

# TYPHOON ODETTE

Final Report



Office of Civil Defense  
National Disaster Risk Reduction and Management Council

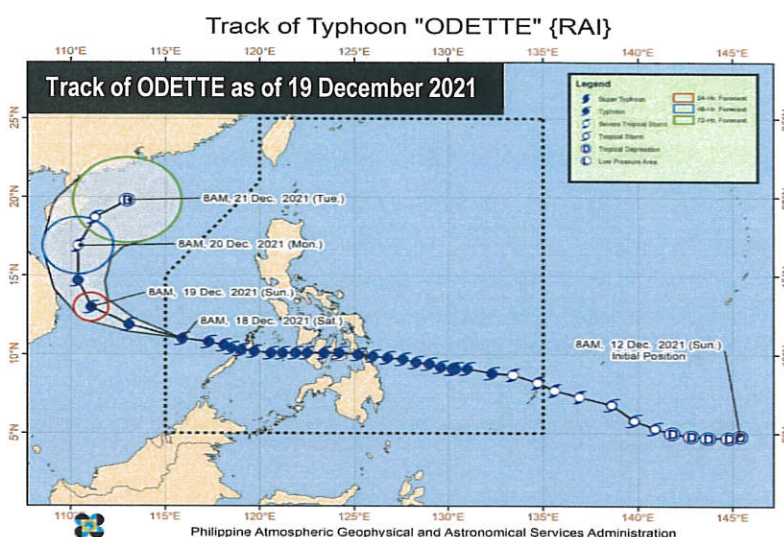


# FINAL REPORT FOR TYPHOON ODETTE

## I. SITUATION OVERVIEW

### SUMMARY

Typhoon ODETTE (International Name: RAI) is the 15<sup>th</sup> tropical cyclone that hit the country in 2021. It was first detected as a Low Pressure Area on 12 December 2021 then entered Philippine Area of Responsibility (PAR) on 14 December 2021. It intensified and made 9 landfalls. On 18 December 2021, Typhoon ODETTE left the PAR.



Chronology of events for Typhoon ODETTE is as follows:

**12 December 2021, 11:00 AM**

The Low Pressure Area outside the Philippine Area of Responsibility southeast of Palau developed into a Tropical Depression.

**14 December 2021, 11:00 PM**

Severe Tropical Storm "RAI" entered the PAR and was named ODETTE. Tropical Cyclone Wind Signal (TCWS) No. 1 issued over southeastern portion of Eastern Samar; Dinagat Islands, the eastern portion of Surigao del Norte including Siargao and Bucas Grande Islands, and the northern portion of Surigao del Sur.

**15 December 2021, 8:00 AM**

ODETTE intensified into a typhoon as it moved westward over the Philippine Sea east of Mindanao. TCWS No. 2 issued over the eastern portion of Surigao del Norte and Surigao del Sur. At 11:00 PM, TCWS No. 3 was issued over Dinagat Islands, Surigao del Norte, the northern portion of Agusan del Norte, and the northern portion of Surigao del Sur.

**16 December 2021, 11:00 AM**

TCWS No. 4 was issued over Southern Leyte, and the eastern portion Bohol, Dinagat Islands, Surigao del Norte including Siargao and Bucas Grande Islands. There were seven (7) landfalls recorded:

- 1:30 PM: Siargao Island, Surigao del Norte
- 3:10 PM: Cagdianao, Dinagat Islands
- 4:50 PM: Liloan, Southern Leyte
- 5:40 PM: Padre Burgos, Southern Leyte
- 6:30 PM: Pres Carlos Garcia, Bohol
- 7:30 PM: Bien Unido, Bohol
- 10:00 PM: Carcar, Cebu

**17 December 2021**

Additional landfalls were recorded as follows:

- 12:00 AM: La Libertad, Negros Oriental.
- 5:00 PM: Roxas, Palawan.

**18 December 2021, 12:40 PM**

Typhoon "ODETTE" left PAR.

The following were identified as the hard-hit provinces in five (5) regions.

REGIONS	HARD-HIT PROVINCES
MIMAROPA	Palawan
Region 6	Negros Occidental
Region 7	Bohol
Region 8	Cebu
Region 9	Negros Oriental
Region 10	Southern Leyte
CARAGA	Leyte
	Dinagat Islands
	Surigao Del Norte

Here are some photos depicting the damage brought about by ODETTE in Magsaysay, Palawan in MIMAROPA, Kabankalan City, Negros Occidental in Region VII, Maasin, Southern Leyte in Region VIII, and Surigao City in CARAGA:



## EFFECTS

As of 30 March 2022, the recorded effects of Typhoon ODETTE to the population are as follows:

