute to resiliency and enhance capacity against natural and human-induced hazards.

3) The strength, flexibility, and overall resilience of society to recover from disasters and better cope with future stresses can be enhanced through a

combination of top-down and bottom-up approaches and a combination of both hard and soft institutional measures.

BIBLIOGRAPHY

A. BOOKS

Ranghieri, F. and Ishiwatari, M. (2014). Learning From Mega Disasters: Lessons from the Great East Japan Earthquake. International Bank for Reconstruction and Development/The World Bank

Shaw, R. (2014). Community Practices for Disaster Risk Reduction in Japan (Disaster Risk Reduction Methods, Approaches and Practices). ISSN 2196-4114 (electronic)/ ISBN 978-4-431-54246-9 (eBook) Springer

Shiwaku, K. et.al (2016) Disaster Resilience of Education Systems (Experience from Japan). ISSN 2196-4106 Disaster Risk Reduction, ISBN 978-4-0431-55980-1, ISSN 2196-4114 (electronic)/ISBN 978-4-431-55983-5 (eBook) Springer

Comprehensive Strategy for Recovery from the Great Hanshin-Awaji Earthquake. March 2010. City of Kobe (ebook)

B. LAWS AND OTHER ISSUANCES

Implementing Rules and Regulations of Republic Act 10121. The Philippine Disaster Risk Reduction and Management Act of 2010

Disaster Countermeasures Basic Act (Act No. 223 of 15 November 1961; revised June 1997)

C. MANUALS/JOURNALS

"BOKOMI" Guidebook. Community Emergency Drill Programs and School Disaster Education Programs. April 2015 (2nd Edition)

Implementation Handbook for Disaster Resilience Education at the Regional Level. 2015/March. Cabinet Office (Disaster Management Office) Executive Committee for Disaster Management Education Challenge

Plan, 1

White Paper on Disaster Management in Japan 2015 (Summary)

Disaster Management in Japan. Published by Director General for Disaster Management Cabinet Office, Government of Japan. 1-6-2 Nagatacho, Chiyoda-Ku, Tokyo, Japan

Hyogo Disaster Management Center (The Regional Hub for Disaster Management Activities) Publication

Hyogo Phoenix Plan Booklet

Kobe City Hall Building No.4 (Crisis Management Center) Publication

Tsunami/Storm Surge Disaster Prevention Station Guidebook

Osaka City Abeno Life Safety Learning Center Pamphlet

Caraga Regional Risk Profile as of 2012

Caraga Region DRRM Plan 2013-2017

Caraga Regional Response Plan

National Disaster Risk Reduction and Management Framework (NDRRMF) Briefer

Province of Dinagat Islands Official Entry to the 2015 Regional/National Gawad KALASAG Search for Excellence in DRRM and Humanitarian Assistance

Disaster Risk Reduction Resource Manual by the Department of Education. 2008 Department Order 37, s. 2015 dated August 12, 2015

Guidelines for Health Emergency Management by DOH-HEMS, Second Edition, 2008

School Disaster Risk Reduction and Management Manual
Rescue and Emergency Service Provider On Disaster (RESPOND), Inc. Official

Entry to Gawad KALASAG 2016

D. ELECTRONIC SOURCES

Aquino, T. (2014) Take It From Hinatuan, Award-winning Surigao Sur town shares best practices in Disaster Management. InterAksyon.com. Retrieved October 27, 2016, from http://www.interaksyon.com/article/96132/take-it-from-hinatuan--award-winning-surigao-sur-town-shares-best-practices-in-disaster-mgt

http://web.pref.hyogo.jp/ac22/documents/000174257.pdf

http://www.unisdr.org/2016/tsunamiday/#stories

http://www.interaksyon.com/article/96132/take-it-from-hinatuan--award-winning-surigao-sur-town-shares-best-practices-in-disaster-mgt

DepEd affirms commitment to safe schools, highlights community participation at WCDRR. March 14, 2015. Retrieved November 7, 2016, from http://www.deped.gov.ph/press-releases/deped-affirms-commitment-safe-schools-highlights-community-participation-wcdrr

Increasing Community Capacity for Recovery and Resilience. Retrieved on November 7, 2016, from https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_012615.html

Response to the Great East Japan Earthquake. Retrieved November 8, 2016, from http://www.data.go.jp/data/en/dataset/mext_20140912_0013/resource/37cbdff9-5c72-487f-a7b0-a53d784c4717

Regional Workshop on Total Disaster Risk Management 7-9 August 2002. Public Awareness of Disaster Risks through Education by Mr. Shinji Ito Supervisor, Educational Planning Office, Hyogo Prefectural Board of Education, Japan. Retrieved on November 8, 2016 from
http://www.adrc.asia/publications/TDRM/10.pdf

E. UNPUBLISHED MATERIALS

Nogra, A. (2013). *"Institutionalizing Resilience of Communities and Nation: The Philippines and Japan Experiences." [Research Paper] Asian Disaster Reduction Center, Kobe City, Hyogo, Japan*

F. PRESENTATION MATERIALS

Disaster Management in Japan by Mr. Junji Moriwaki, International Cooperation Division, Disaster Management Bureau, Cabinet Office of Japan

DM Issues by Ms. Shiomi Yumi of Asian Disaster Reduction Center (ADRC)

Recovery from the Great East Japan Earthquake based on respective partnerships between local governments presented by Masaya Shinbayashi, Municipal Affairs Division, Hyogo Prefectural Government (August 20,2013)

Wide-area Disaster Prevention Measures by the Union of Kansai Governments presented by Kenichi Nakanishi, Wide-area Planning Division, Wide-area Disaster Prevention Bureau, Union of Kansai Governments (May 26, 2014)