THE CHALLENGE OF MANAGING THE "NEW NORMAL"

Usec. Alexander P. Pama
Executive Director, NDRRMC and
Administrator, OCD

APEC Climate Symposium

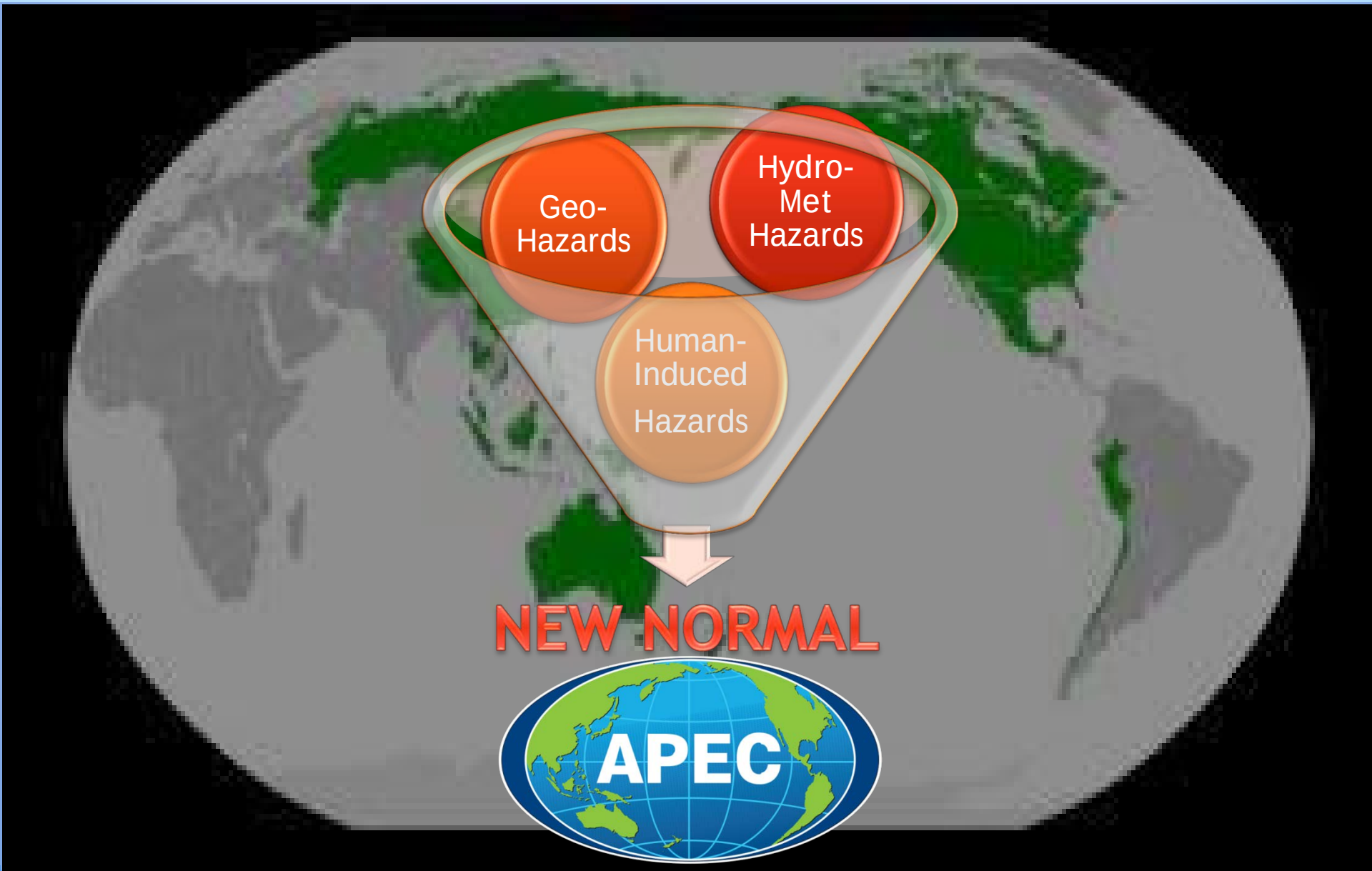
Outline:

- The "New Normal" in the Asia Pacific Region
  - Climate Change and Disasters

- Managing the "New Normal" - Philippine Context
  - Philippine Disaster Risk Reduction and Management System
  - Pre-Disaster Risk Assessment: Action Programs and Protocols

The "New Normal" in the Asia-Pacific Region

The “New Normal” in the Asia-Pacific Region



Vulnerabilities
in the Asia-Pacific Region

- Accdg. to UNESCAP, the Asia and the Pacific region is home to 63 economies with 4.1 Billion people or 75% of world population and also the region with the highest growth rate. (as of 2014)
- The region also represents:
  - 40% of disaster events
  - 80% of fatalities
  - 80% of people affected (1.6B)
  - 50% economic damages (USD 700B)

Vulnerabilities
in the Asia-Pacific Region

- Chances a person will be hit by disaster impacts compared to another region:
  - 2 x more than Africa
  - 6 x more than Latin American Countries
  - 30 x more than North America and Europe

Amount of disaster - related losses

incurred in APEC economies

every year for the last 10 years

*OVER

$100

BILLION

Reference: World Bank, Presentation to the APEC Senior Finance Officials' on "Regional Catastrophe Risk Pooling among APEC Members," 12 June 2015.

Climate Change and Disasters

Climate Change and Disasters

- **Global climate change is already modifying hazard levels and exacerbating disaster risks. (GAR 2015)**
- Growing **global inequality, increasing hazard exposure, rapid urbanization and the overconsumption of energy and natural capita**l now threaten to drive risk to dangerous and unpredictable levels with **systemic global impacts.**
- **growing risk inequality**
- **increasing risks due to low levels of investment**
- **Socially segregated urban development**

Climate Change and Disasters

ESCAP

- **Inverted resilience**
- Disasters cause immediate, short term contraction in economic output or possibly decline in growth
- Developing economies can no longer finance response and building back better simply from foreign aid or borrowing
- They also have little flexibility in reallocating budget expenditure, and face capacity gaps in budgetary and planning processes

Climate Change and Disasters

- Disruptions to production and supply chains
- Disruptions in trade and investments
- Threats to economic growth and development
- Damages and financial losses
- Casualties

Managing the "New Normal" - Philippine Context

Managing the "New Normal" - Philippine Context

- **The Philippines is particularly vulnerable to disasters and risks brought about by climate change**

- **Located in the Pacific Typhoon Belt and the Pacific Ring of Fire**

World Risk Report 2014

The 15 countries that are most at risk worldwide

Country	Risk (%)	Rank
Vanuatu	36.50	1
Philippines	28.25	2
Tonga	28.23	3
Guatemala	20.68	4
Bangladesh	19.37	5
Solomon Islands	19.18	6
Costa Rica	17.33	7
El Salvador	17.12	8
Cambodia	17.12	9
Papua New Guinea	16.74	10
Timor-Leste	16.41	11
Brunei Darussalam	16.23	12
Nicaragua	14.87	13
Mauritius	14.78	14
Guinea-Bissau	13.75	15

The 15 most exposed countries worldwide

Country	Exp. (%)	Rank
Vanuatu	63.66	1
Tonga	55.27	2
Philippines	52.46	3
Japan	45.91	4
Costa Rica	42.61	5
Brunei Darussalam	41.10	6
Mauritius	37.35	7
Guatemala	36.30	8
El Salvador	32.60	9
Bangladesh	31.70	10
Chile	30.95	11
Netherlands	30.57	12
Solomon Islands	29.98	13
Fiji	27.71	14
Cambodia	27.65	15

Reference: http://www.worldriskreport.com/uploads/media/WorldRiskReport_2014_online.pdf

Climate Risk Index

CRI 1994–2013 (1993–2012)	**Country**	**CRI score**	Death toll	Deaths per 100,000 inhabitants	Total losses in million US$ PPP	Losses per unit GDP in %	Number of Events (total 1994–2013)
1 (1)	Honduras	10.33	309.70	4.60	813.56	3.30	69
2 (2)	Myanmar	14.00	7137.40	14.80	1256.20	0.87	41
3 (3)	Haiti	16.17	307.80	3.41	261.41	1.86	61
4 (4)	Nicaragua	16.67	160.15	2.98	301.75	1.71	49
5 (7)	Philippines	19.50	933.85	1.13	2786.28	0.74	328
6 (5)	Bangladesh	20.83	749.10	0.54	3128.80	1.20	228
7 (6)	Vietnam	23.50	391.70	0.48	2918.12	1.01	216
8 (8)	Dominican Republic	31.00	210.45	2.38	274.06	0.37	54
9 (10)	Guatemala	31.17	83.20	0.68	477.79	0.62	80
10 (12)	Pakistan	31.50	456.95	0.31	3988.92	0.77	141

