

This Situation Update is provided by the AHA Centre for use by 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 and news agencies.



IMPACTS OF TYPHOON MANGKHUT 'OMPONG' IN THE PHILIPPINES



Estimated cost of
damages to
infrastructure

₱ 6.92 Billion [USD 128 Million]



Estimated cost of
damages to
Agriculture

₱ 26.8 Billion [USD 493 Million]

Typhoon Mangkhut 'Ompong' is the 3rd tropical cyclone for the month of September 2018. The typhoon developed from an area of low pressure situated over the Marshall Islands 7 September 2018. The typhoon made landfall over the remote portion of Baggao, Cagayan at 1:40 AM on September 15, 2018. This natural phenomena has caused secondary incidents such as landslide, flooding, road slip, land subsidence, and vehicular accident. The impacts are on human casualties and infrastructures.



Partially damaged
houses

135,324



Totally damaged
houses

11,143



Affected
barangays

5,032



Affected
roads

325



Affected
bridges

8



Affected
persons

2,398,961



Affected
families

561,247



Injured

134



Death

23



Missing

2

Update 27-Sep-18 [6 AM]

Source: www.ndrrmc.gov.ph

1. HIGHLIGHTS

- a. Based on Situation Report Number 44 from the National Disaster Risk Reduction and Management Council ([NDRRMC](#)) of the Philippines, a total of **561,247 families / 2,398,961 people** were affected in 5,032 barangays, 481 cities/municipalities, and 31 provinces in in Regions I, II, III, Cordillera Administrative Region (CAR), National Capital Region (NCR), CALABARZON, and MIMAROPA. The number of temporarily displaced people further decreased to around **22,045 people / 5,218 families** inside and outside evacuation centres.
- b. An updated estimation suggests the total cost damages and losses in Regions I, II, III, CALABARZON, V, and CAR is around PHP 33.7 billion (USD 621 million) ([NDRRMC](#)). This accounted for around PHP 26.8 billion (USD 493 million) in loss of agriculture sector and PHP 6.92 billion (USD 128 million) damages to infrastructure.
- c. ASEAN-ERAT regional specialists are providing information management support for the Emergency Operations Centre of the NDRRMC (infographic on Page 1). Locally procured ASEAN relief items are being delivered to the affected areas, starting from 24 September 2018. The AHA Centre's assistance has been received in the 4 worst affected regions:

	Received		
	Generator set	Rice (sacks)	Tarpaulin (rolls)
Region I	1	-	-
Region II	1	300	-
Region III	1	-	1,000
CAR	1	300	20

- d. As agricultural damages to staples are high with huge areas being inundated as a result of the typhoon, the demand for these staples will increase significantly over the next quarter. As the weather is transitioning towards Northeast Monsoon (Amihan), there should be forward planning measures to stockpile food in anticipation of the next typhoon season as PAGASA had forecasted 6 to 8 typhoons to develop or enter PAR between October 2018 and March 2019.
- e. Compilation of Situation Updates, Flash Updates, and other information products of the AHA Centre is accessible through the following link:
<https://ahacentre.org/typhoon-mangkhut-ompong-updates/>

2. SUMMARY OF EVENTS, FORECAST AND ANTICIPATED RISK

- a. Accumulated report until 27 September 2018 indicates that a total of 402 areas were flooded in Region I, III, CALABARZON, and MIMAROPA. Recent progress suggests flood water already subsided in 191 areas (47.5%) within Bautista, Pangasinan Province (Region I), Butaan Province (Region III) and Occidental Mindoro Province (MIMAROPA) ([NDRRMC](#)).
- b. Cumulative rainfall and track of Super Typhoon Mangkhut "Ompong" is as shown below:



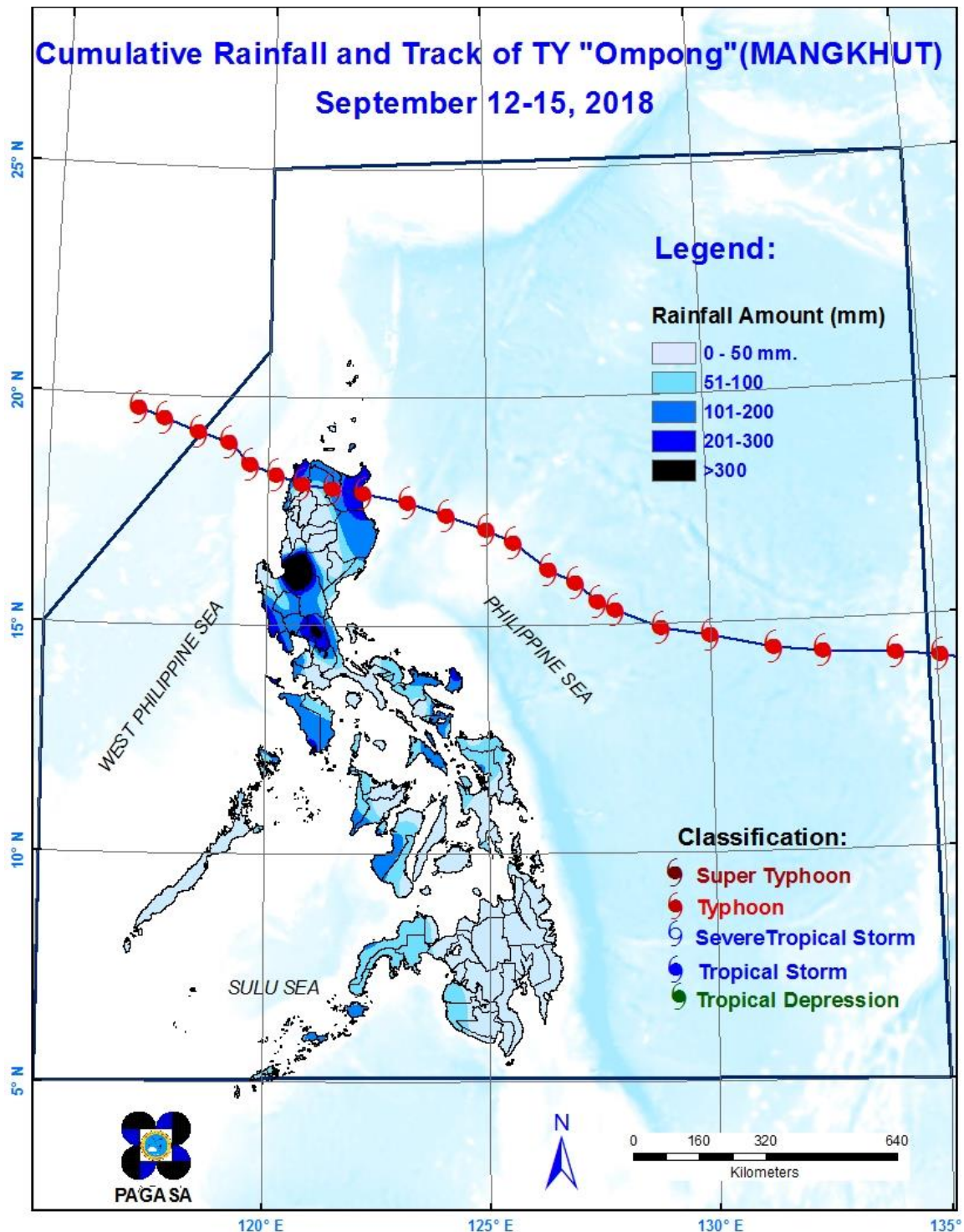


Figure 1: Cumulative Rainfall and Track of Typhoon Mangkhut "Ompong", Source: [PAGASA](#)

- c. Some of the weather systems which affect the Philippines are illustrated in Figure 2 below. The Southwest Monsoon (Habagat) will transition to the Northeast Monsoon (Amihan) within the next few weeks between late September and early October.

