

SITUATION UPDATE SUPER TYPHOON GONI IN THE PHILIPPINES

Saturday, 07 November 2020, 20:00 hrs (UTC+7)

No. **1**

This Situation Update is provided by the AHA Centre for use of the ASEAN Member States and relevant stakeholders. The information presented is collected from various sources, including but not limited to ASEAN Member States' Government Agencies, UN, IFRC, NGOs, Humanitarian and Dialogue Partners, and News Organisations.

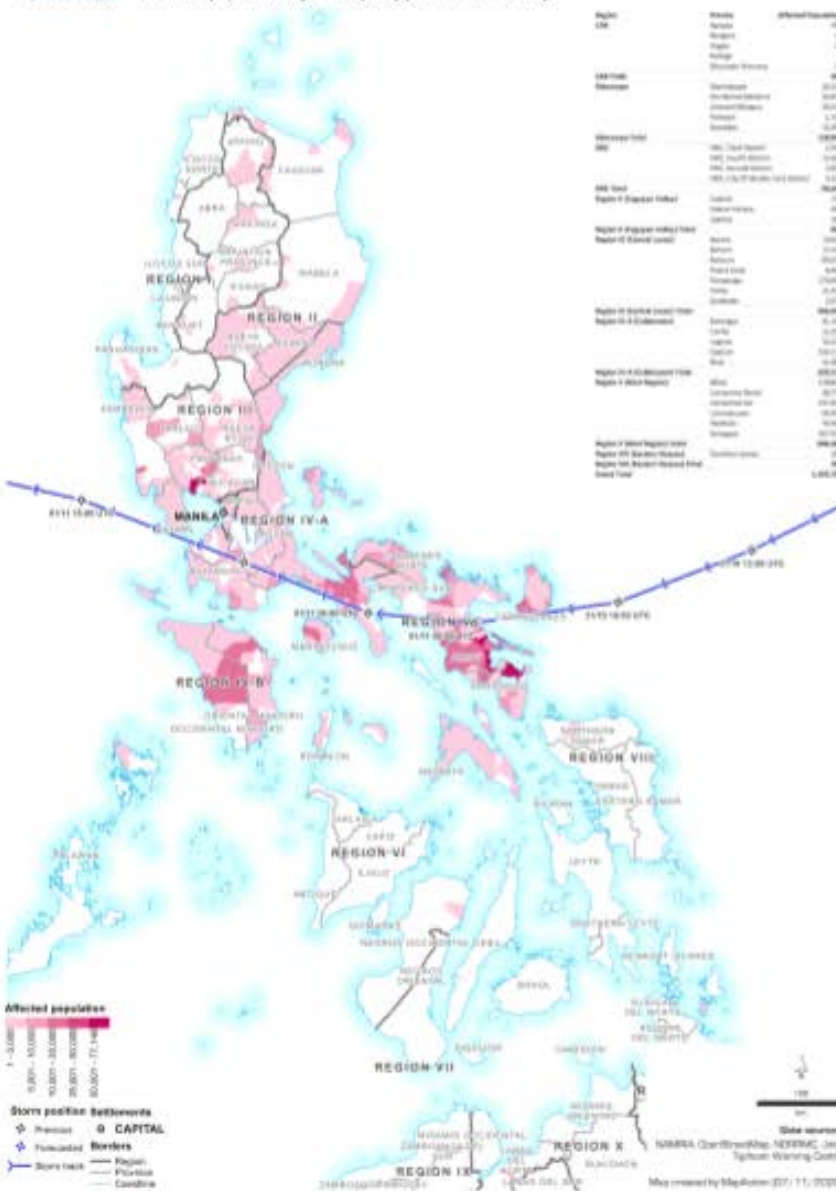
SUPER TYPHOON GONI PHILIPPINES

Figures are the latest updates, correct as of 07 November 2020



The Philippines: Typhoon Goni (Rolly)
Affected population by Municipality (as at 7 Nov 2020)

MAADT v3



KEY FIGURES



1.5M
AFFECTED PERSONS



182K
DISPLACED PERSONS (NOW)



1.3K
EVACUATION CENTRES (NOW)



20
DEAD



165
INJURED



6
MISSING



82.7K
DAMAGED HOUSES



\$225 Million
USD WORTH OF DAMAGES TO
INFRASTRUCTURE



\$62 Million
USD WORTH OF DAMAGES TO
AGRICULTURE

Note: Estimations are based on data reported/confirmed by the National Disaster Risk Reduction and Management Council (NDRRMC) of the Philippines and other verified sources

1. HIGHLIGHTS

- a. On **01 November 2020**, Super Typhoon GONI (locally known as ROLLY) made its **first landfall** in the vicinity of **Bato, Catanduanes (Bicol Region)** with **maximum sustained winds** of **225 km/h** (equivalent to **Category 4** in the Saffir-Simpson Hurricane Wind Scale) and gustiness of up to 280 km/h. It made a total of four (4) landfalls, and resulted in direct **wind damage, storm surge hazard, flooding, landslide, lahar, mudflow, and rock slides** along its path.
- b. On 31 October 2020, the **NDRRMC Response Cluster** was activated to monitor and facilitate emergency response and humanitarian assistance. To date, the NDRRMC Response Cluster is still in operations.
- c. **Impact to population** in the regions of Cagayan Valley, Central Luzon, CALABARZON, MIMAROPA, Bicol, Eastern Visayas, CAR, and NCR are as follows:
 - i. A total of **375,074 families** or **1,459,762 persons** were affected.
 - ii. **46,194 families** or **181,759 persons** are still being served inside and outside evacuation centres.
 - iii. **1,291 evacuation centres** are still being used by internally displaced persons.
 - iv. **178 COVID-19 patients** and **417 medical/support staff** in 11 mega and local quarantine/testing facilities were evacuated.
 - v. There are **20 dead, 165 injured, and 6 missing** persons.
- d. Status of **Critical Lifelines**:
 - i. **16 road sections and 6 bridges are still not passable.**
 - ii. **All airports and seaports** in the affected areas are now **operational.**
 - iii. A total of **128 cities/municipalities** are still experiencing **power interruptions/outages.**
 - iv. A total of **40 cities/municipalities** are still experiencing **water interruptions/outages.**
 - v. A total of **68 cities/municipalities** experienced **telecommunications network interruptions/outages.**
- e. NDRRMC deployed a **Rapid Damage Assessment and Needs Analysis (RDANA)** Team to Catanduanes province from 05 to 09 November 2020.
- f. On 06 November 2020, NDRRMC accepted the AHA Centre's offer of humanitarian assistance; specifically, the mobilisation of regional stockpiles in the **Disaster Emergency Logistics System for ASEAN (DELSA)** Satellite Warehouse in Camp Aguinaldo, Quezon City, Philippines. These regional stockpiles are funded by the **Japan-ASEAN Integration Fund (JAIF)** and **Direct Relief**. The AHA Centre is currently facilitating the mobilisation of DELSA stockpiles and local procurement of tarpaulins, in coordination with the NDRRMC - Office of Civil Defense (OCD).



2. SUMMARY OF EVENTS

- a. According to the Philippine Atmospheric, Geophysical and Astronomical Services Administration ([PAGASA](#)), at 0350h of **01 November 2020**, Super Typhoon GONI (locally known as ROLLY) made its **first landfall** in the vicinity of **Bato, Catanduanes (Bicol Region)** with **maximum sustained winds of 225 km/h** (equivalent to **Category 4** in the Saffir-Simpson Hurricane Wind Scale) and gustiness of up to 280 km/h.
- b. Super Typhoon GONI made a total of **four landfalls** as it made its way through the regions of Bicol and CALABARZON.