The Philippine Disaster Risk Reduction and Management System

Republic Act 10121 : The Paradigm Shift in the Philippine DRR System

REPUBLIC ACT NO. 10121

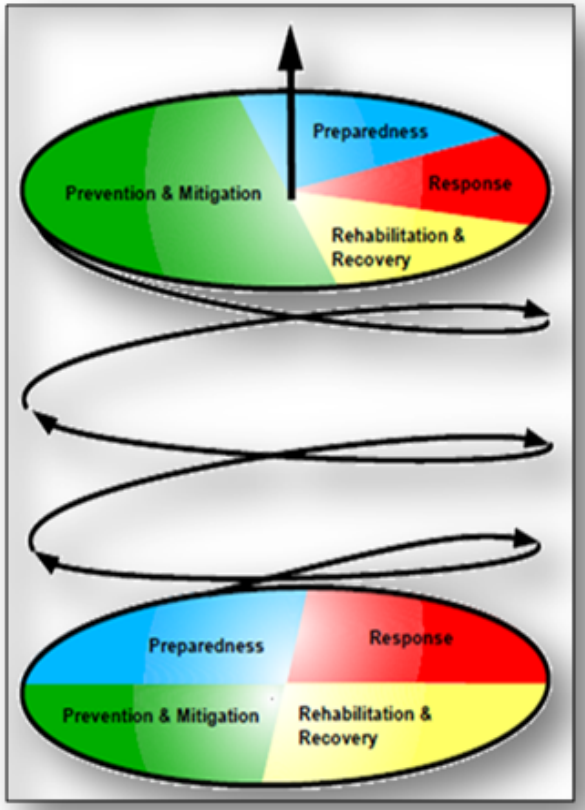
AN ACT STRENGTHENING THE PHILIPPINE DISASTER RISK REDUCTION AND MANAGEMENT SYSTEM, PROVIDING FOR THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT FRAMEWORK AND INSTITUTIONALIZING THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT PLAN, APPROPRIATING FUNDS THEREFOR AND FOR OTHER PURPOSES

The NDRRM Framework

Safer, adaptive and resilient Filipino communities toward sustainable development

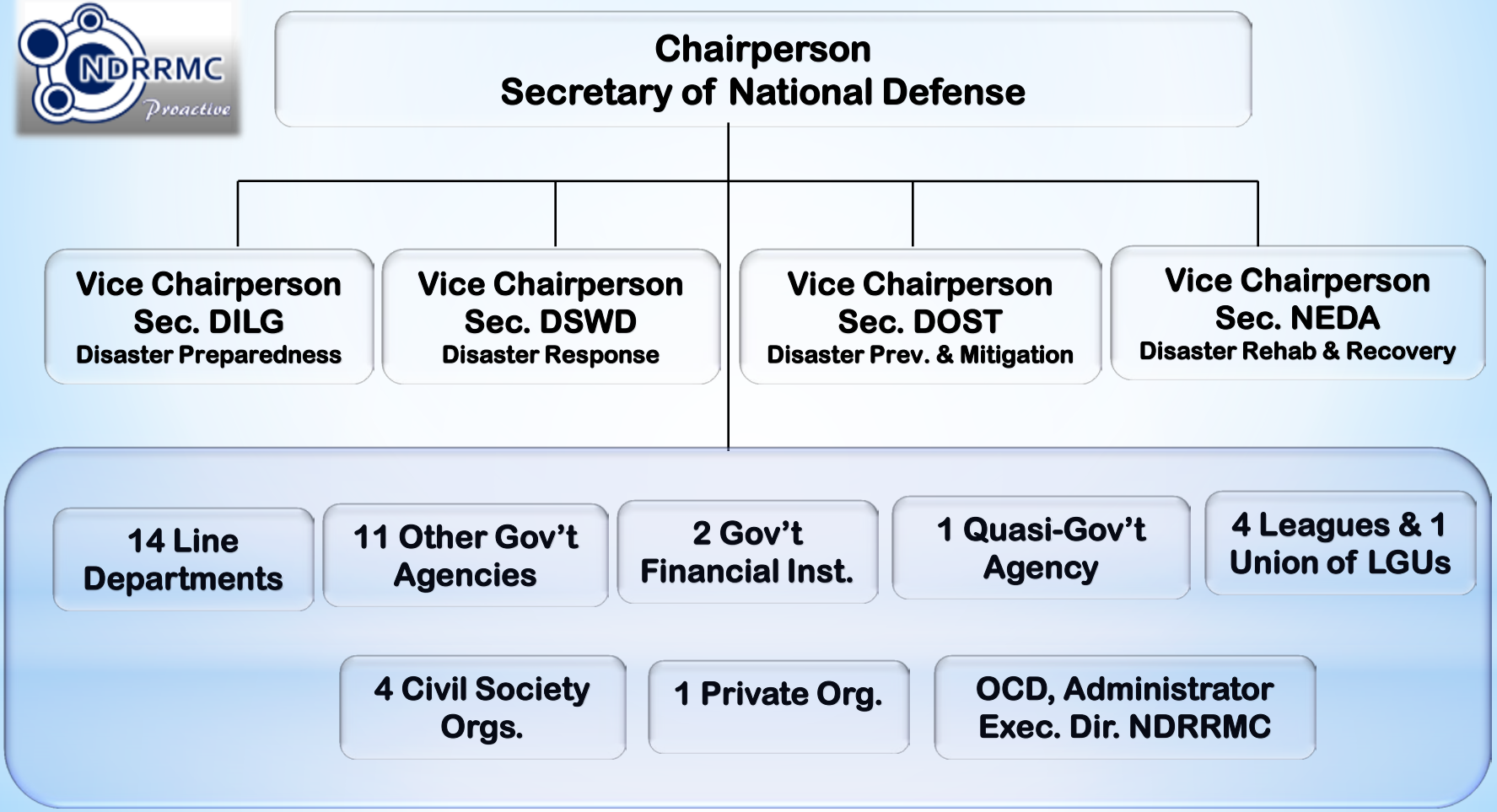
RISK FACTORS

Hazards
Exposures
Vulnerabilities
Capacities



Mainstreaming DRR and CCA in Planning and Implementation

The NDRRMC Organizational Structure

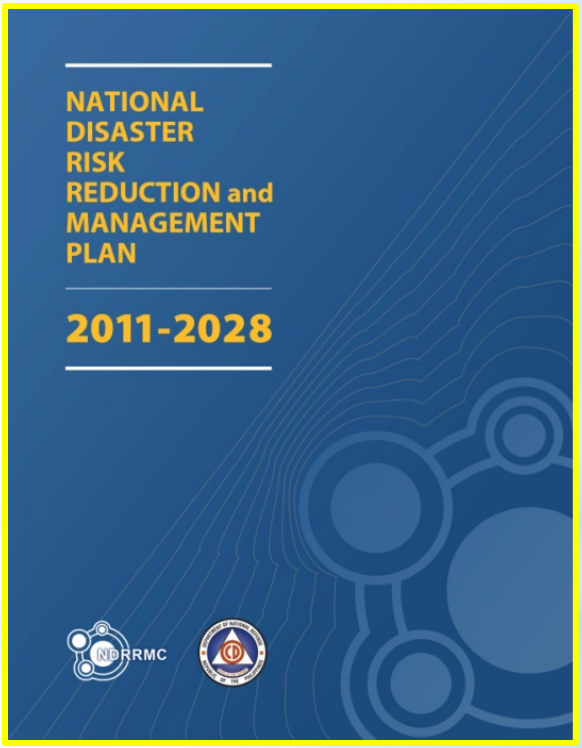


DRRMC Networks

- National Disaster Risk Reduction and Management Council
- Regional Disaster Risk Reduction and Management Councils
- Provincial Disaster Risk Reduction and Management Councils
- City Disaster Risk Reduction and Management Councils
- Municipal Disaster Risk Reduction and Management Councils
- Barangay Disaster Risk Reduction and Management Committees

The National Disaster Risk Reduction and Management Plan (NDRRMP)

- 4 Priority Areas with 4 Long Term Goals
- 14 Objectives
- 24 Outcomes
- 56 Outputs
- 93 Activities



