



SITUATION UPDATE No. 12 - Final Typhoon Mangkhut (Ompong) The Philippines

No. **12**

adinet.ahacentre.org/reports/view/1304 | <https://reliefweb.int/disaster/tc-2018-000149-phi>

Friday, 28 September 2018, 17:00 hrs (UTC+7)

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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 on 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

174,139



Totally damaged houses

13,163



Affected barangays

5,215



Affected roads

325



Affected bridges

8



Affected persons

2,634,617



Affected families

625,293



Injured

134



Death

52



Missing

2

Update 28-Sep-18 [6 AM]

Source: www.ndrrmc.gov.ph



SITUATION UPDATE

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 **625,293 families / 2,634,617 people** were affected in 5,215 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 **21,324 people / 5,063 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 have supported the Emergency Operations Centre of the NDRRMC for the past week and are demobilising today. Locally procured ASEAN relief items have all been delivered to the affected areas by 26 September 2018. The AHA Centre's assistance was received by the regional offices 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 28 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. [PAGASA](#) warned that sea travel remains risky over the northern and eastern seabords of Luzon and the eastern seaboard of Visayas."PAENG" is expected to exit the Philippine Area of Responsibility (PAR) on Saturday morning (29 September).

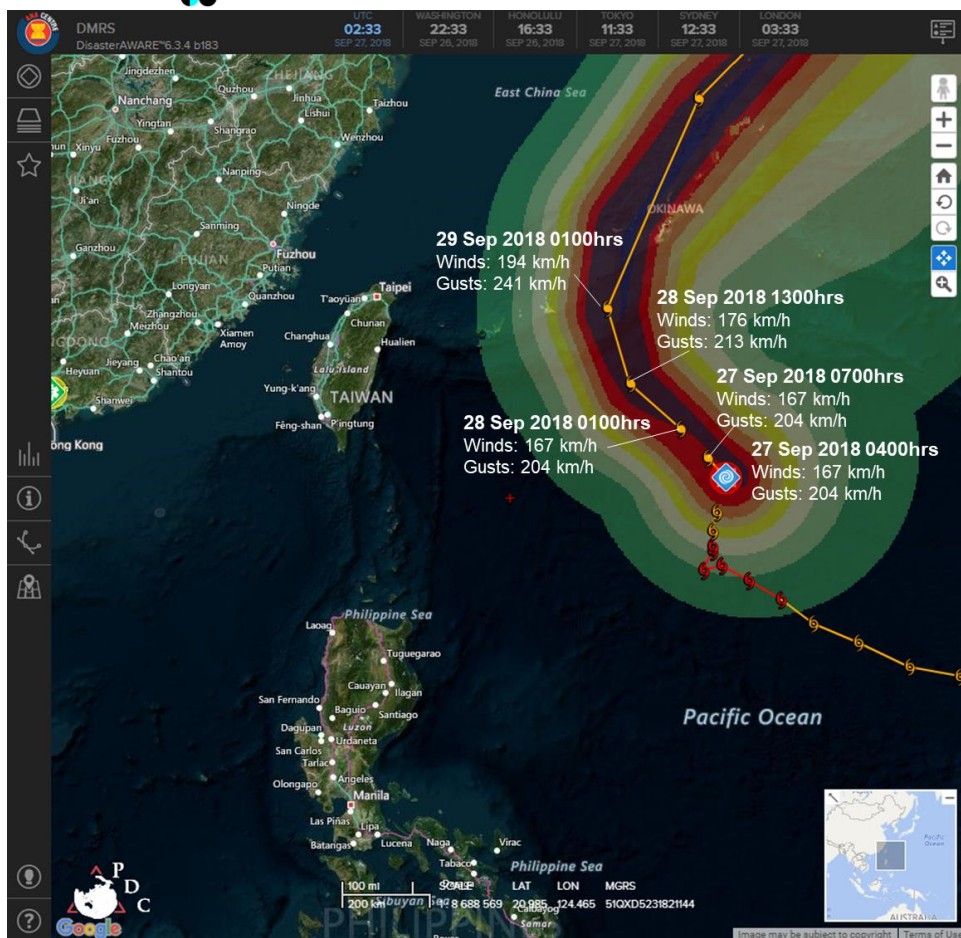
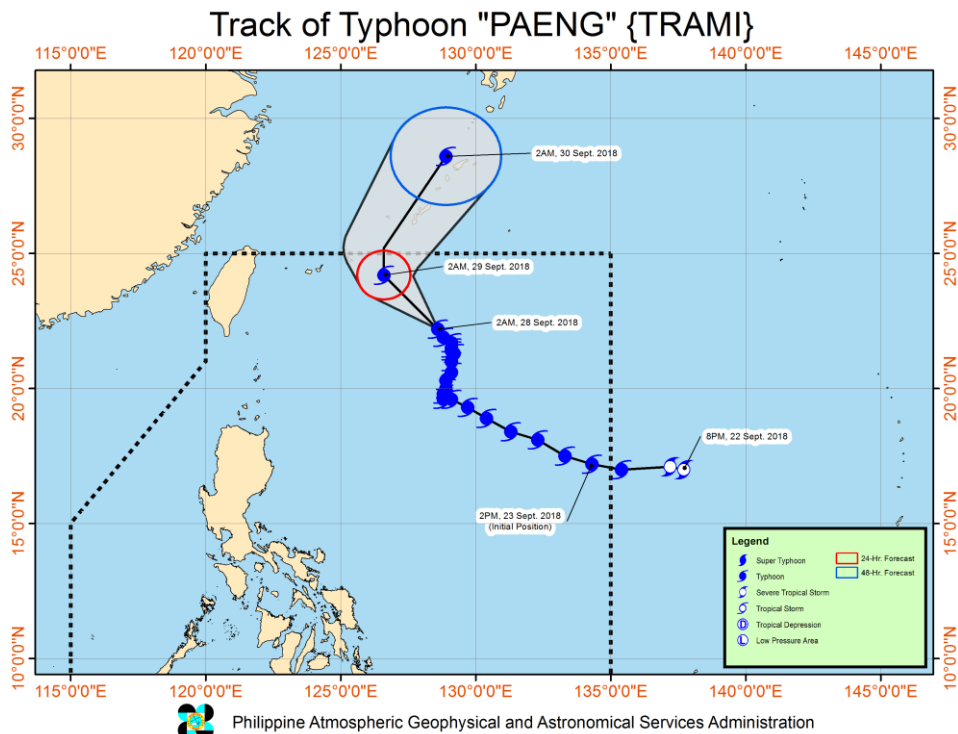


Figure 1: Forecasted track of Typhoon Trami "Paeng"



