



PHILIPPINES NATIONAL DISASTER PREPAREDNESS BASELINE ASSESSMENT

**A DATA-DRIVEN TOOL FOR
ASSESSING RISK AND BUILDING
LASTING RESILIENCE**



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- Department of Transportation
- Metropolitan Manila Development Authority
- National Economic and Development Authority
- Bureau of Customs
- Philippine National Police
- Government Service Insurance System
- Department of Information and Communications Technology
- Philippine Statistics Authority
- Philippine Atmospheric, Geophysical and Astronomical Services Administration
- UN Working Group
- Philippine Disaster Resilience Foundation
- National Mapping and Resource Information Authority

LIST OF ACRONYMS

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AADMER = ASEAN Agreement on Disaster Management and Emergency Response

ACDV = Accredited Community Disaster Volunteers

ADB = Asian Development Bank

ADPC = Asian Disaster Preparedness Center

AFP = Armed Forces of the Philippines

AHA Centre = ASEAN Coordinating Centre for Humanitarian Assistance

ASEAN = Association of Southeast Asian Nations

BDC = Barangay Development Council

CBI = Connecting Business Initiative

CBO = Community-based organization

CBRNE = Chemical, Biological, Radiological, Nuclear, and Explosives

CBTS = Capacity Building and Training Service

CBTSO = Capacity Building and Training Service Office

CCA = Climate change adaptation

CCC = Climate Change Commission

CDETP = Civil Defense Education and Training Program

CDEM = Center for Disaster and Emergency Management

CDP = Comprehensive Development Plans

CHED = Commission on Higher Education

CLAP = Calamity Loan Assistance Program

CLUP = Comprehensive Land Use Plan

CMC = Crisis Management Center

CEPRENAC = Coordination Center for the Prevention of Natural Disasters in Central America

CSO = Civil Society Organization

DA = Department of Agriculture

DALA = Damage and Loss Assessment

DBM = Department of Budget and Management

DENR = Department of Environment and Natural Resources

DEPED = Department of Education

DILG = Department of the Interior and Local Government

DINA = Disaster Information for Nationwide Awareness Project

DM = Disaster management

DMA = Disaster management analysis

DND = Department of National Defense

DoF = Department of Finance

DOST = Department of Science and Technology

DPWH = Department of Public Works and Highways

DRFI = Disaster Risk Financing and Insurance

DRR = Disaster risk reduction

DRR-CCA = Disaster risk reduction-climate change adaptation

DRRMTI = Disaster Risk Reduction and Management Training Institutes

DSWD = Department of Social Welfare and Development

eGMP = eGovernment Master Plan

EWBS = Emergency Warning Broadcast System

FDES = Framework for the Development of Environment Statistics

FSFM = Frankfurt School of Finance and Management

GAA = General Appropriations Act

GeoRiskPH = Geospatial Information Management and Analysis Project for Hazards and Risk Assessment in the Philippines

GFDRR = Global Facility for Disaster Reduction and Recovery

GIS = Geographic Information System

GSIS = Government Service Insurance System

HADR = Humanitarian assistance disaster relief

HFA = Hyogo Framework for Action

HOT = Humanitarian OpenStreetMap

ICS = Incident Command System

IDRC = International Development Research Centre

IMC = Incident Management System

IMT = Incident Management Team

USINDOPACOM = US Indo-Pacific Command Area of Responsibility

IRR = Implementing Rules and Regulations

LCDC = Local Civil Defense Council

LDCC = Local Disaster Coordinating Council

LDRRM Fund = Local Disaster Risk Reduction and Management Fund

LDRRMC = Local Disaster Risk Reduction and Management Council

LDRRMO = Local Disaster Risk Reduction and Management Office

LGA = Local Government Academy

MDG = Millennium Development Goals

MGB = Mines and Geosciences Bureau

MOOE = Maintenance and Other Operating Expenditures

NAMRIA = National Mapping and Resource Information Authority

NCCAP = National Climate Change Action Plan

NCDA = National Civil Defense Administration

NCDC = National Civil Defense Council

NCDPP = National Calamities and Disaster Preparedness Plan

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NDCC = National Disaster Coordinating Council

NDRP = National Disaster Response Plan

NDRRM Fund = National Disaster Risk Reduction and Management Fund

NDRRMC = National Disaster Risk Reduction and Management Council

NDRRMETP = National Disaster Risk Reduction and Management Education and Training Program

NDRRM Framework = National Disaster Risk Reduction and Management Framework

NDRRMOC = National Disaster Risk Reduction and Management Operations Center

NDRRMP = National Disaster Risk Reduction and Management Plan

NDRRMP = National Disaster Risk Reduction and Management Plan

NEDA = National Economic and Development Authority

NFDRRM = National Framework for Disaster Risk Reduction and Management

NGO = Nongovernmental organization

NSRC = National Service Reserve Corps

NSRRMC = Chairperson of the National Council

NSTP = National Service Training Program

OCD = Office of Civil Defense

OCDROs = Office of Civil Defense Regional Offices

ONEA – GET = Northeast Asia and Global Education and Training Institute

OSM = Open Street Map

OP = Operations Center

OPCEN = Operations Center

OSEC = Office of the Secretary

PAGASA = Philippine Atmospheric, Geophysical and Astronomical Services Administration

PAHRODF = Philippine Australia Human Resource Organizational Development Facility

PD = Presidential Decree

PDC = Pacific Disaster Center

PDNA = Post Disaster Needs Assessment

PDP = Philippine Development Plan

PDRF = Philippine Disaster Resilience Foundation

PeGIF = Philippine government Inter-operability Framework

PHIVOCS = Philippine Institute of Volcanology and Seismology

PRC = Philippine Red Cross

PSA = Philippines Statistics Authority

PSDIP = Philippine City Disaster Insurance Pool

PSF = People's Survival Fund

PAO = Public Affairs Office

QRF = Quick Response Fund

RA = Republic Act

RDANA = Rapid Damage and Needs Assessment

RDCC = Regional Disaster Coordinating Council

RDRRMC = Regional Disaster Risk Reduction and Management Council

RDRRMO = Regional Disaster Risk Reduction and Management Office

RDRRMOC = Regional Disaster Risk reduction and Management Operations Center

RED = Rescue Emergency Disaster

REDAS = Rapid Earthquake Damage Assessment Systems

RVA = Risk and vulnerability assessment

SD = Sustainable development

SDGs = Sustainable Development Goals

SFDRR = Sendai Framework for Disaster Risk Reduction

SIMEX = Simulation exercise

SNAP = Philippine Strategic National Action Plan

SOP = Standard operating procedures

SRR = Search, Rescue, and Retrieval

TDRI = Thailand Development Research Institute

TESDA = Technical Education and Skills Development Authority

Tesda = Technical Education and Skills Development Authority

UNDP = United Nations Development Programme

UNDRR = United Nations Office for Disaster Risk Reduction (see also UNISDR)

UN ECLAC = United Nations Economic Commission for Latin America and the Caribbean

UNOCHA = United Nations Office for the Coordination of Humanitarian Affairs

USAID = US Agency for International Development

WASH = Water, Sanitation and Hygiene

WFP = World Food Program

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EXECUTIVE SUMMARY

**PHILIPPINES NATIONAL DISASTER
PREPAREDNESS BASELINE ASSESSMENT**

OVERVIEW

The Pacific Disaster Center (PDC) completed the Philippine National Disaster Preparedness Baseline Assessment (NDPBA) in partnership with the Office of Civil Defense (OCD). The Center also developed relationships and data-sharing agreements with multiple government and non-governmental agencies in the Philippines that supported the data gathering and vetting process including the Philippines Institute of Volcanology and Seismology (PHIVOLCS), the United Nations Office of Coordination of Humanitarian Affairs (UNOCHA), and the United Nations Development Program (UNDP). A complete list of PDC's valued partners in the NDPBA effort is included in the Acknowledgements. The NDPBA was funded by the United States Government through the US Indo-Pacific Command (USINDOPACOM) and was conducted in coordination with the US Embassy in Manila.

Hazard-based risks, vulnerabilities, resilience, and disaster management capabilities were researched and analyzed to produce scientific data that can be used in the decision-making process during all phases of disaster management. The results are based on data made available by in-country partners during the period of the project from 2018-2021 and include recommendations that will increase disaster management readiness. The NDPBA provides stakeholders with analytical tools, scientific data, and evidence-based practices that allow the disaster management community in the Philippines to reduce disaster risk and support response efforts. The methodology and associated recommendations are in alignment with United Nations Development Goals and the Sendai Framework for Disaster Risk Reduction 2015-2030.

Among the most powerful tools to emerge from the PDC-Philippines partnership is the implementation of PDC's PhilAWARE, in collaboration with the OCD, ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre), Humanitarian OpenStreetMap Team (HOT), Yayasan Peta Bencana, and UNOCHA with sponsorship from the US Agency for International Development (USAID). PhilAWARE is a derivation of PDC's DisasterAWARE web application software that utilizes a massive collection of scientifically verified geospatial data leveraged to provide early warning, multi-hazard monitoring, and modeled impact assessments.

The full report presents the data collected, the results of our modeling, analysis of these results, and the recommendations for closer alignment with the Sendai Framework. The following sections

SUMMARY OF FINDINGS

The devastating impact of Typhoon Ondoy in 2009 spurred a restructuring of institutional arrangements in recognition of the fact that the Philippines was institutionally underprepared to cope with its DM requirements. In 2010, Republic Act 10121 (RA 10121) signaled a paradigm shift in disaster management praxis in the Philippines from a largely reactionary to a deliberately proactive approach. RA 10121 established the National Disaster Risk Reduction and Management Council, Regional and Local Disaster Risk Reduction and Management Councils, and designated the Office of Civil Defense as the principal administrative body responsible for DM activities in the Philippines. Institutional weaknesses such as insufficient local implementation, interagency coordination, and funding persist. This is partially due to the absence of a dedicated stand-alone DM agency.

The Philippines made great strides in establishing a strong DM governance apparatus but opportunities for improvement have been identified. Whilst continuity of operations (COOP) and continuity of government (COG) planning is required throughout the Philippines, the operationalization of such plans is absent. The absence of mutual aid agreements among local government units (LGUs) and other DM entities including resource providers also presents an opportunity for development.

NATURAL HAZARD EXPOSURE

101 million **74 million**

people affected by natural disasters (2010 - 2019)

people affected by tropical cyclones (2010-2019)



Tropical Cyclones



Floods



Landslides



Earthquake



Volcano



Tsunami



Liquefaction



Wildfire



Drought



Storm Surge



Typhoon Winds



Exposure to multiple hazards is compounded by **socioeconomic vulnerabilities**. Although the poverty rate has dropped steadily in recent years, rural poverty and income inequalities remain a challenge.



The **COVID-19 pandemic** and the subsequent **global economic downturn** caused the **Philippine economy to contract by 9.5% for the first time in 22 years.**



The Department of Interior and Local Government (DILG) is mandated to ensure that communities are equipped with necessary skills and capabilities to cope with the impacts of disasters. Resources are unevenly distributed, and often insufficient in rural and remote areas.

Inequality could be reduced by the development of a centralized, standardized electronic reporting system for all levels of government to utilize benefitting the entire DM response apparatus. Although significant progress has been achieved there is uneven capacity development at the local level because wealthier LGUs are more able to develop capacities than underfunded LGUs.

Insufficient funding is a common thread underpinning virtually every identified weakness throughout the entire DM system - especially at lower administrative levels and in rural areas. More skilled practitioners, material resources, capacity building, and direct financial aid to disaster-affected persons and communities are all components that would benefit greatly from increased financial inputs to the DM system.

Our results have identified necessary actions to be taken by the Government of the Philippines and its partners to further build capacity for disaster resilience and response.

RECENT MAJOR DISASTERS

2019

Tropical Cyclone
Danas

\$377,440,000 (USD)

Damages

RECOMMENDATIONS



These recommendations are included in greater detail in the body of this report. Our hope is that the Government of Philippines and key development and disaster management partners will leverage the results of this comprehensive assessment to enable a more robust and sustainable disaster risk-reduction effort in the Philippines contributing to saving lives and property.

IN LIGHT OF OUR FINDINGS, PDC MAKES THE FOLLOWING RECOMMENDATIONS:

1

Create a standalone, cabinet-level DM agency to fully optimize overall DM capacity and to secure a larger budget, more resources, and more manpower. (i.e., Senate approval of House Bill 5989)

2

Establish a separate office within the DM agency dedicated to 1) Engagement with bilateral, international, and other humanitarian actors; and 2) Management of the implementation of DRR, CCA, the Sendai Framework, and the SD 2030 Agenda.

3 Mandate requirements for NDRRMC members to strictly adhere to a standard operating procedure to deal with implementation challenges.

4 Formalize DM professional competencies using OCD's competency framework.

5 Address the institutional, operational, and policy barriers faced by communities seeking access to the People's Survival Fund.

6 Explore strategies to substantially increase annual funding levels from the National Budget for the National Disaster Risk Reduction and Management Fund (DRRM Fund).

7 Establish low-interest loans and microfinancing options to support household, business, or NGO recovery costs that are ineligible under other funding streams or options.

8 Strengthen public confidence in the government's DM capabilities and support for increasing DM capabilities.

9 Mandate DRRMCs at each level of government to establish and maintain continuity of operations and continuity of government plans.

10 Fully implement a standard Incident Management System at all levels of government.

11 Require all LGUs to submit inventory lists to their Regional DRRMCs showing all disaster-related equipment in commodity stockpiles

12 Establish formal memoranda of understanding (MOU) with appropriate parties to support DM efforts at regional, provincial, and local levels similar to the way the Coast Guard, Fire, Military, and Police have mutual aid agreements at the national level.

13

Increase the overall strength of emergency services capacity at all levels of government.

14

Strengthen the overall sheltering program at all levels of government.

15

Establish requirements for risk and vulnerability assessments in DM and DRR planning efforts at every administrative level.

16

Fully automate the early warning process for all hazard types and eliminate the need for manual intervention currently used with some hazards for targeted warning.

17

Implement a comprehensive and robust social media program to promote all DRRMCs in a standardized way.

18

Increase information access and sharing among all DM stakeholders by developing or promoting a COP platform.

19

Enhance resilience through efforts to decrease vulnerabilities and increase coping capacities.

20

Expand communications capacity by implementing (HF) radio communications across Philippines government DM agencies, in addition to enhancing satellite communications.

21

Reassess progress made toward DRR and resilience goals.

AN INTRODUCTION

TO PDC'S NATIONAL DISASTER PREPAREDNESS BASELINE ASSESSMENT (NDPBA)

The NDPBA uses a collaborative, stakeholder-driven approach. PDC worked to integrate national priorities and stakeholder feedback throughout every step of the process. The NDPBA for Philippines included a Risk and Vulnerability Assessment (RVA) which examined several components of risk including exposure to hazards, vulnerability, coping capacity, and existing disaster management capabilities. The findings of the RVA were further reviewed through the lens of PDC's unique Disaster Management Analysis (DMA). The DMA contextualizes the RVA and guides recommendations designed to increase resilience and reduce disaster risk. Findings of this analysis were compiled into a Disaster Risk Reduction (DRR) Plan offering practical actions to be taken over a five-year period.

To access to the findings, recommendations, and data (tabular and spatial) used to conduct the Philippines NDPBA analysis, please request access to the Pacific Disaster Center's DisasterAWARE platform at emops.pdc.org.



PHILIPPINES NDPBA

APPLYING ASSESSMENT RESULTS

The Pacific Disaster Center’s (PDC) National Disaster Preparedness Baseline Assessment (NDPBA) is more than just an assessment, it is a sustainable system for accessing, understanding, updating, and applying critical risk information in decision making. The NDPBA provides the necessary tools, scientific data, and evidence-based practices to effectively reduce disaster risk—informing decisions at the national, subnational, and local level.



STRENGTHEN PARTNERSHIPS

- Use the NDPBA as a decision-support tool to create a transparent and efficient process for disaster risk reduction efforts within the context of Philippines.
- Provides necessary tools and data for disaster monitoring to promote risk-informed decision making and sustainable development.
- Allows team members to conceptualize risk as a function of data, measuring the social, cultural, and economic drivers of risk.



SUPPORT SENDAI COMMITMENTS

By participating in the NDPBA process, Philippines significantly enhances its capacity to meet Sendai Framework commitments under each of these Priority Areas:

- Priority 1** - Understanding Disaster Risk
- Priority 2** - Strengthening Disaster Risk Governance to Manage Disaster Risk
- Priority 3** - Investing in Disaster Risk Reduction for Resilience
- Priority 4** - Enhancing Disaster Preparedness for Effective Response and to “Build Back Better” in Recovery, Rehabilitation and Reconstruction



INCREASE RESILIENCE

- Align in areas where partner capacity development efforts overlap.
- Improve resilience at the subnational level and reduce potential impacts to the population.
- Rely on trusted and proven data-driven tools.



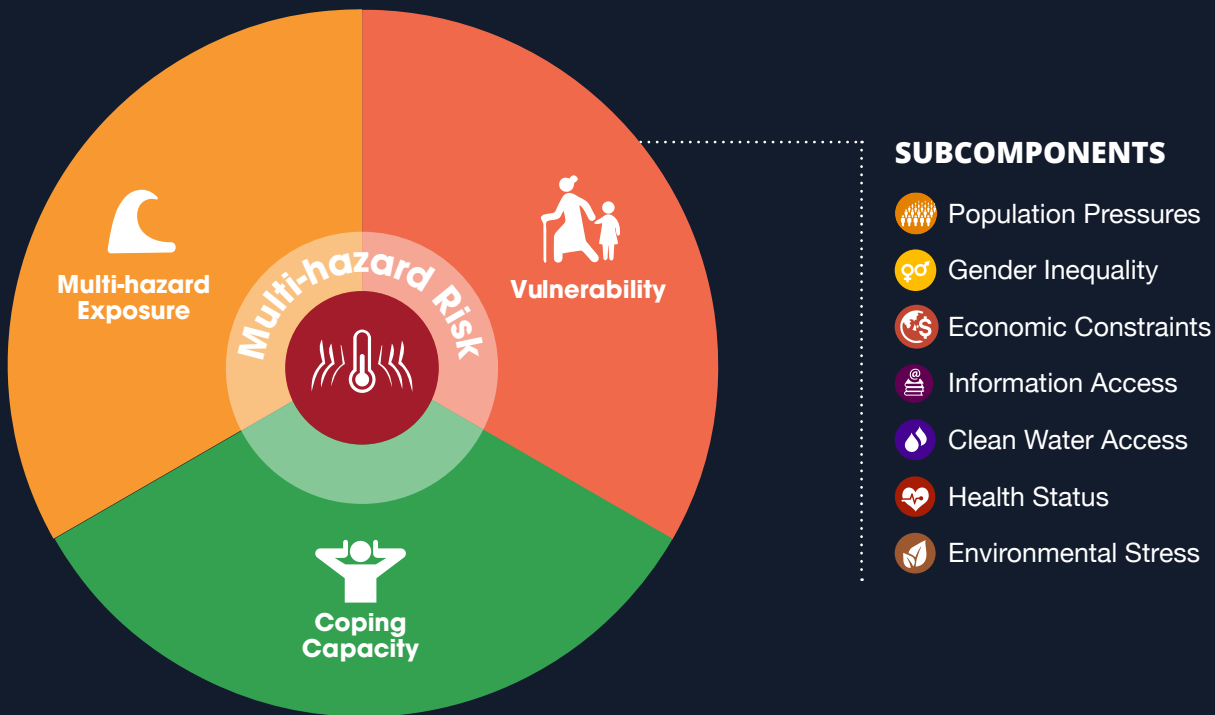
NDPBA

METHODOLOGY AND OBJECTIVES

OVERVIEW

MEASURING RISK

RVA METHODOLOGY | COMPONENTS OF RISK



The NDPBA methodology is based on a composite index approach and investigates the underlying conditions that lead to increased risk. The assessment combines several components of risk which include multi-hazard exposure, coping capacity, and vulnerability. Individual components are comprised of subcomponents used to assess the status of thematic areas either as a sum or individually. Additional information on the assessment methodology can be found at: <https://pdc.org/methodology>.

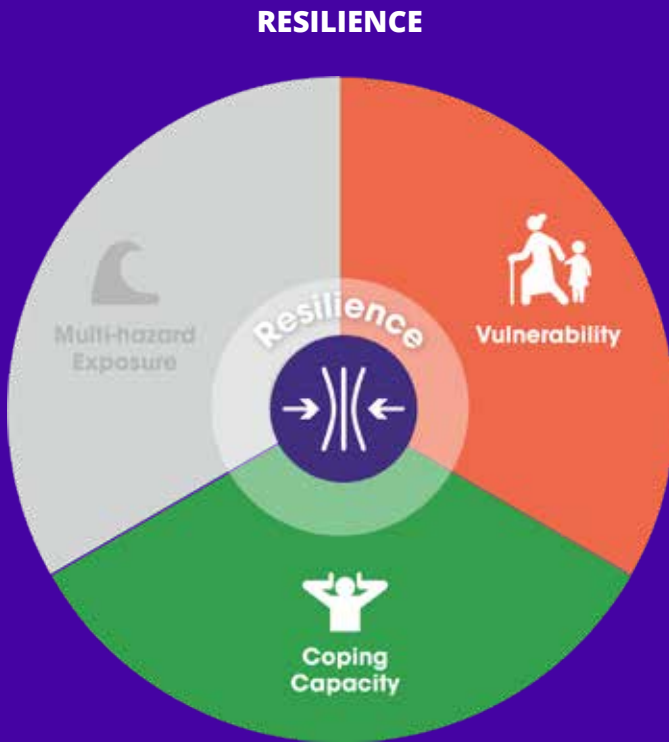
OBJECTIVES

Form a foundation for long-term data sharing and monitoring to support disaster risk reduction.

Enhance decision making through improved access to temporal and spatial data.

MEASURING RESILIENCE

RVA METHODOLOGY



HAZARD INDEPENDENT



Components of resilience are independent of natural hazard exposure. This type of measure helps rank countries based on their likelihood of experiencing a disruption outside of a naturally occurring event. The measure of resilience includes vulnerability and coping capacity components, including their subcomponents.

OBJECTIVES

Use vulnerability and coping capacity indicators to determine initiatives and engagements that will decrease vulnerability and reduce disaster risk by increasing the resiliency of the population.

KEY CONCEPTS

RVA METHODOLOGY

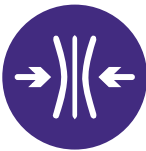
EXAMPLES AND DEFINITIONS



VULNERABILITY: Provides visibility into the underlying socioeconomic and societal factors that predispose areas to disasters. A vulnerability analysis measures the physical, environmental, social, and economic conditions and processes that increase susceptibility of communities and systems to the damaging effects of hazards. Multiple factors influencing disaster outcomes, including those linked to poverty and development, are considered in the analysis.



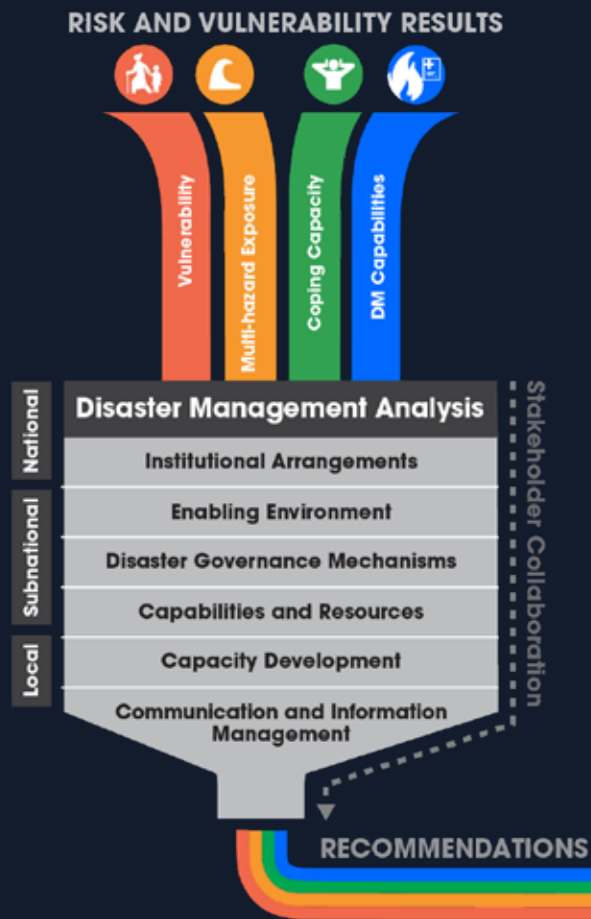
COPING CAPACITY: Provides visibility into the status of governance and capacity within each province. A coping capacity analysis measures the systems, means, and abilities of people and societies to absorb and respond to disruptions in normal function. It considers a range of factors that contribute to the ability of an impacted population to limit the likelihood or severity of the damaging effects of hazards and to manage disruptions that do arise.



RESILIENCE: Provides an overall measure of the ability of a district to withstand shocks and disruptions to normal function. For instance, districts with lower resilience may also exhibit a decrease in the ability of a population to mitigate the negative impacts of a disaster and return to normal function. This measure is the combination of the vulnerability and coping capacity components.

DISASTER MANAGEMENT ANALYSIS

DMA METHODOLOGY



The Disaster Management Analysis (DMA) identifies, codifies, and characterizes capacity implementation needs given risks identified in the RVA and a country’s risk reduction goals. The analysis looks at the capabilities, resources, and systems that have been developed or implemented to reduce disaster risk, to address unmet needs that arise from a subsequent disaster event, and to facilitate long-term recovery of people, economies, and societies.

ANALYSIS OBJECTIVES

Increase resilience and reduce disaster risk through disaster management capacity development initiatives.

DISASTER MANAGEMENT THEMES

The DMA aims not only to limit hazard risk as assessed, but also address the anticipated response and recovery needs of hazard-exposed populations, economies, and societies. The manner in which unmet capacity is identified, qualified, and quantified supports a sharper focus on cost-effective investment planning. It also helps support long-term development in a manner that directly reflects the Sendai Framework and Sustainable Development Goals. The analysis considers needs in relation to multi-hazard risk, and is based on sector-defined capacity standards. Associated themes are listed below with examples of the data and information that help to inform the analysis.



**Institutional
Arrangements**



**Enabling
Environment**



**Disaster Governance
Mechanisms**



**Capabilities
and Resources**



**Capacity
Development**



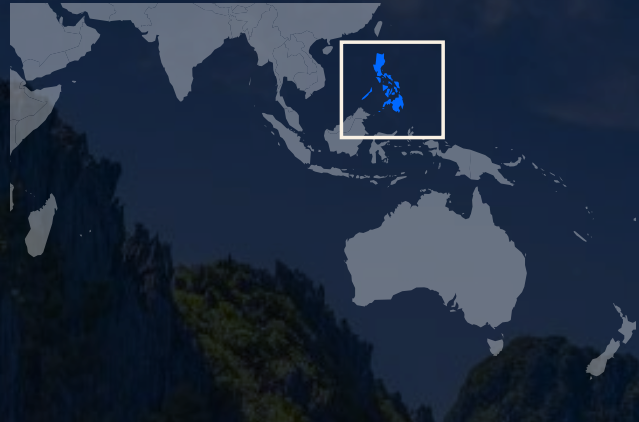
**Communication and
Information Management**



COUNTRY BACKGROUND AND OVERVIEW

GEOGRAPHY

An archipelagic nation with no land borders, the Philippines' 17 regions and 81 provinces span three major island groups: Luzon, Visayas, and Mindanao. Situated in the equatorial Pacific Ring of Fire atop a tectonic subduction zone where the Philippine and Eurasian Plates converge, the Philippines is among the most disaster-prone countries in the world. Its geographic location gives rise to volcanic activity, earthquakes, and tsunami hazards, whilst its southeast Asian tropical monsoon and tropical rainforest climates are highly susceptible to typhoons, floods, landslides, and extreme temperatures. Annually, typhoons alone in the Philippines cost an estimated 2% of the country's yearly GDP.



7,641

Islands

Neighboring countries

- Indonesia
- Malaysia
- Taiwan
- Brunei
- Palau
- Vietnam
- China

36,289 km

Coastline

Three major island groups

- Luzon
- Visayas
- Mindanao

300,000 km²

Total Area (298,170 land and 1,830 water)

81

Administrative divisions (provinces)

17

Regions

GEOLOGY

 **24**
Volcanoes

 **\$18 billion**
Tropical cyclone losses (2004-2019) (EMDAT)

2.0 million
People exposed to potential volcanic impacts

CLIMATE

The Philippines consists mainly of tropical monsoon and tropical rainforest climates. Key climate change risks for the country include an increase in:


Cyclones



Floods


Landslides


Coral Bleaching


Food insecurity


Sea level rise


Extreme temperature

DEMOGRAPHICS

109,581,085

Total population



0.6

Doctors per 1,000 people



70

Avg. life expectations

13th

Most populous country in the world



.63

Nurses per 1,000 people



121

Deaths per 100 000 live births



98

Global socioeconomic vulnerability ranking



1

Hospital bed per 1000 people



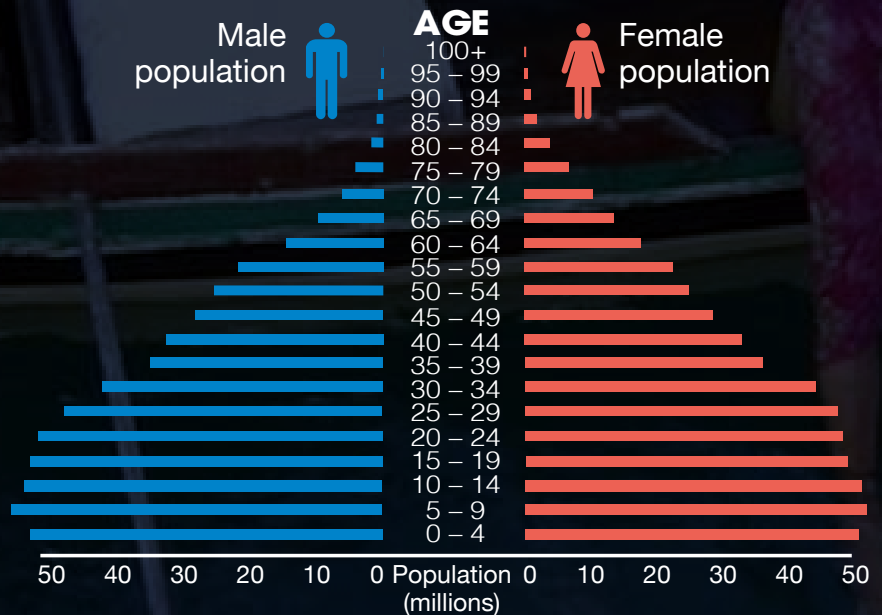
98.3%

Adult literacy



1.21%

Avg. annual population growth



ECONOMY

As of 2019, the Philippines' GDP was \$376.8 billion (USD). Its natural resources include timber, petroleum, nickel, cobalt, silver, gold, salt, and copper. Key industries include semiconductors and electronics assembly, construction, chemical products, radio/television/communications equipment, petroleum and fuel, textiles and garments, non-metallic minerals, basic metal industries, and transport equipment. The Philippines' top partners in trade are the US, Japan, China, Hong Kong, and Singapore.

GDP and Key Industries

\$376.796

Gross domestic product (GDP 2018)



6%

Avg. annual growth in GDP



16.6%

People living below national Poverty line (2018)



Wood products



Chemicals



Copper concentrates



Electronics



Seafood



Machinery and transport equipment



Processed food and beverages



Coconut Oil



Apparel



Fruit

Major industries (% of GDP)

9.6%

Agriculture

30.6%

Industry

59.8%

Services

KEY INFRASTRUCTURE

Infrastructure shortcomings are seen as a major barrier to economic growth. Plans are underway to spend \$165 billion USD on infrastructure by 2022

Transportation

 **249**
Airports

89
with paved runways

158
without paved runways


2
Heliports

 **216,387**
km roads

61,093
Paved

155,294
Unpaved

 **77**
km railways

 **130,000**
Active duty personnel
in Armed forces

90,000
Army

24,000
Navy

16,000
Air Force

 **1,706**
Merchant marines

54
Bulk carrier

46
Container ship

685
General cargo

197
Oil tanker

724
Other

Major seaports

- Batangas
- Cagayan de Oro
- Cebu
- Davao
- Liman
- Manila

Emergency services

 **149,333**
Police officers

 **1**
Fire Station per
100,000 population
and 50 square miles

 **1-2**
Firefighters
per 1000-5000
population

 **19,970**
Evacuation centres

DISASTER MANAGEMENT

MAJOR MILESTONES/IMPROVEMENTS PAST 10 YEARS

The Philippine Disaster Risk Reduction and Management Act of 2010, Republic Act No. 10121 (RA 10121) constitutes a comprehensive legal foundation and policy framework for addressing DM requirements and represents a turning point for the Philippines in terms of its legal and institutional environment regarding DM. RA 10121 codifies the engagement of all sectors of society from national government agencies and offices down to local governments and community organizations (ibid.).

- RA 10121 also made significant provisions for funding mechanisms directed at DM institutions and dedicated DM funds.
- The People's Survival Fund (PSF) was created by Republic Act 10174 of 2011 to administer financial support for communities coping with and building resilience to the effects of climate change.

DM WAREHOUSES/RESOURCES PER REGION

As of 2020, the Office of Civil Defense (OCD) reports 4 warehouses, with projected plans for 16 warehouses by 2022 (OCD, 2020, p.26, 35).

MAJOR DISASTERS PAST 10 YEARS (2009-2019)

TYPHOON HAIYAN/YOLANDA

Date: November 6-9, 2013

Lives lost: 7,354 / Injured: 28,689

Damages: \$10,000,000,000 (10 Billion USD)

- One of the deadliest disasters to strike the Philippines
- Struck just three weeks after the Bohol earthquake, complicating relief efforts
- 3,424,593 families/16,078,181 people affected

BOHOL EARTHQUAKE

Date: October 15, 2013

Lives lost: 230 / Injured: 976

Damages: \$51,459,000 (51.5 Million USD)

- 73,002 houses damaged, including 14,512 completely destroyed

MONSOONAL RAIN (HABAGAT), ENHANCED BY TROPICAL STORM MARING (TRAMI)

Date: August 13-21, 2013

Affected regions:

- Region III (Central Luzon) province (Pampanga district (Lubao, Floridablanca, Minalin areas), Bulacan district (Meycauayan area), Nueva Ecija district (Mariveles, Bataan, Malolos City, Carranglan areas), Zambales district (Olongapo area), Tarlac, Bataan districts),
- Region IV-A (Calabarzon) province (Rizal district (Teresa, Binangonan areas), Cavite district (Imus, Bacoor, Kawit, Noveleta, Tanza areas), Quezon district (Sariaya area), Laguna district),
- Region IV province (Mindoro Occidental district), National Capital region (NCR) province (Metropolitan Manila district (Las Pinas, Caloocan, Valenzuela, Navotas, Malabon areas)),
- Region I (Ilocos region) province (Pagasinan district), Cordillera Administrative region (CAR) province (Mountain Province district (Bontoc, Sagada areas), Benguet district (Tuba area), Abra district)

Lives lost: 31 / Injured: 30

Total affected people: 3,096,422 / Damages: \$2,190,000,000 (2.2 billion)

TYPHOON BOPHA/PABLO

Date: formed Nov. 25, 2012, dissipated Dec. 9, 2012

Lives lost: 1,901 / Injured: 2,666

Damages: \$898,352,000 (898 Million USD)

- 216,817 houses damaged, 89,666 destroyed
- 711,682 families/6,243,998 people affected

TROPICAL STORM WASHI/SENDONG

Date: Dec. 13-19, 2011

Lives lost: 1,439 / Injured: 6,071

Damages: \$38,082,000 (38 Million USD)

- 125,256 families/1,168,726 people affected
- 52,435 houses damaged, including 14,883 completely destroyed



THE RVA

RISK AND VULNERABILITY ASSESSMENT RESULTS

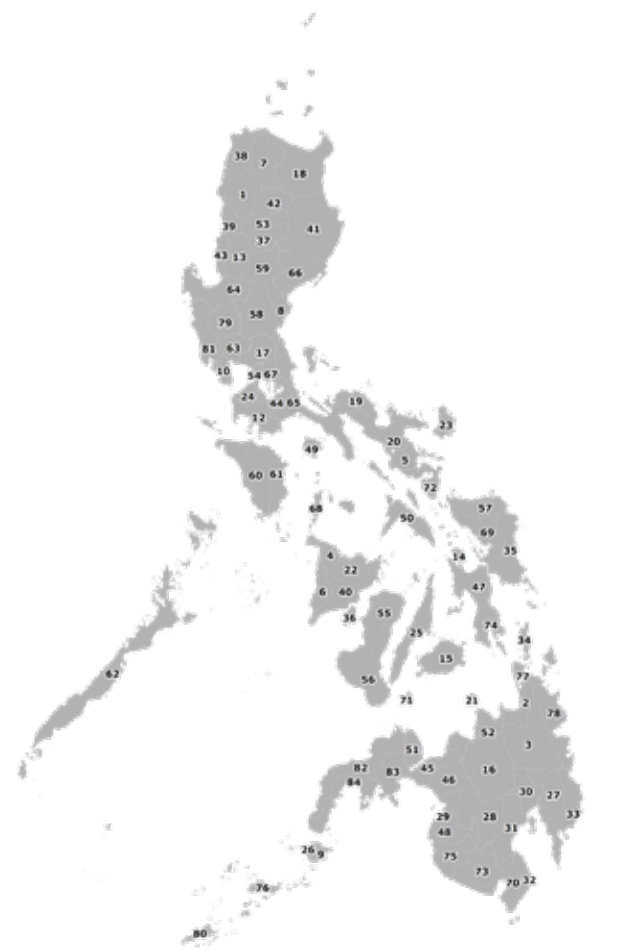
RISK AND VULNERABILITY ASSESSMENT RESULTS

Provided in this section are the results of the Risk and Vulnerability Assessment (RVA) conducted by the Pacific Disaster Center as part of the Philippines National Disaster Preparedness Baseline Assessment. For details on the methodology and data sets used see Appendix A.

PHILIPPINES BACKGROUND

The Republic of the Philippines is a sovereign state in Southeast Asia. The Philippines comprises an archipelago of over 7,600 islands and shares no land boundaries with any other country. The main island groups are Luzon, Visayas, and Mindanao. These islands are further subdivided into 17 regions, 81 provinces and 146 cities. The RVA compares data at the provincial level. Additionally, the analysis includes the National Capital Region, the independent component city Cotabato City, and the component city Isabela City for a total of 84 territories.

PHILIPPINES PROVINCES



COMPONENTS OF RISK



Vulnerability



Coping Capacity



Multi-Hazard Exposure



THE RVA

MULTI-HAZARD EXPOSURE

MULTI-HAZARD EXPOSURE

The geography of the Philippines exposes the country to many hazards. Located in the Western Pacific typhoon belt, an average of 20 tropical cyclones form or cross inside the Philippines Area of Responsibility each year (PAGASA, 2020). The archipelago represents over 36 thousand kilometers of exposed coastline. In addition, The Philippines is situated in “Ring of Fire” leading to significant seismic activity and volcanic hazards (UNDRR & ADPC, 2019). According to the National Disaster Risk Reduction and Management Council, there were 248 major natural and man-made disasters that occurred in 2016 alone. In that year, more than 1.7 million people were impacted and the damages topped 14.3 trillion pesos (PSA, 2018). Combined with increasing frequency and severity of natural hazards due to climate change, disaster risk in the Philippines is rising.

Global Multi-Hazard Exposure Rank

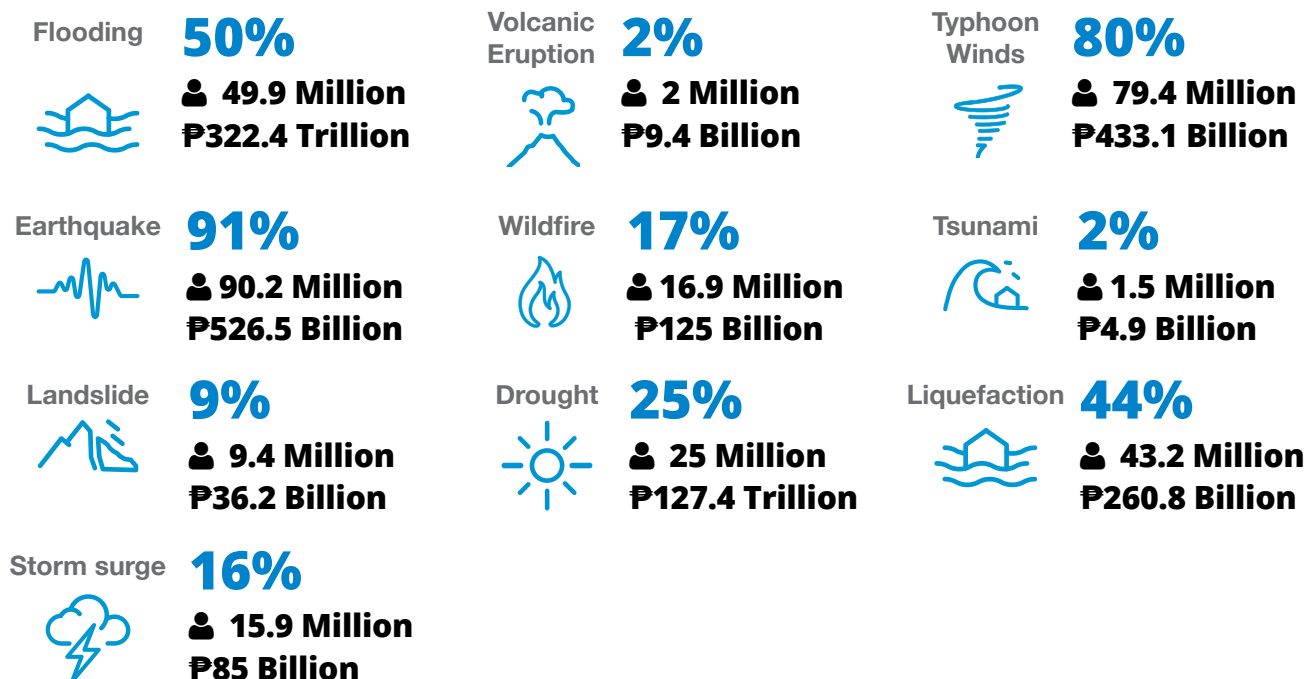
2 OF 207 COUNTRIES

The Philippines' Rank among ASEAN Member States

1 OF 10 COUNTRIES

PHILIPPINES ESTIMATED POPULATION AND CAPITAL EXPOSURE

Multi-hazard exposure at the provincial level in the Philippines was assessed by combining components of volcano, landslide, flooding, wildfire, typhoon winds, earthquake, tsunami, drought, storm surge, and liquefaction.



MULTI-HAZARD EXPOSURE BY PROVINCE

	RANK	PROVINCE	INDEX SCORE	RANK	PROVINCE	INDEX SCORE			
VERY HIGH	1	NCR	0.993	43	Samar	0.622	MEDIUM		
	2	Isabela	0.901	44	Surigao del Norte	0.605			
	3	Cagayan	0.871	45	Camarines Norte	0.603			
	4	Cebu	0.841	46	Zamboanga del Sur	0.603			
	5	Leyte	0.831	47	South Cotabato	0.601			
	6	Pangasinan	0.83	48	Antique	0.599			
	7	Iloilo	0.821	49	Catanduanes	0.586			
	8	Rizal	0.812	50	Compostela Valley	0.584			
	9	Pampanga	0.799	51	Batangas	0.583			
	10	Nueva Ecija	0.797	52	Quirino	0.581			
	11	Nueva Vizcaya	0.792	53	Masbate	0.579			
	12	Cavite	0.789	54	Maguindanao	0.577			
	13	Negros Occidental	0.785	55	Misamis Oriental	0.573			
	14	Bulacan	0.783	56	Apayao	0.562			
	15	Camarines Sur	0.762	57	Kalinga	0.557			
	HIGH	16	Ilocos Norte	0.756	58	Davao Oriental		0.552	LOW
		17	Laguna	0.747	59	Biliran		0.546	
18		Oriental Mindoro	0.745	60	Sarangani	0.543			
19		Agusan del Sur	0.741	61	Cotabato City	0.539			
20		Albay	0.73	62	Marinduque	0.533			
21		Zambales	0.725	63	Abra	0.532			
22		Southern Leyte	0.718	64	Davao del Norte	0.53			
23		Tarlac	0.717	65	Cotabato	0.506			
24		Agusan del Norte	0.711	66	Lanao del Norte	0.504			
25		Ilocos Sur	0.694	67	Bukidnon	0.504			
26		Capiz	0.679	68	Romblon	0.481			
27		Bataan	0.677	69	Palawan	0.48			
28		Occidental Mindoro	0.66	70	Lanao del Sur	0.477			
29		Benguet	0.658	71	Misamis Occidental	0.477			
30		La Union	0.657	72	Zamboanga del Norte	0.472			
31		Surigao del Sur	0.649	73	Davao del Sur	0.451			
32		Sorsogon	0.648	74	Dinagat Islands	0.409			
MEDIUM	33	Aurora	0.644	75	Zamboanga Sibugay	0.359	VERY LOW		
	34	Aklan	0.644	76	Guimaras	0.352			
	35	Eastern Samar	0.642	77	Camiguin	0.351			
	36	Quezon	0.641	78	Davao Occidental	0.308			
	37	Mountain Province	0.638	79	Basilan	0.182			
	38	Negros Oriental	0.633	80	Batanes	0.171			
	39	Ifugao	0.632	81	Siquijor	0.137			
	40	Northern Samar	0.631	82	Sulu	0.131			
	41	Bohol	0.629	83	City of Isabela	0.084			
	42	Sultan Kudarat	0.627	84	Tawi-Tawi	0.002			



THE RVA

VULNERABILITY

VULNERABILITY

Vulnerability measures the physical, environmental, social, and economic conditions and processes that increase susceptibility of communities and systems to the damaging effects of hazards. Vulnerability data is designed to capture the multi-dimensional nature of poverty, the inequality in access to resources due to gender, and the ability of a given area to adequately support the population. In coordination with stakeholders the following indicators were selected to measure vulnerability subcomponents in the Philippines. Breaking down each vulnerability subcomponent to the indicator level allows users to identify the key drivers of vulnerability to support risk reduction efforts and policy decisions.

Global Vulnerability Rank

62 OF 160 COUNTRIES

The Philippines' Rank among ASEAN Member States

2 OF 10 COUNTRIES

VULNERABILITY SUBCOMPONENTS AND INDICATORS



Population Pressures

- Average Annual Population Change
- Average Annual Urban Population Change
- Informal Settler Households



Gender Inequality

- Labor Force Participation Ratio
- Female to Male School Enrollment Rate



Information Access Vulnerability

- Households with Internet
- Households with Radio
- Households with Television
- Population Literacy Rate
- Gross Primary School Enrollment



Economic Constraints

- Economic Dependence Ratio
- Poverty Incidence



Environmental Stress

- Livestock Density
- Barren Land
- Average Annual Forest Cover Change



Vulnerable Health Status

- Malnutrition Among Children (0 to 5 Years)
- Infant Mortality Rate
- Maternal Mortality Rate
- Disabled Population
- Average Life Expectancy at Birth
- TB Mortality Rate
- Intestinal Infectious Disease Mortality Rate
- HIV Mortality Rate
- Other Arthropod-Borne Viral Fevers and Viral Hemorrhagic Fever Mortality Rate



Clean Water Access Vulnerability

- Households with Improved Safe Water Source
- Households with Sanitary Toilet

VULNERABILITY BY PROVINCE

RANK	PROVINCE	INDEX SCORE	RANK	PROVINCE	INDEX SCORE
1	Basilan	0.826	43	Agusan del Norte	0.435
2	Sulu	0.757	44	Davao Oriental	0.431
3	Maguindanao	0.7	45	Abra	0.431
4	Lanao del Sur	0.672	46	Biliran	0.43
5	Tawi-Tawi	0.648	47	Nueva Vizcaya	0.425
6	Masbate	0.596	48	Oriental Mindoro	0.423
7	Northern Samar	0.558	49	Iloilo	0.422
8	Sarangani	0.553	50	Quirino	0.417
9	Eastern Samar	0.552	51	Bohol	0.414
10	Palawan	0.539	52	South Cotabato	0.413
11	City of Isabela	0.535	53	Cagayan	0.41
12	Occidental Mindoro	0.535	54	Compostela Valley	0.402
13	Davao Occidental	0.531	55	Davao del Norte	0.401
14	Samar	0.53	56	Kalinga	0.401
15	Zamboanga del Norte	0.525	57	Isabela	0.393
16	Zamboanga Sibugay	0.508	58	Misamis Oriental	0.392
17	Sultan Kudarat	0.504	59	Misamis Occidental	0.392
18	Lanao del Norte	0.497	60	Aklan	0.385
19	Camarines Norte	0.496	61	Davao del Sur	0.38
20	Surigao del Norte	0.492	62	Nueva Ecija	0.376
21	Surigao del Sur	0.49	63	Zambales	0.376
22	Agusan del Sur	0.488	64	Camiguin	0.372
23	Cebu	0.486	65	Southern Leyte	0.365
24	Negros Occidental	0.482	66	Batangas	0.364
25	Negros Oriental	0.481	67	Ilocos Norte	0.362
26	Bukidnon	0.478	68	La Union	0.357
27	Romblon	0.476	69	Rizal	0.355
28	Albay	0.475	70	Pangasinan	0.352
29	Quezon	0.472	71	Ilocos Sur	0.343
30	Ifugao	0.471	72	Tarlac	0.336
31	Cotabato	0.47	73	Guimaras	0.336
32	Leyte	0.468	74	Benguet	0.329
33	Catanduanes	0.466	75	Pampanga	0.328
34	Dinagat Islands	0.465	76	Mountain Province	0.323
35	Zamboanga del Sur	0.461	77	Capiz	0.318
36	Marinduque	0.46	78	Bataan	0.315
37	Aurora	0.456	79	Laguna	0.311
38	Sorsogon	0.456	80	Siquijor	0.309
39	Apayao	0.454	81	Cavite	0.307
40	Camarines Sur	0.446	82	Bulacan	0.302
41	Cotabato City	0.44	83	NCR	0.273
42	Antique	0.436	84	Batanes	0.263

VERY HIGH

HIGH

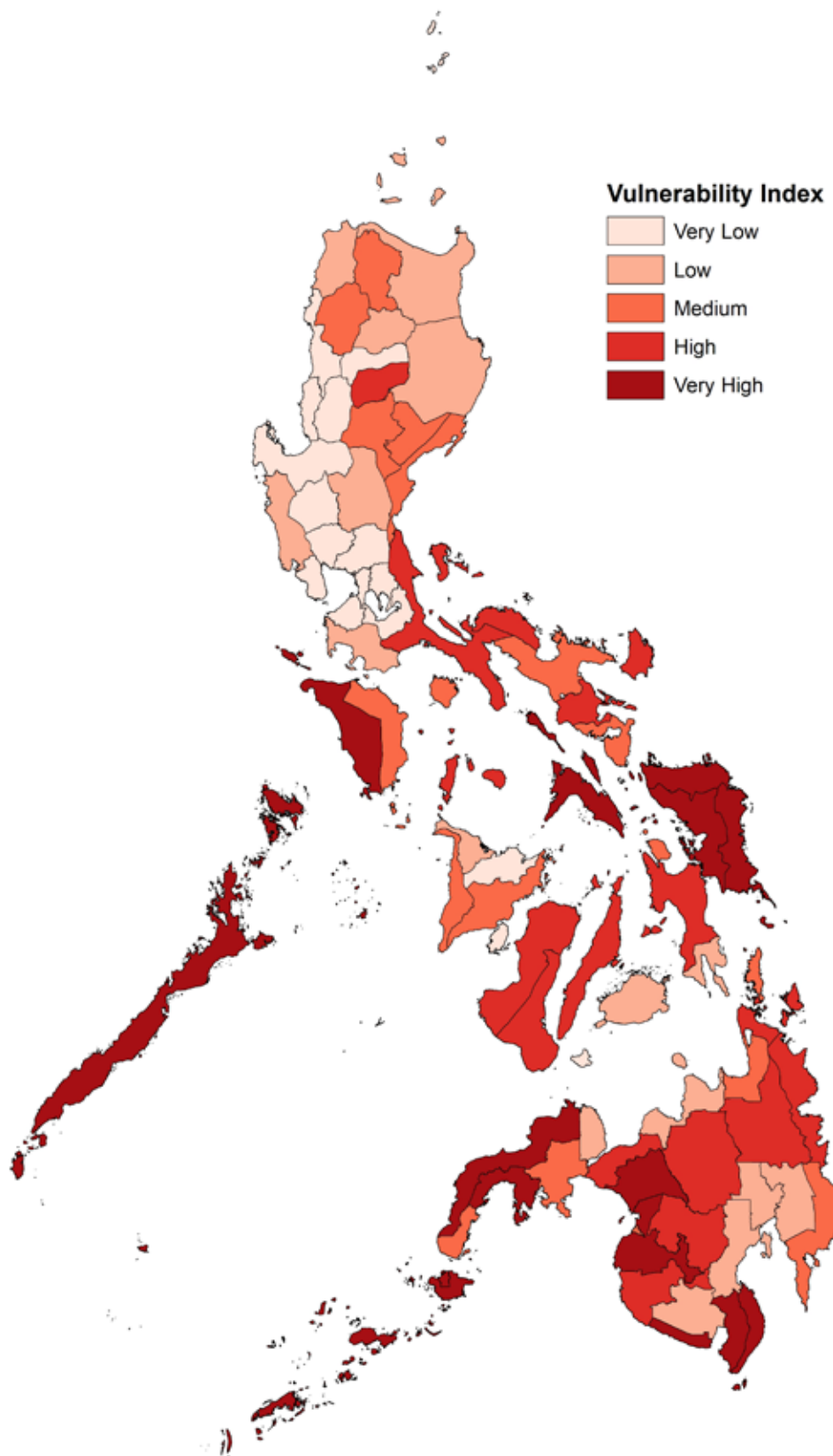
MEDIUM

MEDIUM

LOW

VERY LOW

VULNERABILITY BY PROVINCE





THE RVA

COPING CAPACITY

COPING CAPACITY

Coping Capacity describes the ability of people, organizations, and systems, using available skills and resources, to face and manage adverse conditions, emergencies, or disasters.