PRE-DISASTER RISK ASSESSMENT – ACTION PROGRAMS AND PROTOCOLS (PDRA-APP)

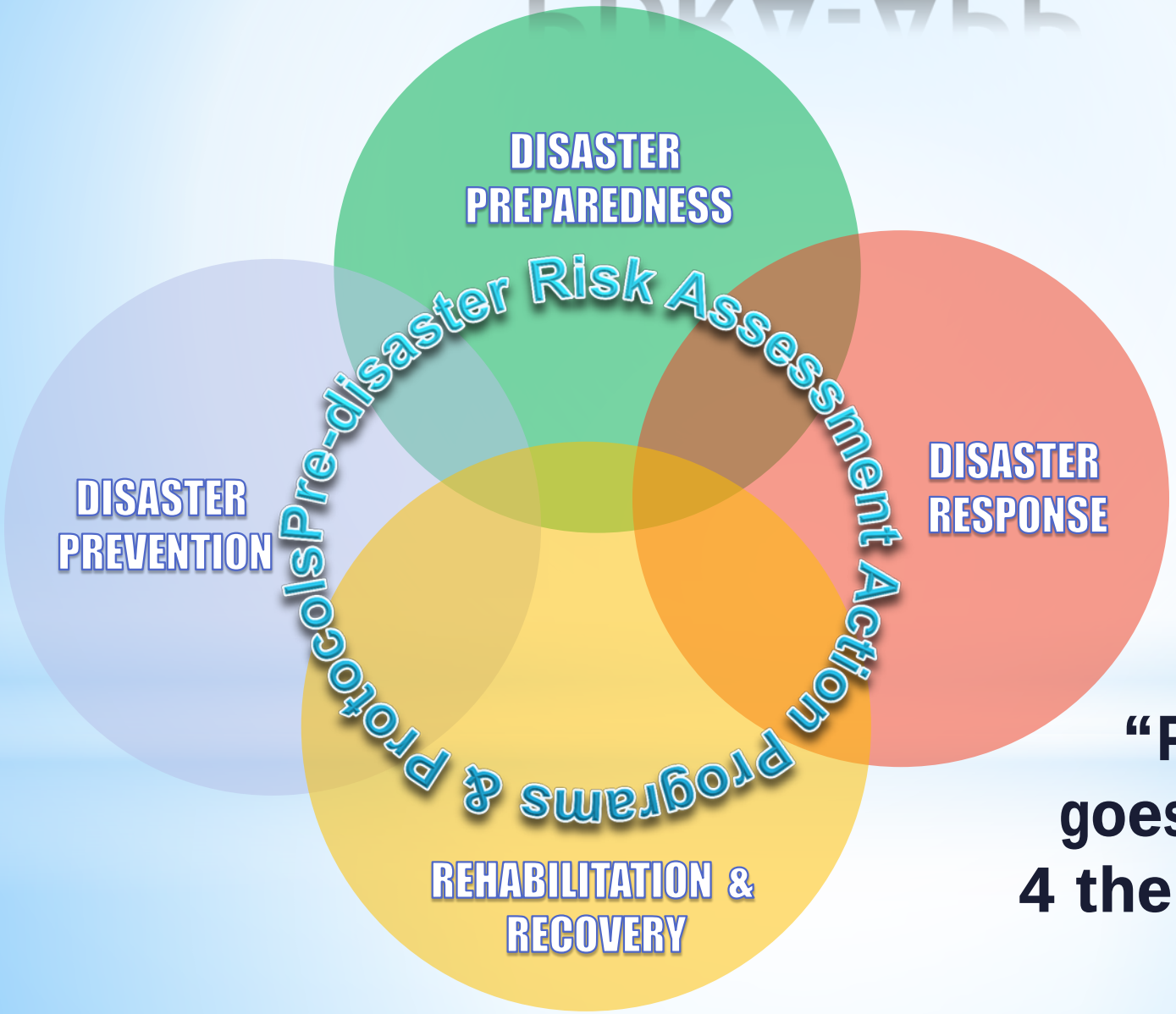
PDRA-APP

HAZARD → RISK = *Calculated Impact* $\frac{H \times E \times V}{C}$ → PREPAREDNESS LEVEL 1 2 3 = IMPLEMENTATION OF ACTION PROGRAMS & PROTOCOLS PER AGENCY

Where:
H= hazard
E=exposure
V=vulnerability
C=capacity

HAZARD SPECIFIC,
AREA FOCUSED & TIME BOUND

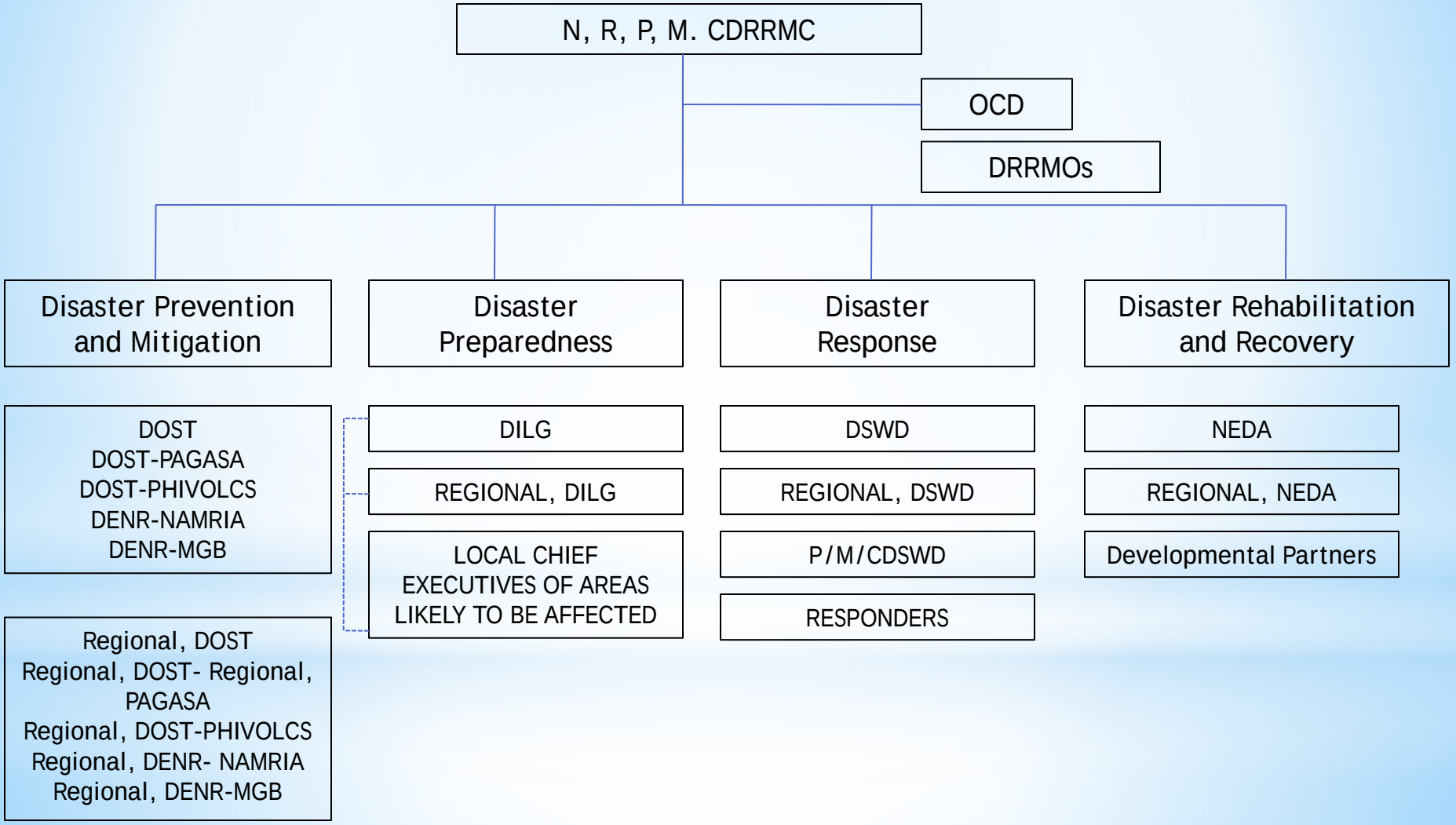
PDRA-APP



"PDRA-APP goes across the 4 thematic areas"