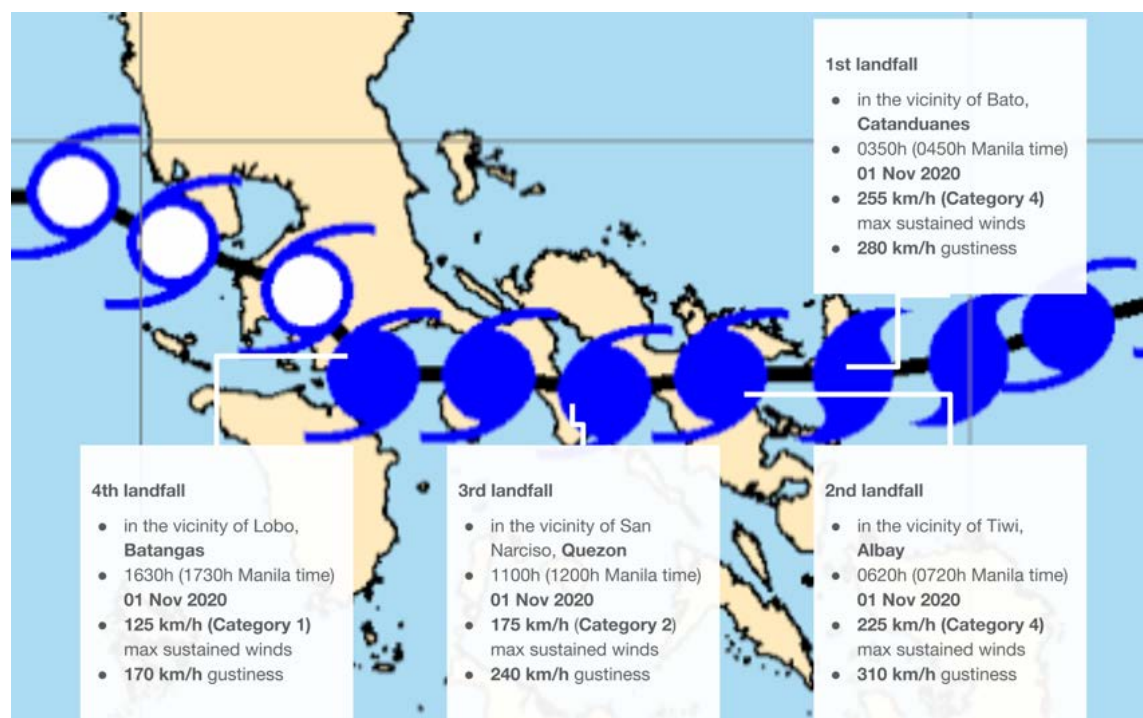


Figure 1. Landfall areas of Super Typhoon GONI (Source: [PAGASA](#))

- c. Super Typhoon GONI reportedly brought **direct wind damage, storm surge hazard, flooding, landslide, lahar, mudflow, and rock slides** along its path. These hazards resulted in impact to the **population** and damages to **properties, infrastructures, and agriculture**.
- d. Super Typhoon GONI is comparable to **Typhoon ANGELA** (locally known as ROSING) and **Super Typhoon HAIYAN** (locally known as YOLANDA).
 - i. Super Typhoon GONI and Typhoon ANGELA share a **similar typhoon track** — made landfall in the Bicol Region, moved towards Southern Luzon and Metro Manila, and exited in the West Philippine Sea. While being stronger than Typhoon ANGELA, Super Typhoon GONI has the **same level of impact on the population**.
 - ii. Super Typhoon HAIYAN is just **10 km/h stronger** than Super Typhoon GONI upon landfall, in terms of maximum sustained winds. However,



running figures show that Super Typhoon GONI's **impact on the population is less than 10%** of that of Super Typhoon HAIYAN's.

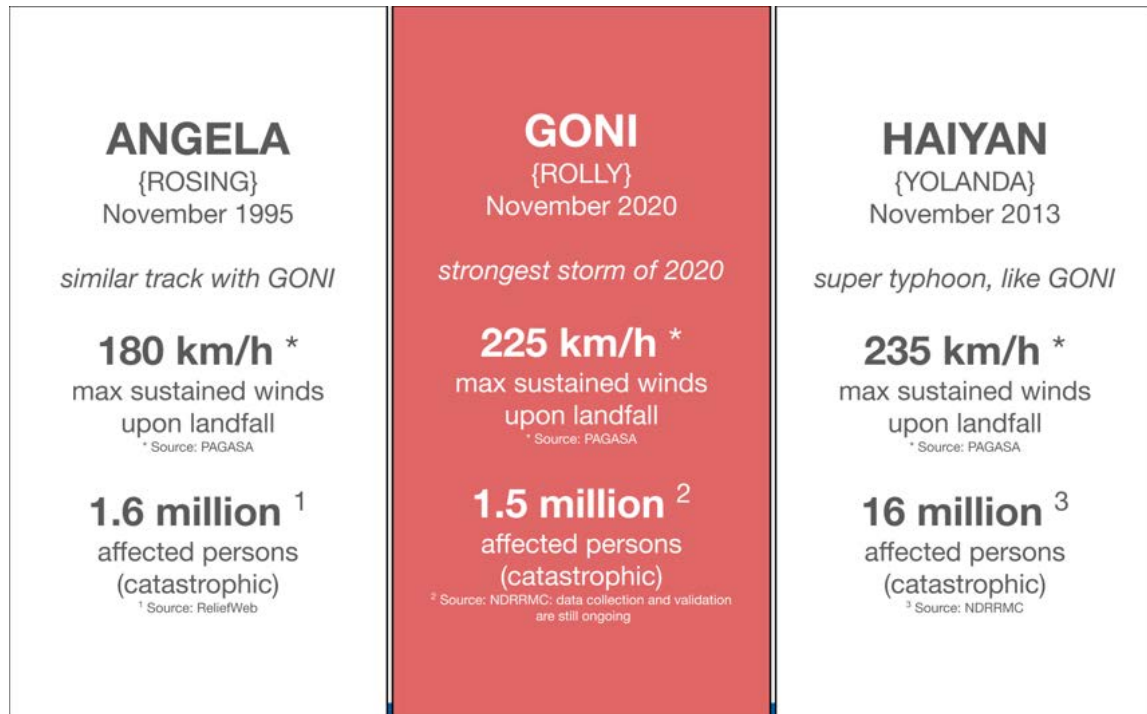


Figure 2. Comparison of Super Typhoon GONI with similar tropical cyclones — Typhoon ANGELA and Super Typhoon HAIYAN (Sources: [NDRRMC](#), [PAGASA](#), [ReliefWeb](#))

- e. The National Disaster Risk Reduction and Management Council ([NDRRMC](#)) of the Philippines attribute this significant reduction in risk (and in spite of the ongoing COVID-19 pandemic globally) to their **time-tested preparedness measures**, shaped by its rich experiences.
 - i. NDRRMC disseminated a total **41 emergency alerts and warnings** to the general public prior to experiencing the hazards. This allowed the general public to be guided in their preparations.
 - ii. **Pre-Disaster Risk Assessment (PDRA)** meetings were also conducted multiple times (28, 30, and 31 October 2020) at all levels of Disaster Risk Reduction and Management Councils (DRRMC). This allowed respective DRRMCs to prepare their responses accordingly, based on the changing risks as the tropical cyclone approaches.
 - iii. **Pre-emptive Evacuation** of a total **480K persons** residing in at-risk areas in exposed localities was also conducted by local DRRMCs.
- f. On 31 October 2020, the **NDRRMC Response Cluster** was activated to monitor and facilitate emergency response and humanitarian assistance. To date, the NDRRMC Response Cluster is still in operations.
- g. On 01 November 2020, the AHA Centre sent a letter to NDRRMC to **convey sympathy to the affected population** and **show solidarity** with the Government of the Philippines by offering humanitarian assistance and operational support.
- h. On 06 November 2020, NDRRMC accepted the AHA Centre's offer of humanitarian assistance; specifically, the mobilisation of regional stockpiles in the **Disaster**



Emergency Logistics System for ASEAN (DELSA) Satellite Warehouse in Camp Aguinaldo, Quezon City, Philippines. These regional stockpiles are funded by the **Japan-ASEAN Integration Fund (JAIF)** and **Direct Relief**.

3. ASSESSMENT OF IMPACT, HUMANITARIAN NEEDS, AND ANTICIPATED RISKS

Hazards

- a. On 31 October 2020, the Pacific Disaster Center ([PDC Global](#)), through the ASEAN Disaster Monitoring & Response System ([DMRS](#)), forecasted several hazards associated with Super Typhoon GONI, and each hazard's respective risk level.
 - i. About **\$232 billion USD worth of infrastructures** (total replacement value) are exposed to **moderate to severe damaging winds**.