In coordination with stakeholders the following indicators were selected to measure coping capacity subcomponents in the Philippines. Breaking down each coping capacity subcomponent to the indicator level allows users to identify the key drivers of coping capacity to support risk reduction efforts and policy decisions.

Global Coping Capacity Rank **96** OF 176 COUNTRIES

The Philippines' Rank among ASEAN Member States **4** OF 10 COUNTRIES

COPING CAPACITY SUBCOMPONENTS AND INDICATORS

Economic Capacity
 Purchasing Power of the Peso
 Labor Force Participation Rate
 Local Government Annual Regular Income

Transportation Capacity
 Road Density
 Average Distance to Ports

Governance
 Voter Participation
 Organized Violence Rate per 10,000 Persons
 Garbage Pickup

Communications Capacity
 Households with Landline
 Barangays with Mobile Coverage

Environmental Capacity
 Forest Reserves
 Protected Areas per 1,000 Hectares of Land

Energy Capacity
 Households with Access to Electricity
 Households with Access to Cooking Fuel

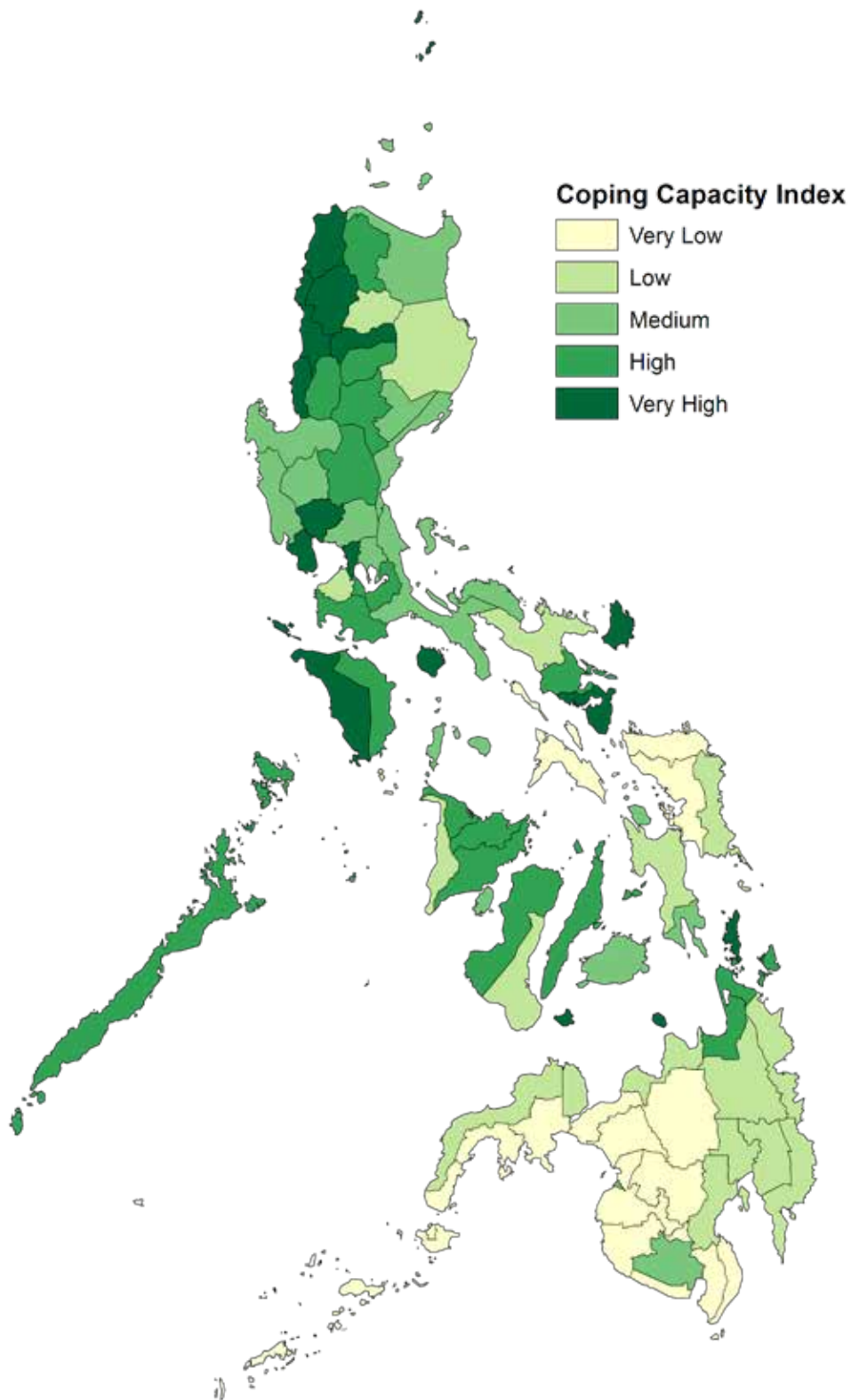
Healthcare Capacity
 Physicians Per 10,000 Persons
 Vaccination Coverage
 Hospital Bed Capacity
 Average Distance to Hospital

Emergency Services
 Evacuations Centers per 100,000 Persons
 Fire Stations per 100,000 Persons
 Fire Trucks per 100,000 Persons

COPING CAPACITY BY PROVINCE

	RANK	PROVINCE	INDEX SCORE	RANK	PROVINCE	INDEX SCORE	
VERY HIGH	1	Batanes	0.753	43	Zambales	0.563	MEDIUM
	2	Ilocos Norte	0.693	44	Pangasinan	0.561	
	3	NCR	0.675	45	Cotabato City	0.559	
	4	Ilocos Sur	0.67	46	Quirino	0.557	
	5	Bataan	0.668	47	Camarines Norte	0.556	
	6	Mountain Province	0.66	48	Cagayan	0.556	
	7	Camiguin	0.651	49	Bulacan	0.552	
	8	La Union	0.651	50	Romblon	0.551	
	9	Siquijor	0.646	51	Davao del Norte	0.548	
	10	Dinagat Islands	0.642	52	Camarines Sur	0.547	
HIGH	11	Abra	0.638	53	Isabela	0.547	LOW
	12	Catanduanes	0.63	54	Cavite	0.546	
	13	Pampanga	0.63	55	Eastern Samar	0.543	
	14	Sorsogon	0.624	56	Leyte	0.541	
	15	Occidental Mindoro	0.622	57	Davao del Sur	0.541	
	16	Marinduque	0.618	58	Misamis Occidental	0.54	
	17	Nueva Vizcaya	0.615	59	Misamis Oriental	0.532	
	18	Benguet	0.61	60	Agusan del Sur	0.531	
	19	Laguna	0.608	61	Surigao del Sur	0.527	
	20	Iloilo	0.602	62	Compostela Valley	0.52	
MEDIUM	21	Ifugao	0.601	63	Davao Oriental	0.52	VERY LOW
	22	Agusan del Norte	0.6	64	Kalinga	0.519	
	23	Albay	0.599	65	Negros Oriental	0.518	
	24	Surigao del Norte	0.595	66	Antique	0.514	
	25	Nueva Ecija	0.592	67	Zamboanga del Norte	0.492	
	26	Oriental Mindoro	0.588	68	Masbate	0.489	
	27	Capiz	0.588	69	Lanao del Norte	0.487	
	28	Aklan	0.585	70	Bukidnon	0.479	
	29	Apayao	0.582	71	Zamboanga del Sur	0.473	
	30	Palawan	0.577	72	City of Isabela	0.461	
31	Batangas	0.575	73	Zamboanga Sibugay	0.46		
32	Negros Occidental	0.575	74	Davao Occidental	0.451		
33	Cebu	0.573	75	Samar	0.451		
34	Southern Leyte	0.571	76	Cotabato	0.442		
35	Rizal	0.57	77	Sultan Kudarat	0.436		
36	Aurora	0.569	78	Northern Samar	0.429		
37	Tarlac	0.568	79	Sarangani	0.413		
38	Biliran	0.567	80	Lanao del Sur	0.378		
39	Guimaras	0.567	81	Tawi-Tawi	0.343		
40	Bohol	0.566	82	Basilan	0.331		
41	Quezon	0.565	83	Maguindanao	0.302		
42	South Cotabato	0.565	84	Sulu	0.221		

COPING CAPACITY BY PROVINCE





THE RVA

RESILIENCE

RESILIENCE

Resilience in the Philippines was calculated by averaging Vulnerability and Coping Capacity. Results are displayed for each province below, while the four main drivers of resilience with detailed recommendations are provided in the individual province profiles.

Global Resilience Rank






93 OF 155 COUNTRIES

The Philippines' Rank among ASEAN Member States

6 OF 10 COUNTRIES

APPLYING RESILIENCE DATA

Resilience data can be used to:

-  Prioritize response and recovery efforts during hazard events.
-  Identify the social, cultural, and economic factors that influence disaster risk and vulnerability.
-  Provide the necessary justification to support policy decisions that will protect lives and reduce losses resulting from disasters.
-  Establish a provincial-level foundation for monitoring risk and vulnerability over time.
-  Enhance decision making for disaster risk reduction initiatives.

RESILIENCE COMPONENTS



Vulnerability

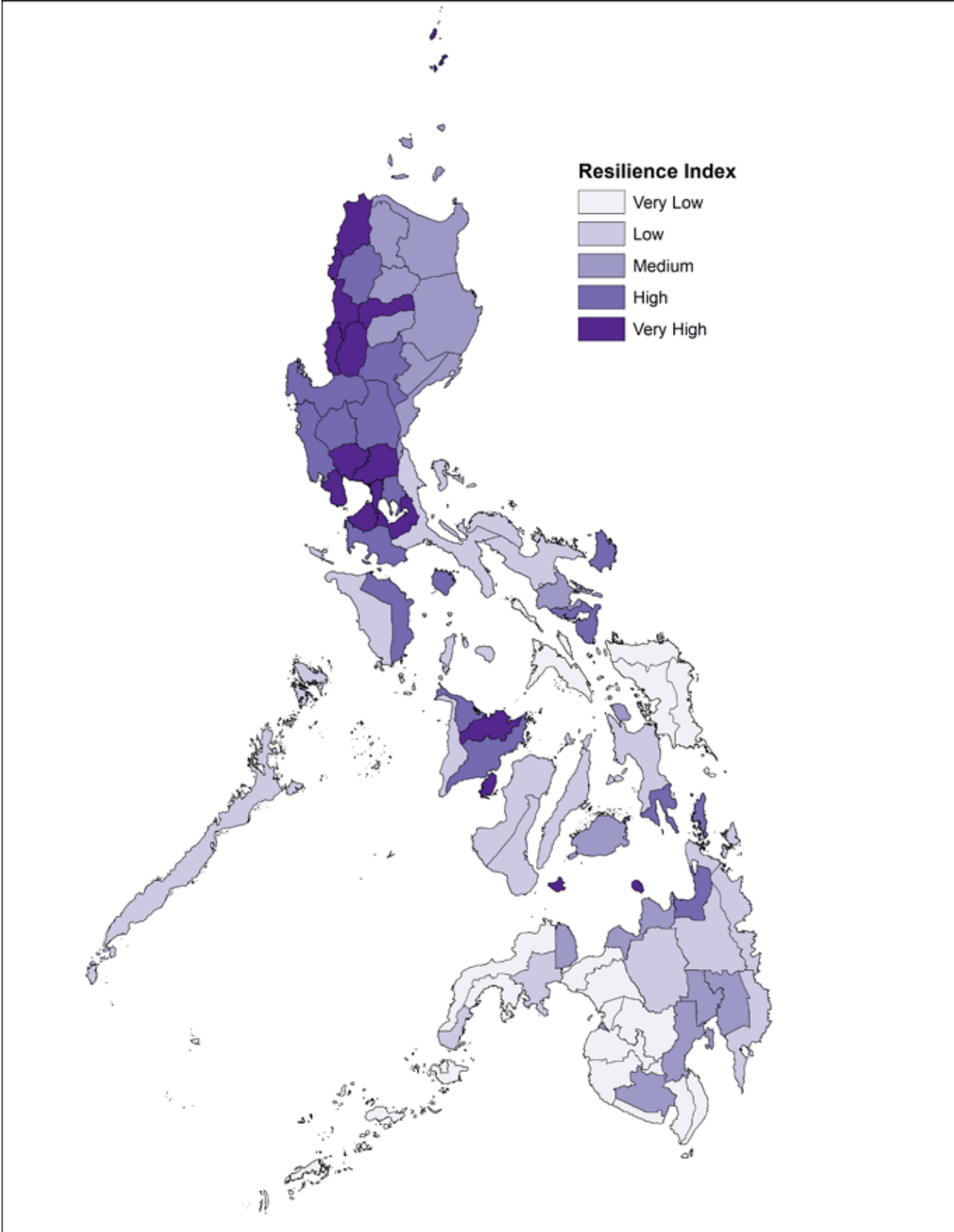


Coping Capacity

RESILIENCE BY PROVINCE

	RANK	PROVINCE	INDEX SCORE	RANK	PROVINCE	INDEX SCORE	
VERY HIGH	1	Batanes	0.744	43	Biliran	0.565	MEDIUM
	2	NCR	0.697	44	Ifugao	0.563	
	3	Bataan	0.675	45	Apayao	0.561	
	4	Siquijor	0.668	46	Albay	0.56	
	5	Mountain Province	0.665	47	Compostela Valley	0.558	
	6	Ilocos Norte	0.664	48	Kalinga	0.557	
	7	Ilocos Sur	0.662	49	Cotabato City	0.555	
	8	Pampanga	0.649	50	Aurora	0.554	
	9	La Union	0.646	51	Surigao del Norte	0.55	
	10	Laguna	0.644	52	Camarines Sur	0.549	
HIGH	11	Camiguin	0.639	53	Negros Occidental	0.545	LOW
	12	Benguet	0.638	54	Quezon	0.544	
	13	Capiz	0.633	55	Davao Oriental	0.543	
	14	Bulacan	0.623	56	Cebu	0.542	
	15	Cavite	0.615	57	Occidental Mindoro	0.54	
	16	Guimaras	0.615	58	Antique	0.537	
	17	Tarlac	0.614	59	Leyte	0.535	
	18	Nueva Ecija	0.605	60	Romblon	0.535	
	19	Abra	0.603	61	Camarines Norte	0.528	
	20	Pangasinan	0.603	62	Agusan del Sur	0.519	
MEDIUM	21	Batangas	0.603	63	Surigao del Sur	0.517	VERY LOW
	22	Rizal	0.602	64	Negros Oriental	0.516	
	23	Southern Leyte	0.602	65	Palawan	0.516	
	24	Aklan	0.599	66	Zamboanga del Sur	0.501	
	25	Nueva Vizcaya	0.593	67	Bukidnon	0.498	
	26	Zambales	0.591	68	Eastern Samar	0.494	
	27	Iloilo	0.588	69	Lanao del Norte	0.491	
	28	Dinagat Islands	0.587	70	Cotabato	0.484	
	29	Sorsogon	0.583	71	Zamboanga del Norte	0.481	
	30	Agusan del Norte	0.582	72	Zamboanga Sibugay	0.472	
31	Catanduanes	0.581	73	Sultan Kudarat	0.462		
32	Oriental Mindoro	0.58	74	City of Isabela	0.46		
33	Marinduque	0.578	75	Samar	0.46		
34	Davao del Sur	0.576	76	Davao Occidental	0.455		
35	Bohol	0.575	77	Masbate	0.444		
36	Isabela	0.575	78	Northern Samar	0.433		
37	South Cotabato	0.574	79	Sarangani	0.426		
38	Misamis Occidental	0.572	80	Lanao del Sur	0.352		
39	Davao del Norte	0.572	81	Tawi-Tawi	0.344		
40	Cagayan	0.571	82	Maguindanao	0.297		
41	Misamis Oriental	0.569	83	Basilan	0.249		
42	Quirino	0.566	84	Sulu	0.23		

RESILIENCE BY PROVINCE





THE RVA






HAZARD-SPECIFIC RISK

HAZARD-SPECIFIC RISK

Hazard-Specific Risk examines individual hazard exposure in combination with a province's resilience to provide a clear understanding of risk drivers for each hazard type. Hazard-Specific Risk provides a tool for disaster managers to anticipate, plan for, and mitigate outcomes of specific hazard events across the Philippines.

APPLYING HAZARD SPECIFIC RISK DATA

Hazard-specific risk data can be used to:

-  Examine socioeconomic and cultural factors that make certain populations more susceptible to negative outcomes from a specific hazard.
-  Anticipate potential impacts of a specific hazard on a province's population.
-  Enhance national and subnational multi-hazard planning.
-  Prioritize national and district-level hazard-specific mitigation actions.
-  Provide necessary justification to enhance hazard monitoring and implement early warning systems.

HAZARD RISK COMPARED



Flood



Volcanic Eruption



Tsunami



Storm Surge



Drought



Earthquake



Wildfire



Typhoon Winds

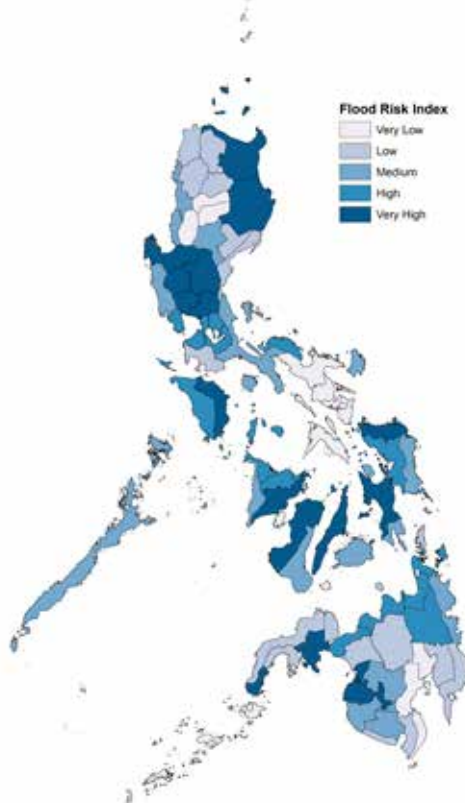


Liquefaction

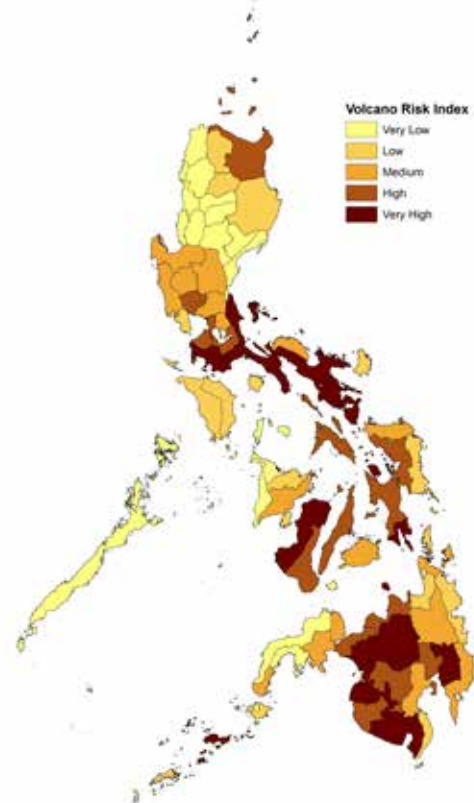


Landslide

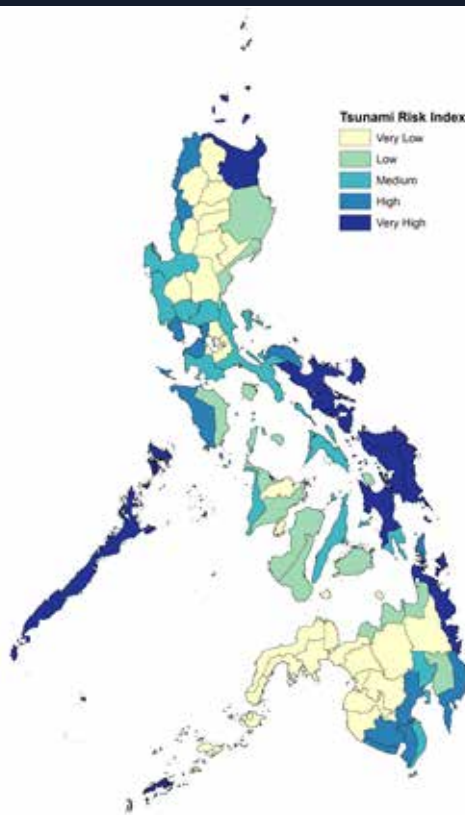
FLOOD RISK



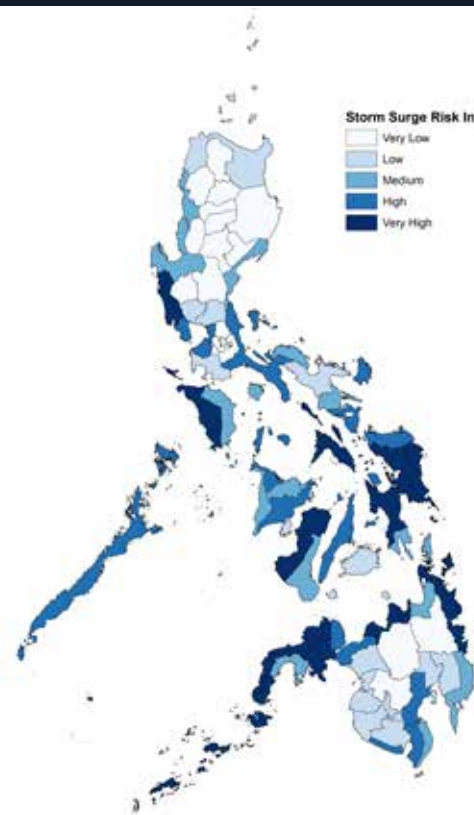
VOLCANO RISK



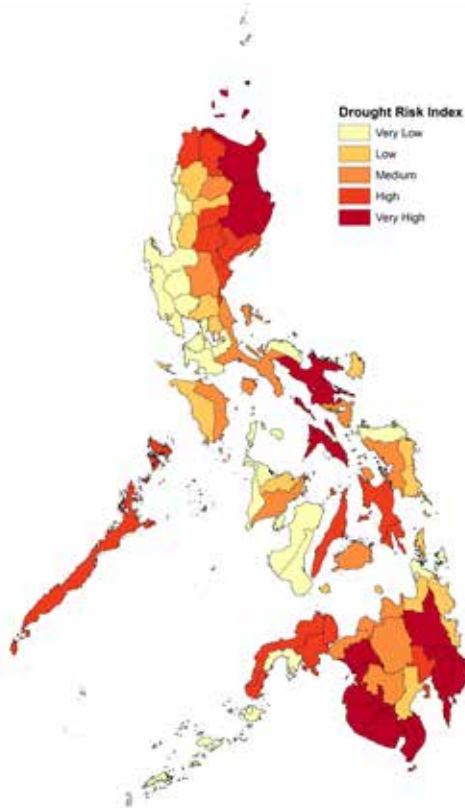
TSUNAMI RISK



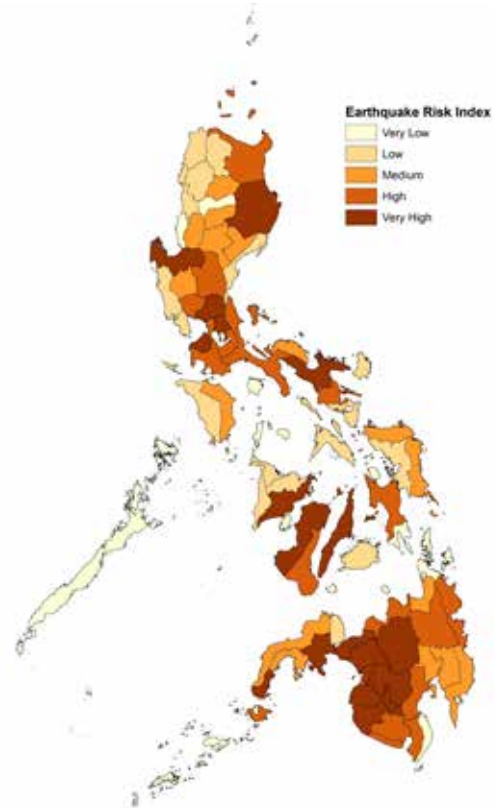
STORM SURGE RISK



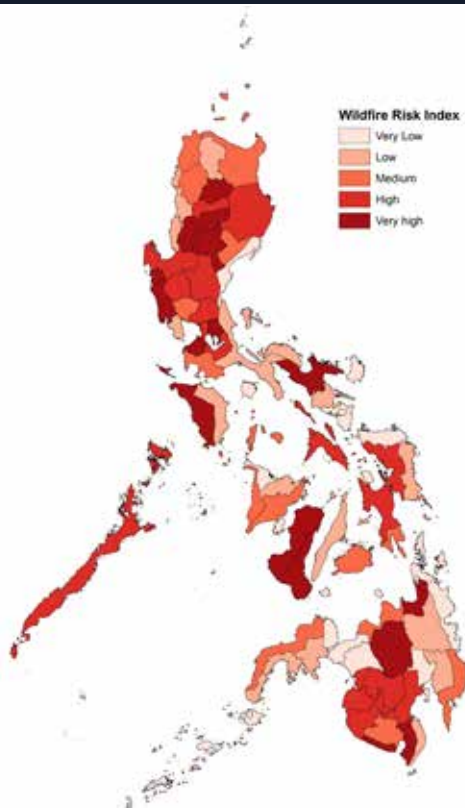
DROUGHT RISK



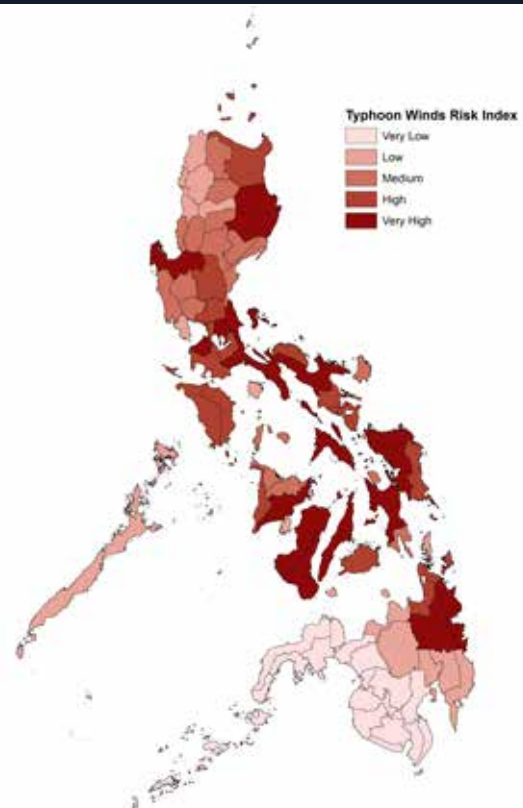
EARTHQUAKE RISK



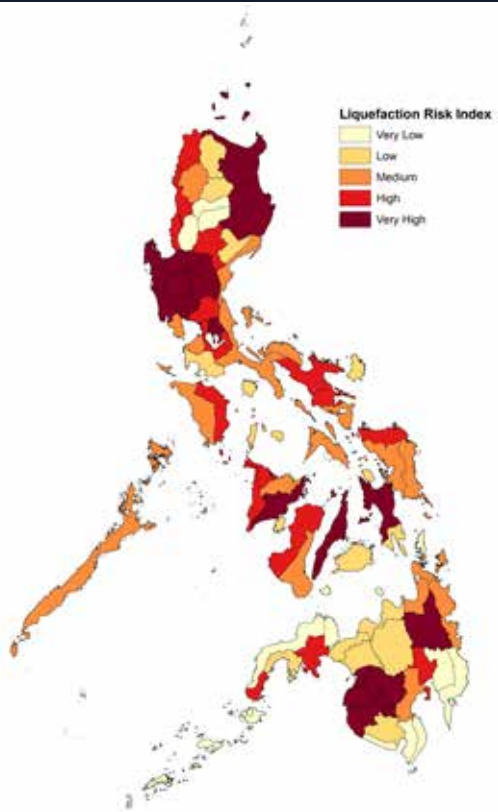
WILDFIRE RISK



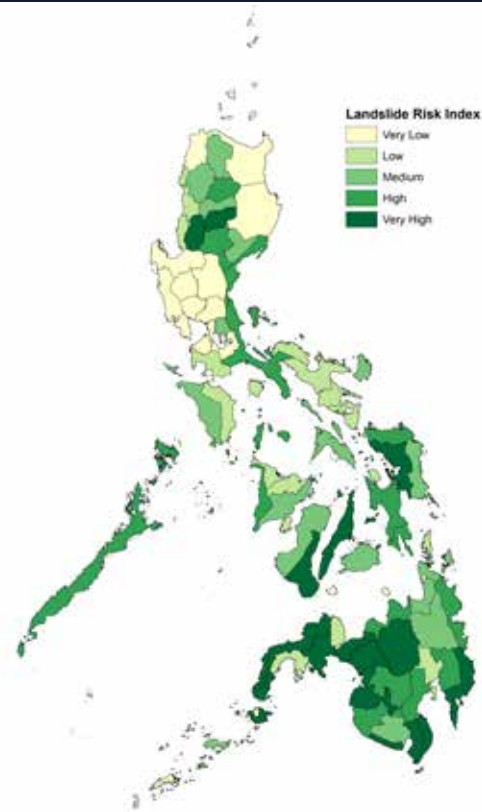
TYPHOON RISK



LIQUEFACTION RISK



LANDSLIDE RISK





THE RVA

MULTI-HAZARD RISK

MULTI-HAZARD RISK

Multi-hazard Risk combines hazard exposure, susceptibility to impact, the relative ability to absorb negative disaster impacts, and the distribution of disaster management resources to provide a collective measure of what is likely how each province may be affected by hazard and disasters as a whole over time. Analyzing risk information throughout all phases of disaster management - mitigation, preparedness, response, recovery - improves operations and promotes efficient resource allocation.

Applying a repeatable methodology and identifying provincial risk provides a baseline for conducting temporal analysis and a better understanding of the potential impact of climate change. Analyzing trends in risk allows decision-makers to determine effective disaster risk reduction initiatives and implement evidence-based policy.

Global Multi-hazard Risk Rank

6 OF 165 COUNTRIES

The Philippines' Rank among ASEAN Member States

2 OF 10 COUNTRIES

MULTI-HAZARD RISK COMPONENTS

Multi-hazard Risk in the Philippines was calculated by averaging Multi-hazard Exposure, Vulnerability and Coping Capacity. Results are displayed for each province below, while additional detail on provincial risk is provided in the individual province profiles.



Vulnerability



Coping Capacity



Multi-hazard Exposure

MULTI-HAZARD RISK BY PROVINCE

RANK	PROVINCE	INDEX SCORE	RANK	PROVINCE	INDEX SCORE
1	Maguindanao	0.661	43	Surigao del Norte	0.501
2	Lanao del Sur	0.591	44	Pampanga	0.5
3	Northern Samar	0.588	45	Tarlac	0.496
4	Leyte	0.587	46	NCR	0.496
5	Cebu	0.586	47	Sorsogon	0.494
6	Isabela	0.584	48	Bohol	0.493
7	Cagayan	0.577	49	Compostela Valley	0.489
8	Sultan Kudarat	0.568	50	Davao Oriental	0.489
9	Agusan del Sur	0.568	51	Laguna	0.486
10	Samar	0.567	52	South Cotabato	0.484
11	Negros Occidental	0.565	53	Quirino	0.483
12	Masbate	0.564	54	Palawan	0.483
13	Sarangani	0.564	55	Aklan	0.482
14	Basilan	0.561	56	Kalinga	0.481
15	Sulu	0.557	57	Apayao	0.48
16	Camarines Sur	0.555	58	Misamis Oriental	0.478
17	Eastern Samar	0.551	59	Cotabato City	0.476
18	Iloilo	0.548	60	Ilocos Norte	0.476
19	Pangasinan	0.541	61	Catanduanes	0.475
20	Surigao del Sur	0.538	62	Biliran	0.472
21	Albay	0.536	63	Zamboanga Sibugay	0.472
22	Rizal	0.536	64	Capiz	0.471
23	Nueva Vizcaya	0.536	65	Romblon	0.47
24	Zamboanga del Sur	0.534	66	Davao Occidental	0.466
25	Negros Oriental	0.533	67	Davao del Norte	0.462
26	Nueva Ecija	0.529	68	Benguet	0.461
27	Oriental Mindoro	0.529	69	Batangas	0.459
28	Occidental Mindoro	0.527	70	Marinduque	0.459
29	Cavite	0.519	71	Ilocos Sur	0.456
30	Quezon	0.518	72	La Union	0.455
31	Agusan del Norte	0.516	73	Misamis Occidental	0.444
32	Camarines Norte	0.515	74	Bataan	0.443
33	Zambales	0.514	75	Abra	0.442
34	Cotabato	0.513	76	Tawi-Tawi	0.438
35	Bulacan	0.512	77	Davao del Sur	0.433
36	Aurora	0.512	78	Dinagat Islands	0.412
37	Antique	0.508	79	City of Isabela	0.388
38	Lanao del Norte	0.507	80	Mountain Province	0.387
39	Southern Leyte	0.505	81	Guimaras	0.374
40	Zamboanga del	0.503	82	Camiguin	0.358
41	Ifugao	0.502	83	Siquijor	0.267
42	Bukidnon	0.502	84	Batanes	0.228

VERY HIGH

HIGH

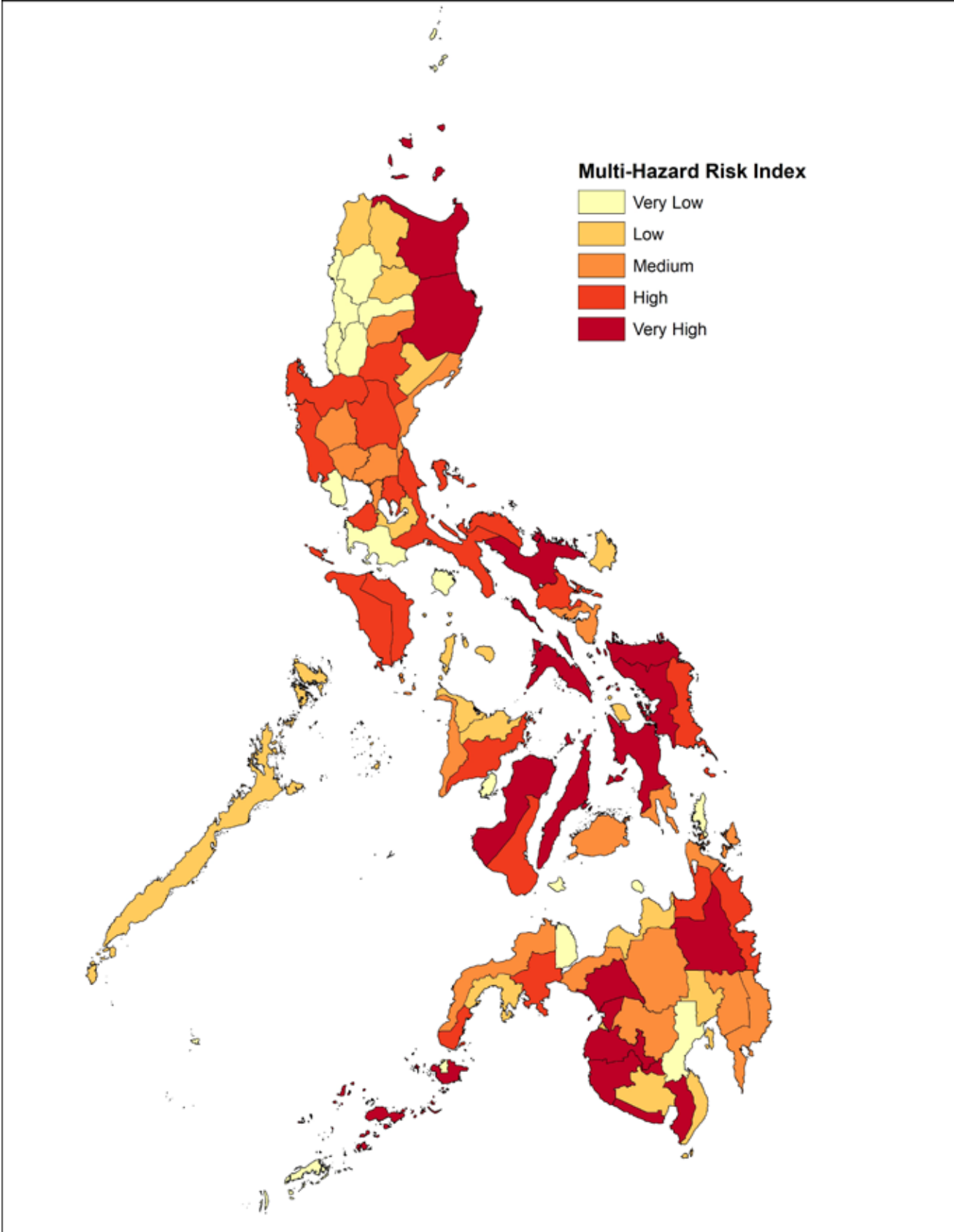
MEDIUM

MEDIUM

LOW

VERY LOW

MULTI-HAZARD RISK BY PROVINCE





REPUBLIC OF THE PHILIPPINES
National Disaster Risk Reduction and Management Council
NDRRM Operations Center



THE DMA

DISASTER MANAGEMENT ANALYSIS

SUMMARY OF FINDINGS

DISASTER MANAGEMENT ANALYSIS

FINDINGS & RECOMMENDATIONS

The Disaster Management Analysis provides context to the risk and vulnerability data. Understanding the complex environment of disaster management in the Philippines allows stakeholders to identify the best course of action that aligns within the Philippines legal framework and with national disaster risk reduction goals.

In the section below, each disaster management indicator with detailed supporting information is provided. Data was compiled through online and archival research and validated with in-country stakeholders.

DISASTER MANAGEMENT ANALYSIS THEME & SUBTHEMES



Institutional Arrangements

- Organizational Structures
- Leadership
- Stakeholder Engagement



Disaster Governance Mechanisms

- Plans and Processes
- Command, Control, and Coordination Systems
- Governance Infrastructure



Enabling Environment

- Legal Foundation
- Financial Resources
- Clear and Comprehensive Strategies
- Confidence & Support
- Attitudes & Experiences



Capacity Development

- Formalized Capacity Development Plans and Strategies
- Training & Education
- Monitoring & Evaluation



Communication & Information Management

- Hazard & Risk Analysis
- Monitoring & Notification
- Disaster Assessment
- Information Collection and Management
- Media & Public Affairs



Capabilities & Resources

- Facilities & Equipment
- Human Resources
- Commodities & Supplies
- Functional Capabilities



INSTITUTIONAL ARRANGEMENTS

SUB-THEME STATUS

- Limited or No Capacity
- Early Capacity Development
- Achievement with Significant Limitations
- Substantial Progress with Some Limitation
- Advanced Capacity



The present-day structuring of DM institutional arrangements in the Philippines is the result of a process that began in the wake of the devastating impact of Typhoon "Ondoy" in 2009. Republic Act 10121 (RA 10121) of 2010 was passed into law in recognition of the fact that the Philippines was institutionally underprepared to cope with DM requirements. RA 10121 established the National Disaster Risk Reduction and Management Council (NDRRMC) and Regional and Local Disaster Risk Reduction and Management Councils (RDRRMC, LDRRMC), and designated the OCD as the principal administrative body responsible for DM activities in the Philippines. Stakeholder engagement is strong and diverse, local implementation and interagency coordination for DM remain to be fully realized. House Bill 5989 proposes the creation of a stand-alone Department of Disaster Resilience addresses this and other issues that have arisen due to the absence of a dedicated, stand-alone DM agency. Another institutional weakness identified is DM leadership positions do not require job-specific competencies or previous DM experience.

CURRENT STATUS

Limited or No Capacity



Advanced Capacity

INSTITUTIONAL ARRANGEMENTS SUB-THEMES



Organizational Structures



Leadership



Stakeholder Engagement



ORGANIZATIONAL STRUCTURES

Organization of Government DM Functions: There is a dedicated DM agency located within a larger ministry or department. The OCD, a bureau of the Department of National Defense (DND),¹ is the principal administrative body responsible for DM activities in the Philippines.

Development of DM Organizational Structure: A structured organizational arrangement with effective coordination has been designed, but implementation is not complete. Interagency DM responsibilities are clearly mapped and implemented: The National Disaster Risk Reduction and Management Council (NDRRMC) is comprised of 36 member-agencies with four representatives from Civil Society Organizations (CSOs) totaling 40 members.

Bilateral or Multilateral Engagement: There is no dedicated office for engagement with bilateral, international, and other humanitarian actors. However, within the OCD each department does its own engagement with the relevant bilateral, international, and other humanitarian actors. It is unclear whether those departments communicate between themselves.

Regionalized Capacity: DM activities, including those for response, are conducted out of regional DM offices. The OCD has 17 Regional Offices for conducting DM activities including planning, programming, implementation, monitoring and evaluation of all regional civil defense and DRRM plans.

DRR Platform: Plans exist to establish a national platform to manage implementation of DRR or the Sendai Framework, but implementation is not complete. The OCD, in recognition of the limitations of the NDRRM Plan regarding specifications for implementing the Sendai Framework, has begun conducting workshops and trainings on capacity building for the Philippine Government to formally implement the Sendai Framework.

Climate Change Adaptation (CCA) Platform: There is a national platform to manage implementation of Climate Change Adaptation/the Paris Agreement. The Climate Change Commission (CCC) is a standalone, cabinet level agency called the Climate Change Commission that is chaired by the President of the Philippines and consists of three Commissioners appointed by the President.

Sustainable Development (SD) Platform: Plans exist to establish a platform to manage implementation of SD/2030 Agenda, but implementation is not complete. The National Disaster Risk Reduction and Management Council (NDRRMC) has not integrated the Sustainable Development Goals (SDGs) of 2030 into its policies yet but is cognizant of the need to do so.

Military Engagement: The military is formally integrated in the civil DM structure. The Armed Forces of the Philippines (AFP) are fully integrated into the DM structure as they maintain membership on the National Disaster Risk Reduction and Management Council (NDRRMC).

Integration of DRR, CCA, and SD: Platforms managing implementation of DRR, CCA, and SD are partially integrated. The National Disaster Risk Reduction and Management Plan (NDRRMP) 2011 – 2028 enumerates objectives, outcomes, outputs, and activities to be achieved by 2028 with the end goal of achieving disaster risk reduction, climate change adaptation, and sustainable development.



LEADERSHIP

Emergency Management Leadership Arrangement: A singular leadership position with responsibility for all DM activities throughout government exists. The single leadership position responsible for all DM activities throughout the Philippine government is the Secretary of the Department of National Defense (DND), Chairperson of the National Disaster Risk Reduction and Management Council (NDRRMC).

Leadership Positions Filled: All DM leadership positions are filled. All the leadership positions in OCD, down to the Division level, including Regional Directors, are filled albeit some are on an Officer-in-Charge (OIC) basis. OIC means that one is in an "Acting" capacity. The official is serving their position in an interim or temporary basis until such time that a person is officially assigned the position. It may be a different person, or it may be the OIC themselves. Regarding the National Disaster Risk Reduction and Management Council (NDRRMC) in relation to Cluster Leaderships, the positions of Cabinet Secretaries are filled.

Job-specific Competencies of Leadership Positions: DM leadership positions do not require job-specific competencies or previous DM experience. OCD's Competency Framework constitutes the standard for the recruitment, selection and placement of candidates to the positions, performance management, rewards and recognition, learning and development, and training programs.² In recent years, political appointees have not been limited to the Secretaries or even just to the Undersecretaries: Assistant Secretaries down to Division Chiefs have been politically appointed. This opens the possibility that appointees are underqualified.

Political Access of DM Leadership: DM leadership enjoys an institutionalized, direct line of reporting and responsibility to the highest level of government: The Chairperson of the National Disaster Risk Reduction and Management Council (NDRRMC) is the Secretary of the Department of National Defense (DND) and Cabinet member of the Executive Branch of Government and has direct access to the President of the Philippines.

Proxy Leadership Arrangements: It is possible for DM leadership to appoint or otherwise ensure incident-specific proxy leadership during major disaster events such that centralized leadership is maintained during concurrent incidents.

Special Decision-Making and Policy-Making Committees for Response and Recovery: Special decision-making committees are in place for response and recovery operations via the National Disaster Risk Reduction and Management Council (NDRRMC). Among the members of the NDRRMC are 1) the Secretary of the Department of Social Welfare and Development (DSWD) as Vice Chairperson for Disaster Response and head of the Response Cluster and 2) the Director General of the National Economic and Development Authority (NEDA) as Vice Chairperson for Disaster Rehabilitation and Recovery and head of the Rehabilitation

and Recovery Cluster. Special disaster risk management policy-making committees or bodies in place. The National Disaster Risk Reduction and Management Council (NDRRMC) is the policy making, coordinating, integrating, supervising, monitoring, and evaluating body for DRR in the country.

Multi-Stakeholder Participation in Decision-Making Committees: Multiple stakeholder groups are included and have decision-making responsibilities. Multiple stakeholder groups are included and have operational or decision-making responsibilities: Among the members of the National Disaster Risk Reduction and Management Council (NDRRMC) are four (4) representatives from CSOs, and one (1) representative from the private sector, among others.



STAKEHOLDER ENGAGEMENT

Stakeholder Representation in Government DM Structures: Governmental DM organizational arrangements formalize NGO, private sector, and other stakeholder entities in official DM and disaster risk reduction structures through assignment of roles and responsibilities. Leadership at the National Disaster Risk Reduction and Management Council (NDRRMC) includes four (4) representatives from the CSOs, one (1) representative from the private sector, and the Secretary General of the Philippine Red Cross (PRC).

Public Private Partnerships (PPPs): Policies to support the creation of public-private partnerships (PPPs) are established in RA 10121 and its Implementing Rules and Regulations. Different levels of DRRMCs shall engage with the private sector along with CSOs and other volunteers. Also included are the rules for accreditation, mobilization, and protection of the partner private sector, CSOs, volunteers and the national service reserve corps.

NGO and Private Sector Inventory: An inventory or registry exists that lists organizations and details the capabilities and resources possessed by each. RA 10121 and its IRR stipulate that the OCD shall maintain a national roster of Accredited Community Disaster Volunteers (ACDVs), National Service Reserve Corps (NSRC), CSOs and the private sector.

Nature of Multi-Stakeholder Engagement: NGOs are comprehensively engaged in Government DM efforts in a manner that is coordinated and complementary. RA 10121 and its IRR and the National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028 stipulate that NGOs have representation in the National Disaster Risk Reduction and Management Council (NDRRMC). As such, they take part in NDRRMC functions.

Private Sector Engagement: The private sector is actively engaged in official DM efforts, including owners and operators of critical infrastructure, as guided by policies and procedures.

NGO Organizational Arrangements: There are formal NGO associations with established and active membership of NGOs with and without defined DM program areas or missions. RA 10121 and its IRR

provide how NGOs can have a formal association with Government and other established and active members in the field of DM through accreditation with the OCD and the Local Disaster Risk Reduction and Management Offices (LDRRMOs).

Academia Involvement in Government DM: Policies and strategies support a robust academic community of practitioners that contribute to official DM efforts through R&D, training, and other means using structurally integrated arrangements. Academia is involved in DM efforts in two ways.

- By membership to the National Disaster Risk Reduction and Management Council (NDRRMC).
- RA 10121 stipulates the integration of disaster risk reduction education into the school curricula of secondary and tertiary levels.

National Government Engagement in Regional and Global Efforts: Strong and effective relationships exist with global and regional organizations, including formalized support frameworks and agreements that have been ratified. The Philippine government is proactive in joining regional and global DM efforts, notably as a signatory to the AADMER.



ENABLING ENVIRONMENT

SUB-THEME STATUS

- Limited or No Capacity
- Early Capacity Development
- Achievement with Significant Limitations
- Substantial Progress with Some Limitation
- Advanced Capacity



RA 10121 establishes a statutory basis for the Philippines' national emergency management system. Coupled with subsequent laws and decrees, the country's legal framework defines component structures, creates line-item budgetary and contingency funding streams, defines disaster declaration processes, and formalizes domestic military support, among other purposes. Access to funding, especially at the local level and for a wide range of stakeholders remains challenging due to incomplete funding of contingency budgets, shallow insurance penetration, and poor access to affordable disaster loans. DRR and DM policies support the mainstreaming of national goals in development, planning, recovery, and reconstruction, and promote integration and coordination with climate change adaptation (CCA) and sustainable development (SD) policies and goals. Integration of DRR, CCA, and SD remains slow and uneven.

CURRENT STATUS

Limited or No Capacity



Advanced Capacity

ENABLING ENVIRONMENT SUB-THEMES



Legal Foundation



Financial Resources



Clear and Comprehensive Strategies



Public Confidence and Political Support



Attitudes, Engagement, and Experience



LEGAL FOUNDATION

Legal Arrangements Address DM Requirements: DM legislation is comprehensive and driven primarily by a single current disaster law. RA 10121 constitutes a comprehensive legal foundation and policy framework for addressing DM requirements.

Scope of Legislation: RA 10121 provides a statutory basis to address all phases of DM.

Basis of the Legislative Process: DM legislation is established based on an all-hazards, broad strategic vision. The National Disaster Risk Reduction and Management Council (NDRRMC), mandated by RA 10121, developed the National Disaster Risk Reduction and Management Framework (NDRRM Framework) that provides for “comprehensive, all-hazards, multi-sectoral, inter-agency and community-based approach to disaster risk reduction and management”.

Implementation Schedules in Legislation: Legislation details implementation schedules and is fully implemented. RA 10121 mandated a 90-day implementation of the National Disaster Risk Reduction and Management Plan (NDRRMP) and designated a Congressional Oversight Committee for the purpose of supervision of the implementation of the mandates of the Act. The NDRRMP 2011-2028 divides outcomes, objectives, and activities into three timelines: short-term, medium-term, and long-term.

Legislation and Institutions: Detailed provisions for the establishment of DM institutions are articulated in RA 10121.

Legislation and Budgets: Legislation provides detailed provisions for the establishment of DM budgets. Line-item allocations from the annual General Appropriations Act (GAA) (State budget), the National Disaster Risk Reduction and Management Fund (NDRRM Fund), and the allocation of a revolving fund of one billion pesos (~24 million USD) to the OCD are all dictated by RA 10121.