PDRA-APP

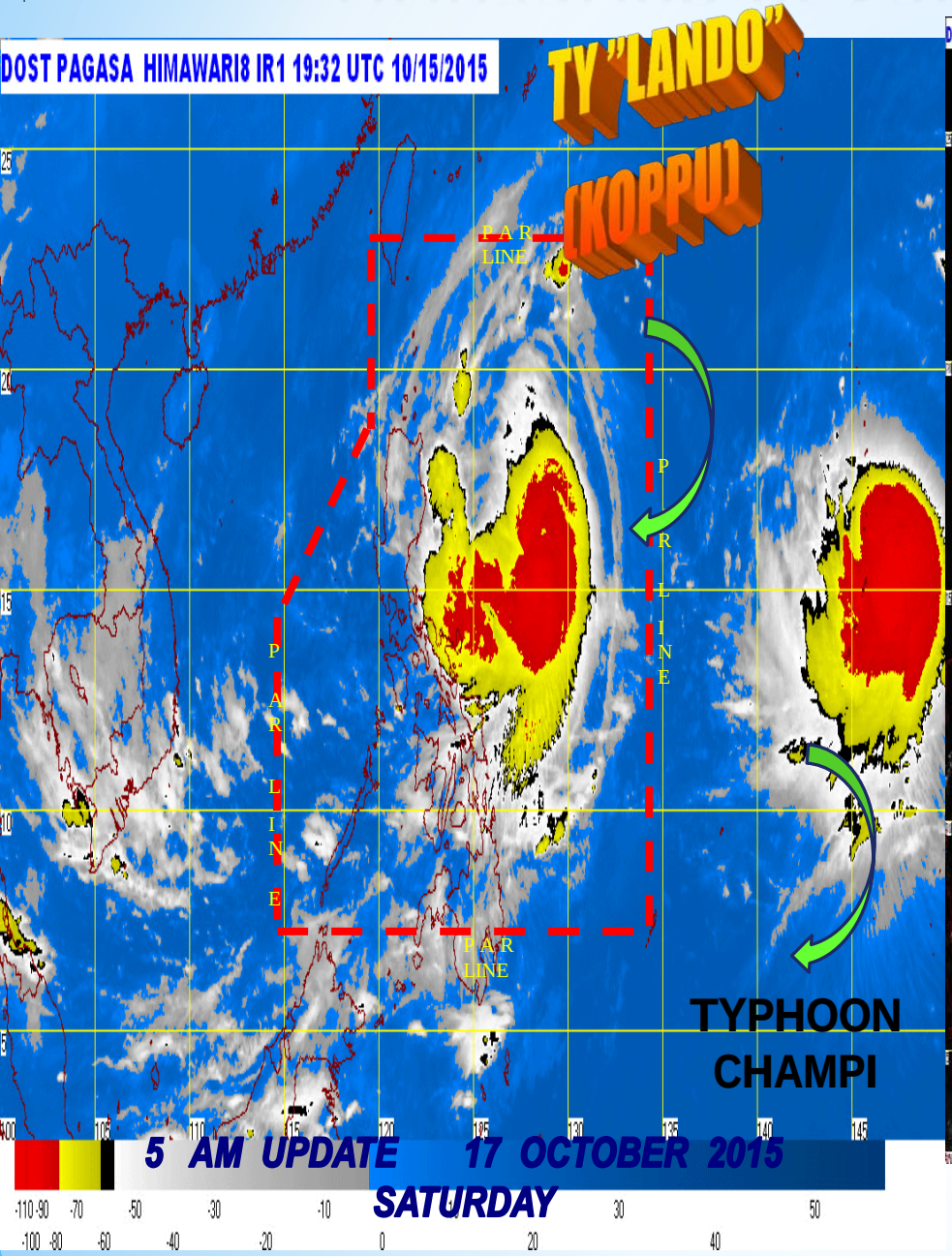
ORGANIZATIONAL STRUCTURE AND ARRANGEMENT

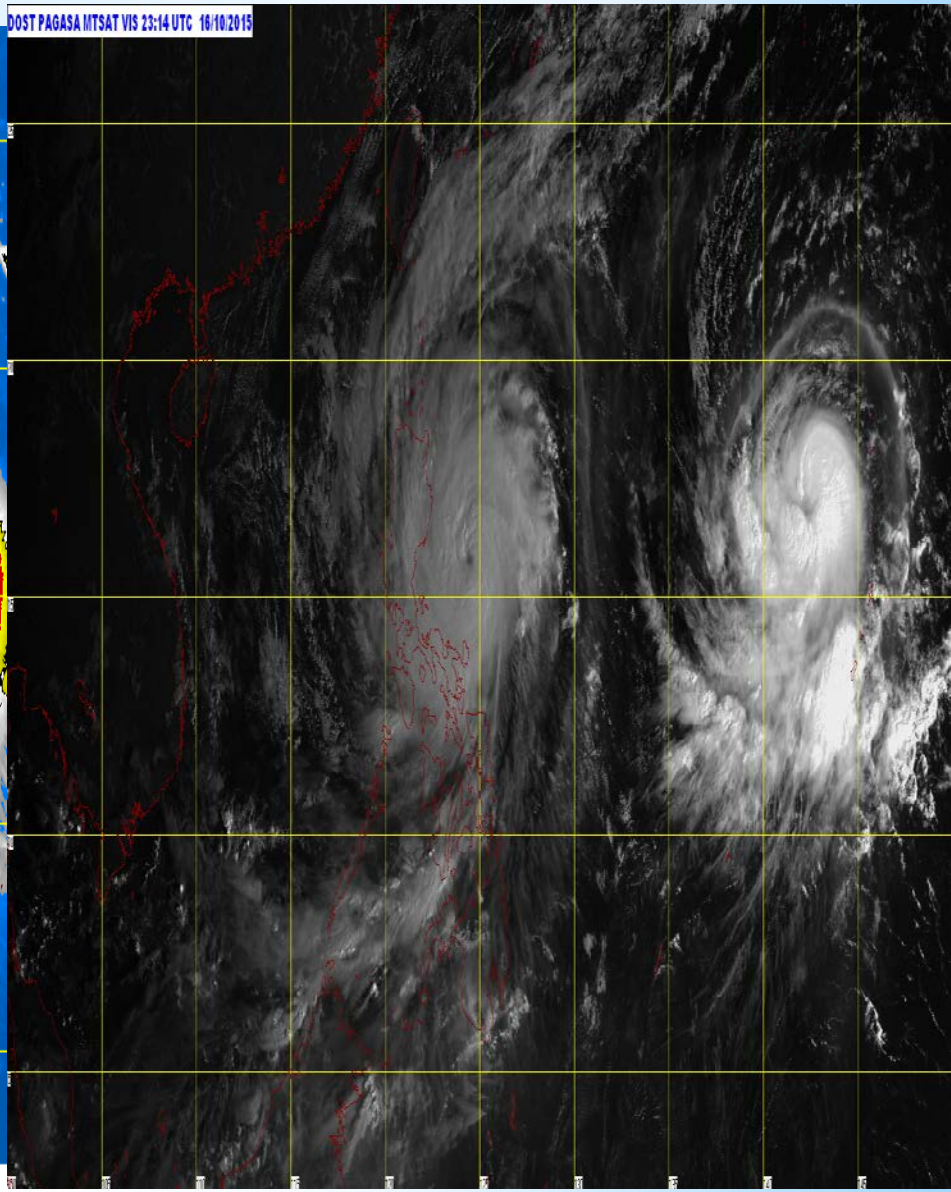


PDRA FOR HYDROMET HAZARDS

USE OF SCIENCE AND TECHNOLOGY IN PDRA

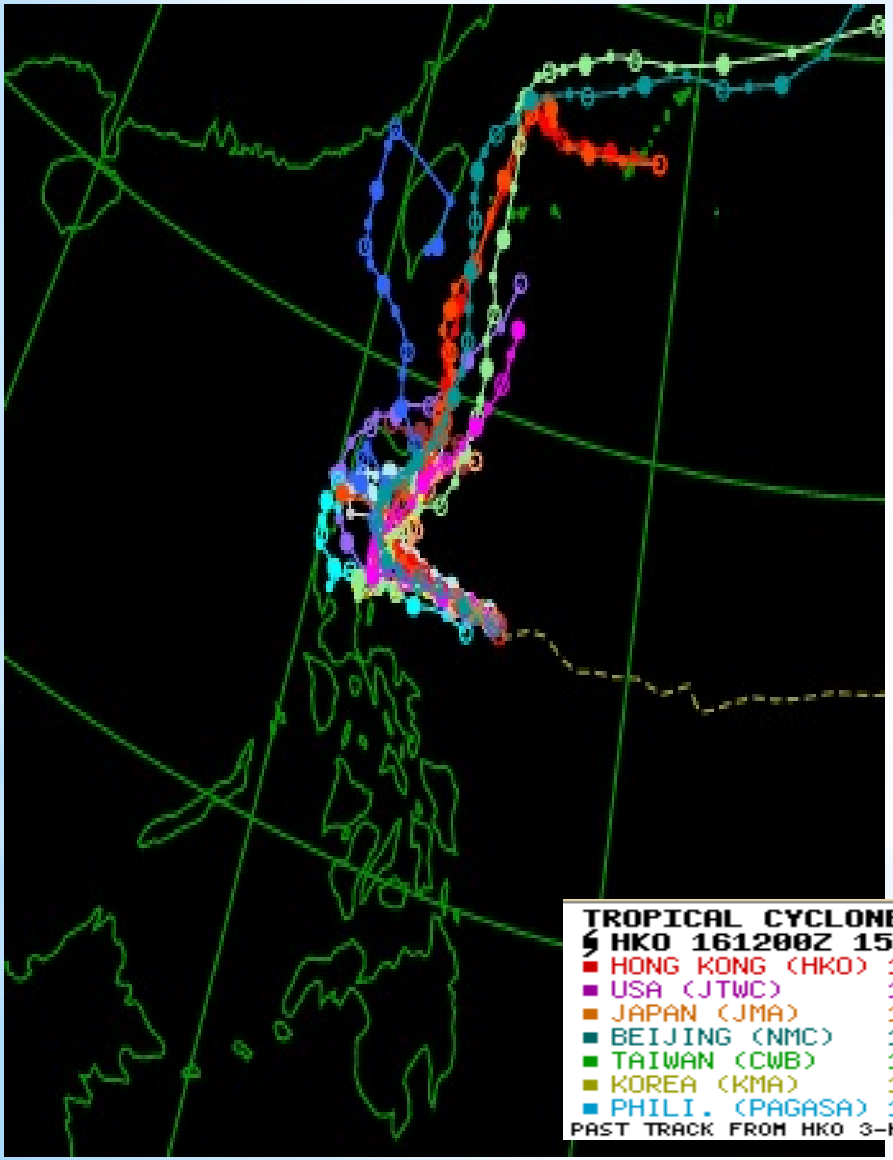