Figure 3. Wind damage to infrastructure in Catanduanes province (Bicol Region) (Source: [OCD](#))

- ii. Up to **6 m** high potential **storm surges** in the eastern coasts of Bicol Region and CALABARZON.





Figure 4. Storm Surge in Quezon Province (CALABARZON) (Source: [GMA News Online](#))

- iii. **230 to 300 mm** of estimated **tropical cyclone rainfall** in Bicol Region, CALABARZON, Central Luzon, and Metro Manila.



Figures 5 & 6. [LEFT] Flooding in Batangas Province (CALABARZON) (Source: [ABS-CBN News](#)) and [RIGHT] Landslide in Catanduanes Province (Bicol Region) (Source: [OCD](#))

- b. According to [PAGASA](#), **101 to 300 mm** of cumulative rainfall are reported in the provinces along the track of Super Typhoon GONI.



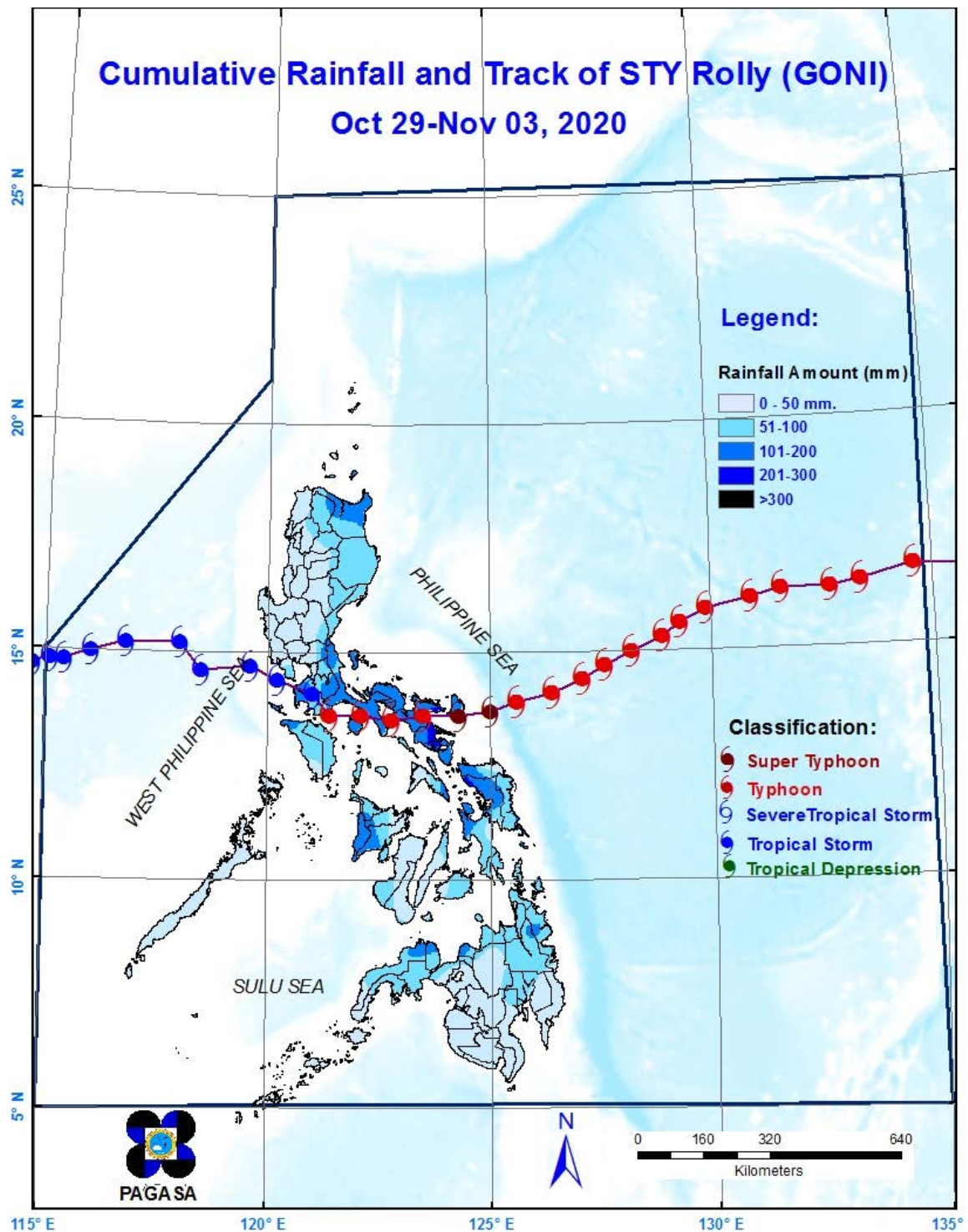


Figure 7. Tropical Cyclone Associated Rainfall for Super Typhoon GONI (Source: [PAGASA](#))

- c. On 30 October 2020, the Philippine Institute of Volcanology and Seismology ([PHIVOLCS](#)) issued advisories on potential **lahar and mudflow** in communities surrounding the volcanoes of Mayon (Bicol Region), Taal (CALABARZON), and Pinatubo (Central Luzon).





Figure 8. Lahar in Albay Province (Bicol Region) (Source: [The Filipino Times](#))

Impact to Population

- a. A total of **375,074 families** or **1,459,762 persons** were affected in the regions of Cagayan Valley, Central Luzon, CALABARZON, MIMAROPA, Bicol, Eastern Visayas, CAR, and NCR. Of which, **178,556 families** or **686,400 persons** are in the **Bicol Region**, or about 47% of the running national total.
- b. **46,194 families** or **181,759 persons** are still being served inside and outside evacuation centres in the regions of Central Luzon, CALABARZON, MIMAROPA, Bicol, CAR, and NCR. Of which, **31,446 families** or **123,283 persons** are in the **Bicol Region**, or about 68% of the running national total.
- c. **1,291 evacuation centres** are still being used by internally displaced persons in the regions of Central Luzon, CALABARZON, MIMAROPA, Bicol, and NCR. Of which, **854 evacuation centres** are in the **Bicol Region**, or about 66% of the running national total.
- d. **178 COVID-19 patients** and **417 medical/support staff** in 11 mega and local quarantine/testing facilities were evacuated.
- e. There are **20 dead**, **165 injured**, and **6 missing** persons in the regions of CALABARZON, MIMAROPA, and Bicol.

Status of Critical Lifelines

- a. A total of **60 road sections** and **7 bridges** are affected by flooding, landslides, uprooted trees, and/or fallen electric utility posts in the regions of Cagayan Valley, Central Luzon, CALABARZON, Bicol, and CAR. Of which, **16 road sections** and **6 bridges** are still not passable.
- b. **All airports and seaports** in the affected areas are now **operational**.
- c. A total of **128 cities/municipalities** in the regions of CALABARZON, MIMAROPA, Bicol, and Eastern Visayas are still experiencing **power interruptions/outages**.



- d. A total of **40 cities/municipalities** in the regions of MIMAROPA and Bicol are still experiencing **water interruptions/outages**.
- e. A total of **68 cities/municipalities** in the regions of CALABARZON, MIMAROPA, and Bicol experienced **telecommunications network interruptions/outages**.

Damages

- a. A total of **82,719 damaged houses** are reported in the regions of CALABARZON, MIMAROPA, Bicol, and CAR.

TOTALLY-DAMAGED HOUSES	PARTIALLY-DAMAGED HOUSES
15,969	66,750

Table 1. Distribution of Damaged Houses by category (Source: [NDRRMC](#))

- b. To date, an estimated of **\$225 million USD worth of damages to infrastructures** was incurred in the regions of Ilocos, Cagayan Valley, Central Luzon, CALABARZON, MIMAROPA, Bicol, Eastern Visayas, CAR, and NCR. Majority of the damages is recorded in the **Bicol Region**, amounting to approximately **\$212 million USD**.

