



THE PHILIPPINE DISASTER RISK REDUCTION AND MANAGEMENT SYSTEM



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C O N T E N T S

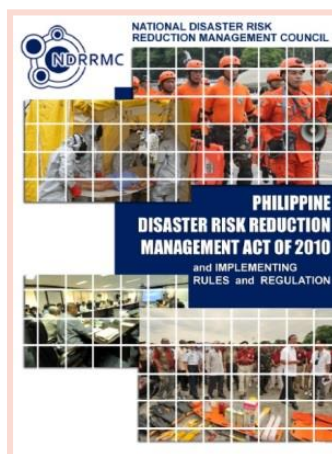


I. General Information



II. Philippine Disaster Risk Profile

- A. Natural Hazards
- B. Recent Major Disasters



III. Philippine DRRM System

- A. Salient Features of Republic Act 10121
- B. NDRRM Framework
- C. NDRRM Plan
- D. Four DRRM Thematic Areas
- E. National Disaster Response Plan
- F. National Disaster Preparedness Plan
- G. Harmonized National Contingency Plan for Magnitude 7.2 Earthquake
- H. Challenges



IV. ADRC Counterpart

Country Report of the Philippines

I. General Information

The Philippines, located in Southeast Asia (SEA), is one of the largest island groups in the world with 7,107 islands and islets lying about 500 miles (800 kms) off the coast of Vietnam. Outstanding physical features of the Philippines include the irregular configuration of the archipelago, the coastline of some 22,550 miles (36,290 km), the great extent of mountainous country, the generally northward trend of the river systems, and the spectacular lakes. The islands are composed primarily of volcanic rock and coral, but all principal rock formations are present. The archipelago has a total land area of 120,000 sq miles (300,000 sq km) and stretches about 1,150 miles (1,850 km) from north to south, and its widest east-west extent, at its southern base, is some 700 miles (1,130 km).

It is further divided into three (3) major groups of islands namely, Luzon, Visayas and Mindanao. Luzon is the biggest island group while Visayas is a melting pot of Spanish, Chinese, and Indo-Malayan cultures; and Mindanao where Chinese and Muslims are predominant. There are 17 administrative regions, namely: National Capital Region (NCR); Ilocos Region (Region I); Cordillera Administrative Region (CAR); Cagayan Valley (Region II); Central Luzon (Region III); CALABARZON (Region IV-A); MIMAROPA (Region IV-B); Bicol Region (Region V); Western Visayas (Region VI); Central Visayas (Region VII); Eastern Visayas (Region VIII); Zamboanga Peninsula (Region IX); Northern Mindanao (Region X); Davao Region (Region XI); SOCCSKSARGEN (Region XII); Caraga Region (Region XIII); and, Autonomous Region in Muslim Mindanao (ARMM). Figure 1 below illustrates the map of the Philippine Islands.

Manila is the capital city but outside Manila there are also diverse centers of commerce and industry, culture, the arts, and education. Meanwhile, Quezon City is the largest and most-populous city. The country has a total population of 100,981,437 based on the 2015 Census of Population (POPCEN 2015). The Filipino is basically of Malay stock with a sprinkling of Chinese, American, Spanish and Arab blood, and other ethnic minorities. The system of Government is Democratic with our current President, His Excellency RODRIGO ROA DUTERTE.

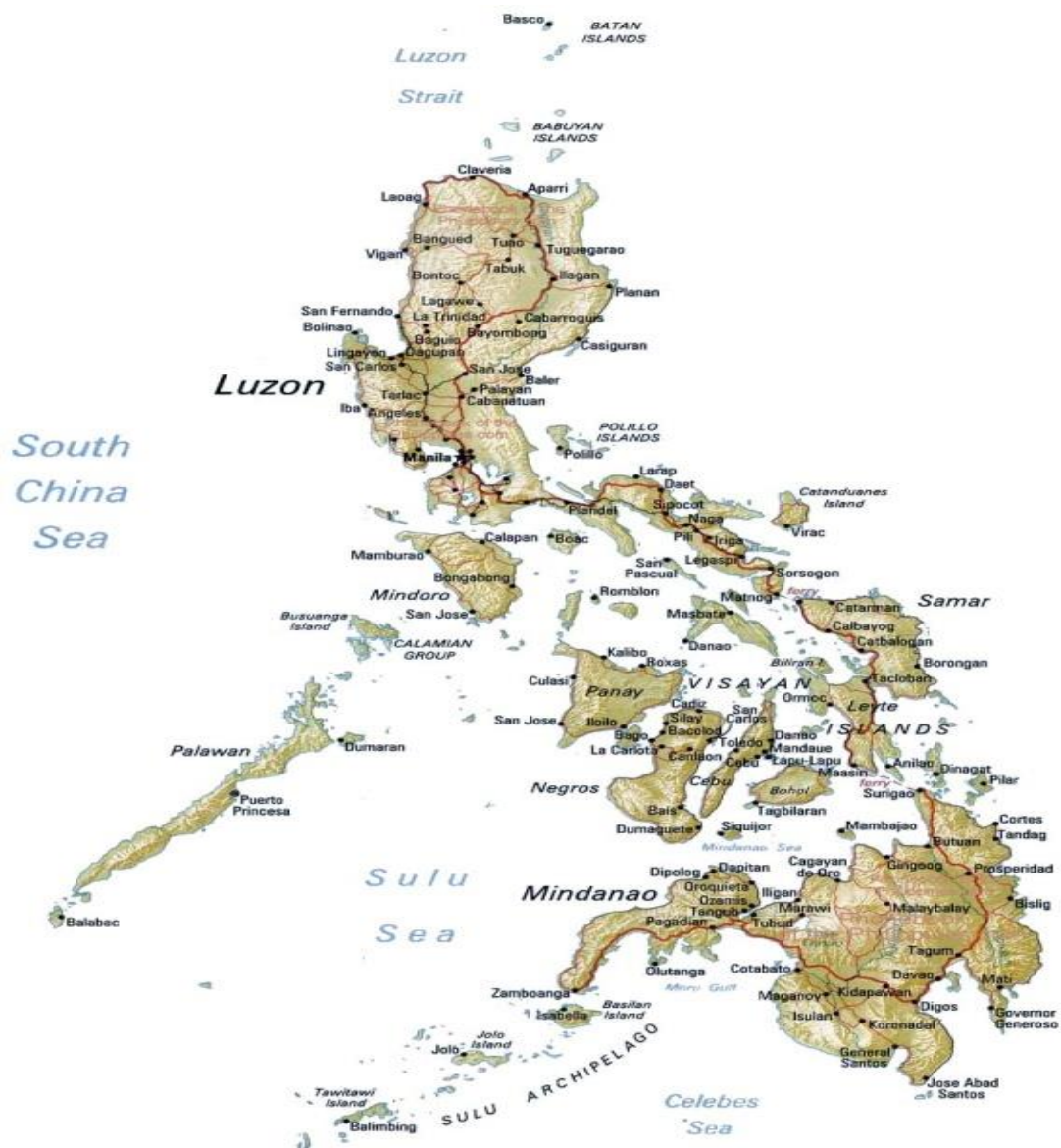


Figure 1. Map of the Republic of the Philippines

The climate of the Philippines is tropical and maritime. It is characterized by relatively high temperature, high humidity and abundant rainfall. It is similar in many respects to the climate of the countries of Central America. Temperature, humidity and rainfall are the most important elements of the country's weather and climate.

Based on the average of all weather stations in the Philippines, excluding Baguio, the mean annual temperature is 26.6o C. The coolest months fall in January with a mean temperature of 25.5oC while the warmest month occurs in May with a mean temperature of 28.3oC.

Rainfall is the most important climatic element in the Philippines. Rainfall distribution throughout the country varies from one region to another, depending upon the direction of the moisture-bearing winds and the location of the mountain systems.

The mean annual rainfall of the Philippines varies from 965 to 4,064 millimeters annually. Baguio City, Eastern Samar, and Eastern Surigao receive the greatest amount of rainfall while the southern portion of Cotabato receives the least amount of rain. At General Santos City in Cotabato, the average annual rainfall is only 978 millimeters.