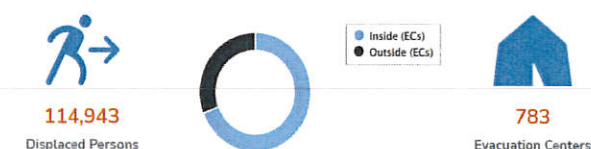
### PRE-EMPTIVE EVACUATION



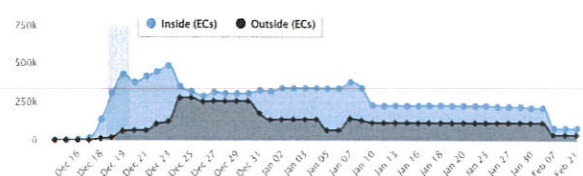
### AFFECTED POPULATION



### STATUS OF EVACUATION

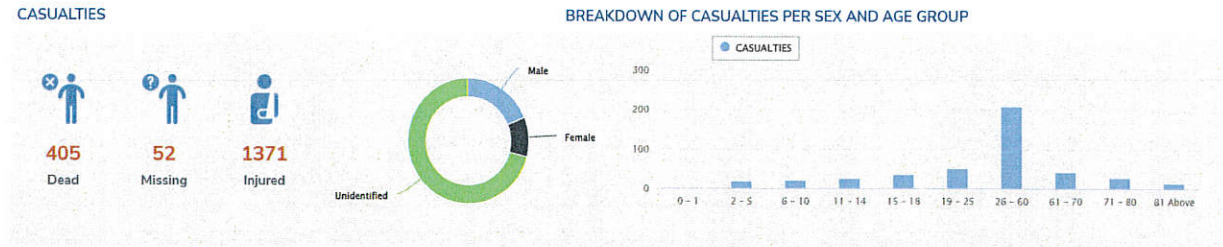


### DISPLACEMENT TREND

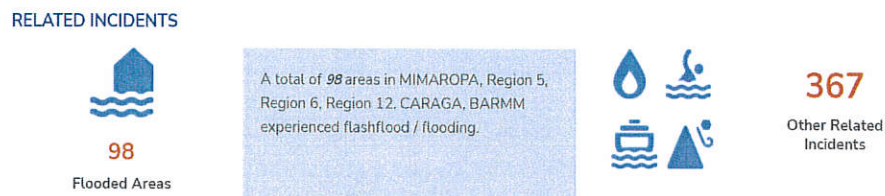




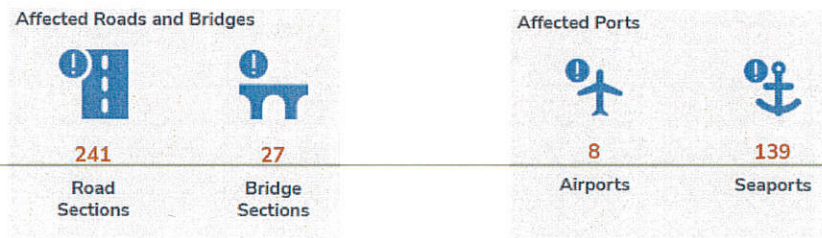
In terms of casualties, the summary is as follows:



In terms of incidents monitored, the number of incidents recorded are as follows:



The number of affected roads and bridges as well as ports is summarized as follows:



Several cities and municipalities further encountered interruption in lifelines. The number of cities and municipalities with affected power, water supply and communication lines is as follows:



There were also recorded damage to houses, infrastructure and agriculture. The estimated cost of these damages are as follows:



#### DAMAGE TO AGRICULTURE

  
**10,243,619.844**  
Hectares of Crops

  
**120,350**  
Livestock and Poultry

  
**6,177.2**  
Agricultural Infrastructure/  
Equipment

  
**P 17,748,148,271.91**  
Estimated Cost  
of Damage to  
Agriculture

In terms of Declaration of State of Calamity, a National Declaration was made on 31 December 2021, declaring State of Calamity in MIMAROPA, Regions VI, VII, VIII, X, and CARAGA, along with local declarations. Further, class and work suspensions were declared by the local government authorities.

#### STATE OF CALAMITY

A total of **496** cities/municipalities in MIMAROPA, Region 6, Region 7, Region 8, Region 10, CARAGA had declarations of State of Calamity

#### SUSPENSION OF CLASS AND WORK

  
**464**  
Cities/ Municipalities with  
Class Suspension

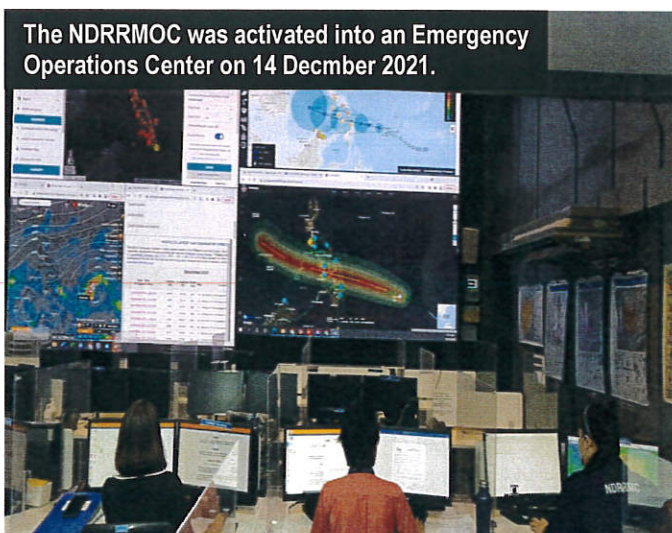
  
**299**  
Cities/ Municipalities with  
Work Suspension

## II. MAJOR ACTIONS

The following are the significant response and early recovery actions taken to manage the impacts of Typhoon ODETTE.

### NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL

As early as 10 December 2021, the NDRRMC conducted its first weather updating session with all RDRRMCs. Another weather updating session was conducted on 12 December 2021, then the Pre-Disaster Risk Assessment (PDRA) was initiated the following day, 13 December 2021. To facilitate inter-agency coordination, the NDRRMC Emergency Operations Center (EOC) Management Team and the Virtual EOC were activated on 14 December 2021. Further, CHARLIE Protocol has been activated, raising the Red Alert Status of the NDRRMC. Another weather updating session was conducted on 15 December 2021 as well as series of Virtual EOC Briefings to highlight the preparedness measures.



A total of 55 Emergency Alert and Warning Messages (EAWMs) were issued to the public by the NDRRMC through the OCD, Warning Agencies, DICT, NTC, GLOBE and SMART pursuant to RA No. 10639. Further, a total of 584 NDRRMC Advisories were published Via Monitoring Dashboard and Mobile Application.



Per NDRRMC Memo No. 147 s 2021, the following Response Clusters were activated:

- Logistics (OCD)
- Emergency Telecommunications (DICT)
- Food and Non-Food Items (DSWD)
- Camp Coordination and Camp Management (DSWD)
- Internally Displaced Population Protection (DSWD)
- Health (DOH)
- Education (DepEd)
- Search, Rescue and Retrieval (AFP)

The following Response Clusters were also on standby:

- Law and Order (PNP)
- Management of the Dead and Missing (DILG)
- Phil International Humanitarian Assistance (DFA)

The OCD led by Usec Ricardo Jalad presented via VTC the situation updates to the President.



Further, pursuant to NDRRMC Memo Nos. 1 and 5, s. 2022, the new Shelter Cluster was organized under the leadership of DHSUD to facilitate provision of emergency shelter assistance for all communities rendered homeless by the typhoon.

On 21 December 2021, upon recommendation of the NDRRMC, the Office of the President issued Proclamation No. 1267, declaring State of Calamity in MIMAROPA, Regions VI, VII, VIII, X, and CARAGA.

Subsequently, the President visited heavily affected areas, particularly in Surigao City on 18 December 2021, Inabanga, Bohol on 19 December 2021, Kabankalan City, Negros Occidental on 20 December 2021, and Palawan on 22 December 2021.

Visit of President Rodrigo Roa Duterte at Surigao City Airport on 18 December 2021.



To inform all stakeholders about the coordination requirements for ODETTE response, the NDRRMC issued Memorandum No. 03 s 2022, specifying the priority areas and needs as well as arrangements for providing response and early recovery assistance.



The NDRRMC, under the instruction of the President, also supervised the distribution of water bottles by the RDRRMCs directly to communities. For this purpose, an Area Command Team (ACT) has been organized and established under the command of the OCD Operations Service. The ACT operated virtually.

In terms of donations, the OCD monitored 456 domestic donations. Based on reports from the Department of Foreign Affairs (DFA), a total of 22 international donations were accepted.

## REGIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCILS

Based on the results of PDRA, the NDRRMC issued Memo No. 148 to activate the Emergency Preparedness and Response (EPR) Protocols. RDRRMCs MIMAROPA, VI, VII, VIII, X, XII, and CARAGA, categorized as high risk regions, activated CHARLIE Protocol. Meantime, RDRRMCs I, II, CALABARZON, V, IX, XI, and BARMM, as medium risk regions, activated BRAVO Protocol. Finally, NCR, CAR, and III, being low risk regions, activated ALPHA Protocol.

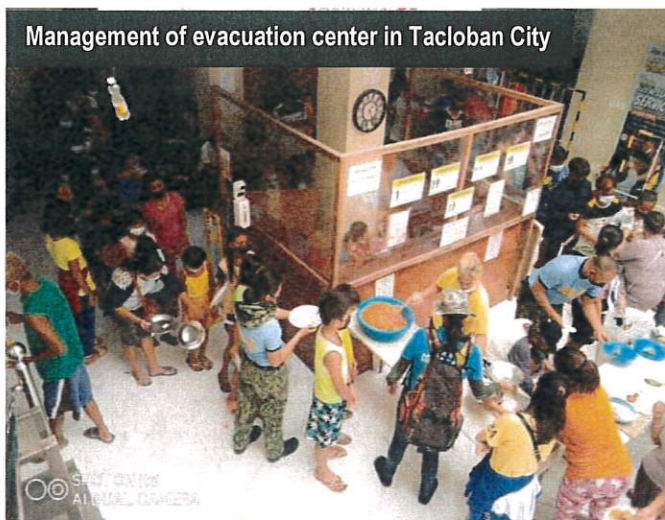
RDRRMC	Description	Action	EPR Protocol
MIMAROPA, VI, VII, VIII, X, XII, CARAGA	High Risk	Requires immediate action	CHARLIE
I, II, CALABARZON, V, IX, XI, BARMM	Medium Risk	Requires high priority for action	BRAVO
NCR, CAR, III	Low Risk	Requires preparatory and initial action	ALPHA