Legislation is Socialized: Legislation for DM is socialized throughout the government via the NDRRMC and LDRRMCs. The NDRRMC (also called the National Council) comprises twenty-five executive government departments and fifteen stakeholder entities including local government units (LGU) and CSO.

Declarations Process, Vertical Cooperation, and Resource Requisition: The Philippines has a formalized declaration of calamity process, vertical cooperation mechanisms, and means to conduct requisition of human and material resources during disaster events, as laid out in RA 10121.

Emergency Powers: Legislation enables leadership to curtail certain rights and activities during a state of emergency. RA 10121 mandates that upon declaration of a state of calamity, remedial measures be taken such as implementation of price ceilings on necessities whilst price-fixing, gouging, and hoarding of necessities are prohibited and punishable by law. In addition, the Philippine Constitution gives the government power to restrict movement during health emergencies.

DM Structures and Arrangements of Sub-jurisdictions: Legislation requires DM structures and arrangements at lower levels of government. RA 10121 mandates the formation of RDRRMCs and LDRRMCs.

Guidance for DRR Activities and Requirements: RA 10121 formally commits to sustainable development practices nationally, regionally, and locally regarding land-use regulations, infrastructure projects, and socio-economic measures including poverty reduction. Further, the National Disaster Risk Reduction and Management Plan 2011-2028 (NDRRMP 2011-2028) joins land-use recommendations and sustainable development practices with DRR-CCA activities to reflect an overarching policy of integration.

Facilitation of Military Support: Legislation enables and facilitates military support for DM purposes. RA 10121 authorizes the Chairperson of the National Council (NDRRMC), as the Secretary of the Department of National Defense (DND), to compel reserve forces for aid in relief and rescue operations during disasters.

Facilitation of International & Cross-Border Activities (Facilitation and Provision): Legislation facilitates international DM needs, including participation in regional and international DM frameworks and provisions for bilateral and international support. Legal provisions and policy declarations that facilitate international/cross-border DM needs are comprehensive. The Philippines is fully committed to international cooperation as evidenced by their ongoing collaborations with the UN Office for Disaster Risk Reduction (UNDRR) and the Asian Disaster Preparedness Center.



FINANCIAL RESOURCES

DM Budget Arrangement: Budget provides line-item funding for DM activities. RA 10121 mandates line-item allocations from the annual State budget shall be used to fund the OCD and the National Disaster Risk Reduction and Management Fund.

DM Budget Funded at Targeted Levels: The Philippines DM budget is funded at the levels targeted in legislation. This is evidenced by a 2020 status report from the Department of Budget and Finance (DBM) regarding the National Disaster Risk Reduction and Management Fund (NDRRM Fund).

Scope of DM Budget: The DM budget of the Philippines covers programmatic costs as well as administrative and operational needs.

DRM Grant Programs: Grant programs that support preparedness, DRR programs and acquisitions at the sub-regional and local levels exist but are limited in their scope. The People's Survival Fund (PSF) was created as an ongoing instrument to "provide long-term finance streams" to communities coping with and building resilience to the effects of climate change and related disasters. However, access to funding has proven elusive for its intended recipients, local government units (LGUs).

Budget Supports Training, Education, and Research & Development: The Philippine OCD, via its Capacity Building and Training Service Office, maintains ongoing formal DM/DRR training and educational programs. Two of the Research Priorities of the Harmonized National Research and Development Agenda 2016 for the

Department of Science and Technology (DOST) are Disaster Risk Reduction and Climate Change Adaptation.

National Budget Supports Sub-Jurisdictions: Capacity development at local levels in the Philippines is supported by both the Local Disaster Risk Reduction and Management Funds and the National Disaster Risk Reduction and Management Fund, however implementation obstacles exist.

Dedicated Emergency or Contingency Fund Exists: Quick Response Funds (QRFs) for emergency use are a requirement at every level of government in the Philippines.

Contingency Fund Levels: Disaster Risk Reduction and Management Funds (DRRM Funds) are required at every level of government in the Philippines. However, there is no required percentage of GDP mandated by law.

Contingency Fund Limits: Disaster reserve funds are subject to guidelines for access and provisions that limit non-disaster uses. All DM funds are monitored to ensure appropriate use. Quick Response Funds (QRFs) may only be accessed once a state of calamity is declared.

Existence of and Public Support for Catastrophe Risk Transfer: A catastrophic risk insurance market is supported by the public sector.

Insurance Industry Oversight: The Government's Insurance Commission (IC) regulates insurance markets to ensure solvency.

Availability of Low-interest Loans to Support Recovery: The Government maintains low-interest loan programs that support the recovery expenses to a limited range of stakeholders.

Availability of Microfinance Credit Schemes: The Government does not support disaster microfinance credit schemes or expedited remittances.

Guidelines for Disaster Relief Disbursement: Clear guidelines exist for the provision of disaster relief funds to disaster-impacted jurisdictions. Quick Response Funds (QRFs) may be accessed by Disaster Risk Reduction and Management Offices (DRRMOs) once a state of calamity is declared.



CLEAR AND COMPREHENSIVE STRATEGIES

Strategic Plans and Policies: Distinct DM and DRR strategic plans (strategies) and policies exist for all DM phases.

Stakeholder Engagement: DM and DRR strategic plans are inclusive of and developed in coordination with relevant stakeholders including NGOs and private sector.

Stakeholder Guidance: Guidance is provided through a combination of self-directed and facilitated means (e.g., support from technical staff) and guidance is provided to the full spectrum of DM stakeholders.

Policy Support of DRR Integration: DRR and DM policies support integration of national goals in development, planning, recovery, and reconstruction, and ensure integration and coordination with CCA and SD policies and goals. However, implementation has been slow.

DRR and DM Policy Integration Progress: The NDRRMC has representation and cooperation across high-level government agencies and ministries and is formally committed to the widespread integration of DM and DRR into policy.

Mitigation Mandates in DRR Policies: Explicit mitigation requirements are included in DRR policies and plans; however, enforcement mechanisms do not exist.

Consideration of Gender and Vulnerable Groups in Strategies and Policies: DM and DRR strategies and policies address gender issues and vulnerable groups but implementation challenges remain.



PUBLIC CONFIDENCE AND POLITICAL SUPPORT

Support from Top Government Officials: The office of the President champions DM and DRM activities, including preparedness and mitigation. The NDRRMC includes high-ranking representatives from twenty-five executive government departments, all of whom answer directly to the President.

Support of the Legislature: There exist standing legislative and advisory committees with a central focus on DM and/or DRR. The Committee on Disaster Resilience in House of Representatives and the National Disaster Risk Reduction and Management Council (NDRRMC) are both exclusively focused on DM.

Interagency and Multi-stakeholder Input in the Legislative Process: Committees facilitate inter-agency and multi-stakeholder input in the legislative process. Two seats on the National Disaster Risk Reduction and Management Council (NDRRMC) are reserved for NGOs, and there are mandates to establish provincial, city, and municipal disaster risk reduction and management councils as well as local disaster risk reduction management offices and barangay (local community) disaster risk reduction and management committees.

Public Support for DRR: The Philippine public generally supports the provisions provided in the schools and training available from the LGUs but 47.5% believe inadequate funds are preventing them from preparing adequately for a disaster.

Public Confidence in Governmental DM: The Philippine public seems to either lack confidence in or lack knowledge of DM agencies' activities.

Political Approval Ratings: There does not appear to be any formal collection of ratings or the level of public

support for the political figures or the National Disaster Risk Reduction and Management Plan (NDRRMP).



ATTITUDES, ENGAGEMENT, AND EXPERIENCE

Practical Experience of the Jurisdiction: Jurisdiction responds to more than one (1) major disaster that requires extra-jurisdictional and/or interagency coordination each year. The Philippines experiences an average of average of twenty (20) tropical cyclones per year, with about eight (8) or nine (9) making landfall. The country also contains twenty-four (24) active volcanoes that are classified as potentially deadly and costly.

Practical Experience of the Lead DM Official: Lead DM official has coordinated a major disaster requiring or in provision of extra-jurisdictional assistance within the previous year and has held their position for at least three years. Major General Delfin Lorenzana, Secretary of National Defense and Chairperson of NDRRMC, previously held the positions of Director of War, Secretary of War and Public Works, and Minister of War.

Public Engagement in DM: The Philippine public is somewhat engaged through disaster preparedness education programs, training and education, and involvement in disaster exercises. The OCD's National Disaster Risk Reduction and Management Education and Training Program (NDRRMETP) and their Civil Defense Education and Training Program (CDETP) offer disaster preparedness education programs, training, and education to a wide range of stakeholders.

Private Sector Engagement in DM: The private sector is active in DM efforts at local, regional, and national levels. For example, the Philippine Disaster Resilience Foundation is a nationwide platform that mobilizes, informs, and directs business engagements for DM.

Household Preparedness: About half of Philippines surveyed in 2017 reported inadequate household incomes to cover food, water, electricity, healthcare, and education and only 27% were confident that they could adapt to changes resulting from a disaster.



DISASTER GOVERNANCE MECHANISMS

- Limited or No Capacity
- Early Capacity Development
- Achievement with Significant Limitations
- Substantial Progress with Some Limitation
- Advanced Capacity



Disaster governance is structured to address all phases of DM, utilizing plans that guide DM and DRR activities across all the Philippine DM agencies. Continuity of operations (COOP) and continuity of government (COG) planning is required throughout the Philippines; however, guidance for the operationalization of such plans is not evident. The OCD maintains an Emergency Operations Center (EOC) outfitted with supplies, equipment, and technology to accommodate response to major events. EOC functions in the National Disaster Risk Reduction and Management Operations Center (NDRRMOC) and is staffed and equipped to ensure continuous operations, including a small duty team during non-business hours. RDRRMC EOCs serve as backup EOCs to the NDRRMOC. The Incident Command System (ICS) has been incorporated as a formal component of disaster response operations in the Philippines, and it is used as a standard of practice in all events. Overall, DM governance is strong; elements in need of improvement have been identified. The DM system would benefit from the establishment of mutual aid agreements among local government units (LGUs) and other DM entities including resource providers.



DISASTER GOVERNANCE MECHANISMS SUB-THEMES



Plans & Processes



Command, Control and Coordination Structures



Governance Infrastructure



PLANS & PROCESSES

DM Phases Addressed in Plans: Philippine formal plans and DM standard operating procedures address the phases of Response, Disaster Risk Reduction (Mitigation), and Long-Term Recovery/Reconstruction. The Philippine government apparatus is structured to address all phases of DM.

Coordination of Government Disaster Plans: Plans guide DM activities across all of the Philippine DM agencies. As the implementing arm of the NDRRMC, the OCD provides leadership in coordinating DM plans across agencies.

Continuity of Operations (COOP) and Continuity of Government (COG): COOP and COG planning is required throughout the Philippines, but plans remain under development or are untested. There are overarching plans and guidance referring to continuity of operations and continuity of government. However, guidance for the operationalization of such plans is not evident.

Roles and Responsibilities Defined by Plans: Philippine DM plans and SOPs identify roles and responsibilities for each level of government from local to regional and national actors. The National Disaster Risk Reduction and Management Plan clearly outlines the roles of the national government, the NDRRMC, OCD, RDRRMCs, LDRRMCs, and Provincial, City, Municipal DRRMCs.

Definition of the Declarations Process: The declarations process is defined in DM Plans, SOPs, and other official Philippine documentation, and declarations must follow the existing procedures. The declarations process is well defined and practiced.

Accessibility of Plans and Processes: Philippine DM and DRR plans and standard processes are publicly accessible. National Disaster Response Plans are printed and bound into booklets that are widely available to partners. They are also found online on the government website.

Coordination of Government and Stakeholder Plans: Philippine DM stakeholder community maintains sectoral and/or facility plans that are coordinated with government DM plans e.g., for hospitals, schools, power plants, prisons, etc. RA 10121 expanded the “whole-of-government” approach to the “whole-of-society approach” with the inclusion of the private sector in the Council to instigate the shift from a top-down and reactive approach to a bottom-up inclusive and participatory DRRM approach.

Mutual Aid Agreements: Mutual aid agreements exist to support DM efforts in the Philippines, but they are informal, unwritten, or unsigned. The Coast Guard, Fire, Military, and Police have mutual aid agreements at the national level. It is likely that through their coordination activities for assistance support to the lower levels of government that mutual aid agreements at lower levels are not needed.

International Mutual Aid Agreements: Formal mutual aid agreements have been established at the bilateral/global regional level with Philippine DM and DRR stakeholders. As an ASEAN Member State, the Philippines can receive international assistance from assisting Member States.

Protocols for the Use of External Disaster Assistance: Protocols are in place that facilitate and expedite the entry and use of extra-jurisdictional physical and human resources, and Philippine acceptance and coordination of bilateral and multilateral donor aid (e.g., grants/loans). The OCD Operations Service maintains a database of accredited community disaster volunteers at the national level. If international assistance is required, the Philippines, as an ASEAN Member state, complies with the rules applying to the Receiving Party, as outlined in the AADMER.

Volunteer and Donations Management Capacity: Systems are in place to process, accept, and utilize donated goods and volunteer resources in the Philippines. The OCD has a system for tracking donations.



COMMAND, CONTROL, AND COORDINATION SYSTEMS

Incident Command Systems: The Incident Command System (ICS) has been incorporated as a formal component of disaster response operation in the Philippines, and it is used as a standard of practice in events of all size and scope. The NDRRMOC utilizes a command system as an integral part of its Core Functions.

Incident Coordination Systems: Incident coordination is guided by a standardized incident management system that has been implemented at all levels of government in the Philippines – this enables transparent and expedited integration of nongovernmental and private sector resources into response activities, but implementation challenges remain. Challenges remain as implementation of ICS varies greatly at the different levels of government, especially at the Local Government Unit level.

Legal Basis of Command and Coordination Structures: Incident command, management systems and structures, and decision-making authority and reporting hierarchies are defined by the Philippines' legal and planning instruments. Although specified in law and the National Disaster Response Plans (NDRPs), the establishment and implementation of an incident command system (ICS) for on-scene management of disasters varies greatly at the different levels of government.

Command and Coordination by Function: Plans and procedures delineate leadership and coordination in the Philippines for disaster and emergency support functional areas such as SAR, Public Health, and Shelter. The National Disaster Response Plans (NDRPs) include structured planning using eleven (11) Response Clusters for focused response.

Facilitation of Interagency Coordination: Standard procedures exist for interagency coordination in the Philippines, including interagency agreements, requests for assistance, mission assignments, reporting requirements, and re-imburement. The NDRRMOC's Standard Operating Procedure (SOP) clearly defines the intra- and inter-agency information and communication flow.



GOVERNANCE INFRASTRUCTURE

Emergency Operations Center: The OCD maintains a sole-use and purpose-built EOC. The nerve center of all response coordination at the national level for the day-to-day operations includes a small duty team during non-business hours and functions in the NDRRMOC.

Dedicated EOC Facility: The Philippine National EOC is not in a dedicated facility. The NDRRMOC is in a building that shares office space with the organization's day-to-day operations.

EOC Resources: The Philippine National EOC is outfitted with supplies, equipment, and technology to accommodate response to major events per plans and procedures and is of a size to accommodate multi-agency staff. During elevated emergency conditions when the NDRRMOC is activated, this dedicated facility is fully equipped and ready to accommodate the NDRRMOC Member Agencies who convene in that facility to support response and recovery operations.

EOC Activation Readiness: The Philippine National EOC is capable of no-notice activations. The NDRRMOC has 24/7 duty staff who monitor events and alert council members and various stakeholders when required.

EOC Activation Duration: The Philippine EOC is staffed and equipped to ensure continuous operations. The NDRRMOC has a backup generator to sustain uninterrupted EOC operations. At full fuel capacity it lasts 24 hours. Another generator for the administration/offices could serve as back-up. Additionally, Camp Aguinaldo (where OCD & the Department of National Defense along with its other agencies are located) has a one (1) Megawatt power generator that can power the whole Camp.

EOC Resilience: The Philippine National EOC is physically protected from most hazards. The NDRRMOC building is hardened and designed to withstand a magnitude 8 earthquake and typhoon strength winds. It is unknown if it is protected from other hazards.

EOC Accessibility: The Philippine National EOC is easily accessible for key government officials. The NDRRMOC is situated in an easily accessible location in Metro Manila where key government officials report to support emergency operations.

Backup EOC: Backup EOCs with capabilities of the primary Philippine National EOC exists. RDRRMOC EOCs serve as back up EOCs to the NDRRMOC.

Field-Level Coordination Centers: The OCD has plans, procedures, and resources to establish multiple field-level coordination centers. Regional and Local DRRMCs are fully functional EOCs that serve as field-level coordination centers and are an integral part of the nation-wide DRRM network.

Long-Term Community Recovery Facilitation Capacity: The Philippines has plans, procedures, and

resources to support long-term community recovery and has employed these effectively in past disasters. Policies and plans for Disaster Rehabilitation and Recovery fall under the responsibility of the Vice Chairperson of The National Economic and Development Authority.

Communications Interoperability: Full communications interoperability exists amongst Philippine DM stakeholders. To ensure interoperability at the regional level, the NDRRMC utilizes tools such as video teleconferencing and information exchange mechanisms provided by the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management to ensure the Philippines' interoperability with other ASEAN member states.

Responder Credentialing: Credentialing processes and systems exist and have been tested in past disaster events. Accreditation of volunteers is the responsibility of the local government who provides endorsement for volunteers to the OCD.



CAPABILITIES & RESOURCES

SUB-THEME STATUS

- Limited or No Capacity
- Early Capacity Development
- Achievement with Significant Limitations
- Substantial Progress with Some Limitation
- Advanced Capacity



Dedicated front-line disaster response facilities and material resources are unevenly distributed and, in some cases, insufficient, especially in rural and remote areas. For example, not every city or municipality has its own dedicated fire station. Whilst a majority (50-75%) of LGUs have sufficient material resources designated for emergency management, resource readiness differs widely between locations. Coordination at the NDRRMOC reduces this inequality somewhat by expediting delivery of necessary supplies and equipment to threatened areas. The Department of Interior and Local Government (DILG) has the overall responsibility to ensure that communities are equipped with necessary skills and capabilities to cope with the impacts of disasters. However, a centralized, standardized electronic reporting system for all levels of government to utilize would benefit the entire DM response apparatus.



CAPABILITIES & RESOURCES SUB-THEMES



Facilities & Equipment



Human Resources



Commodity & Supply Inventory



Functional Capabilities



FACILITIES & EQUIPMENT

Emergency Services Facilities Capacity: 1 fire station per 50-100,000 population; 1 fire station per 20-50 square miles. The average number of fire stations in the Philippines per 100,000 population calculated across the 81 provinces is 2.33. Hence, there is at least one (1) fire station per 50,000 population. Not every province, city or municipality has its own dedicated fire station. The average number of fire stations across all the provinces is slightly less than one (1) fire station (0.8) per 50 square miles which leaves large areas unattended.

Material Resources Available for DM: The majority (50-75% or more) of jurisdictions are equipped with resources appropriate to manage known hazards. The majority of jurisdictions in the Philippines are equipped with resources appropriate to manage known hazards.

Supplemental DM Resources: Supplemental DM resource and equipment requirements in the Philippines are secured through a comprehensive blend of formalized private-sector partnerships, relationships with the NGO sector, and other means. In the event of an emergency, the utilization of resources from the provincial/regional level organizations may be required. Regional DRRMC Chairpersons may tap the facilities and resources of other government agencies and private sectors.

DM Equipment Inventories: Inventories of disaster-relevant equipment are maintained but are incomplete and/or not regularly updated. The National Disaster Risk Reduction and Management Council is responsible for providing guidelines on maintaining the inventory and monitoring of all relief goods, including donations. The responsibility for maintaining equipment inventory falls on the Local Government Units.

Shelter Capacity: Emergency shelters with the capacity to serve at least 50% of anticipated needs have been identified, but alternate sheltering capabilities would likely have to be identified to address all requirements. Emergency shelter operations are the purview of Local Government Units. The National Government assists with resource shortfalls when needed, and coordination takes place at the NDRRMOC.

Shelter Suitability Assessments: All shelters have been assessed for suitability. The LGUs are responsible, together with the Red Cross, for assessing shelter suitability.

Shelter Equipment: The majority (between 50 and 75%) of shelters are equipped to meet disaster-specific requirements. Shelters are equipped by the Red Cross in cooperation with LGUs.

Warehousing Capacity: Purpose-built warehouse and staging facilities exist to meet logistics operations requirements in a major disaster event. The responsibility for maintaining warehouses falls to LGUs.

Public health and medical facilities. Public health and medical facilities are an integrated component of the nation's DM system. As an integral component of the Health Cluster, individual hospitals, health facilities, and the Department of Health all play key roles in the DM system.



HUMAN RESOURCES

Emergency Services Staff: Between 1 and 2 firefighters per 1000-5000 population is the current level of firefighting personnel in the Philippines.

Planning Staff: A cadre of trained staff with job functions dedicated to pre- and post-disaster emergency management activities and programs is maintained at levels sufficient to meet programmatic needs. The OCD has trained, dedicated staff that ensures pre- and post-disaster emergency management activities and programs is maintained at levels sufficient to meet programmatic needs for communities, cities, municipalities and provinces are consistent with the national plans.

Surge Staff Documentation and Procedures: Surge staffing needs are formally addressed in the jurisdiction's disaster plans and procedures, and sufficient surge staffing resources have been identified and verified. Surge staffing needs are met by NDRRMC member-agencies. Accredited volunteers are also utilized to support surge staffing needs.

Surge Staff Source: Surge capacity staff are drawn from throughout the DM stakeholder community, including NGOs, the private sector, and other government agencies. Surge staffing is a standard component of response. The main sources of surge staffing needs are from NDRRMC member-agencies, who are also augmented by accredited volunteers.

Rosters of Trained Professionals: Rosters of trained professionals can support critical post-disaster needs are maintained. According to OCD staff, rosters of trained professionals are kept. This responsibility generally falls to local governments.

City Pairing or Similar Technical Staffing Partnerships: Programs exist to a limited extent. City pairing arrangements, secondment schemes, or other similar mechanisms exist to a limited degree in the Philippines.



COMMODITY & SUPPLY INVENTORY

Generating Estimates of Post-Disaster Commodity Needs: Estimates of post-disaster commodity needs (e.g., food, water, pharmaceuticals) are developed using scenario-based planning. Post-disaster needs are estimated through a Pre-Disaster Risk Assessment which is conducted at the NDRRMOC to evaluate the hazard's level of risk in a specific area to determine the appropriate level of government response.

Commodity Stockpile Quantities: Commodity stockpiles are maintained at levels that do not meet estimated needs, but contracts are in place to address anticipated deficiencies. Commodity stockpiles are maintained by local government units. Accurate stockpiles are not known, as there are no known standardized mechanisms to determine adequacy levels.

Location of Commodity Stockpiles: Commodity stockpiles are kept in distributed locations that enable access to all locations throughout the area of analysis within 24-48 hours. Local government units maintain commodity stockpiles while RDRRMCs coordinate the movement and distribution of commodities to quickly get resources to where they are needed within their region.

Basis of Commodity Stockpile Distribution: Commodity stockpiles are distributed according to assessed risk and anticipated need. Commodity stockpiles are distributed by the RDRRMC through the Logistics cluster.

Commodity Contracts: Contracts with commodity providers exist and are assessed for reliability during disasters. Private industry partners are an integral part of the National Disaster Risk Reduction and Management Council's Response Cluster.

DM Resource and Supply Inventories: DM resource and supply inventories spanning all agencies, facilities, and jurisdictions exist. Overall responsibility for DM resources at the national government level resides with the Logistics Cluster.

Frequency of Resource and Supply Inventory Updates: Regular status updates are made to supply inventories. According to the National Disaster Risk Reduction and Management Plan, all response agencies are directed to conduct inventory of existing Disaster Risk Reduction and Management (DRRM) resources, however the frequency is not indicated.

Hosting of Resource and Supply Inventories: DM resource inventories are managed through multiple (individual) information systems, and/or a centralized system is planned or under development but is not yet operational. All response agencies are directed to conduct inventory of existing Disaster Risk Reduction and Management resources. However, the way in which this is managed is not indicated.

National government's defined disaster logistics program or capability: A national disaster logistics program or capability exists. Emergency Logistics Management is part of the NDRRMOC's Core Functions.



FUNCTIONAL CAPABILITIES

Support for psychosocial recovery: National-level support for psychosocial recovery is comprehensive and effective. Mental health and psychosocial support falls within the Health Cluster, with the Department of Health as the lead government agency.

Evacuation Capacity: Comprehensive evacuation support capacity exists at the national level to facilitate the evacuation efforts of subnational and/or local governments. The Logistics Cluster and the Vice Chairperson for the Department of Social Welfare and Development has overall responsibility for evacuation activities.

National plans, strategies, or policies that address post-disaster water, sanitation, and hygiene (WASH) needs: WASH is addressed in plans, strategies, and policies, and information regarding the mechanisms for support to impacted areas is provided. The Department of Health is the responsible lead government agency for WASH activities.

Managing the safety and security needs of disaster-affected populations: Safety and security responsibilities are defined and assigned to an appropriate ministry, office, or stakeholder. Safety and security are considerations for the Department of Social Welfare and Development, the Department of Health, and to some extent Department of National Defense, the Department of Interior and Local Government.

HAZMAT response capacity: HAZMAT response supported through a centralized (i.e., national level) HAZMAT response capacity. The Bureau of Fire Protection (BFP)-HAZMAT has the responsibility for monitoring emergency incidents involving response to chemical, biological, radiological, nuclear, and explosives, and fire.

Support for search and rescue activities: National search and rescue capabilities exist. The AFP is the Government Cluster Lead for the Search, Rescue and Retrieval (SRR) and leads SRR operations and activities.

Support for preparedness, response, and recovery in the Agriculture sector: Support for the disaster-related needs of the agriculture sector are comprehensive and are addressed in plans, policies, and or strategies. Damages to agriculture go through the Regional Disaster Risk Reduction and Management Operations Center (RDRRMOC) and OCD regional offices.



CAPACITY DEVELOPMENT

SUB-THEME STATUS

- Limited or No Capacity
- Early Capacity Development
- Achievement with Significant Limitations
- Substantial Progress with Some Limitation
- Advanced Capacity



There is widespread formal and informal engagement in the promotion of disaster awareness, preparedness, and training through government-sponsored offerings and programs from community organizations and networks. Government-sponsored programs are offered through the Capacity Building and Training Service Office at the OCD, Department of Education (DepEd), CHED, Technical Education and Skills Development Authority (Tesda), and the National Disaster Risk Reduction and Management Council. The Humanitarian Leadership Academy Philippines, a nongovernmental organization, offers the Philippine Disaster Risk Reduction and Management System online course in partnership with OCD. In addition, the Philippine Red Cross (PRC) offers community programs in disaster risk reduction, disaster preparedness, disaster response, and disaster recovery, among others. The Department of Science and Technology's (DOST) Harmonized National Research and Development Agenda 2016 includes priorities for disaster risk reduction and climate change adaptation, and the higher education community offers programs that support DM professionalization, including the hosting of symposia on DM-related topics.



CAPACITY DEVELOPMENT SUB-THEMES



Formalized CD Plans & Strategies



Training and Education



Capacity Development Monitoring & Evaluation



FORMALIZED CD PLANS & STRATEGIES

Training and Exercise Requirements and/or Recommendations: Training and exercise requirements and/or recommendations are established for all staff active in DM, for leaders, and for the media. The National Disaster Risk Reduction and Management Plan 2011-2028 stipulates the establishment of DRRM Training Institutes.³ Regional and local disaster risk reduction and management offices (DRRMOs) are mandated to provide “training, orientation, and knowledge management activities on disaster risk reduction and management at the local level”.⁴ (Section 12)

Position-Specific Competency Requirements: Position specific competency requirements have been identified and serve as a driver for training and education strategies. DM leadership positions do not require job-specific competencies or previous DM experience but it is generally expected. However, there has been a recent trend of political appointments based on politics rather than competencies, as mentioned earlier.

Coordination of CD Efforts: Philippines has a designated government agency or office tasked with coordination and support of DM and DRR capacity development. As mentioned earlier, the Capacity Building and Training Service Office at the OCD maintains ongoing formal DR/DRR training and educational programs. It is mandated that OCD is the designated government office tasked with coordination and support of DM and DRR capacity development.

Strategy Driven Efforts: DM and DRR capacity development plans and strategies are drafted and used to drive capacity development efforts. The National DRR and DRM Strategy 2011-2028 has plans and strategies at all levels to increase people’s resilience and decrease their vulnerabilities.

DM and DRR Capacity and Resource Needs Assessments: DM and DRR capacity and resource needs are periodically assessed through deliberative planning. Monitoring and evaluation of needs are done periodically by the Local, Regional, and National DRRM Councils.

Coordination with Regional/Global CD Efforts: CD efforts coordinated with Regional/global efforts. The Philippines actively contributed to the development of the SFDRR 2015-2030. In addition, the Philippines is signatory to the legally-binding AADMER in 2009.⁵

National Science and Technology (S&T) Agenda: National S&T agenda addresses DM and DRR needs. The Harmonized National Research and Development Agenda 2016 priorities include strengthening disaster risk governance to manage disaster risk through stronger involvement and use of science in policy, decision-making, and investing in DRR for resilience.



TRAINING & EDUCATION

Conduct of DM and DRR Training: The Philippines maintains formal DM/DRR training programs utilizing facilities distributed nationally, with dedicated staff, and recurring budgets.

Scope of Training and Education Curriculum: DM and DRR training curricula address a comprehensive and expanding set of training and education requirements that closely track all typical and emerging needs across a diverse audience of stakeholders.

Training Methods: Training is provided in geographically distributed in-person training facilities, centralized in-person training facilities, and online study programs.

Training Catalog and Schedule: A structured annual training schedule and catalog of available courses and dates that support comprehensive training throughout the year exists. The OCD posts its National Disaster Risk Reduction and Management and Civil Defense Education and Training Catalogue on its official website.

Training Records: Training records are maintained in a centralized system. The OCD has a Records Department wherein all activities are documented.

Program to Support Exercises: A formal exercise program with a dedicated staff is maintained. Formal exercise programs are available via the Capacity Building and Training Service Office, under the auspices of the OCD and the DND.

Exercise Evaluation Standards: Exercise evaluation standards do exist and are common throughout the area of analysis. The National Disaster Risk Reduction and Management Plan 2011-2028 stipulates that trainings, simulation exercises, and drills be regularly conducted and evaluated.

Structured Annual Exercise Schedule: General recommendations for exercise schedules are provided. The NDRRMC sets a notional calendar each year regarding drills and simulation exercises.

National-Level Exercise: National-level exercise is conducted on an annual basis. The NDRRMC conducts nationwide earthquake drills to strengthen regional and national mechanisms for coordination during an emergency and to bolster preparedness in local communities.

Support for Sub-Jurisdictional Exercises: The government provides comprehensive technical, advisory, financial, and material support to sub-jurisdictions. RA 10121 mandates that disaster risk reduction and management training institutes must be accessible to public and private stakeholders at local and national levels.

Exercise Participation Requirements: All government agencies with DM functions required to participate in disaster exercises.

Stakeholder Involvement in Training and Exercises: NGO and private sector stakeholders are invited to participate in training and exercises via the National Disaster Risk Reduction and Management Education and Training Program.

DM Programs in the Higher-Ed Community: A robust, formally organized community of higher education institutions offering programs that support DM professionalization, including the hosting of symposia on DM-related topics.

National DM Curriculum: National DRM curriculum provided to K-12 schools and use of that curriculum is required.

Public Education Methods: Multimodal disaster preparedness information is provided to targeted sectors, stakeholder groups, and audiences; disaster preparedness information is provided to a generalized audience through media or other active campaigns, and disaster preparedness information is provided on various government websites.

Community Centers and Public Awareness/Education: There is widespread formal and informal engagement in the promotion of disaster awareness, preparedness, and training through community organizations and networks.

Formal public awareness, preparedness, and resilience-building programs: Public awareness, preparedness, and resilience-building programs are carried out in the Philippines on a regular basis.

Disaster Preparedness Information for the Private Sector: Private sector provided with informational and resource support for preparedness and resilience efforts.

Higher-Ed Program and Degree Offerings: Masters' and bachelors' degrees in DM are offered.



MONITORING & EVALUATION

Standard Evaluation Procedures: RA 10121 mandates the OCD conduct periodic assessments and monitoring of the National Disaster Risk Reduction and Management Plan.

Review of Plans, Strategies, and SOPs: According to the Rehabilitation and Recovery Planning Guide developed by the National Disaster Risk Reduction and Management Council, programs should monitor the implementations and assess needs, plans, and strategies on a yearly basis.

Review of DM Legislation: Rep. Ronnie Ong presented a resolution in 2019 for a full review of RA 10121 by Congress. In early 2020, Sen. Sherwin Gatchalian sought a Senate review of RA 10121.

Requirements for Post-Disaster Reviews: The Rehabilitation and Recovery Planning Guide 2019 as well as other disaster planning documents require post-disaster review and incorporation of lessons learned into the plans, laws, and the DM budgets.

Evaluations Incorporated into Plans, Policies, and/or SOPs: Local government units and other entities have given reports and feedback related to the evaluation of the current plans, policies and/or SOPs, but it is unclear whether they are directly used in improvements.



COMMUNICATION & INFORMATION MANAGEMENT

- Limited or No Capacity
- Early Capacity Development
- Achievement with Significant Limitations
- Substantial Progress with Some Limitation
- Advanced Capacity



The Philippines has standardized the risk assessment process at the national, provincial, and local levels. However, local implementation has been slow due to lack of technical support and financial shortages. Similarly, although a centralized GIS system exists to support risk assessment reporting, lack of personnel with sufficient training or technical skill makes it difficult for many local government units to access maps or other data. Hazard monitoring occurs for all significantly populated areas and utilizes the most up-to-date methods and technologies. NDRRM member groups monitor all major hazards.

CURRENT STATUS

Limited or No Capacity



Advanced Capacity

COMMUNICATION & INFORMATION MANAGEMENT SUB-THEMES



Hazard & Risk Analysis



Monitoring and Notification



Disaster Assessment



Information Collection, Management, and Distribution



Media and Public Affairs



HAZARD AND RISK ANALYSIS

Risk Assessment Processes and Standards: Philippines has instituted a wholesale standardization in the risk assessment process at the national, provincial, and local levels, however implementation challenges remain.

Risk Assessment Requirements for Planning: Risk assessments are a requirement in the National Disaster Risk Reduction and Management Plan; however, there are implementation challenges due to technical and financial shortages.

Risk Assessment Staffing Capacity: Risk assessment staff exists at levels sufficient to address jurisdictional needs, but sub-national support is insufficient.

Vulnerability Measured in Risk Assessments: While vulnerable groups/areas are mentioned, vulnerability mapping is absent from any DRR and DM plans published.

Climate Change Included in Risk Assessments: Most programs related to climate change have been reactive instead of proactive. The Department of the Interior and Local Government's Local Government Academy is exploring how climate and disaster risk assessment relate to local government units' (LGUs) functions such as development of their comprehensive land use plan and comprehensive development plan by considering the hazards, exposures, and vulnerabilities of the LGUs.

Local and Indigenous Knowledge in Risk Assessments: Local government units sometimes lack sufficient capability to conduct multi-sectoral risk assessments. Ideally, the Philippines would support the mainstreaming of contextualized knowledge since the local governments and authorities are knowledgeable about local needs and gaps.

Hosting of Risk Assessment Information: RA 10121 mandates that a Disaster Risk Reduction and Management Information System and GIS-based national risk map database be established for policy, planning, and decision-making tools. However, it is sometimes difficult for local government units to access applicable maps or other data as they have not received sufficient training or lack the technical skills.

Risk Mapping Requirements: Risk maps are usually a part of the overall national efforts, but only a recommendation for local government units. However, there are no requirements to submit risk maps in the DRR and DM process.

Risk Mapping Capacity: The Philippines has made significant progress in collecting comprehensive and updated risk information to create risk maps using different technological tools including GIS, LiDAR, Interferometric Synthetic Aperture Radar, computer simulations, and fault mapping. There remains limited capacity for mapping at the local level.

Risk Assessment Link to Development Processes: Risk assessment informs the development process but problems with implementation and working jointly across units exists.



MONITORING AND NOTIFICATION

Existence of Hazard Monitoring: Monitoring of all major hazards is occurring. Various groups within the NDRRMC are monitoring all major hazards for the country. They have a robust network of organizations, sensors, and capacities to detect severe weather, seismic activity, flooding, and dam levels/issues.

Coordination of Hazard Monitoring: Single office tasked with oversight and/or management of monitoring for all major hazards. Per RA 10121, hazard monitoring is coordinated by OCD by leveraging the capabilities of agencies within NDRRMC for early warning.

Population in Areas Served by Monitoring Efforts: Monitoring of hazards benefits more than 75% of the jurisdiction's population. Hazard monitoring occurs for all significantly populated areas of the Philippines.

Doppler Radar Coverage: Between 75 - 100 % of land area. The Philippines Atmospheric, Geophysical and Astronomical Services Administration operates eleven Doppler radars and five coastal radars that cover major populated land masses.

Hazard Monitoring Responsibility: Hazard monitoring managed by agencies or offices with relevant or hazard-specific missions. Overseen by the NDRRMC and communicated to the OCD Operations Center, hazard-specific early warning is conducted for the entire Philippine archipelago by various agencies and ministries.

Hazard Monitoring Methods: Hazard monitoring efforts in the Philippines utilize the most up-to-date methods and technologies for all hazards.

Assignment of Notification/Early Warning Responsibilities: Notification/early warning functions consolidated and assigned to the DM agency for all hazards. Hazard notifications and early warning functions are consolidated and assigned to the OCD for appropriate action, supported by the agencies of the NDRRMC.

Standard Procedures for Early Warning: Standard procedures for all hazards. The OCD Operations Center's standard operating procedures clearly lay out the procedures to facilitate notification and early warning from national to local levels for all hazards.

Targeted Early Warning Capabilities: For only some hazards (that georeferenced warning is possible), for only some locations, or geo-referenced warning capacity remains under development. Based on the extent of the hazard data that comes in from the sensors, OCD Operations Center's standard operating procedures state that messages will be tailored to the appropriate area(s).

Early Warning Systems Coverage Area: 75% of the population is served by early warning systems. NDRRMC agencies cover relevant areas of the Philippines with various hazard sensors while nearly all of the Philippines is covered by the SMS early warning network.

Testing of Early Warning Systems: Warning systems are tested for all hazards with warning capabilities. Early warning systems are tested per OCD's standard operating procedures.⁶

Training and Education for Warning Recipients: Populations served by early warning systems are provided with pre-disaster training or education about message meaning and appropriate response. The NDRRMC supports regional and local natural DM committees with training, information, and material support.

Population Targeting of Early Warning Messages: Early warning systems have the capacity to address the needs of specific populations (e.g., vulnerable populations.) in all locations. Vulnerable populations are considered for disaster risk reduction and response at local levels – including early warning systems.

Early Warnings Communication Channels: Warnings provided through radio, television, social media, landline phones, mobile phones, and sirens. Per Republic Act 10639, early warning for all hazards will be delivered by mobile (cellular) phones – specifically via Simple Message Service (SMS).



DISASTER ASSESSMENT

Disaster Assessment Capabilities: Disaster assessment systems and procedures exist, supported by policy and in practice.

Disaster Assessment Requirements: Assessments are regularly used to inform declarations decision-making. Disaster assessments are a requirement under the disaster declaration process and the results are used to inform declarations decision-making.

Nationally Authorized Assessment Methodology: A nationally authorized assessment methodology exists, and it is adhered to. The National Disaster Response Plans and the OCD Manual for Response have detailed provisions on disaster assessment methodologies. The methodology is universally applied across the government.

Assessment Resource Capacity: Governmental assessment capacity is sufficient. Government in general has sufficient levels of staff, equipment, and resources to conduct assessments in the immediate aftermath of major events.

Assessments and Incident Action Planning: Assessment outcomes are generally a key driver behind incident action planning. The NDRRMC SOP & Guidelines that include the National Disaster Preparedness Plan 2015-2028, and the National Disaster Response Plans have incorporated some of the lessons learned from Yolanda and previous major disasters.¹⁰⁻¹³

Stakeholder Engagement in the Assessment Process: Standard methodologies require multi-stakeholder engagement. Assessment teams consist of representatives of LGU sector agencies and other relevant stakeholders. In large disasters international humanitarian organizations are also heavily involved in the assessments.



INFORMATION COLLECTION, MANAGEMENT, AND DISTRIBUTION

Data Collection and Storage Standards: National standards have been developed for data collection and storage, but implementation challenges exist. National level data collection and storage standards exist, although have not been fully implemented by all data providers.

Format of Data: Digital format is primarily the case at the jurisdictional level and mixed at the sub-jurisdictional levels. Data is primarily in digital format with access restrictions.

Data Sharing: Data is shared between different levels of government, but not outside of the government realm. Data is readily shared between different levels of government. During response and recovery activities, provincial and regional DM bodies provide data to the national level and that data is disseminated from the national portal.

GIS-Based Data Management System to Leverage a Common Operating Picture (COP): COP capabilities are in development however information gaps from a lack of available data exist. The OCD is working to develop a common operating picture utilizing the PhilAWARE web application. The PhilAWARE platform provides access to real-time and historical hazard information, risk assessments, and base data coming from several authoritative government sources, resulting in a centralized data repository.

Disaster Loss Database Linked to the National Statistics Agency: A national disaster loss database is linked to the national statistics agency. The OCD provides national disaster loss data directly to the Philippines Statistics Authority.

Facilitation of Information Sharing: DM information sharing occurs through disparate systems or platforms. DM information and data are provided through a series of platforms. The current USAID-funded PhilAWARE initiative seeks to bring all data sources to a common location to support DM information sharing.



MEDIA AND PUBLIC AFFAIRS

Public Information Officer: The jurisdiction utilizes a single point of contact for public affairs across all government DM functions. Media interviews to release updates on disasters are provided by the RDRRMCs through their officially designated spokesperson. Official disaster updates must adhere to strict rules about informing the OCD and the NDRRMOC. It is more often the authorized NDRRMOC spokesperson who gives the interview to the media.

Documented Communications Strategy: The jurisdiction has a documented communications strategy. The NDRRMOC serves as the official repository of all disaster information. Data and information are pushed up from Member Agencies, RDRRMCs and OCD Regional Offices, who are responsible for validating and verifying the information prior to its submission to the NDRRMOC.

Dedicated Media Briefing Space: The jurisdiction provides a dedicated media briefing space collocated or close to the DM facility. The NDRRMOC conference room is the designated area for the NDRRMOC spokesperson to speak with the media.

Media Training: Media training on disaster-specific communication is offered to key officials and government leadership.

Information Dissemination Formats: Processes exist to obtain and disseminate public information in multiple formats and through multiple channels. The public receives alerts through multiple channels; via SMS text message, siren warning, cell broadcast alert through the TELCOs Global and Smart, and through digital television via the Emergency Warning Broadcast System (EWBS). The National DRRMC also has a strong social media presence it leverages to push out information to the public.

Pre-scripted Information Bulletins: Pre-scripted information bulletins have been developed for all major hazards. Messages are pre-crafted at the national level at the NDRRMOC.

Public Information Audiences: Public information capacity includes capability to communicate with special-needs and vulnerable populations. The NDRRMOC and OCD offer training through a one-day Disaster Risk Reduction and Management (DRRM) Course and is designed to increase awareness and includes addressing persons with disabilities, children, women, and youth.

Tracking Publicly-Generated Information: Publicly-generated information is tracked and used, but no dedicated policies or procedures exist to do so. Social media is the main conduit used by NDRRMOC/OCD for quick dissemination of hazard notification and is the chosen method woven into the various sections of their Plans. Though social media is pushed out, user responses are not tracked.



NATIONAL RECOMMENDATIONS

NATIONAL RECOMMENDATIONS

The recommendations presented are based on findings from the Philippines' National Disaster Preparedness Baseline Assessment. The assessment by the Pacific Disaster Center in coordination with Office of Civil Defense and other disaster management stakeholders in the Philippines began in late 2018 and completed in 2021.

The following opportunities for improving disaster management in the Philippines have been identified through a thorough examination of DM functions and capabilities at all levels of government. Available resources are unevenly distributed and often insufficient in rural and remote areas. The government is burdened by multiple issues stemming from a lack of funding, insufficient resources, a lack of interagency coordination, and no stand-alone DM agency.

The development of a stand-alone, cabinet level DM agency fully optimizes the DM capacity throughout all levels of government in the Philippines. With the establishment of a fully functioning DM agency in the government an opportunity will be created to implement recommendations for improvement in DM functions within the Philippines.

Requirements for the development of plans for a continuity of operations (COOP), continuity of government (COG), or interagency agreements has never been enforced resulting in the absence of any plans. This presents a new opportunity to review what current plans exist, develop new plans, and review the existing interagency agreements that can be used to best leverage response efforts for DM.

Insufficient funding either is a contributing factor or the main factor for every weakness identified within the NDPBA. The development of a DM agency utilizing the "Top Down" government approach in funding can address the identified issues resulting from insufficient funding within the government.

The following recommendations are necessary actions identified to be taken by the Government of the Philippines and its partners to further build capacity for disaster resilience.



CREATE A STANDALONE, CABINET-LEVEL DM AGENCY TO FULLY OPTIMIZE OVERALL DM CAPACITY AND TO SECURE A LARGER BUDGET, MORE RESOURCES, AND MORE MANPOWER.

- Garner support from the public and all the stakeholders for the passing of the bill (HB 5989) to create the agency by conducting an information dissemination campaign means of showing support for the bill.

2

ESTABLISH SEPARATE AND DISTINCT OFFICES WITHIN THE DM AGENCY DEDICATED TO 1) ENGAGEMENT WITH BILATERAL, INTERNATIONAL, AND OTHER HUMANITARIAN ACTORS; AND 2) MANAGEMENT OF THE IMPLEMENTATION OF DRR, CCA, THE SENDAI FRAMEWORK, AND THE SD 2030 AGENDA.

- Identify the processes by which creating the separate office could be achieved under the auspices of the DM agency, i.e., whether by an Act of Congress or simply a memorandum drafted by the DM agency.
 - Establish framework to clearly define and implement procedures that ensure the seamless alignment of DRR, CCA, Sendai, and SD 2030 Agenda in policies and plans among and between offices.
 - Conduct a comprehensive review of existing policies and plans regarding DRR, CCA, Sendai, and the SD 2030 Agenda to deconflict points of conflict or misalignment.

3

MANDATE NDRRMC MEMBERS TO STRICTLY ADHERE TO A STANDARD OPERATING PROCEDURE (SOP) TO DEAL WITH IMPLEMENTATION CHALLENGES.

- A thorough review of debriefing meeting notes should be conducted to identify the major implementation challenges in all four phases of the disaster cycle.
 - All members should agree on which challenges urgently need to be addressed.
- Develop a standard operating procedure that will address implementation challenges.
 - Create standardized plan templates that will ensure consistency and easy integration into existing National DRRMC plans/procedures.
 - Conduct plan training and exercises on these SOP.

4

FORMALIZE DM PROFESSIONAL COMPETENCIES USING OCD'S COMPETENCY FRAMEWORK.

- Institutionalize the standards developed within the competency framework.
 - Conduct national-level workshops on the developed competencies and require participation at all levels of government.
 - Standardize the process of implementation of the developed competencies to help ensure consistency and easy execution.
 - Establish a training schedule to ensure all the relevant personnel are knowledgeable in the implementation process.

5

ADDRESS THE INSTITUTIONAL, OPERATIONAL, AND POLICY BARRIERS FACED BY COMMUNITIES SEEKING ACCESS TO THE PEOPLE'S SURVIVAL FUND.

- Establish a public database wherein all stakeholders can view and track the progress of approved projects to facilitate transparency and knowledge-sharing.
 - Include financial information (amounts awarded; amounts spent)
 - Allow the public to view the proposals of approved projects.
 - Show the progress of approved projects.
- Require entities awarded financial support to compile, upon completion of a project, a narrative description (either in writing or on video) of the step-by-step process whereby their winning proposal was developed.
 - Include discussion about experts consulted and their contributions.
 - Include discussions with representatives from all stakeholder groups.
- Establish a large advisory committee at the national level to assist LGUs' proposal and application processes.
 - Ensure the advisory committee has members with
 - A range of expert knowledge.
 - Direct access to financial decision makers.
 - Availability to guide LGUs at each stage of the application process.
 - Ability to guide LGUs on community-driven approaches.
 - Ensure that LGUs have direct access to the advisory committee.

6

EXPLORE STRATEGIES TO SUBSTANTIALLY INCREASE ANNUAL FUNDING LEVELS FROM THE NATIONAL BUDGET FOR THE NATIONAL DRRM FUND.

- Consider a mandate to require a minimum of 1.5% GDP to be earmarked from the GAA for the National Disaster Risk Reduction and Management Fund.
 - Avoid conflict over program cuts by taking the same percentage off the top of all allocations.
- Amplify public appeals for donations nationally and internationally.
- Consider a DM tax on certain items like cigarettes, alcohol, and/or luxury items.
- Consider a DM tourism tax, e.g., on hotel rooms, for travelers.

7

ESTABLISH LOW-INTEREST LOANS AND MICROFINANCING OPTIONS TO SUPPORT HOUSEHOLD, BUSINESS, OR NGO RECOVERY COSTS THAT ARE INELIGIBLE UNDER OTHER FUNDING STREAMS OR OPTIONS.

- Establish a multi-sectoral task force to proceed with the goal of operationalizing the provisioning of low-interest loans and disaster microfinance credit schemes and/or expedited remittance mechanisms.
 - Engage with state-owned banks.
 - Identify stakeholders that would benefit and can support repayment.

8

STRENGTHEN PUBLIC CONFIDENCE IN GOVERNMENT DM CAPABILITIES AND SUPPORT FOR INCREASING DM CAPABILITIES.

- Establish formal collection of public opinions and attitudes regarding confidence in, support for, and knowledge of the government's DM capabilities.
 - Utilize the data to inform the style and substance of outreach, engagement, and education.
 - Utilize the data to identify gaps in capabilities.

9

MANDATE DRRMCS AT EACH LEVEL OF GOVERNMENT TO ESTABLISH AND MAINTAIN CONTINUITY OF OPERATIONS (COOP) AND CONTINUITY OF GOVERNMENT (COG) PLANS.

- Standardize COOP and COG plan process
 - Create standardized plan templates to help ensure consistency and integration into National DRRMC plans.
 - Establish a planned maintenance and review schedule to ensure plans are regularly updated.
 - Conduct COOP and COG plan training and exercises.
 - Establish a training schedule to ensure all DRRMCS are knowledgeable in the mandated COOP and COG plan process.
 - Conduct an annual national government level exercise that requires participation at all levels of government.
 - Address COOP and COG deficiencies identified during training and exercise in an annual national improvement plan.

10

FULLY IMPLEMENT A STANDARD INCIDENT MANAGEMENT SYSTEM AT ALL LEVELS OF GOVERNMENT.

- Mandate compliance with the use of the Incident Command System (ICS) for all levels of government.
 - Conduct a survey to determine existing ICS implementation gaps.
 - Identify efforts to address gaps.

11

REQUIRE ALL LGUS TO SUBMIT INVENTORY LISTS ANNUALLY TO THEIR REGIONAL DRRMCS SHOWING ALL DM EQUIPMENT IN COMMODITY STOCKPILES.

- Create a standardized electronic reporting system for all levels of government to utilize.
 - Create a standard format for all levels of government to track disaster-related inventory.
 - Allow DRRMCs at all levels to access inventories in their region and allow comprehensive visibility to the NDRRMC.

12

ESTABLISH FORMAL MEMORANDA OF UNDERSTANDING (MOU) WITH APPROPRIATE PARTIES TO SUPPORT DM EFFORTS AT REGIONAL, PROVINCIAL, AND LOCAL LEVELS SIMILAR TO THE WAY THE COAST GUARD, FIRE, MILITARY, AND POLICE HAVE MUTUAL AID AGREEMENTS AT THE NATIONAL LEVEL.

- Compel RDRRMCs to identify and coordinate proximal municipalities and LGUs to facilitate mutual agreements that would best utilize available and proximal resources.
- Establish formal agreements with resource providers.

13

INCREASE THE OVERALL STRENGTH OF EMERGENCY SERVICES CAPACITY AT ALL LEVELS OF GOVERNMENT.