Using temperature and rainfall as bases, the climate of the country can be divided into two major seasons: (1) the rainy season, from June to November; and (2) the dry season, from December to May. The dry season may be subdivided further into (a) the cool dry season, from December to February; and (b) the hot dry season, from March to May.

Based on the distribution of rainfall, four climate types are recognized, which are described as follows:

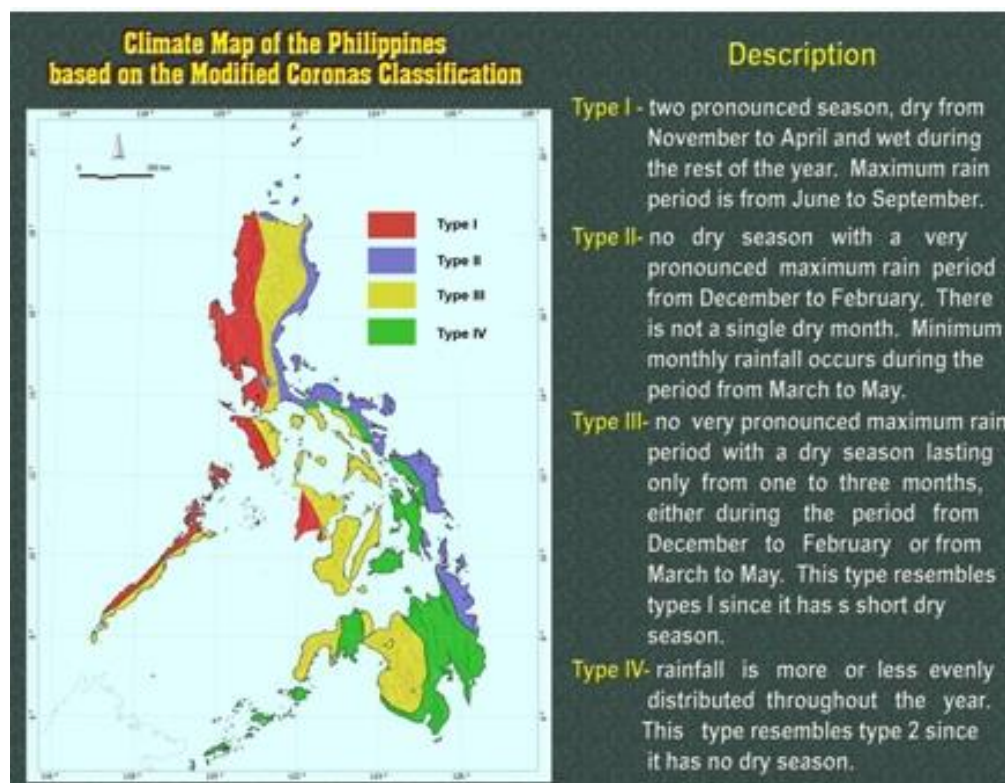


Figure 2. Climate Map of the Philippines based on the Modified Coronas Classification

II. Philippine Disaster Risk Profile

A. Natural Hazards Likely to Affect the Country (Features and Tendency)

The Philippines is prone to almost all types of natural hazards because of its geographical location and geotectonic setting.

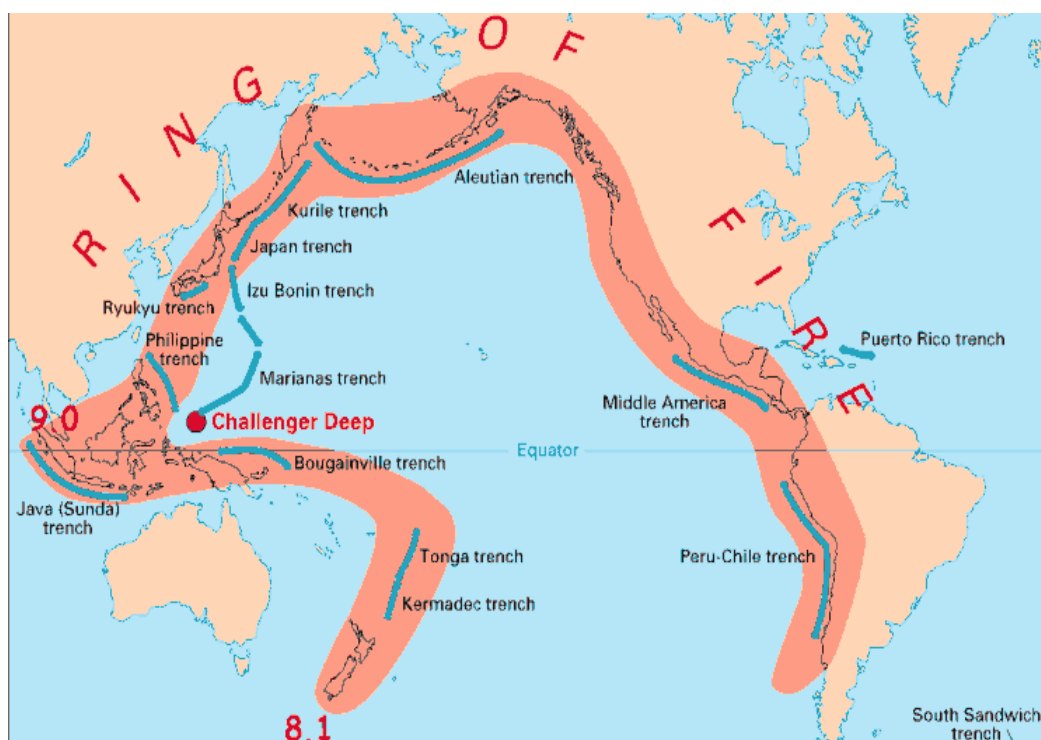


Figure 3. Map showing the Pacific Ring of Fire

In addition, the Philippines is situated along the highly-seismic Pacific Ring of Fire as shown on Figure 3. This is the area where the Philippine Sea and Eurasian Tectonic Plates meet and is prone to occurrences of earthquakes, tsunamis and volcanic eruptions. In fact, there are 300 volcanoes in the country and 22 are active.

Figure 4 shows the distribution of active faults and trenches in the Philippines which are found in several areas of the country.