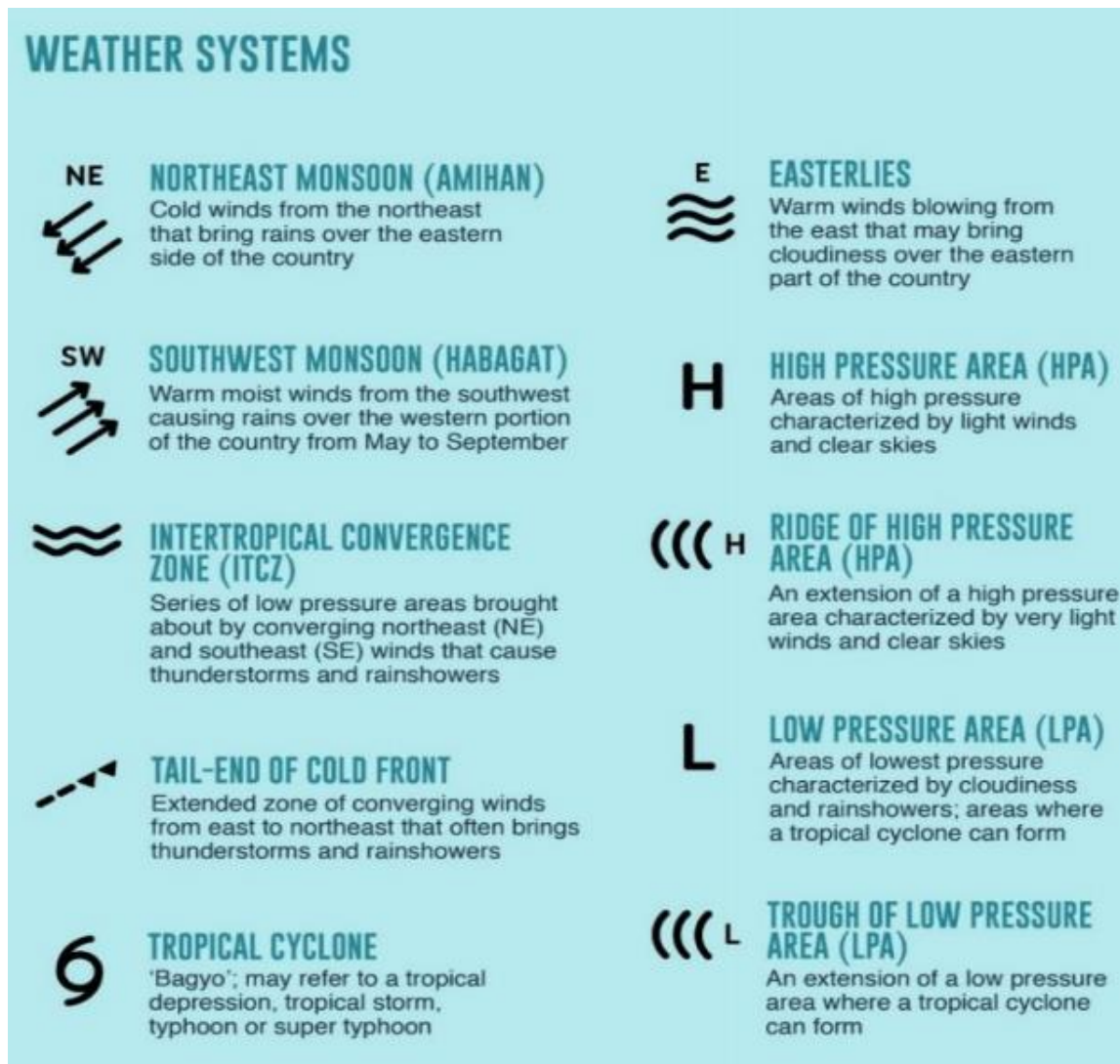


Figure 2: Weather systems which affect Philippines, Source: [PAGASA](https://www.pagasa.dost.gov.ph/)

- d. [PAGASA](https://www.pagasa.dost.gov.ph/) has forecasted that for October 2018: most parts of Luzon will likely experience below normal rainfall condition while most parts of Visayas and Mindanao will likely receive near normal rainfall. For November 2018: below normal rainfall in most parts of northern Luzon, western Visayas and some parts of Mindanao while the rest of the country will likely receive near normal rainfall; and for December 2018, below normal conditions in most areas of Luzon, while generally near normal over the Visayas and Mindanao (Figure 3).