3. ASSESSMENT OF DAMAGE, IMPACT, AND HUMANITARIAN NEEDS

- a. As of 26 September 2018, the NDRRMC has confirmed and verified 52 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 **625,293 families / 2,634,617 people** were affected in 5,215 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 28 September, 877 cities/municipalities (92.4%) of affected areas have resumed their activities, indicating a resume to normalcy.
- c. A total of 21,324 people / 5,063 families are seeking refuge inside and outside evacuation centres across the affected regions ([NDRRMC](#)). There are currently 68 evacuation centres still open, sheltering 3,687 people / 990 families (around 17.3 % 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. Until 28 September 2018, 135 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](#)).
- e. As of 28 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](#)).
- f. 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. 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.
- g. The breakdown of damages are shown in Figure 2 with Region II totaling damages in PHP 15.3 billion. The breakdown shows that CALABARZON and Region VI sustained damages mostly in agricultural sector rather than infrastructure. However, the full extent of the assessment is still undergoing till this date.
- h. 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 5**. As can be seen in Figure 5, Cagayan Province is the worst hit area, with 7,788 houses totally damaged and 63,523 houses partially damaged.
- i. Detailed maps of the agricultural damages developed by MapAction are available on ReliefWeb



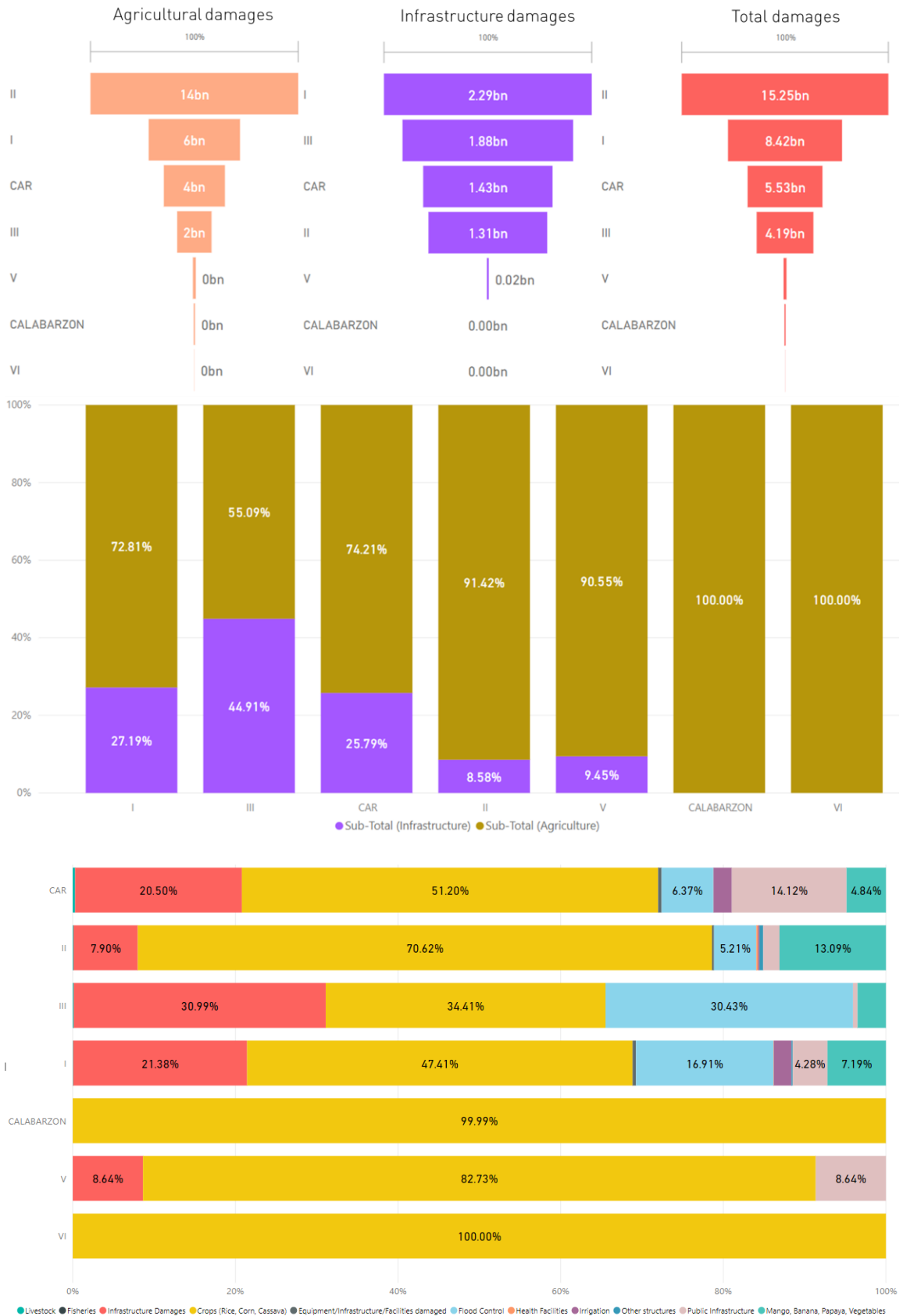


Figure 2: Breakdown of damages by sector (as of 28 September 2018, data source: [NDRRMC](#))



j. Figures 3 and 4 depict the breakdown of damages by sector. Flood control infrastructure sustained the highest amount of damages totaling PHP 4.96 billion which constitutes 71.7%. Public infrastructure includes road sections and bridges which were affected and it takes up 26.4% totaling PHP 1.83 billion.