- Assess firefighting capabilities in each jurisdiction.
 - Require each Regional DRRMC to survey and evaluate its jurisdiction's emergency services capacity annually.
- Evaluation standards should be established and disseminated by the NDRRMC.
- Establish required timeline for annual evaluation of standards.
 - Consolidate all reports to gain a comprehensive picture of capabilities.
 - Determine priority areas using risk and vulnerability measures.
- Invest in strengthening volunteer firefighter programs.
 - Survey neighborhoods for possible suitable candidates for fire team programs.
 - Increase the number of firefighters by offering incentives for participants willing to go through training and certification.
 - Increase the number of training offerings.
 - Invest in equipping volunteer fire teams.

14

STRENGTHEN THE SHELTERING PROGRAM AT ALL LEVELS OF GOVERNMENT.

- Task the Department of Social Welfare and Development (DSWD) with creating shelter assessment guidelines.
- LGUs, in coordination with their respective PRC offices, shall assess sheltering program in each jurisdiction according to DSWD's guidelines.
 - Require each Regional DRRMC to survey and evaluate its jurisdiction's sheltering program on a regular schedule.
 - Consolidate all reports to gain a comprehensive picture of capabilities.
 - Determine priority areas using risk and vulnerability measures.
- Work with each Regional DRRMC to improve sheltering capabilities.
 - Ensure there is adequate shelter capacity to meet community needs.
 - Assess shelters for suitability to fit the needs of the community.
 - Ensure shelters are equipped to meet disaster-specific requirements.

15

ESTABLISH REQUIREMENTS AND SUPPORT FOR RISK AND VULNERABILITY ASSESSMENTS, TO INCLUDE RISK MAPPING, IN DM AND DRR PLANNING EFFORTS AT EVERY ADMINISTRATIVE LEVEL.

- The Department of Science and Technology (DOST), in coordination with the University of the Philippines' Nationwide Operational Assessment of Hazards Center (UP-NOAH), PHIVOLCS, PAGASA, NAMRIA, MGB, and OCD shall determine and establish standards and reporting requirements for risk assessments as part of preparedness and mitigation plans.
 - Requirements should be mandatory irrespective of whether the planning entity is requesting funding.
 - Assign compliance oversight to RDRRMC officers to support local risk assessment and enforce standards established by DOST et alia.
 - Promote the sharing of risk assessment data, planning strategies, and expertise between smaller, geographically proximal LGUs to offset the burdens of compliance.
- Establish/update baseline data and produce a national/regional/provincial data repository or data management system where LGUs can access data they may need in their assessments and planning.
- Deepen the integration of climate change factors into risk assessments by establishing baseline climate data standards and methodologies.
- Strengthen the commitment to mainstream local, contextualized knowledge in risk assessments by leveraging local experience and expertise to identify needs and gaps.

16

FULLY AUTOMATE THE EARLY WARNING PROCESS FOR ALL HAZARD TYPES AND ELIMINATE THE NEED FOR MANUAL INTERVENTION CURRENTLY USED WITH SOME HAZARDS FOR TARGETED WARNING.

- Create an automated process for the public and NDRRMC members to receive early warning for all hazards affecting particular areas, directly from the authoritative source (i.e., PAGASA/PHIVOLCS).
 - Include functionality for the public and NDRRMC members to receive targeted warning directly from the authoritative source (i.e., PAGASA, PHIVOLCS).
 - Eliminate the need for OCD to manually intervene, which adds an additional step to the process of early warning.
 - Develop automated targeted early warning processes for hazards such as flooding.

17

IMPLEMENT A COMPREHENSIVE AND ROBUST SOCIAL MEDIA PROGRAM TO PROMOTE ALL DRRMCS IN A STANDARDIZED WAY.

- Create a social media policy for DRRMCS at all levels of government.
 - Include guidelines on what content should be shared, and with what frequency.
 - Include guidelines against sharing of proprietary information, posting of defamatory or derogatory content, and information that may imply illegal conduct.
- Support a campaign to increase social media presence and outreach.
 - Ensure cohesiveness - all government agencies should be "connected" on social media, actively re-posting each other's messages and activities.
 - Actively post relevant and interesting new information on a regular basis to keep the community engaged.

18

INCREASE INFORMATION ACCESS AND SHARING AMONG ALL DM STAKEHOLDERS BY DEVELOPING OR PROMOTING A COP PLATFORM.

- Support ongoing efforts to create, develop, and institutionalize a centralized data repository that is accessible to all agencies involved in DM.
 - Ongoing efforts should include:
 - PHIVOLCS developing a geospatial hazard and risk data repository.
 - USAID/OCD effort to develop a COP utilizing the PhilAWARE web application.
 - Expand data and information sharing outside of government agencies to include NGOs, universities, and other organizations involved in DM activities.
 - Promote the digitization of data at the sub-national level by providing technical trainings to staff involved with data management.

19

ENHANCE RESILIENCE THROUGH EFFORTS TO DECREASE VULNERABILITIES AND INCREASE COPING CAPACITIES.

- Promote environmental stewardship by continuing to work with stakeholders and international partners on reforestation and sustainable forestry projects.
- Promote environmentally conscious and sustainable livestock practices.
 - Engage and educate households and local livestock farmers.
- Continue to promote workforce participation and equal schooling opportunities beyond the limited compulsory education for females. In the midst of the COVID-19 pandemic, existing gender inequalities and biases have distinct impacts on the health and well-being of women. Empowering women and girls can uplift communities and boost economic capacity for the Philippines.
- Increase capacity of emergency services by promoting partnerships in all sectors to identify gaps and areas of cooperation that support all phases of DM. A more holistic overview of available resources will ensure equitable and comprehensive emergency services coverage. Invest in infrastructure and other resources, such as evacuation centers and emergency vehicles, to ensure that needs can be met in the event of a disaster.
- Continue to strengthen economic capacity by promoting gainful work opportunities and investments in human capital. These steps will strengthen the labor force and sustain economic expansion.

20

EXPAND COMMUNICATIONS CAPACITY BY IMPLEMENTING (HF) RADIO COMMUNICATIONS ACROSS PHILIPPINES GOVERNMENT DM AGENCIES, IN ADDITION TO ENHANCING SATELLITE COMMUNICATIONS. THESE MEDIUMS PROVIDE REDUNDANT RESILIENT EMERGENCY-COMMUNICATIONS ALTERNATIVES TO VSAT TECHNOLOGY.

- Conduct terrain analysis to best identify placement of HF Antennas and other communications infrastructure.
- Equip Philippine government EOCs with standalone Automatic Link Establishment (ALE) high-frequency HF Radio communications for the following reasons:
 - Provide a reliable rapid method of HF connectivity between stations during periods following disasters where HF ionospheric propagation could be greatly affected.
 - Enable two or more stations within the government to initiate a circuit during emergencies without worry of congestion on shared spectrum use or interference.
 - Allow for HF communication beyond line of sight (BLOS) during and following disasters.

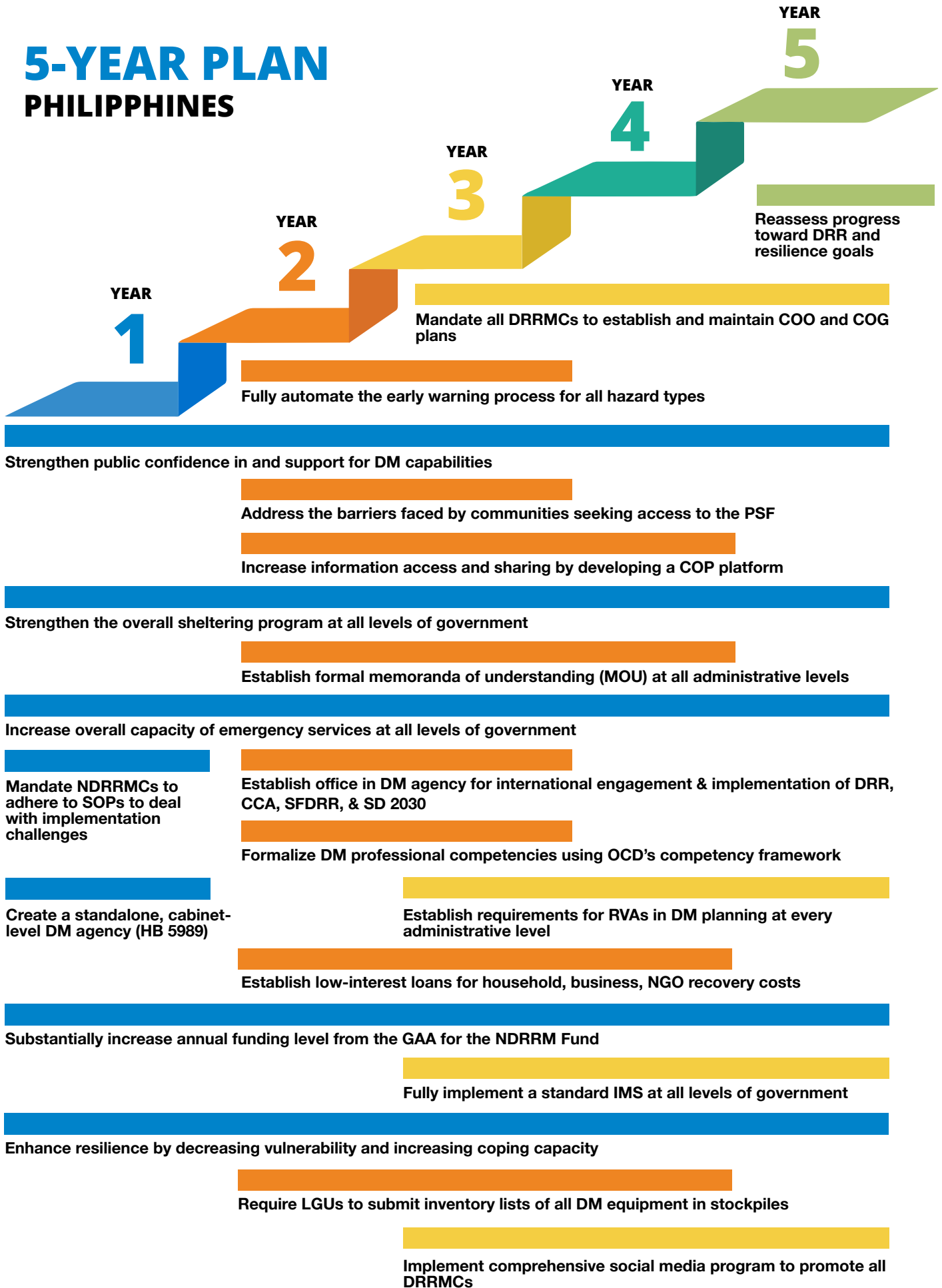
- Assess suitability for use of HF radios by key partners and increase number of key partners equipped with HF radios as appropriate.
- Provide policy guidelines and training for use of HF radios.
- Identify periodic maintenance schedules for HF communication equipment.
- Periodic testing of HF communications equipment at least twice per year.
- Equip Philippine government with Iridium Short Burst Data (SBD) modems for communications and data transmissions in the event of VSAT and HF failures.
- Explore other viable and sustainable options for emergency communications, such as satellite communication kits in conjunction with the International Telecommunications Union (ITU) and Emergency Telecommunications Cluster.

21

REASSESS PROGRESS MADE TOWARD DRR AND RESILIENCE GOALS.

- Update the NDPBA, including both the RVA and DMA analyses, to track progress toward reducing vulnerabilities, increasing coping capacities, and building DM capabilities in support of the Philippines' DRR and Sustainable Development Goals.

5-YEAR PLAN PHILIPPINES





PROVINCE RISK PROFILES

SUBNATIONAL ASSESSMENT RESULTS

Download Province Risk profiles:

<https://www.pdc.org/wp-content/uploads/NDPBA-PHL-Province-Profile-New-Merged-compressed.pdf>

PROVINCE RISK PROFILES

The following section provides a more detailed overview of each district in Philippines. Included in this overview are drivers of vulnerability, coping capacity, and resilience, a comparison of each province with the overall country, and strategic, data-driven, actionable recommendations.

Each province recommendation looks at one of the top four drivers of resilience through the lens of the existing national disaster management structure in Philippines. The recommendations are designed to be concise, actionable, and supported by the data.



NDPBA

APPENDIX A

RVA METADATA

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RVA METADATA

Multi-Hazard Exposure

Subcomponent: Raw Exposure

Indicator	Source(s)	Year	Description
Raw Population Exposure	Population: Facebook, UNOCHA HDX Storm surge: Project NOAH (Nationwide Operational Assessment of Hazards) Volcano: Smithsonian Institution, Global Volcanism Program, PDC Landslide: Project NOAH (Nationwide Operational Assessment of Hazards) Flooding: MGB Wildfire: UNEP/DEWA/GRID-Europe Typhoon Winds: UNEP/DEWA/GRID-Europe Earthquake: UNEP/DEWA/GRID-Europe Tsunami: International Centre for Geohazards Drought: UNEP/DEWA/GRID-Europe Liquefaction: PHIVOLCS	Population: 2018 Storm surge: 2019 Volcano: 2020 Landslide: 2019 Flooding: 2010 Wildfire: 2014 Cyclone Winds: 2011 Earthquake: 2013 Tsunami: 2011 Drought: 2014 Liquefaction: 2000	Cumulative raw count of person units exposed to multiple hazards, including storm surge, volcanoes, landslides, flooding, wildfire, typhoon winds, earthquakes, tsunamis, liquefaction, and drought.

Notes

Storm Surge: All areas exposed to storm surge categorized as 2.01m -5m at peak height.

Volcano: A population exposure index was used to estimate impacts with geodesic buffers of 10km, 30km and 100 km. For more information please see: Brown, S.K., Auker, M.R. & Sparks, R.S.J. (2015). Populations around Holocene volcanoes and development of a Population Exposure Index. In: S.C. Loughlin, R.S.J. Sparks, S.K. Brown, S.F. Jenkins & C. Vye-Brown (eds) Global Volcanic Hazards and Risk, Cambridge: Cambridge University Press.

Landslide: Hazard levels 2 and 3; "build only with slope protection and intervention" and "no dwelling zone".

Flooding: All areas exposed to flooding.

Wildfire: All areas exposed to wildfires based on fire occurrences between 1997-2010.

Cyclone Winds: Saffir-Simpson Scale, Category 1 or higher.

Earthquake: MMI VII and above based on 1.0 second spectral acceleration at a 2475-year return period.

Tsunami: All areas exposed to tsunamis.
Drought, Moderate to high hazard rating

Liquefaction: All areas exposed to liquefaction.

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Multi-Hazard Exposure			
Subcomponent: Raw Exposure			
Indicator	Source(s)	Year	Description
Raw Economic Exposure	PDC's All-hazard Impact Model Storm surge: Project NOAH (Nationwide Operational Assessment of Hazards) Volcano: Smithsonian Institution, Global Volcanism Program, PDC Landslide: Project NOAH (Nationwide Operational Assessment of Hazards) Flooding: MGB Wildfire: UNEP/DEWA/GRID-Europe Typhoon Winds: UNEP/DEWA/GRID-Europe Earthquake , UNEP/DEWA/GRID-Europe Tsunami: International Centre for Geohazards Drought: UNEP/DEWA/GRID-Europe Liquefaction: PHIVOLCS	AIM: 2018 Storm surge: 2019 Volcano: 2020 Landslide: 2019 Flooding: 2010 Wildfire: 2014 Cyclone Winds: 2011 Earthquake: 2013 Tsunami: 2011 Drought: 2014 Liquefaction: 2000	Cumulative raw value of capital stock exposed to multiple hazards, including storm surge, volcanoes, landslides, flooding, wildfire, typhoon winds, earthquakes, tsunamis, liquefaction, and drought.
Notes			
See above for detailed description of hazard zones.			

APPENDIX A

RVA METADATA

Multi-Hazard Exposure

Subcomponent: Relative Exposure

Indicator	Source(s)	Year	Description
Relative Population Exposure	Population: Facebook, UNOCHA HDX Storm surge: Project NOAH (Nationwide Operational Assessment of Hazards) Volcano: Smithsonian Institution, Global Volcanism Program, PDC Landslide: Project NOAH (Nationwide Operational Assessment of Hazards) Flooding: MGB Wildfire: UNEP/DEWA/GRID-Europe Typhoon Winds: UNEP/DEWA/GRID-Europe Earthquake , UNEP/DEWA/GRID-Europe Tsunami: International Centre for Geohazards Drought: UNEP/DEWA/GRID-Europe Liquefaction: PHIVOLCS	Population: 2018 Storm surge: 2019 Volcano: 2020 Landslide: 2019 Flooding: 2010 Wildfire: 2014 Cyclone Winds: 2011 Earthquake: 2013 Tsunami: 2011 Drought: 2014 Liquefaction: 2000	Cumulative raw count of person units exposed to multiple hazards, per capita.
Notes			
See above for detailed description of hazard zones			

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Multi-Hazard Exposure			
Subcomponent: Relative Exposure			
Indicator	Source(s)	Year	Description
Relative Economic Exposure	PDC's All-hazard Impact Model Storm surge: Project NOAH (Nationwide Operational Assessment of Hazards) Volcano: Smithsonian Institution, Global Volcanism Program, PDC Landslide: Project NOAH (Nationwide Operational Assessment of Hazards) Flooding: MGB Wildfire: UNEP/DEWA/GRID-Europe Typhoon Winds: UNEP/DEWA/GRID-Europe Earthquake , UNEP/DEWA/GRID-Europe Tsunami: International Centre for Geohazards Drought: UNEP/DEWA/GRID-Europe Liquefaction: PHIVOLCS	AIM: 2018 Storm surge: 2019 Volcano: 2020 Landslide: 2019 Flooding: 2010 Wildfire: 2014 Cyclone Winds: 2011 Earthquake: 2013 Tsunami: 2011 Drought: 2014 Liquefaction: 2000	Relative capital exposure, which is the sum of exposed capital by province divided by the total estimated value of assets and infrastructure in the area.
Notes			
See above for detailed description of hazard zones.			

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Vulnerability				
Subcomponent: Economic Constraints				
Indicator	Source(s)	Year	Description	Notes
Poverty Incidence	Philippine Statistics Authority; Family Income and Expenditure Survey (FIES)	2018	The proportion of families/individuals with per capita income/ expenditure less than the per capita poverty threshold to the total number of families/ individuals by province in the Philippines.	
Economic Dependence Ratio	Philippine Statistics Authority (PSA); 2015 Census of Population	2015	Ratio of dependents - people younger than 15 and older than 64 - to the working-age population - those ages 15-64 by province in the Philippines.	

Vulnerability				
Subcomponent: Clean Water Access Vulnerability				
Indicator	Source(s)	Year	Description	Notes
Households with Improved Safe Water Source	Department of Health, FHSIS Annual Report	2018	Percent of households with access to improved safe water source by province in the Philippines.	
Households with Sanitary Toilet Facility	Department of Health, FHSIS Annual Report	2018	Percent of households with access to sanitary toilet facilities by province in the Philippines.	

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Vulnerability				
Subcomponent: Access to Information Vulnerability				
Indicator	Source(s)	Year	Description	Notes
Households with Internet	Philippine Statistics Authority (PSA); 2010 Census of Population	2010	Percent of households that have access to the internet from their home by province in the Philippines.	Missing Davao Occidental, which was due to provincial boundaries. The value for Davao del Sur was used since at the time it was a part of that province.
Households with Radio	Philippine Statistics Authority (PSA); 2010 Census of Population	2010	Percent of households that have a radio in their home by province in the Philippines.	
Households with Television	Philippine Statistics Authority (PSA); 2010 Census of Population	2010	Percent of households that have a television in their home by province in the Philippines.	
Population Literacy Rate	PSA; 2015 Census of Population	2015	Literacy rate of the population 10 years and older by province in the Philippines.	
Gross Primary Enrolment Rate	UNOCHA, Department of Education, PSA	2018	The ratio of the primary school enrollment to the total population between 6 and 11 years old for the given school year by province in the Philippines.	This data represents the number of students enrolled in primary school, regardless of age, expressed as a percentage of the official school-age population (6-11 years). Gross enrollment numbers can exceed 100% due to the inclusion of over-aged students because of early or late entrants, and grade repetition.

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Vulnerability				
Subcomponent: Vulnerable Health Status				
Indicator	Source(s)	Year	Description	Notes
Malnutrition Among Children (0 to 5 Years)	Food and Nutrition Research Institute; Anthropometric Survey 2015	2018	Proportion of thinness/ wasting among children, less than 5.0 years old (0 to 59 months) by province in the Philippines.	
Infant Mortality Rate	Department of Health; FHSIS 2018 Annual Report	2018	Number of infant deaths per 1,000 live births by province in the Philippines.	
Maternal Mortality Rate	Department of Health; FHSIS 2018 Annual Report	2018	Number of maternal deaths per 100,000 live births by province in the Philippines.	
Disabled Population	UNOCHA, Department of Social Welfare and Development	2016	Disabled population per 100,000 persons by province in the Philippines.	
Average Life Expectancy at Birth	Philippine Statistics Authority Philippine Statistics Authority	2010	Average male and female provincial life expectancy at birth in the Philippines.	Missing Davao Occidental, which was due to provincial boundaries. The value for Davao del Sur was used since at the time it was a part of that province.
TB Mortality Rate	Department of Health; 2016 Philippine Health Statistics	2016	TB mortality rate per 100,000 population by province in the Philippines.	
Intestinal Infectious Disease Mortality Rate	Department of Health; 2016 Philippine Health Statistics	2016	Intestinal Infectious Disease mortality rate per 100,000 population by province in the Philippines.	
HIV Mortality Rate	Department of Health; 2016 Philippine Health Statistics	2016	HIV mortality rate per 100,000 population by province in the Philippines.	
Other Arthropod-Borne Viral Fevers and Viral Hemorrhagic Fever Mortality Rate	Department of Health; 2016 Philippine Health Statistics	2016	Other arthropod-borne viral fevers and viral hemorrhagic fever mortality rate per 100,000 population by province in the Philippines.	

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Vulnerability				
Subcomponent: Population Pressures				
Indicator	Source(s)	Year	Description	Notes
Population Growth Rate	PSA; 2015 Census of Population	2015	Average annual population growth rate between 2010 to 2015 by province in the Philippines.	
Informal Setters	PSA; 2015 Census of Population	2015	Percent of households that are informal settlers by province in the Philippines.	Values are derived as the sum of households that are classified as rent-free house and lot without consent of owner and own house rent-free lot without consent of owner.
Urban Population Growth Rate	PSA; 2015 Census of Population	2015	Average annual urban population growth rate between 2010 to 2015 by province in the Philippines.	The value for Apayao could not be validated and was excluded from analysis.

Vulnerability				
Subcomponent: Environmental Stress				
Indicator	Source(s)	Year	Description	Notes
Livestock Density	PSA, Opendata	2012	Density of non-avian livestock per hectare of farmland by province in the Philippines.	
Barren Land	PSA, Department of Forestry; Land Asset Accounts for Tree-Covered Areas of the Philippines	2010	Hectares of barren per 10,000 hectares of land by province in the Philippines.	Terrestrial barren land includes any geographical area dominated by natural abiotic surfaces (bare soil, sand, rocks, etc.) where the natural vegetation is absent or almost absent (covers less than 2 percent).
Average Annual Forest Change	UNOCHA, WFP	2018	Average annual forest cover change (percentage) for the period 2000 - 2010 by province in the Philippines	Missing Davao Occidental, which was due to provincial boundaries. The value for Davao del Sur was used since at the time it was a part of that province.

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Vulnerability

Subcomponent: Gender Inequality

Indicator	Source(s)	Year	Description	Notes
Female to Male Labor Force Participation Ratio	PSA; 2015 Census of Population	2015	Ratio of female employment rate to male employment rate by province in the Philippines.	
Female to Male Secondary School Enrollment Ratio	PSA, UNOCHA, Department of Education	2018	Ratio of female secondary school enrollment rate to male secondary enrollment rate by province in the Philippines.	

Coping Capacity

Subcomponent: Economic Capacity

Indicator	Source(s)	Year	Description	Notes
Purchasing Power of the Peso	Philippine Statistics Authority	2017	Purchasing power measured as the real value of the peso in a given period relative to a chosen reference period by province in the Philippines.	
Labor Force Participation Rate	Philippine Statistics Authority	2016	Proportion of total labor force to the total household population 15 years and over by province in the Philippines.	
Local Government Annual Regular Income	Bureau of Local Government Finance, Department of Finance	2016	Local government annual regular income per capita by province in the Philippines.	

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Coping Capacity				
Subcomponent: Governance				
Indicator	Source(s)	Year	Description	Notes
Voter Participation	Commission on Election	2016	Percent of registered voters who voted in 2016 by province in the Philippines.	
Organized Violence Rate	UNOCHA, ACLED	2019	Organized violence incidence rate per 100,000 population by province in the Philippines.	
Garbage Pickup	Philippine Statistics Authority; 2010 Census of Population	2010	Percent of households who receive garbage pickup services by province in the Philippines.	Missing Davao Occidental, which was due to provincial boundaries. The value for Davao del Sur was used since at the time it was a part of that province.

Coping Capacity				
Subcomponent: Environmental Capacity				
Indicator	Source(s)	Year	Description	Notes
Forest Reserves	Department of Environment and Natural Resources Forest Management Bureau	2018	Percentage of total forests that are established forest reserves by province in the Philippines.	Several provinces were aggregated together and listed as totals for both. Those provinces were given half of the values used. And if there were dashes it was assumed that it represents a 0.
Protected Areas	Department of Environment and Natural Resources Forest Management Bureau	2018	Hectares of protected areas per 1,000 hectares of land by province in the Philippines.	
Physicians per 10,000 Persons	OCHA, Department of Health (DOH), PSA	2010	Number of doctors per 10,000 population by province in the Philippines.	Values represent government employed physicians.

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Coping Capacity

Subcomponent: Health Care Capacity

Indicator	Source(s)	Year	Description	Notes
Vaccination Coverage	Department of Health; FHSIS	2018	Percent of fully immunized children, defined as, infants who received one dose of BCG, three doses each of OPV, DPT, and Hepatitis B vaccines, and one dose of measles vaccine before reaching one year of age by province in the Philippines.	
Hospital Bed Capacity	Department of Health, PSA	2018	Hospital beds per 10,000 persons by province in the Philippines.	
Average Distance to Hospital	UNOCHA, Facebook data for good, Philippines Red Cross, PSA, NAMRIA	2019	Average distance (km) between populated areas and hospitals by province in the Philippines.	
Households with Access to Electricity	Philippine Statistics Authority; 2010 Census of Population	2010	Percent of households with access to electricity by province in the Philippines.	Values represent households that report using electricity for lighting. Missing Davao Occidental, which was due to provincial boundaries. The value for Davao del Sur was used since at the time it was a part of that province.

Coping Capacity

Subcomponent: Energy Capacity

Indicator	Source(s)	Year	Description	Notes
Households with Access to Cooking Fuel	Philippine Statistics Authority; 2010 Census of Population	2010	Percent of households with access to cooking fuel by province in the Philippines.	Values represent households that report using liquified petroleum gas for cooking fuel. Missing Davao Occidental, which was due to provincial boundaries. The value for Davao del Sur was used since at the time it was a part of that province.
Road Density	UNOCHA, OSM, NAMRIA, PSA	2020	Total road length (kilometers) per square kilometer of land by province in the Philippines.	

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Coping Capacity				
Subcomponent: Transportation Capacity				
Indicator	Source(s)	Year	Description	Notes
Average Distance to Port	UNOCHA, Aviation Authority, OSM, Namria, Philippine Statistics Authority	2015	Average distance between populated areas and airports/ seaports by province in the Philippines	
Households with a Landline	Philippine Statistics Authority; 2010 Census of Population	2010	Percent of households that have a landline in their home by province in the Philippines.	Missing Davao Occidental, which was due to provincial boundaries. The value for Davao del Sur was used since at the time it was a part of that province.

Coping Capacity				
Subcomponent: Communications Capacity				
Indicator	Source(s)	Year	Description	Notes
Mobile Coverage	Philippine Statistics Authority; 2015 Census of Population	2015	Percent of barangays with cellular phone signal by province in the Philippines. Cellular phone signal is said to be available in a barangay if one can send and receive text messages or can make and receive phone calls through a cellular phone	
Evacuation Centers per 100,000 Persons	UNOCHA, DILG, NAMRIA, PSA	2015	Evacuation centers per 100,000 population by province in the Philippines.	The dataset only includes evacuation shelters that are designated as such by the DILG.

APPENDIX A

RVA METADATA

Coping Capacity				
Subcomponent: Emergency Services Capacity				
Indicator	Source(s)	Year	Description	Notes
Fire Stations per 100,000 Persons	Open data Freedom of Information; Bureau of Fire Protection, PSA	2017	Number of fire stations and fire stations per 100,000 population by province in the Philippines.	
Fire Trucks per 100,000 Persons	Open data Freedom of Information; Bureau of Fire Protection, PSA	2017	Number of serviceable firetrucks per 100,000 population by province in the Philippines.	



NDPBA

APPENDIX B

DMA SURVEY RESULTS

APPENDIX B

DMA SURVEY RESULTS

The Disaster Management Analysis provides context to the risk and vulnerability data. Understanding the complex environment of disaster management in Philippines allows stakeholders to identify the best course of action that aligns within Philippines' legal framework and with national disaster risk reduction goals.

In the section below each disaster management indicator with detailed supporting information is provided. Data was compiled through online and archival research and validated with in-country stakeholders.

INSTITUTIONAL ARRANGEMENTS

ORGANIZATIONAL STRUCTURES

ORGANIZATION OF GOVERNMENT DM FUNCTIONS

- a. There is a dedicated DM agency located within a larger ministry or department
- b. The OCD, a bureau of the Department of National Defense (DND),¹ is the principal administrative body responsible for DM activities in the Philippines.

The DM system in Philippines is rooted in civil defense due to its experience during the Japanese occupation of World War II and later the nuclear arms race in the 1950s. The country is vulnerable to all types of disasters particularly typhoons, floods and earthquakes based on its location on the highly seismic Pacific Ring of Fire.¹⁴ Thus, the Philippine government promulgated Republic Act 1190, otherwise known as the Civil Defense Act of 1954. This act established the National Civil Defense Administration (NCDA) with a dual purpose of providing protection and welfare during war *or* other national emergencies. RA 1190 also led to the establishment of civil defense

¹ House Bill No. 5989, creating the Department of Disaster Resilience (DDR), was passed September 21, 2020. However, as of May 2021 it has not been passed by the Senate.

councils at the national (National Civil Defense Council) and local levels (Local Civil Defense Councils).

Previously the NCDA was a planning body under the Office of the President and faced significant budgetary and operational challenges due mainly to a lack of public interest. In 1968 a powerful earthquake hit Manila and caused the Ruby building to collapse. The government responded by issuing Administrative Order No.151 creating a National Committee on Disaster Operation consisting of Department Secretaries and line agencies.¹⁴

In 1970 a comprehensive disaster plan was issued by the President when Typhoon Seniang hit the Bicol Region and flooded Metro Manila for almost three months. The plan provided for the creation of a National Disaster Control Center chaired by the Secretary of National Defense and consisted of the relevant Department Secretaries.¹⁴

The NCDA was later abolished and its function and personnel and those of the National Disaster Control Center were transferred to the OCD. OCD in its present organization and name was established in 1972 through the Letter of Implementation No. 19, Series of 1972.¹⁴

The OCD, a bureau of the DND has the following mandate:

“...to administer 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.”¹⁵

The OCD is the executing arm and Secretariat of the National Disaster Risk Reduction and Management Council (NDRRMC). The NDRRMC uses the services and facilities of OCD.¹⁵

On June 11, 1978, Presidential Decree (PD) No. 1566 was passed, strengthening the Philippine disaster control capability, and establishing a community disaster preparedness program nationwide. This Decree established the National Disaster Coordinating Council (NDCC), the precursor of the present-day National Disaster Risk Reduction and Management Council (NDRRMC), and organized disaster coordinating councils from the national (NDCCs) down to the regional (RDCCs) and municipal (LDCCs) levels. The PD No. 1566 also recognized the State policy on self-reliance among local officials and their constituents in responding to disasters or emergencies with the preparation of the National Calamities and Disaster Preparedness Plan (NCDPP) by the OCD, and implementing plans by the NDCC member-agencies.¹⁶

On July 25, 1987, Executive Order No. 292, Instituting the “Administrative Code of 1987” was signed by the President that further delineated the functions of OCD as follows:

“In times of war and other national emergencies of equally grave character, coordinate the activities and functions of various government agencies and instrumentalities, as well as of private institutions and civic organizations devoted to public welfare to maximize the utilization of the facilities and resources of the entire nation for the protection and preservation of the civilian population and property.”¹⁶

RA 10121 was passed into law on September 27, 2010 in response to the devastating impact of Typhoon “Ondoy” to the National Capital Region on September 26, 2009.^{14,4}

RA 10121s primary purpose was to strengthen the country’s disaster risk reduction and management system. It also shifted OCD’s paradigm “from disaster response to a more proactive disaster risk reduction and management.”¹⁴ RA 10121 replaced PD No.1566 of 1978. RA 10121 remains as the legal and institutional backbone of the country’s DM and DRRM.⁴

DEVELOPMENT OF DM ORGANIZATIONAL STRUCTURE

- a. **A structured organizational arrangement with effective coordination has been designed, but implementation is not complete.**
- b. Interagency DM responsibilities are clearly mapped and implemented: The National Disaster Risk Reduction and Management Council (NDRRMC) is comprised of thirty-six (36) member-agencies with four representatives from CSOs totaling forty (40) members.

The PD 1566 of 1978 established the National Disaster Coordinating Council (NDCC) delineated the duties and responsibilities of the National Disaster Coordinating Council (NDCC), the Regional Disaster Coordinating Councils (RDCCs) and the Local Disaster Coordinating Councils (LDCCs). PD 1566 also mandated the preparation of the National Calamities and Disaster Preparedness Plan (NCDPP) by the OCD and implementing plans by the NDCC member-agencies.¹⁶

The subsequent instrument (RA 10121) renamed the National Disaster Coordinating Council (NDCC) as the National Disaster Risk Reduction and Management Council (NDRRMC) in order to place emphasis on the disaster risk reduction.⁴ RA 10121 also delineated the members and their respective responsibilities within the national DM system. RA 10121 replaced PD No.1566 of 1978.

As shown below in **Figure 1**, the NDRRMC is chaired by the Secretary of National Defense (DND). The NDRRMC is organized according to the DM cycles with a departmental minister (secretary) or an agency leading each of the four thematic areas representing the DM phases (See also **Figure 11 NDRRM 2011-2028 vision**):³

- (1) Disaster Prevention & Mitigation headed by the Secretary of DILG.
- (2) Disaster Preparedness by the Secretary of Social Welfare and Development (DSWD).
- (3) Disaster Response by the Secretary of Science and Technology (DOST); and
- (4) Disaster Rehabilitation and Recovery, by the Director General of the National Economic and Development Authority (NEDA).

The NDRRMC consists of thirty-six (36) additional members with fourteen (14) members from line departments, eleven (11) from various government agencies, two from governmental financial institutions, one from a quasi-government agency, and four representatives from CSOs making it a total of forty (40) members.⁴

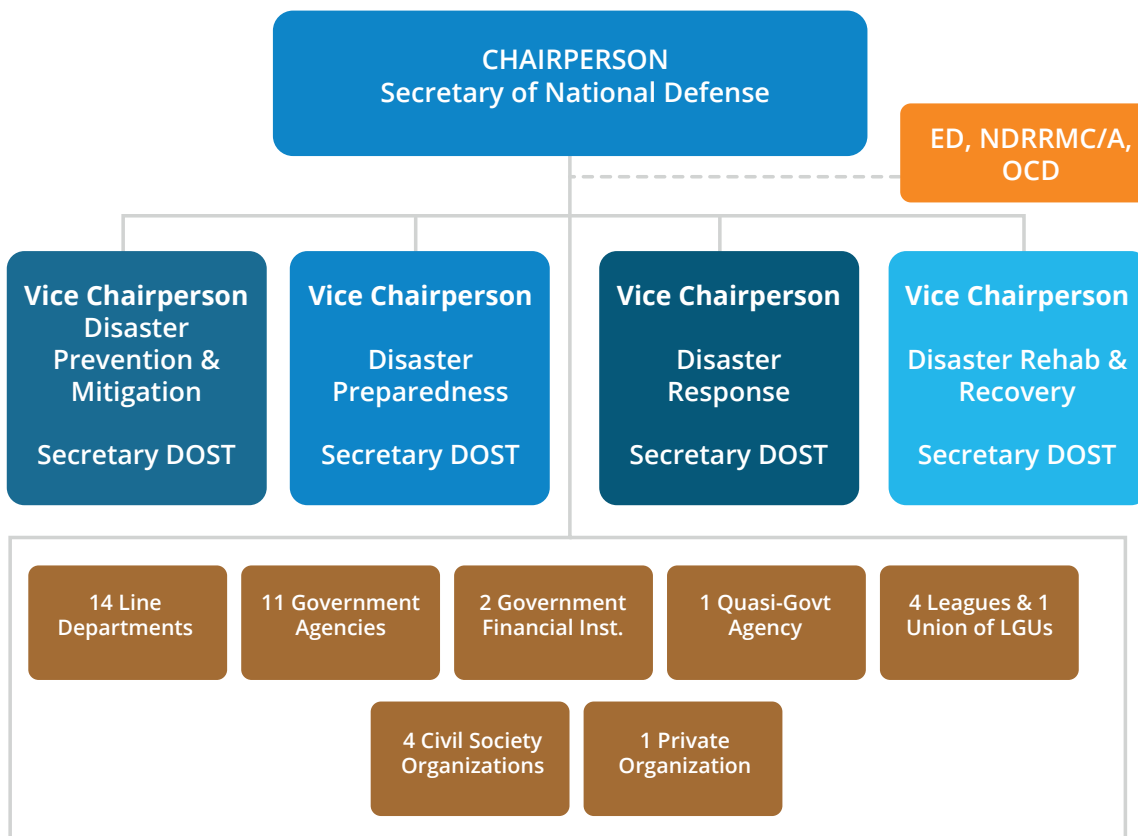


Figure 1 Organizational Chart of NDRRMC (Source: OCD-DND, 2018)¹⁷

The interagency DM responsibilities are further delineated in the National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028. Aside from establishing expected outcomes, outputs, key activities, indicators, the NDRRMP determined the lead agencies, implementing partners and timelines under the four thematic areas listed in the paragraph above (See also **Figure 11 NDRRM 2011-2028 vision** in the *Capacity Development – Formalized CD Plans & Strategies* section). This corresponds to the structure of the National Disaster Risk Reduction and Management Council (NDRRMC).³

BI/MULTILATERAL ENGAGEMENT

- a. **There is no dedicated office for engagement with bilateral, international, and other humanitarian actors.**
- b. OCD does not have a separate office or entity dedicated to engagement with bilateral, international, and other humanitarian actors.¹⁸ However, each department does its own engagement with the relevant bilateral, international, and other humanitarian actors. Examples of this is the Policy Development and Planning Service of OCD has projects with AHA Centre;¹⁹ the 24/7 Operations Center has initiatives with UNOCHA,²⁰ and the Information and Communications Technology Division is spearheading the implementation of the PhilAWARE Project with PDC.²¹



**OFFICE OF CIVIL DEFENSE
OCD ORGANIZATIONAL STRUCTURE**

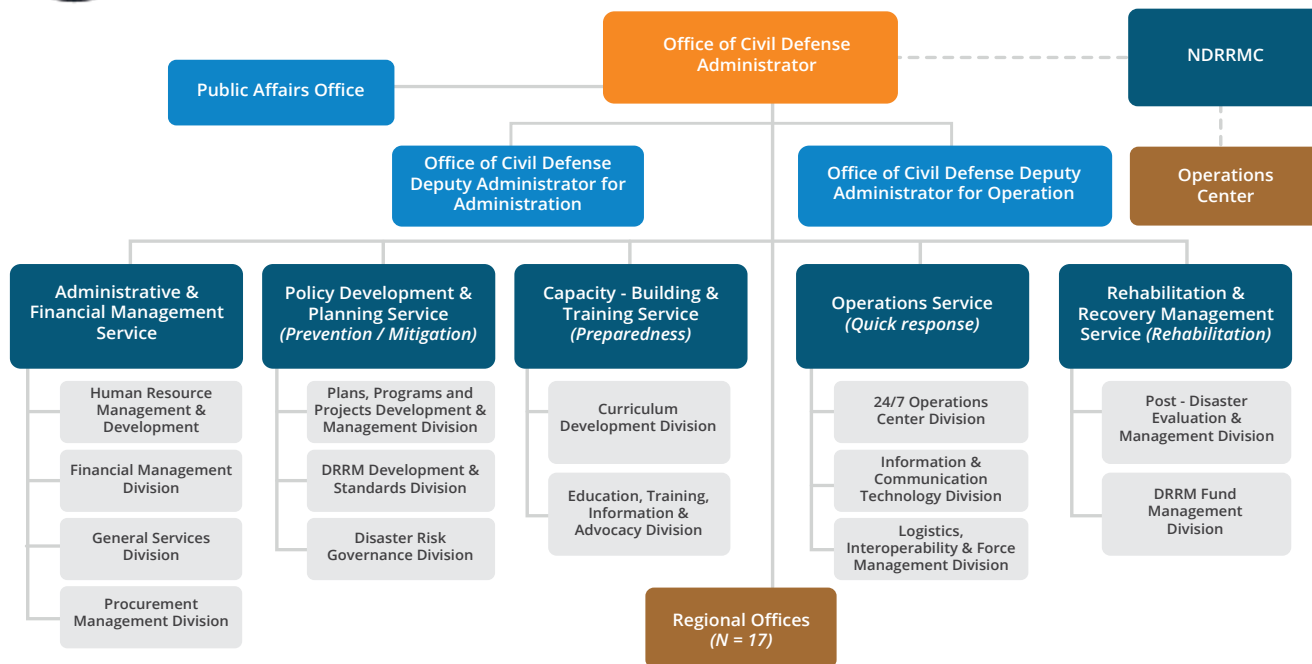


Figure 2 OCD Organizational Structure (Source: OCD Website)

REGIONALIZED CAPACITY

- a. **DM activities, including those for response, are conducted out of regional DM offices.**
- b. The OCD has seventeen (17) Regional Offices¹⁸ for conducting DM activities including planning, programming, implementation, monitoring and evaluation of all regional civil defense and DRRM plans; in addition each maintains an operating facility for the operation of the Regional DRRMOC for response activities.

As stated in RA 10121, “the existing regional offices of the OCD shall serve the same purpose as OCD at the national level.” As such, “the OCD Regional Director will chair the RDRRMC and the Regional Office will be the secretariat of the RDRRMCs.” Included in its function is to: ensure the efficient and effective planning, programming, implementation, monitoring and evaluation of all regional civil defense and DRRM plans; and maintain an operating facility for the operation of the Regional DRRMOC.²²

DISASTER RISK REDUCTION (DRR) PLATFORM

- a. **Plans exist to establish a national platform to manage implementation of DRR or the Sendai Framework, but implementation is not complete.**
- b. The OCD, in recognition of the limitations of the NDRRM Plan regarding specifications for

implementing the Sendai Framework, has begun conducting workshops and trainings on capacity building for the Philippine Government to formally implement the Sendai Framework.

The SFDRR 2015-2030 was adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015.²³ In December 2011 the final version of the National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028 was released by the Philippine Government, four years before Sendai. Therefore, the NDRRMP does not address Sendai in its entirety which is acknowledged by the Government of Philippines.

Whilst drafting the NDRRMP 2011-2028, the NDRRMP Task Force studied national and government reports on activities related to disaster risk reduction (DRR) including the Philippine Strategic National Action Plan for Disaster Risk Reduction (SNAP) 2009-2019, the National Disaster Risk Reduction and Management Framework, and the Hyogo Framework for Action.³

Acknowledging this, the Philippines is fully committed to collaborations with the UN Office for Disaster Risk Reduction (UNDRR) and the Asian Disaster Preparedness Center (ADPC) and was actively involved in the development of the SFDRR. A 2019 Report details the Philippines' commitments to the four priorities of the SFDRR.²⁴

OCD recognizes the limitation of the NDRRM Plan and has started workshops and trainings for capacity building of Philippine Government on implementing the Sendai Framework. A workshop aimed at implementing the Sendai Framework by UNISDR Office for Northeast Asia and Global Education and Training Institute (ONEA – GETI), under the lead of OCD and attended by other NRRMDC members was held on February 3 – 5, 2016.

The participants expressed their commitment in aligning the Philippines' National Action Plan and Strategies to the Sendai Framework, and dedication to building the capacity of other Philippine stakeholders at the conclusion of the three-day workshop. Aside from this, the training also resulted in a couple of progressive steps in relation to the Sendai Framework. It facilitated further coordination of the current DRRM Action Plan and strategies with the Sendai Framework. The training also helped in developing the capacities of national government officials to effectively engage and support SFDRR and the national plans.²⁵

At the Third United Nations World Conference on Disaster Risk Reduction (3WCDDR) in 2015, the Philippines took an active role in creating the SFDRR 2015-2030. The Philippines remains fully committed to international cooperation as evidenced by their ongoing collaborations with the UN Office for Disaster Risk Reduction (UNDRR) and the Asian Disaster Preparedness Center. In 2019, the collaboration produced a Status Report (Disaster Risk Reduction in the Philippines) detailing their commitments in action to the four priorities of the Sendai Framework.

CLIMATE CHANGE ADAPTATION (CCA) PLATFORM

- a. Plans exist to establish a platform to manage implementation of CCA/the Paris Agreement**
- b. The Philippine Government maintains the CCC under the Office of the President of the Philippines established by the Climate Change Act of 2009 (RA 9729). The CCC is a standalone, cabinet level

agency that is chaired by the President of the Philippines and consists of three Commissioners each appointed by the President. It is the lead climate change policy-making body of the government that is tasked to coordinate, monitor, and evaluate government programs to ensure mainstreaming of climate change in national, local, and sectoral development plans towards a climate resilient country.²⁶

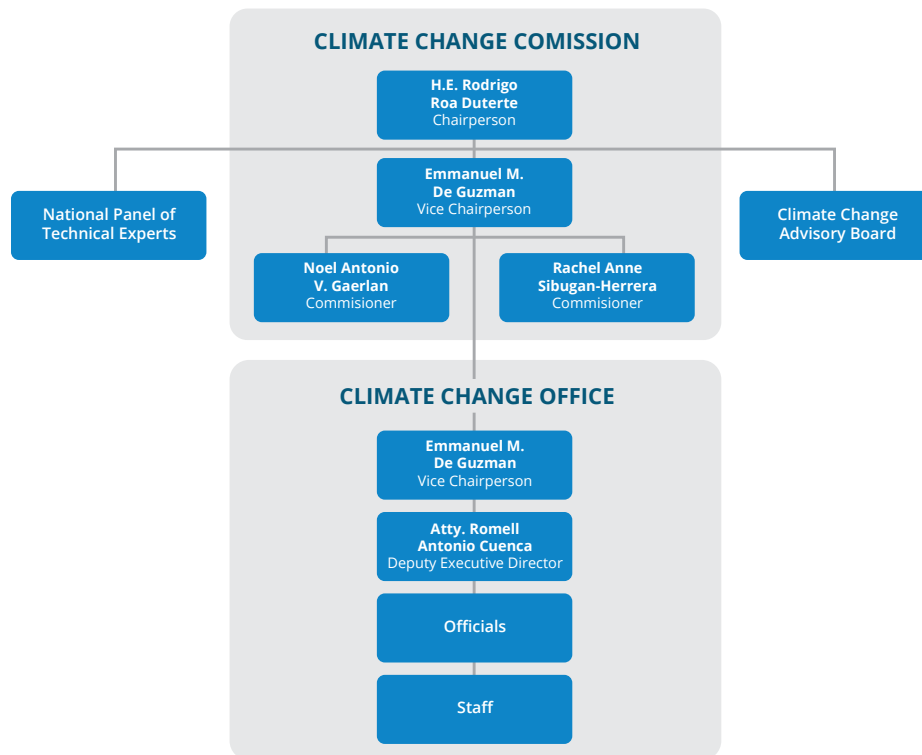


Figure 3 Organizational Chart of the Climate Change Commission (Source: CCC Website)

However, since the Paris Agreement has only been signed in 2016, this has not been incorporated in the prior existing policies of the Philippines. Just like in the implementation of the Sendai Framework, the NDRRMC have existing mechanisms to review its policies and address this particular concern.

SUSTAINABLE DEVELOPMENT (SD) PLATFORM

- a. **Plans to establish a platform to manage the implementation of SD/2030 exist but have not been incorporated.**
- b. The National Disaster Risk Reduction and Management Council (NDRRMC) has not integrated the Sustainable Development Goals (SDGs) of 2030 into its policies.

Most of the Philippine National disaster risk reduction policies were developed and released prior to the adoption of all United Nations Member States of the Sustainable Development Goals

(SDGs) in 2015. The NDRRMP 2011-2028 have provisions related to meeting the commitments under the Millennium Development Goals and Hyogo Framework for Action.³ The NDRRMC is cognizant of the fact that the current policies need to integrate and implement the Sustainable Development Goals (SDGs) of 2030.

INTEGRATION OF DRR, CCA, AND SD

- a. Platforms managing implementation of DRR, CCA, and SD are partially integrated.**
- b. The National Disaster Risk Reduction and Management Plan (NDRRMP) 2011 – 2028 enumerates objectives, outcomes, outputs, and activities to be achieved by 2028 with the end goal of achieving disaster risk reduction, climate change adaptation, and sustainable development.

The Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121) and its implementing rules and regulations (IRR) have laid down the groundwork for the integration of disaster risk reduction and climate change. As such, climate change is incorporated into the Declaration of the Policy⁴ by:

- Promulgating the building of the resilience of local communities to disasters including the impacts of climate change
- Adopting a DRR management approach that is comprehensive and proactive in lessening the socioeconomic and environmental impacts of disasters including climate change
- Developing, promoting, and implementing a National Risk Reduction and Management Plan (NDRRMP) that is aimed at reducing disaster risks including those of projected climate risks
- Mainstreaming DRR and climate change in the development processes
- Ensuring DRR and climate change measures include vulnerable groups.

The same policy provides a clear definition of climate change⁴ and articulates climate change information and climate risk reduction and management in the Geographic Information System definition.⁴

RA 10121 appointed a Council Member with the title of *the Executive-Director of the Climate Change Office of the Climate Change Commission*.⁴

RA 10121 tasks the NDRRMC to coordinate with the Climate Change Commission to

- Develop assessment tools on the existing and potential hazards and risks brought about by climate change to vulnerable areas and ecosystems in coordination with the Climate Change Commission.⁴
- In coordination with the Climate Change Commission, formulate and implement a framework for climate change adaptation and disaster risk reduction and management from which all policies, programs, and projects shall be based.⁴

RA 10121 Section 11.2 articulates the integration of climate change into the Provincial, City, and

Municipal local development plans, programs, and budgets through the DRRM Councils. The Local Disaster Risk Reduction and Management Offices (LDRRMO) are tasked to consolidate disaster risk information including climate change risks and maintain a local risk map.⁴

RA 10121 and its IRR is recognized as having laid down the groundwork for the integration of disaster risk reduction and climate change.^{4,22} NDRRM Plan 2011 – 2028 highlights the integration and progresses a bit further from the groundwork by enumerating fourteen (14) objectives, twenty-four (24) outcomes, fifty-six (56) outputs, and ninety-three (93) activities to be achieved by 2028. All these policies are in line with the Philippines’ overall vision of a “safer, adaptive and disaster-resilient Filipino communities toward sustainable development”.³ Another noteworthy action in terms of CCA integration was the passage of the Executive Order No.26 (EO 26) *Declaring and Interdepartmental Convergence Initiative for National Greening Program (NGP)* in 2011 by the Office of the President. The EO 26 declares the NGP as a government priority and designates the related Departments as lead agencies for its implementation in a coordinated effort between the national and local government agencies and other stakeholders including the higher education and the private sector.²⁷

NDRRMC is mindful of the challenges in the execution of these policies and the need for continuing review, monitoring and adoption of the same is required to be updated with the relevant universal policies.

MILITARY ENGAGEMENT

- a. **Military is formally integrated in the civil DM structure.**
- b. The Armed Forces of the Philippines (AFP) is fully integrated into the DM structure as they maintain membership on the National Disaster Risk Reduction and Management Council (NDRRMC).