Utilization of Satellite Imageries





Multi-Agency Forecast

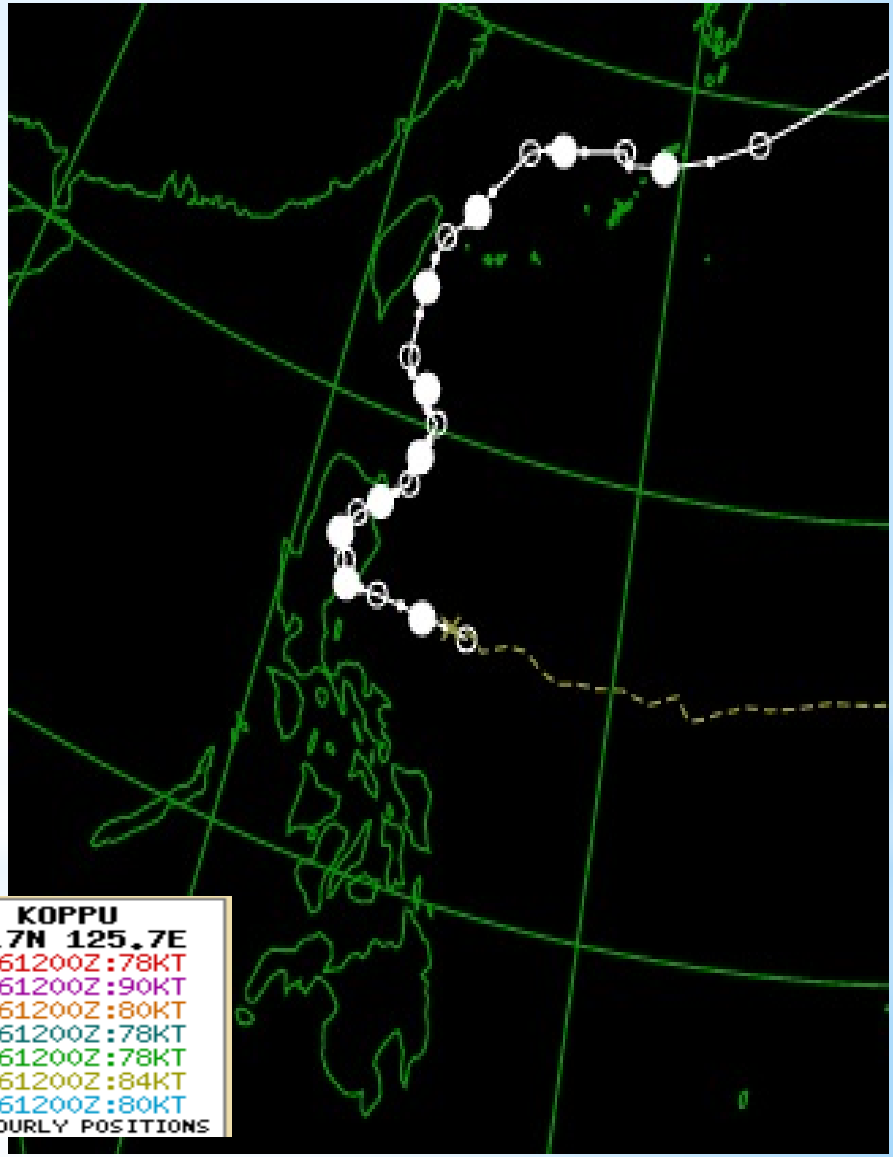
(as of 8PM, 16 October 2015)



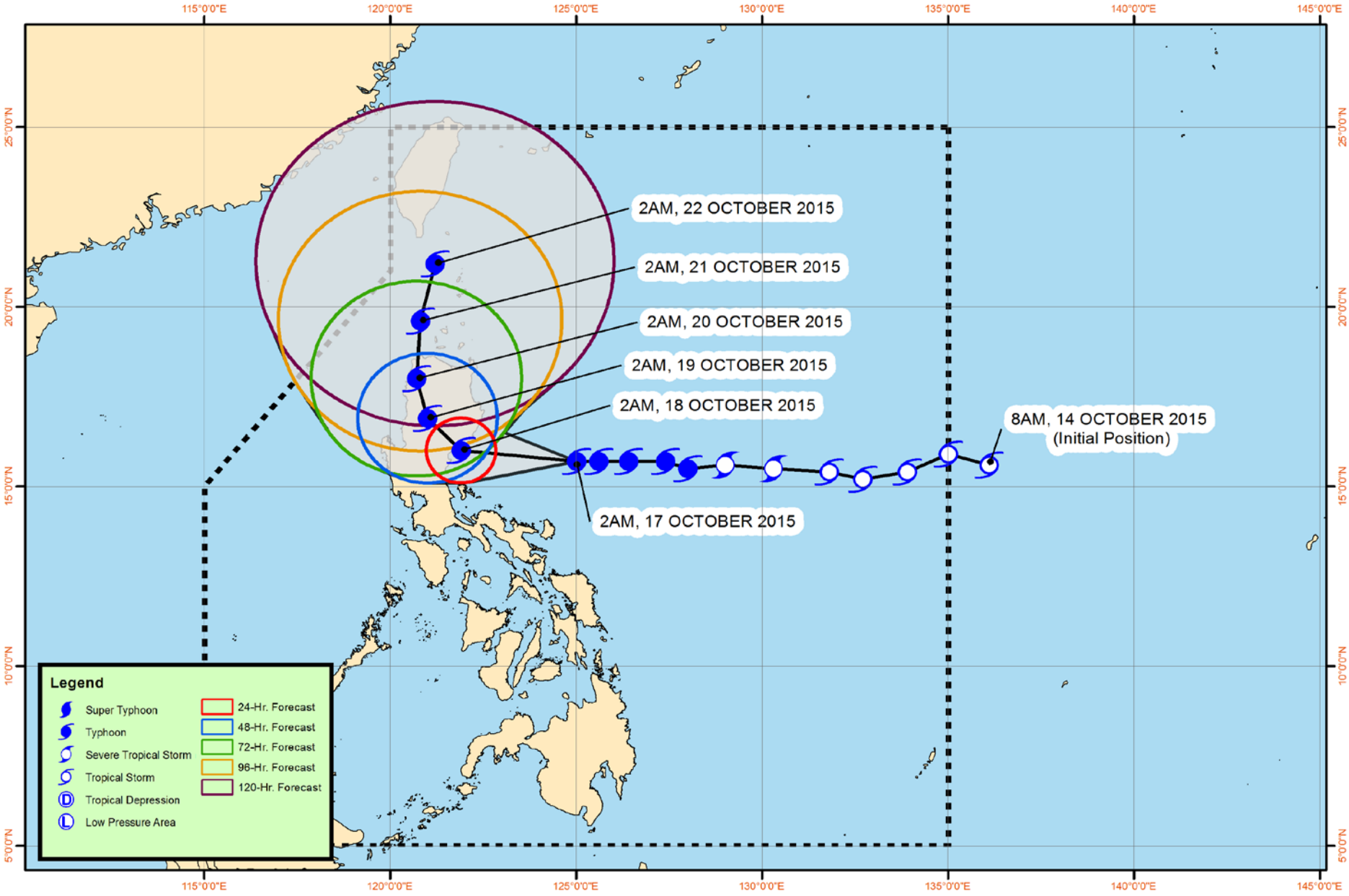
Consensus Track (PAGASA)