REGION	DAMAGE TO INFRASTRUCTURE (in PHP - reported)	DAMAGE TO INFRASTRUCTURE (in USD - approximate)
Bicol Region (Region V)	10,200,770,886.00	211,728,118.58
MIMAROPA	256,499,800.20	5,323,932.94
CALABARZON	199,000,000.00	4,130,461.91
Central Luzon (Region III)	134,500,000.00	2,791,694.10
Cagayan Valley (Region II)	37,000,000.00	767,975.33
CAR	8,000,000.00	166,048.72
Ilocos (Region I)	7,500,000.00	155,670.68
NCR	5,500,000.00	114,158.50
Eastern Visayas (Region VIII)	3,500,000.00	72,646.32
GRAND TOTAL	10,852,270,686.20	225,250,707.08

Table 2. Cost of Damages to Infrastructures (Source: [NDRRMC](#))

- c. To date, an estimated of **\$62 million USD worth of damages to agriculture** (crops, livestock, fisheries, and agricultural facilities) was incurred in the regions of Ilocos, Central Luzon, CALABARZON, MIMAROPA, Bicol, Eastern Visayas, CAR, and NCR. Majority of the damages is recorded in the Bicol Region, amounting to approximately \$49 million USD.



REGION	DAMAGE TO AGRICULTURE (in PHP - reported)	DAMAGE TO AGRICULTURE (in USD - approximate)
Bicol Region (Region V)	2,346,728,867.00	48,708,915.57
CALABARZON	560,479,166.00	11,633,356.01
Central Luzon (Region III)	59,221,172.00	1,229,199.98
MIMAROPA	16,300,000.00	338,324.27
CAR	3,799,800.00	78,868.99
NCR	1,156,000.00	23,994.04
Eastern Visayas (Region VIII)	173,491.00	3,600.99
Ilocos (Region I)	56,410.00	1,170.85
GRAND TOTAL	2,987,914,906.00	62,017,430.70

Table 3. Cost of Damages to Agriculture (Source: [NDRRMC](#))

State of Calamity

- a. Three (3) provinces declared a State of Calamity:
 - i. Cavite Province (CALABARZON) - 01 November 2020
 - ii. Catanduanes Province (Bicol) - 02 November 2020
 - iii. Camarines Sur Province (Bicol) - 02 November 2020
- b. One (1) municipality declared a State of Calamity:
 - i. Mulanay, Quezon Province (CALABARZON) - 05 November 2020

Humanitarian Needs

- a. Food & Non-Food Items
- b. Temporary Shelter
- c. Restoration of Critical Facilities

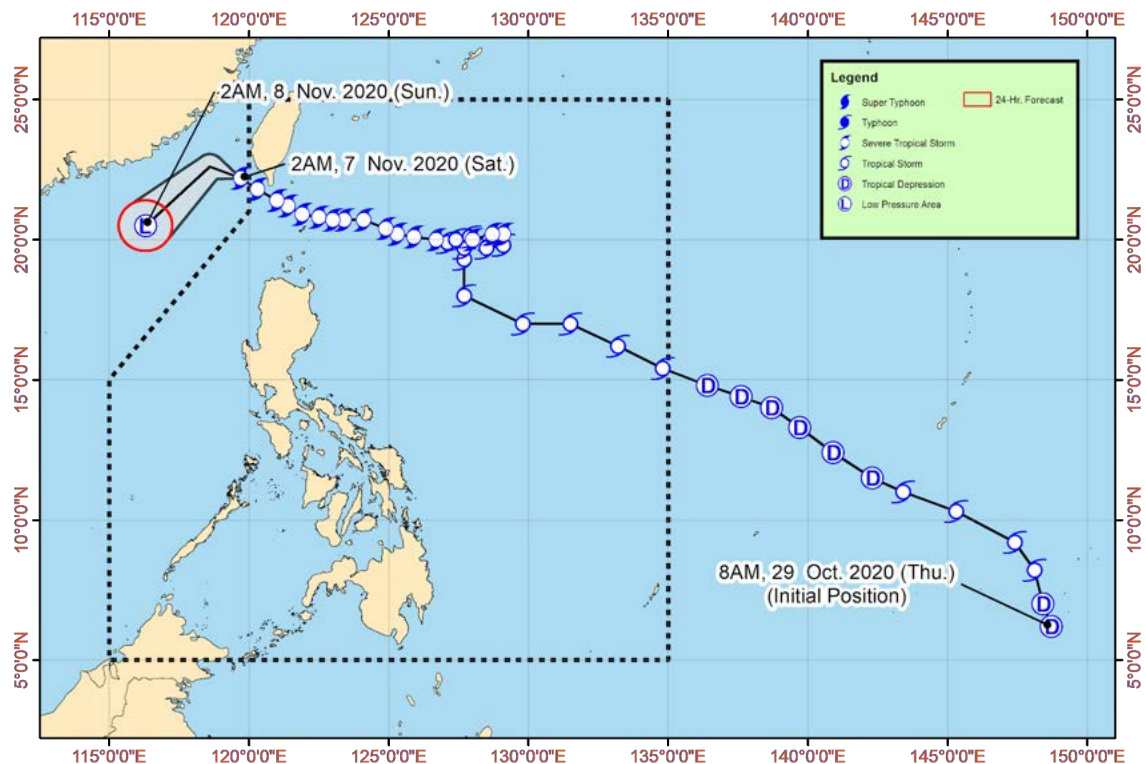
Anticipated Risks

- a. Tropical Storm ATSANI
 - i. According to [PAGASA](#), as of 0500h of 07 November 2020, **Tropical Storm ATSANI left the Philippine Area of Responsibility (PAR)** at 0000h of 07 November 2020. The tropical cyclone is expected to turn southwestward in the next 12 hours and head towards the West



Philippine Sea. It is forecast to **weaken into a Low Pressure Area** within 24 to 36 hours due to increasingly unfavorable conditions.

Track of Severe Tropical Storm "SIONY" {ATSANI}

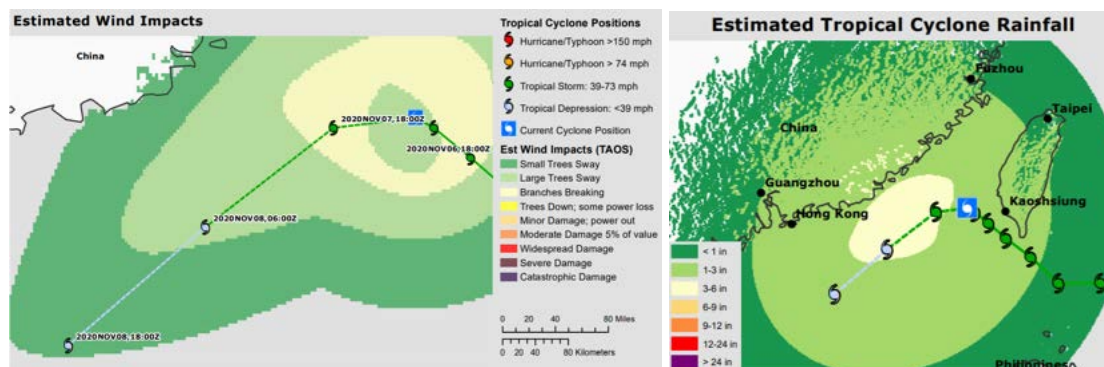


Philippine Atmospheric Geophysical and Astronomical Services Administration

Figure 9. Track of Tropical Storm ATSANI (Source: [PAGASA](#))

- ii. In the next 24 hours, **moderate to rough seas** (2-3 m) will be experienced over the seaboard of Batanes, Babuyan Islands, and the northern portion of Ilocos Norte. Mariners of small seacrafts are advised to take precautionary measures when venturing out to sea. Inexperienced mariners should avoid navigating in these conditions.
- iii. According to [PDC Global](#), as of 1600h of 07 November 2020, Tropical Storm ATSANI (locally known as SIONY), is located in the Northwest Pacific Ocean with **maximum sustained winds of 74 km/h**, and wind gusts of up to 93 km/h. The tropical cyclone is headed West Northwest at about 4 km/h, and is expected to strengthen over the next 24 hours. It is cautioned, however, that the storm's actual position may shift significantly over the next few days. Based on the current forecast (the storm's centre and path), **Tropical Storm ATSANI is not expected to cross over a major landmass within the next 48-72 hours**, although it may impact smaller islands along the way.