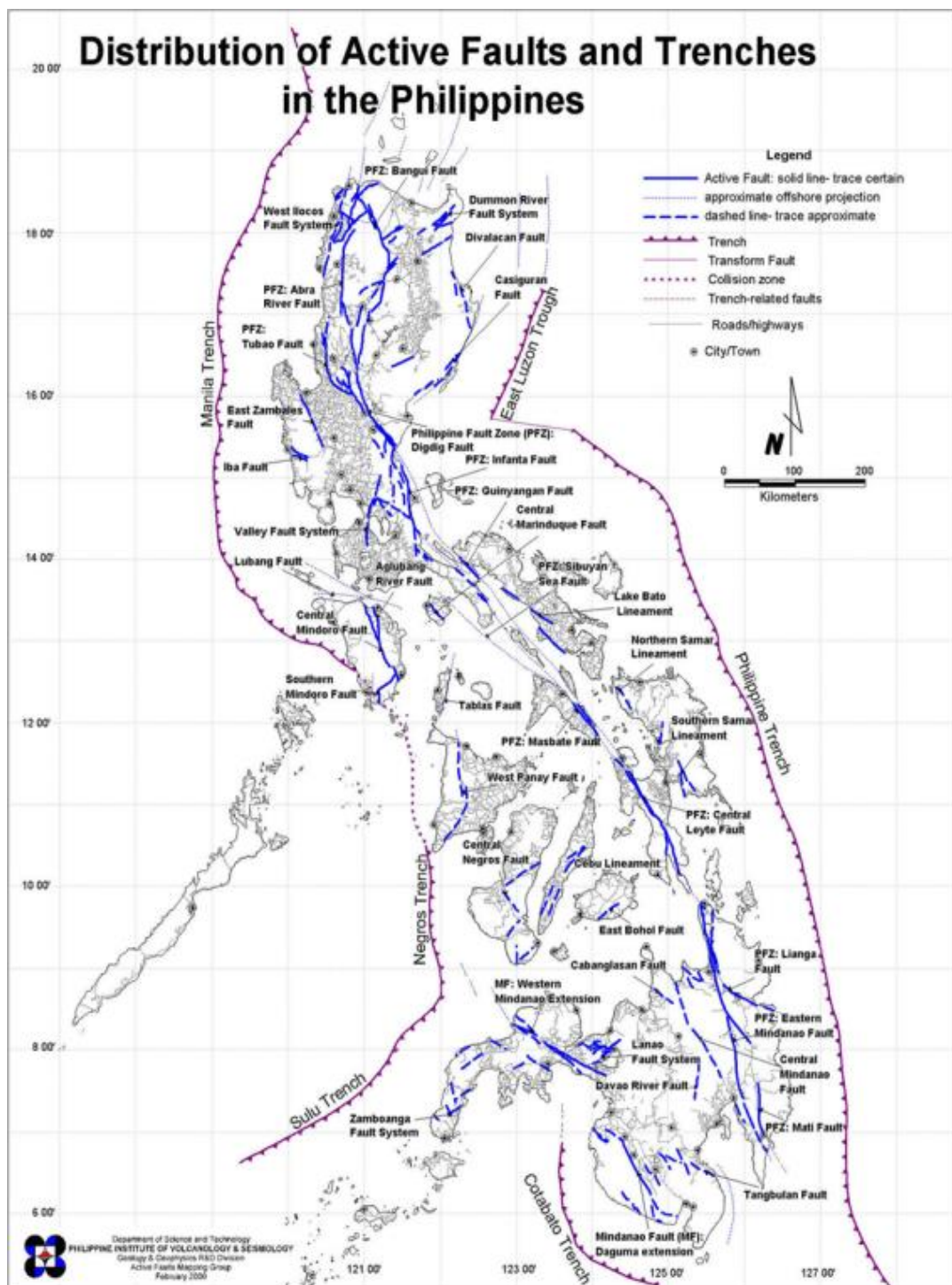


Figure 4. Map showing the Distribution of Active Faults and Trenches in the Philippines

Moreover, Figure 5 presents the seismicity or the frequency of occurrence of earthquakes, almost all parts of the country experience earthquakes. Generally, we encounter an average of 20 earthquakes a day, per latest figures from the Philippine Institute of Volcanology and Seismology (PHIVOLCS). Earthquake disasters are not as

frequent as the typhoons and flooding that take place in the Philippines.

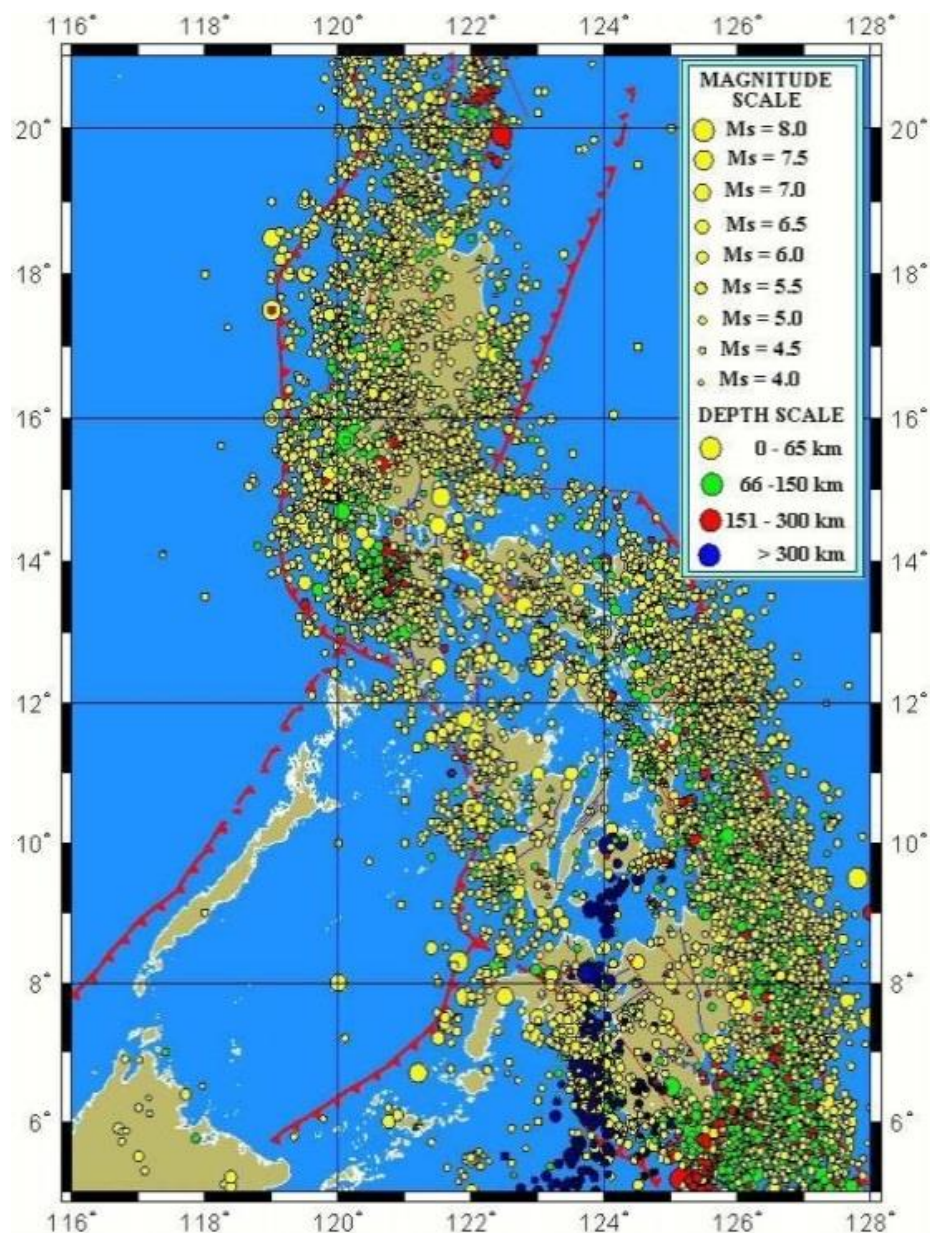


Figure 5. Map showing the Seismicity of the Philippines

Nevertheless, the impact generated on affected communities is usually massive and devastating. Earthquake-induced disasters were few in numbers and in terms of casualties. According to the Annual Report by the PHIVOLCS, in 2017, six (6) damaging earthquakes hit the country commencing with the magnitude 6.7 earthquake in Surigao del Norte on 10 February. A series of earthquakes were recorded in Mabini, Batangas Province from April to August 2017. A

major event in the earthquake swarms had a magnitude of 5.5 on 04 April. Two (2) more strong earthquakes occurred on 08 April, the first with magnitude 5.6, succeeded by another with magnitude 6.0. On 12 April, a magnitude 6.0 earthquake occurred with epicenter near Wao, Lanao del Sur. On the 29th of the same month, a magnitude 7.2 earthquake happened offshore of Sarangani, Davao Occidental. On 25 May, a magnitude 5.4 earthquake happened near the vicinity of San Marcelino, Zambales. Lastly, Ormoc City, Leyte and vicinity were shaken by the magnitude 6.5 earthquake on 06 July (PHIVOLCS Annual Report, 2017). The strong ground shaking subsequently caused liquefaction, earthquake-induced landslides, and damages to buildings and other infrastructures. Areas transected by the active faults that moved and generated the earthquakes were also affected by ground rupture.

Aside from being situated in the Pacific Ring of Fire shown on Figure 6 below, the country is also located along the Pacific Typhoon Belt. This explains the occurrences of different weather disturbances such as typhoons. The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) reports that every year, an average of twenty (20) tropical cyclones enter the Philippine Area of Responsibility (PAR) and five (5) of which shall be most destructive. Tropical cyclones and its sequential effects of rain and windstorms, as well as floods are the most prevalent types of hydro-meteorological hazards in the country.