(as of 8PM, 16 October 2015)

From: DOST



Track of Typhoon "LANDO" {KOPPU}



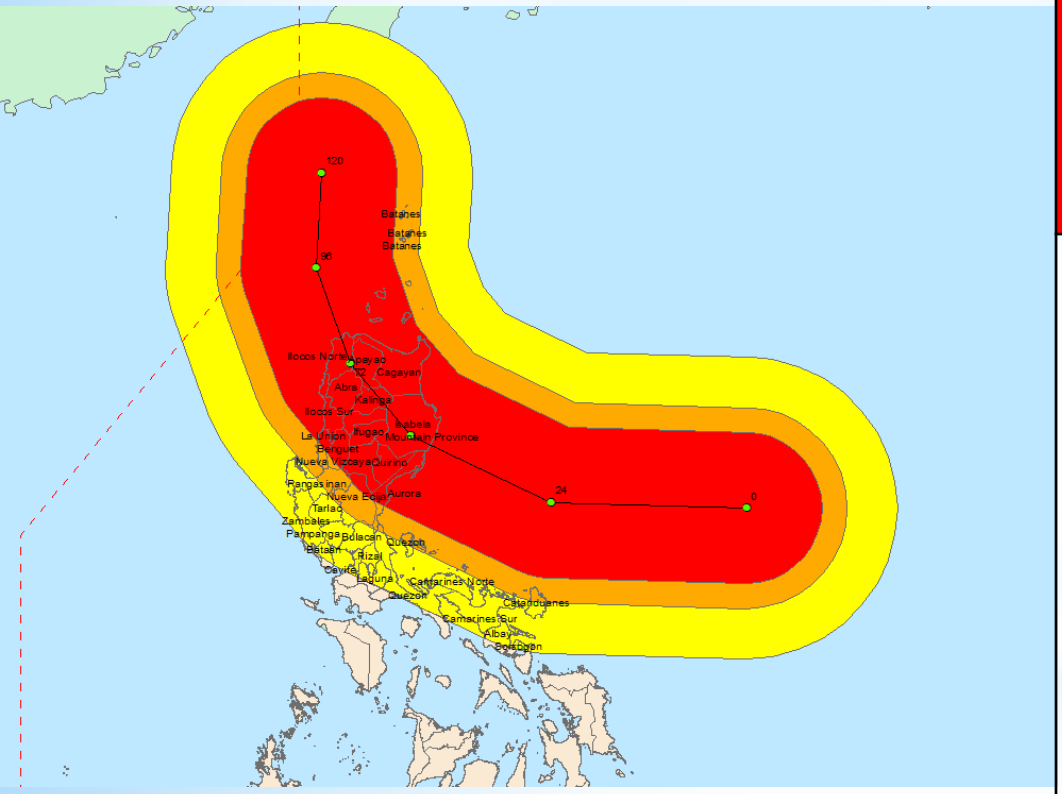
Philippine Atmospheric Geophysical and Astronomical Services Administration

Public Storm Warning Signal

PSWS # 3 (winds of 121-170 kph is expected in at least 18 hrs)	**Aurora, Quirino, Isabela and Polillo Islands**
PSWS # 2 (winds of 61-120 kph is expected in at least 24 hrs)	**Northern Quezon, Nueva Vizcaya, Nueva Ecija, La Union, Benguet, Ifugao, Mt. Province, Ilocos Sur, Ilocos Norte, Abra, Apayao, Kalinga, and Cagayan including Babuyan and Calayan group of Islands**
PSWS # 1 (winds of 30-60 kph is expected in at least 36 hrs)	**Batanes, Pangasinan, Bulacan, Pampanga, Tarlac, Zambales, Bataan, Rizal, Batangas, Laguna, Southern Quezon, Cavite, Albay, Camarines Norte, Camarines Sur, Catanduanes and Metro Manila**

From: DOST

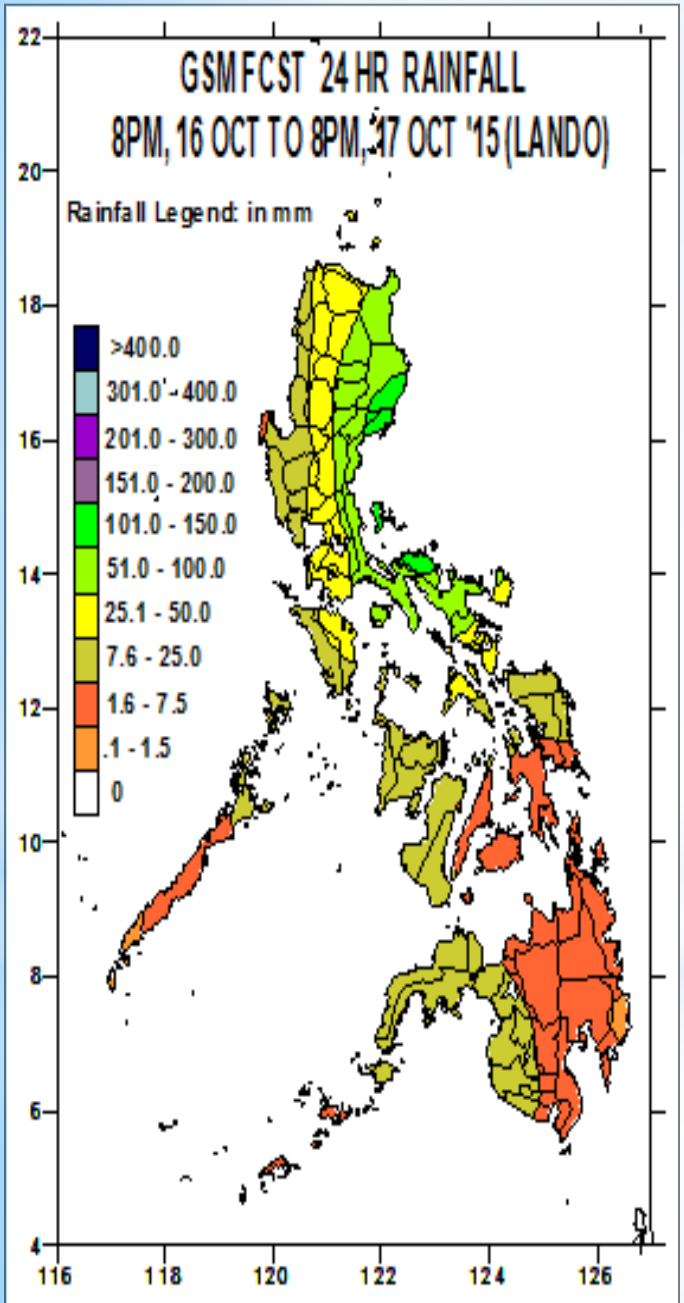
Critical Preparedness Action Levels for LGUs