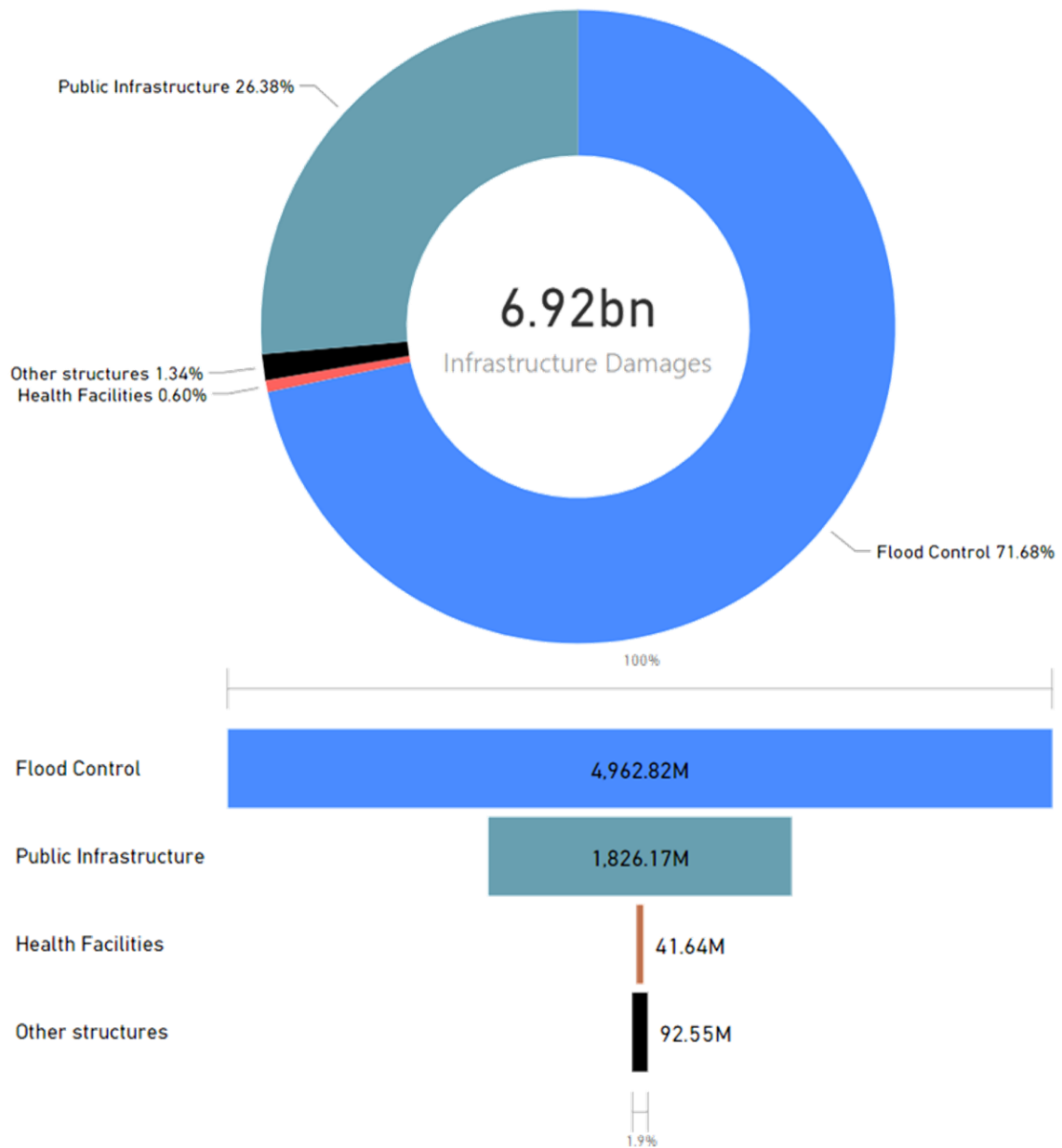


Figure 3: Breakdown of damages for infrastructure damages (as of 28 September 2018, data source: [NDRRMC](#))



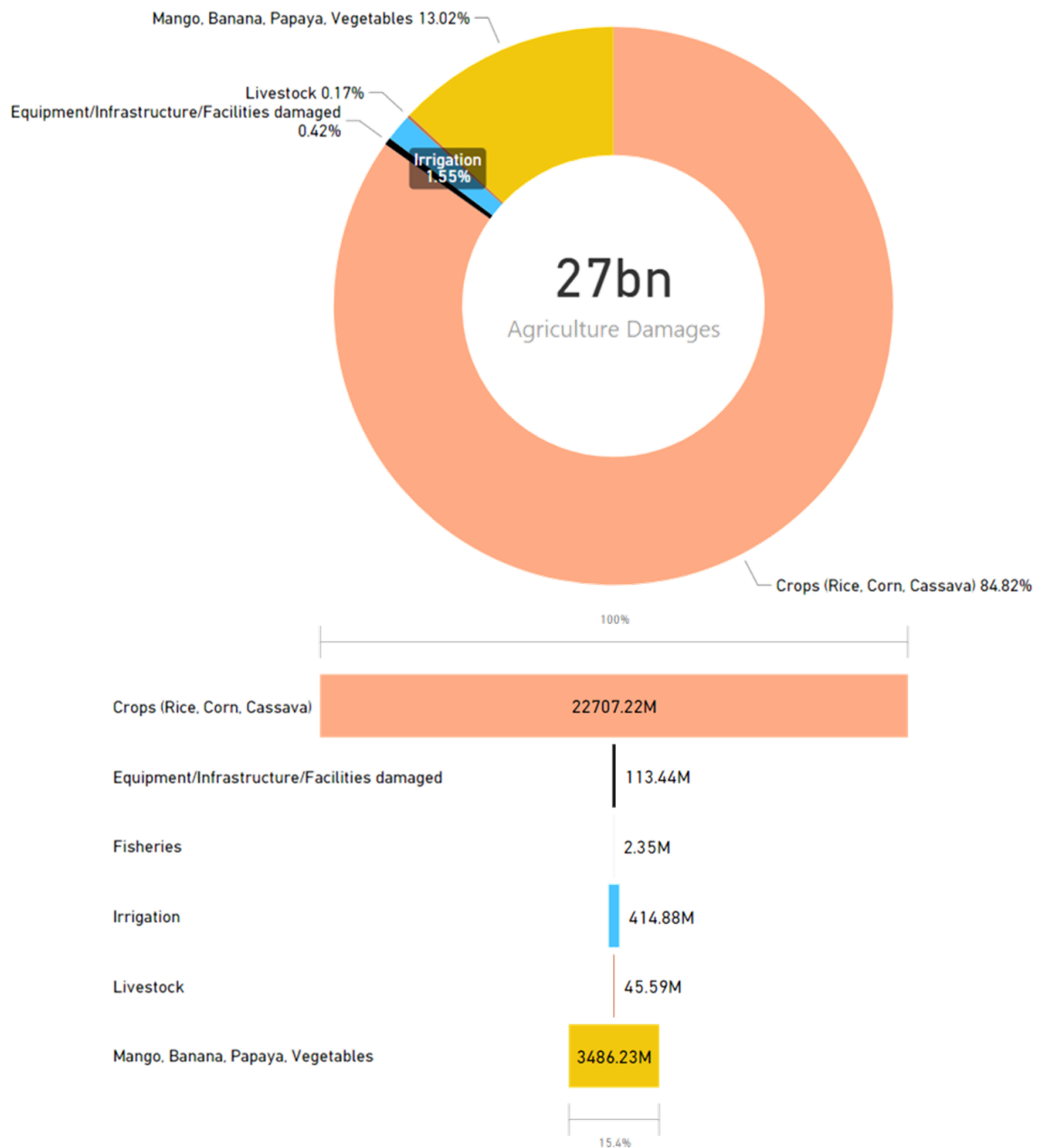


Figure 4: Breakdown of damages for agriculture damages (as of 28 September 2018, data source: [NDRRMC](#))