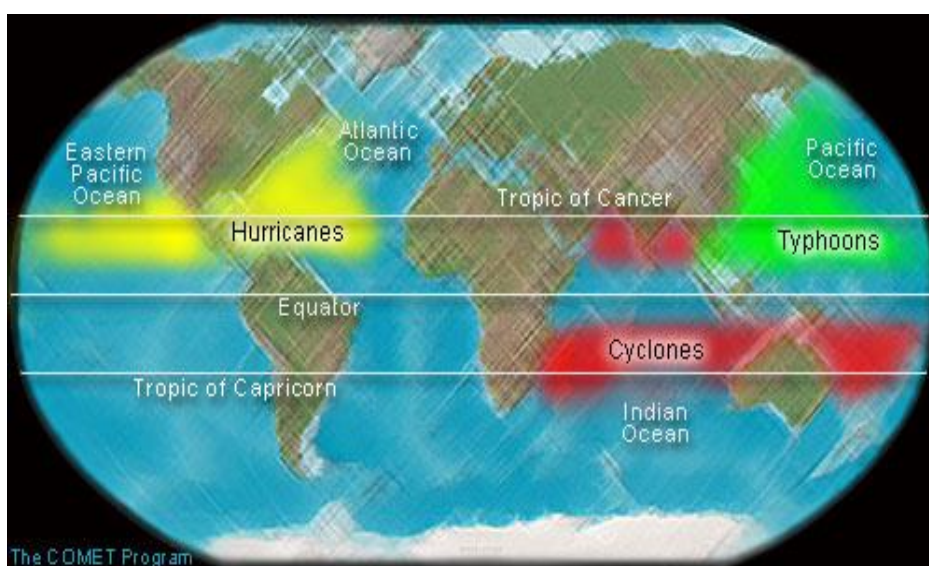


Figure 6. Photo showing Pacific Typhoon Belt

In fact, the Philippines can also be called “Exporter of Typhoons”. Figure 7 below illustrates the tracks of Tropical Cyclones in the Western North Pacific Period from 1948 to 2010 based on the records of the Japan Meteorological Agency (JMA).

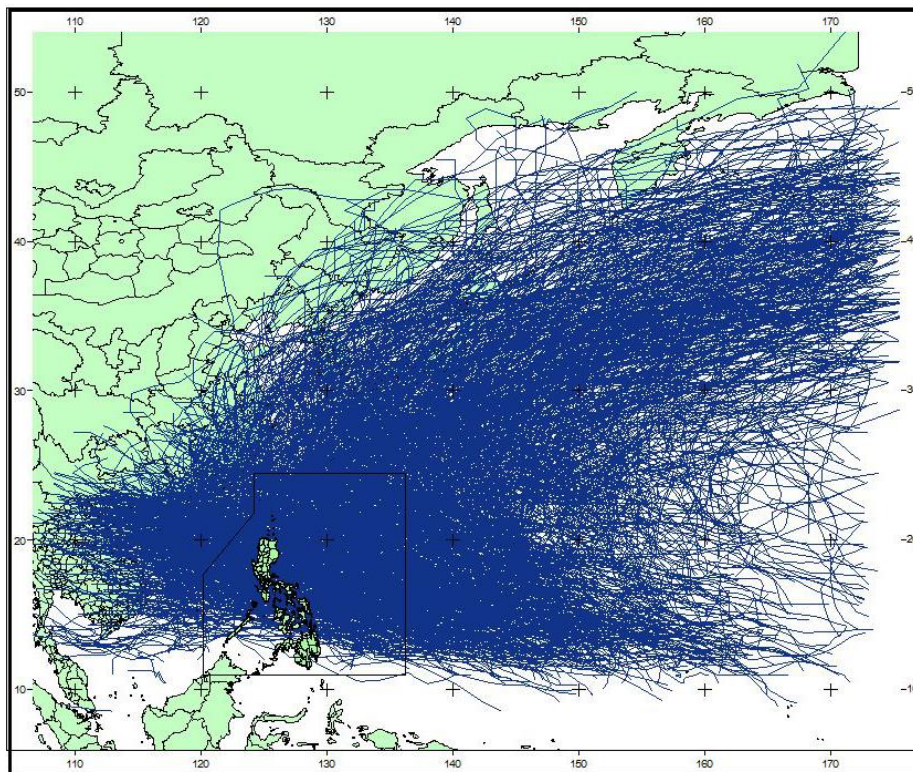


Figure 7. Tracks of Tropical Cyclones in the Western North Pacific Period from 1948 to 2010

Between 1997 and 2007, eighty-four (84) tropical cyclones entered the Philippine Area of Responsibility (PAR). These typhoons resulted to a total of 13,155 in human casualty and more than 51 million families have been affected. Economic losses due to typhoon damages in agriculture, infrastructures and private properties are estimated to reach P158.242-B. Some of the most devastating floods and landslides are triggered by these typhoons that happened also within this period. The El Nino Southern Oscillation which is a periodic disaster recorded high economic costs in just a single occurrence. In 2010, out of the almost PhP 25-M worth of damages to properties caused by natural disasters, tropical cyclones contributed to more than half. These affected more than 3 million people in that year alone.

As shown on Figure 8, the intensity scale classification of tropical cyclone by the Philippine Atmospheric Geophysical and Astronomical

Services Administration (PAGASA), have developed the category for Super Typhoon, with sustained winds of greater than 220 km per hour. In the past years, the country does not have the category for Super Typhoon. However, because of Typhoon Yolanda, the PAGASA had the realization that the strength of typhoons can go beyond the country's existing threshold.

PAGASA's Tropical Cyclone Intensity Scale	
Category	Sustained winds
Super Typhoon	≥119 knots ≥220 km/h
Typhoon	64–119 knots 118–220 km/h
Severe Tropical Storm	48–63 knots 89–117 km/h
Tropical Storm	34–47 knots 62–88 km/h
Tropical Depression	≤33 knots ≤61 km/h

Figure 8: PAGASA's Tropical Cyclone Intensity Scale

In addition, Philippines also has to contend with the irreversible impacts of climate change that is characterized by the increasing global temperatures as illustrated on Figure 9.

Photo credit: Google Images



Figure 9: Schematic Presentation showing Climate Change

Amongst these natural hazards, the Philippine government has to deal with internal disputes and threats of terrorism in some areas

making us also vulnerable to this kind of political and human-induced hazards.

Environmental factors such as denuded forests aggravate flood risks. The pace of deforestation since the 1930s accelerated in the 1950s and 1960s, before falling slightly in the 1980s. Even now, the effects of loose soil and reduced forest cover from past forestry activities are felt in frequent landslides and floods. Recent events show that the annual monsoon season in the country has brought severe flooding in most areas.

Based on the data from the National Disaster Risk Reduction and Management Council (NDRRMC), a total of 302 natural incidents were monitored for the period CY 2014-2017 as seen on Figure 10 below.