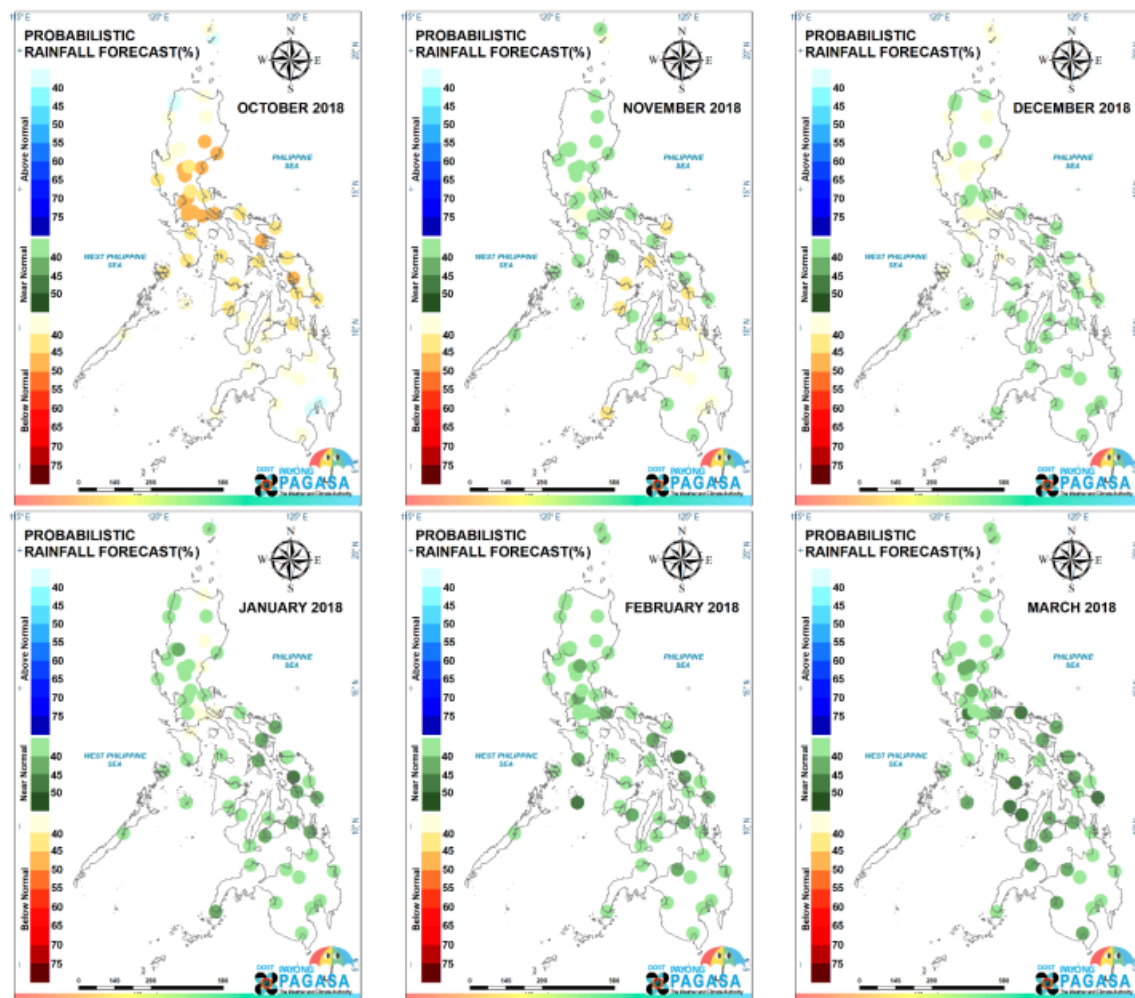


Figure 3: Probabilistic rainfall forecast between October and March 2019 (typo of dates in the provided figure), Source: [PAGASA](#)

- e. PAGASA is expecting generally near average to slightly warmer than average temperature for the next 6 months with a likelihood of 6 to 8 tropical cyclones to develop or enter Philippines Area of Responsibility (PAR). Most areas of Luzon are expected to enter a meteorological dry spell to drought conditions (Figure 4) between December 2018 and March 2019. This is due to the Northeast Monsoon (Amihan) which typically dominates the weather with cooler and drier conditions.

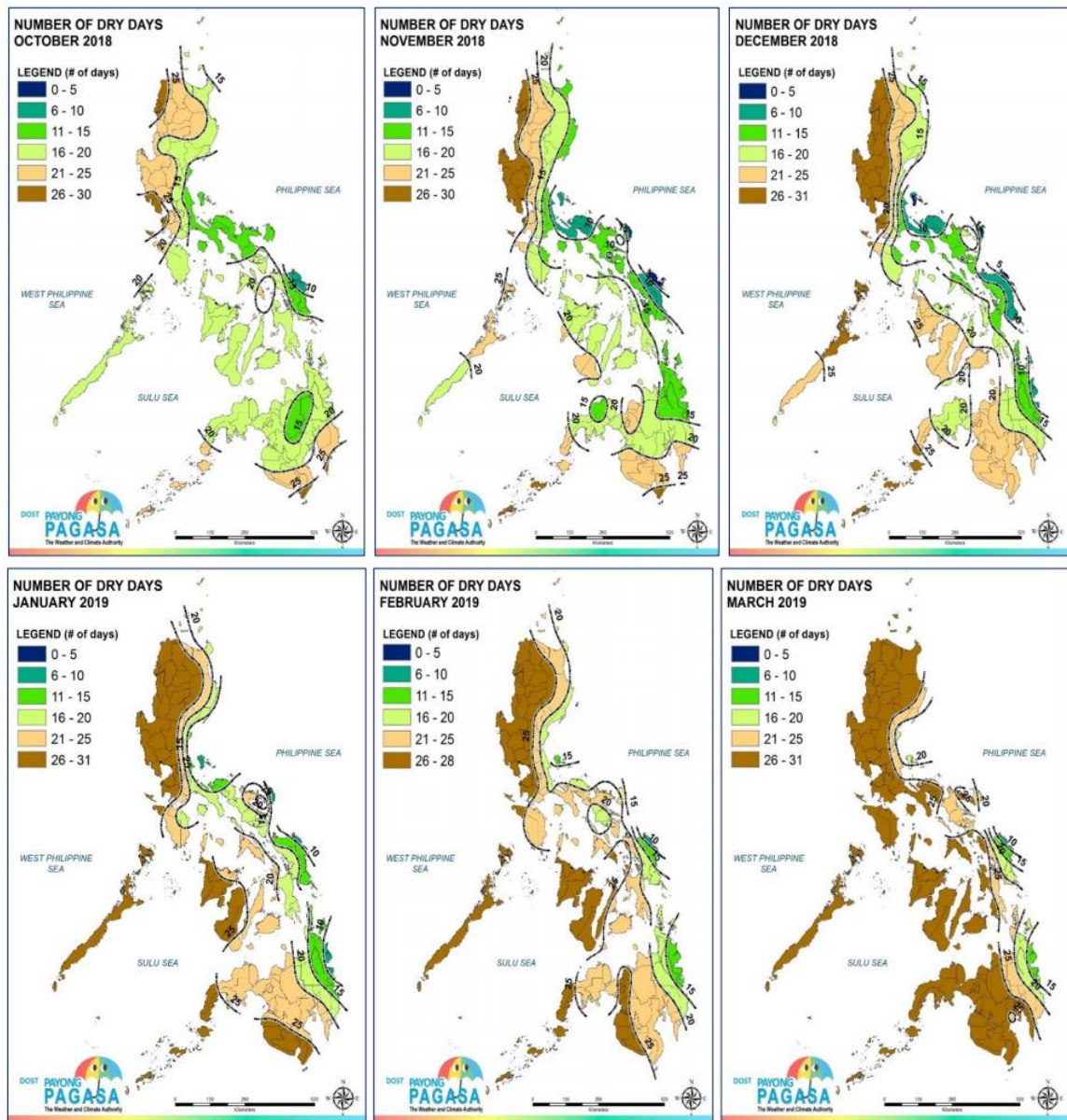


Figure 4: Number of dry days between October and March 2019 Source: [PAGASA](#)

- f. [PAGASA](#) has "PAENG" (Figure 5) may bring light to at times moderate rains over Northern Luzon on Friday (28 September). Sea travel remains risky over the northern and eastern seaboard of Luzon and the eastern seaboard of Visayas. It is expected to exit the Philippine Area of Responsibility (PAR) on Saturday morning (29 September).