Figures 10 and 11. [LEFT] Estimated Wind Impacts and [RIGHT] Tropical Cyclone Rainfall forecast for Tropical Storm ATSANI (Source: [PDC Global](#))

b. Low Pressure Area (LPA) East of Visayas

- i. According to [PAGASA](#), at 1000h of 07 November 2020, the LPA was estimated at **205 km East of Guiuan, Eastern Samar** (11.1°N, 127.6°E). It is forecast to move generally west-northwestward towards Eastern Visayas and may likely reach the said area within the day. The **LPA may likely develop into Tropical Depression TONYO (local name)** within the next 36 hours. In such an event, Tropical Cyclone Wind Signal #1 will be immediately hoisted in the initial Severe Weather Bulletin.
- ii. Hazards affecting land areas:
 1. **Moderate to heavy**, with at times, **intense rains** will be experienced over Bicol Region, Northern Samar, Eastern Samar, and Samar.
 2. **Light to moderate**, with at times, **heavy rains** may prevail over CALABARZON, MIMAROPA, Mindanao, and the rest of Visayas.
 3. **Flooding** (including flash floods), **rain-induced landslides**, and **sediment-laden streamflows (i.e. lahar)** may occur during heavy or prolonged rainfall especially in areas that are highly or very highly susceptible to these hazards and/or those that received significant antecedent rainfall from tropical cyclones SAUDEL, MOLAVE, and GONI.
- iii. Hazards affecting coastal waters:
 1. The LPA and the Easterlies will bring **moderate to rough seas** (2.0 to 3.5 m) over the seaboard of northern Quezon (including the northern and eastern coastal waters of Polillo Islands) and Camarines Norte, the northern seaboard of Camarines Sur, the northern and eastern seaboard of Catanduanes, and the eastern seaboard of Albay (including Rapu-Rapu Islands), Sorsogon, Eastern Samar, Dinagat Islands, and Siargao Islands.
 2. Mariners of small seacrafts are advised to take precautionary measures when venturing out to sea. Inexperienced mariners should avoid navigating in these conditions.



3. The public and disaster risk reduction and management offices concerned are advised to take precautionary measures and watch for the next update on this weather disturbance to be incorporated in the 24-Hour Public Weather Forecast.

4. ACTIONS TAKEN AND RESOURCES MOBILISED

Response by the Government of the Philippines

- a. On 31 October 2020, the **NDRRMC Response Cluster** was activated to monitor and facilitate emergency response and humanitarian assistance. To date, the NDRRMC Response Cluster is still in operations.

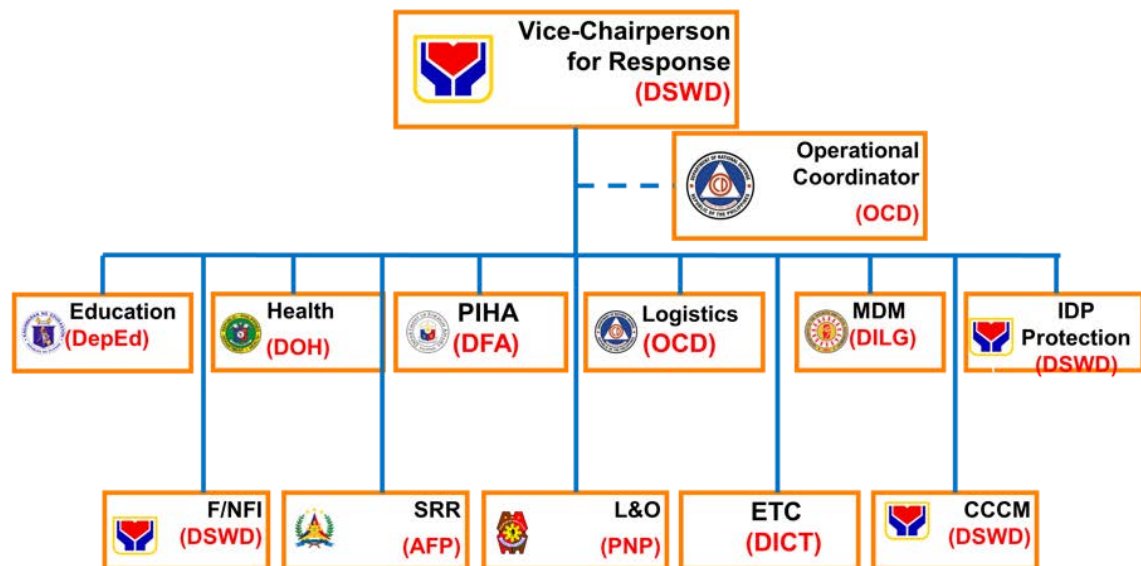


Figure 12. NDRRMC Response Cluster and respective Leads (Source: NDRRMC)

- b. In light of the COVID-19 pandemic, the Response Cluster is conducting regular meetings through a **Virtual Coordinating Centre (VCC)**.
- c. Deployed a **Rapid Damage Assessment and Needs Analysis (RDANA)** Team to Catanduanes province from 05 to 09 November 2020. The composite team is composed of representatives from the Department of Social Welfare and Development, Office of Civil Defense, Department of Public Works and Highways, Department of Energy, Department of Agriculture, Department of Health, and Presidential Communications Operations Office (PCOO).
- d. An estimated **\$1.3 million USD worth of assistance** from DSWD, DOH, LGUs, and NGOs were provided to the affected families in the regions of Cagayan Valley, Central Luzon, CALABARZON, MIMAROPA, Bicol, CAR, and NCR.
- e. Issued **COVID-19 Operational Guidance for Camp Coordination and Camp Management (CCCM) and Protection** to strengthen infection prevention and control measures inside evacuation centres.



- f. Provision of **Food & Non-Food Items (FNFI)** is still ongoing (\$218K USD worth of DSWD augmentation to LGUs). Transportation of FNFI to Bicol is facilitated by OCD.
- g. The NDRRMC Emergency Telecommunications Team re-established communication links with the Provincial Government of Catanduanes on 02 November 2020. **Restoration of communication links** (and other critical infrastructures) in the affected areas is still ongoing.
- h. Assessment of damages to **educational infrastructures** is ongoing. Infrastructure and non-infrastructure interventions to affected schools are also ongoing.
- i. **\$65K USD** worth of medical commodities and **\$415K USD** worth of financial assistance has been provided by the DOH to its regional offices and hospitals in the Bicol Region.
- j. **Personnel and cargo aircrafts** of the military are being used to support ongoing Humanitarian Assistance and Disaster Relief (HADR) operations. About **50 trucks** are also available to deliver relief items to affected areas. Logistics assets are being coordinated by the OCD.
- k. Personnel and logistics assets of several uniformed services are mobilised to conduct **Search, Rescue, and Retrieval operations**.
- l. **Aerial surveys** to quickly assess situations were also conducted.
- m. To date, the Philippines has **no calls for international assistance** yet.

Response by the AHA Centre

- a. On 01 November 2020, the AHA Centre sent a letter to NDRRMC to **convey sympathy to the affected population** and **show solidarity** with the Government of the Philippines by offering humanitarian assistance and operational support:
 - i. Mobilisation of ASEAN relief items from the **Disaster Emergency Logistics System for ASEAN (DELSA)** or DELSA Satellite Warehouse in Camp Aguinaldo, Quezon City, Manila and/or through local procurement. Depending on the needs and availability, the relief items could consist of shelter tool kits, family kits, indoor family tents and tarpaulins;
 - ii. **Information management** support; and
 - iii. Facilitating deployment of **ASEAN assets and capabilities**, including but not limited to airlift capabilities.
- b. To facilitate operations coordination with NDRRMC, the AHA Centre deployed its **In-Country Liaison Team (ICLT)** on 01 November 2020. The ICLT is based in the NDRRM Operations Centre in Camp Aguinaldo, Quezon City, Philippines.
- c. On 04 November 2020, the AHA Centre organised an online **Executive Briefing** to **facilitate strategic coordination** between NDRRMC and potentially assisting ASEAN Member States, Humanitarian Partners, and Diplomatic Missions. NDRRMC



Philippines Executive Director, Undersecretary Ricardo B. Jalad, shared the latest situation and immediate needs in the Government-led response, as well as conveyed appreciation to the offers of support.