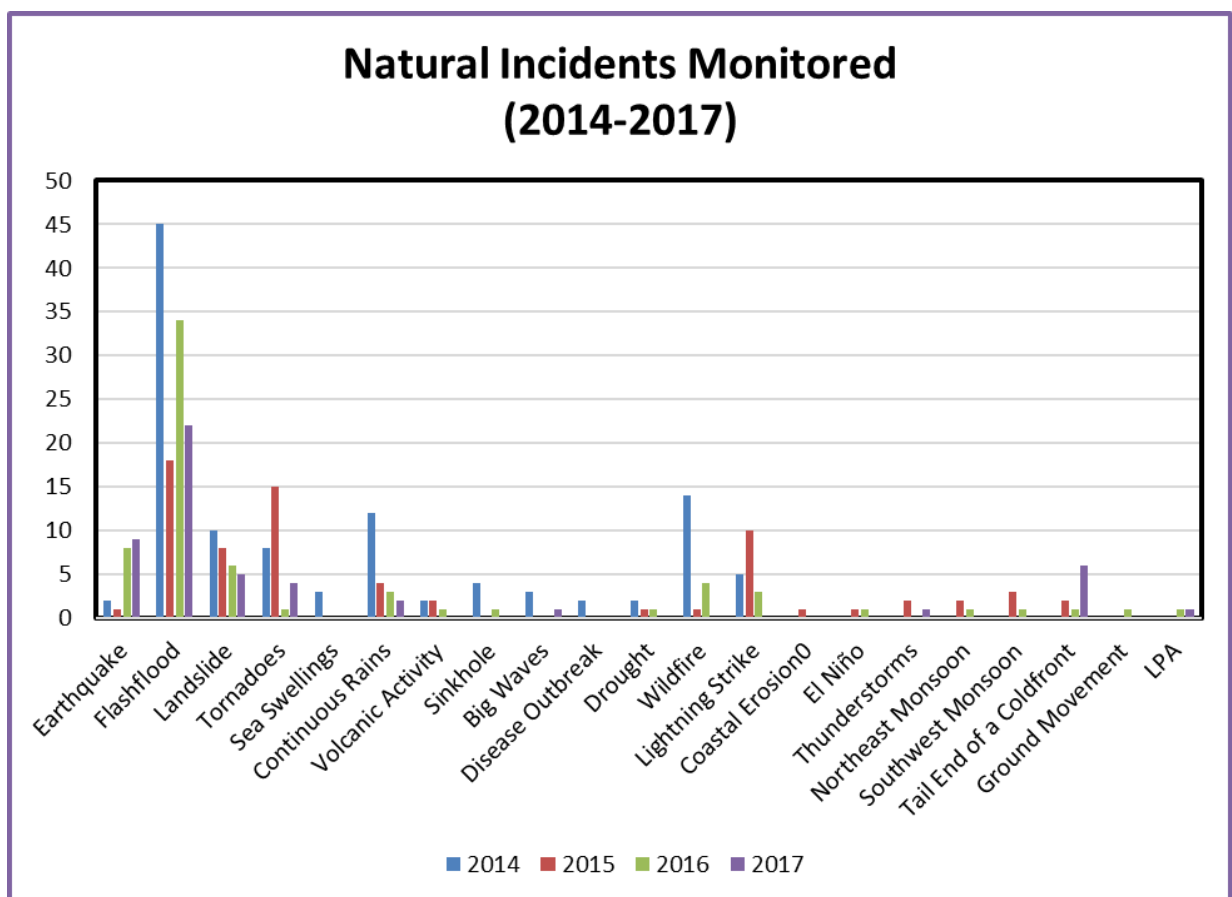


Figure 10. *Natural incidents monitored for CY2014-2017*

Of the natural incidents monitored, flashfloods topped the list with 119 or 39.2% incidents followed by landslides with 29 or 9.6% and tornado with 28 or 9.2%.

B. Recent Major Disasters:

1. Naga Landslides (September 2018)

A landslide incident occurred in Sitio Sindulan, Barangay Tinaan, Naga City, Cebu. The City of Naga was declared under State of Calamity thru Resolution No. 001-A-2018 on 21 September 2018 due to damages brought by the occurrence of a massive landslide. It affected 1,972 families or 8,252 persons in barangays, with 77 dead, 7 injured and 57 missing.

2. Typhoon Mangkhut (September 2018)

Typhoon Mangkhut, locally known as Typhoon Ompong entered the Philippine Area of Responsibility (PAR) on 12 September 2018 and has made landfall in Baggao, Cagayan on 15 September 2018. The typhoon caused widespread damage across Northern and Central Luzon due to its intense nature and large size (~900km). Interaction with the rugged terrain of Northern Luzon have aggravated the nature of rainfall, which caused flooding and landslides especially in the mountainous Cordillera Administrative Region. It affected a total of 730,596 families or 3,029,062 persons in 5,917 barangays with 82 dead, 138 injured and 2 missing. It destroyed 210,500 houses and damaged a total estimated amount of ₱7.2B on infrastructure and ₱26.8B on agriculture.

3. Volcanic Activity (January 2018)

Mayon Volcano (*Bulkang Mayon*), also known as Mount Mayon, is an active volcano in the Province of Albay. Mayon is the most active volcano in the Philippines having erupted over 49 times in the past 400 years.



On 13 January 2018, a phreatic eruption occurred in Mayon Volcano. Per PHIVOLCS Eruption Notification, the estimated height of grayish ash plume is at 2,500 meter that drifted towards the Southwest. Traces of ashfall were found in the Municipalities of Camalig, Guinobatan, Daraga and Ligao City.

DOST-PHIVOLCS raised the alert status of Mayon Volcano from Alert Level 2 (increasing unrest) to Alert Level 3 (increased tendency towards hazardous eruption). This means Mayon was exhibiting relatively high unrest and that magma is at the crater. On 16 January 2018, the Albay Province was declared under the State of Calamity thru Resolution No. 00670-2018. NDRRMOC raised the alert status from Blue to Red and conducted continuous monitoring and coordination with other member agencies and response clusters.

On 22 January 2018, PHIVOLCS raised the Alert Level of Mayon Volcano to Alert Level 4 (hazardous eruption imminent). The Danger Zone was extended to 8 kilometers radius from the summit vent. The public was strongly advised to be vigilant and desist from entering this danger zone. Civil aviation authorities advised pilots to avoid flying close to the volcano's summit as ash from eruptions can be hazardous to aircraft. A total of nine (9) international flights and sixteen (16) were cancelled due to volcanic activity.

Then, on 6 March 2018, a notice for lowering of Mayon Volcano's status from Alert Level 4 (hazardous eruption imminent) to Alert Level 3 (decreased tendency towards hazardous eruption).

On 07 March 2018 as per Situational Report no. 57 issued by the NDRRMC, a total of seventy-six (76) volcanic earthquakes and thirteen (13) rockfall events were recorded by Mayon's seismic monitoring network. Sulfur dioxide emission was measured at an average of 4,459 tonnes/day on 06 March 2018. Deflation of the lower slopes that began on 20 February is still being recorded by electronic tilt and by Precise Levelling (PL) surveys.

A total of 16,380 families were pre-emptively evacuated in Region V due to Mt. Mayon phreatic eruption. A total of 23,705 families / 90,742 persons were affected in 61 barangays in the municipalities / cities of Bacacay, Camalig, Guinobatan, Ligao City, Daraga, Tabaco City, Malilipot, Santo Domingo (Libog), and Legazpi City in the Province of Albay (Region V).

4. Typhoon Hagupit (December 2014)

Typhoon Hagupit, locally known as Typhoon “Ruby” entered the Philippines on 4 December 2014 at 4:00AM with maximum winds of 175kph and gustiness of 210kph and is moving West Northwest at 25kph. Typhoon Hagupit is being compared to last year’s Super Typhoon Yolanda that also enters PAR on the last quarter of the year.

A total of 944,249 families or 4,149,484 persons were affected in Regions III, IV-A, IV-B, V, VI, VII, VIII, CARAGA and NCR. There were 18 fatalities and 916 injured persons and damaged 290,670 houses. Furthermore, it damaged infrastructure and agriculture amounting to Php5,090,265,462.00.

5. Super Typhoon Yolanda (November 2013)

Super Typhoon Haiyan, locally known as Typhoon Yolanda entered the Philippine Area of Responsibility PAR on 6 November 2013 and made landfall on (1) Guiuan, Eastern Samar; (2) Tolosa, Leyte; (3) Daanbantayan, Cebu; (4) Bantayan Island, Cebu; (5) Conception, Iloilo; and finally (6) Busuanga, Palawan and left the Philippines on 9 Nov 2013.