The above RDRRMCs had been involved in various emergency preparedness and response activities, summarized as follows:

- Conducted preemptive and forced evacuation
- Redundant dissemination of warnings
- Deployment of logistics support
- Provided Non-Food Items (Blankets, Emergency Tent, Portable Generator, Rain Gera, Hygiene Kits, Chainsaw, Family Pack, Megaphone).
- Provision of family food packs
- Enforcement of no-fishing and sailing policies to prevent communities from venturing into the seas
- Sending of augmentation teams
- Conduct of aerial assessment
- Provision of fuel and mobility support such as air, land and sea assets
- Establishment and provision of modular tents
- Provision of personnel support to assist in distribution of relief items







- Suspension of work and classes
- Establishment of free stations for mobile charging and phone calls
- Provision of medical supplies and hygiene kits
- Conduct of RDANA and PDNA
- Distribution of potable water
- Deployment of Emergency Telecommunications Team and mobilization of DICT GECS MOVE
- Provision of cash donations
- Provision of assistance to stranded individuals
- Issuance of travel advisories

Further, with reference to the instructions of the Office of the President, the RDRRMCs delivered a total of 4,045,614 litres of drinking water to 3,183 affected barangays.

REGION	TARGET LGUs	BRGYS. REACHED	WATER DISTRIBUTED (IN LITERS)
4B	Roxas, Palawan, Puerto Princesa City	54	834,264.0
7	Bohol, Cebu, Negros Oriental, Siquijor	2,750	581,955.0
8	Southern Leyte, Leyte	302	666,430
CARAGA	Dinagat Is., Siargao, Surigao Del Norte	77	1,962,965
<b>TOTAL</b>		<b>3,183</b>	<b>4,045,614.0</b>

## RESPONSE CLUSTERS

With reference to the National Disaster Response Plan (NDRP) for Hydrometeorological Hazards, Response Clusters have been organized by the NDRRMC to facilitate the overall response efforts from the national level and monitor the needs at the regional to local levels.

The Camp Coordination and Camp Management Cluster, led by DSWD, is assigned to provide assistance and augment all requirements for the management and evacuation of affected families and individuals. Relatedly, the Internally Displaced Population (IDP) Protection Cluster, also led by the DSWD, aims to enhance the Government's capacity to ensure that protection issues do not arise during the emergency situation and to respond and mitigate the effect of any protection issues that do arise.


 <p>Camp Coordination and Camp Management; and Protection</p>	Lead: DSWD	
	Members/Assisting Agencies: DOH, DepEd	
	10,930	2,145,284
	Evacuation Centers used	Persons served




The Food and Non-Food Item Cluster, led by DSWD, has the objective to save lives by providing food and non-food items to the affected population in the short-term, and to restore at least the pre-disaster level of food security in the affected areas in the long-term.

 Food and Non-Food Items	Lead: DSWD		
	Members/Assisting Agencies: None reported		
	1,541,044	273,303	
	Food items delivered	Non-Food Items delivered	

The Search, Rescue and Retrieval Cluster, led by AFP, aims to provide support for an effective, efficient, organized and systematic search, rescue and retrieval operations in disaster affected areas upon order to minimize loss of lives and casualties.

 Search, Rescues and Retrieval	Lead: AFP		
	Members/Assisting Agencies: PNP, BFP, PCG		
	676		
	Teams deployed		

The Law and Order Cluster, led by PNP, aims to provide security for the Response Clusters, enforce law and order in the community, and provide traffic management that will facilitate the speedy movement of people, goods, and equipment to the affected areas.

 Law and Order	Lead: PNP		
	Members/Assisting Agencies: AFP, DOE, DOTr, DSWD, DWPH, PCG, PDRF, WFP		
	1,801	1,162	639
	Total personnel involved (available and deployed)	Personnel deployed in evacuation centers	Personnel deployed in evacuated areas

The Health Cluster, led by DOH, aims to ensure effective and predictable health response built on health priorities and related best practices. Further, it supervises the implementation of health protocols given that the threat of Coronavirus Disease 2019 (COVID-19) is still existing.


 Health	Lead: DOH		
	Members/Assisting Agencies: PRC, UNICEF, WHO, WASH		
	P3,486,219.08	P 13,903,644.40	202
	Augmented logistics from Centers for Health Development	Augmented logistics from DOH Central Office	Teams deployed



The Education Cluster, led by DepEd, aims to ensure the safety of learners and DepEd personnel and to provide continued access to quality of education to all affected learners.