RA 10121 and its IRR have identified the AFP as a member of the NDRRMC.²² The NDRRMP 2011-2028 further delineated the function and responsibility of AFP as a member. In 2014, the National Disaster Response Plan (NDRP) was released. Eight (8) national response clusters were created and the AFP was designated as lead of the Search, Rescue and Retrieval (SRR) cluster.²⁸

LEADERSHIP



EMERGENCY MANAGEMENT LEADERSHIP ARRANGEMENT

- a. **A singular leadership position with responsibility for all DM activities throughout government exists.**
- b. The Secretary of the Department of National Defense (DND) is also Chairperson of the National Disaster Risk Reduction and Management Council (NDRRMC); it is the single leadership position

responsible for all DM activities throughout the Philippine government as stipulated in RA 10121, its IRR, and is further reiterated in the NDRRMP 2011 – 2028. The person in this position shall be the leader on policy making, coordination, integration, supervision, monitoring and evaluation functions.⁴ The NDRRMC Chairperson may also call upon other instrumentalities or entities of the government, nongovernmental organizations, and civic organizations for the use of their facilities and resources when necessary in disaster risk reduction and management.⁴ This includes the authority to call on the reserve force to assist in relief and rescue during disasters or calamities.²⁹

On the other hand, the OCD, the agency mandated as the implementing arm of the NDRRMC is headed by an Administrator. This Administrator also serves as the Executive Director of the NDRRMC and, as such, has the same duties and privileges of a department undersecretary.^{4,22} This Undersecretary reports to the Secretary of the DND.²² **Figure 1** depicts the organizational structure of the NDRRMC.

LEADERSHIP POSITIONS FILLED

- a. **All DM leadership positions are filled.**
- b. All the leadership positions in OCD, down to the Division level, including Regional Directors are filled albeit some are on an Officer-in-Charge capacity as described in the *Institutional Arrangements – Leadership* section of the report. In the case of the NDRRMC, as of June 2016 the positions of Cabinet Secretaries were filled.³⁰

JOB-SPECIFIC COMPETENCIES OF LEADERSHIP POSITIONS

- a. **Although it is generally expected, DM leadership positions do not require job-specific competencies or previous DM experience.**
- b. The OCD Administrator is an exception: RA 10121 and its Implementing Rules and Regulations stipulate that the position shall be occupied by a universally acknowledged expert in the field of disaster preparedness and management and of proven honesty and integrity.^{4,31} (Rule 7, Section 2) However, in recent years, political appointees have not been limited to the Secretaries or even just to the Undersecretaries: Assistant Secretaries down to Division Chiefs have been politically appointed.

In an effort to professionalize its workforce, the OCD launched its Competency Framework on 27 May 2016 and promulgated it through the NDRRMC to its Regional Offices. The competencies were developed as a result of a partnership with the Australian Aid and Philippine Australia Human Resource Organizational Development Facility (PAHRODF). The competencies constitute the standard for the recruitment, selection and placement of candidates to the positions, performance management, rewards and recognition, learning and development, and training programs.²

The OCD website lists the managerial/ leadership competencies as trifold:³²

- Strategic Perspective
- Change Management
- Managing Performance

POLITICAL ACCESS OF DM LEADERSHIP

- a. **DM leadership enjoys an institutionalized, direct line of reporting and responsibility to the highest level of government.**
- b. The Chairperson of the NDRRMC is the Secretary of the DND and member of the Cabinet at the Executive Branch of Government and has direct access to the President of the Philippines.³³

RA 10121 and its IRR states that the Administrator of the OCD shall also serve as Executive Director of the NDRRMC. As such, the Administrator shall have the same duties and privileges of a department undersecretary.^{4,22} As OCD is a Bureau under the DND, the OCD Administrator is Undersecretary to the DND Secretary.¹

EO 292 Section 29 further defined the authority of the OCD Administrator in relation to the Secretary of the DND as follows: “The Administrator shall, subject to the approval of the Secretary of National Defense, prescribe the organization, functions, duties and responsibilities of civil defense units on the national and local government levels, in connection with the various operating units for civil defense.”¹⁶

PROXY LEADERSHIP ARRANGEMENTS

- a. **It is possible for DM leadership to appoint or otherwise ensure incident-specific proxy leadership during major disaster events to ensure that centralized leadership is maintained during concurrent incidents.**
- b. Through the Incident Management Team (IMT) – a variation from the US’ Incident Command System (ICS), the Philippines has an approach to ensure that there is leadership during major disaster events.

From RA 10121 and further clearly defined in the IRR, it is the Local Risk Reduction and Management Councils (LDRRMCs) that take the lead in preparing for and responding to disasters based on the following criteria:

- (a) The Barangay Development Council (BDC), if a barangay is affected; [BDC serves as the LDRRMC in every barangay]
- (b) The city/municipal DRRMCs, 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 NDRRMC and intermediary LDRRMCs act as support to the local governmental units (LGUs) which have the primary responsibility as the first responders.^{4,22}

During a disaster or emergency response, the DSWD Secretary, who is the NDRRMC Vice Chairperson for response activates the response cluster of NDRRMC. Then, NDRRMC Executive Director/ OCD Administrator activates the IMTs. While the resources shall be placed under the operations control of the IMT, it remains under administrative control of the response cluster. Thus, the response cluster is responsible for technical expertise, procedures, and mandates while IMTs oversee resources and personnel on-site as illustrated in **Figure 4**. The Response clusters and IMTs work together in providing assistance.³⁴



Figure 4 Diagram of Emergency Response Leadership (Source: Presentation shared by OCD, February 2020)

SPECIAL DECISION-MAKING AND POLICY-MAKING COMMITTEES FOR RESPONSE AND RECOVERY

- a. **Special decision-making committees are in place for response and recovery operations via the National Disaster Risk Reduction and Management Council (NDRRMC).**
- b. The NDRRMC is the policy making, coordinating, integrating, supervising, monitoring and evaluating body^{4,22} for DRR in the country. Among the members of this Council are the Secretary of the Department of Social Welfare and Development (DSWD) as Vice Chairperson for Disaster Response and heads the Response Cluster; and the Director General of the National Economic and Development Authority (NEDA) as Vice Chairperson for Disaster Rehabilitation and Recovery and heads the Rehabilitation and Recovery Cluster.^{3,4,22}
- c. It should be noted that Disaster Response includes Early Recovery, thus the Response Cluster is also responsible for the early recovery operations. Early recovery “encompasses the restoration of basic services, livelihoods, shelter, governance, security and rule of law, environment and social dimensions, including reintegration of displaced populations”.²²

Special disaster risk management policy-making committees

- a. **Special disaster risk management policy-making committees or bodies are in place.**
- b. The National Disaster Risk Reduction and Management Council (NDRRMC) is the policy making, coordinating, integrating, supervising, monitoring and evaluating body for DRR in the country.^{4,22}

MULTI-STAKEHOLDER PARTICIPATION IN DECISION-MAKING COMMITTEES

- a. **Multiple stakeholder groups are included and have decision-making responsibilities.**
- b. Among the members of the NDRRMC are four (4) representatives from the CSOs and one (1) representative from the private sector.^{4,22} Civil Society Organizations (CSOs) are defined as “non-state actors whose aims are neither to generate profits nor to seek governing power. These include nongovernment organizations (NGOs), professional associations, foundations, independent research institutes, community-based organizations (CBS), faith-based organizations, people’s organizations, social movements, and labor unions”.^{4,22}

STAKEHOLDER ENGAGEMENT



STAKEHOLDER REPRESENTATION IN GOVERNMENT DM STRUCTURES

- a. **Governmental DM organizational arrangements formalize NGO, private sector, and other stakeholder entities in official DM and disaster risk reduction structures through assignment of roles and responsibilities.**
- b. Included in the members of NDRRMC are nongovernmental stakeholders. These are, the four (4)

representatives from the CSOs, one (1) representative from the private sector, and the Secretary General of the Philippine Red Cross (PRC).^{4,22} The Philippine Red Cross is a “nongovernmental society auxiliary to the authorities of the Republic of the Philippines in the humanitarian field”.³⁵ See **Figure 1 Organizational Chart of NDRRMC**.

As members of the NDRRMC, these nongovernmental stakeholders take part in the policy making, coordinating, integrating, supervising, monitoring and evaluating, among the other functions of the Council.^{4,22} The NDRRMP 2011 – 2028 also strongly encouraged the increased participation and engagement with CSOs, the private sector, and even volunteers by identifying in which priority area they will have a role in, which targeted outcomes they will be an implementing partner in, and the DRR Cluster they belong to.³

PUBLIC PRIVATE PARTNERSHIPS (PPPS)

- a. Policies to support the creation of PPPs are established in RA 10121 and its IRR.**
- b. RA 10121 and its IRR establishes that one (1) representative from the private sector shall be a member of the NDRRMC.^{4,22} See **Figure 1 Organizational Chart of NDRRMC**. The IRR or RA 10121 further reiterates how the different levels of DRRMCs shall engage with the private sector along with CSOs and other volunteers.²² It also includes the rules for accreditation, mobilization and protection of the partner private sector, CSOs, volunteers and the national service reserve corps.²²

The Philippine Disaster Resilience Foundation (PDRF) is the private sector representative in the NDRRMC.³⁶ The PDRF is an organization composed of the largest private corporations and non-government organizations (NGOs).³⁶ On October 10, 2018, PDRF, together with NDRRMC and the United Nations Development Programme (UNDP), drew up a national framework on the role of the private sector in disaster risk reduction (DRR). UNDP supported the activity through the Connecting Business Initiative (CBI).³⁷

NGO AND PRIVATE SECTOR INVENTORY

- a. An inventory or registry exists that lists organizations and details the capabilities and resources possessed by each organization.**
- b. RA 10121 and its Implementing Rules and Regulations stipulate that the OCD shall maintain a national roster of ACDVs, National Service Reserve Corps (NSRC), CSOs and the private sector. In addition, the National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028 dictates that an inventory of existing resources and services shall be maintained.

Under the IRR of RA 10121, it is stipulated that OCD shall maintain a national roster of ACDVs, National Service Reserve Corps (NSRC), CSOs and the private sector.²²

Under NDRRMP 2011 – 2028, an inventory of existing resources and services should be done as well.³

PRIVATE SECTOR ENGAGEMENT

- a. **The private sector is actively engaged in official DM efforts, including owners and operators of critical infrastructure, as guided by policies and procedures.**
- b. The private sector is actively engaged in DM in the Philippines. Only in the last decade has the private sector's DM engagement been formalized with government and guided by policies and procedures.

In October 2009 (the same year RA 10121 was ratified), the Special National Public Reconstruction Commission (Public Commission) was formed to lead the reconstruction activities for the devastation caused by typhoons Fengshen (local name Frank), Parma (local name Pepeng), and tropical storm Ketsana (local name Tropical Storm Ondoy). The Commission then tapped the private sector to direct more support for its reconstruction programs. In response, the Philippine Disaster Resilience Foundation, then called Philippine Disaster Recovery Foundation, was established by the country's largest private corporations and NGOs. Immediately, the Public Commission and PDRF drew a cooperation agreement.³⁶

Up until June 2014, RA 10121, its Implementing Rules and Regulations (IRR), NDRRMP 2011-2028, and the NDRP were the only legal and strategic documents that acknowledged the role of the private sector in DM. Later the NDRP for Hydro-Meteorological Disaster 2018, NDRP for Earthquake and Tsunami 2018, and NDRP Consequence Management for Terrorism-related Incidents 2018 were established private for sector disaster preparedness.

In October 2018, the three private sector preparedness plans were incorporated into the PDRF and NDRRMC solidifying the role of the private sector in the National DM system.

NGO ORGANIZATIONAL ARRANGEMENTS

- a. **There are formal NGO associations with established and active membership of NGOs with and without defined DM program areas or missions.**
- b. Both RA 10121 and its IRR provide how NGOs can have a formal association with Government and other established and active members in the field of DM. This is through accreditation with OCD and/ through the LDRRMOs.^{4,22}

NONGOVERNMENTAL STAKEHOLDERS ENGAGED IN DM

- a. **NGOs are comprehensively engaged in Government DM efforts in a manner that is coordinated and complementary.**
- b. As specified in RA 1021, its IRR and NDRRMP 2011- 2028, NGOs have representation as a member in the NDRRMC. As a member, they take full part in NDRRMC functions such as policy making. They also have roles and responsibilities as members of a particular Cluster.^{3,22}

As member of the NDRRMC it is also their responsibility to disseminate the information from NDRRMC/ LDRRMC to the group they represent or to other NGOs.³⁸ NGOs and the Government thereby engage in coordinated and complimentary ways.

ACADEMIA INVOLVEMENT IN GOVERNMENT DM

- a. **Policies and strategies support a robust academic community of practitioners that contribute to official DM efforts through R&D, training, and other means using structurally integrated arrangements.**
- b. Academia is involved in governmental DM efforts in two ways: First, as a member of NDRRMC, academia is party to the policy making, coordinating, integrating, supervising, monitoring and evaluating body in the national DM system.⁴ One of the four seats for CSO representation is for the academe or independent research institutes from a non-state college or a university.^{3,38}

The second way of involvement is through the integration of disaster risk reduction education into the school curricula and the Sangguniang Kabataan (SK) Program, and the mandatory training curricula for the public sector employees. Section 14 of RA 10121 and Rule 10, Sections 1 – 3 of RA 10121 stipulate the several Departments and their relevant agencies, in coordination with OCD, to integrate disaster risk reduction and management education in the school curricula of secondary and tertiary level of education, including the National Service Training Program (NSTP),²⁹ whether private or public, including formal and nonformal, technical, vocational, indigenous learning, and out-of-school youth courses and programs. Public sector employees also have mandatory training in emergency response and preparedness.

The public sector agencies that require DRR integration into their training are as follows: DEPED, CHED, the Technical Education and Skills Development Authority (TESDA), the National Youth Commission (NYC), the Department of Science and Technology (DOST), the DENR.²²

NATIONAL GOVERNMENT ENGAGEMENT IN REGIONAL AND GLOBAL EFFORTS

- a. **Strong and effective relationships exist with global and regional organizations, including formalized support frameworks and agreements that have been ratified.**
- b. The Philippine government is proactive in joining regional and global DM efforts. It has institutionalized these efforts through RA 10121 and its IRR where NDRRMC is empowered to coordinate or oversee the implementation of the country's obligations with DM treaties to which it is a party and see to it that the country's DM treaty obligations be incorporated in its disaster risk reduction and management frameworks, policies, plans, programs, and projects. The IRR in particular mentions the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) to which the Philippines is a signatory.^{4,22}

OCD continues to engage on the global level with other organizations like the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) as required by RA 10121. In February of 2018 the Deputy Administrator of OCD had a meeting with the Director of OCHA Geneva where both parties “explored possible areas for further cooperation and collaboration, including capacity-building trainings and workshops for Philippine government personnel dealing with humanitarian response”.³⁹

ENABLING ENVIRONMENT

LEGAL FOUNDATION:

LEGAL ARRANGEMENTS ADDRESS DM REQUIREMENTS

- a. **DM legislation is comprehensive and driven primarily by a single current disaster law.**
- b. RA 10121 constitutes a comprehensive legal foundation and policy framework for addressing DM requirements. RA 10121 mandates NFDRRM, institutionalizes the NDRRMP, and stipulates the appropriation of funding for DM.⁴ In addition, RA 10121 codifies the engagement of all sectors of society from national government agencies and offices to local governments and community organizations.⁴

RA 10121 also mandates the development of a National Disaster Risk Reduction and Management Plan (NDRRMP), to be based upon a National Disaster Risk Reduction and Management Framework (NDRRM Framework). The National Council is responsible for establishing the Framework and the Plan and for ensuring that the Plan is consistent with the Framework. The OCD is responsible for the oversight, management, and physical implementation of the Plan.⁴

SCOPE OF LEGISLATION

- a. **RA 10121 provides a statutory basis to address all phases of DM.**
- b. As mandated by RA 10121, the Government's declared commitments to all phases of DM are codified in the NDRRMP 2011-2028.⁴ (See also the Philippine Strategic National Action Plan for Disaster Risk Reduction 2009-2019 (SNAP)). As previously mentioned, the NDRRMP 2011-2028 maps out the four thematic areas (phases) of DM addressed therein (See also **Figure 11 NDRRM 2011-2028 vision in the Capacity Development – Formalized CD Plans & Strategies** section):³
 - (1) Disaster Prevention & Mitigation headed by the Secretary of DILG.
 - (2) Disaster Preparedness by the Secretary of Social Welfare and Development (DSWD).
 - (3) Disaster Response by the Secretary of Science and Technology (DOST); and
 - (4) Disaster Rehabilitation and Recovery, by the Director General of the National Economic and Development Authority (NEDA).

The NDRRMP allocates specific outcomes to each DM phase and assigns responsibility to corresponding agencies to achieve their respective outcomes.³ However, there is acknowledgement in the Plan that sharp delineations between phases creates an artificial distinction that does not serve the overall progress of DM, that they are mutually reinforcing, “interoperable”, and “cannot stand alone” because all DM efforts contribute to the overall goals and objectives of greater resilience and decreased vulnerability for Filipino people.³

BASIS OF THE LEGISLATIVE PROCESS

- a. **DM legislation is established on the basis of an all-hazards, broad strategic vision.**
- b. RA 10121 serves as the legal basis for a broad strategic vision regarding DM. The NDRRMC (also called the National Council) is mandated by RA 10121 to develop a NDRRM Framework that provides for “comprehensive, all-hazards, multi-sectoral, inter-agency and community-based approach to disaster risk reduction and management”.⁴ The OCD is responsible for the formulation, oversight, management, and physical implementation of a NDRRM Plan and ensuring it is based upon and entirely consistent with the NDRRM Framework.⁴ Both the Framework and the Plan indicate the Government’s efforts to pivot from a self-described “reactive” to a “proactive” approach to DM in order to achieve increased resilience and decreased vulnerability for all communities.³

IMPLEMENTATION SCHEDULES IN LEGISLATION

- a. **Legislation details implementation schedules and is fully implemented.**
- b. RA 10121 mandated a 90-day implementation of the NDRRMP and ongoing yearly reports to be prepared by the NDRRMC and the OCD in order to audit the progress of the implementation of the dictates of the Act. The Chairperson of the NDRRMC was given 90 days to issue “rules and regulations for the effective implementation” of the Act. The Act also designated a Congressional Oversight Committee for the purpose of supervision of the implementation of the mandates of the Act. The Oversight Committee was given 5 years from the activation of the Act to conduct a sunset review of the accomplishments and impacts, performance, and structure of the implementing agencies.⁴

The NDRRMP 2011-2028 divides outcomes, objectives, and activities into three timelines: short-term, medium-term, and long-term. All efforts are coordinated to align with commitments to Millennium Development Goals, the Philippine Development Plan 2011-2016, and the National Climate Change Action Plan. For the response, rehabilitation, and recovery phases operational timelines are attached as well.³

Some local government units (LGU) have faced difficulties in timely implementation of their local DRRMPs because of manpower shortages in some regions.^{40(p73)}

LEGISLATION AND INSTITUTIONS

- a. **Detailed provisions for the establishment of DM institutions are articulated in RA 10121.**
- b. The NDRRMC was conceived as an assemblage of existing government entities. The National Council draws from twenty-five federal executive departments and fifteen stakeholder entities including LGU and CSOs.⁴ See below under heading *DM Structures and Arrangements of Sub-jurisdictions* in this section for details on DM institutions at lower levels.

LEGISLATION AND BUDGETS

- a. **Legislation provides detailed provisions for the establishment of DM budgets.**
- b. RA 10121 established the National Disaster Risk Reduction and Management Fund (NDRRM Fund) for uses related to disaster risk reduction, mitigation, prevention, and preparedness. Thirty percent (30%) of the NDRRM Fund must be allocated as a Quick Response Fund (QRF) for relief, recovery, and reconstruction efforts.⁴ The amount appropriated for the NDRRM Fund is based on the recommendations of the National Disaster Risk Reduction and Management Council (NDRRMC) and approval from the President of the Philippines. RA 10121 also stipulates the allocation of a revolving fund of one billion pesos (~ 24 million USD)² to the OCD as the principal administrative body for the execution of the dictates of the Act.⁴ The legislation does not have provisions for inflation adjustment.

Local DRRM Funds receive allocations from at least 5% of “the estimated revenue from regular sources” for uses pertaining to pre- and post-disaster measures including training, equipment, and medicines. Payments for calamity insurance premiums may also be drawn from LDRRM Funds.⁴

LEGISLATION IS SOCIALIZED

- a. **Legislation for DM is actively socialized throughout the government via the NDRRMC and LDRRMCs.**
- b. **Legislation for DM is actively socialized throughout the government via the NDRRMC and LDRRMCs.** The National Council comprises twenty-five executive government departments and fifteen stakeholder entities including LGUs and CSOs.⁴

Regional and Local DRRMCs are mandated at the regional, provincial, municipal, city, and barangay level by RA 10121. RDRRMCs must also establish RDRRM Operations Centers.⁴

See below for more details on local structures and arrangements.

DECLARATIONS PROCESS, VERTICAL COOPERATION, AND RESOURCE REQUISITION

- a. **RA 10121 lays out a formalized declaration of calamity process, vertical cooperation mechanisms, and means to conduct requisition of human and material resources during disaster events.**
- b. The most affected Disaster Risk Reduction and Management Council (DRRMC) shall take the lead in the disaster situation, from local barangay to provincial, regional, and national levels during an emergency. The affected area shall be in direct communication with the higher-level councils for assistance. RA 10121 also empowers Local Disaster Risk Reduction and Management Offices (LDRRMO) to “mobilize instrumentalities and entities” of all sectors of local society including government, CSOs, and volunteers to “utilize their facilities and resources” during disaster

² There is no clause for the adjustment of the figure against inflation. One (1) USD equals 41.7 PHP as of September 2020. When the Act was issued one (1) USD equaled 41.47 PHP. Although it looks flat the average annual inflation rate fluctuated between as high as 6% to as low as 0.5%. Source: Trading economics/Philippines inflation rate: <https://tradingeconomics.com/philippines/inflation-cpi>

events. LDRRMCs are also mandated to “Develop, strengthen and operationalize mechanisms for partnership or networking with the private sector, CSOs, and volunteer groups”.⁴

The OCD has a mandate to establish standard operating procedures for communication and coordination between all relevant agencies, councils, at all phases of DM. There is also a mechanism codified in the Act to engage international humanitarian assistance.⁴

RA 10121 mandates the NDRRMC to develop vertical coordination mechanisms to achieve coherence of directives between national agencies down to LGUs during pre- and post-disaster phases. The Act also authorizes the Chairperson of the NDRRMC to engage “instrumentalities or entities of the government and nongovernment and civic organizations” for use of facilities and resources in all phases of DM.⁴

The NDRRMC developed an Incident Command System (ICS) for on-scene response and management coordination of all DRRM activities in 2012. DR managers, responders, public and private stakeholders at all levels are eligible to participate in regular, mandated training for Incident Management Teams (IMT).⁴

EMERGENCY POWERS

- a. **Legislation enables leadership to curtail certain rights and activities during a state of emergency.**
- b. Regarding the legal diminishment of certain rights and activities during an emergency, RA 10121 mandates that upon declaration of a state of calamity, remedial measures be taken such as implementation of price ceilings on necessities like food, water, medication, and petroleum (as laid out in Republic Act No. 7581). Price-fixing, gouging, and hoarding of necessities are prohibited and punishable by law and monitored by the Local Price Coordination Council.⁴ The Act lays out additional prohibited activities, punishable by law, that interfere with the importation and distribution of humanitarian aid.⁴

Section 11 of RA 10121 empowers Local Disaster Risk Reduction and Management Councils (LDRRMCs) to implement “forced or preemptive evacuation” of residents if necessary.⁴

Curfews are not mentioned in RA 10121. Curfews have been imposed by municipalities including Quezon City, Manila, Muntinlupa, Makati, and Pasig since the start of COVID-19 in 2020. These are achieved by executive order made possible under President Duterte’s declared state of public health emergency. Article III, Section 6 of the Philippine constitution gives the government power to restrict movement “in the interest of national security, public safety, or public health, as may be provided by law”.⁴

DM STRUCTURES AND ARRANGEMENTS OF SUB-JURISDICTIONS

- a. **Legislation requires DM structures and arrangements at lower levels of government.**

b. Legal provisions for DM structures and arrangements at lower levels of government in the Philippines are comprehensive. RA 10121 mandates the formation of RDRRMCs. Regional directors of the OCD are the designated chairpersons of RDRRMCs. Each RDRRMC must establish a RDRRMOC “when necessary”. The RDRRMCs are also responsible for the supervision, coordination, and evaluation of the LDRRMCs (described in the Act as “Provincial, City, and Municipal Disaster Risk Reduction and Management Councils”).⁴ See **Figure 5** Organizational Chart of the Metro Manila Disaster Risk Reduction and Management Council.

The LDRRMCs must ensure that local development plans integrate disaster risk reduction and sustainable development principles. LDRRMOs are mandated in all provinces, municipalities, cities, and Barangays.⁴

Additional provisions for arrangements and responsibilities for DM requirements at regional and local levels are detailed in RA 10121. Regarding coordination during emergencies, the LDRRMCs are designated as lead(s) in responding to a disaster event in accordance with which region is affected and the size of the affected area. This holds from the smallest designation of barangay to city, provincial, regional, and up to the national level. As dictated by RA 10121, the Local Council and the National Council function in support of the LGUs during a disaster event. Civil society organizations and the public sector are likewise expected to conform to the arrangements set out in Section 15.⁴

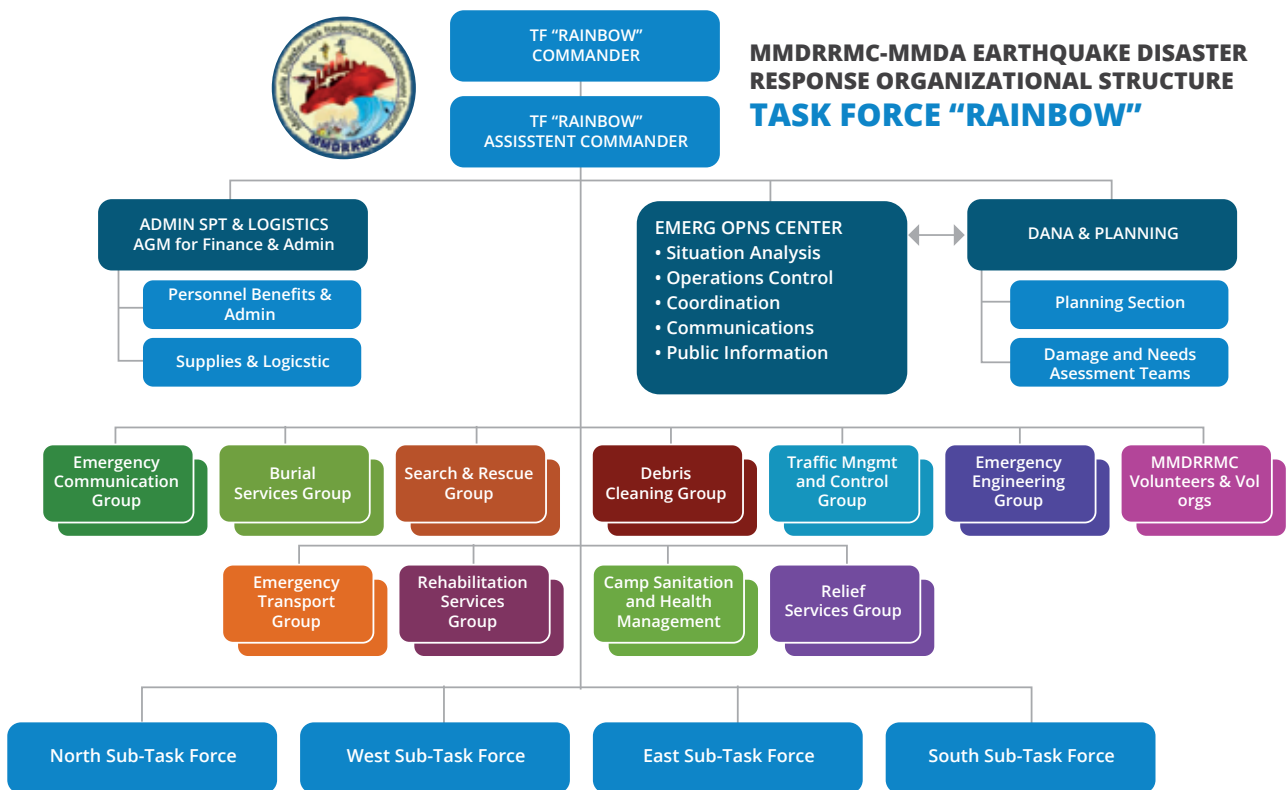


Figure 5 Organizational Chart of the Metro Manila Disaster Risk Reduction and Management Council. Source: <http://www.mmda.gov.ph/images/pdf/Home/MMDRRMC/PHILIPPINE-DRRM-SYSTEM-AND-OPLAN-METRO-YAKAL.pdf>

GUIDANCE FOR DRR ACTIVITIES AND REQUIREMENTS

- a. **RA 10121 formally commits to sustainable development practices nationally, regionally, and locally regarding land-use regulations, infrastructure projects, and socio-economic measures including poverty reduction.**
- b. The Act mandates the incorporation of disaster risk reduction practices into Comprehensive Development Plans (CDP) and Comprehensive Land Use Plans (CLUP) as defined by the LDRRM Plans. The Act also mandates the LDRRMCs to integrate both CCA and DRR into “development plans, programs, and budgets as a strategy for sustainable development”.⁴

The Act also stipulates that the prohibition of land-use activities such as housing development in high-risk zones, and the promotion of hazard-resistant engineering, and planning, shall be implemented in new construction as indicative of “disaster prevention” activities.⁴

The Philippine Development Plan 2017-2022 confirms and reiterates the Government’s commitment to “ensure compliance with disaster risk reduction and management (DRRM) and climate change adaptation (CCA) requirements to mitigate risks and address vulnerability” in planning projects, a reflection of the stated overall goal of mainstreaming and integrating CCA-DRR activities.^{41(pp11-14,187)} In addition, the NDRRMP 2011-2028 joins land-use recommendations and sustainable development practices with DRR-CCA activities to reflect the overarching policy of integration.³ See also the previous discussion on CCA in the *Institutional Arrangements -Organizational Structures, Climate Change Adaptation (CCA) Platform* section.

FACILITATION OF MILITARY SUPPORT

- a. **Legislation enables and facilitates military support for DM purposes.**
- b. RA 10121 authorizes the Chairperson of the National Council (NSRRMC), as the Secretary of the DND, to compel reserve forces for aid in relief and rescue operations during disasters as codified in the Republic Act No. 7077.²⁹ The Armed Forces of the Philippines (AFP) play an integral role in humanitarian assistance disaster relief (HADR). The National Disaster Response Plan (2014) identifies the AFP as a key player in disaster response activities.⁴² Among the duties of the AFP during a disaster response are: Search, Rescue and Retrieval (SRR); evacuations; and transport of personnel, equipment, and materials.⁴³ See also the earlier discussion under the *Institutional Arrangements-Organizational Structures* section, *Military Engagement* heading.

FACILITATION OF INTERNATIONAL & CROSS-BORDER ACTIVITIES (FACILITATION AND PROVISION)

- a. **Legislation facilitates international DM needs, including participation in regional and international DM frameworks and provisions for bilateral and international support.**
- b. Legal provisions and policy declarations that facilitate international/cross-border DM needs are comprehensive. The Philippines took an active role in creating the SFDRR 2015-2030 at the Third United Nations World Conference on Disaster Risk Reduction (3WCDDR) in 2015. The Philippines remains fully committed to international cooperation as evidenced by their ongoing collaborations

with the UN Office for Disaster Risk Reduction (UNDRR) and the Asian Disaster Preparedness Center. The collaboration in 2019 produced a Status Report (Disaster Risk Reduction in the Philippines) detailing their commitments in action to the four priorities of the Sendai Framework.²⁴

RA 10121 authorizes “duty and tax free privileges” (Section 105 of the Tariff and Customs Code of the Philippines) for the importation of necessities and equipment for purposes of DM and recovery.⁴ This mechanism is activated after the President declares a state of calamity.⁴ The Act also mandates that all “programs, projects, and activities” related to disaster risk reduction must adhere to “established national policies” and be “aligned with international agreements”.⁴ The OCD is responsible for ensuring these mandates are followed. This is reiterated in the NDRRMP 2011-2028.³

FINANCIAL RESOURCES



DM BUDGET ARRANGEMENT

- a. **Budget provides line-item funding for DM activities.**
- b. As provided by RA 10121, line-item allocations from the annual General Appropriations Act (GAA) (State budget) are used to fund the NDRRM Fund and LDRRM Funds. RA 10121 mandates that every province, city, municipality, and barangay establish their own LDRRM Funds. All DRRM Funds are required to allocate 30% to a QRF for use during a disaster situation; the remaining 70% may be used for any and all DM activities, including response.^{4,44} The NDRRM Fund and the LDRRM Funds comprise the primary funding arrangements for DM. As mentioned earlier, RA 10121 stipulates the allocation of a revolving fund of one billion pesos (~24 million USD) to the OCD as the principal administrative body for the execution of the dictates of the Act.⁴ The legislation does not have a provision for inflation adjustment.

Another State-funded resource, the People’s Survival Fund (PSF), was created by Republic Act 10174 of 2011 (RA 10174) to administer financial support for communities coping with and building resilience to the effects of climate change.^{45 (Section 18)} Sanctioned uses for the PSF include prevention and adaptation activities such as resource and land management; the Fund also serves as a guarantee for risk insurance for farmers and farm laborers.⁴⁵ RA 10174 mandates that the GAA (State budget) provide an opening balance of one billion pesos (~24 million USD) to establish the PSF.⁴⁵ The PSF shall also maintain that amount as a minimum balance, in part by encouraging “donations, endowments, grants and contributions”.⁴⁵ The PSF is managed by the CCC.

DM BUDGET FUNDED AT TARGETED LEVELS

- a. **The Philippines DM budget is funded at the levels targeted in legislation.**
- b. RA 10121 mandates State Budget allocations to the NDRRM Fund.⁴ According to a 2020 status report from the DBM regarding the NDRRM Fund, total combined appropriations for fiscal years 2019 and 2020 totaled more than 22 billion pesos (~450 million USD).⁴⁶ This is in addition to the aforementioned revolving fund of one billion pesos (~24 million USD), allocated from the GAA, for the PSF. See **Figure 6 State Budget Allocations** below for visualization.

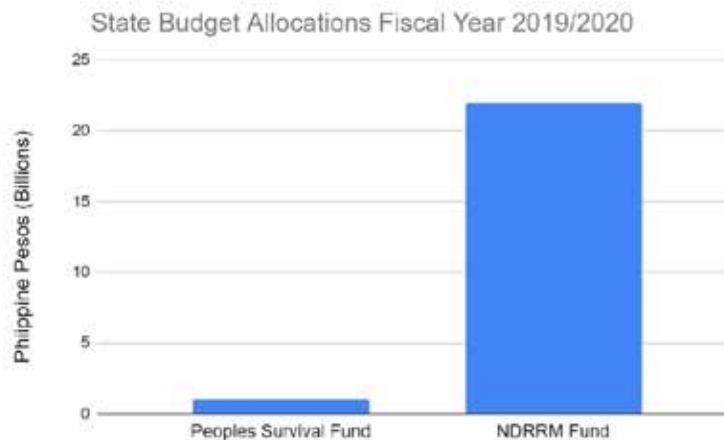


Figure 6 State Budget Allocations

RA 10121 mandates every province, city, municipality, and barangay to have their own LDRRM Funds. A 2018 DND audit records 1063 LGUs reporting on financial and operational activities regarding DRRM funds and offices, whilst 386 LGUs failed to report on their DRRM activities, indicating some level of participation.⁴⁰ However, research from the Harvard Humanitarian Initiative and Ateneo de Manila University published in 2018 reveals that LGUs in the 4th- 6th class range (i.e., the lower half of municipalities by average annual income) are chronically underfunded regarding their DRRM mandates.⁴⁷

SCOPE OF DM BUDGET

- a. **The DM budget of the Philippines covers programmatic costs as well as administrative and operational needs.**
- b. Regarding the scope of DM funding in the Philippines, the DM budget covers programmatic costs as well as administration and operational needs. This is especially documented in a recent Department of Budget and Management Status Report of the NDRRM Fund where significant Maintenance and Other Operating Expenditures (MOOE) were funded.⁴⁶

In Sections 5, 6 of RA 10121 the powers, functions, and responsibilities of the OCD and the NDRRMC are addressed. Both organizations are tasked with considerable administrative, operational, and programmatic duties. The NDRRMC oversees the administration of the NDRRM

Fund, including processing allocations to 30 agencies with programs for DM responsibilities.⁴⁰ As previously stated, RA 10121 mandates a minimum revolving fund of 1 billion pesos (~ 24 million USD) to the OCD as the agency in charge of realizing the mandates of the Act.

- For major disaster declarations, funding allocation is determined as recommended by the NDRRMC and based upon the approval of the President.
- The GAA, Republic Act 10964 (RA 10964) of 2018, and a 2018 DND report on both show 19.6 billion pesos (~370 million USD)³ appropriated to the NDRRM Fund.^{40,48} The purpose of the fund was for
 - reconstruction, rehabilitation, repair, aid, relief and other works or services, including pre-disaster activities.
 - additional funding source of the QRF; and,
 - insurance coverage of government facilities against natural calamities.⁴⁸
- In addition, RA 10964 appropriated 7.6 billion pesos (~145 million USD) to Quick Response Funds and 10 billion pesos (~190 million USD) to the Marawi Recovery, Rehabilitation, and Reconstruction Program (MRRRP).
- The OCD received roughly 508 million pesos (~10 million then-USD), divided between their NDRRM Fund and the QRF. In addition, almost 18 billion pesos (~343 million USD) were distributed among 1,063 LDRRM Funds.
- For general administration and support, and operations, the OCD received about 1.07 billion pesos (~24 million USD) in 2018.⁴⁸
- Cash donations for 2018 totaled almost 4 billion pesos (~76 million then-USD).^{40,48} The sources of donations were not given.

DRM GRANT PROGRAMS

- a. **Grant programs that support preparedness, DRR programs and acquisitions at the sub-regional and local levels exist but are limited in their scope.**
- b. DRR grant programs and acquisitions at the sub-regional and local levels that support preparedness exist but are limited in their scope. The People’s Survival Fund (PSF) was created by Republic Act 10174 (RA 10174) as an ongoing instrument to “provide long-term finance streams” to communities coping with and building resilience to the effects of climate change and related disasters.⁴⁵ Sanctioned uses for the PSF include prevention and adaptation activities such as resource and land management and institutional development; the fund also serves as a guarantee for risk insurance for farmers and farm laborers.⁴⁵ RA 10174 mandated that the State Budget must provide an opening balance of one billion pesos (~24 million USD) to establish the PSF as a revolving fund.⁴⁵ The PSF shall also maintain that amount as a minimum balance, in part by encouraging “donations, endowments, grants and contributions.”⁴⁵ Access to funding has

³ Pesos and US dollars are in 2018 figures.

proven elusive for its intended recipients- the local government units (LGUs). A joint report by the International Development Research Centre (IDRC), Thailand Development Research Institute (TDRI) and the Frankfurt School of Finance and Management (FSFM) identified issues at policy, institutional, and operational levels.⁴⁹

The State Budget (2018) for the DRRM Fund itemized 1.754 million pesos (~33 thousand USD) in a line item marked “Locally Funded Grants/Aids”.^{40,48}

BUDGET SUPPORTS TRAINING, EDUCATION, AND RESEARCH & DEVELOPMENT

a. The DM budget support training, education, and R&D.

b. Regarding the funding of DM training, education, and research and development: The OCD, via its Capacity Building and Training Service Office, maintains ongoing formal DM/DRR training and educational programs. Dozens of projects are itemized in a 2018 DND audit. One example is training for Rapid Earthquake Damage Assessment Systems (REDAS) for the local government unit (LGU) in Tabuk, Kalinga (pilot project) at the State University and College (SUC), thereby:

- Enhancing risk governance capabilities,
- Creating a cooperation mechanism between the LGU and SUC, and
- Institutionalizing science and technology networks providing disaster risk reduction (DRR) and climate change adaptation (CAA).

This project reflects the Government’s goal of mainstreaming and integrating DRR and CCA into policies and plans.^{40,48,50} Dozens of REDAS trainings have been given subsequently to DM officials since 2018.⁵¹ A formally organized community of higher education institutions also offers programs that support DM research. For more information on training, education, and research see section on *Capacity Development-Training & Education* below.

The NDRRMP 2011-2028 called for the “Establishment of DRRM Training Institutes”.³ A 2018 DND report records “sustained DRRM Education and Research through permanent training institutions”.⁴⁰

Two (2) of the ten (10) Research Priorities of the Harmonized National Research and Development Agenda 2016 for the Department of Science and Technology (DOST) are Disaster Risk Reduction and Climate Change Adaptation.⁵² For more on research and development, see the section on *Capacity Development-Training & Education* below.

NATIONAL BUDGET SUPPORTS SUB-JURISDICTIONS

a. Capacity development at local levels in the Philippines is supported by both the Local Disaster Risk Reduction and Management Funds and the NDRRM Fund, however implementation obstacles exist.

b. Capacity development at local levels in the Philippines is supported by both the LDRRM Funds and the NDRRM Fund. DRRM activities covered by the funds include, but are 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”.²² In addition, local development plans that are part of the Local Disaster Risk Reduction and Management Plans (LDRRMPs) can be supported through access to the Local Disaster Risk Reduction and Management Funds (LDRRM Funds). Furthermore, Local Government Units (LGUs), together with their respective Local Disaster Risk Reduction and Management Offices (LDRRMOs), may request disbursements from the National Disaster Risk Reduction and Management Fund (NDRRM Fund) for disaster risk reduction and management projects. See **Figure 7 Calamity Fund Process Flow**.⁵³

The 2018 DND report on Disaster Risk Reduction and Management Funds (DRRM Funds) describes numerous community programs implemented for enhancing capacity including but not limited to: "Establishing Platforms for Knowledge Exchange"; “Enhanced Unit Readiness and Preparedness”; “Information, Education and Communication Campaigns (IECs)/Flood Drills”; “Capacitated DRRM focal person/school heads on Standardized DRRM/CCA/EIE Modules and SDRRM Manual”.^{40,48}

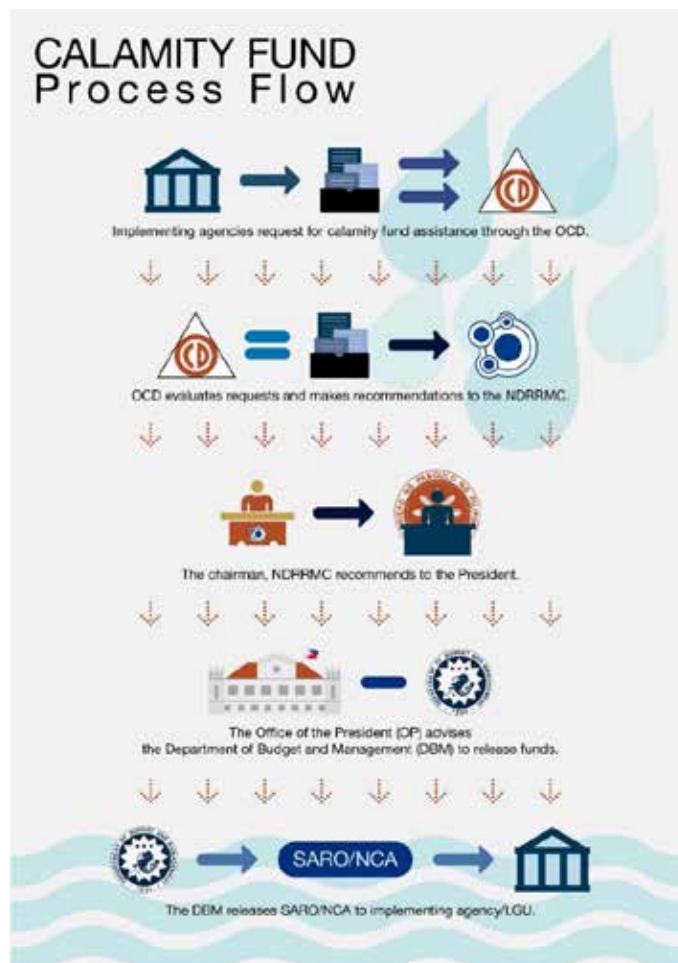


Figure 7 Calamity Fund Process Flow (Source: Department of Budget and Management website. <https://www.dbm.gov.ph/index.php/programs-projects/calamity-and-quick-response-funds#5-is-there-a-process-flow-to-follow-to-release-the-fund>)

DEDICATED EMERGENCY OR CONTINGENCY FUND EXISTS

- a. **Quick Response Funds (QRFs) for emergency use are a requirement at every level of government in the Philippines.**
- b. QRFs for emergency use are a requirement at every level of government in the Philippines. The QRFs are apportioned from DRRM Funds as mandated by RA 10121.⁴ As previously stated, 30% of each DRRMF must be allocated to a QRF for use during an emergency. See **Figure 7 Calamity Fund Process Flow**.

CONTINGENCY FUND LEVELS

- a. **DRRM Funds are required at every level of government in the Philippines. However, there is no required percentage of GDP mandated by law.**
- b. Funding for the National DRRM Fund is allocated, by mandate, from the annual State Budget via the General Appropriations Act (GAA).⁴⁸ No required percentage of GDP is mandated by law.

The Gross Domestic Product of the Philippines was reported to be approximately 17.415 trillion pesos (~330.9 billion USD) for the year 2018.⁵⁴ Considering the Fiscal Year budget for 2018 was 3.78 trillion pesos (~71.8 billion USD), DM expenditures make up almost 1% of the entire 2018 State Budget.⁵⁵ However, combined expenditures on DM for fiscal year 2018⁴ (37.2 billion pesos)⁴⁰ reflect just 0.22% of Philippine GDP for 2018, far below the internationally accepted 1% of GDP for DM purposes.^{56(p2)} Since the Philippines is a highly disaster-prone country, a larger percentage would be prudent.

GDP 2018 (PHP)	State Budget 2018 (PHP)	DM Expenditures 2018 (PHP)
17.415 trillion	3.78 trillion	37.2 billion

DM Expenditures / GDP	DM Expenditures/State Budget
0.22%	0.98%

CONTINGENCY FUND LIMITS

- a. **Disaster reserve funds are subject to guidelines for access and provisions that limit non-disaster uses.**
- b. Disaster reserve funds are subject to guidelines for access and provisions that limit non-disaster uses. All DM funds are monitored to ensure appropriate use. QRFs may only be accessed once a state of calamity is declared. According to RA 10121, all Local Disaster Risk Reduction and Management Funds (LDRRM Funds) are required to allocate 30% of total funds to QRFs. LDRRM Funds are managed by Local Disaster Risk Reduction and Management Councils (LDRRMCs).

⁴ For the year 2018, the disaster funding consisted of 19.6 billion pesos for the NDRRM Fund, 10 billion pesos for the Marawai Recovery Program, and 7.6 billion QRF as mentioned earlier. That totals to 37.2 billion pesos (~707 million USD).

QRFs may be accessed by the Local Disaster Risk Reduction and Management Offices (LDRRMOs) once a state of calamity is declared. NDRRM Memorandum 2017-45 mandates that projects funded from the NDRRM Fund must be monitored and evaluated periodically for confirmation of appropriate uses.⁴

EXISTENCE OF AND PUBLIC SUPPORT FOR CATASTROPHE RISK TRANSFER

a. A catastrophic risk insurance market is supported by the public sector.

- b. The World Bank, working with the Department of Finance and its Disaster Risk Financing and Insurance Strategy,⁵⁷ issued 3-year catastrophe bonds on behalf of the Philippine government for earthquakes and cyclones in 2019.⁵⁸ Previously (2017) the World Bank secured catastrophic risk insurance to Philippine government agencies and individual provinces for typhoons and earthquakes. All are market-based financial instruments.⁵⁸

In addition, the Philippine City Disaster Insurance Pool (PCDIP) was created to provide immediate post-disaster relief funds to participating cities. Ten Philippine cities are engaged in the PCDIP, prepared together with the Department of Finance and the Asian Development Bank (ADB).⁵⁹

The Department of Finance has recently (2019) called for cooperation with ASEAN's Disaster Risk Financing and Insurance (DRFI) that provides for greater access to regional risk transfer mechanisms.⁶⁰

INSURANCE INDUSTRY OVERSIGHT

a. The Government's Insurance Commission (IC) regulates insurance markets to ensure solvency.

- b. The IC is a government agency under the auspices of the Department of Finance. The IC regulates insurance markets to ensure solvency, overseeing licensure and operations of insurance agents, general agents, resident agents, underwriters, brokers, adjusters and actuaries.⁶¹ Whilst the IC does not have a specific DM mandate, DM insurance products are subject to its oversight.

AVAILABILITY OF LOW-INTEREST LOANS TO SUPPORT RECOVERY

a. The Government maintains low-interest loan programs that support the recovery expenses to a limited range of stakeholders.

- b. A Calamity Loan Assistance Program (CLAP) provides needed financial assistance for Philippine pensioners on the government's Social Security System (SSS) who have been affected by a disaster. Additional resources have been implemented for SSS members affected by disaster; for example advances on pension payments, reduced rates for Direct House Repair and Improvement Loans, and a Loan Restructuring Program for members affected by disaster who are past due on loan payments.⁴⁰

For government workers, emergency loans are available through the Government Service Insurance System (GSIS). The GSIS also covers local government units (LGUs) and national

government agencies (NGAs).⁶² In addition, the GSIS began offering COVID-19 emergency loans for its members.⁶³

RA 10121 lists among “remedial measures” for disaster recovery efforts the “granting of no-interest loans by government financing or lending institutions to the most affected section of the population through their cooperatives or people’s organizations”.⁴

AVAILABILITY OF MICROFINANCE CREDIT SCHEMES

- a. **The Government does not support disaster microfinance credit schemes or expedited remittances.**
- b. A previous program since terminated was the Microfinance Development Program that started in 2005 with the assistance of the ADB.⁶⁴ There remains private offerings for microfinance.

GUIDELINES FOR DISASTER RELIEF DISBURSEMENT

- a. **Clear guidelines exist for the provision of disaster relief funds to disaster-impacted jurisdictions.**
- b. Some government agencies have their own QRFs so they may respond immediately in a disaster situation without waiting for a recommendation from National Disaster and Risk Reduction and Management Council (NDRRMC) or the Office of the President (OP) once a state of calamity has been declared. The President will declare a state of calamity based upon a recommendation from the NDRRMC, according to criteria set by the NDRRMC.⁴ The following agencies have their own Quick Response Funds (QRFs):
 - Department of Public Works and Highways (DPWH),
 - Department of National Defense (DND)/ Office of the Secretary (OSEC)/ Office of the Civil Defense (OCD), DEPED,
 - Department of Social Welfare and Development (DSWD),
 - Department of Agriculture (DA).

If or when one of the above agencies has depleted their QRF, they may request additional support directly from the DBM; this requires approval from the OP.⁵³

As mentioned earlier, Quick Response Funds (QRFs) may be accessed by the Local Disaster Risk Reduction and Management Offices (LDRRMOs) once a state of calamity is declared.²² The release and use of the Quick Response Funds is supported by the “declaration of a state of calamity upon recommendation of the NDRRMC.”^{65 (Section 6.3)} Guidelines for the release of Quick Response Funds (QRF) are also codified in RA 10121: Upon a declaration of a state of calamity, the QRF shall be released for “relief and recovery” (Section 22).⁴ This is reiterated in Memorandum Circular No. 2017-45.⁶⁶ This process is the same on national, regional, and local levels.⁶⁶

CLEAR AND COMPREHENSIVE STRATEGIES

STRATEGIC PLANS AND POLICIES

- a. **Distinct DM and DRR strategic plans (strategies) and policies exist for all DM phases.**
- b. The NDRRM Framework has four priority areas (listed above and see also **Figure 11 NDRRM 2011-2028 vision** in *Capacity Development – Formalized CD Plans & Strategies* section).⁶⁷ The Framework emphasizes that the priorities, or phases, should not be understood as discrete but rather as having intentionally blurred boundaries that allow for interoperability thus allowing for better coordination and effectiveness. Each priority in the Framework has a corresponding long-term goal that is to be achieved by 2028 through fourteen (14) objectives, twenty-four (24) outcomes, fifty-six (56) outputs, and ninety-three (93) activities. These are divided into three timelines: short term (2011-2013), medium term (2014-2016), and long term (2017-2028).⁶⁷

Medium term would contribute to meeting commitments under the Millennium Development Goals and Hyogo Framework for Action.³ The short-term and medium term priorities have reached their sunset provision dates. Long term activities are to coincide with National Climate Change Action Plan (NCCAP) to reinforce convergence of the two plans. The NCCAP outlines the agenda for climate change adaptation and mitigation from 2011 to 2028.⁶⁸

National Disaster Risk Reduction and Management Plan 2011-2028 iterates the same objectives, outcomes, outputs, and activities within the same four thematic areas⁵ (phases of DM) as the Framework.³ (See **Figure 1 Organizational Chart of NDRRMC** in the *Institutional Arrangements – Organizational Structures* section and **Figure 11 NDRRM 2011-2028 vision** in the *Capacity Development – Formalized CD Plans & Strategies* section.)