Track of Typhoon "PAENG" {TRAMI}

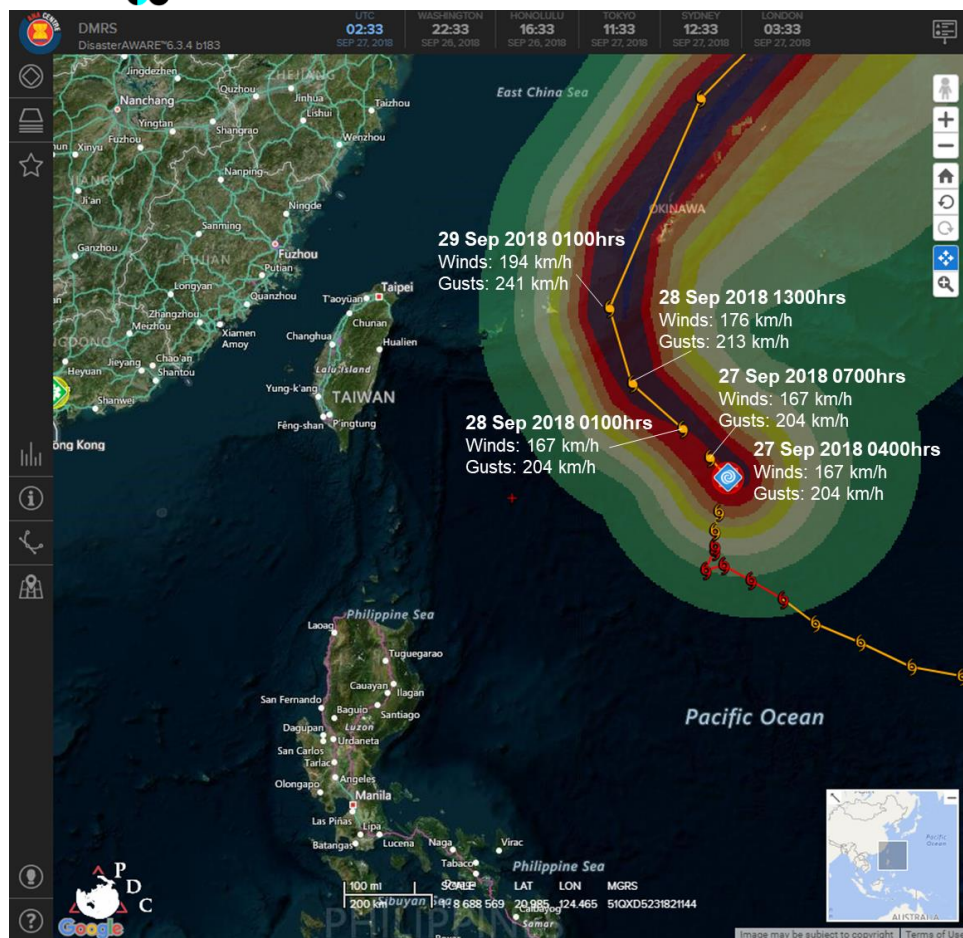
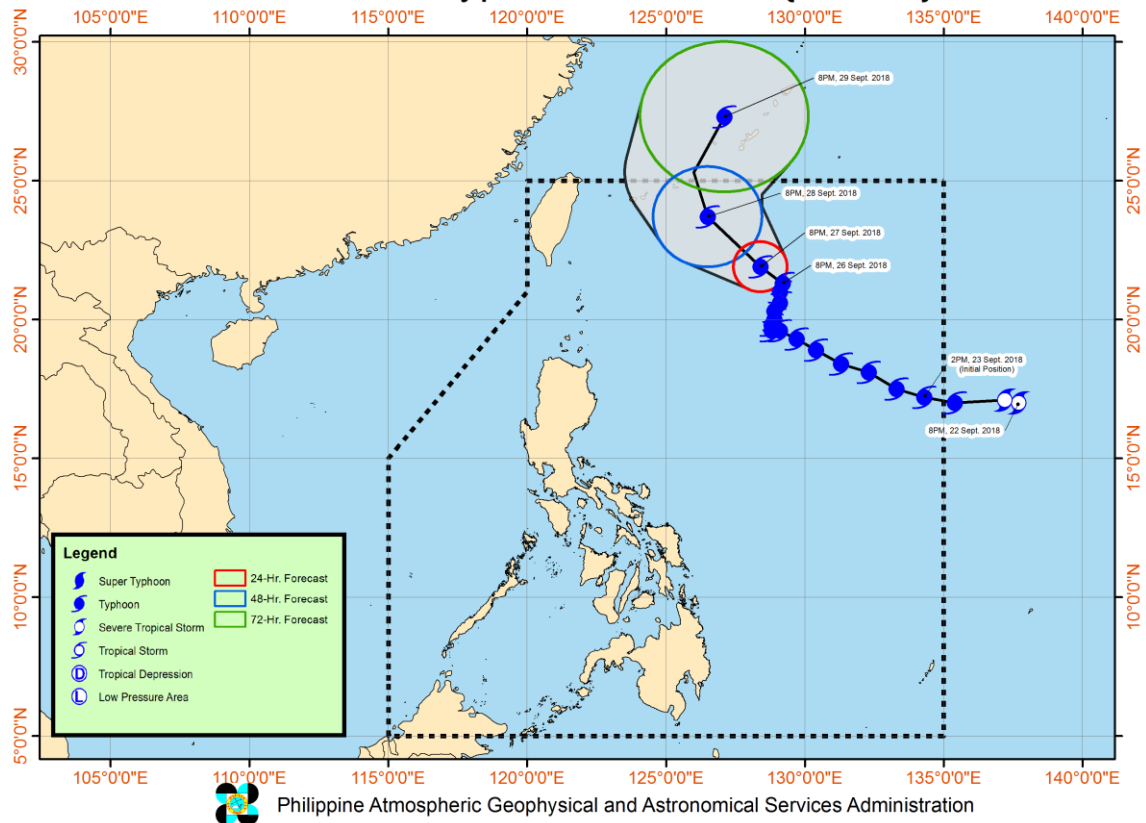


Figure 5: Forecasted track of Typhoon Trami "Paeng"



3. ASSESSMENT OF DAMAGE, IMPACT, AND HUMANITARIAN NEEDS

- a. As of 26 September 2018, the NDRRMC has confirmed and verified 23 fatalities, 134 injuries and 2 missing persons in Region I, III, CAR, and NCR ([NDRRMC](#)). The related authorities are still in the process of validation of missing and dead in these affected areas.
- b. Based on Situation Report Number 42 from the National Disaster Risk Reduction and Management Council ([NDRRMC](#)) of the Philippines, a total of **561,247 families / 2,398,961 people** were affected in 5,032 barangays, 481 cities/municipalities, and 31 provinces in in Regions I, II, III, CAR, NCR, CALABARZON, and MIMAROPA. The accumulation of affected people was due to suspension of classes in 948 cities and 228 work activities in government offices. As of 27 September, 877 cities/municipalities (92.4%) of affected areas have resumed their activities, indicating a resume to normalcy.
- c. A total of 22,045 people / 5,218 families are seeking refuge inside and outside evacuation centres across the affected regions ([NDRRMC](#)). There are currently 68 evacuation centres still open, sheltering 3,760 people / 1,004 families (around 17.06 % from the total IDPs). It is a further decrease from the record in the previous report, with the distribution of IDPs remains concentrated in Region I, II, III, and CAR.
- d. The confirmed number of damaged houses (total and partial damages) in Region I, II, III, and CAR has further increased to 146,467 houses ([NDRRMC](#)). This includes 11,143 totally damaged houses and 135,324 partially damaged houses. The distribution of the updated housing damages information can be found in **Figure 7**. As can be seen in Figure 6, Cagayan Province is the worst hit area, with 7,788 houses totally damaged and 63,523 houses partially damaged.
- e. Until 26 September 2018, 134 areas have their electricity supplied (around 67%) from the total 198 areas experiencing power interruption in Region I, CALABARZON, V, VIII, IX, X, CAR, and NCR experienced power interruption ([NDRRMC](#)).
- f. As of 27 September 2018, 296 road sections have been cleared from rubbles and are passable. This is around 90.2% of the road sections affected following the typhoon landfall (initially 324 road sections closed down). In addition, 6 out of 8 affected bridges are now passable ([NDRRMC](#)).
- g. An updated estimation of damage and losses in Regions I, II, III, CALABARZON, V, and CAR suggests in total around PHP 33,692,891,286 (USD 621 million). This accounted for around PHP 26,769,717,988 (USD 493 million) in loss of agriculture sector no update) and PHP 6,923,173,298 (USD 128 million) damages to infrastructure. **Figure 6** on the right describe the proportion of damages to infrastructure in Region I, II, III, V, CALABARZON, and CAR. The damage cost to the health facilities has been calculated, i.e. around PHP 41.6 million (USD 767,534). Most of the damages observed from Region I, II, and CAR.