 Education	Lead: DepEd	
	Members/Assisting Agencies: Save the Children Philippines, PLDT and SMART, Seeds Asia, Psychological Association of the Philippines (PAP), World Vision, GIZ/Aral Pilipinas, UNICEF, Cultural Center of the Philippines (CCP), ChildFund Philippines, Plan International, USAID ABC+, FundLife	
	<b>1,633</b> Schools used as evacuation centers	<b>10,248</b> Classrooms used as evacuation centers


The Emergency Telecommunications Cluster, led by DICT, is accountable to strengthen ICT capacities at the national down to the local level responders and provide emergency access to communications.

 Emergency Telecommunications	Lead: DICT	
	Members/Assisting Agencies: OCD, PLDT and SMART, GLOBE, Converge, WFP	
	<b>417</b> Assets deployed	

The Logistics Cluster, led by OCD, aims to provide an efficient and effective strategic emergency logistics services to all clusters. It further facilitates coordination and information on emergency road network, status of critical infrastructure/lifelines, etc.

 Logistics	Lead: OCD		
	Members/Assisting Agencies: AFP, DOE, DOTr, DSWD, DWPH, PCG, PDRF, WFP		
	<b>258</b> Land assets/resources deployed	<b>49</b> Sea assets/resources deployed	<b>33</b> Air assets/resources deployed

The Philippine International Humanitarian Assistance Cluster, led by DFA, has the responsibility to establish an organized and systematic management structure for all international humanitarian assistance to the Philippines.


 Phil. International Humanitarian Assistance	Lead: DFA	
	Members/Assisting Agencies: OCD	
	<b>22</b> International assistance accepted	

The Shelter Cluster, led by DHSUD, aims to assess emergency shelter needs and implement construction thereof in accordance with agreed standards.

 Shelter	Lead: DHSUD		
	Members/Assisting Agencies: NHA, DSWD, DENR, PCA, AFP		
	<b>45,250</b> Families assisted	<b>P170,415,000</b> Total amount distributed	<b>39,802</b> Trees cut and converted into shelter materials



In terms of financial assistance for affected families, the following is the total amount of financial assistance that has been released by key government agencies for various beneficiaries. The said amount is intended for ODETTE response and early recovery.

 <p>Financial Assistance</p>	<p>Assisting Agencies: DBM, NHA, DSWD, DTI, DA, DOLE, DILG</p> <p><b>P 10,368,544,485.62</b></p> <p>Total amount distributed</p>
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### III. ANALYSIS

#### CHARACTERISTICS OF PAST MAJOR TYPHOONS

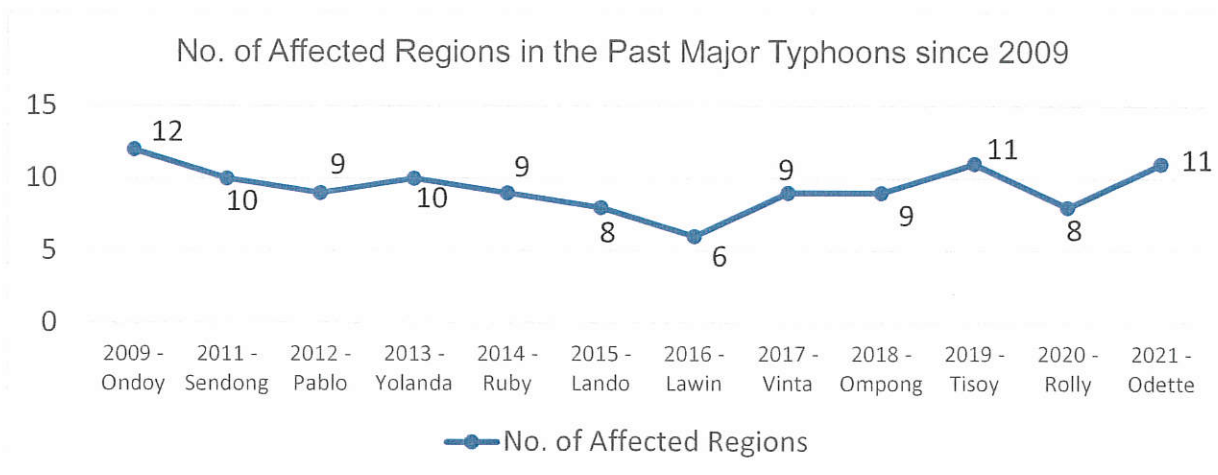
The attributes of Typhoon ODETTE has been analyzed with reference to the attributes of past major typhoons in the last decade.