The NDRRMP shows its commitment to each thematic area, or DM phase, by appointing an appropriate lead agency for each. The positions are filled by:³

- Vice-Chairperson for Disaster Prevention and Mitigation: Department of Science and Technology (DOST)
- Vice-Chairperson for Disaster Preparedness: Department of Interior and Local Government (DILG)
- Vice-Chairperson for Disaster Response: Department of Social Welfare and Development (DSWD)
- Vice-Chairperson for Rehabilitation and Recovery: National Economic and Development Authority (NEDA)

Other policies/guidelines directed at specific DM phases include (or particular activities within a phase) but are definitely not limited to:

⁵ Called priority areas in the NDRRM Framework

- *Disaster Response Operations Guide*⁶⁹ by Department of Social Welfare and Development (DSWD) (Vice-Chairperson for Disaster Response);
- *Contingency Planning Guidebook*^{70,71} by NDRRMC;
- *Rapid Damage Assessment and Needs Analysis (RDANA) Guidelines*^{72,73} NDRRMC; and
- *Disaster Recovery and Rehabilitation Guide*⁷⁴ by National Economic and Development Authority (NEDA); NDRRMC member agency.

STAKEHOLDER ENGAGEMENT

a. DM and DRR strategic plans are inclusive of and developed in coordination with relevant stakeholders including NGOs and private sector.

b. The (NDRRMP) 2011-2028 outlines activities to strengthen capacity of the national government and the LGUs along with partner stakeholders to build disaster resilience in communities and to institutionalize arrangements and measures for reducing disaster risks.³ The NDRRMP 2011-2028 implementation stipulations identifies community practices and stakeholder groups that are integral to the successful pursuit of the targets in the plan:³

- Community-based good practices for replication and scaling up.
- Indigenous practices on DRRM
- Public-Private-Partnerships
- DRR and CCA networks.

The NDRRMP 2011-2028 additionally dictates that coordination with DILG is required in the development of DM and DRR plans to incorporate the input of multiple stakeholder groups and to ensure integration of relevant land-use mandates and other statutes regarding development.³

The Local Planning Illustrative Guide: Preparing and Updating the CDP (2017) from the Department of the Interior and Local Government – Bureau of Local Government Development (DILG-BLGD) presents numerous strategies for including CCA, DM and DRR in the development process.⁷⁵ The Guide also emphasizes the importance of engaging with multiple stakeholders including representatives for:⁷⁵

- Persons with Disability, Children: Department of Social Welfare and Development (DSWD)
- Senior Citizens: Office of Senior Citizens Affairs (OSCA)
- Women: Gender and Development Focal Point System (GFPS)
- Climate Change Adaptation/Disaster Risk Reduction (CCA/DRR)
- Municipal Environment and Natural Resources Officers (MENRO)
- Local Disaster Risk Reduction and Management Offices (LDRRMO)
- Civil Society Organizations/People's Organizations (CSOs/POs)

- Indigenous Cultural Communities/Indigenous Peoples (ICCs/IPs Communities)
- Representatives of Local Special Bodies (LSBs) and
- Local Advisory Councils (LACs)

STAKEHOLDER GUIDANCE

- Guidance is provided through a combination of self-directed and facilitated means (e.g., support from technical staff) and guidance is provided to the full spectrum DM stakeholders.**
- The CBTS, under the auspices of the OCD, offers a variety of DM and DRR trainings to a wide audience of stakeholders via their Training Portal. The delivery method of their online courses is blended: “various information-rich eLearning formats such as videos, webinars, interactive modules, microsites, and more”.⁷⁶ Examples of offerings include:
 - *Risk Communication webinar* for “all members of DRRM Councils at the national, regional, provincial, cities, municipalities, and barangays; National Governments Agencies, Constitutional Offices, State Universities and Colleges, including GOCCs”
 - *Strengthening earthquake disaster preparedness during the COVID-19 pandemic webinar* for the general public
 - *Community based disaster risk reduction and management (CBDRRM)* to encourage community members to bring the implementation of DRRM into their communities.
 - *Local disaster risk reduction and management planning* for local implementation of DRR and DM programs

Other sources of guidance for a range of stakeholders include publications by DILG:

- Kewentong Listo: *Stories of Disaster Preparedness and Resilience*, 3 volumes:⁷⁷
- *Indigenous Practices as the Cornerstone of Disaster Management.*
- *Behind the Scenes of Every Calamity, DILG Fieldworkers in Action.*
- *Techy and Ready, Disaster Management Practices in the Modern Age.*

Bigkisan, A Compendium on the DILG Technical Assistance Program for Local Resource Institutes is another resource with some DM, DRR, and capacity building relevance.⁷⁸

POLICY SUPPORT OF DRR INTEGRATION

- DRR and DM policies support adequate integration of national goals in development, planning, recovery, and reconstruction, and ensure integration and coordination with CCA and SD policies and goals. Implementation of the policies remains slow.**
- As mentioned earlier in the *Institutional Arrangements-Organizational Structures* section under

heading *Sustainable Development (SD) Platform*, the NDRRMC has not fully integrated SD in general or the Sustainable Development Goals (SDGs) 2030 and CCA into its DM and DRR policies. However, the NDRRMP does stipulate the mainstreaming of DRRM and CCA into policies, planning, and development.³ Also mentioned above is the *Local Planning Illustrative Guide: Preparing and Updating the CDP (2017)* from the Department of the Interior and Local Government – Bureau of Local Government Development (DILG-BLGD). The Guide represents a solid instrumentalization of mainstreaming CCA and DRRM into the development process.⁷⁵

The Climate Change Commission is the primary government body in charge of the coordination, evaluation, and monitoring to “ensure mainstreaming of climate change in national, local, and sectoral development plans”.⁷⁹ However, notwithstanding the stipulations of the NDRRMP and the mandate imposed upon the CCC, the challenge lies in the implementation of the stated policies and goals due to parallel strategies, action plans, tools and reporting mechanisms. This is compounded by capacity gaps at the local level.⁸⁰ (Chapter 6)

The Department of Science and Technology's (DOST) *Harmonized National Research and Development Agenda 2016* also prioritizes research on Disaster Risk Reduction and Climate Change Adaptation – but they are separate priorities rather than a single focus on the integration of DRR and CCA.⁵²

DRR AND DM POLICY INTEGRATION PROGRESS

- a. **The NDRRMC has representation and cooperation across high-level government agencies and ministries and is formally committed to the widespread integration of DM and DRR into policy.**
- b. The NDRRMC has representation and cooperation across high-level government agencies and ministries and is formally committed to the widespread integration of DM and DRR into policy. The *Local Planning Illustrative Guide: Preparing and Updating the CDP* discussed above indicates that DRR and DM policies are applied in the development process at local levels.

MITIGATION MANDATES IN DRR POLICIES

- a. **Explicit mitigation requirements are included in DRR policies and plans; however, enforcement mechanisms do not exist.**
- b. As mentioned in the *Enabling Environment – Clear and Comprehensive Strategies* section under heading *Strategic Plans and Policies*, the Department of Science and Technology (DOST) is the lead agency in charge of the NDRRMF and the NDRRMP 2011-2028 priority area (1): Disaster Prevention and Mitigation.^{3,67} The NDRRMP 2011-2028 stipulates that DRR (and CCA) shall be budgeted for and incorporated into development plans and policies at every administrative level.³ RA 10121 embeds the notion of enforcement in its definition of ‘mitigation’: “measures include... the enforcement of comprehensive land-use planning, building and safety standards, and legislation”⁴ and confers responsibility overall to the NDRRMC to “Monitor the development and enforcement by agencies and organizations of the various laws, guidelines, codes or technical standards”.⁴ RA 10121 additionally tasks the OCD with ensuring the development,

implementation, and monitoring of national standards on mitigation.⁴ There is no evidence of the implementation of enforcement mechanisms, in local contexts.

CONSIDERATION OF GENDER AND VULNERABLE GROUPS IN STRATEGIES AND POLICIES

- a. **DM and DRR strategies and policies address gender issues and vulnerable groups but implementation challenges remain.**
- b. The National Disaster Risk Reduction and Management Plan (NDRRMP) is committed to promoting gender-sensitive vulnerability and capacity analysis with sensitivity to the indigenous practices and local knowledge in disaster risk reduction and management activities.

As mentioned above in the *Enabling Environment – Clear and Comprehensive Strategies* section under heading *Stakeholder Engagement*, the Local Planning Illustrative Guide: Preparing and Updating the CDP (2017) (from DILG-BLGD) presents strategies for engaging with multiple stakeholders including representatives from vulnerable populations.⁷⁵ To that end, a database tool called Rationalized Planning Indicator and Data Set (RaPIDS) has been developed for use by LGUs to incorporate locally relevant indicators – local development indicators (LDIs) – into their planning efforts, such as gender.⁷⁵ See **Figure 8** *RaPIDS Indicator Composition*. The National Climate Change Action Plan 2011–2028 from the CCC stipulates gender-sensitive vulnerability and risk assessments for provincial and local planning efforts.⁶⁸

A 2014 report on gender and DRRM in the Philippines found that barriers to the implementation of gender considerations into practice are persistent despite their inclusion in DRRM plans and policies.⁸¹ For example, gender stereotypes influence DRRM activities like training only men for search and rescue because the activity requires strength, and enlisting women as volunteers because they have more ‘free time’.⁸¹ See **Figure 9** *A Diagram of Barriers and Opportunities in the Promotion of Gender Equality in DRRM* in DRRM (from the report).

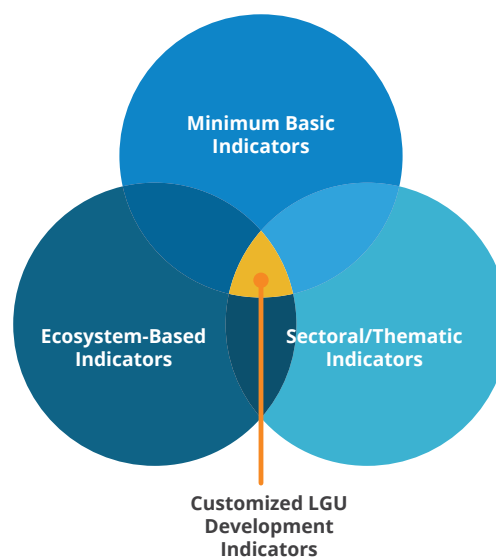


Figure 8 *RaPIDS Indicator Composition* (Source https://www.dilg.gov.ph/PDF_File/reports_resources/dilg-reports-resources-2017110_298b91787e.pdf)

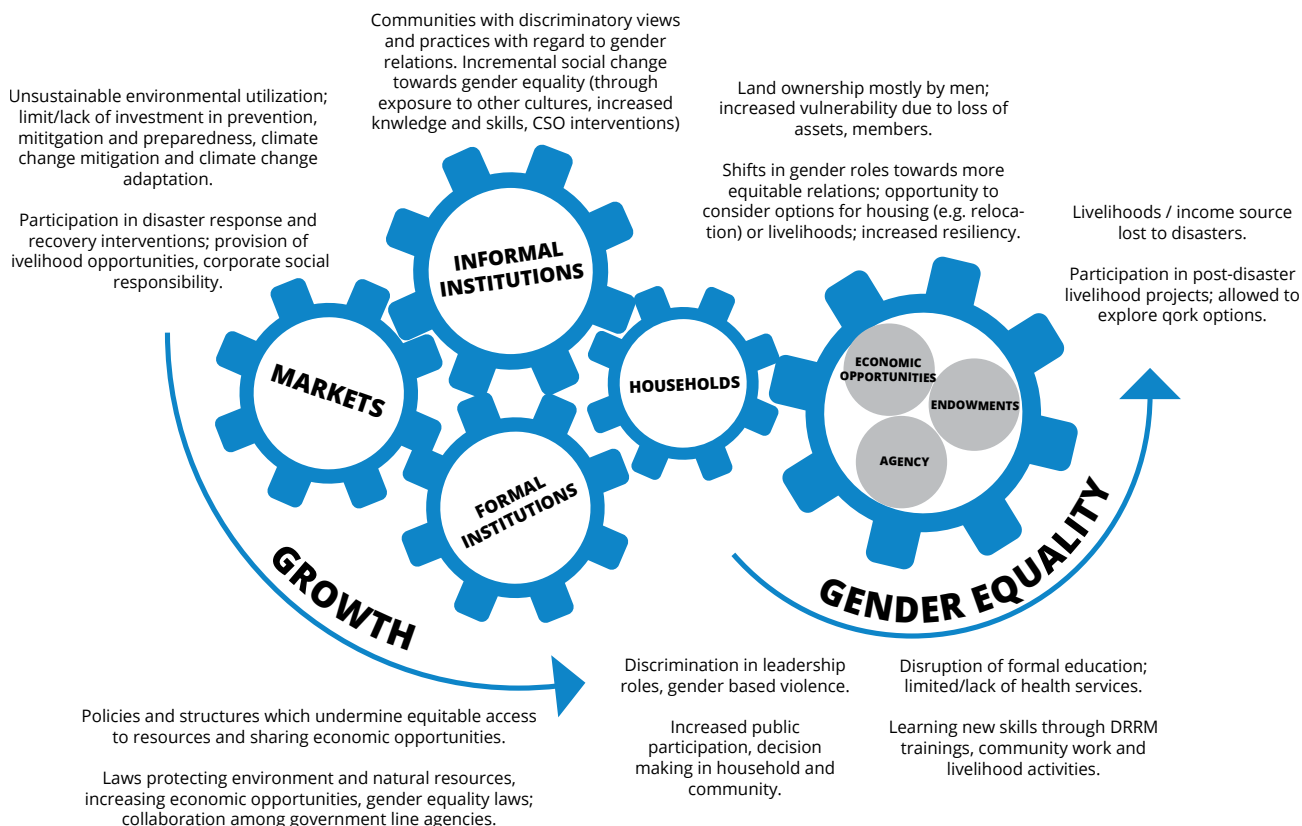


Figure 9 A Diagram of Barriers and Opportunities in the Promotion of Gender Equality in DRRM (Source: <https://library.pcw.gov.ph/sites/default/files/Review%20of%20Gender%20Equality%20in%20DRRM%20%20Final%20Report.pdf>)

PUBLIC CONFIDENCE & POLITICAL SUPPORT

SUPPORT FROM TOP GOVERNMENT OFFICIALS

- a. **The National Disaster Risk Reduction and Management Council (NDRRMC) includes high-ranking representatives from twenty-five executive government departments, all of whom answer directly to the President.**
- b. The Fourteenth Philippine Congress passed RA 10121; Pres. Gloria Macapagal Arroyo formally signed it on May 27, 2010.⁴ The law strengthened the Philippine DRRM system by institutionalizing the National DRRM Plan. RA 10121 mandated the NDRRMC develop a NDRRM Framework, and this framework serves as the principal guide to conduct efforts on DRRM all over the country.⁴ Part of the purpose of RA 10121 is to ensure that the country as a whole is proactive when it

comes to assessing disaster risks. The idea is that, with the guidance of the President and other government officials, the Philippines is prepared adequately for any impending natural disasters through initiatives such as requiring DRR education is integrated with the school curricula at various levels across the country.⁴ Another initiative is the Climate Change Act, enacted in 2009, it established a commission to be chaired by the President and attached to the President's office.⁸²

SUPPORT OF THE LEGISLATURE

- a. **The Committee on Disaster Resilience in House of Representatives and the National Disaster Risk Reduction and Management Council (NDRRMC) are both exclusively focused on DM.**
- b. The Committee on Disaster Resilience in the House of Representatives deals with “all matters directly and principally relating to disaster and calamities, whether natural or man-made, as well as policies, plans, programs and projects related to disaster risk and vulnerability reduction and management including disaster preparedness and resiliency, relief and rescue, recovery, rehabilitation and reconstruction”.⁸³ The National Disaster Management Council (NDMC) is headed by the Secretary of the Department of National Defense (DND) as Chairperson and the Secretary of the Department of Social Welfare and Development (DSWD) and Director-General of the National Economic Development Authority (NEDA) as Vice-Chairpersons. The other NDMC members consist of leaders from twenty-eight (28) other government organizations and two (2) NGOs as described earlier and depicted in **Figure 1**. The NDMC's mandate is on mainstreaming disaster risk reduction into sustainable development and poverty reduction strategies, policies, plans and budgets at all levels.⁴

INTERAGENCY AND MULTI-STAKEHOLDER INPUT IN THE LEGISLATIVE PROCESS

- a. **Two seats on the National Disaster Risk Reduction and Management Council (NDRRMC) are reserved for NGOs. There are also mandates to establish provincial, city, and municipal disaster risk reduction and management councils as well as local disaster risk reduction management offices and barangay (local community) disaster risk reduction and management committees.**
- b. A total of thirty-one (31) government agencies, LGUs, society organizations, and private sector groups are included on the NDRRMC; two seats are reserved for NGOs. The OCD enlists the ACDV that is in part developed in consultation with various stakeholders.²² Joint Memorandum Circular No. 2014-1 set guidelines that established LDRRMOs and Barangay DRRM Committees (BDRRMCS) in the LGUs.⁸⁴ These guidelines are to help strengthen the involvement of crucial stakeholders in risk governance at the local level.²⁴

PUBLIC SUPPORT FOR DRR

- a. **The Philippine public generally support the provisions provided in the schools and training available from the LGUs but 47.5% believe inadequate funds are preventing them from preparing adequately for a disaster.**
- b. It appears the Philippine public supports the provisions provided in the schools and training available from the LGUs. However, forty-seven and a half percent (47.5%) of the population believes a lack of overall funding is the cause for inadequate overall disaster preparation. Most Filipinos do not believe that public infrastructure improvements would increase preparedness and only twenty percent (20%) believed that improving LGU planning would help. The trends seemed to be associated with educational level.⁸⁵

PUBLIC CONFIDENCE IN GOVERNMENTAL DM

- a. **The Philippine public seems to lack confidence in or lack knowledge of DM agencies' activities.**
- b. The Philippines mandates disaster preparedness and awareness in school lessons, but the population seems to still not be confident in help from DM agencies before or after a disaster. Only eleven percent (11%) take advice from the local government and 85% are not familiar with their local disaster risk management officer. Eighty-one (81%) and seventy-four (74%) percent are unfamiliar with the existence of a local DRMP or DRM fund, respectively. However, the majority believe the information from the LGU is timely (62%), sufficient (65%), and reliable (68%). There are instances when warnings were delayed, and the public were unaware of who was supposed to be in charge during the disaster. DM knowledge increased after training provided by the LGU.⁸⁵

POLITICAL APPROVAL RATINGS

- a. **Approval ratings are not collected and/or public support for political figures is not measured.**
- b. There is no identified formal collection of ratings or the level of public support for the political figures or the NDRRMP. However, there is an organizational structure set up to monitor and report on the projects related to NDRRMP. The appropriate Local, Regional, or National DRRM Council usually conduct the evaluations. The OCD will aid in the evaluation at the regional and national levels when appropriate. An LGU would be the assisting organization at the local level. Once the monitoring unit is established, they are to choose an appropriate monitoring tool for the process. This allows for standardized reporting as well as data sharing. Reports on the progress of projects flow from the overseeing level up to the President to provide updates on targets and the use of funding. The reports also indicate where there may be issues with implementation so that it may be used to make improvements. Evaluating outcomes also helps with determining whether or not the activities and interventions are effective and efficient in contributing to achieving the goal.⁸⁶

ATTITUDES, ENGAGEMENT, AND EXPERIENCE

PRACTICAL EXPERIENCE OF THE JURISDICTION

- a. **The Philippines responds to more than one major disaster each year that requires inter-agency coordination.**
- b. The Philippines experiences an average of twenty (20) tropical cyclones per year, with about 8 or 9 making landfall. The country also contains eighteen (18) active volcanoes classified as potentially deadly and costly.^{87(p386)} The Philippines ranks ninth in terms of disaster risk index according to the World Risk Report 2020 (improved from third in 2018) that is published annually by Bundnis Entwicklung Hilft with the risk index calculated by the Institute for International Law of Peace and Armed Conflict (IFHV).⁸⁸ Each year, eight (8) or nine (9) tropical cyclones make landfall resulting in impacts from landslides, flooding, and storm surge.^{24,89} The country is also located in the subduction zone between two tectonic plates creating the capacity for major earthquakes in the region.²⁴ With eighteen (18) active volcanoes located throughout the country classified globally as having the worst eruptions, the Philippines is prone to catastrophic impacts from these natural hazards.²⁴ From 2000 to 2016, natural hazards in the Philippines resulted in 23,000 deaths with average annual socioeconomic damages of about \$1.2 billion USD per year.⁸⁹ It is estimated that the typhoon season in the Philippines costs the country about 2% of the country's yearly GDP.²⁴

PRACTICAL EXPERIENCE OF THE LEAD DM OFFICIAL

- a. **Lead DM official coordinates multiple major disasters requiring, or in provision of, extra-jurisdictional assistance each year, and/or has held their position for at least three years.**
- b. Secretary of National Defense and Chairperson of NDRRMC, Maj. Gen. Delfin Lorenzana, held the positions of Director of War, Secretary of War and Public Works, and Minister of War. Maj. Gen. Delfin Lorenzana, assumed office on June 30, 2016.⁹⁰ He has held this position for the past four years after spending more than four (4) decades in defense and foreign relations.⁹¹ The country has experienced thirteen (13) typhoons, eleven (11) earthquakes, and two (2) volcanic eruptions for which he was responsible for response coordination through his position as the Chairperson of NDRRMC.⁹²

PUBLIC ENGAGEMENT IN DM

- a. **Public is engaged through disaster preparedness education programs, training and education, and/or involvement in disaster exercises, but organized citizen brigades do not exist or are uncommon.**
- b. The Philippine public is somewhat engaged through disaster preparedness education programs, training and education, and/or involvement in disaster exercises. The OCD's National Disaster Risk Reduction and Management Education and Training Program (NDRRMETP) and their

CDETP offer disaster preparedness education programs, training, and education to a wide range of stakeholders including, but not limited to, indigenous communities, urban poor, senior citizens, rural farmworkers, and NGOs.⁹³

Evidence of the public's involvement in disaster preparedness education programs, training and education, and/or involvement in disaster exercises can be found in a 2018 DND audit.⁴⁰ The public seems to either lack confidence in or lack knowledge of DM agencies' activities.

For more detail on these and other programs, see Section *Capacity Development - Training and Education* below.

PRIVATE SECTOR ENGAGEMENT IN DM

- a. **Business community actively participates in DM exercises, events, and trainings, and business associations report a high utilization of business continuity and emergency planning among members.**
- b. The private sector is active in DM efforts at local, regional, and national levels. The NDRRMP³ has no clear guidelines for supporting the private sector during a disaster but the private sector is an active player in DM efforts at local, regional, and national levels. The Philippine Disaster Resilience Foundation (PDRF), founded in 2009, is a “nationwide platform that mobilizes, informs, and directs business engagements for DM.”³⁶ The PDRF looks to heighten the resilience of small to medium size enterprises (SMEs) through various activities that align with the National Resilience Core Group on Strengthening SME Disaster Resilience.⁹⁴ The importance of this alliance is to increase the disaster preparedness of the local communities and societies as SMEs account for over 90% of the private sector.⁹⁴

HOUSEHOLD PREPAREDNESS

- a. **Assessments or surveys of household and individual disaster preparedness are conducted and show only 25-50% of households report adequate preparedness.**
- b. A survey conducted by The Harvard Humanitarian Initiative in 2017 on Perceptions of Disaster Resilience and Preparedness in the Philippines showed that 36% reported they felt very prepared, 33% somewhat prepared, and 31% feel they are not prepared. About half felt they did not have adequate household incomes to cover food, water, electricity, healthcare, and education and only 27% was confident that they could adapt to changes resulting from a disaster.⁸⁵

DISASTER GOVERNANCE MECHANISMS

PLANS & PROCESSES

DM PHASES ADDRESSED IN PLANS

- a. **Philippine formal plans and DM standard operating procedures address the phases of Response, Disaster Risk Reduction (Mitigation), and Long-Term Recovery/Reconstruction.**
- b. The national government organization is structured to address all phases of DM. All levels of government are required to follow the National Disaster Risk Reduction and Management Plan (NDRRMP)³ and law 10121.²² As mentioned earlier in the *Enabling Environment – Legal Foundation* section, this law is responsible for the-paradigm shift from a reactive DRRM approach to a more proactive method. A more bottom up and participatory Disaster Risk Reduction Management (DRRM) approach is promoted and practiced.²²

The Response phase is addressed through their hazard-specific National Disaster Response Plan (NDRP)s for Earthquakes, Tsunamis and Hydro-Meteorological, and Terrorism. These NDRPs focus on the response phase; however, they also briefly address the other phases.¹⁰⁻¹²

Disaster Risk Reduction (Mitigation) and Long-Term Recovery/Reconstruction are addressed in the National Disaster Coordinating Council (NDCC) Republic Act (RA) No. 10121,⁴ as well as in the National Disaster Risk Reduction and Management Plan (NDRRMP).³ RA 10121 institutionalizes the disaster risk reduction and management system not only in the National Government but also in all local government units in the country. The NDRRMP provides the legal basis for policies, plans and programs to deal with disasters.³

COORDINATION OF GOVERNMENT DISASTER PLANS

- a. **Plans guide DM activities across all the Philippine DM agencies**
- b. Local Disaster Risk Reduction Management (DRRM) Offices are in charge of setting the direction, development, implementation and coordination of DRRM programs for their areas (Province, City and Municipality, and Barangay).⁹⁵

As the implementing arm of the NDRRMC, the OCD provides leadership in bringing together the various DM plans.⁹⁵ Through the OCD Strategic Plan, efforts were made to align with the intents of R.A. 10121, thus contributing to a more comprehensive DRRM program.⁹⁶ The National Disaster Response Plan (NDRP) for Earthquakes & Tsunamis, Hydro-Meteorological, and Terrorism Events provide foundation for a coordinated response across all DM agencies.¹⁰⁻¹²

CONTINUITY OF OPERATIONS (COOP) AND CONTINUITY OF GOVERNMENT (COG)

- a. **COOP and COG planning is required throughout the Philippines, but plans remain under development or are untested.**
- b. There are overarching plans and guidance referring to continuity of operations and continuity of government and there was no-evidence of plans that articulate the “how to” in these areas. The Philippine Development Plan addresses the importance of minimizing disruption in public sector organizations by government agencies adopting business continuity practices. This Plan promotes business continuity planning, development of policies that ensure business continuity and mitigating disaster risks.⁴¹ Reference to operational continuity is touched upon in the NDRP for Hydro-Meteorological Hazards with one bullet to address business continuity in the context of early recovery.¹¹

ROLES AND RESPONSIBILITIES DEFINED BY PLANS

- a. **Philippine DM plans and SOPs identify roles and responsibilities for each level of government from local to regional and national actors.**
- b. Philippine DM plans and SOPs identify roles and responsibilities for each level of government from local to regional and national actors. The four (4) DRRM Thematic Areas (Listed above and see also **Figure 11** *NDRRM 2011-2028 vision* in *Capacity Development – Formalized CD Plans & Strategies* section) are aligned with the organizational structure of the national government as was discussed earlier and depicted in **Figure 1** *Organizational Chart of NDRRMC* in the *Institutional Arrangements – Organizational Structures* section.

The NDRPs are strategic plans that provide targeted guidance for ALL agencies involved in DRRM.^{11,12} In addition, the NDRRMP clearly outlines the roles of the national government, NDRRMC, OCD, RDRRMCs, LDRRMCs, and Provincial, City, Municipal Disaster Risk Reduction and Management Councils (P/C/MDRRMC and Local DRRMCs).³

DEFINITION OF THE DECLARATIONS PROCESS

- a. **The declarations process is defined in DM Plans, SOPs, and other official documentation, and declarations must follow the existing procedures.**
- b. The declarations process is well defined and practiced. The NDRRMOC SOP & Guidelines define the conditions and triggers as well as outlines the process for the President to declare a National State of Calamity.⁶ Most recent example is the declaration of state of calamity due to the COVID-19 pandemic on March 16th, 2020. Although the LGUs have the authority to declare a state of calamity, this National declaration by the President does not happen often. Super Typhoon Haiyan (2013) and the Mayan Volcano eruption (2018) were the latest instances.⁹⁷

ACCESSIBILITY OF PLANS AND PROCESSES

- a. **Philippine DM and DRR plans, and standard processes are publicly accessible.**

- b. National Disaster Response Plans are printed and bound into booklets that are widely available to partners.^{11,12,95} Most of the plans are accessible via the internet to provide widest dissemination to stakeholders. The NDRRMC’s website serves as an online information hub where stakeholders have access to advisories, updates, situational reports, and other relevant reports. It also serves as an electronic library of DRRM related policies, guidelines and materials.⁹⁸

COORDINATION OF GOVERNMENT AND STAKEHOLDER PLANS

- a. **Philippine DM stakeholder community maintains sectoral and/or facility plans that are coordinated with government DM plans e.g., for hospitals, schools, power plants, prisons, etc.**
- b. The Republic Act No. 10121 (RA 10121) is key to the advancing and evolving strategic DM in the Philippines. RA 10121 expanded the “whole-of-government” approach to the “whole-of-society approach” with the inclusion of the private sector in the Council. The paradigm shift brought about by the law shows a change from a top-down and reactive approach to a bottom-up inclusive and participatory DRRM approach.⁴

The OCD Strategic Plan includes “scorecards” that clarify the strategic objectives at the tactical level. Performance Scorecards promote targets from the perspective of the stakeholders. This section of the Strategic Plan specifies the units responsible for each performance measure at the different levels of government.⁹⁵

MUTUAL AID AGREEMENTS

- a. **Mutual aid agreements exist to support DM efforts in the Philippines, but they are informal, unwritten, or unsigned.**
- b. According to OCD, fire stations provide mutual aid to neighboring barangays all the time but it is not clear if there are formal signed agreements between individual fire stations.⁹⁵ At the national level, the Bureau of Fire Protection (BFP) has the overall responsibility for managing fire incidents, and working through the Logistics & Engineering Division Directorate, coordinates fire support aid from neighboring barangays.¹²

Four examples of mutual aid agreements, according to OCD, concern the Coast Guard, Fire, Military and Police. These entities are represented at the national level and it is likely that through their coordination activities for assistance support to the lower levels of government that mutual aid agreements at those lower levels are not needed.⁹⁵

INTERNATIONAL MUTUAL AID AGREEMENTS

- a. **Formal mutual aid agreements have been established at the bilateral/global regional level with Philippine DM and DRR stakeholders.**
- b. A Presidential declaration of National Calamity does not always translate to the need for international assistance nor is international assistance dependent on a Presidential declaration.

The Philippines can receive international assistance from other ASEAN nations. ASEAN may establish a Joint Operations and Coordination Centre of ASEAN (JOCCA) typically at ground zero to provide international assistance depending on the scale of the disaster. The last instance in the Philippines was Super Typhoon Haiyan in 2013.⁹⁵

PROTOCOLS FOR THE USE OF EXTERNAL DISASTER ASSISTANCE

- a. **Protocols are in place that facilitate and expedite the entry and use of extra-jurisdictional physical and human resources, and Philippine acceptance and coordination of bilateral and multilateral donor aid (e.g., grants/loans).**
- b. The OCD Operations Service maintains a database of accredited community disaster volunteers at the national level. Volunteers are accredited by the local government offices who provide endorsement to OCD. OCD's Operations Service maintains a database of ACDVCs at the national level.^{95,99 (Slide 6.1)}

If international assistance is required, the Philippines, as an ASEAN Member state, complies with the rules applying to the Receiving Party, as outlined in the AADMER. As such, the receiving party shall ensure that measures are in place to receive assistance.⁵

VOLUNTEER AND DONATIONS MANAGEMENT CAPACITY

- a. **Systems are in place to process, accept, and utilize donated goods and volunteer resources in the Philippines.**
- b. OCD has a document tracking system which is a dedicated computer for the sole purpose of tracking communications and disaster reports. This includes tracking any communications on donations through a dedicated email inbox. Information is forwarded to personnel in charge of document tracking. Using this dedicated computer and email the assigned staff passes on the information to the Team Leader, Director, Operations Chief at NDRRMOC for decision making.⁹⁵

The Zamboanga City Crisis Management Center (CMC) also receives donations from both private and public sources. The CMC manager facilitates the collection of relief goods donations including USAID.⁶

COMMAND, CONTROL AND COORDINATION STRUCTURES

INCIDENT COMMAND SYSTEMS

- a. **The Incident Command System (ICS) has been incorporated as a formal component of disaster response operation in the Philippines, and it is used as a standard of practice in events of all size and scope.**
- b. The National Disaster Risk Reduction and Management Operations Center (NDRRMOC) utilizes a command system as an integral part of its core functions.⁹⁵ This hybrid system is often referred to interchangeably as the Incident Command System (ICS).⁹⁵ ICS is used tactically on-scene for all disaster events. Incident Management Teams (IMT) utilize ICS in the field allowing for seamless integration of ongoing disaster operations. This works especially well when any of the eleven (11) Response Clusters are activated.^{6,11}

INCIDENT COORDINATION SYSTEMS

- a. **Incident coordination is guided by a standardized incident management system that has been implemented at all levels of government in the Philippines – this enables transparent and expedited integration of nongovernmental and private sector resources into response activities, but implementation challenges remain.**
- b. As mentioned in sections *Institutional Arrangements* and *Enabling Environment*, the National Disaster Risk Reduction and Management Council (NDRRMC) is the highest organized and authorized body for DRRM in the Philippines. In alignment with the implementation of RA 10121 and the inclusion of the private sector to National Disaster Risk Reduction and Management Council (NDRRMC) membership, the capacities of all stakeholders were greatly enhanced through the implementation of training programs.⁹⁵ Various levels of Incident Command System (ICS) courses, training and exercises are offered by the NDRRMC to Disaster Risk Reduction Management (DRRM) Stakeholders.⁹³ Challenges remain as implementation of ICS varies greatly at different levels of government, especially at the Local Government Units (LGUs).⁹⁵⁻

LEGAL BASIS OF COMMAND AND COORDINATION STRUCTURES

- a. **Incident command, management systems and structures, and decision-making authority and reporting hierarchies are defined by the Philippines' legal and planning instruments.**
- b. Though specified in law^{4,22} and well defined in Plans such as the National Disaster Response Plans (NDRPs), the establishment and implementation of an incident command system (ICS) for on-scene management of disasters vary greatly at the different levels of government.²² This lack of support is especially evident at the Local Government levels.⁹⁵

COMMAND AND COORDINATION BY FUNCTION

- a. **Plans and procedures delineate leadership and coordination in the Philippines for disaster and emergency support functional areas such as SAR, Public Health, and Shelter.**
- b. The National Disaster Response Plans (NDRPs) include structured planning using eleven (11) Response Clusters for focused response. These organized groups are responsible for coordination at the strategic level to provide resource support for tactical response.^{11,12} This is helpful when the event escalates to an international response, allowing easy for integration with the Humanitarian Clusters of the International Humanitarian Country Teams.³ RA 10121 sets the foundation for the establishment of the DRRM network, which provides structure from the national down to the regional, provincial, city, municipal and barangay levels.⁴

FACILITATION OF INTERAGENCY COORDINATION

- a. **Standard procedures exist for interagency coordination in the Philippines, including interagency agreements, requests for assistance, mission assignments, reporting requirements, and re-imburement.**
- b. Standard procedures exist for interagency coordination in the Philippines, including interagency agreements, requests for assistance, mission assignments, reporting requirements, and re-imburement. The National Disaster Risk Reduction and Management Operations Center (NDRRMOC) Standard Operating Procedure (SOP) clearly defines intra- and inter-agency information and communication flow.⁶ Also defined is the information flow to the media and other stakeholders, as well as the public. The SOP also includes matrix of Alert Status (White – normal operations, Blue – limited activation, and Red – NDRRMOC staffing and immediate inter-agency coordination) for different hazards and conditions/triggers for different levels of Alert Status.⁶ **Figure 10** below shows the *NDRRMOC Operation Alert Levels*.

The mechanism for requesting International Assistance is specified in the IRR of RA 10121.²²

NORMAL	EMERGENCY (24 hours duty)
<p>WHITE - Normal operations</p> <p>Alert monitoring, coordination, reporting</p>	<p>BLUE - In preparation for a slow onset disaster</p> <p>Limited activation of the NDRRMOC. Primary or lead personnel from the OCD, complemented by Detailed Duty Officers (e.g. AFP, PNP, PCG, BFP, including PAGASA and Project NOAH for weather disturbance) shall render duty at the NDRRMOC.</p>
	<p>RED - In anticipation of an imminent emergency situation</p> <p>Requires response agency staffing at the NDRRMOC and immediate inter-agency coordination.</p>

Figure 10 NDRRMOC Operation Alert Levels (Source: NDRRMOC SOP, p.4.)

GOVERNANCE INFRASTRUCTURE



EMERGENCY OPERATIONS CENTER

- a. **The OCD maintains a sole-use and purpose-built EOC.**
- b. The OCD is the executive operating arm of the NDRRMC. Day to day operations and small duty team during non-business hours function in the NDRRMOC. When the EOC is activated, it serves as the dedicated operating area for the NDRRMC. Breakout conference/meeting rooms are used by OCD staff during non-disasters whilst they are utilized to provide support for NDRRMC members during EOC activations.⁶

DEDICATED EOC FACILITY

- a. **The Philippine National EOC is not in a dedicated facility.**
- b. The NDRRMOC is the principal facility responsible for coordination with Operation Centers of the NDRRMC Member Agencies and the RDRRMCs. This is used for both non-disaster and disaster purposes and is where OCD conducts its day-to-day operations.⁶

EOC RESOURCES

- a. **The Philippine National EOC is outfitted with supplies, equipment, and technology to accommodate response to major events per plans and procedures and is of a size to accommodate multi-agency staff.**
- b. During elevated emergency conditions the National Disaster Risk Reduction and Management Operations Center is activated. This dedicated facility is fully equipped and ready to accommodate the National Disaster Risk Reduction and Management Council Member Agencies who convene in the facility to support response and recovery operations.⁶

EOC ACTIVATION READINESS

- a. **The Philippine National EOC is capable of no-notice activations.**
- b. The NDRRMOC has 24/7 duty staff who monitor events and alert Council members and various stakeholders when required.⁹⁵ The OCD staff are postured to ramp up with little to no notice with a dedicated Quick Response Team (QRT), who immediately report to the NDRRMOC upon notice from the Staff Duty Officer. The QRT is relieved upon the assumption of duty by the activated Operations Service Alert Team.⁶

EOC ACTIVATION DURATION

- a. **The Philippine EOC is staffed and equipped to ensure continuous operations.**
- b. The NDRRMOC is equipped with a backup generator to sustain uninterrupted EOC operations. Staffing the NDRRMOC appears to be adequately planned for during disasters.⁹⁵ According to

SOP, when the NDRRMOC is at the elevated Blue and Red Alert activation levels, the Operations Service Alert Teams, other OCD Duty personnel, and involved NDRRMC member agencies are expected to render duty on a 24-hour rotational basis.⁶

EOC RESILIENCE

- a. **The Philippine National EOC is physically protected from most hazards.**
- b. The NDRRMOC building is hardened and designed to withstand a magnitude eight (8) earthquake and typhoon strength winds.⁹⁵ It remains unknown if it is protected from other hazards.

EOC ACCESSIBILITY

- a. **The Philippine National EOC is easily accessible for key government officials.**
- b. The NDRRMOC is located in an easily accessible location in Metro Manila. It is the established facility where key government officials and NDRRMC member agencies report to support emergency operations.⁹⁵

BACKUP EOC

- a. **Backup EOCs with capabilities of the primary Philippine National EOC exists.**
- b. The RDRRMCs' EOCs serve as back up EOCs to the National DRRMOC. Each regional EOC is equipped at the levels as the national EOC and is expected to serve as a backup national EOC if required.⁹⁵ The Harmonized National Contingency Plan for the Magnitude 7.2 Earthquake provisions for primary and alternate EOCs using an earthquake scenario of a magnitude of 7.2 and above hitting Metro Manila and the nearby regions of Central Luzon and Calabarzon.¹⁰⁰ The Plan summarizes the response actions of all Local DRRMOCs, Regional DRRMOCs, and the National DRRMOC, and includes the contingency plan to utilize the capabilities of nearby operational RDRRMCs, should the NDRRMC become "overwhelmed" or "compromised".¹⁰⁰

FIELD-LEVEL COORDINATION CENTERS

- a. **The OCD has plans, procedures, and resources to establish multiple field-level coordination centers.**
- b. RDRRMCs and Local DRRMOCs are fully functional EOCs that serve as field-level coordination centers and are an integral part of the nation-wide DRRM network. All EOCs serve as the primary hub for coordination.^{95,100}

LONG-TERM COMMUNITY RECOVERY FACILITATION CAPACITY

- a. **The Philippines has plans, procedures, and resources to support long-term community recovery and has employed these effectively in past disasters.**
- b. Policies and plans for Disaster Rehabilitation and Recovery fall under the responsibility of the Vice Chairperson of The National Economic and Development Authority (NEDA) at the national level. Post-disaster needs assessments and resettlement also fall under NEDA.⁹⁹ The National Health

Cluster, led by the Department of Health, ensures access to health services to communities at the local level including opening recovery centers during the post-disaster phase. These activities are part of the early recovery process and the transition phase to long-term recovery.¹²

COMMUNICATIONS INTEROPERABILITY

- a. **Full communications interoperability exists amongst Philippine DM stakeholders.**
- b. Emergency communication capabilities include satellite phones which were distributed nationally for emergency voice and text (SMS – short message service) communications. VSAT (Very-small-aperture terminal) satellite systems are also part of the emergency communications capability that provides high-speed and independent data communications. This includes fixed terminals and fly-away terminals for deployment. Their capabilities also include Portable Man Pack Repeaters and Digital Mobile Radios.

The NDRRMOC uses advanced collaboration solutions including high resolution video conferencing, real-time data streaming and a resource sharing and collaboration system. To ensure interoperability at the regional level, the NDRRMC utilizes tools such as video teleconferencing and information exchange mechanisms provided by the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management to ensure the Philippines' interoperability with other ASEAN member states.⁷

RESPONDER CREDENTIALING

- a. **Credentialing processes and systems exist and have been tested in past disaster events.**
- b. Accreditation of volunteers is the responsibility of the local government. They then provide endorsement for volunteers to the OCD. This system works well and has been validated through past events. More recently added to support this effort, the ACDV is a database of volunteers at the national level, such as the National Service Corps and the private sector. The database is maintained by the OCD's Operations Service staff.^{95,99}

CAPABILITIES AND RESOURCES

FACILITIES & EQUIPMENT

EMERGENCY SERVICES FACILITIES CAPACITY

- a. **The average number of fire stations in the Philippines per 100,000 population calculated across the eighty-one (81) provinces is 2.33. There is at least one (1) fire station per 50,000 population.**
- b. The number of fire stations and capability varies within each Bureau of Fire Protection (BFP) fire region. Not every province, city or municipal has its own dedicated fire station. The government-controlled fire departments are augmented by multiple volunteer fire teams contributing to overall capability.⁹⁵ The volunteers are required to achieve a standard level of competency through training.^{101(p17,18)}

The chartering law of the Philippine National Police, also known as the Republic Act No.6975 of 1990 requires the establishment of “at least one (1) fire station with adequate personnel, firefighting facilities and equipment in every provincial capital, city and municipality subject to the standards, rules and regulations as may be promulgated by the Department. The local government unit shall, however, provide the necessary and or site of the station.”^{102 (Section 56)}

In terms of performance, according to the quarterly statistics kept by the DILG for 2018, approximately 86% of the fire and related emergencies were responded to in under seven minutes. However, the report included the remark: “Fire stations are not strategically located to facilitate fast and timely response”.^{103(p2)}

MATERIAL RESOURCES AVAILABLE FOR DM

- a. **The majority of jurisdictions in the Philippines are equipped with resources appropriate to manage known hazards.**
- b. The responsibility for maintaining equipment inventory falls on the Local Government Units (LGU), however the capacity varies greatly between LGUs.⁹⁵ All response agencies are directed to report their available assets. Although resource readiness differs between locations, the overall system balances out, as the primary responsibility for resources falls with the National Government.⁹⁵

The Department of Interior and Local Government (DILG) has the overall responsibility to ensure that communities are equipped with necessary skills and capabilities to cope with the impacts of disasters. National government agencies maintain and evaluate their existing resources and are directed to reinforce its local and regional counterparts if needed.³ Delivery of necessary supplies and equipment to the threatened areas is expedited through coordination at the National Disaster

Risk Reduction Management Operations Center (NDRRMOC).⁶

Preparedness activities include the convening of the Pre-Disaster Risk Assessment (PDRA) Core Group through the National Disaster Risk Reduction and Management Council (NDRRMC) Executive Director.⁶

SUPPLEMENTAL DM RESOURCES

- a. **Supplemental DM resource and equipment requirements in the Philippines are secured through a comprehensive blend of formalized private-sector partnerships, relationships with the NGO sector, and other means.**
- b. NGO and public-sector resources are utilized at municipal and barangay levels. Local Disaster Risk Reduction and Management Funds (LDRRMFs) are a resource that can be used to support disaster risk management activities including the purchase of needed equipment. The Calamity Fund and Quick Response Fund are fund assistance sources that can be requested by the Local Government Units (LGU), through the appropriate Regional/Provincial/City/Municipal Disaster Risk Reduction and Management Council (DRRMC) to the National DRRMC.²²

If the event escalates, or is of a higher scale or magnitude, it may require the utilization of resources from the provincial/regional level organizations or higher. The Regional DRRMC 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.²²

Coordination will take place at the National Disaster Risk Reduction Management Operations Center (NDRRMOC) if national response and resource mobilization are needed. The National DRRMC Chairperson may call upon other entities, including non-government and private organizations, for assistance with resources or use of facilities.⁶

DM EQUIPMENT INVENTORIES

- a. **Inventories of disaster-relevant equipment are maintained but are incomplete and/or not regularly updated.**
- b. The responsibility for maintaining equipment inventory falls on the Local Government Units (LGU) and compliance to this varies greatly.⁹⁵ The National Disaster Risk Reduction and Management Council (DRRMC) is responsible for providing guidelines on the maintaining inventory and monitoring of all relief goods, including donations.²²

SHELTER CAPACITY

- a. **Emergency shelters with the capacity to serve at least 50% of anticipated shelter needs have been identified. Emergency shelter operations are the purview of Local Government Units. The National Government assists with resource shortfalls when needed, and coordination takes place at the National Disaster Risk Reduction Management Operations Center.**

- b. The responsibility for emergency shelter operations falls on the Local Government Units (LGU). The National Government assists with addressing resource shortfalls when needed. Coordination will take place at the National Disaster Risk Reduction Management Operations Center (NDRRMOC) when needed.⁹⁵

SHELTER SUITABILITY ASSESSMENTS

- a. **All shelters have been assessed for suitability.**
- b. Local Government Units (LGU) are accountable for working together with the Red Cross for assessing shelter suitability.⁹⁵ Typically, school buildings and public gymnasiums are used as evacuation centers. After Typhoon Haiyan impacted the Philippines in 2013, most of these evacuation centers in Tanauan were severely damaged. Since Typhoon Haiyan, safer and structurally sound dial purpose evacuation centers were rebuilt with sensitivity to the special-needs and vulnerable populations.¹⁰⁴

SHELTER EQUIPMENT

- a. **The majority (between 50 and 75%) of shelters are equipped to meet disaster-specific requirements. Shelters are equipped by the Red Cross in cooperation with Local Government Units.**
- b. The National government augments with resources from the Red Cross where there are shortfalls.⁹⁵

WAREHOUSING CAPACITY

- a. **Purpose-built warehouse and staging facilities exist to meet logistics operations requirements in a major disaster event.**
- b. The responsibility for maintaining warehouses falls with the Local Government Units (LGU). Some, but not all, maintain warehouses. At the international level, ASEAN has pre-positioned warehouses to support international emergencies throughout the region. As an ASEAN member-state, the Philippines is eligible to benefit from this resource during a disaster. These assets are coordinated through the Logistics cluster.⁹⁵

The OCD Strategic Plan lists a 2018 baseline which shows four (4) existing warehouses and sixteen (16) warehouses as a 2022 target. The initiative is to establish functional warehouses to improve the operational capacity of OCD.⁹⁶

INTEGRATION OF PUBLIC HEALTH AND MEDICAL FACILITIES

- a. **Integration of public health and medical facilities is comprehensive.**
- b. A key component to the integration of health data into the larger DM system is the Geoportal PH portal.¹⁰⁵ Real-time health data straight from the Philippine Department of Health is accessible to anyone through this online platform. Status of hospitals and other health facilities are an integrated component of the Rapid Damage Assessment and Needs Analysis. Individual hospitals

and health facilities – all the way up the spectrum to the Department of Health having the overall responsibility, play key roles in the DM system.⁶ The NDRRMP pulls together the essential DRRM pieces including policy formation, socio-economic development planning, budgeting and governance in the area of health among other important areas.³

HUMAN RESOURCES

EMERGENCY SERVICES STAFF

- a. **1-2 firefighters per 1000-5000 population is the current level of firefighting personnel in the Philippines.**
- b. There are seventeen (17) designated Bureau of Fire Protection (BFP) regions. The total representation of BFP employees in all regions is 24,920 according to the BFP Statement of Assets, Liabilities and Networth 2018. This number includes other positions besides firefighters. Even if that number represented only firefighters, given the population of the Philippines it would indicate that there is roughly one (1) firefighter per 4,000 population.¹⁰⁶ According to the DILG 2018 Quarterly Physical Report of Operations, there are “fewer than 1 fire station per 100,000 population; fewer than 1 fire station per 50 square miles”, which further supports this.¹⁰³

PLANNING STAFF

- a. **A cadre of trained staff with job functions dedicated to pre- and post-disaster emergency management activities and programs is maintained at levels sufficient to meet programmatic needs.**
- b. The NDRRMP provides the policies, plans and programs dealing with disasters. As mentioned earlier and depicted in **Figure 1 Organizational Chart of NDRRMC**, the NDRRMP covers four thematic areas (See also **Figure 11 NDRRM 2011-2028 vision**). As the operational arm of the NDRRMC, the OCD has trained dedicated staff that ensures communities, cities, municipalities, and provinces are consistent with the national plans. Training opportunities are offered to all levels of government, as well as NDRRMC member-agencies.³ The PDC team met least three of the OCD who were recently trained through an ASEAN resident program, which strengthens the capabilities of the NDRRMOC, especially when international assistance is needed.⁹⁵

SURGE STAFF DOCUMENTATION AND PROCEDURES

- a. **Surge staffing needs are formally addressed in the jurisdiction’s disaster plans and procedures, and sufficient surge staffing resources have been identified and verified.**
- b. Surge staffing needs are met by NDRRMC member-agencies who are expected to provide detailed Duty Officers to complement the OCD personnel for 24-hour duty coverage during

NDRRMOC Emergency Condition Blue and Red Alert levels.⁶ Accredited volunteers are also utilized to support surge staffing needs.⁹⁵

SURGE STAFF SOURCE

- a. **Surge capacity staffing is a standard component of response in the Philippines and is drawn from throughout the DM stakeholder community.**
- b. The NDRRMOC member-agencies are expected to provide detailed Duty Officers to complement the OCD personnel for 24-hour duty coverage during NDRRMOC Emergency Condition level Blue and Red Alerts. Accredited volunteers are also utilized to support surge staffing.⁶

As mentioned previously, in extreme responses or if international disaster assistance is required, as an ASEAN Member State the NDRRMOC can request assistance through the AHA Centre.^{107(p9)}

ROSTERS OF TRAINED PROFESSIONALS

- a. **Rosters of trained professionals are kept according to the OCD staff with the responsibility falling to Local Governments.**
- b. According to the OCD, LGUs are responsible to maintain rosters of trained professionals.⁹⁵ The NDRRMOC has the responsibility to form a technical management group composed of representatives from the member agencies to meet as often as necessary to effectively manage and sustain national efforts on National DRRM.⁴

CITY PAIRING OR SIMILAR TECHNICAL STAFFING PARTNERSHIPS

- a. **City pairing arrangements, secondment schemes, or other similar mechanisms exist to a limited degree in the Philippines.**
- b. Examples that point to disaster-related technical partnerships include the post-workshop handholding sessions that were provided by the Development Academy of the Philippines' Technical Assistance Team to assist the OCD-Technical Working Group. Another is from the OCD's Strategic Plan 2020-2022, Strategic Initiative 7: Four (4)-Part Program for the Enhancement of OCD's Disaster Response Operations (4PEDRO). One of the key outputs listed is the creation of a Quick Response Fund for a Monitoring Technical Working Group.⁹⁶

COMMODITY & SUPPLY INVENTORY

GENERATING ESTIMATES OF POST-DISASTER COMMODITY NEEDS

- a. **Estimates of post-disaster commodity needs (e.g., food, water, pharmaceuticals) are developed using scenario-based planning.**
- b. Post-disaster needs are estimated through Pre-Disaster Risk Assessments (PDRAs) which are conducted at the National Disaster Risk Reduction and Management Operations Center (NDRRMOC) to evaluate the level of risk in a specific area in order to predetermine the appropriate level of government response.¹² This preparedness activity appears to take place when the threat is already imminent.