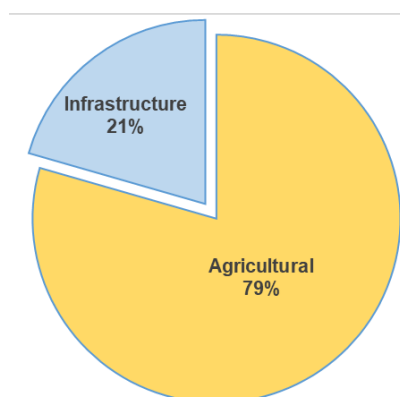


Figure 6 Cost of damages by sector (as of 27 September 2018, data source: [NDRRMC](#))

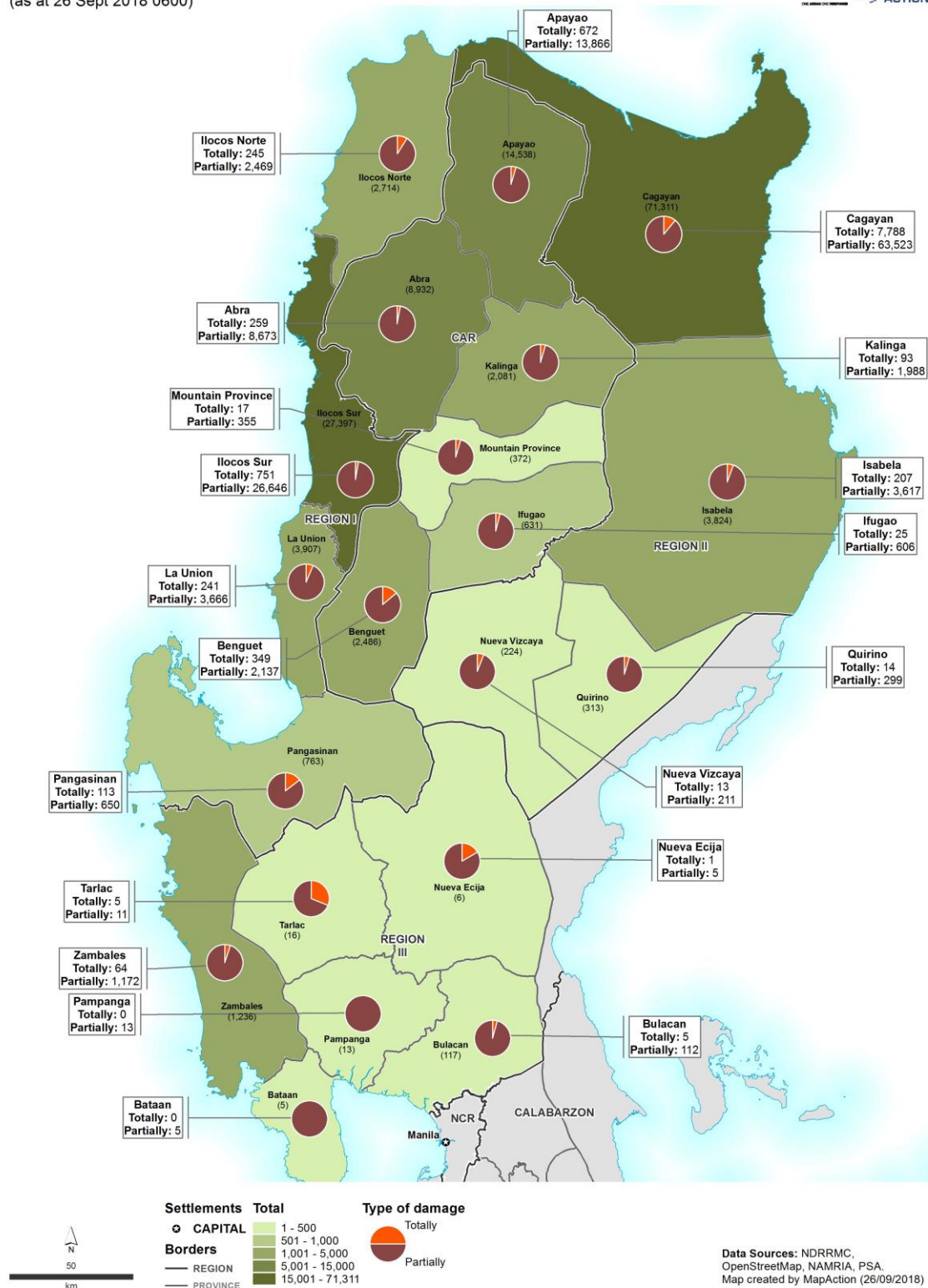


Figure 7: Reported number of partially and totally destroyed houses (as of 26 September 2018, data source: NDRRMC)

4. ACTIONS TAKEN AND RESOURCES MOBILISED

Response by Government of the Philippines

- a. The release of EAWM for alerting the public on Typhoon Trami is ongoing. A total of eight (8) provinces and seven (7) cities/municipalities were declared under state of calamity.
- b. A total of PHP 111,120,535 (around USD 2.11 million) worth of assistance has been provided by Office of Civil Defense, Department of Health, Department Social Welfare and Development, Local Government Units, and NGOs (NDRRMC) to Regions I, II, III, MIMAROPA, NCR, and CAR until 26 September. From the latest amount, around PHP 125 million worth of assistance has been channeled to be absorbed at the local level, i.e. around 81.6% of the standby assistance and stockpiles prior to the landfall (an increase of around 18.5% from previous report). Figure 8A below provides distribution of assistance until 27 September 0600hrs, in comparison with the previous day and to the stand-by funds and assistance prior to the landfall.