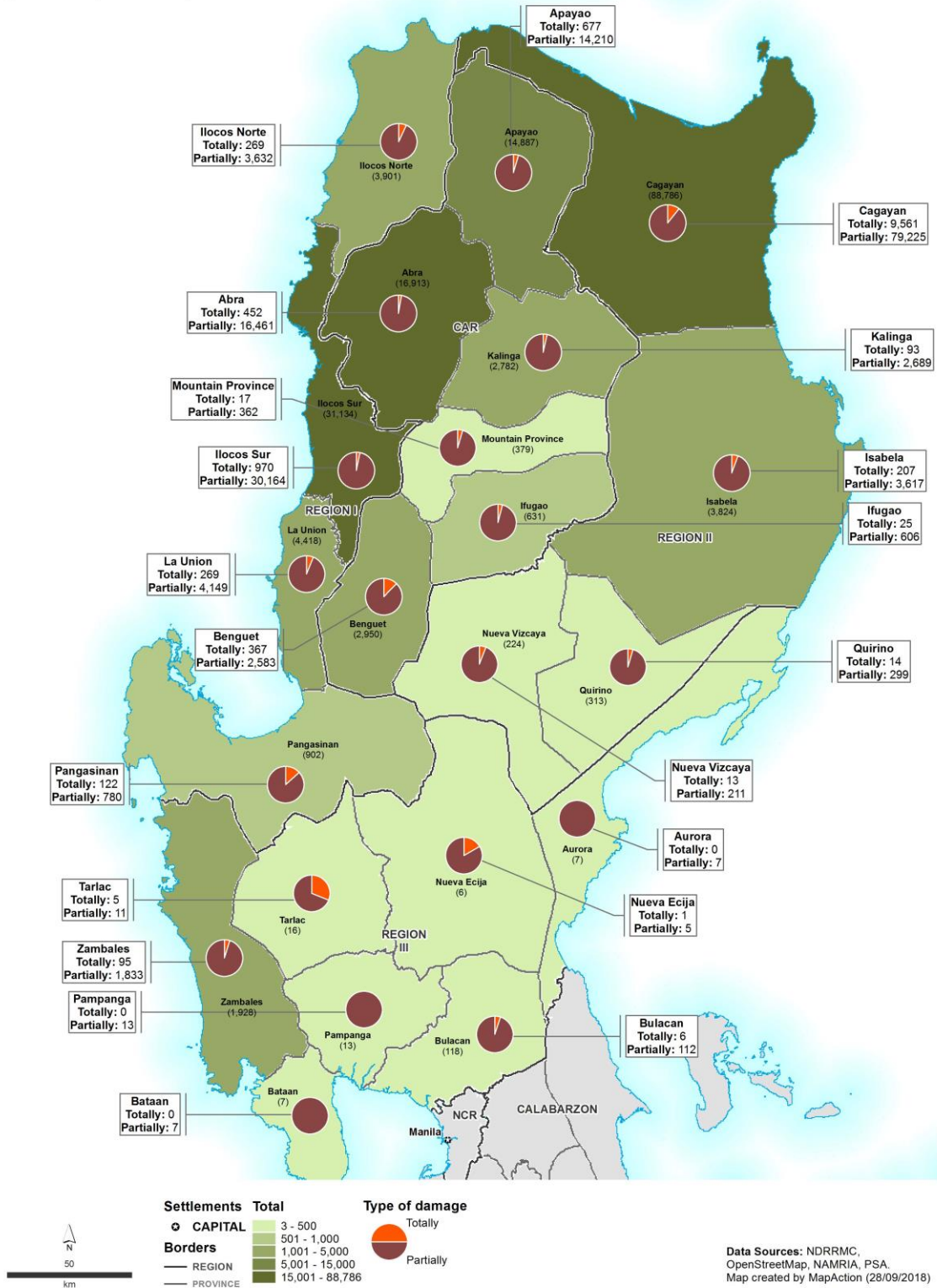
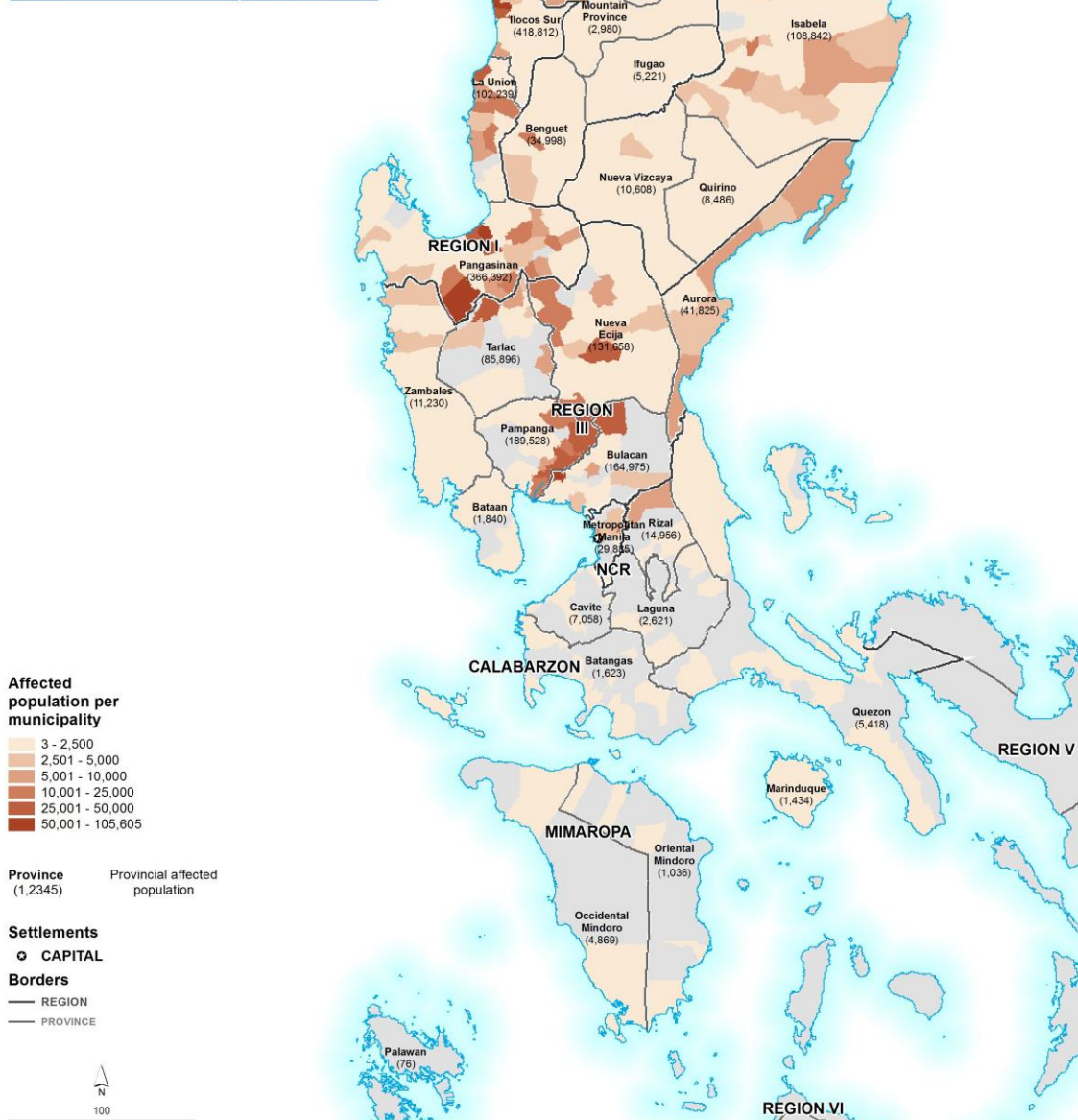