Specific estimates of post-disaster commodity needs are reported to NDRRMOC through the RDRRMCs, who obtain the information from the local government units in the affected areas.⁶ In addition to the information flow from the ground level up through official communication channels, the Response Cluster and Incident Management Team (IMT) prepare to conduct the Rapid Damage and Needs Assessment (RDANA) operations. The triggers for activating the Response Cluster and IMT are 1) an approved Memorandum Order with signature by the Vice-Chairperson for Response and the Executive Director of the National DRRMC, and 2) the elevation of alert status from Blue Alert to Red Alert, or 3) as directed by appropriate authorities. RDANA is a critical operation early in the emergency phase to determine the needs of the communities.^{11,12,95}

COMMODITY STOCKPILE QUANTITIES

- a. **Commodity stockpiles are maintained by local government units. Whether stockpiles are sufficient is not known, as there are no standardized mechanisms to determine adequacy levels.**
- b. LGUs tend to under-report their actual on-hand commodities. This practice stems from the belief that if they report their totality of assets it is less likely they will get assistance from the national government.

LOCATION OF COMMODITY STOCKPILES

- a. **Commodity stockpiles are kept in distributed locations that enable access to all locations throughout the area of analysis within 24-48 hours.**
- b. LGUs maintain commodity stockpiles, though stockpiles vary between LGUs. The RDRRMC coordinates the movement and distribution of commodities to quickly get resources to where they are needed within their region.⁹⁵

BASIS OF COMMODITY STOCKPILE DISTRIBUTION

- a. **Commodity stockpiles are distributed according to assessed risk and anticipated need.**
- b. Commodity stockpiles are distributed by the RDRRMC through the Logistics cluster. This also includes the pre-positioning of resources in strategic areas according to anticipated needs.⁹⁵

COMMODITY CONTRACTS

- a. **Contracts with commodity providers exist and are assessed for reliability during disasters. Private industry partners are an integral part of the NDRRMC's Response Cluster.**
- b. As mentioned earlier in the *Enabling Environment – Legal Foundation* section, RA 10121 dictated the inclusion of the private sector in the NDRRMC. As a member-agency, they are expected to adhere to the NDRRMOC's SOP and Guidelines. Private industry partners are an integral part of the NDRRMC Response Cluster. The private sector could include private corporations and non-profit institutions. They are considered key actors in the distribution of goods and services.⁶ Evidence related to formal contracts could not be found.

DM RESOURCE AND SUPPLY INVENTORIES

- a. **DM resource and supply inventories spanning all agencies, facilities, and jurisdictions exist.**
- b. LGUs, are responsible for maintaining warehouse commodity inventories, however not all LGUs have commodity warehouses. Overall responsibility for DM resources at the national government level resides with the Logistics Cluster. NDRRMC member-agency resources are considered to augment the Logistics Cluster.⁹⁵

The OCD Strategic Plan lists four existing warehouses as a 2018 baseline and sixteen (16) warehouses as a 2022 target. The stated initiative is to establish functional warehouses to aid improvement in the operational capacity of OCD.⁹⁶

FREQUENCY OF RESOURCE AND SUPPLY INVENTORY UPDATES

- a. **Regular status updates are made to supply inventories.**
- b. According to the NDRRMP, all response agencies are directed to conduct inventory of existing DRRM resources, however the frequency is not indicated.³ In addition, national government agencies are responsible for knowing their existing resource inventory and are directed to reinforce their local and regional counterparts when needed.⁶

HOSTING OF RESOURCE AND SUPPLY INVENTORIES

- a. **DM resource inventories are managed through multiple information systems; a centralized system is planned but is not yet operational.**
- b. According to the NDRRMP, all Response agencies are directed to conduct inventory of existing DRRM resources, however the way in which this is managed is not indicated.³ The LDRRMOs

are required to report on the utilization of the LDRRM Fund and other dedicated DRRM resources after the fact.⁴ It is not evident if these reports along with other resources are managed through a centralized information system.

NATIONAL DISASTER LOGISTICS PROGRAM OR CAPABILITY

- a. **A national disaster logistics program or capability exists.**
- b. Emergency Logistics Management is part of the NDRRMOC's Core Functions. There are eleven (11) Response Clusters, and the OCD is the government lead for the Logistics Cluster. As such, OCD is responsible to supervise, coordinate and report on all activities of the Logistics Cluster during the disaster response phase.⁶

FUNCTIONAL CAPABILITIES



SUPPORT FOR PSYCHOSOCIAL RECOVERY

- a. **National-level support for psychosocial recovery is comprehensive and effective.**
- b. The Health Cluster is responsible for mental health and psychosocial support, with the Department of Health (DOH) as the lead government agency. As the lead, DOH will supervise, coordinate, and report all cluster activities during the disaster phase.⁶

An example of services provided in the past is a 9-man Mental Health Psycho-Social Support (MNPSS) team from the National Center for Mental Health (NCMH). They engaged in the psychosocial process for affected individuals during a 2013 armed conflict in Zamboanga City.⁶

EVACUATION CAPACITY

- a. **Comprehensive evacuation support capacity exists at the national level to facilitate the evacuation efforts of subnational and/or local governments.**
- b. The Vice Chairperson for the Department of Social Welfare and Development (DSWD) has overall responsibility. However, LGUs have direct responsibility for evacuations. Evacuation is one of the eleven (11) Response Clusters.^{3,7} The national government augments with resources where there are shortfalls which can include the military.⁹⁵

NATIONAL PLANS, STRATEGIES, OR POLICIES THAT ADDRESS POST-DISASTER WATER, SANITATION, AND HYGIENE (WASH) NEEDS

- a. WASH is addressed in plans, strategies, and policies; information regarding the mechanisms for support to impacted areas is provided.**
- b. Water, Sanitation and Hygiene (WASH) activities fall within the Health Cluster, one of the eleven (11) Response Clusters. The Department of Health is the responsible lead government agency for WASH activities. WASH falls under the thematic area of Disaster Response, and the Vice-Chairperson for the Department of Social Welfare and Development (DSWD) has the overall responsibility for those activities.⁶

MANAGING THE SAFETY AND SECURITY NEEDS OF DISASTER-AFFECTED POPULATIONS

- a. Safety and security responsibilities are defined and assigned to an appropriate ministry, office, or stakeholder.**
- b. Safety and Security is a common thread that weaves through all four Thematic Areas, particularly Thematic Areas three (3) and four (4). Disaster Response (Thematic Area 3) addresses safety and security needs in plans involving evacuation, sheltering, and search and rescue activities. The responsible lead agencies for carrying out these activities are:
 1. Department of Social Welfare and Development (DSWD)
 2. Department of Health (DOH)
 3. Department of National Defense (DND),
 4. Department of Interior and Local Government (DLIG)

DOH and DSWD are the lead agencies responsible for ensuring a safe, sound, and secure community that is protected from the effects of disasters and restoring to normal functioning after each disaster. The responsibilities are outlined in plans addressing activities in Thematic Area four (4), Disaster Rehabilitation and Recovery. The Vice-Chairperson for Rehabilitation and Recovery is the National Economic and Development Authority (NEDA) which has the overall lead responsibility for Thematic Area 4 above.³

HAZMAT RESPONSE CAPACITY

- a. HAZMAT response supported through a centralized (i.e., national level) HAZMAT response capacity.**
- b. The Bureau of Fire Protection (BFP)-HAZMAT has the responsibility for monitoring emergency incidents at the national level that involve response to Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE), and fire (forest fire/conflagration).⁶

SUPPORT FOR SEARCH AND RESCUE ACTIVITIES

- a. National search and rescue capabilities exist.**

- b. The Department of National Defense – Armed Forces of the Philippines (DND-AFP) is the Government Cluster Lead for the Search, Rescue and Retrieval (SRR) and leads SRR operations and activities.⁶ The National Disaster Risk Reduction and Management Operations Center (NDRRMOC) functions as the coordinating hub to ensure that requirements of the affected regions are referred to the appropriate agencies at the NDRRMOC.⁶ The SRR capacity falls within Thematic Area three (3) Disaster Response and the overall responsible agency is the Department of Social Welfare and Development (DSWD)⁷ with Lead agency responsibility shared between the Department of National Defense (DND), Department of Interior and Local Government (DLIG), and the Department of Health (DOH).³

SUPPORT FOR PREPAREDNESS, RESPONSE, AND RECOVERY IN THE AGRICULTURE SECTOR

- a. **Support for the disaster-related needs of the agriculture sector is comprehensive and is addressed in plans, policies, and or strategies.**
- b. Damages to agriculture (crops, livestock, high value commercial crops, fisheries, facilities, equipment, irrigation, warehouses and infrastructure) are expected and reportable items for departments and Regional DRRMOCs and OCD Regional Offices (OCDROs) to include when reporting up to the National DRRMOC. Plans also specifically address slow-onset conditions such as drought and its effect on agriculture.⁶

The Secretary of the Department of Agriculture is a member of the NDRRMC. Also, by law, the composition of the Local DRRMC in every barangay must include the Head of the Local Agriculture Office. Policy formulation, planning, budgeting and governance must include agriculture among other areas.⁴

CAPACITY DEVELOPMENT

FORMALIZED CD PLANS & STRATEGIES

TRAINING AND EXERCISE REQUIREMENTS AND/OR RECOMMENDATIONS

- a. **Training and exercise requirements and/or recommendations are established for all staff active in DM, for leaders, and for the media.**
- b. The National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028 stipulates the establishment of DRRM Training Institutes. Regional and local disaster risk reduction and management offices (DRRMO) are mandated to provide “training, orientation, and knowledge management activities on disaster risk reduction and management at the local level”.⁴ The

Philippine Disaster Risk Reduction and Management System (PDRRMS) online course was launched in 2018 in a partnership with the OCD and the Humanitarian Leadership Academy Philippines.

The OCD is involved in multiple training and capacity building projects relating to all phases of DM with multiple partner agencies, in various regions, as evidenced by a DND 2018 audit and mandated by RA 10121.^{4,40}

The Masters in Crisis and Disaster Risk Management Scholarship Program was established in 2016 at PPSC as a result of mandates from the RA 10121. It continues to provide individuals in the government, private sector, and public safety further education and training in the crisis and disaster risk field.¹⁰⁸ The PDRRMS online course, an online version of the OCD in-person training, was launched in 2018 in a partnership with the OCD and the Humanitarian Leadership Academy Philippines.¹⁰⁹ The course is offered through Kaya, a free learning platform for the Humanitarian Leadership Academy (HLA)'s offerings, along with other topics on DM and readiness. The Center for Disaster and Emergency Management (CDEM) is in place for training, mainstreaming DRR in education, research toward policy advocacy, and extension services related to DRR, DM, and emergency management.¹⁰⁹⁻¹¹¹ There are also several other offices offering training to a variety of entities that bring together individuals from multiple sectors.¹¹²

POSITION-SPECIFIC COMPETENCY REQUIREMENTS

- a. **Position specific competency requirements have been identified and serve as a driver for training and education strategies.**
- b. DM leadership positions do not require job-specific competencies or previous DM experience, but it is generally expected. RA 10121 and its IRR stipulate that the OCD Administrator shall be a “universally acknowledged expert in the field of disaster preparedness and management and of proven honesty and integrity”.^{4,31} There has been a recent trend of political appointments based on politics rather than competencies.

As indicated earlier in the *Institutional Arrangements – Leadership* section under the *Job-specific Competencies of Leadership Positions* heading, OCD launched its Competency Framework in 2016 and promulgated through the NDRRMC to its Regional Offices. The competencies were developed because of a partnership with the Australian Aid and Philippine Australia Human Resource Organizational Development Facility (PAHRODF). The competencies constitute the standard for the

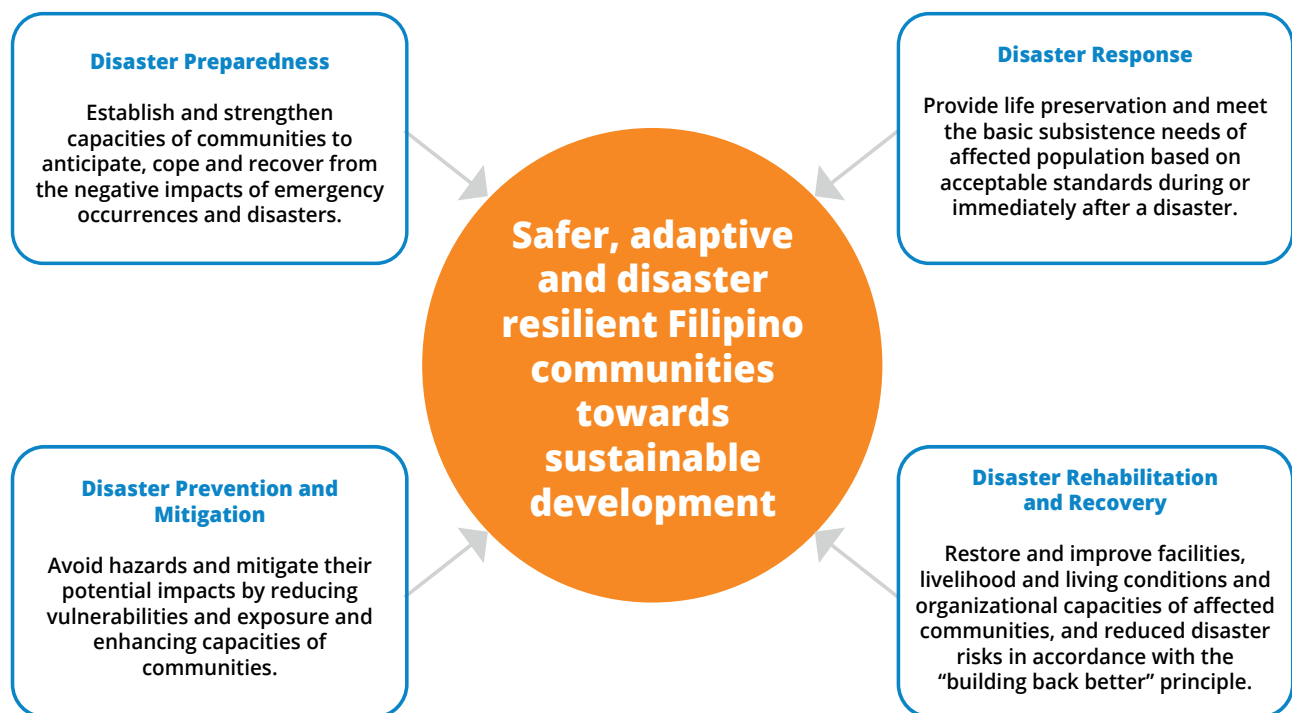
- Recruitment, selection, and placement of candidates to the positions
- Performance management
- Rewards and recognition
- Learning and development, and training programs.²

COORDINATION OF CD EFFORTS

a. The Philippines has a designated government agency or office tasked with coordination and support of DM and DRR capacity development.

As mentioned earlier, the Capacity Building and Training Service Office at the OCD maintains ongoing formal DM/DRR training and educational programs. OCD is also responsible for formulating and implementing the NDRRMP and ensuring its consistency across the cities, municipalities, and communities. The NDRRMP 2011-2028 designates a responsible agency for each of the four thematic areas of DM (See **Figure 1 Organizational Chart of NDRRMC** in the *Institutional Arrangements – Organizational Structures* section and **Figure 11 NDRRM 2011-2028 vision** in the *Capacity Development – Formalized CD Plans & Strategies* section). At the center is the OCD as the coordinating agency.

Disaster risk reduction and management activities covered by RDRRM and LDRRM funds include, but are 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”.²²



Thematic Area	Responsible Agency	Supporting Agencies
Disaster Prevention and Mitigation	Department of Science and Technology (DOST)	Office of Civil Defense (OCD); Department of Environment and Natural Resources (DENR); Department of Finance (DOF)
Disaster Preparedness	Department of Interior and Local Government (DILG)	Philippine Information Agency (PIA); OCD
Disaster Response	Department of Social Welfare and Development (DSWD)	OCD; Disaster Risk Reduction and Management Councils (DRRMCs); Local Government Units (LGUs); Department of Health (DOH)
Disaster Rehabilitation and Recovery	National Economic and Development Authority (NEDA)	OCD; National Housing Authority (NHA); DOH; and DSWD

Figure 11 NDRRM 2011-2028 vision (Source: NDRRMP 2011-2028 Executive Summary)⁶

STRATEGY DRIVEN EFFORTS

- a. **The National DRR and DRM Strategy 2011-2028 has plans and strategies at all levels to increase people’s resilience and decrease their vulnerabilities.**
- b. The National DRR and DRM Strategy 2011-2028 has plans and strategies at all levels to “envision a country of safer, adaptive and disaster-resilient Filipino communities toward sustainable development.”⁷³ The strategy is to go from a reactive to a proactive approach to increase people’s resilience and decrease their vulnerabilities.

DM AND DRR CAPACITY AND RESOURCE NEEDS ASSESSMENTS

- a. **DM and DRR capacity and resource needs are periodically assessed through deliberative planning.**
- b. Monitoring and evaluation are done by the Local, Regional, and National DRRM Councils. The latest resolution concerning monitoring and evaluation was NDRRMC Resolution No. 01, s. 2019 that codified the Rehabilitation and Recovery Planning Guide (RRPG).⁸⁶ The plan lays out the process to assess, monitor, and evaluate needs throughout the year. The RRPG recommends annual report submissions, but assessments can be submitted when the evaluating unit determines it necessary. Appropriate tools are suggested such as both online and offline methods that are simple, user-friendly, and cost-efficient with the capability to share to other groups. The system for reporting across levels is to be defined if various levels are involved, such as inputs are regional or local and those evaluating are national. A sample flow chart is included in the Resolution document as well as a table to list needs and all the necessary information.⁸⁶ A sample flowchart is shown in **Figure 12**.

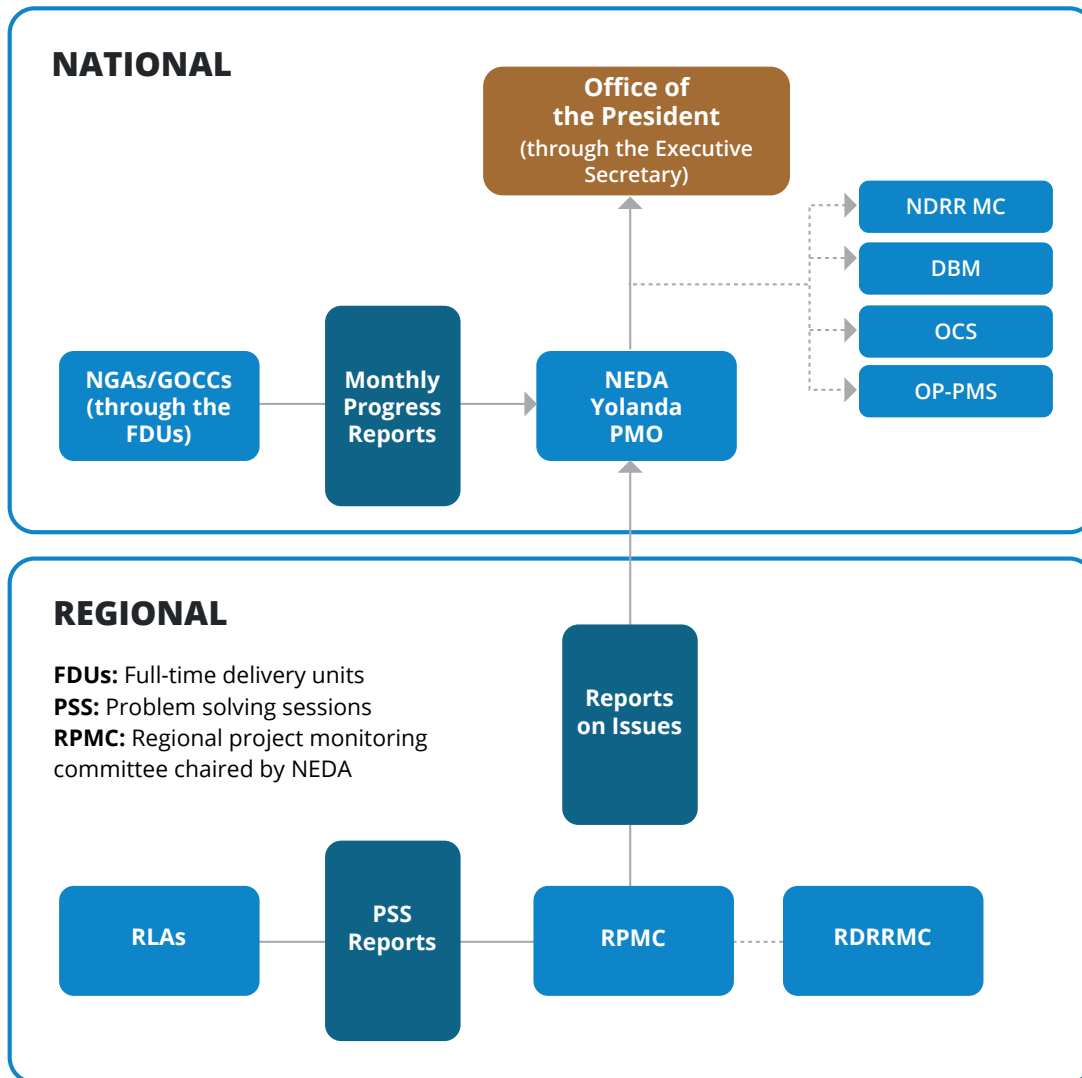


Figure 12 Sample Flowchart for Monitoring and Reporting Process (Yolanda Comprehensive Rehabilitation and Recovery Program) (Source: Resolution No. 1 2019, Approving the Rehabilitation and Recovery Planning (RRP) Guide (p.68))

COORDINATION WITH REGIONAL/GLOBAL CD EFFORTS

- a. **The Philippines actively contributed to the development of the SFDRR 2015-2030**
- b. The Philippines has shown its commitment to collaborate with the UN Office for Disaster Risk Reduction (UNDRR) and the ADPC. A 2019 Report details the Philippines’ commitments to the four priorities of the SFDRR.²⁴

The Philippines is a member of ASEAN, which ratified the legally-binding AADMER in 2009.⁵ The ASEAN Vision 2025 on Disaster Management charts the strategic direction to move the implementation of AADMER. Article 17 of AADMER mandates “Member States to jointly or individually develop strategies and implement programs for rehabilitation and promote, as appropriate, bilateral, regional and international cooperation for rehabilitation as a result of a disaster.”⁵

NATIONAL SCIENCE AND TECHNOLOGY (S&T) AGENDA

- a. **The Harmonized National Research and Development Agenda 2016 priorities include 1) strengthening disaster risk governance to manage disaster risk through stronger involvement and use of science in policy and decision-making, and 2) investing in DRR for resilience through use of scientific evidence.**
- b. The Sendai Framework classifies elements of the Department of Science and Technology's (DOST) plans of action in DOST, 2016 for 2017-2022 and Sections I, II, and V of the Harmonized National Research and Development Agenda, 2016.⁵² The four Sendai priorities are:
- 1) Understanding disaster risk by updating data and using the data in monitoring and reviewing progress and building capacity
 - 2) Strengthening disaster risk governance to manage disaster risk through stronger involvement and use of science in policy and decision-making
 - 3) Investing in DRR for resilience through use of scientific evidence; and
 - 4) Enhancing disaster preparedness for effective response, and to “build back better” in recovery, rehabilitation, and reconstruction²³

The priorities will identify and respond to the needs of policy- and decision-makers for scientific data and information.^{23,52} The Philippines has been a leader in the region in this aspect, developing “a contingency plan that includes 100 earthquake monitoring systems, tsunami detection tools, fault finding maps and web-based and mobile application, satellite radar for weather forecasting and real-time monitoring”¹¹³ through a collaboration with academia, the private sector, and the community. The Philippines is a member of the UNISDR Asia Science Technology and Academia Advisory Group (ASTAAG), a community of scientific and technological academics that look to find ways to improve disaster risk through various activities and dissemination of their knowledge. The group is a community of scientific and technological academics that look to find ways to improve disaster risk through various activities and dissemination of their knowledge.¹¹⁴ According to the ASTAAG report (2018), in the 5 years before 2018, DOST spent over 30% of their research and development funds on projects related to DRR and climate change related initiatives.¹¹⁴ DOST-Technology Application and Promotion Institute (DOST-TAPI) organized the expo, “Science for the People: Safer, Adaptive and Prepared Filipino Communities toward Sustainable Development,” featuring several DRRM related technologies and initiatives.¹¹⁵ The Expo included the following agencies:

- Philippine Atmospheric, Geophysical, and Astronomical Services Administration (DOST-PAGASA),
- Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS),
- Advanced Science and Technology Institute (DOST-ASTI),
- Philippine Nuclear Research Institute (DOST-PNRI),
- Industrial Technology Development Institute (DOST-ITDI),

- Food and Nutrition Research Institute (DOST-FNRI), and
- Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERRD).

TRAINING & EDUCATION



CONDUCT OF DM AND DRR TRAINING

- The Philippines maintains formal DM/DRR training programs with dedicated staff and recurring budgets utilizing facilities distributed nationally.**
- As mandated by RA 10121,⁴ the OCD, via its CBTS Office, maintains ongoing formal DM/DRR training programs. As the primary agency tasked with ensuring the dictates of RA 10121, the OCD is well-funded, and has satellite office facilities throughout the nation.⁴

The OCD is involved in multiple training and capacity building projects relating to all phases of DM with multiple partner agencies, in various regions, as evidenced by a DND 2018 audit and mandated by RA 10121.^{4,40}

The NDRRM Fund and LDRRM Funds are mandated and funded by the annual State Budget and available to fund trainings on preparedness and response, simulation exercises, research, and training of DM personnel.^{4,44,66}

DILG, via its Local Government Academy (LGA) in Pasig (near Manila), in cooperation with the OCD offers Rescue Emergency Disaster (RED) at their state-of-the-art Rescue Emergency Disaster Training Center. The LGA offers its trainings and facilities to LGUs, and “DILG offices and its partner organizations”.⁵¹ Facilities in Pasig include:

- Fire Fighting Section and First Aid Training Room.
- Earthquake Simulation Room.
- Fire Fighting Simulation.
- Rescue and Escape Section.
- Typhoon Simulation Room.
- First Aid Training Section.
- Smoke Maze Section; and a
- Seminar Hall”.⁵¹

SCOPE OF TRAINING AND EDUCATION CURRICULUM

- a. **DM training curricula in the Philippines address a comprehensive and expanding set of training and education requirements that closely track all typical and emerging needs across a diverse audience of stakeholders.**
- b. DM training curricula in the Philippines address a comprehensive and expanding set of training and education requirements. The requirements closely track all typical and emerging needs across a diverse audience of stakeholders. The OCD administers two programs of courses in DM: The National Disaster Risk Reduction and Management Education and Training Program (NDRRMETP) and the CDETP. Courses within the NDRRMETP and CDETP offer modules lasting 1-6 days, at basic, advanced, and executive levels.

The NDRRMETP specifies who shall benefit from its NDRRMETP, including a wide variety of stakeholders, with priority given to:

1. Local Government Units
2. Communities
3. Public Sector Employees and
4. Private Sector Employees⁹³

Fourteen additional stakeholder groups⁷ are identified as eligible beneficiaries including indigenous communities, rural farmworkers, and NGOs. All phases of DM are addressed in the catalogue of programs offered by the OCD. The CDETP is reserved for OCD employees and personnel with civil defense knowledge and competencies.⁹³

TRAINING METHODS

- a. **Training is provided in geographically distributed in-person training facilities, centralized in-person training facilities, and online study programs.**
- b. The Department of the Interior and Local Government, via its Local Government Academy offers Rescue Emergency Disaster training at their state-of-the-art Rescue Emergency Disaster Training Center. Regional and local Disaster risk reduction and management offices are mandated to

7 1. Farmers and landless rural workers
 2. Artisanal fisherfolk
 3. Urban poor
 4. Indigenous cultural communities/indigenous peoples
 5. Workers in the formal sector and migrant workers
 6. Workers in the informal sector
 7. Women
 8. Youth and students
 9. Persons with disabilities
 10. Victims of disasters and calamities
 11. Senior citizens
 12. Nongovernment organizations (NGOs)
 13. Children
 14. Cooperatives

provide training. The Humanitarian Leadership Academy (HLA) offers online courses on the PDRRMS. The LGA offers its trainings and facilities to local government units (LGUs), and “DILG offices and its partner organizations.”⁵¹

Geographically distributed:

RDRRMOs and LDRRMOs are mandated to provide “training, orientation, and knowledge management activities on disaster risk reduction and management at the local level”.⁴ The OCD, via their CBTS, offers community level trainings.⁹³

Additional centralized in-person training and regional facilities that provide training:

The OCD offers training courses to its employees (presumably at or near their national and regional offices).⁹³

Online (facilitated and/or self-study):

The HLA partnered with the OCD and the NDRRMC to offer online courses on the PDRRMS.¹¹⁶

The OCD’s Project DINA, provides public online access to their audio-visual presentations on earthquakes, tsunamis, tropical cyclones, landslides, floods, volcanic eruptions, and fires.¹¹⁷

TRAINING CATALOG AND SCHEDULE

- a. **The OCD posts its National Disaster Risk Reduction and Management and Civil Defense Education and Training Catalogue on its official website.**
- b. Programs of courses are listed covering all phases of DM, and a wide range of eligible stakeholders are identified for participation. Duration of each program is posted; however, dates and locations are not.^{51,93}

TRAINING RECORDS

- a. **The OCD has a Records Department wherein all activities are documented.**
- b. The NDRRMP 2011-2028 requires every agency involved in every activity to submit reports to the Agency Leads. The Agency Leads then consolidate the reports for submission to Vice-Chairperson of lead agency.³

The DND, as parent organization to the OCD, reports on the audits of the NDRRM Fund. The report catalogues all activities related to uses of the NDRRM Fund. The 2018 DND report lists dozens of training and education activities, exercises, and drills across all seventeen (17) regions of the Philippines.⁴⁰

PROGRAM TO SUPPORT EXERCISES

- a. **Formal exercise programs are available via the CBTS Office, under the auspices of the**

OCD and the DND.

- b. The NDRRMC and the OCD plan and conduct various exercises with dedicated personnel, other relevant agencies, and a wide range of public and private stakeholders on a regular basis as evidenced by a 2018 DND audit.⁴⁰

“Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programs.”⁴⁰

EXERCISE EVALUATION STANDARDS

a. Exercise Evaluation Standards are common throughout the area of analysis.

- b. The NDRRMP 2011-2028 stipulates that trainings, simulation exercises, and drills should be regularly conducted and evaluated.³

STRUCTURED ANNUAL EXERCISE SCHEDULE

a. General recommendations for exercise schedules are provided.

- b. The NDRRMC sets a notional calendar each year regarding drills and simulation exercises.¹¹⁸

NATIONAL-LEVEL EXERCISE

a. The NDRRMC conducts nationwide earthquake drills to strengthen regional and national mechanisms for coordination during an emergency and to bolster preparedness in local communities.

- b. OCD regional offices lead the drills in each of the seventeen (17) regions. Ten nationwide drills have been conducted since 2012.¹¹⁹

The NDRRMC held its first simulation exercise (SIMEX) in 2019 to enhance “unified decision-making” of cabinet secretaries and other high-ranking government officials after a major disaster has occurred. The NDRRMC and the OCD expressed their commitment to conducting more simulation exercises, and differentiated drills for separate hazards, to test the government’s capabilities and preparedness.¹¹⁹ Other exercises held by the NDRRMC and the OCD include a 36-Hour Search, Rescue, and Retrieval (SRR) Simulation Exercise, regional multi-hazard simulation drills, regional flood and earthquake drills, a simulated exercise for volcano eruption.^{40,119–121}

Multiple bilateral and multilateral exercises are also conducted between the U.S. and Philippines military, government, non-government organizations.^{122–125}

SUPPORT FOR SUB-JURISDICTIONAL EXERCISES.

a. The Philippines Government provides comprehensive technical, advisory, financial, and material support for exercise efforts to sub-regions.

The Philippine Government provides comprehensive technical, advisory, financial, and material support for exercise efforts to sub-regions. RA 10121 mandates that Disaster Risk Reduction and Management Training Institutes (DRRMTI) be accessible to public and private stakeholders at local and national levels.⁴ It also stipulates that “formal, institutional, legal and budgetary” support must be present for DM actors and stakeholders to engage in necessary training, field exercises, evacuation drills, and proliferation of public awareness.⁴

Local Disaster Risk Reduction and Management Offices (LDRRMOs) are mandated to organize and conduct training of local personnel involved in DM.⁴ LDRRMOs (and National and Regional DRRMOs) must engage communities in DRRM activities. All local public sector employees must also receive training in emergency response and preparedness.⁴ The DRRMTI must also provide training and educational materials and must conduct periodical awareness and education programs for LDRRMC officials and members.⁴

Evidence of the support can be found in the 2018 DND audit.⁴⁰

EXERCISE PARTICIPATION REQUIREMENTS

- a. **All government agencies with DM functions are required to participate in disaster exercises**
- b. Not every exercise requires involvement from every agency. Each exercise has an identified agency lead and implementing partners.

“In each of the activities under the NDRRMP, agency leads and implementing partner agencies and/or groups were identified. Following RA 10121, the overall lead or focal agency for each of the four priority areas are the vice-chairpersons of the National DRRM Council.”³

STAKEHOLDER INVOLVEMENT IN TRAINING AND EXERCISES

- a. **NGOs and private sector stakeholders are invited to participate in training and exercises via the National Disaster Risk Reduction and Management Education and Training Program.**
- b. National Disaster Risk Reduction and Management Education and Training Program (NDRRMETP) serves a wide variety of stakeholders. (For complete list, see under *Scope of Training and Education Curriculum* heading in this section.)

Multiple bilateral and multilateral exercises are conducted between the US and Philippine militaries, government and nongovernment organizations, and international humanitarian organizations as mentioned above.

Evidence of NGO and private sector stakeholder participation can be found in a 2018 DND audit.⁴⁰

DM PROGRAMS IN THE HIGHER-ED COMMUNITY

- a. **A robust, formally organized community of higher education institutions offer programs**

that support DM professionalization, including the hosting of symposia on DM-related topics.

b. Examples include but are not limited to:

4th International Research Colloquium towards Disaster Risk Transfer (4IRC-DRT), Philippine School of Business Administration Manila, Philippines ¹²⁶
Lahore College for Women University, Pakistan holds International Conference “Architecture Education Towards Disaster Mitigation” ¹²⁷
PSBA-Manila & OCD-NCR signed Disaster Risk Reduction Partnership, Philippine School of Business Administration Manila, Philippines ¹²⁸
PSBA-Manila DRM Unit to present at the 6th Global Platform for Disaster Risk Reduction 2019 IGNITE Stage, Philippine School of Business Administration Manila, Philippines ¹²⁹
University of the Philippines: UP Resilience Institute (RI) ¹³⁰
“Developing the Philippines as a Global Hub for Disaster Risk Reduction – A Health Research Initiative as Presented at the 10th Philippine National Health Research System Week Celebration” ¹³¹
“Strengthen the capabilities of environmental sector at various levels in environmental planning, sustainable land use planning, disaster risk management and mitigation with the use of state of the art environmental management tools.” (Research agenda UPLB) ¹³⁰
“Documentation and Evaluation of Disaster Mitigation, Preparedness, and Response Projects in the Municipalities Under the WFP-DPR Programme in Four Provinces: Cagayan, Benguet, Laguna and Sorsogon” ¹³²
UPLB Climate and Disaster Risks Studies Center (UPLB-CDRSC) ¹³³
Target / Beneficiaries: UPLB students, faculty and researchers, Los Baños community, LGUs, SUCs, GAs, POs, CSOs, industries, private and public institutions, individuals ¹³⁴

HIGHER-ED PROGRAM AND DEGREE OFFERINGS

a. Masters’ and bachelors’ degrees in DM are offered.

b. Masters’ and bachelors’ degrees in DM are offered. Examples include, but are not limited to:

Degree	Institution
Masters in Crisis and Disaster Risk Management (MCDRM)	Central Bicol State University of Agriculture ¹³⁵
Master of Business Administration, Specialization in Disaster Risk Management (MBA-DRM)	Philippine School of Business Administration (PSBA) ¹³⁶
Master of Science in Environmental Management	Philippine Women’s University (PWU) ¹³⁷
Master of Science in Environmental Science	De La Salle University ¹³⁸
Master in Disaster Risk and Resilience	Ateneo de Manila University ¹³⁹

Master in Disaster Risk Management Course (MCDRM)	Philippine Public Safety College ¹⁰⁸
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PUBLIC EDUCATION METHODS

- a. **National disaster risk reduction and management curricula are provided to K-12 schools in the Philippines.**
- b. DEPED, CHED, and Technical Education and Skills Development Authority (Tesda) are required to participate in DRRM efforts via incorporation of into their curricula.⁴ The Act stipulates that DRRM personnel “encourage community, specifically the youth, participation in disaster risk reduction and management activities, such as organizing quick response groups, particularly in identified disaster-prone areas, as well as the inclusion of disaster risk reduction and management programs as part of youth programs and projects.”⁴ DEPED’s Comprehensive Disaster Risk Reduction and Management in Basic Education Framework was distributed and institutionalized for all schools to incorporate into their curricula via a DEPED Order.¹⁴⁰

PUBLIC AWARENESS, PREPAREDNESS, AND RESILIENCE-BUILDING PROGRAM

- a. **Public awareness, preparedness, and resilience-building programs are carried out in the Philippines on a regular basis for a wide range of stakeholders.**
- b. For example: A Department of Defense audit shows that “17 regions celebrated the National Disaster Resilience Month with variety of activities in increasing awareness on DRR and CCA.”⁴⁰ A convention held for the purpose of “Increased of awareness and enhanced capacity of the community to the threats and impacts of all hazards” and “establishing platforms for knowledge exchange” was attended by three-hundred (300) delegates from local government units (LGUs).⁴⁰ Multiple agencies and stakeholders were involved in both examples above, and dozens of other activities regarding public awareness, preparedness, and resilience-building are iterated in the report.⁴⁰

The NDRRMP 2011-2028 declares the policy of raising public awareness and preparedness “through multi-stakeholder coordination”.³ The NDRRMP mandates that LDRRMOs shall “disseminate information and raise public awareness” and to build resilience of communities.³ The above policies are mandated in RA 10121.⁴ However, refer to discussion earlier about deficiencies in public awareness and support for DM activities.

DM EDUCATION FOR THE PUBLIC

- a. **Multimodal disaster preparedness information is provided to targeted sectors, stakeholder groups, and audiences, disaster preparedness information is provided to a generalized**

audience through media or other active campaigns, and disaster preparedness information is provided on various government websites.

b. A DND report shows that in 2018 many efforts were carried out, for example (taken from the report):⁴⁰

Project	Stakeholder(s)
Enhanced Unit Readiness and Preparedness trainings and informational campaigns	Local government units (LGUs)
Information, Education and Communication Campaigns (IECs) / Flood Drills	61 IECs/Flood Drills conducted (locations not specified)
Health emergency management (HEM) preparedness activities and response operations in support of health emergency management (HEM)	Regional Offices and DOH hospitals
Sustained DRRM Education and Research through permanent training institutions	Participants from the DOH Regional Offices – PHO, CHO, PHTL and DMO/DOH Representatives, Hospital and LGU personnel
<p>Social Media accounts and Web Page:</p> <p>New insights and features were incorporated in the new Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA) Website</p> <ul style="list-style-type: none"> Better prepared citizenry activities 	<p>2,891,554 likes in Facebook, 5.97M followers in Twitter, 84,534 subscribers in YouTube</p> <ul style="list-style-type: none"> Department of Health (DOH) Employees including the public, LGU’s constituents especially bystanders, Academe personnel and selected DOH personnel.

COMMUNITY CENTERS AND PUBLIC AWARENESS/EDUCATION

a. **There is widespread formal and informal engagement in the promotion of disaster awareness, preparedness, and training through community organizations and networks.**

- In particular, the International Federation of Red Cross and Red Crescent Societies (IFRC) in the Philippines (Philippine Red Cross, PRC) operates on hundred four (104) local chapters.¹⁴¹ PRC’s Disaster Management Program includes:¹⁴²
- Disaster Risk Reduction:** Contributes to the development of safe and resilient communities, schools, and workplaces through RC 143 in order to capacitate them to prepare, respond, and recover from any emergency situation.
- Disaster Preparedness:** Strengthens the preparedness capacity of the PRC (both the NHQ and Chapters) for timely and effective response.
- Disaster Response:** Provides appropriate humanitarian services in the areas of rescue, relief, health, welfare, and emergency shelter to the most vulnerable groups among the total affected population.

- **Disaster Recovery:** Involves the provision, restoration and improvement of shelter, livelihood, and basic community facilities, to improve living conditions and reduce disaster risk, supporting long-term approaches of building back better and safer.

Trainings offered by the PRC include:¹⁴³

- Standard First Aid and Basic Life Support – Cardiopulmonary Resuscitation with Automated External Defibrillator
- Occupational First Aid and Basic Life Support – Cardiopulmonary Resuscitation with Automated External Defibrillator
- Emergency First Aid

RCP also operates a volunteer program called Red Cross 143 (RC 143). RC 143 is a community-based initiative formed around one (1) leader and a minimum of forty-three (43) members engaging proactively and cooperatively in disaster risk reduction activities.¹⁴⁴

Culturally, “Filipinos promote *bayanihan*...a strong social norm of community welfare and reciprocal labour and comes into play during disasters, in which those less affected help those which have been hit harder”.¹⁴⁵

DISASTER PREPAREDNESS INFORMATION FOR THE PRIVATE SECTOR

- The private sector is provided with informational and resource support for preparedness and resilience efforts.**
- A DND report shows that in 2018 many efforts were carried out, an example (taken from the report):

PHIVOLCS conducted thirteen (13) batches of REDAS trainings to one (1) province (Tarlac); to Luzon, Visayas and East Mindanao LGUs; to two (2) cities (Iloilo and Muntinlupa); to a private sector organization (National Grid Corporation); and to two (2) non-governmental organizations (Philippine Disaster Resilience Foundation and Catholic Relief Services).⁴⁰

The NDRRMP 2011-2028 stipulates that DRR awareness in the private sector shall be assessed and materials shall be disseminated .³

The Citizen’s Charter from the OCD commits its CBTS to private sector stakeholders (among others),¹⁴⁶ as does the CBTS Catalogue.⁹³

MONITORING & EVALUATION

STANDARD EVALUATION PROCEDURES

- a. **RA 10121 mandates the Office of Civil Defense (OCD) with the responsibility of periodic assessment and monitoring of the NDRRMP.²²**
- b. The National DRR and DRM Strategy 2011-2028³ gives a process for the monitoring and assessments. Since the passage of RA 10121 and the NDRRMP, there have been several revisions and updates addressing specific plans, strategies, and SOPs:
 - NDRRMC Memorandum Circular No. 04, s. 2012 sets guidelines on the use of incident command system as an on-scene disaster response and management mechanism.¹⁴⁷
 - Memorandum No. 13, s. 2012 requested the NDRRMC member agencies to submit their respective progress reports to be included in the biennial progress review of the HFA.⁶⁵
 - NDRRMC, DBM, and Department of the Interior and Local Government issued a Joint Memorandum Circular No. 2013-1 on the allocation and utilization of the Local Disaster Risk Reduction and Management Fund (LDRRMF), which set terms for the LDRRMF according to Sections 2 € , 12 (6), and 21 of RA 10121 and the NDRRMP.
 - Joint Memorandum Circular No. 2014-1⁸⁴ states the guidelines for establishing local DRRM offices or Barangay DRRM committees in local government units according to Sections 12, 76, and 83 of RA 10121.
 - NDRRMC Memorandum Circular No. 19, s. 2016¹⁴⁸ sets up the rules and regulations for the management of dead and missing persons according to Section 4 of RA 10121⁴
 - Section 102 of RA 7160.¹⁴⁹ Chapter XXI of Presidential Decree No. 856¹⁵⁰, and
 - Administrative Order No. 2007-0018.¹⁵¹
 - The latest update is NDRRMC Resolution No. 01, s. 2019⁸⁶ that approved the Rehabilitation and Recovery Planning (RRP) Guide that outlines how and when each entity should evaluate, assess, and report.

REVIEW OF PLANS, STRATEGIES, AND SOPS

- a. **According to the Rehabilitation and Recovery Planning (RRP) Guide developed by the NDRRMC, programs should monitor the implementations and assess needs, plans, strategies, etc. on at least a yearly basis.⁸⁶**
- b. Units may evaluate and report more frequently, e.g., following a disaster. Programs are updated as needed based on annual reporting. However, there is reported confusion regarding the reporting requirements amongst LGUs.⁴⁷

REVIEW OF DM LEGISLATION

- a. **DM-relevant legislation reviewed and updated on a regular basis and following major disasters, and/or a comprehensive DM law has been passed in the last 5 years.**
- b. Rep. Ronnie Ong presented a resolution in 2019 for a full review of RA 10121 by Congress. In early 2020, Sen. Sherwin Gatchalian sought a Senate review of RA 10121.

RA 10121 was passed in 2009 along with the NDRRMP. RA 10121 requires an annual review of the NDRRMP.⁴ Five years after RA 10121 took effect, a systematic evaluation was to be performed by the Congressional Oversight Committee. However, it appears that an official formal review did not take place by Congress. The results of the consultations done for the review were instead used as the basis for bills that proposed the creation of a department solely for DRM – the Civil Defense Authority (CDA). These results were shared in 2017 with several recommendations.

REQUIREMENTS FOR POST-DISASTER REVIEWS

- a. **Post-event reviews occur after all major disaster events, whether or not requirements exist.**
- b. The Rehabilitation and Recovery Planning Guide 2019 as well other disaster planning documents require post-disaster review and incorporation of lessons learned into the plans, laws, and DM budgets.

The Rehabilitation and Recovery Planning Guide signed into law through Resolution 1/2019 addresses the requirement to conduct post-disaster review and recovery and the incorporation of lessons learned into post-disaster reconstruction, economic and sustainable development of the affected areas.⁸⁶ It addresses the review and updating of the laws and policies on the overall disaster risk management and post-disaster rehabilitation and recovery.⁸⁶ The post disaster needs assessment (PDNA) is also required to guide the national and local DRRM Funding allocations for that particular disaster and future disasters.⁸⁶

Post-disaster review and evaluation requirements are also present in the planning documents including the Hurricane Disaster Plan 2004, National Disaster Response Plan (NDRP) for Hydro-Meteorological Hazards (version 2), and National Disaster Response Plan (NDRP) Earthquake and Tsunami 2018.^{11,12,152} Each response agency is required to provide DRRMCs best practices employed during the response phase to serve as “lessons learned” documents. The OCD is mandated by RA 10121 to develop and ensure standards to implement risk reduction programs which are reflected in subsequent planning documents as mentioned above.⁴

EVALUATIONS INCORPORATED INTO PLANS, POLICIES, AND/OR SOPS

- a. **Evaluations of adverse events, drills, and/or exercises occur but there is no evidence that outcomes influence or are otherwise linked to plans, policies, and/or SOPs.**
- b. LGUs and other entities provide reports and feedback related to the evaluation of the current plans, policies and/or SOPs. It remains unclear whether they are directly used in improvements.

Confusion on the 5-year evaluation of RA 10121 includes speculations about whether evaluations are being used at all.¹⁵³ Recent changes including NDRRMC Resolution No. 01, s. 2019⁸⁶ appear to incorporate some of the evaluations and feedback such as those suggested by the Partners for Resilience.¹⁵⁴

COMMUNICATION AND INFORMATION MANAGEMENT

HAZARD & RISK ANALYSIS

RISK ASSESSMENT PROCESSES AND STANDARDS

- a. **Philippines has instituted a wholesale standardization in risk assessment process at the national, provincial, and local levels, however implementation challenges remain.**
- b. At the national level, conducting risk assessments falls under the authority of DOST as it is the lead institution for the Disaster Prevention and Mitigation thematic area under the NDRRMC, as stipulated by RA 10121 (See **Figure 1** *Organizational Chart of NDRRMC* in the *Institutional Arrangements – Organizational Structures* section).²² However, DOST reportedly has challenges exerting its authority on some of the major implementing authorities.¹⁵⁵

The University of the Philippines' Nationwide Operational Assessment of Hazards Center (UP-NOAH) was launched by DOST through a Presidential directive to improve operational readiness of the Philippine government against extreme weather conditions through the use of advanced technology to assess risks.¹⁵⁶ The UP-NOAH Center task is to develop accessible multidisciplinary risk assessment tools to aid local government decision-making in DRR and DM.¹⁵⁷ The NOAH center is also tasked to integrate current risk assessment tools into a common platform called Geospatial Information Management and Analysis System for Hazards and Risk Assessment in the Philippines (GeoRiskPH).¹⁵⁶ It is a work-in-progress.^{155,156}

The Philippine Institute of Volcanology and Seismology (PHIVOLCS), the Philippines Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), National Mapping and Resource Information Authority (NAMRIA), Mines and Geoscience Bureau (MGB), and UP Resilience Institute have a mandate for conducting risk assessments.^{24,156,158} The agencies have technical expertise that complement one another for conducting multi-hazard risk assessments; PHIVOLCS and DOST along with PAGASA, NAMRIA, MGB, and OCD have all agreed to contribute to the GeoRiskPH.¹⁵⁶ PAGASA and PHILVOLCS are also represented at NOAH.¹⁵⁶

NOAH's project Integrated Scenario-based Assessments of Impacts and Hazards (ISIAH), has objectives that include:

1. Create a municipal level risk assessment, incident reporting and visualization tool
2. Map exposure elements such as population, buildings, and critical facilities
3. Assess vulnerability to hydro meteorological hazards based on available datasets
4. Provide data and risk information required by the NDRRMC during extreme weather events through the Pre-Disaster Risk Assessment (PDRA) system.

The ISIAH project lasted from 2016 to 2017 and resulted in completely mapping fifteen (15) of eighty-one (81) provinces.^{157(p.1019)} More work remains to be done.