Photo-credit: rappler.com

The wrath of “Yolanda” affected a total of 3,424,593 Families or 16,078,181 Persons in 12,139 Brgys in 44 Prov, 591 Mun, 57 Cities in the Regions of IV-A, IV-B, 5,6,7,8,10,11 & Caraga. A total of 1,140,332 houses were damaged and killed 6,318 individuals, 28,689 were injured and 1,061 went missing during the onslaught. The dreadful event left a total of Php89,598,068,634.88 worth of damages to infrastructure, productive, social and cross-sectoral sectors.

Due to the massive destruction and immense effects of TY Yolanda, the President issued Presidential Proclamation No 682 declaring a state of national calamity on 11 Nov 2013 and Presidential Assistant for Recovery and Rehabilitation (PARR) was designated to oversee the TY Yolanda Reconstruction and Rehabilitation.

6. Earthquake in Central Visayas (October 2013)

An earthquake of tectonic origin with 7.2 magnitude occurred in Region VII on 15 October 2013 at about 8:12AM with an epicenter at Sagbayan, Bohol and recorded 3,198 aftershocks and 94 of which were felt. It causes 222 fatalities, 976 were injured, and 8 were missing.

Secondary to the quake, landslide incidents occurred in different municipalities in Bohol. Stampede occurred at Barba Sports Complex in Toledo City and Pinamungahan Auditorium both in Cebu. A ground subsidence was also reported by Mines and Geosciences Bureau



(MGB) at Purok 7 and 8 Barangay Poblacion I, Tagbilaran City, Bohol and residents nearby were advised to preemptively evacuate.

A total of 671,103 families / 3,221,248 persons were affected in 1,527 barangays in 60 municipalities and 6 cities in 6 provinces of Regions VI and VII. A total of 73,002 houses, 41 bridges and 18 roads were damaged. A total of PhP2,257,182.90 worth of damaged roads, bridges, flood control, school buildings, hospitals and other public buildings.

III. Philippine Disaster Risk Reduction and Management System

A. Salient Provisions of Republic Act 10121

Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 is entitled as, *“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”*.

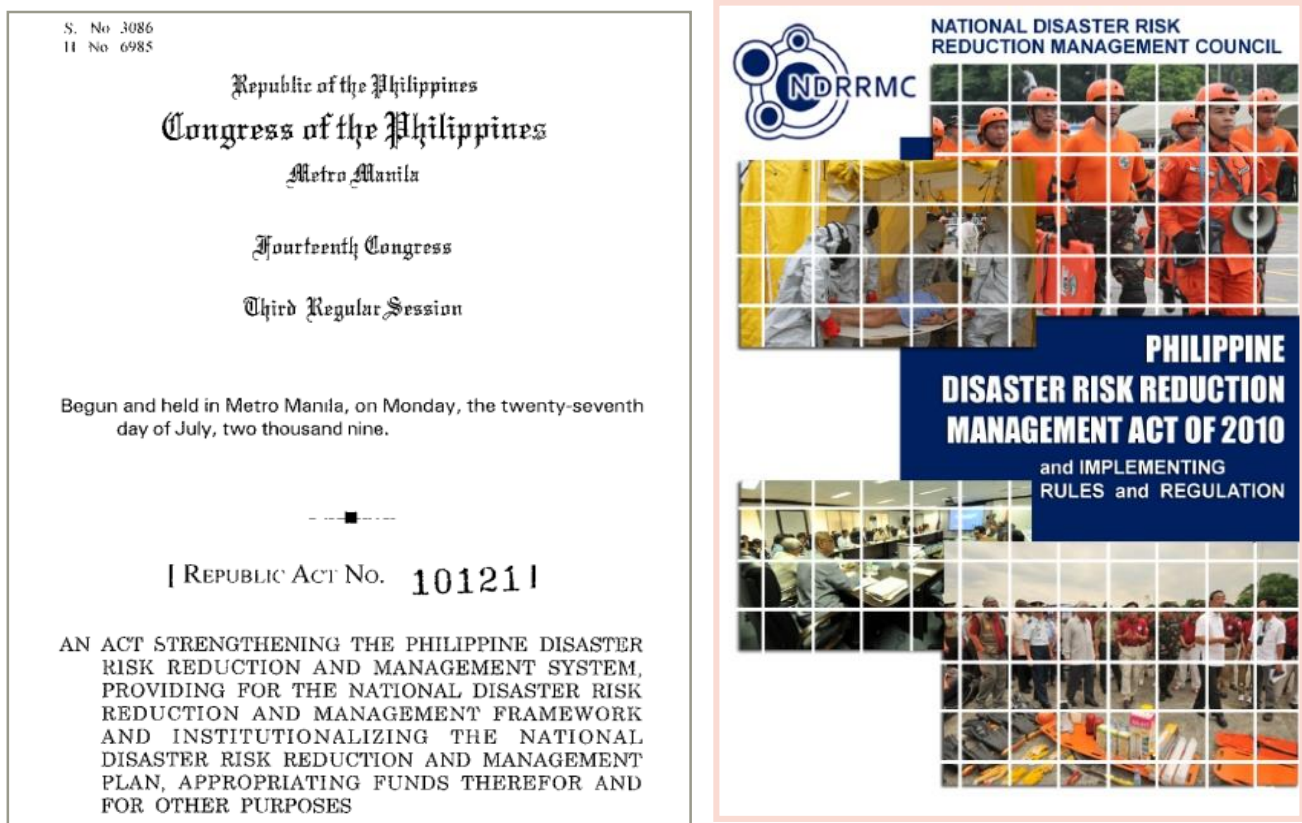


Figure 11. Cover Photos of Republic Act 10121 & IRR

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 provisions of the PDRRM Law include:

1. Section 5 provides for the creation of the National Disaster Risk Reduction and Management Council (NDRRMC) which is formerly known as the National Disaster Coordinating Council but its 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 the Administrator of the Office of Civil Defense (OCD) as the Executive Director, and 39 members as shown in Figure 12.

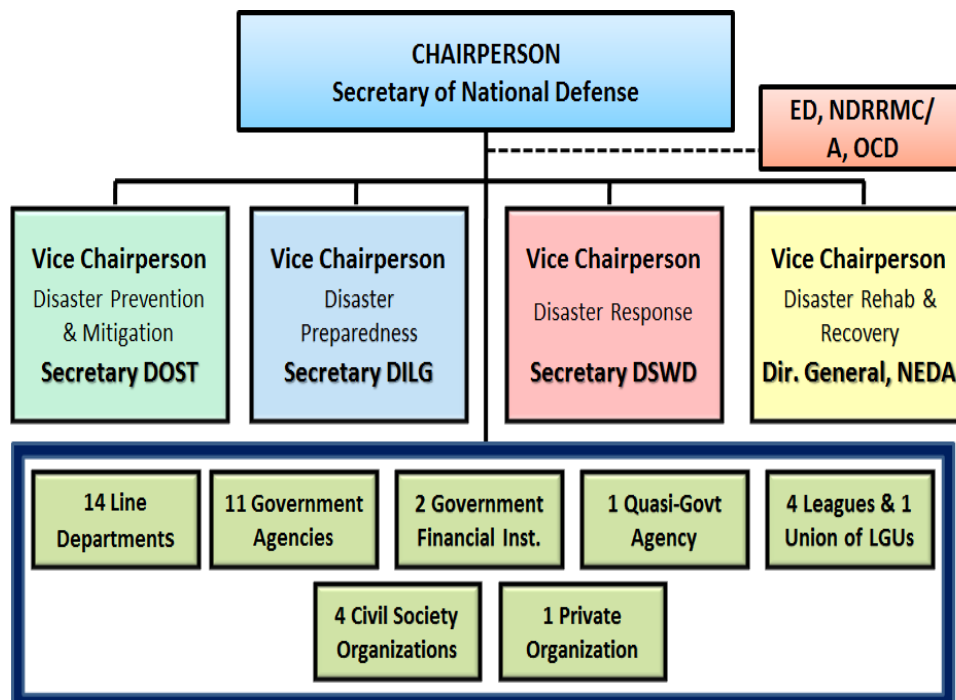


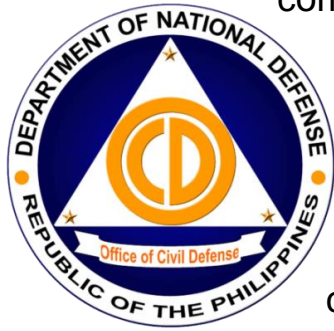
Figure 12. Organizational Chart of NDRRMC

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 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 disaster risk reduction and management. 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.