- d. The Executive Briefing was attended by ASEAN Secretary General Dato Lim Jock Hoi and over 60 representatives from other ASEAN Member States, ASEAN Secretariat, AHA Centre, Diplomatic Missions to ASEAN, Foreign Embassies based in Jakarta, UN OCHA, WFP, UNOSAT, PDC, TSF, DHL, SDC, MSB, and the EU.
- e. On 06 November 2020, NDRPMC accepted the AHA Centre's offer of humanitarian assistance; specifically, the mobilisation of regional stockpiles in the **Disaster Emergency Logistics System for ASEAN (DELSA)** Satellite Warehouse in Camp Aguinaldo, Quezon City, Philippines. These regional stockpiles are funded by the **Japan-ASEAN Integration Fund (JAIF)** and **Direct Relief**.
- f. Subsequently, the **AHA Centre Emergency Operations Centre (EOC)**'s Alert Level was raised to **RED**. Coordination within the EOC is conducted virtually.
- g. In coordination with OCD, the AHA Centre is currently facilitating the mobilisation of **DELSA stockpiles** and local procurement of tarpaulins.

No	Stockpile/Relief Items	Qty	Unit
Direct Relief			
1	Family Kit with ASEAN & Direct Relief Logo	700	Kit
2	Family Tent Indoor with ASEAN & Direct Relief Logo	250	Pcs
JAIF			
3	Tarpaulin 4x60m	446	Roll
4	Shelter Repair Kit	100	Kit
5	Family Tent Outdoor with ASEAN Logo	74	Pcs
6	Mosquito Net	5.000	Pcs
7	Family Kit with ASEAN Logo	5.000	Kit
8	Kitchen Set with ASEAN Logo	1.000	Kit
9	Jerry Can with 10 litre capacity	5.010	Pcs
10	Family Tent Indoor with ASEAN Logo	750	Pcs
Direct Relief + JAIF (Co-Funding)			
11	Tarpaulin 8ft x 100 Meter	2.500	Roll
Grand Total			

Figure 13. DELSA stockpiles to be mobilised to augment the response capacities of the Philippines

Response by Other Humanitarian / Operational Partners

- a. The Pacific Disaster Center (PDC) is supporting the AHA Centre through disaster monitoring & analysis.



- b. The Philippines Disaster Resilience Foundation (PDRF) is coordinating with the AHA Centre, and directly committed logistical support to the NDRRMC.
- c. Map Action is supporting the AHA Centre through maps and other spatial analysis products.
- d. The United Nations Institute for Training and Research - Operational Satellite Applications Programme (UNITAR-UNOSAT) is continuously providing information products that can support the ongoing emergency response.
- e. Sentinel Asia and Earth Observatory Singapore (EOS) ARIA-SG provided several raw and analysed satellite images that can support the ongoing emergency response.
- f. The International Organization for Migration (IOM) donated 500 modular tents to DSWD.
- g. The World Food Programme (WFP) committed logistical support to the NDRRMC.

5. RECOMMENDATIONS AND PLAN OF ACTIONS

The AHA Centre's Plan

- a. The AHA Centre stands ready to support and facilitate regional and international assistance, if and when requested by NDRRMC.
- b. The AHA Centre will continue its close coordination with NDRRMC and will issue necessary updates accordingly.

Prepared by:

The AHA Centre - Emergency Operations Centre (EOC)

ABOUT THE AHA CENTRE

The AHA Centre - ASEAN Coordinating Centre for Humanitarian Assistance on disaster management - is an inter-governmental organisation established by 10 ASEAN Member States – Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam - to facilitate the cooperation and coordination among ASEAN Member States and with the United Nations and international organisations for disaster management and emergency response in the region.

The ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre), Graha BNPB 13th Floor, JL Raya Pramuka Kav 38, East Jakarta, 13210, Indonesia
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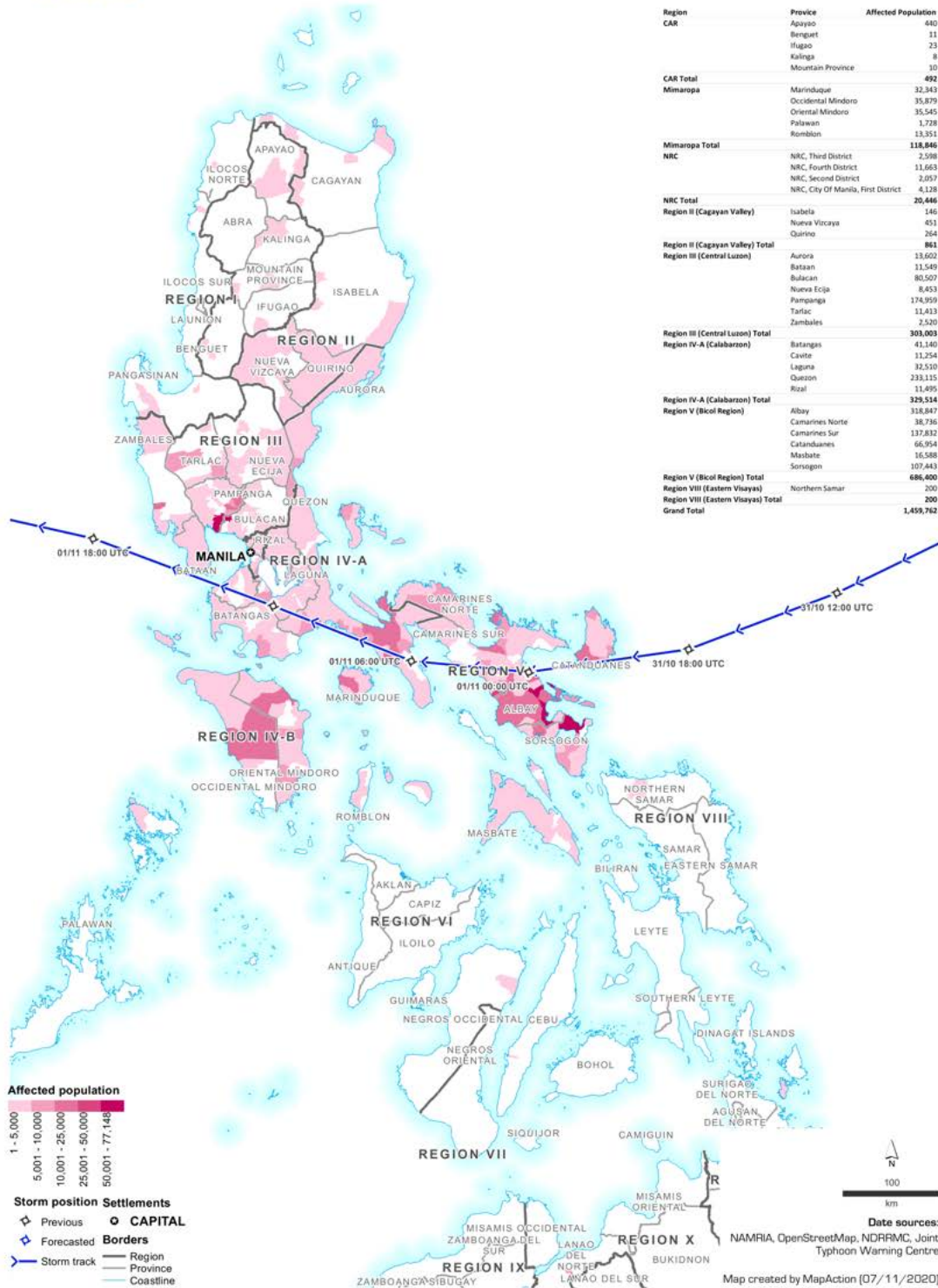
ANNEX: Information Products from Partners