Tropical Cyclone Name	ONDOY	SENDONG	PABLO	YOLANDA	RUBY	LANDO	LAWIN	VINTA	OMPONG	TISOY	ROLLY	ODETTE
Year	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Strength Near Center	105 kph	75 kph	185 kph	225 kph	215 kph	120 kph	225 kph	120 kph	205 kph	175 kph	225 kph	195 kph
Gustiness	135 kph	90 kph	220 kph	260 kph	250 kph	150 kph	315 kph	145 kph	330 kph	275 kph	310 kph	270 kph
Highest Wind Signal Duration in PAR	2	3	3	4	3	4	5	2	4	2	5	4
	SEPT 24-27, 2009	DEC 15-18, 2011	DEC 1 - 9, 2012	NOV. 6-9, 2013	DEC 3 - 10, 2014	OCT 14-21, 2015	OCT 17-20, 2016	DEC 20-25, 2017	SEPT 12-16, 2018	NOV 30 - DEC 5, 2019	OCT 29 - NOV 3, 2020	DEC 14-18, 2021
Days in PAR	3 days	3 days	8 days	3 days	7 days	7 days	3 days	5 days	4 days	5 days	5 days	4 days

*\*Measurement of YOLANDA's strength was disrupted due to the devastation to the weather stations*

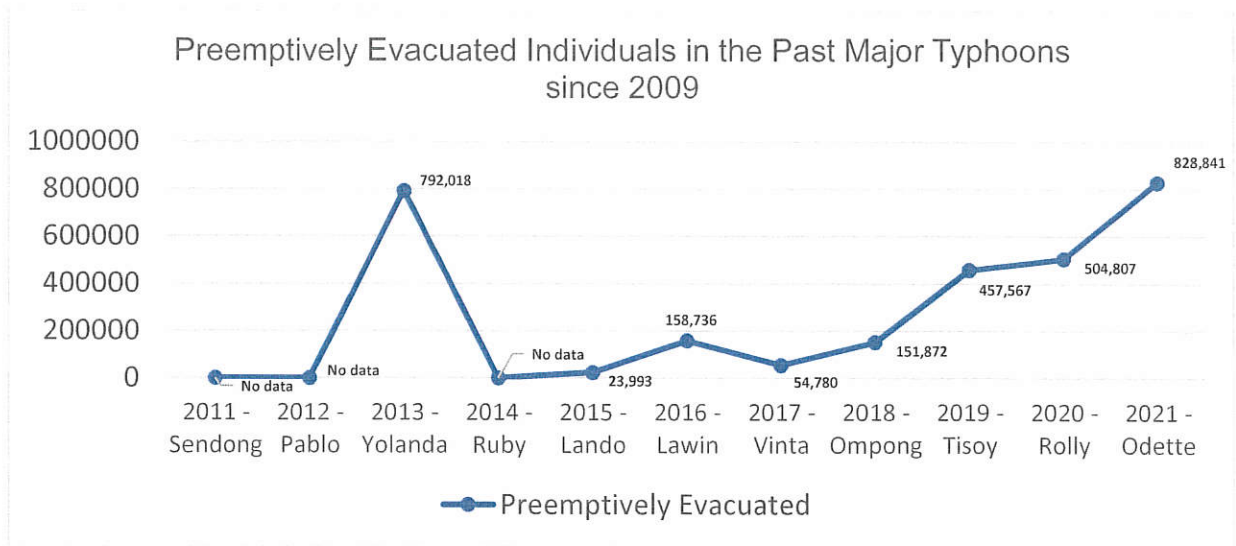
Based on the table, we can observe that YOLANDA (2013), LAWIN (2016) and ROLLY (2020) are among the strongest in terms of typhoon attributes. This just shows that ODETTE, despite being strong in terms of characteristics, is categorically not among the worst disasters since there are other tropical cyclones with greater impacts.