2. Section 8 of the law stipulates that the Office of Civil Defense (OCD) 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 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 we disseminate situation reports, alerts and communications to all Council members and various stakeholders. It is also a venue for us to facilitate effective management of the consequences of disasters.

3. Section 10 of RA 10121 provides for the creation of the Regional Disaster Risk Reduction and Management Council (RDRRMC), formerly known as Regional Disaster Coordinating Council (RDCC). RDRRMC coordinates, integrates, supervises, and evaluates the activities of the local Disaster Risk Reduction and Management Councils (LDRRMCs). The RDRRMC is responsible in ensuring

disaster sensitive regional development plans, 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.

4. Section 11 provides for the organization at the Local Government Level. The Provincial, City and 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 which is mandated to be organized and shall operate under the Barangay Development Council (BDC).

The Local DRRMCs shall be chaired by the local chief executives, 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 shall have the following functions:

- a) 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;

- b) Ensure the integration of disaster risk reduction and climate change adaptation into local development plans, programs and budgets as a strategy in sustainable development and poverty reduction;
- c) Recommend the implementation of forced or preemptive evacuation of local residents, if necessary; and,
- d) Convene the local council once every three (3) months or as necessary.



Figure 13. 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 13.

5. Section 12 provides for the Local Disaster Risk Reduction and Management Office (LDRRMO). It is also mandated that the local government units shall establish an LDRRMO in every province, city, and municipality, and a Barangay Disaster Risk Reduction and Management Committee in every 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, city or municipal mayor and the punong barangay (barangay captain) in case of the BDRRMC. 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 act as front liners of all disaster risk reduction and management plans, programs, projects and activities.

6. Section 15 provides for the coordination during emergencies. 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 as shown in Figure 14.

Barangay Development Council	1 Barangay affected
City/Municipal DRRMC	2 or more Barangays affected
Provincial DRRMC	2 or more Cities/Municipalities affected
Regional DRRMC	2 or more Provinces affected
NDRRMC	2 or more Regions affected

Figure 14. Criteria on coordination during emergencies

7. Section 21 provides for the Local Disaster Risk Reduction and Management Fund (*LDRRMF*) which 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.

8. Section 22 of RA 10121 provides for the National Disaster Risk Reduction and Management Fund. (a) 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.

(b) 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.

(c) 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.

(d) 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.

(e) All departments, bureaus, offices and agencies of the government are hereby 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.

Notably, the special provisions for the NDRRM Fund under the General Appropriations Act No. 10964, provided for the aid, relief and rehabilitation services to communities / areas affected by human-induced and natural calamities, and repair and reconstruction of permanent structures, including other capital expenditures for disaster operation, and rehabilitation activities with a total budget amounting to Nineteen Billion Six Hundred Million Pesos (P19.6 B).

In addition to the NDRRM Fund, the amount of Seven Billion Six Hundred Million pesos (P7.6B) is used for the Quick Response Fund of various agencies such as the Departments of Social Welfare and Development, National Defense, Health, Public Works and Highways, Education, and Agriculture, as well as National Electrification Administration and National Irrigation Administration. Release of funds for other agencies in need of QRF shall be subject to the submission of a favorable recommendation of the NDRRMC and approval of the DBM.

9. Section 23 of the law also specifies *funding of the OCD* as lead agency to carry out the provisions the Philippine Disaster Risk Reduction and Management Act of 2010. 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. 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 15, 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.

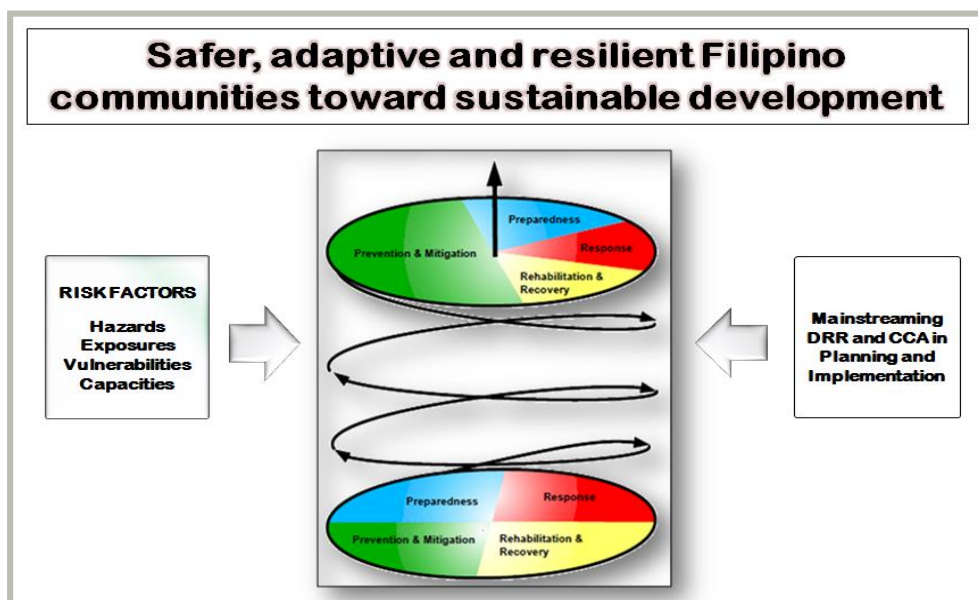


Figure 15. Diagram showing the National DRRM Framework (NDRRMF)

The Framework envisions a country to have a ***“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. Our aim is 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 our learnings, good practices, research and experiences, helping us address the

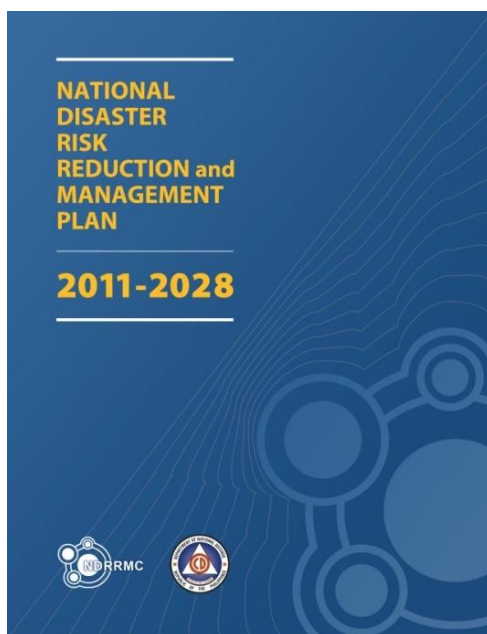
underlying causes of our vulnerability and increasing our ability to adjust to the situation before us. By being adaptive, we learn to innovate and go to the next level.

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. It also 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 7 February 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.

D. Four (4) DRRM Thematic Areas

In accordance with the NDRRMF, through the NDRRMP, the country envisions a ***“Safer, adaptive and disaster resilient Filipino communities towards sustainable development.”*** This 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 16, each priority area has its own long term goal, which when put together will lead to the attainment of the country's over goal/vision in DRRM.



Figure 16. 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 we do 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 we conduct 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.

(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.