Figure 5: Reported number of partially and totally destroyed houses (as of 27 September 2018, data source: [NDRRMC](#))

The Philippines: Affected population by municipality (as at 28 Sept 2018 0600)



| Regional Summary | Affected |
|------------------|------------------|
| Region I | 936,994 |
| Region II | 629,101 |
| Region III | 626,952 |
| CAR | 372,594 |
| Calabarzon | 31,676 |
| NCR | 29,885 |
| Mimaropa | 7,415 |
| Total | 2,634,617 |



Data Sources: NDRRMC, OpenStreetMap, NAMRIA, PSA. Map created by MapAction (28/09/2018)



4. ACTIONS TAKEN AND RESOURCES MOBILISED

Response by Government of the Philippines

- 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.
- Due to the widespread destruction of TY Ompong, President Rodrigo Roa Duterte, upon the recommendation of the National Disaster Risk Reduction and Management Council (NDRRMC) on 25 September 2018 declared the State of Calamity in Regions I, II, III and CAR to hasten the response operations, early recovery, relief and rehabilitation efforts of the government and to facilitate international humanitarian assistance.
- A total of PHP 132,122,066 (around USD 2.44 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 28 September. From the latest amount, around PHP 132 million worth of assistance has been channeled to be absorbed at the local level, i.e. around 86.0% of the standby assistance and stockpiles prior to the landfall (an increase of around 4.37% from previous report). Figure 6A below provides distribution of assistance until 28 September 0600hrs, in comparison with the previous day and to the stand-by funds and assistance (depicted in blue) prior to the landfall.

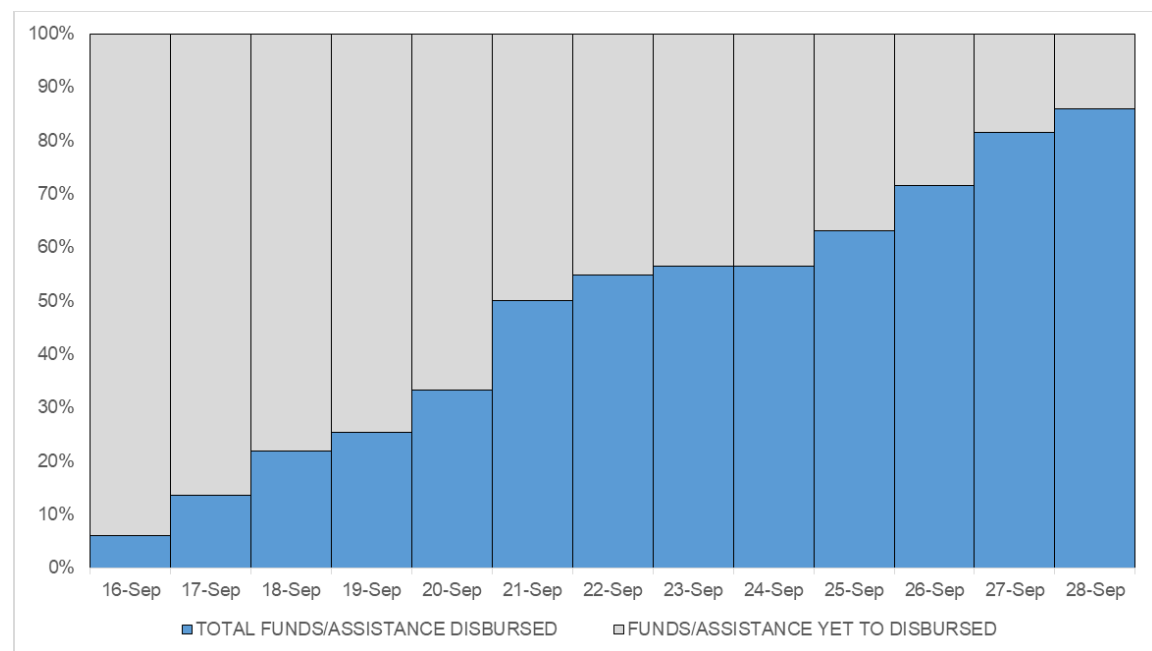


Figure 6A: Progress of Assistance Disbursement and Mobilisation by OCD, DOH, DSWD, LGUs and NGOs until 28 September 2018 (based on data from [NDRRMC](#))

Furthermore, Figure 6B shows the progress of disbursement and mobilisation by region. The key update is an increase of around PHP 6.74 million (5.1% increase from previous report) worth of assistance to Region II, and CAR as can be seen in green line of Figure 6B.



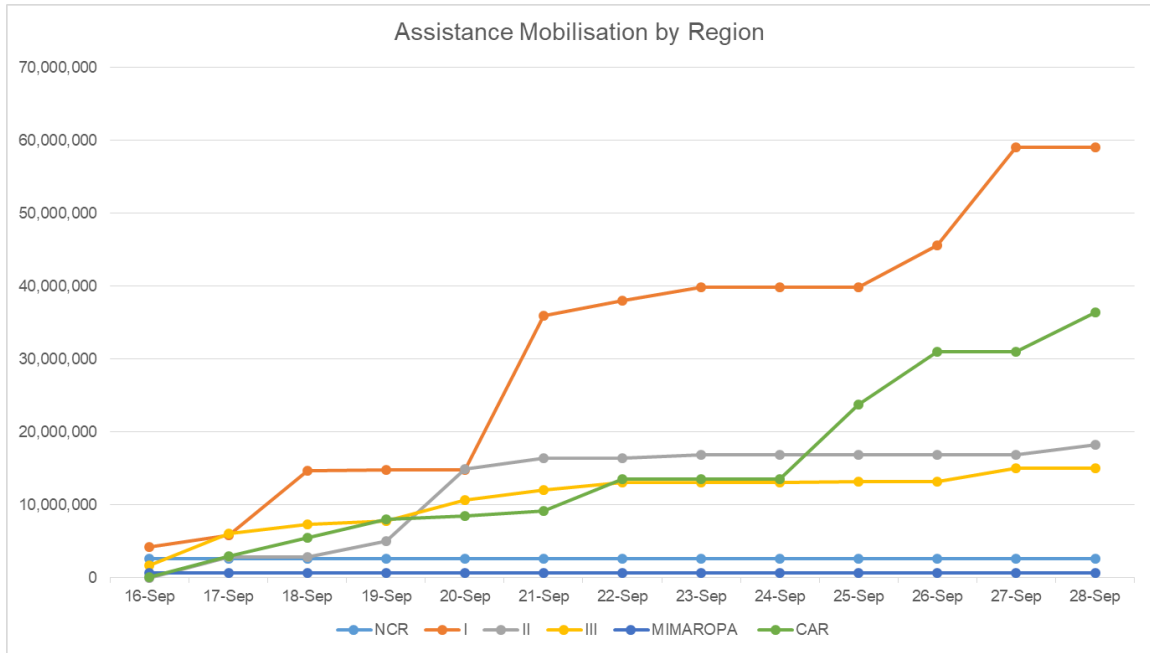


Figure 6B: Progress of Assistance Disbursement and Mobilisation by OCD, DOH, DSWD, LGUs and NGOs until 28 September 2018: Value of assistance distribution (in PHP) by region (based on data from [NDRRMC](#))

Response by the AHA Centre

- a. 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 7).