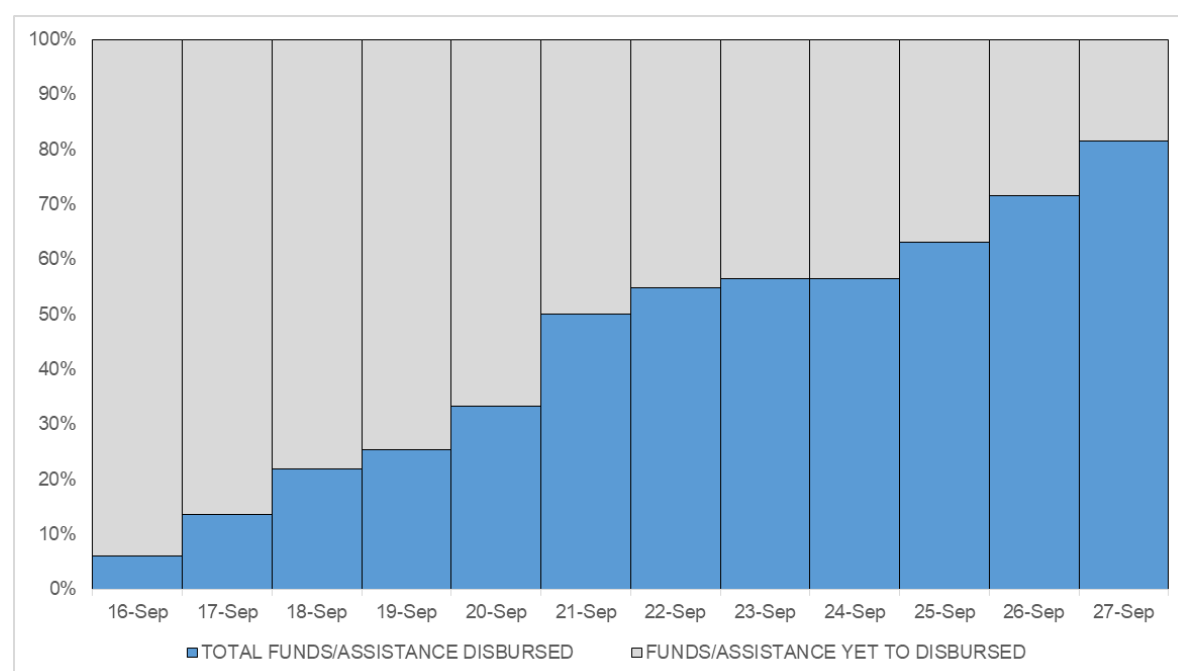


Figure 8A: Progress of Assistance Disbursement and Mobilisation by OCD, DOH, DSWD, LGUs and NGOs until 27 September 2018 (based on data from [NDRRMC](#))

Furthermore, Figure 8B shows the progress of disbursement and mobilisation by region. The key update is an increase of around PHP 28 million worth of assistance to Region I, Region III and MIMAROPA as can be seen in green line of Figure 8B.

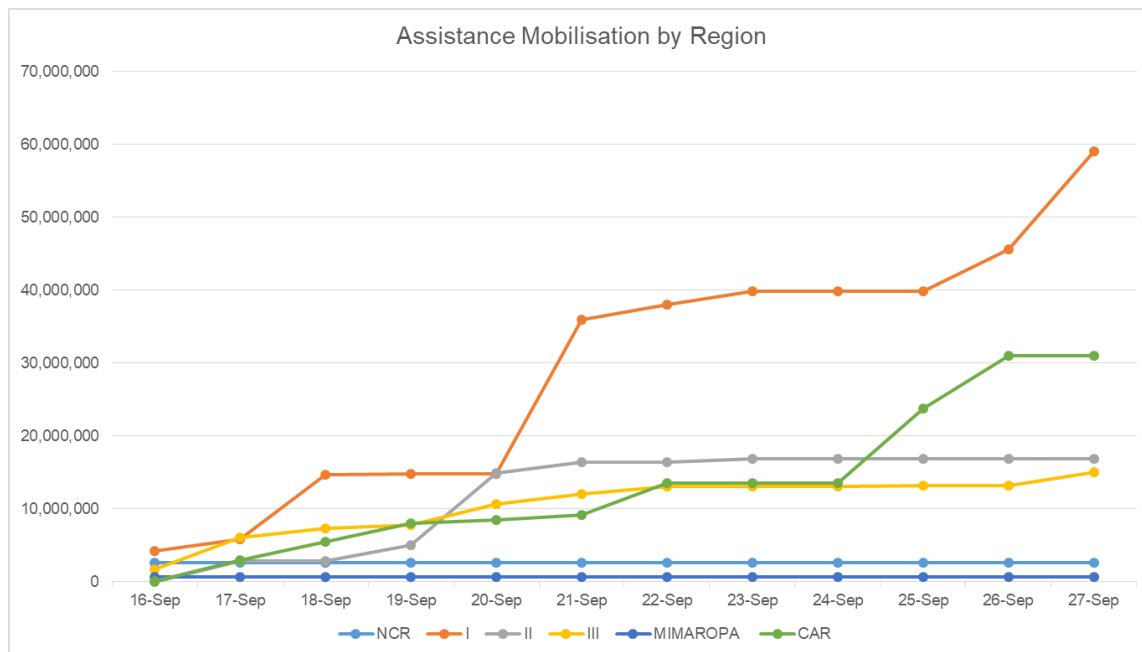


Figure 8B: Progress of Assistance Disbursement and Mobilisation by OCD, DOH, DSWD, LGUs and NGOs until 26 September 2018: Value of assistance distribution (in PHP) by region (based on data from [NDRRMC](#))

Response by the AHA Centre

- The AHA Centre's Executive Director and Director of Operations were in Region II on 25 September discussing with the Municipal Mayor, Mr Washington M. Taguinod on the impact of the disaster (Figure 9).



Figure 9: Discussion with Region II Municipal Mayor

- b. Mr. Dante D. Balao, the Regional Director of Office of Civil Defense Regional Office II, in Tuguegarao, Cagayan briefed the Executive Director (Adelina Kamal) and Operations Director (Arnel Capili) of the AHA Centre during the visit on 25 September, on the latest situation and the preparedness efforts that have been put in place within the communities. He also explains how radio-communication has helped him coordinate and monitor the situation isolated islands of the region (Figure 10).



Figure 10: Briefing by Regional Director of OCD RO II in Tuguegarao

- c. AHA Centre's relief items have been delivered to the affected regions to be disbursed by the respective Regional Offices (Figure 11 to 13):



Figure 11: Delivery of rice and tarpaulin in CAR



Figure 12: Delivery of generator set to Region II



Figure 13: Delivery of generator set to Region II

- d. The ASEAN-ERAT Information Management Specialists supporting and carrying out analysis in NDRRMC's office (Figure 14).



Figure 14: ASEAN-ERAT Information Management Specialists hard at work






Response by ASEAN Dialogue Partner(s) (in alphabetical order)

- e. The European Union is currently assessing the shelters' condition in coastal areas in Cagayan as well as the mountainous areas of CAR Region. (Source: https://twitter.com/ECHO_Asia/status/1044450341217923072)

Response by Humanitarian and Other Partners

- f. Handicap International - Humanity and Inclusion (HI) had distributed debris clearance kits to Pinukpuk municipality to help with the clearance of blocked roads and public areas. They have assessed that 90% of maize plantations and 60% of rice plantations were flattened in the municipality.
- g. Philippines Red Cross (PRC) has updated the following actions in their 25 September report (Figure 15). PRC Chapters continue to respond to the situation in their respective areas of responsibility, such as coordination with their respective local government units for response such as providing food and other assistance for the displaced families.