#### ANALYSIS OF EFFECTS OF ODETTE AND OTHER MAJOR TYPHOONS

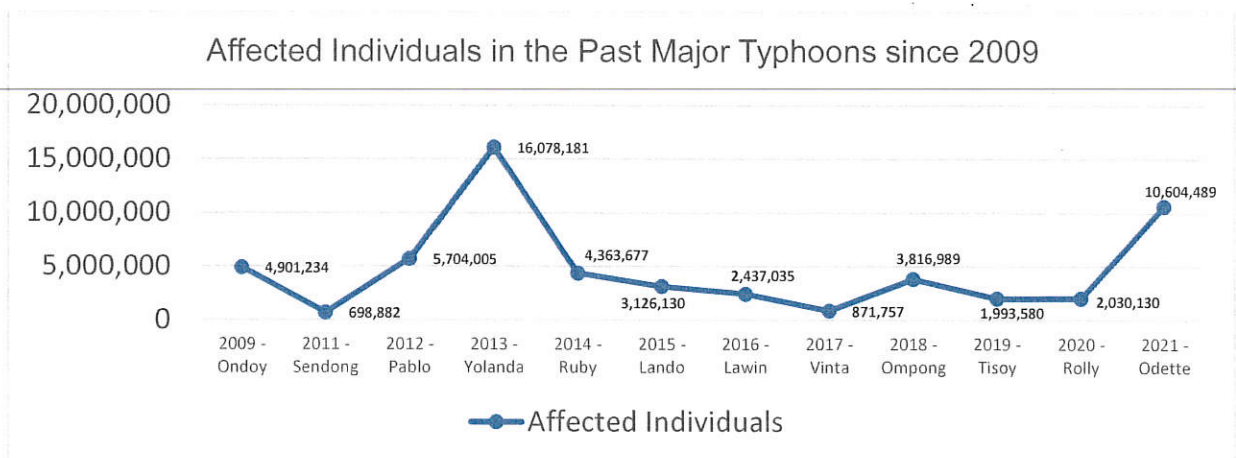




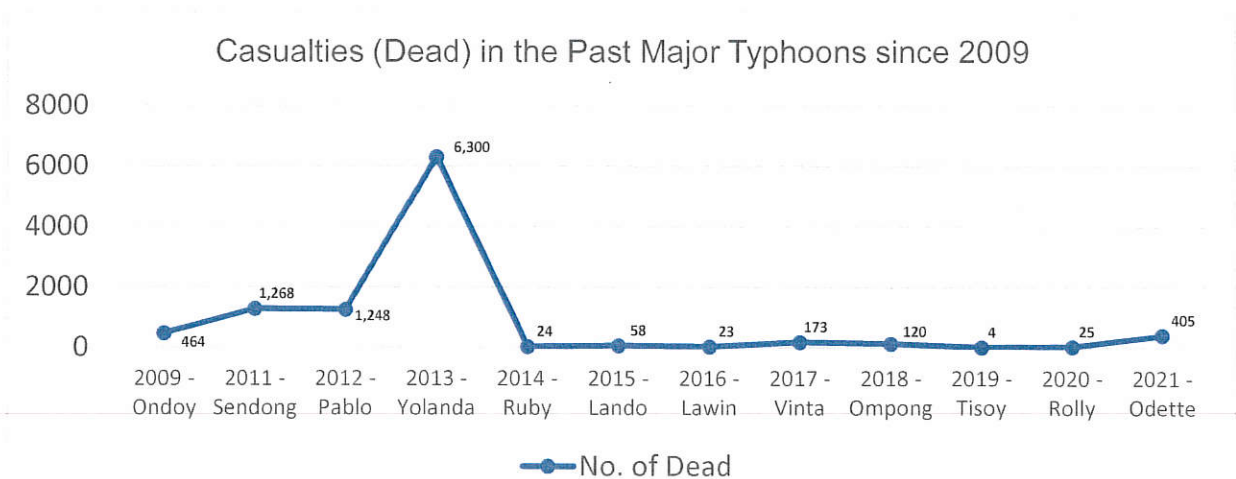
Looking at the number of affected regions for the past major typhoons since 2009, ONDOY (2009) has the highest number of affected regions. ODETTE and TISOY (2019) come in second. Based on the graph, number of affected regions fluctuate per year.



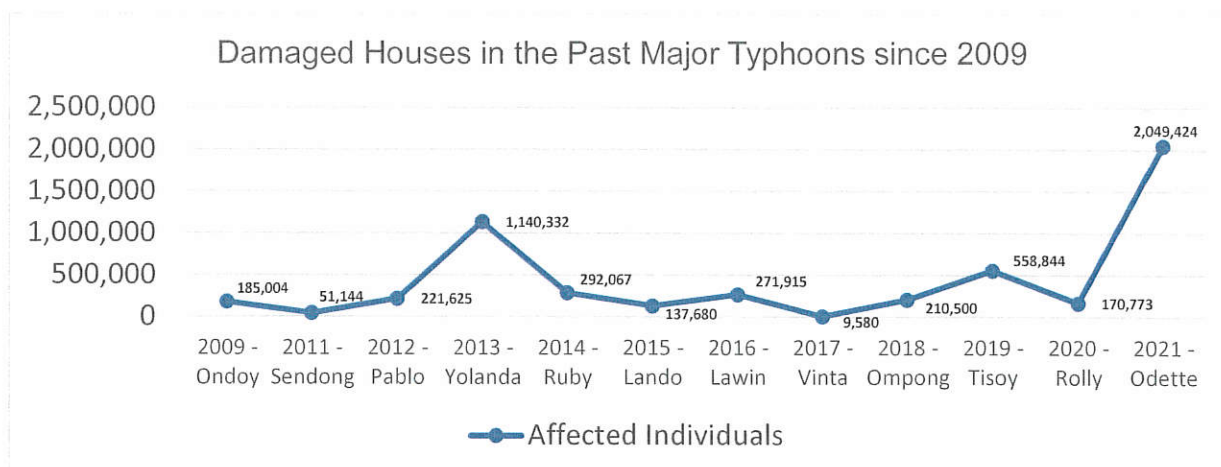
In terms of preemptive evacuation efforts, ODETTE notably has the highest number of preemptive evacuees.



In terms of total individuals affected, since YOLANDA (2013), ODETTE has the next highest number of affected individuals.



In terms of number of casualties (deaths), since YOLANDA (2013), death tolls have been relatively minimal, but there has been slight increase for ODETTE.



In terms of damaged houses, both partially and totally damaged, ODETTE has the highest number of damaged houses.