MAP ACTION

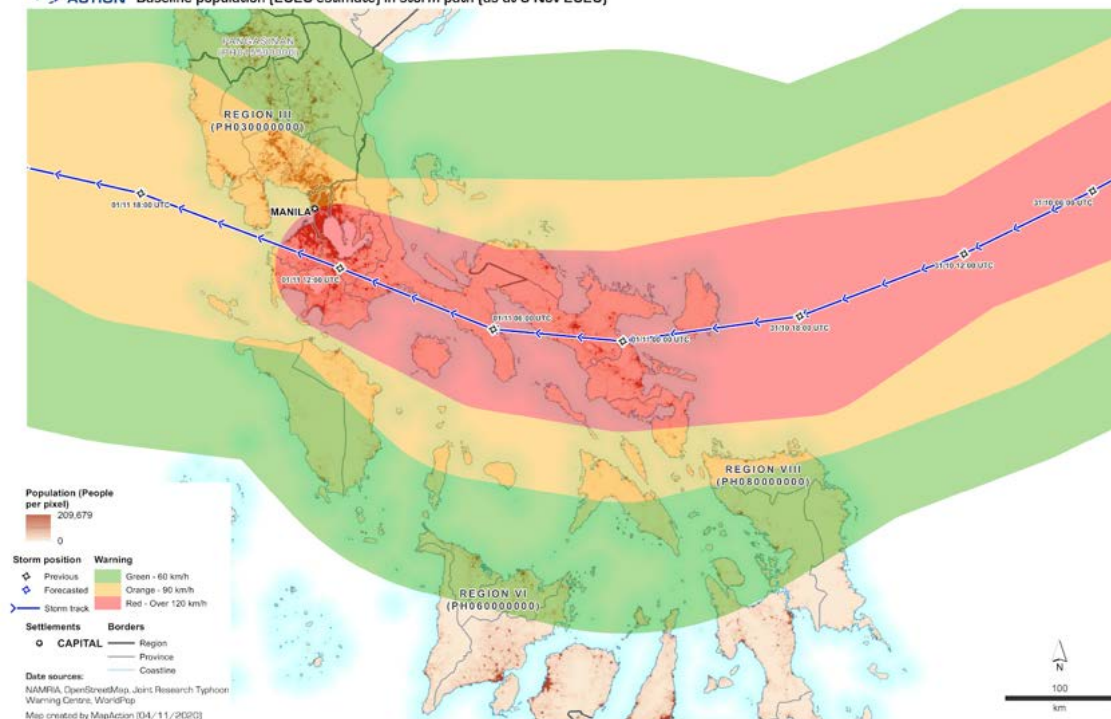


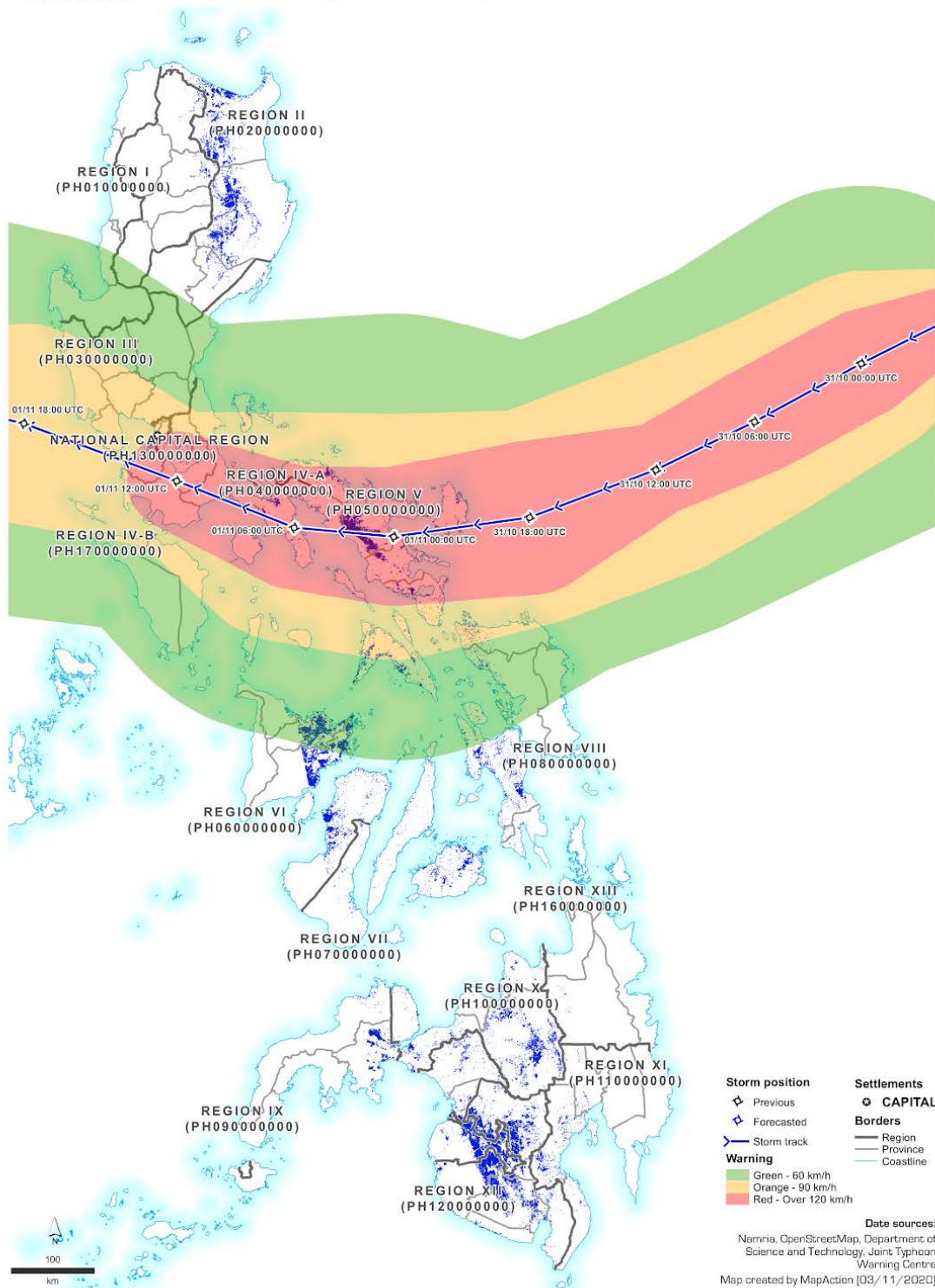
The Philippines: Typhoon Goni (Rolly)
Affected population by Municipality (as at 7 Nov 2020)

MA007 v3



SITUATION UPDATE





PHILIPPINES

Camarines Sur Provinces, Bicol Region (Region V)

Imagery analysis: 1 November 2020 | Published 4 November 2020 | Version 1.0

Tropical Cyclone

TC20201101PHL



Floodwater depth in Camarines Sur Provinces, Bicol Region (Region V) of Philippines as of 1 November 2020

This map illustrates floodwater depth in Camarines Sur provinces of Philippines based on surface waters observed from a Sentinel-1 image acquired on 1st of November 2020 and a digital elevation model data with the floodwater depth estimation tool (FwDET).

This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR-UNOSAT.

Important Note: Flood analysis from radar images may underestimate the presence of standing waters in built-up areas and densely vegetated areas due to backscattering properties of the radar signal.

Legend

- Village
- City/Town
- Primary road
- Secondary road
- Local road
- Railway
- River
- Municipality boundary
- Reference water

Floodwater Depth (m)