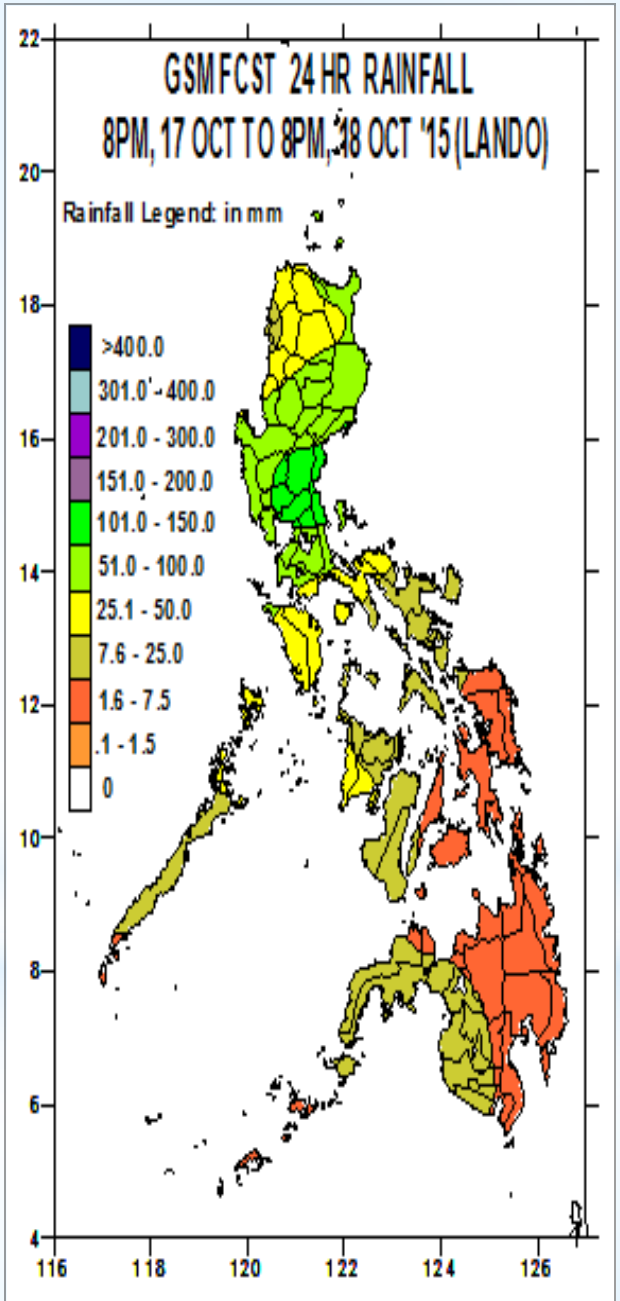


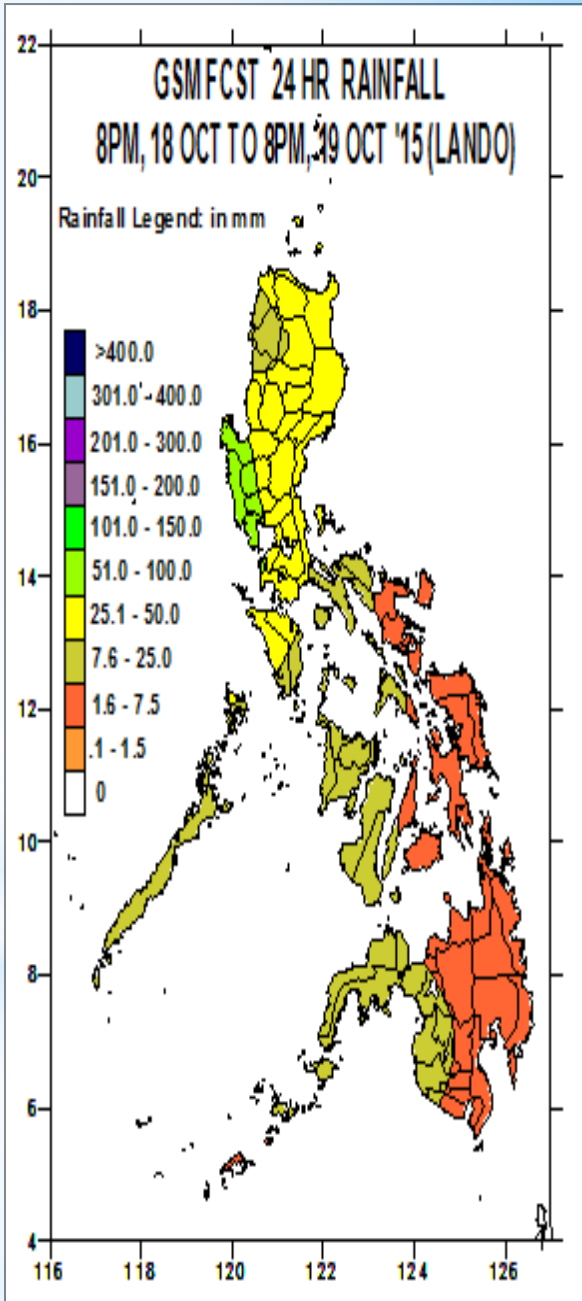
ALERT LEVEL "150KM Radius from the forecast track" Winds: 76kph-85kph Rainfall: Heavy - at time Intense	ALERT LEVEL "200KM Radius from the forecast track" Winds: 61kph-75kph Rainfall: Moderate - Heavy	ALERT LEVEL "200KM Radius from the forecast track" Winds: 30 kph – 60 kph Rainfall: Light - Moderate
Abra	Batanes	Albay
Apayao	Bulacan	Bataan
Aurora	Camarines	Cavite
Benguet	Norte	Laguna
Cagayan	Camarines	Metropolitan
Ifugao	Sur	Manila
Ilocos Norte	Catanduanes	Pampanga
Ilocos Sur	Quezon	Rizal
Isabela	Tarlac	Sorsogon
Kalinga		Zambales
La Union		
Mountain		
Province		
Nueva Ecija		
Nueva		
Vizcaya		
Pangasinan		
Quirino		