Philippine Red Cross Actions¹

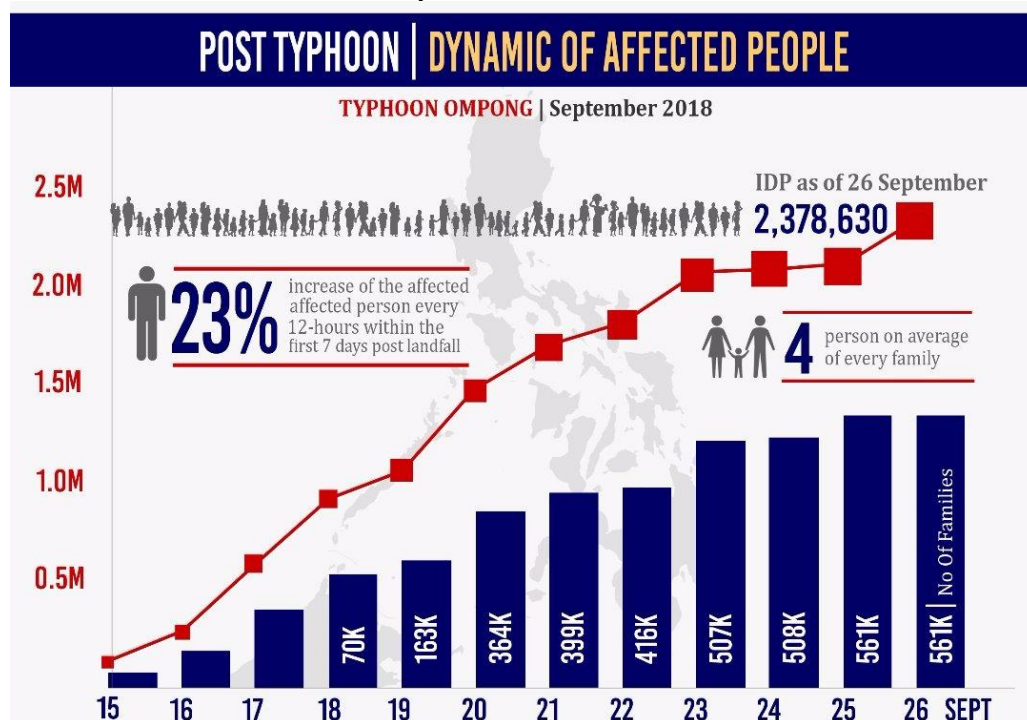
	53 individuals rescued and assisted 440 individuals provided with first aid management and assisted with BP taking 2,000 pcs of doxycycline delivered to Pangasinan
	289 families provided with Food Packs (2-3 days ration) 690 families provided with Food Packs (assorted) 18,700 individuals served with Hotmeals 10,343 individuals served with biscuits 3,665 individuals served with bread 171 individuals served with bottled water 1,416 families provided with blanket 9 individuals provided with thermal blanket 1,403 families provided with sleeping mats (1pc each) 1,165 families provided with mosquito nets 1,165 families provided with tarpaulins
	25 welfare desks established 10,494 individuals provided with psychosocial support 8 individuals provided with RFL service
	145,837 liters of safe water distributed 2,976 individuals provided with hygiene promotion awareness 13 families provided with assorted hygiene items 1,165 families provided with hygiene kits
	3 Assessment Teams deployed, covering Cagayan, Isabela, Kalinga, Ifugao, and Benguet 2 ERU-SAR Teams deployed in Cagayan and Benguet 5 Operational Coordinators deployed to support Cagayan, Baguio City, and Benguet Chapters 3 Humanitarian Caravans deployed to Cagayan, Isabela, and Baguio City

For further exploration please see https://philippineredcross.github.io/Ompong_3W/

Figure 15: Philippine Red Cross Chapters actions

5. POST EVENT ANALYSIS

- f. Following landfall in the early morning of 15 September, assessment teams which were prepositioned on 13 September prior to the event could not be dispatched due to the bad weather until after 16 September. Despite the adverse conditions, the data stream was constant for the first week (Figure 16) as depicted in the trend line. This allows the relevant authorities to quickly grasp the gravity of the situation and direct assistance towards the adversely affected weather.



Date	Time	Rate of Change (%) over 12 hour period		
		Affected people	Affected households	Displaced people
15-Sep	1800hrs	-	-	-
16-Sep	0600hrs	81.3%	83.2%	95.6%
	1800hrs	8.1%	10.1%	4.0%
17-Sep	0600hrs	118.9%	110.2%	42.4%
17-Sep	1800hrs	12.5%	10.8%	12.0%
18-Sep	0600hrs	34.2%	33.7%	-4.0%
	1800hrs	7.8%	7.0%	-24.8%
19-Sep	0600hrs	13.8%	13.1%	-16.4%
	1800hrs	0.0%	0.0%	0.0%
20-Sep	0600hrs	31.0%	30.6%	-6.0%
	1800hrs	6.7%	5.7%	-8.4%
21-Sep	0600hrs	6.6%	6.4%	0.7%
	1800hrs	2.8%	2.8%	-16.4%
22-Sep	0600hrs	2.9%	3.0%	-46.9%
	1800hrs	1.4%	1.4%	-1.3%
23-Sep	0600hrs	22.2%	21.9%	1.0%
	1800hrs	0.0%	0.0%	-13.2%
24-Sep	0600hrs	0.0%	0.0%	-2.2%
	1800hrs	0.0%	0.0%	-0.1%
25-Sep	0600hrs	0.3%	0.4%	-42.9%
	1800hrs	0.0%	0.0%	-0.4%
26-Sep	0600hrs	11.7%	10.0%	-15.2%
	1800hrs	0.0%	0.0%	0.0%

Table 1: Rate of change over 12 hour period for affected individuals, household and displaced.

- h. Comparing the data to date (Table 2) with Typhoon Haima “Lawin” which occurred on 17 Oct 2016, both were categorised as “super typhoon” but the magnitude in damages is 2.5 times more for infrastructure damages and 26.4 times more for agricultural damages. Even with the excellent preparedness measures taken by Government of Philippines for both events, the combined sustained damages still stands at 9 times more compared to the previous event.



Categories	Haima (Oct 16)	Mangkhut (Sep 18)	Magnitude difference
Max sustained winds	225 km/h	200 km/h	-
Gustiness	315 km/h	330 km/h	-
Movement speed	22 km/h	35 km/h	-
Affected individuals (peak)	981,154	2,398,630	2.44
Displaced individuals (peak)	228,695	245,775	1.07
Damaged Houses	90,035	140,886	1.56
Cost of infrastructure damage (pesos)	2,721,799,188	6,923,173,298	2.54
Cost of agricultural damage (pesos)	1,015,922,164	26,769,717,988	26.4

Table 2: Comparison table between Haima and Mangkhut.