Another risk assessment method is the Climate and Disaster Risk Assessment (CDRA) which is a standard process involving studying risks and vulnerabilities of exposed elements including people, buildings, lifelines and other critical infrastructures, agriculture, forestry against natural hazards and climate change.^{159(p.xvii)} CDRA generates data to help inform decision making in land use planning at local levels. A 300+ page supplemental guide on CDRA to the 2014 CLUP was issued by the Housing and Land Use Regulatory Board (HLURB) in 2015. The aim is to mainstream climate change and disaster risks into land use planning at the local level. The CDRA risk assessment process is adopted from NEDA-UNDP-EU Guidelines on Mainstreaming DRR in Subnational Development and Land Use/Physical Planning in the Philippines.^{159(p.12)} Although originally it was supposed to be a quantitative and probabilistic approach, qualitative approaches are used due to the lack of probabilistic hazard maps, lack of complete catalogue of hazard events, lack of georeferenced data of exposed elements, and lack of assessed values of structures.^{159(p.12)}

The integrated Climate and Disaster Risk Assessment Model process is depicted in **Figure 13** below:

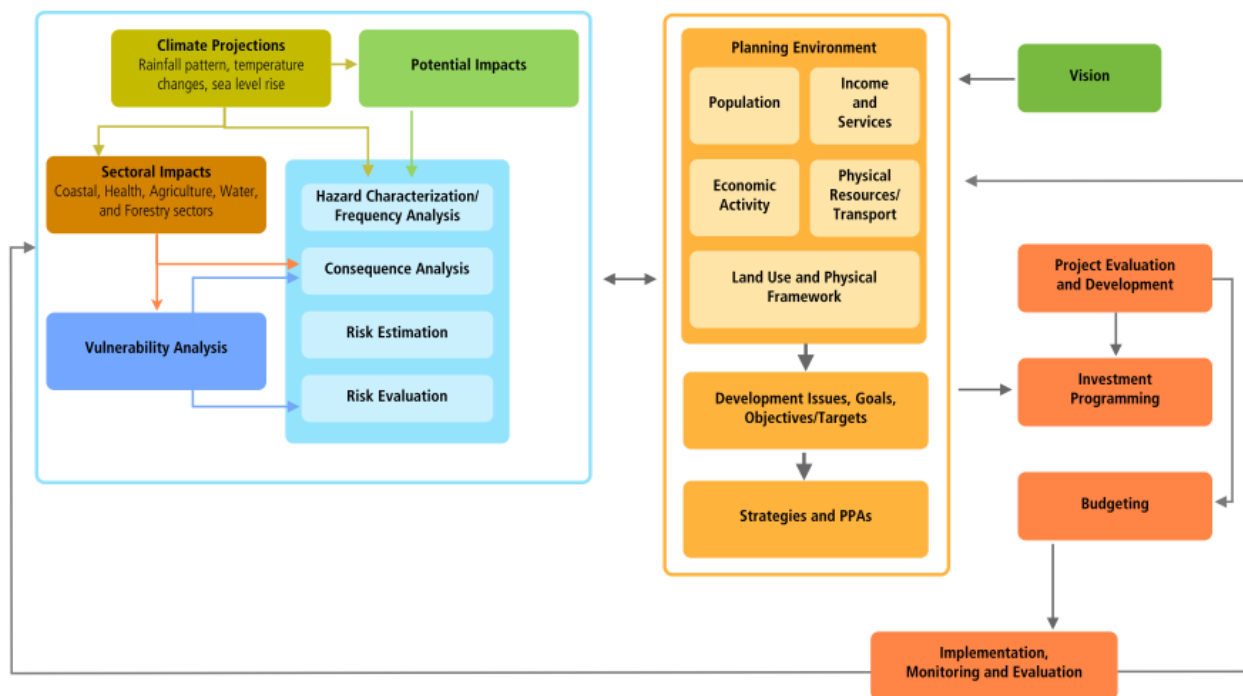


Figure 13 Integrated Climate and Disaster Risk Assessment Model (Source: CLUP Guidebook: Supplemental Guidelines on Mainstreaming Climate Change and Disaster Risks in the Comprehensive Land Use Plan, 2015, p.12)

The 2017 Guide on Local Planning and CDP issued by the Department of the Interior and Local Government – Bureau of Local Government Development (DILG-BLGD) mentions the CDRA in Step three (3) of the CDP as one of the many tools to be factored in the local planning process.^{75(pp.7,12)} The work remains in progress and there are implementation challenges including the lack of technical and financial capacity of the LGUs to develop and implement these plans as well as problems with the information flow from the local government level back up to the national level.¹⁵⁵

RISK ASSESSMENT REQUIREMENTS FOR PLANNING

- a. **Risk assessments are a requirement in the NDRRMP; however, there are implementation challenges due to technical and financial shortages.**
- b. Risk assessments are a requirement in the NDRRMP (2011-2028)³ and mandated by RA 10121.²² At the national level various agencies have the mandate to conduct risk assessments, with mechanisms put into place to make risk assessments a continuous process conducted both at the national and subnational levels with information readily accessible to decision makers.¹⁵⁵ The work remains in progress and the enforcement mechanisms are weakened by financial and technical difficulties. Notable progress from PAGASA entails moving from assessing hazards to assessing risks; this promotes a multi-hazard impact-based early warning system that integrates climate information.¹⁵⁵ LGUs also have the mandate to integrate Climate and DRR into their local planning efforts, however financial and technical challenges have been noted.^{155,159}

The government sometimes uses enforcement mechanisms for risk assessments regardless of a realistic consideration of capabilities. A recent example of this is from February 2020: DILG ordered all LGUs to assess every building for the “Big One Earthquake”, and to provide action plans based on those assessments. Assessments were due ninety (90) days from the announcement with the threat of disciplinary action for noncompliance.¹⁶⁰

RISK ASSESSMENT STAFFING CAPACITY

- a. **Risk assessment staff exists at levels sufficient to address jurisdictional needs, but sub-national support is insufficient.**
- b. The NOAH Program at the University of the Philippines (previously administered by the DOST from 2012 to 2017) assists the country in DRRM, climate change adaptation, mitigation efforts, and related activities.¹⁵⁶ Information from PHIVOLCS, PAGASA, NAMRIA and MGB are used by NOAH to aid their current projects that work to integrate current disaster science research and development projects; the information also informs DOST initiatives in these areas.¹⁵⁶ The projects include DREAM-LIDAR 3D Mapping, hydromet sensors development, Flood NET, DM using WebGIS, storm surge inundation mapping, landslide sensors development, weather information integration for system enhancement (WISE), Doppler system development, strategic communication, and enhancing geohazard mapping through LIDAR and high-resolution imagery.¹⁵⁶ Hazard maps are available both in hard copies and electronic copies downloadable

from the websites. Early warning systems are further enhanced by the Free Mobile Disaster Alert Act of 2014, which mandates telecommunication operators to issue free public warnings via mobile phones, as required by the state, PHIVOLCS, or PAGASA.^{24,161} While this technical capacity has been developed for forecasting and hazard anticipation through NOAH as well as other agencies, the access to all the resources has yet to be fully expanded to the end-users. Funding and training limitations at the LGU level restrict the availability of the resources and individuals to address the needs.^{155(Budgetary instruments)}

VULNERABILITY MEASURED IN RISK ASSESSMENTS

- a. **While vulnerable groups/areas are mentioned, vulnerability mapping is absent from any DRR and DM plans published.**
- b. RA 10121 indicates that the Disaster Risk Reduction and Management Information System database should contain information on disasters and the associated vulnerabilities related to human material and economic and environmental impact.²² The National Framework Strategy on Climate Change 2010-2022 (NFSCC) also addresses bio-physical vulnerabilities as underlying drivers of risks and includes enhanced vulnerability and adaptation assessments as a key result area for adaptation.¹⁶² Vulnerability is measured in some assessments, but only when the data and resources are available in and for that jurisdiction. For example, the ISIAH project as mentioned above included vulnerability assessments for fifteen (15) provinces.¹⁵⁷ Some of the vulnerability assessments have been conducted by NGOs or outside researchers. For example, Manila Observatory conducted vulnerability mapping studies, and Philippine Red Cross has conducted community-based vulnerability assessments in the past.^{163(p.4)} The NFSCC looks to formulate effective and efficient vulnerability, impact, and adaptation assessment tools that are relevant to the areas and users as well as to improve the mechanisms to address the limitations of existing assessment and vulnerability tools.¹⁶² In order to accomplish this, the baseline data in many areas needs to be updated as well as having a national/regional/provincial data repository or data management system where LGUs can access data they may need in their assessments and planning. In summary, while vulnerable groups/areas are mentioned, vulnerability mapping is absent from any published DRR and DM plans.

CLIMATE CHANGE INCLUDED IN RISK ASSESSMENTS

- a. **Most programs related to climate change have been reactive instead of proactive.**
- b. The DILG's Local Government Academy continues to explore how climate and disaster risk assessment relate to LGU functions such as development of their comprehensive land use plans (CLUPs) and comprehensive development plans (CDPs) by considering the hazards, exposures, and vulnerabilities of the LGUs.

RA 10121,²² the Climate Change Act of 2009 (RA 9729),⁸² and the People's Survival Fund⁴⁵ include environmental protection provisions, which the NDRRMC DILG, and DENR are to monitor and look to implement policies for sector-specific programs on coastal resource management, forest development, protection and rehabilitation, and the Ridge to Reef Framework of Development

and localized policies, such as the Agno River Basin Inter-Regional Watershed Management Program in Ilocos.¹⁶⁴

The HLURB has developed comprehensive guidelines to mainstream CDRA into the local planning process as depicted in **Figure 12**.¹⁵⁹ Most programs related to climate change are reactive instead of proactive.

LOCAL AND INDIGENOUS KNOWLEDGE IN RISK ASSESSMENTS

- a. **Local government units sometimes lack sufficient capability to conduct multi-sectoral risk assessments.**
- b. Ideally, the Philippines would support the mainstreaming of contextualized knowledge since the local governments and authorities are knowledgeable about local needs and gaps. RA 10121 requires that each LGU create and submit comprehensive land use and development plans with clear linkages between DRR, CR, and sustainable development at the local level.²² RA 10121 also states that there should be multi-stakeholder participation in the development, updates, and sharing of the national systems because understanding different capacities and constraints of local governments is critical.²⁴ The LGUs often lack sufficient capability to conduct multi-sectoral risk assessments, have limited funding, experience an overall low commitment among those conducting the assessments, and find the tools designed at the national level overwhelming, making the local planning process difficult.^{24,155} With local communities and leaders involved, the Philippines can integrate indigenous knowledge and avoid a top-down approach that may omit crucial information as the local governments and authorities are “knowledgeable about the local needs and gaps, and their support in the operations, especially in the remote regions.”^{24(p.23)} DRR mandates should be as realistic as possible – this means it is critical that local knowledge is included in assessments. This is extremely important in environmental impact assessments and protection measures as it relates to environmental degradation and loss of natural buffer zones (i.e. mangrove forests).²⁴

HOSTING OF RISK ASSESSMENT INFORMATION

- a. **RA 10121 mandates that a Disaster Risk Reduction and Management Information System and GIS-based national risk map database be established for policy, planning, and decision-making tools.**
- b. It is sometimes difficult for LGUs to access applicable maps or other data as they have either not received sufficient training or lack the technical skills. Multiple agencies are responsible for collecting the data needed and may not always coordinate with each other and are usually not located in a centralized database.⁸⁶ The agencies and types of critical data they possess are:
 - Philippine Statistics Authority
 - Population
 - Housing characteristics
 - Household income sources and expenditure items

- Poverty statistics
- Respective government agencies
 - Land area and use
 - Economic activity and livelihood
 - Infrastructure facilities
 - Social services
 - Hazards
- Local development land use and local shelter plans
 - LGU socioeconomic profile
 - LGU housing needs
 - LGU hazard profile
- Local DRRM Plan
 - Disaster related information

All this data should be contained in the Disaster Risk Reduction and Management Information System database, but many times is not. The NOAA Center is in the early stages of integrating current risk assessment tools into a common platform called Geospatial Information Management and Analysis System for Hazards and Risk Assessment in the Philippines (GeoRiskPH).¹⁵⁶

RISK MAPPING REQUIREMENTS

- a. **Risk maps are usually part of the overall national efforts, but only a recommendation for local government units. There are no requirements to submit risk maps as a requirement in the DRR and DM process.**
- b. Thematic Area one (1), Disaster Prevention and Mitigation in the NDRRMP indicates that the OCD should develop mapping for enhanced and effective community-based scientific DRRM and CCA assessment, but is listed as one way a LGU can assess the risk of their area.³ Therefore, risk maps are usually a part of the overall national efforts, but only a recommendation for LGUs. There are no requirements listed in the NDRRMP to submit any form of risk maps as a requirement in the DRR and DM process.³

RISK MAPPING CAPACITY

- a. **The Philippines has made significant progress in collecting comprehensive and updated risk information to create risk maps using different technological tools including GIS, LiDAR, Interferometric Synthetic Aperture Radar, computer simulations, and fault mapping. However, there is limited capacity for mapping at the local level.**
- b. The Philippines has made significant progress since RA 10121 was passed in collecting

comprehensive and updated risk information to create risk maps using different technological tools such as GIS, LiDAR, Interferometric Synthetic Aperture Radar (IfSAR), computer simulations, and fault mapping. Through technical support from the Collective Strengthening on Community Awareness on Natural Disasters (CSCAND) agencies composed of PHIVOLCS, PAGASA, MGB, and NAMRIA, there has been national risk mapping related to hydro-meteorological, geological, and seismic hazards^{166–168} hereinafter referred to as MTR. The MTR is undertaken as part of standard program requirements by the UNDP and AusAID to determine, midway through the Project, how it has progressed in pursuit of its target outputs and outcomes. This process is also expected to identify future courses of action, both for the remainder of Project life and beyond, to ensure the achievement and sustainability of gains. The period covered for the MTR was from June 2006 to June 2009, though some important information from within the period of study (September to November 2009). UP NOAH also started risk mapping that includes community vulnerabilities, especially in urban areas, that cover the parameters of hazards, exposure, and vulnerability contributing to risks.¹⁵⁷ However, there remains limited capacity for mapping at the LGU level partially due to low knowledge transfer as a result of high staff turnover and limited access to hazard and risk data.^{165,168}

RISK ASSESSMENT LINK TO DEVELOPMENT PROCESSES

- a. Risk assessment informs the development process but there are problems with implementation and working jointly across units.**
- b. It is dictated by RA 10121⁴ that each agency create their own plans based on risk assessments; however, this means that each organization is usually working for their own agenda and not considering neighboring units.¹⁶⁵ While this may be fine for certain “policies, programs, and projects (3Ps)”, thinking this way of thinking is not always the best in terms of disasters that affect multiple areas at once.^{165(p.18)}

MONITORING & NOTIFICATION

EXISTENCE OF HAZARD MONITORING

- a. **Monitoring of all major hazards is occurring.**
- b. The various groups that make up the NDRRMC monitor all major hazards for the country. They have a robust network of organizations, sensors, and capabilities to detect severe weather (including tropical storms, typhoons, gales, rainfall/flooding, and thunderstorms), seismic activity (including earthquakes, volcanoes, and tsunamis), flooding (general and for some metropolitan areas, localized), and dam levels/issues.^{6,7} Slow-onset crises and human induced incidents such as armed conflict and major structural fires are systematically reported to the OCD OPCEN for awareness and action. All hazards are categorized into conditions based on severity (White, Blue, Red) and responded to accordingly.^{6,7}

COORDINATION OF HAZARD MONITORING

- a. **A single office is tasked with oversight and/or management of monitoring for all major hazards.**
- b. Per RA 10121, hazard monitoring is coordinated by OCD leveraging the capabilities of agencies within NDRRMC for early warning.⁴

POPULATION IN AREAS SERVED BY MONITORING EFFORTS

- a. **Monitoring of hazards serves more than 75% of the population.**
- b. Hazard monitoring is occurring for all significant populated areas of the Philippines. PAGASA and PHIVOCS are able to access a network of local sensors and remote data throughout the country. OCD also has procedures in place that allows provincial and local agencies to manually report hazards for action.^{7,8,169,170}

DOPPLER RADAR COVERAGE

- a. **Doppler Radar Coverage exists for between 75-100 % of land area.**
- b. The PAGASA operates eleven Doppler radars and five coastal radars that cover major populated land masses. In partnership with the Government of Japan – PAGASA also has access to HIMAWARI-8; a geo-stationary weather satellite and successor to Japan Meteorological Agency's Multi-Functional Transport Satellite (MTSAT) series. This imagery is utilized for timely weather forecasting, tropical cyclone analysis, and for research purposes as it generates data every ten minutes. The equipment was installed at PAGASA in December 2015.¹⁷¹ These feeds are also made available to the public from the PAGASA website and several third-party vendors.¹⁷²⁻¹⁷⁴

HAZARD MONITORING RESPONSIBILITY

- a. **Hazard monitoring is managed by agencies or offices with relevant or hazard-specific missions.**
- b. Hazard-specific early warning is conducted for the entire Philippine archipelago by various agencies and ministries and is overseen by NDRRMC and communicated to the OCD and OPSCEN. The two major agencies conducting this mission are the Philippine Institute of Volcanology and Seismology (PHIVOCs) for geologic disturbances and the Philippines Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) for hydro-meteorological. OCD also has data inputs for many other types of hazards including rapid and slow-onset crises. ^{7,22,99}

HAZARD MONITORING METHODS

- a. **Hazard monitoring efforts in the Philippines utilize the most up-to-date methods and technologies.**
- b. The NDRRMC and OCD are continuously advancing procedures and systems to keep the people of the Philippines safe such as DOST-PHIVOC's GeoRISK platform and Hazard Hunter application for smart phones.⁸ NDRRMC/OCD are also partnering in PDC's PhilAWARE project sponsored by the US Agency for International Development (USAID), which will bring these authoritative feeds into an advanced geospatial platform.^{6,175}

ASSIGNMENT OF NOTIFICATION/EARLY WARNING RESPONSIBILITIES

- a. **Hazard notifications and early warning functions for all hazards are consolidated and assigned to the OCD for appropriate action, supported by the agencies of the NDRRMC.**
- b. This includes traditional rapid-onset emergencies such as earthquakes, and slow-onset crises like drought.⁴

STANDARD PROCEDURES FOR EARLY WARNING

- a. **Standard procedures facilitate notification and early warning for all hazards.**
- b. The OCD Operations Center's standard operating procedures lay out the procedures to facilitate notification and early warning from national to local levels for all hazards.

TARGETED EARLY WARNING CAPABILITIES

- a. **Early warnings are communicated via mobile (cellular) phones, land line phones, sirens, radio / television / social media.**
- b. Per Republic Act 10639, early warning for all hazards will be conducted by mobile (cellular) phones – specifically via Simple Message Service (SMS).¹⁶¹ According to the Philippines Statistics Authority (PSA), there are more than one hundred (100) cell phone plans per one hundred (100) persons.^{176(p10)} OCD OPSCEN SOP mandates that additional notifications be made to landline phones (particularly for first responder agencies), and radio/television/social media for the general public.⁶ These mechanisms are controlled by the NDRRMC/OCD OPSCEN. Local agencies throughout the Philippines use audible sirens as available, relying on initial notifications from

OCD early-warning capabilities to assess the threat.

EARLY WARNINGS COMMUNICATION CHANNELS

- a. Early warning capacity remains under development for some hazards.**
- b. Based on the extent of the hazard data that comes in from the sensors, OCD OPCEN SOP states that messages will be tailored to the appropriate area(s).⁶ Relevant agencies (PAGASA, PHIVOLCS, etc.) have created detailed mapping that reveal specific hazard zones to facilitate precise messaging.⁸ For hazards such as flooding, precise georeferenced locations may not exist.⁹⁹

TESTING OF EARLY WARNING SYSTEMS

- a. Testing is done for all hazards with warning capabilities.**
- b. Early warning systems are tested per OCD's standard operating procedures.⁶

TRAINING AND EDUCATION FOR WARNING RECIPIENTS

- a. Populations served by early warning systems are provided with pre-disaster training or education about message meaning and appropriate response.**
- b. NDRRMC supports regional and local DM committees with training, information, and material support.⁷ This includes Barangay-level DRRMCs that interact directly with local populations. NDRRMC/OCD and many of the other ministries maintain strong social media presence and informative multi-lingual websites.⁸

POPULATION TARGETING OF EARLY WARNING MESSAGES

- a. Vulnerable populations are considered for disaster risk reduction and response at local levels – including early warning systems.**
- b. RA 10121 defines “vulnerable and marginalized groups” as “those that face higher exposure to disaster risk and poverty including, but not limited to, women, children, elderly, differently-abled people, and ethnic minorities.”⁴ Section 2(n) requires NDRRMC/OCD to develop and strengthen the capacities of vulnerable and marginalized groups to mitigate, prepare for, respond to, and recover from the effects of disasters. Section 3(p) requires all Disaster Risk Reduction and Management Information Systems to account for data on vulnerable and marginalized groups. Section 12(d) further requires Barangay-level Disaster Risk Reduction Management Council (BDRRMC) to include existing and active community-based people’s organizations representing the most vulnerable and marginalized groups in the barangay to all planning and operational activities. Additionally, the NDPBA and PhilAWARE project will enhance the ability to consider vulnerable population impact assessments more directly.¹⁷⁷

DISASTER ASSESSMENT

DISASTER ASSESSMENT CAPABILITIES

- a. **Disaster assessment systems and procedures exist, supported by policy and in practice.**
- b. RA 10121 Section 8, paragraph g establishes the need “to formulate standard operating procedures for the deployment of rapid assessment teams, to share information among government agencies, and to coordinate at all levels before and after a disaster.”²² The NDRP and the OCD Operation Manual for Response provide guidance to disaster assessment.^{9,11,12}

The rapid damage and needs assessment (RDANA) missions are conducted jointly and through coordination with the national and/or regional government agencies and the affected local governments using the RDANA Form which was developed through a workshop conducted by NDRRMC with input from ASEAN (See **Table 1**). RDANA teams are organized, equipped, and trained by the national, regional, or local DRRM Councils. The assessments are usually augmented by drone and satellite technology. The collection, storing and analysis of data, and preparation, submission, and proper dissemination of RDANA reports are required under the direction of OCD.⁹ Depending on the scope of the disaster, both the RDANA and especially the post disaster needs assessment (PDNA) may involve the input of various international humanitarian agencies.

DISASTER ASSESSMENT REQUIREMENTS

- a. **Disaster assessments are a requirement under the disaster declaration process and the results are used to inform declarations decision-making.**

The Response Cluster (RC) and the Incident Management Teams (IMT) are the two main operating arms of the Response Pillar. They are activated through a Memorandum Order signed by the NDRRMC Executive Director and Vice-Chairperson for Response respectively based on the triggers as dictated under the *5.1. Operational Guidelines and Procedures- Triggers* subsection of the *OCD Manual of Operations*.^{9,12} Thus, a joint RDANA in the disaster stricken areas is triggered based on:

- (a) Declaration of a State of Calamity.
- (b) Request for assistance from the Local DRRM Council Chairpersons to the NDRRMC or its member agencies.
- (c) Request from a regional agency and from the RDRRMC Chairperson present on the ground, as directed by the NDRRMC Chairperson or the NDRRMC Executive Director
- (d) No contact in six (6) hours in areas expected and/or suspected to be severely affected; and
- (e) Devastation as depicted in pre-Disaster Risk Assessment (PDRA) and as reported by more

than one media reports.⁹

NDRRMOC SOP & Guidelines define the conditions, triggers, and process for declaring a National State of Calamity.⁶ LGUs are required to conduct RDANA in order to receive needed resources.⁹ The report of the RDANA is submitted to the next higher level of government to request support or assistance.⁹ This can be as simple as regions indicating they do not have the resources.⁹

Figure 14 shows the RDANA operations when the alert status is red and under the Level 2 or 3 response level according to the NDRP. **Figure 15** shows the cluster level approach to disaster operations under the NDRP where it shows the RDANA and PDNA stages for earthquakes and tsunamis.

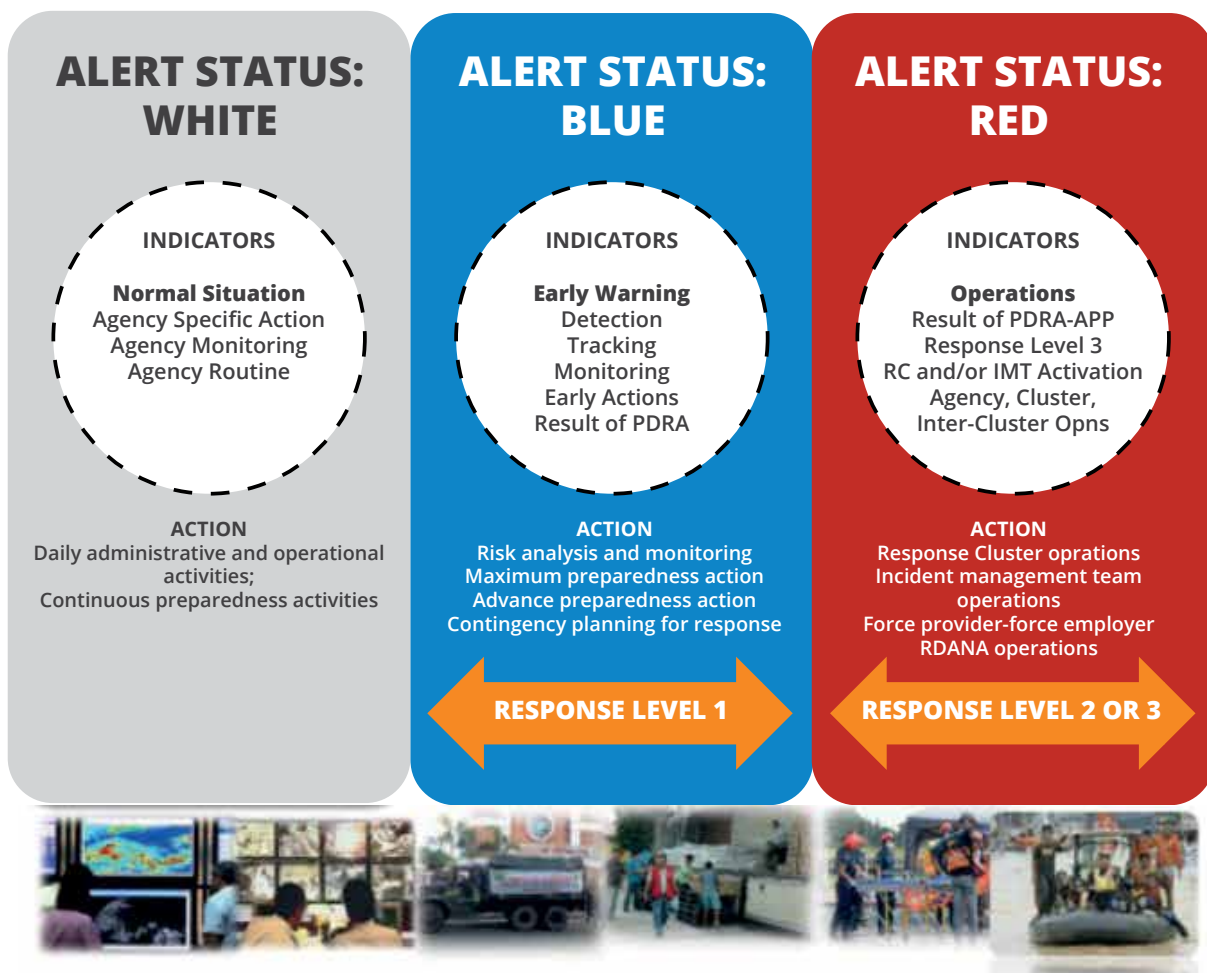


Figure 14 Alert Levels and Response Levels (Source: National Disaster Response Plan (NDRP) for Hydro-Meteorological Hazards ver.2 (p.20))

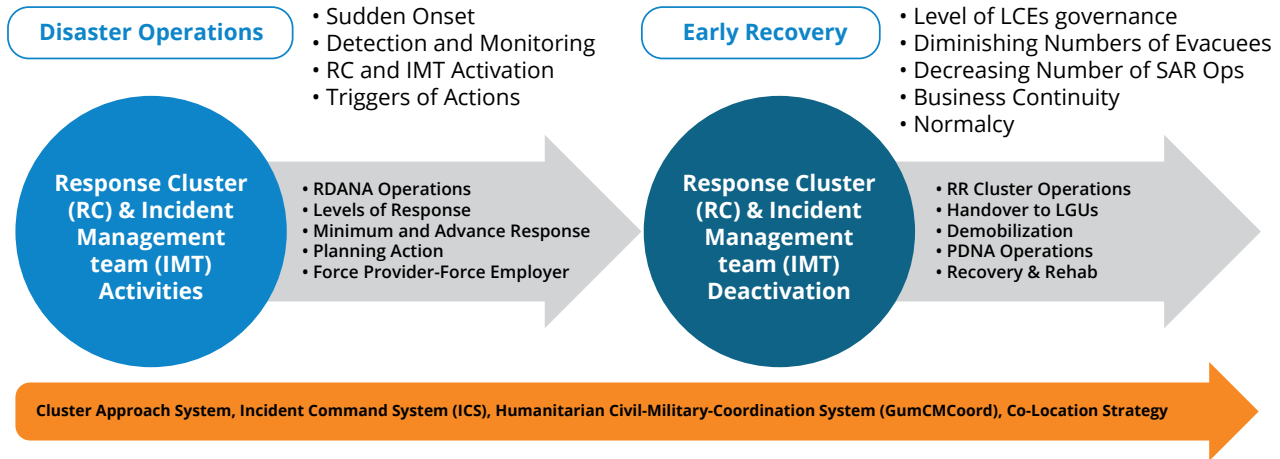


Figure 15 Disaster Response Management Operational Spectrum (for Earthquake and Tsunami) (Source: National Disaster Response Plan (NDRP) for Earthquake and Tsunami (p.27))

NATIONALLY-AUTHORIZED ASSESSMENT METHODOLOGY

- a. A nationally authorized assessment methodology is in use and is adhered to.
- b. The National Disaster Response Plans and the OCD Manual for Response have detailed provisions on disaster assessment methodologies. The methodology is universally applied across the government.

Disaster assessments are based on protocols provided in the NDRPs and the Response Manual provided by the OCD. The legal bases of the IMTs and RDANA are in RA 10121 Section 9, RA 10121 Section 3, Rule 4 IRR, and NDRRMC Memorandum Circular No. 25, s. 2014.^{22,178} **Figure 16** shows the operational flow across the national and regional offices and how the RDANA activities are fed into resource allocation decisions.

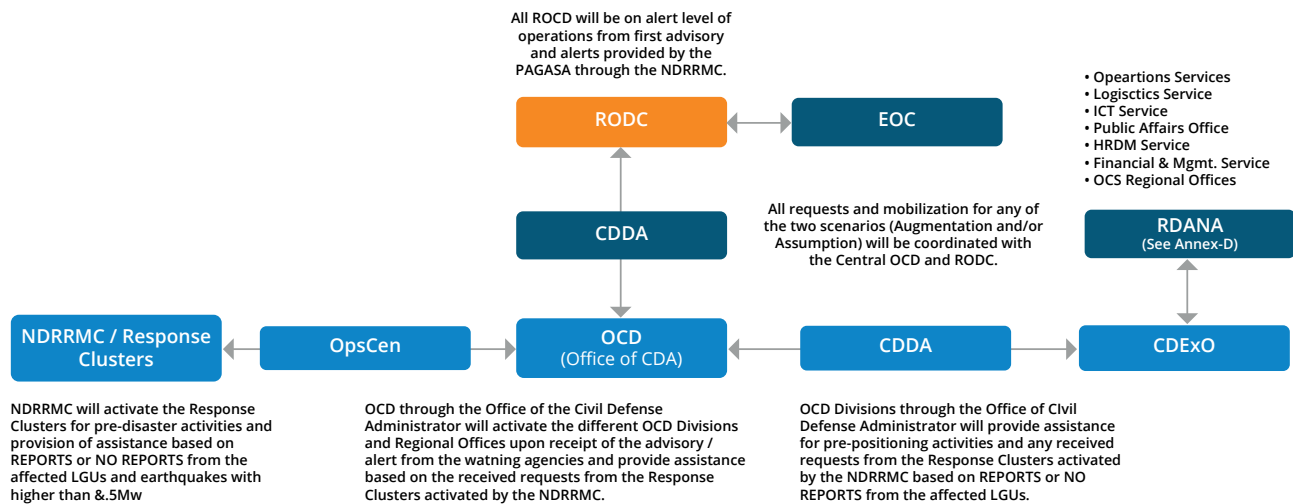


Figure 16 Operation flow of OCD (Central and Regional Office) during disaster phase (Source: OCD Manual for Response Operations 2015, p.2-30.)

The RDANA is conducted by the LGUs during the early and critical stages of the disaster to determine the immediate response and relief needed. Form 1 is to be completed and submitted within seventy-two (72) hours after the disaster. (See **Table 1**).^{9,179} Form 2 of the RDANA, with more detailed damage assessment and needs analysis, serves as the baseline data for the PDNA.⁹ The RDANA conducted by the LGUs are collated by OCD Regional Offices and used to inform resource allocation/ assistance, disaster alerting, situational reporting, and updates.⁹

Table 1 RDANA Initial Report (Form 1) contents

RAPID DAMAGE ASSESSMENT AND NEEDS ANALYSIS INITIAL REPORT							
Note: This must be submitted within 72 after disaster and will answer the question “What are the damages and immediate needs?”							
I. PROFILE OF THE DISASTER		II. INITIAL EFFECTS					
Site Location/Address		Total Population (no. of children/women/Persons with disabilities-PWDs)					
Time of RDANA Team Arrival		Affected Population (no. of children/women/PWDs)					
Time of RDANA Team Departure		Displaced Population (no. of children/women/PWDs)					
Local authorities/persons interviewed		Dead (no. of children/women/PWDs)					
MODALITY		Missing (no. of children/women/PWDs)					
GPS Coordinates		Injured (no. of children/women/PWDs)					
Type of Disaster							
Date and Time of Occurrence							
Summary of Disaster/Incident							
III. STATUS of LIFELINES and CRITICAL FACILITIES		IV. INITIAL NEEDS ASSESSMENT CHECKLIST					
Roads and Bridges, Electricity, Communication Networks, Hospitals, Schools, Airports, Sea Ports, Water Supply System, Market, Residential Houses, Others		Health, Food and Nutrition, WASH, Shelter and NFIs, Protection, Others	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Summary of Damages</th> <th style="width: 50%; text-align: center;">Priority Needs</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table>	Summary of Damages	Priority Needs		
Summary of Damages	Priority Needs						
V. INITIAL RESPONSE ACTIONS							
Response groups involved							
Assets deployed							
Number of families served (children/women/PWDs)							
Extent of local assistance							

Source: NDRRMC Report Development Workshop, ASEAN-ERAT Daily Assessment Form for ARF DIREX, ASEAN-RDANA Manual Quick Reference Guide December 2008, Initial Needs Assessment Checklist (INAC) – Version 06/05/2010

ASSESSMENT RESOURCE CAPACITY

a. Governmental assessment resource capacity is sufficient.

b. Governmental assessment capacity is sufficient, though varies at LGUs. Government in general has sufficient levels of staff, equipment, and resources to conduct assessments in the immediate aftermath of major events.

RDANA teams are organized, equipped, and trained by the national, regional, or local DRRM Councils.⁹ The government quickly mobilizes the necessary resources to the affected areas through tested protocols as described in this report. Although challenges with the timeliness and adequacy of resources at the LGU level are oftentimes reported by the media,¹⁸⁰ according to a 2014 Department of the Interior and Local Government (DILG)/Bureau of Local Government Supervision (BLGS) disaster preparedness audit, overall operational readiness rating was found to be high across the LGUs.¹³

An independent review on the loss and damage assessment system between 2014-2016 using focus group discussions, key informant interviews, national workshop and round table discussions⁸ identified the following issues: Lack of awareness on the tool being used due to:

- Frequent changing of staff
- Lack of a standardized process that results in data mismatch.
- Lack of baseline data and projected damages and losses including lack of digital back-up systems leading to over or underestimation of post disaster data.
- Challenges with the national government's ability to properly distribute resources (e.g., misallocation of resources, problems with the procurement processes)
- Poor governance involving the implementation of institutional arrangements leading to individualized implementing of problems and wrong prioritization.
- Slow assessment system leading to delayed relief and recovery.
- assessors being victims themselves.
- Data loss and absence of integrated data from various sectors which then leads to not having a basis for comparative analysis of data; and
- The RDANA tool having temporal limitations which focuses on short-term and direct impacts, not lending itself in measuring economic losses especially the long-term losses.¹⁶⁵

Early damage assessments are currently augmented by satellite maps using Artificial Intelligence (AI) on the government sponsored HazardHunterPH interactive website, as in the case of Typhoon Ulysses and Typhoon Rolly in 2020.⁸ For hazards such as flooding, precise georeferenced locations may not exist.⁹⁹

⁸ The study involved government agency representatives across all levels, key stakeholders, private sector, NGOs, academia, civil society organizations among others.

ASSESSMENTS AND INCIDENT ACTION PLANNING

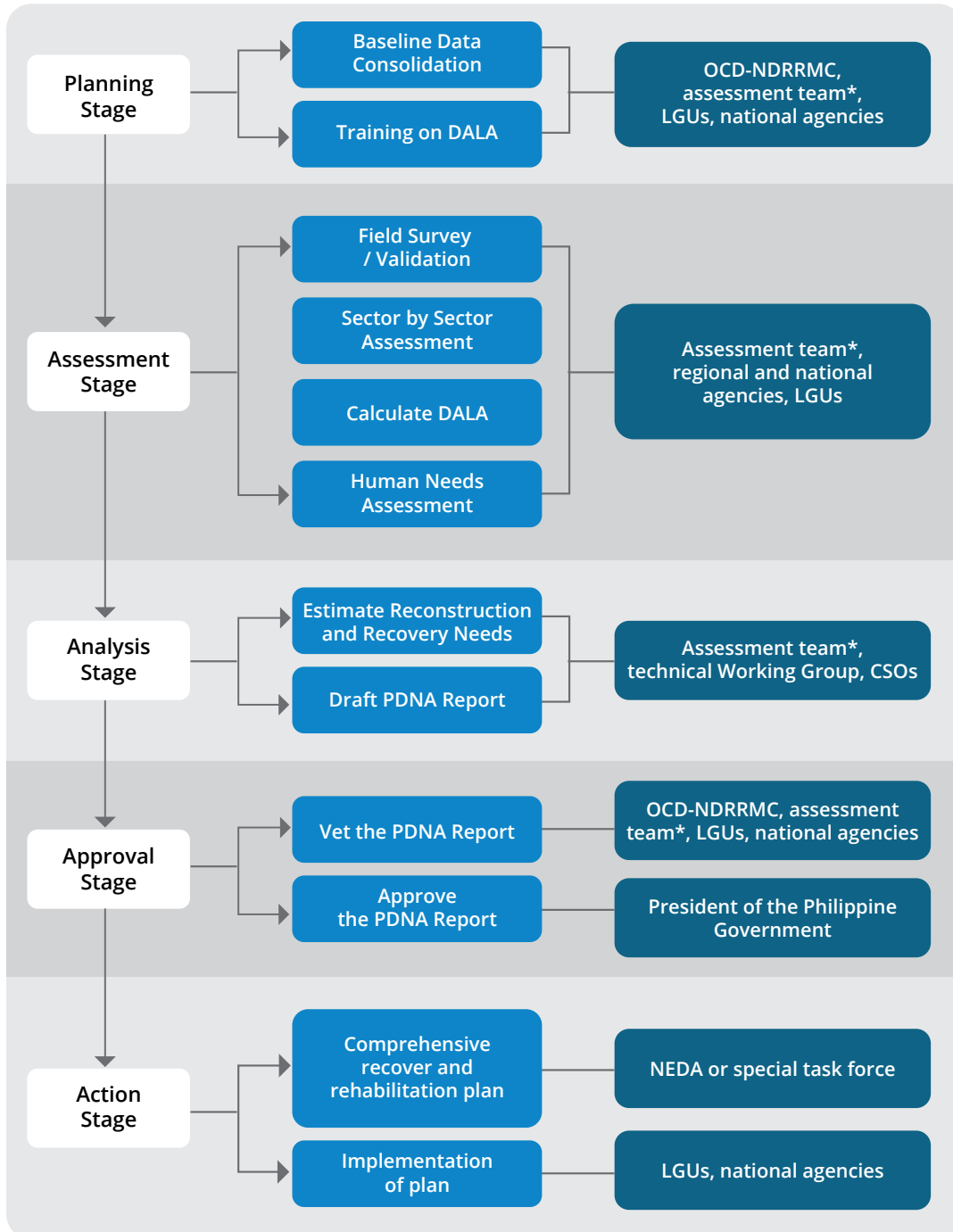
- a. **Assessment outcomes are generally a key driver behind incident action planning.**
- b. The Government of Philippines used the standard PDNA methodology for assessing the impacts of various disasters starting with Typhoon Ondoy (Ketsana) and Pepeng (Parma) of 2009, and with other major ones including later Typhoon Sendong in 2011, Pablo of 2012, and Typhoon Yolanda (Haiyan) of 2013.¹⁶⁵ The ODC-NDRRMC have since been actively modifying the module used in the training of the assessment teams.¹⁶⁵ The national planning documents represent the Philippine government's commitment to the international and regional DRR frameworks; they were also a reaction to the shortcomings observed in the Yolanda (Haiyan) disaster response effort. The NDRRMC SOP & Guidelines including the National Disaster Preparedness Plan 2015-2028, and the National Disaster Response Plans incorporate some of the lessons learned from Yolanda and the previous major disasters.¹⁰⁻¹³

STAKEHOLDER ENGAGEMENT IN THE ASSESSMENT PROCESS

- a. **Standard methodologies require multi-stakeholder engagement in the assessment process.**
- b. Assessment teams consist of representatives of LGU sector agencies and other relevant stakeholders. In large disasters international humanitarian organizations are also heavily involved in the assessments.

The Philippines started to use PDNA in 2009 to assess the impacts and needs of the impacted communities by Typhoon Ondoy when the Philippines Department of Finance sought the help of various development partners including the ADB, European Commission (EC), UN, and the World Bank. The PDNA methodology is based on the Damage and Loss Assessment (DALA) methodology of the UN Economic Commission for Latin America and the Caribbean (ECLAC). Since then, many revisions have been made to best capture the needs.^{165 (p.6)}

Figure 17 shows how the assessment process works in practice and shows that the RDANA and PDNA assessment involve relevant stakeholders. In large scale disasters humanitarian agencies collect their own assessment data and submit to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) to facilitate financial assistance. For smaller scale disasters the affected municipalities or barangays prepare assessment reports by various sector offices and submit them to their LDRRMOs.^{165 (p.6-7)}



*Assessment team consists of representatives from sectoral agencies and other relevant stakeholders.

Figure 17 General flow of the loss and damage assessment system in the Philippines and the key actors involved (Source: Gabriel et al. State of Loss and Damage Assessment System in the Philippines and Proposed L&D Framework.; 2017, p.8.)

INFORMATION COLLECTION, MANAGEMENT, AND DISTRIBUTION

DATA COLLECTION AND STORAGE STANDARDS

- a. **National level data collection and storage standards exist but have not been fully implemented by all data providers.**
- b. Many individual ministries and agencies maintain standalone sets of standard guidelines on data collection and maintenance. The National Mapping and Resource Information Authority (NAMRIA) began implementing the 'One Nation One Map Project', Philippine Geoportal, an e-government funded project that established a web portal to support the sharing of and access to geospatial information using a common standard in 2012.¹⁸¹ The ongoing project, is a full repository of geospatial data but remains unavailable. In 2015 the Information and Communications Technology Office implemented the Philippine government Inter-operability Framework (PeGIF) and eGovernment Master Plan (eGMP) to provide guidance on enabling collaboration through information sharing among government agencies and ministries.¹⁸² Section 23 of the plan requires government agencies to ensure data and information compatibility.¹⁸² The Department of Science and Technology (DOST), responsible for early warning, also provides guidance to member agencies on data standards and compatibility.

FORMAT OF DATA

- a. **Data is primarily in digital format, but access restrictions exist.**
- b. Data and information is typically accessible in web applications and reports are not easily downloaded or shared. This was revealed during extensive desk research and engagement with stakeholders.

DATA SHARING

- a. Data is readily shared between different levels of government.
- b. **During response and recovery activities, PDRRMs and RDRRMs provide data to the national level that is disseminated from the national portal.**

GIS-BASED DATA MANAGEMENT SYSTEM TO LEVERAGE A COMMON OPERATING PICTURE

- a. **The OCD is working to develop a common operating picture utilizing the PhilAWARE web application.**
- b. The PhilAWARE platform provides access to real-time and historical hazard information, risk assessments, and base data coming from several authoritative government sources, resulting in

a centralized data repository.

- c. GIS information and data are dis-aggregated among individual agency web portals. The government has funded a number of efforts designed to generate a common operating picture to support nationwide DM efforts.¹⁷⁰ The DOST recently funded an initiative proposed by PHIVOLCS to consolidate and improve hazard and risk assessment. The OCD is working in partnership with USAID to develop a common operating picture utilizing the PhilAWARE web application.¹⁷⁷ The PhilAWARE platform provides access to real-time and historical hazard information, risk assessments, and base data coming from a number of authoritative government sources, resulting in a centralized data repository expected to be complete in early 2021.

DISASTER DATABASE LINKED TO THE NATIONAL STATISTICS AGENCY

- a. **The OCD provides national disaster loss data directly to the Philippines Statistics Authority.**
- b. The OCD provides national disaster loss data directly to the Philippines Statistics Authority (PSA). The NDRRMC compiles data on extreme events and disasters in line with the Framework for the Development of Environment Statistics (FDES - 2013). Data includes type, location, and date of occurrence of natural extreme events and disasters, number of people killed, injured, and affected, and economic losses.¹⁸³

FACILITATION OF INFORMATION SHARING

- a. **DM information and data are provided through a series of platforms. The current USAID-funded PhilAWARE initiative seeks to bring all data sources to a common location to support DM information sharing.**¹⁷⁵
- b. Geoportal platform provides key base infrastructure with a DRRM portion that includes some hazard zone data. National Mapping and Resource Information Authority (NAMRIA) is the national mapping agency responsible for base infrastructure and are considered the leaders in geospatial data.¹⁸⁴ Other organizations provide hazard-specific data portals including PHIVOLCS¹⁷⁰ for volcanoes, earthquakes, and tsunamis, PAGASA¹⁶⁹ for flood monitoring and typhoons, and the Mines and Geosciences Bureau (MGB)¹⁸⁵ for landslides. The Philippines is also involved in a number of open mapping initiatives with Open Street Map and GFDRR.¹⁸⁶

MEDIA & PUBLIC AFFAIRS

PUBLIC INFORMATION OFFICER

- a. **Media interviews to release updates on disasters are provided by the RDRRMCs through their officially designated spokesperson.**
- b. Official disaster updates must adhere to strict rules about informing the OCD and the NDRRMOC. In practice, it is usually the authorized NDRRMOC spokesperson who gives the interview to the media.
- c. Media interviews releasing updates on disasters could be provided by the RDRRMCs through their officially designated spokesperson, but there are strict rules about informing the OCD and the NDRRMOC when doing so.^{187(p41)} It is usually the authorized NDRRMOC spokesperson who gives the interview to the media. During the NDRRMOC Blue Alert status, the facilitation of press conferences and media coverage is spearheaded by the OCD Public Affairs Office (PAO). When the status is raised to Red Alert, the PAO works with the Philippine Information Agency to provide information.⁹⁵

DOCUMENTED COMMUNICATIONS STRATEGY

- a. **Data and information are pushed up from Member Agencies, RDRRMCs and OCD Regional Offices, who are responsible for validating and verifying the information prior to its submission to the NDRRMOC.**
- b. The NDRRMOC serves as the official repository of all disaster information. There are specific guidelines for reporting casualties to the media or social media, which must be approved first by the NDRRMOC to avoid discrepancies in the report. Reports are submitted from the Local DRRMCs through the Regional DRRMC, and finally to the NDRRMOC using text (SMS), fax, and email.¹⁸⁷

DEDICATED MEDIA BRIEFING SPACE

- a. **The NDRRMOC conference room (in the same facility) is the designated area for the NDRRMOC spokesperson to speak with the media.**
- b. In addition to this designation, this room serves the dual purpose of an extra meeting room when the NDRRMOC is activated.⁹⁵

MEDIA TRAINING

- a. **Media training is offered to key officials and government leadership through the NDRRMOC Education and Training Program.⁹³**
- b. A Risk Communication Training Course for government officials offers the opportunity to develop the knowledge and skills needed for effective communication of disaster risks. This 3-day

technical course provides the tools needed through the use of interactive lecture discussions, structured learning exercises and workshops.⁹³

INFORMATION DISSEMINATION FORMATS

- a. **The public receives alerts through multiple channels: via SMS text message, siren warning, cell broadcast alert through the TELCOs Global and Smart, and through digital television via the Emergency Warning Broadcast System (EWBS).**
- b. The National DRRMC also has a strong social media presence it leverages to push out information to the public.

The OCD is notified by the appropriate official warning agency when a disaster event occurs. OCD then pushes the information out through SMS text messages (and/or utilizing landlines when appropriate) to the RDRRMC members and OCDROs. The OCDROs are then responsible for pushing the messages down to the LGUs, who in turn are responsible for pushing the message to the public. Disaster managers can also pre-register as a subscriber to receive SMS messages directly from the National DRRMC.⁹⁹ See **Figure 18 Information Dissemination Flowchart** below.

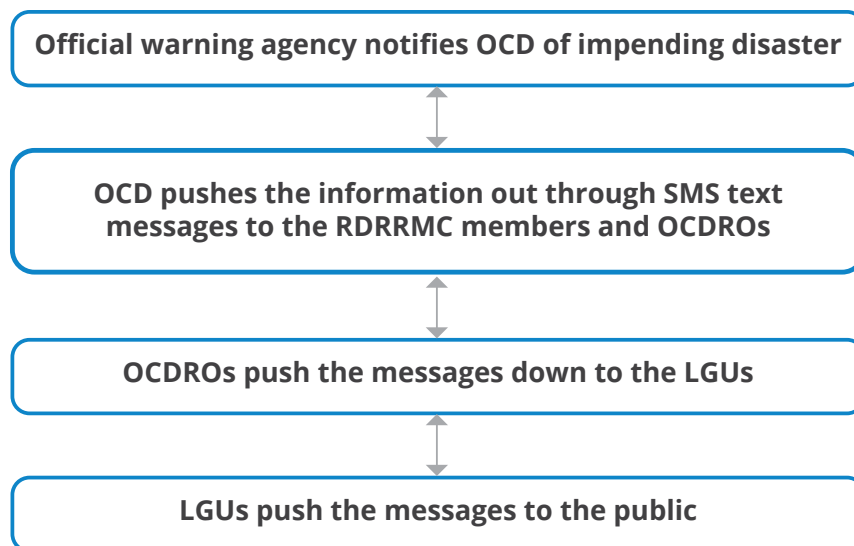


Figure 18 Information Dissemination Flowchart

The public receives alerts through multiple channels; via SMS text message, siren warning, cell broadcast alert through the TELCOs Global and Smart, and through digital television via the Emergency Warning Broadcast System (EWBS). The National DRRMC has a strong social media presence and utilizes Facebook and Twitter to push out information to the public.⁹⁵

PRE-SCRIPTED INFORMATION BULLETINS

- a. Messages are pre-crafted at the national level at the NDRRMOC.
- b. During normal operations (White status) as well as during heightened operations (Blue and Red Alert status), the messages are pre-crafted at the national level at the NDRRMOC. The Staff Duty Officer counter checks the informational messages prepared by the duty staff. The approved message is then pushed for dissemination to the OCD Key Officials and other Stakeholders through SMS text, emails, public website, and other communication channels.⁶

PUBLIC INFORMATION CAPABILITIES

- a. Public information capacity includes capability to communicate with special-needs and vulnerable populations.
- b. The NDRRMC and OCD offer training through a one-day DRRM Course that is designed to increase awareness and includes addressing persons with disabilities, children, women, and youth.

The general public receives alerts through multiple communication channels including social media.⁹⁵

Disaster information communication with populations with special needs is addressed in Chapter 11 of the Philippine Development Plan 2017-2022. The entire chapter is dedicated to “Reducing Vulnerability of Individuals and Families” and acknowledges that though certain social protection measures were put in place to address vulnerable populations, shortfalls remain.⁴¹

Training through a one-day DRRM Course is designed to increase DRRM awareness and includes consideration for persons with disabilities, children, women and youth.⁹³

TRACKING PUBLICLY GENERATED INFORMATION

- a. **No policies or procedures exist for publicly generated information.**
- b. Social media is the main conduit used by NDRRMC/OCD for quick dissemination of hazard notification and is the method integrated into the various sections of their plans. Though social media is pushed out using mainly Facebook and Twitter, user engagement is not tracked.⁶

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