Figure 7: 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 8).



Figure 8: Briefing by Regional Director of OCD RO II in Tuguegarao

- c. AHA Centre's relief items have all been delivered to the affected regions to be disbursed by the respective Regional Offices (Figure 9 to 11):



Figure 9: Delivery of rice and tarpaulin in CAR



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Figure 10: Delivery of generator set to Region II



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Figure 11: Delivery of generator set to Region II



- d. The ASEAN-ERAT Information Management Specialists supporting and carrying out analysis in NDRRMC's office (Figure 12).



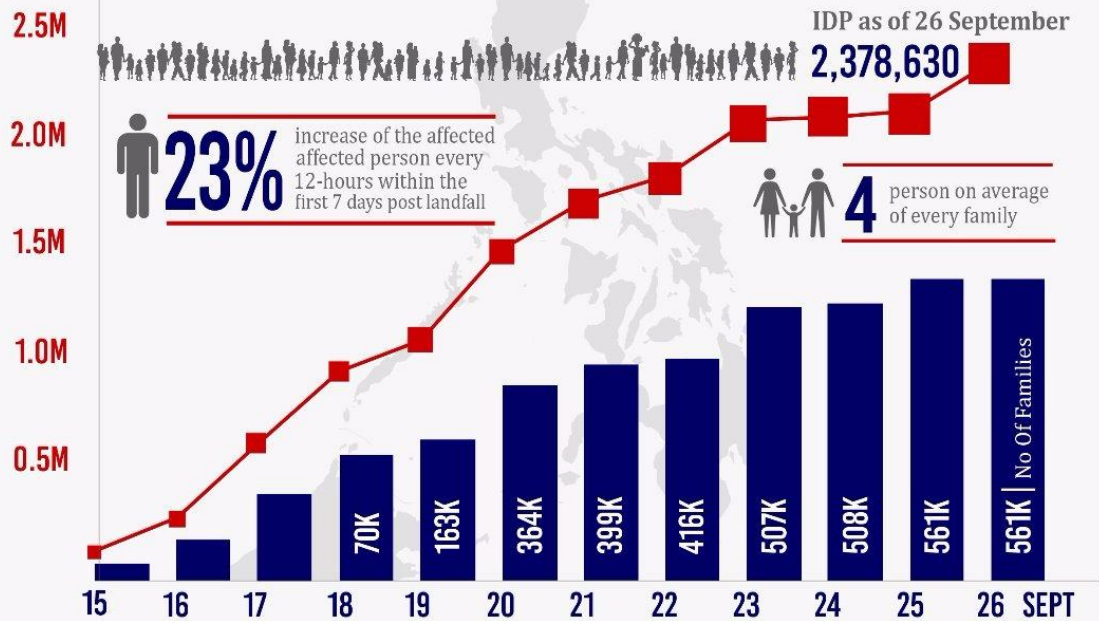
Figure 12: ASEAN-ERAT Information Management Specialists hard at work

5. POST EVENT ANALYSIS

- a. 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 14) 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.
- b. The typhoon has resulted in widespread damages across Northern and Central Luzon due to its intense nature and large size (approximately 900km). Intense rainfall coupled with interaction with the rugged terrain of Northern Luzon (Cordillera and Sierra Madres Mountain Range), resulted in flooding and landslides. This too affected access to these mountainous areas and affected villages within CAR.

POST TYPHOON | DYNAMIC OF AFFECTED PEOPLE

TYPHOON OMPONG | September 2018



POST TYPHOON | DAMAGE TO HOUSES

TYPHOON OMPONG | September 2018

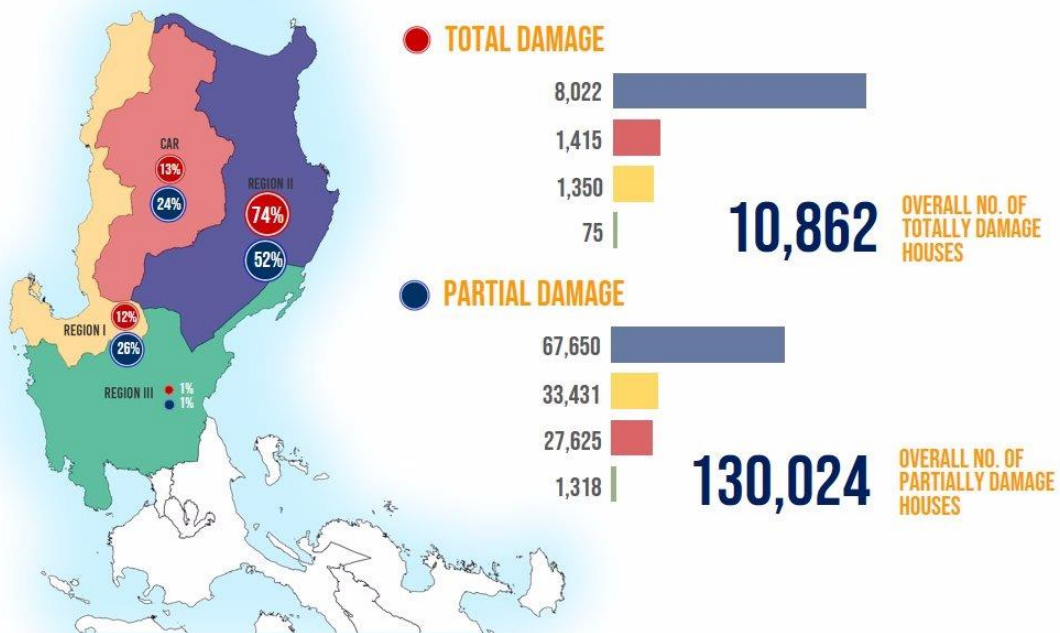


Figure 13: Infographics created by ASEAN-ERAT Information Management Specialists for the post event analysis