In terms of cost of damage, both for the infrastructure sector and agriculture sector, since YOLANDA (2013), ODETTE (2021) has the next highest cost of damage.

While YOLANDA remains to be the most destructive in terms of devastation, there are other stronger tropical cyclones than ODETTE. The highlights of impacts of ODETTE are as follows:

- After ONDOY (2009), ODETTE has second highest number of affected regions
- After YOLANDA (2013), ODETTE has the highest number of affected individuals
- ODETTE has the highest preemptive evacuation
- After the peak of death tolls for YOLANDA (2013), casualties have been consistently low with noticable increase again for ODETTE.
- ODETTE has the highest damaged houses
- After YOLANDA (2013), ODETTE has the next highest cost of damage

Given the significant impacts of Typhoon ODETTE, the following are the impressions based on observations, feedback from stakeholders and analysis of secondary data:



**Gaps in Disaster Prevention and Mitigation:** It has been observed that some government response facilities (EOCs, evacuation centers, etc.) are not structurally sound. Further, the facilities are situated in areas with exposure to typhoon hazards. Hence, while they were activated at the time of the disaster, they were also compromised and damaged, thereby hampering the delivery of disaster response services.

**Gaps in Disaster Preparedness:** There is observed lack of “Disaster Imagination” for worst-case impacts in some localities. Despite the warnings and instructions for preemptive evacuation, there were several anecdotes about the refusal to cooperate and adhere to the directives of the local authorities. Such can be attributed to the lack of historical experience as there are some identified areas that have not been devastated by strong typhoons for the past several years.

In addition, geographic challenges also is a major contributor to the difficulty in cascading directives for emergency preparedness as well as response. Areas situated in far islands are difficult to reach when it comes to dissemination of warnings and advisories.

**Challenges and limitations due to COVID-19:** The threat of COVID-19 remains in the country. Hence, mobility has been restricted due to unwanted exposure. There have been several reports about teams deployed on the ground who caught COVID-19 and had to undergo mandatory isolation before resuming the response and recovery operations.

## IV. BEST PRACTICES

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Overall, here is the summary of best practices observed for Typhoon ODETTE response:

- Dissemination of early warning using various means of communication
- Conduct of PDRA at all levels
- Deployment of emergency telecommunications team
- Creation of Shelter Cluster as a new cluster of the NDRRMC
- Delineation of tasks among agencies for early recovery efforts
- Support of private sector and CSOs
- Utilization of chartered services for air and land mobility by the OCD, as lead of the Logistics Cluster
- Well-coordinated international assistance
- Priority direction of the president prompted immediate action
- Use of Incident Command System (ICS) for delivery of assistance to communities (i.e. water bottles distribution)





## V. CHALLENGES

The NDRRMC, RDRRMC, LGUs, and other stakeholders must take action to overcome the following gaps and challenges:

- Movement of responders remained restricted due to COVID-19 risks
- Exposure of the deployed teams to COVID-19
- Some response facilities were not structurally sound and located in hazard prone areas
- Non-adherence to warnings by some communities
- Disrupted communications led to difficulty in coordination, data gathering, and dissemination of information.
- Competing demands for logistics and transportation support
- Reported non-participation of some agencies in DRRMC activities
- Disruption of transportation due to damaged air and sea ports as well as congestion of vehicles.

Disrupted communications in Siargao led to the deployment of emergency telecommunications team by the NDRRMC



## VI. RECOMMENDATIONS

With reference to NDRRMC Memo No. 30 s 2022, the following are the action items on the part of the NDRRMC for the overall improvement of DRRM services:

- Revisit compliance of LGUs and NGAs to building codes
- Revisit threshold of Super Typhoon Category
- Revisit and enhance understanding of communities on early warning.
- Improve impact-based assessment for PDRA, to include feedback mechanism
- Enhance reporting system and harmonization of response for Clusters
- Develop TOR for agencies/offices rendering duty and participating in DRRMC activities
- Assess and enhance capacities of LGUS on emergency telecommunications, conduct simulation exercises and develop protocols
- Improve logistics operations to prioritize NDRRMC relief; enhance capacities of RDRRMCs on logistics
- Improve ICS thru enhanced logistics capacities of IMTs to bring assistance on the ground to the communities
- Standardize protocols for early recovery
- Review protocols for the declaration of State of Calamity; consider for advance declaration

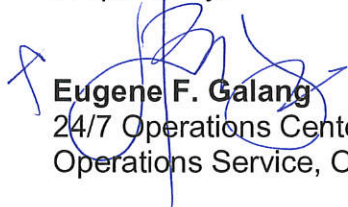
Further, here are other recommendations identified:

- Prioritize the establishment of connection to devastated areas without communication




- Procurement of emergency communications equipment such as VSAT and HF Radios by the LGUs
- Assessment of actions undertaken prior to, during, and after a disaster.

Prepared by:

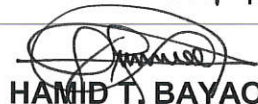
  
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## **ANNEX:**

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NDRRMC Situational Report for TC ODETTE as of 31 March 2022