- i. 84.8% of the agricultural damage is sustained by rice, corn and cassava crops while the remaining 13.0% was sustained by mango, papaya, bananas and vegetable crops. Fisheries only account for about 0.01% while live-stocks account for 0.17%. The highest recorded damages were reported in Region II followed by Region I.
- j. As agricultural damages to staples are high with huge areas being inundated as a result of the typhoon, the demand for these staples will increase significantly over the next quarter. As the weather is transitioning towards Northeast Monsoon (Amihan), there should be forward planning measures to stockpile food in anticipation of the next typhoon season as PAGASA had forecasted 6 to 8 typhoons to develop or enter PAR.
- k. A comprehensive livelihoods needs assessments including next season typhoon preparedness should be conducted simultaneously to better assess the needs and potential assistance for the affected communities. Stockpiles should also be considered for the next quarter to anticipate the rise in demand for staples including preparedness measures.
- l. Based on the latest figures as of 27 September, most IDPs have returned to their dwellings with only a significant portion being housed outside of evacuation centres. The remaining 18,285 who are being served outside of the evacuation centres are likely individuals whose dwellings sustained damages by the storm. Interesting, Figure 17 depicts that roughly 50% of IDPs return to their dwellings within 3 days (72 hours) after the peak and another wave after 2.5 days (60 hours) and the third wave after 2 days.

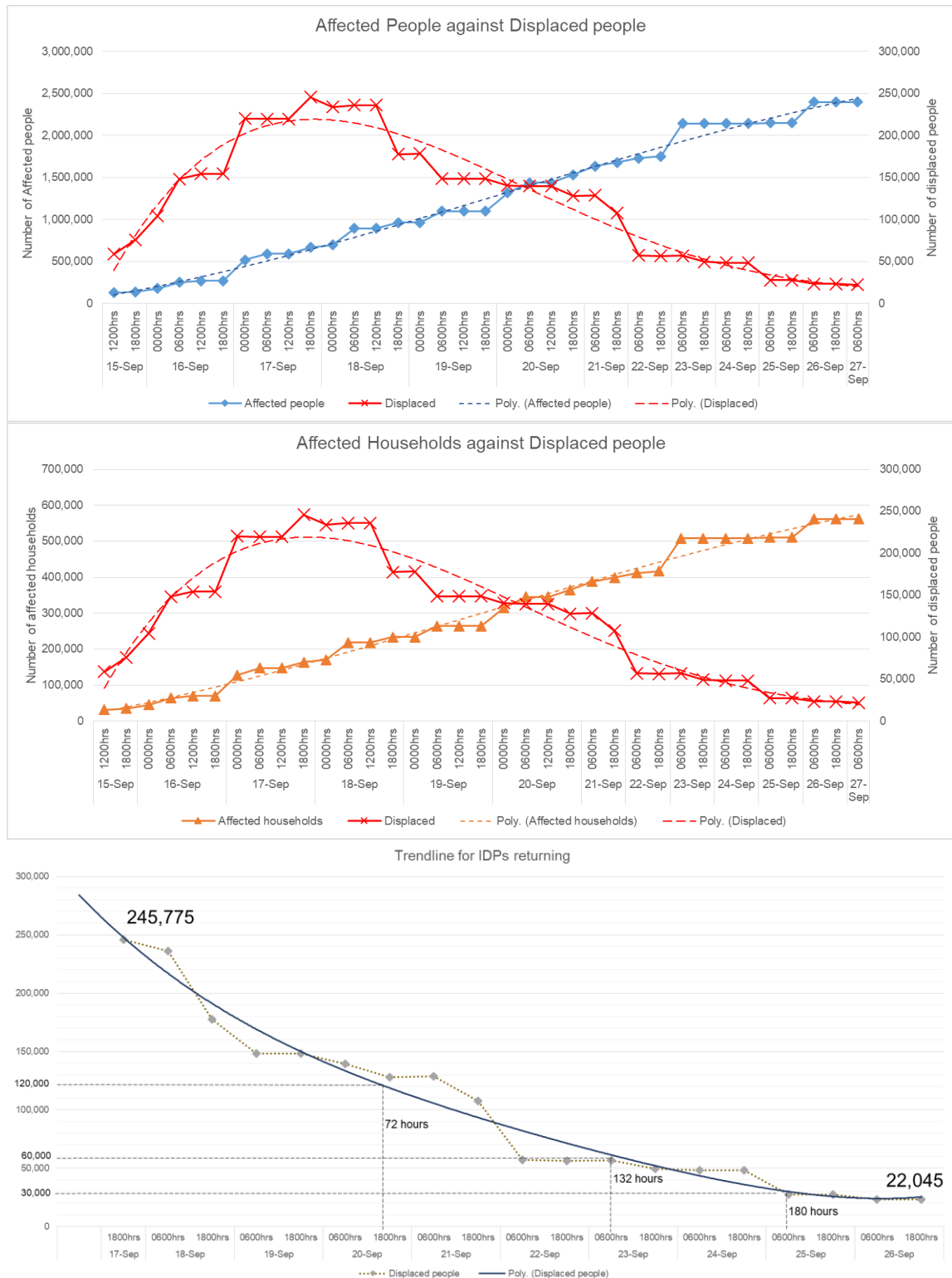


Figure 17: Affected individuals and affected households against displaced individuals

*The affected individuals and households are accumulative figures since the start of the response which follows a linear fashion as depicted by the blue and green trend lines

6. RECOMMENDATIONS AND PLAN OF ACTIONS

Recommendations to be considered by humanitarian partners



- a. Humanitarian partners are advised to monitor weather forecast and warnings regarding anticipated risk due to movement of Tropical Storm Trami. PAGASA is providing tracking service to movement of TS Trami and general flood and landslide advisory: <http://bagong.pagasa.dost.gov.ph/>
- b. In particular, humanitarian partners working at hilly areas within Region CAR should anticipate landslide risk due to weather disturbance brought by TS Trami, which may expose loosen soil in the area. Meanwhile, in low lying area of Region II, extended period of rain may retain inundated areas and may give impetus for health risk in mid-to-long term.
- c. The AHA Centre and Sentinel Asia's DANs are requesting for ground feedback on flooded areas. In addition, based on the recent disaster impact observation, humanitarian partners are advised to enable geotagging function during field assessment for improving understanding on the geographic of the impact.
- d. Humanitarian partners are invited to further share their assessment results, humanitarian operations information, and other insight to the ASEAN-ERAT regional specialists and AHA Centre's EOC for shared analysis to inform collective response to situation in the Region I, II, III, and CAR.
- e. Recommended hashtags that are being used to share updates related to Typhoon Mangkhut are #OmpongPH, #walangpasok (class suspension), #laginghanda (preparedness measure), #ResponsePH, and #ReliefPH

AHA Centre's plans

- a. The AHA Centre's ICLT and ASEAN-ERAT will continue to coordinate closely with the NDRRMC on assistance to be provided by the AHA Centre and other ASEAN stakeholders, i.e. in addition to the information management support and provision of relief items.
- b. The AHA Centre will provide further updates as situation progresses and more information is available.

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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.

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