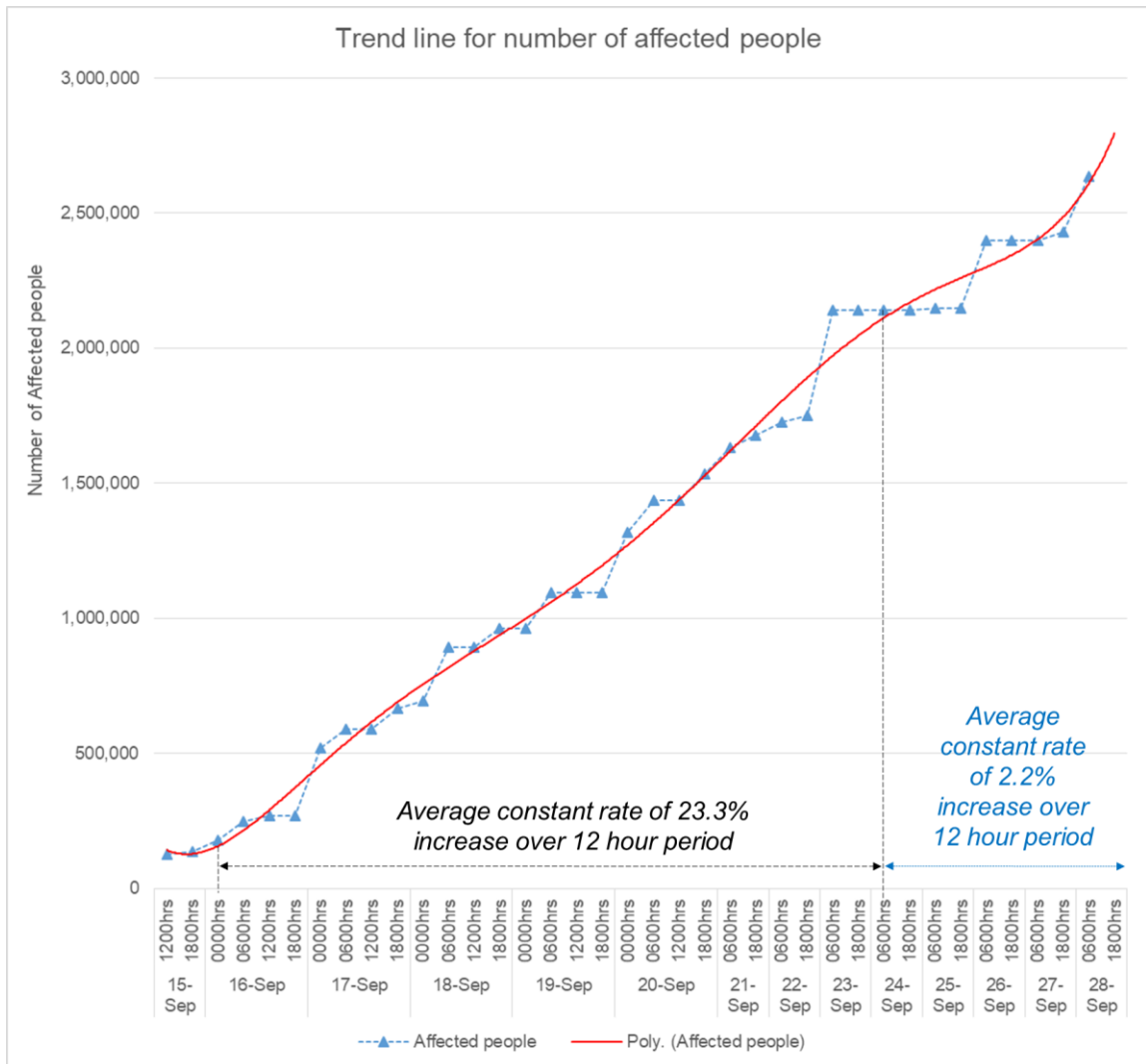


Figure 14: Trend line and rate of change in number of affected individuals

- c. The largest rate of change in assessing the affected individuals and households was recorded between 16 September and 17 September. Data from Table 1 corroborated with trend line shown in Figure 16. A week following the event, the figures have started to slow down and peaked. The current tally stands at more than 2 million affected and peak of more than 200,000 displaced which fits into our classification of a “Catastrophic” event.

**Our classification system draws on past estimates across a span of 6 years.*



| 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% |
| 27-Sep | 0600hrs | 0.0% | 0.0% | -5.3% |
| | 1800hrs | 1.3% | 2.2% | -1.5% |

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

- d. 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 | - |
| Radius | 600 km | 900 km | 1.50 |
| 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.

- e. 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 (Figure 15).
- f. 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.
- g. Breaking down the agricultural damages reveal that bulk of it is due to direct damages sustained by staple crops being inundated (Figure 4). Damages sustained to irrigation facilities, equipment and infrastructure required to support agriculture are approximately PHP 528 million (USD 9.76 million).
- h. Breaking down the infrastructure damages (Figure 16), Region II sustained the most damages with Department of Health pumping up to PHP 3.61 million of assistance compared to PHP 36.7 million damages sustained. Assistance gap is the largest for Region II which is PHP 32.7 million, followed by PHP 2.59 million for Region I and PHP 310,445 for CAR (Figure 17).



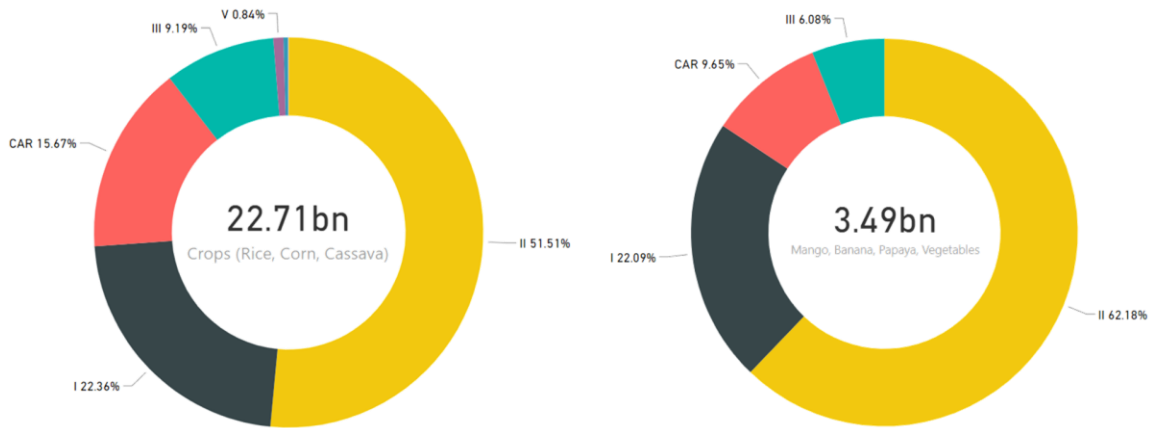


Figure 15: Breakdown of agricultural damages by Region (figures displayed are in Philippines pesos)