- <0.5
- 0.5-1
- 2-3
- 4-5
- 6-7
- >7



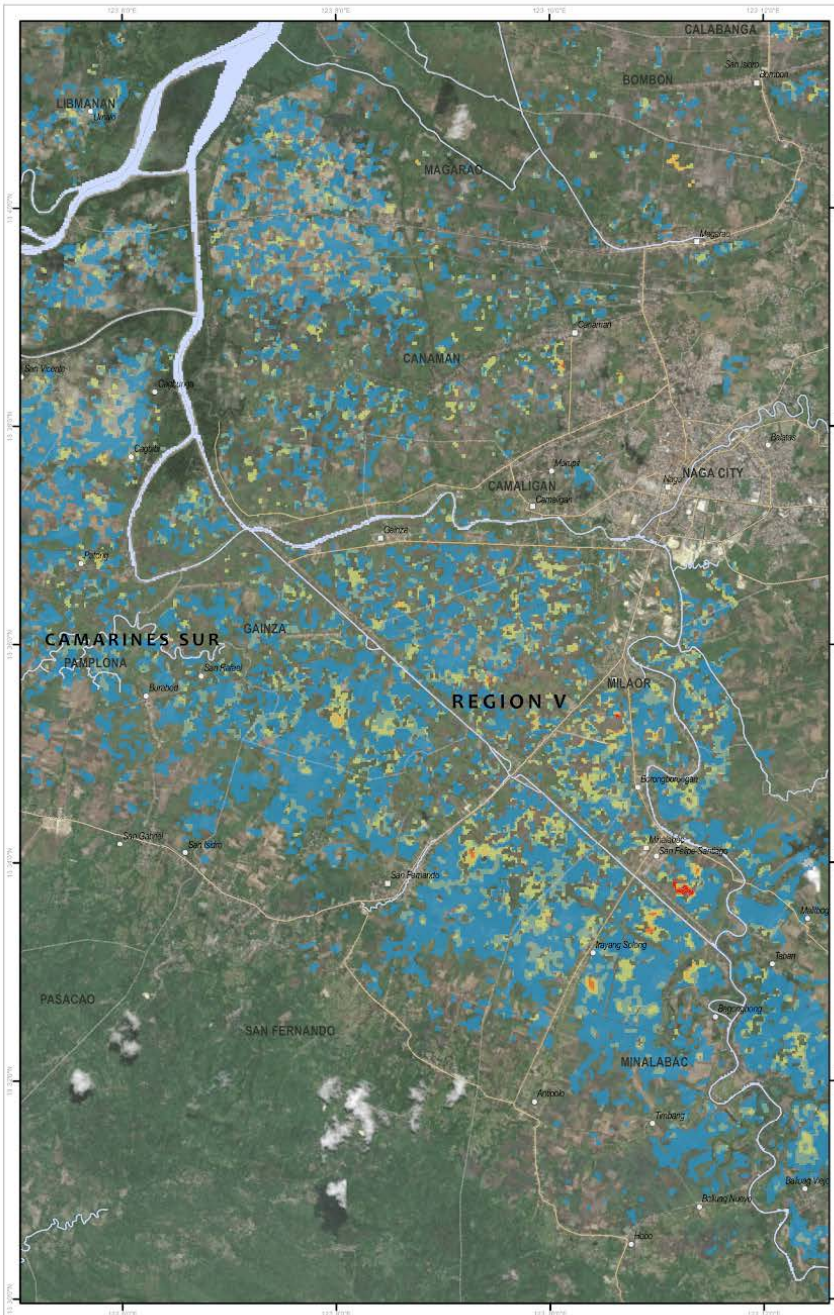
Map Scale for A3: 1:65,000



0 0.5 1 2 3 km

Analysis conducted with ArcGIS v10.7

Coordinate System: WGS 1984 UTM Zone 51N
 Projection: Transverse Mercator
 Datum: WGS 1984
 Units: Meter



Satellite Data: Sentinel-1
 Imagery Date: 1 November 2020
 Acquisition Time: 08:07:17 UTC
 Resolution: 10m
 Copyright: Copernicus Sentinel Data (2020)
 Source: ESA

Floodwater Depth Model: University of Palermo
 Data Elevation Model: SRTM30 PLUS
 Administrative boundaries: UN/FAO Philippines ADM
 Population data: WorldPop (2020)
 Reference Water: The European Commission's Joint Research Centre
 Road: Open Street Map
 Background: Bingmaps (2019)

Analysis: UNITAR-UNOSAT
 Production: UNITAR-UNOSAT

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Satellite detected waters in Albay and Camarines Sur Provinces, Region V of Philippines as of 1 November 2020

This map illustrates satellite-detected surface waters in Albay and Camarines Sur provinces of Philippines as observed from a Sentinel-1 image acquired on 1 November 2020 at about 17:57 local time. Within the analyzed area of about 5,000 km², a total of about 240 km² of lands appear to be flooded. Based on Worldpop population data and the detected surface waters, about 160,000 people are potentially exposed or living close to flooded areas.

This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR-UNOSAT.

Important Note: Flood analysis from radar images may underestimate the presence of standing waters in built-up areas and densely vegetated areas due to backscattering properties of the radar signal.

Legend

-  Airport
-  Village
-  City/Town
-  Primary road
-  Secondary road
-  Local road
-  Railway
-  Province boundary
-  Municipality boundary
-  Analysis extent
-  Reference water
-  Satellite detected water [1 November 2020]

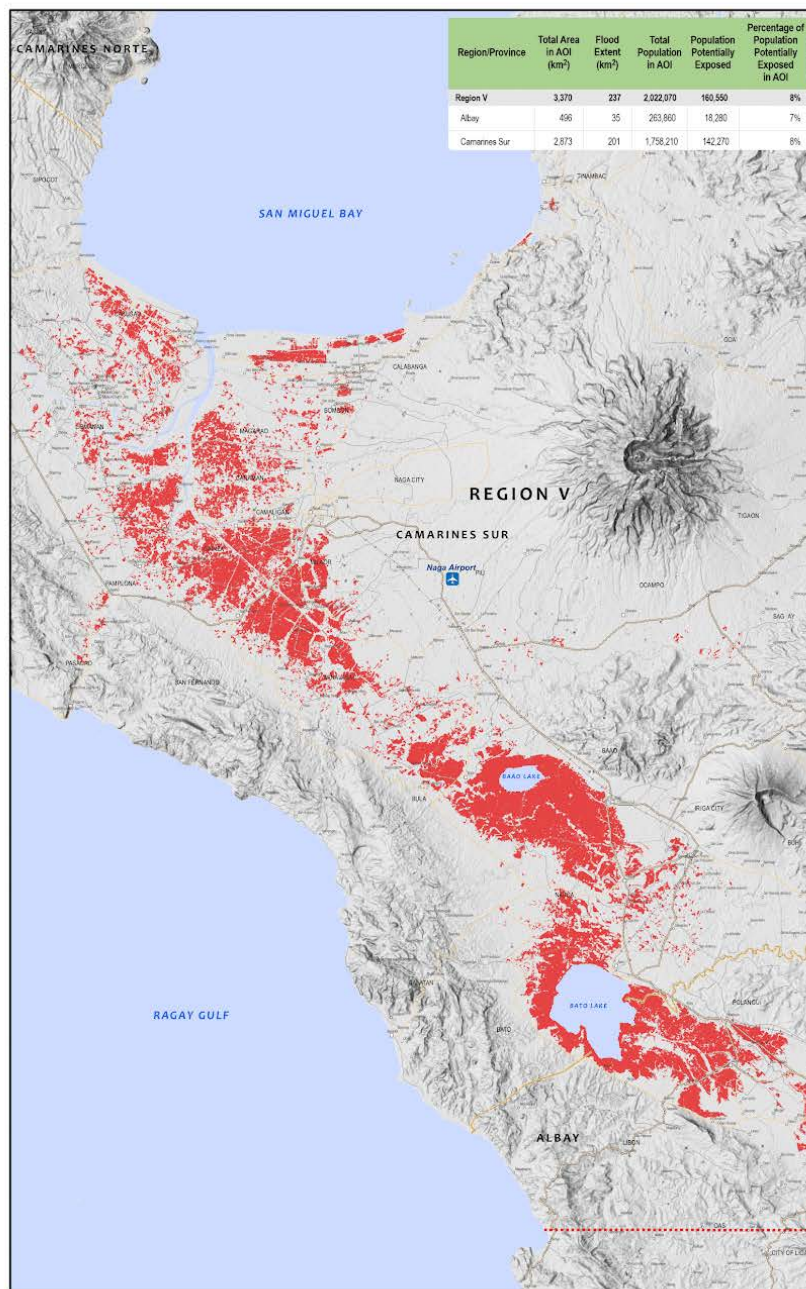


Map Scale for A3: 1:250,000



Analysis conducted with ArcGIS v10.7

Coordinate System: WGS 1984 UTM Zone 51N
 Projection: Transverse Mercator
 Datum: WGS 1984
 Units: Meter



Satellite Data: Sentinel-1
 Imagery Date: 1 November 2020
 Acquisition Time: 18:57 UTC
 Resolution: 10m
 Copyright: Copernicus Sentinel Data (2020), Imagery: Copernicus Sentinel Data (2020), Imagery: Copernicus Sentinel Data (2020)
 Source: ESA

Administrative boundaries: CCIA Philippines, INC.
 Population data: WorldPop (2018)
 Reference Water: The European Commission's Joint Research Centre
 Background: JALOS Global DSM

Analysis: UNITAR-UNOSAT
 Production: UNITAR-UNOSAT

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Sentinel ASIA through Earth Observatory Singapore ARIA-SG