The significant activities under the 4 thematic areas include:

- 1) Disaster Prevention and Mitigation
 - Early warning systems
 - Flood forecasting and monitoring
 - Hazard and risk mappings
 - Structural and non-structural interventions
- 2) Disaster Preparedness
 - Contingency planning
 - Prepositioning and stock-piling
 - Capacitating and organizing responders
 - Training, drills and exercises
 - Pre-Disaster Risk Assessment
- 3) Disaster Response
 - 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 (eg relief distribution)
 - Provision of financial assistance
 - Management of evacuation centers
- 4) Disaster Rehabilitation and Recovery
 - Post-Disaster Needs Assessment (PDNA)
 - Enhancement of policies and plans
 - Reconstruction using “build back better” approach
 - Resettlement
 - Provision of new sources of livelihood

E. The National Disaster Response Plan



The National Disaster Response Plan (NDRP) is the National Government's "multi-hazard" response plan. Emergency management as defined in the NDRRM Act of 2010 (RA 10121), is the organization and management of resources to address all aspects or phases of the emergency, mitigation of, preparedness for, response to and recovery from a disaster or emergency. It outlines the processes and mechanisms to facilitate a coordinated response by the national and/or at the local level departments / agencies. Local government institutions are responsible for the development and improvement of local response plans relative to their areas of responsibility and underlying risks.

The NDRP prescribes the relevant activities on how the disaster response shall be conducted as augmentation or assumption of response functions to the disaster affected local government units (LGUs) as a result of these disasters. The contents of the NDRP also include identifying roles and responsibilities of organizations / institutions during disaster / emergency phase as leads and members of the Response Cluster. The NDRP is also built on the understanding that all LGUs have prepared their Contingency Plans for Hydro-Met and implemented their Local DRRM Plans (LDRRMPs) particularly preparedness activities that are directly connected to response like prepositioning of key assets and resources.

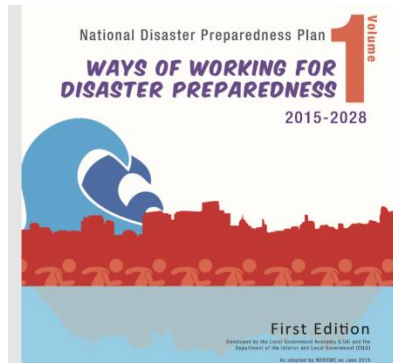
At present, the Government's strategic action plans have three versions for response plans for each possible and perceived disaster. They are NDRPs for:

- a) Hydro-Meteorological Hazards;
- b) Earthquake and Tsunami; and,
- c) Consequence Management for Terrorism-Related Incidents.

F. The National Disaster Preparedness Plan

The primary goal of preparedness is to avert the loss of lives and assets due to threats and emergencies. RA 10121 defines preparedness as the "knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions." While essentially implementation of

preparedness is before any hazard or any disasters strikes, preparedness outcomes straddle between pre-disaster, disaster and post disaster phases based on existing definitions.



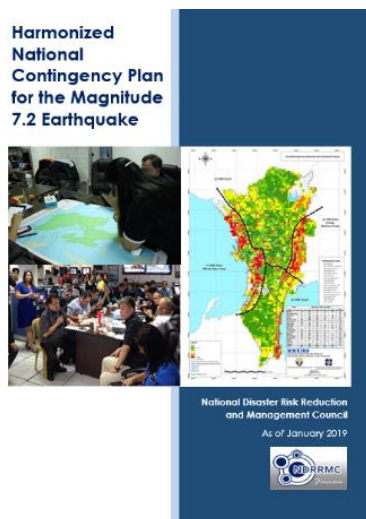
The objectives of the National Disaster Preparedness Plan (NDPP) emanates from the National Disaster Risk Reduction and Management Plan (NDRRMP). The NDPP helps the national and local governments and other stakeholders contribute to the following objectives:

1. To increase level of awareness and enhanced capacity of communities to anticipate, avoid, reduce and survive the threats and impacts of all hazards;
2. To fully-equip communities with the necessary skills and capability to face and survive hazards and cope with the impacts of disasters;
3. To increase Disaster Risk Reduction and Management (DRRM) and Climate Change Adaptation (CCA) capacity of Local DRRM Councils, Offices and Operation Centers at all levels;
4. To develop and implement comprehensive national and local preparedness and response policies, plans and systems; and
5. To strengthen partnership and coordination among all key players and stakeholders.

Consistent with the NDRRMP and other mandates, the NDPP aims to contribute to the broader vision of reducing loss of lives and assets due to hazards and its potential impacts, by aiming at safe and resilient communities. National and local public and private stakeholders need to work together to contribute to attain this objective, with the government taking the lead in facilitating synergy of interventions and ensure that communities are able better to anticipate, cope with, and recover from hazards.

G. Harmonized National Contingency Plan for Magnitude 7.2 Earthquake

The Harmonized National Contingency Plan is intended for the magnitude 7.2 earthquake scenario resulting from the movement of the West Valley Fault (WVF). The scenario may yield a PHIVOLCS Earthquake Intensity Scale (PEIS) of VIII that will affect not only Metro Manila, but also the nearby regions of Central Luzon and CALABARZON.



For a brief background, the WVF scenario is derived from the results of the Metro Manila Earthquake Impact Reduction Study (MMEIRS) conducted by PHIVOLCS, Metro Manila Development Authority (MMDA), and the Japan International Cooperation Agency (JICA) from August 2002 to March 2004. According to the said study, there are 18 earthquake scenarios that may affect Metro Manila and the vicinity. The projected impacts of the WVF earthquake were updated and enhanced in the Greater Metro Manila Area

(GMMA) Risk Analysis Project (RAP) in 2013.

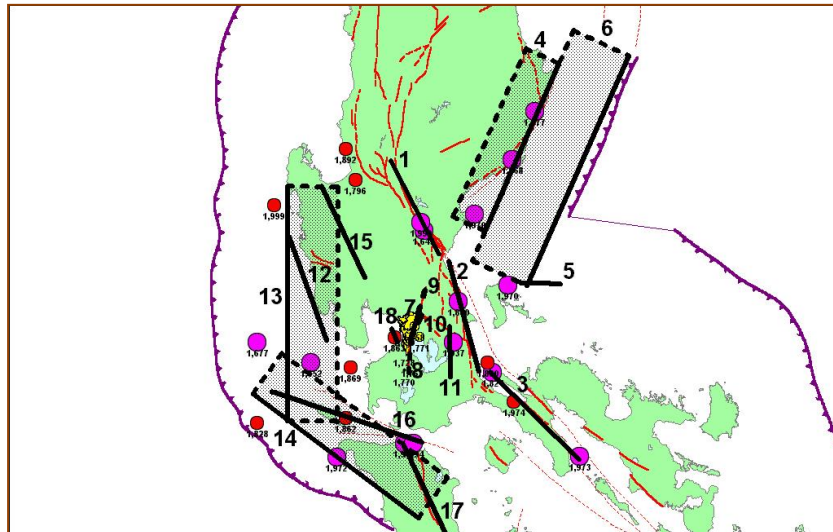


Diagram 1: Map of the 18 Earthquake Scenarios based on MMEIRS

Specifically, the worst case scenarios identified in the MMEIRS are:

1. **SCENARIO 8:** Generated by the WVF, causing a 7.2 magnitude earthquake and leading to severe damage in Metro Manila
2. **SCENARIO 13:** Generated by the Manila Trench, causing a 7.9 magnitude earthquake and leading to the occurrence of tsunami

For this contingency plan, the focus is on the movement of the WVF. The WVF moved four (4) times and generated strong earthquakes within the last 1400 years. The approximate return period of these earthquakes is between 400 to 600 years and no large event along the West Valley Fault is known after 17th century.

In this context, the Harmonized National Contingency Plan has been formulated by the NDRRMC. It is intended to address the response requirements resulting from the anticipated occurrence of the magnitude 7.2 earthquake due to the movement of the WVF that will affect Metro Manila, Central Luzon, and CALABARZON.

H. Challenges

The Philippines are confronted with various challenges when it comes to implementing DRRM. First, there is a need for the ***cooperation and buy-in of the stakeholders***. 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 only job of the government but rather it is a shared responsibility. It is also important to ***consider DRRM as a way of life***. DRRM must be part of day to day 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.

IV. ADRC Counterpart:

Office of Civil Defense (OCD)
National Disaster Risk Reduction and Management Council
(NDRRMC)

Office Address: Office of Civil Defense
Camp General Emilio Aguinaldo, Quezon City, Philippines

References:

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National Disaster Preparedness Plan

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