Global Spectral Model (GSM) 3 DAY FORECAST RAINFALL

From: DOST

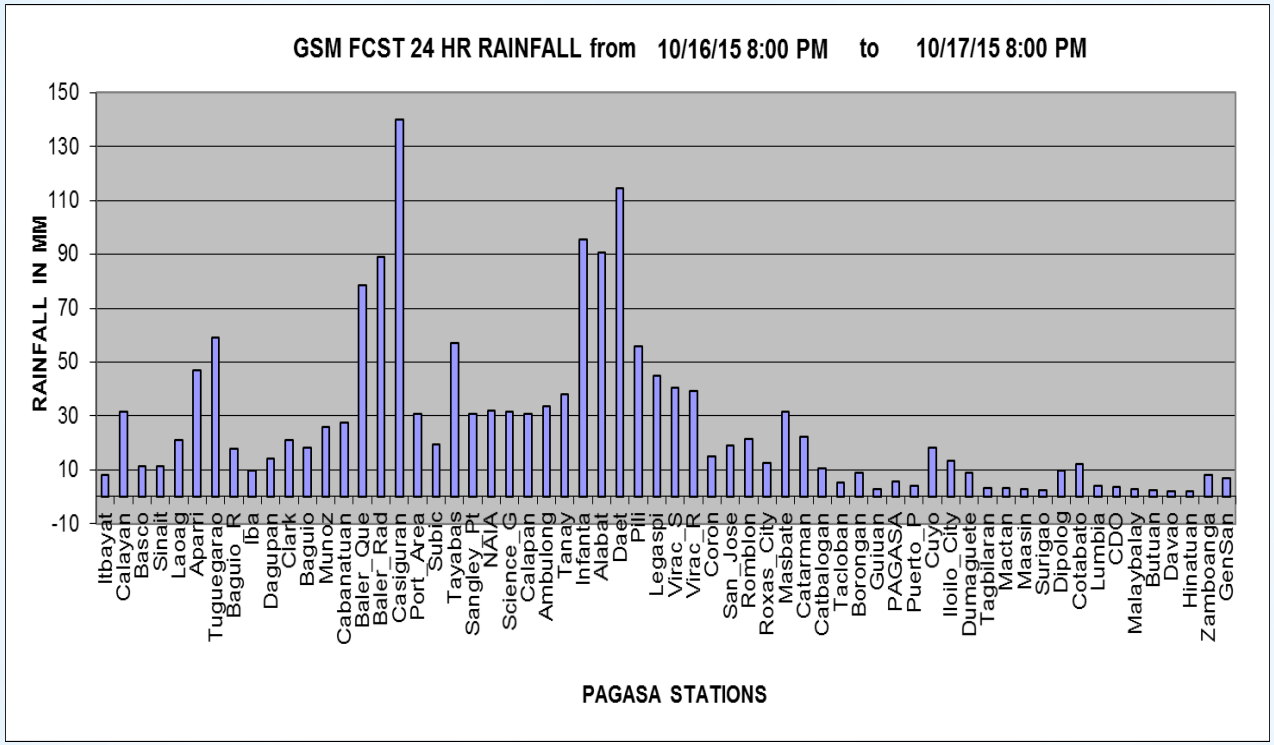


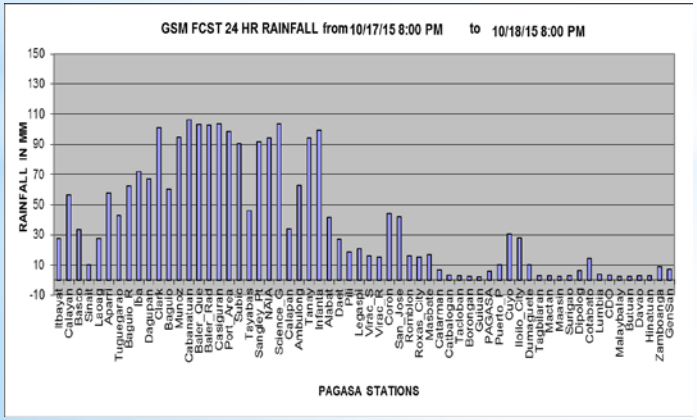


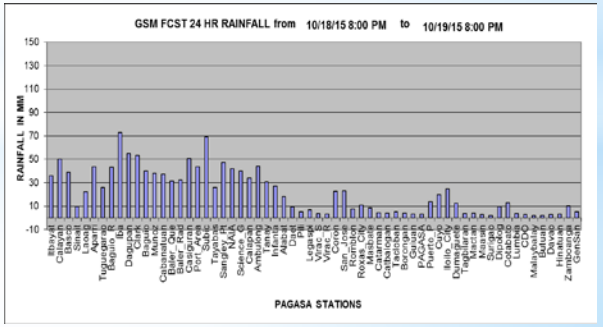


Region	Station	00-24	25-48	48-72	72-96
Region 1	Sinait	2.1	124.1	287.9	705.1
Region 1	Laoag City	3.8	50.8	114.6	446
Region 1	Dagupan City	2.7	250	504.3	610.7
Region 2	Itbayat Is.	0.2	1.2	14.5	123.9
Region 2	Calayan Is.	0.5	17.4	161.9	247.5
Region 2	Basco Is.	3.3	18.8	83.1	226.6
Region 2	Aparri	112.2	261.2	52.8	78.8
Region 2	Tuguegarao	37.9	76.5	18.1	138.1
CAR	Baguio City	5.3	596.7	1711	2424.6
Region 3	Iba	0.3	286.5	206.7	342.1
Region 3	Clark Field	2.7	102.6	20.3	21.3
Region 3	Munoz	61.5	310.7	260.6	305.2
Region 3	Cabanatuan City	59.9	297.1	130.2	193
Region 3	Baler Radar	17.2	301.9	87.5	89.8
Region 3	Casiguran	93.6	175	145.7	182.6
Region 3	Subic Bay	0.9	62.8	88.4	115.5
NCR	Port Area	4.6	98.7	94.2	127.6
NCR	NAIA	4.6	98.7	94.2	127.6
NCR	Science Garden	9.2	104.6	136.3	191.7
Region 4A	Tagaytay	0.4	60.8	74.7	77.4
Region 4A	Tayabas	2.5	4.3	1.7	6.5
Region 4A	Sangley Pt.	3.2	62	75.2	97.1
Region 4A	Tanay	15.6	155.4	172.5	248.7
Region 4A	Infanta	34.7	82.9	2.6	2.9
Region 4A	Alabat Is.	12	2	0	0.3
Region 4B	Calapan	0	0	0	2.4
Region 4B	Ambulong	14.6	7.2	0	3.2
Region 4B	Coron Is.	0.9	6.1	2.2	4
Region 4B	San Jose	14.8	9	2	11.5
Region 4B	Romblon Is.	0	0.8	0	0.4

Global Spectral Model (GSM) 3 DAY FORECAST RAINFALL







From: DOST

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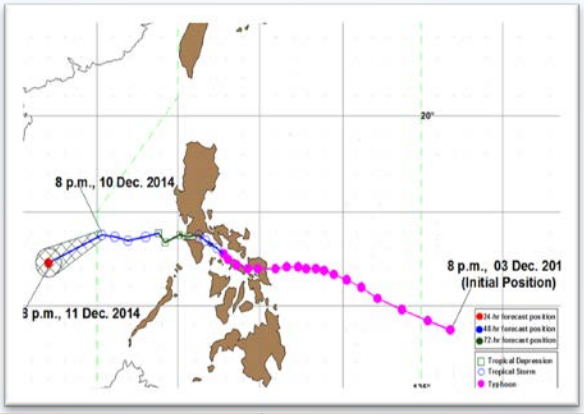
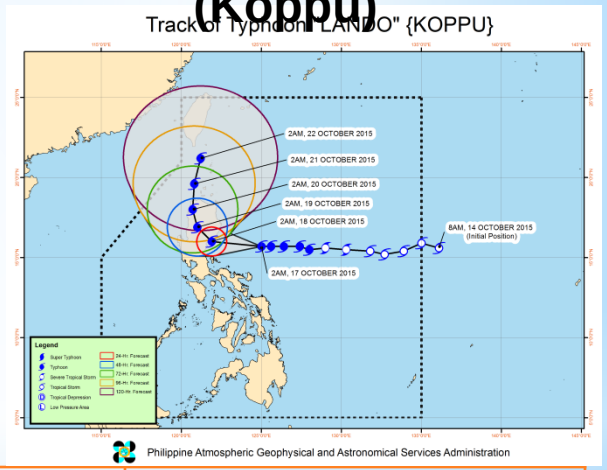
COMPARATIVE ANALYSIS OF RECENT TYPHOONS IN THE PHILIPPINES

Typhoon "Yolanda" (Haiyan)

Typhoon "Ruby" (Hagupit)



Typhoon "Lando" (Koppu)



Characteristics	TYPHOON YOLANDA ("HAIYAN")	TYPHOON RUBY ("HAGUPIT")	TYPHOON LANDO ("KOPPU")
Maximum winds	235 kph	215 kph	175 kph
Gustiness	275 kph	250 kph	210 kph
Duration	4days 06-09 November 2013	7days 04-10 December 2014	8days 14-21 October 2015

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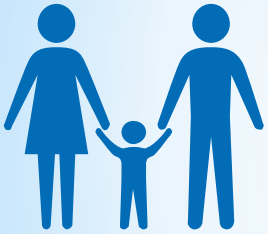
Summary of Effects



	TY YOLANDA	TY RUBY	TY LANDO
CASUALTIES	6,300 people dead	18 people dead	48 people dead
	23,869 injured	916 injured	83 injured
	1,061 Missing	NONE Missing	4 Missing
AFFECTED POPULATION	3,424,593 families	826,589 families	733,152 families
	16,078,181 persons	3,530,307 persons	3,126,127 persons

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Summary of Effects

	TY YOLANDA	TY RUBY	TY LANDO
DAMAGED HOUSES	**1,084,312**	**106,616**	**137,673**
	489,163 totally	58,119 totally	18,788 totally
	595,149 partially	48, 497 partially	118,885 partially

AFFECTED REGIONS

9 Regions (Regions IV-A, IV-B, V, VI, VII, VIII, X, XI, & CARAGA	9 Regions (Regions III, IV-A, IV-B, V, VI, VII, VIII, & NCR	9 Regions (Regions I, II, III, IV-A, V, NCR, & CAR,

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How did we do it?

"GOVERNMENT + PEOPLE"

- ✓ Government provided the structure, resources and systems for DRRM
- ✓ People provided full cooperation and support

Pre-Emptive Evacuation

TY YOLANDA	TY RUBY	TY LANDO
161,973 families or 792,018 persons	146,875 families or 716,639 persons	5,426 families or 23,993 persons

photo credit: inquirer.net

PDRA-APP

Utilizing social media to support the Response Cluster for information exchange and quick coordination

TYPHOON RUBY RESPONSE CLUSTER

CONTACT INFO

Ruby Response Cluster

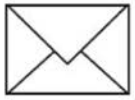
@rubyresponse

#rubyresponse

911-1230; 911-1292; 911-1183

911-1178; 911-1173

0928-258-8676; 0928-258-8691



rubyresponsecluster@gmail.com

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Commendation from the International Community

"The Philippines is the most storm-exposed country in the world and its expertise in disaster risk management can be usefully adopted by other countries trying to implement the Sendai Framework for Disaster Risk Reduction adopted in March this year as a global blueprint for reducing disaster losses,".

-UNISDR Chief Margareta Wahlström

Thank you very much!!!