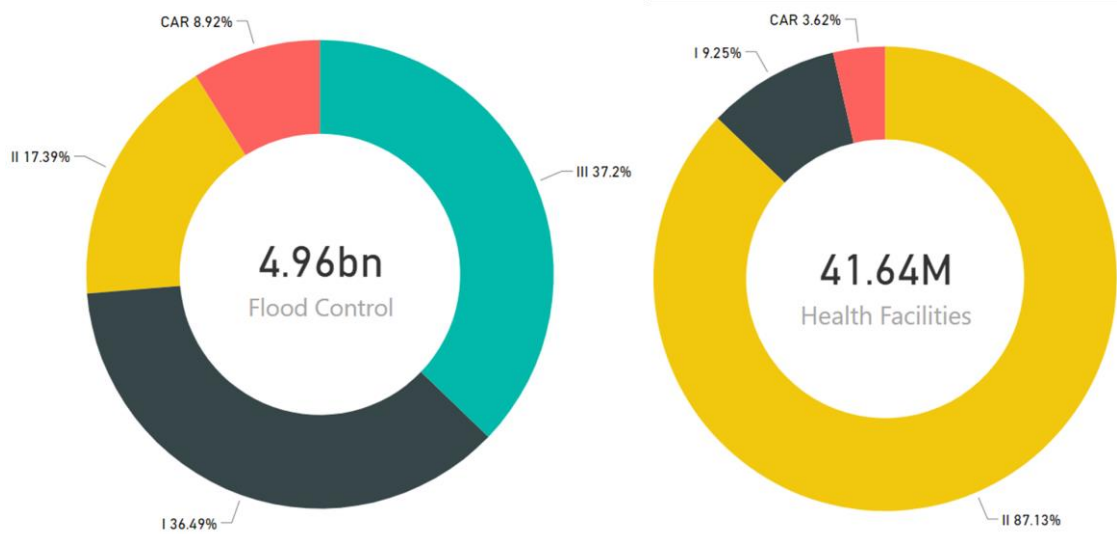


Figure 16: Breakdown of Infrastructure damages by Region (figures displayed are in Philippines pesos)

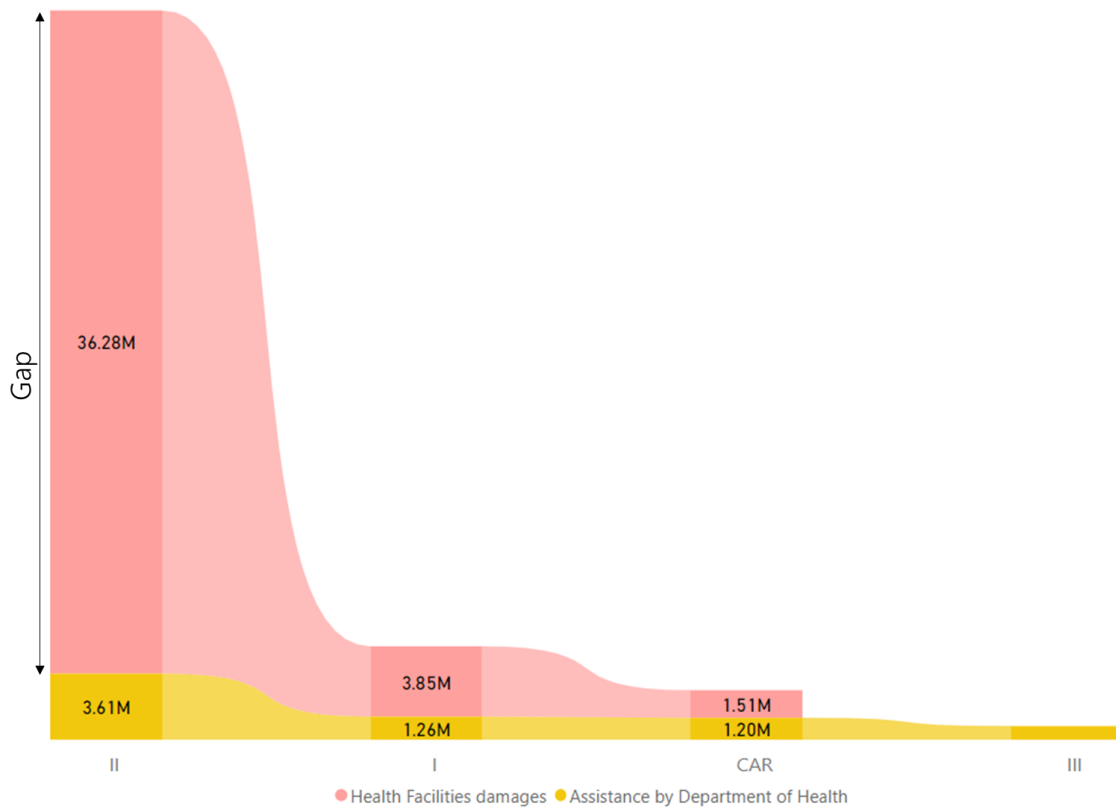


Figure 17: Health facilities damages against assistance provided by Department of Health

- i. 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. Besides supporting agricultural needs, it is crucial to place some attention to the auxiliary support equipment, facilities and infrastructure.
- j. 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 18 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.

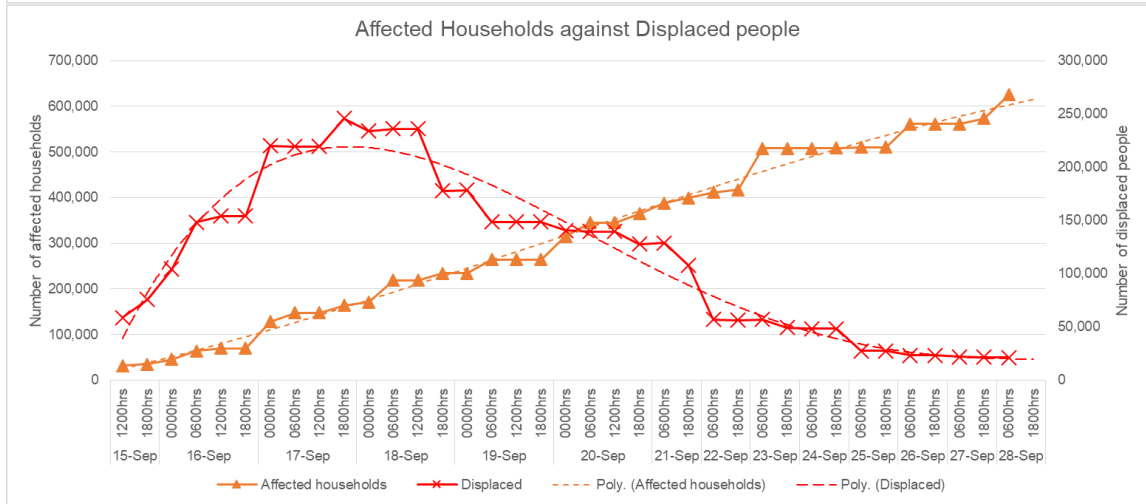
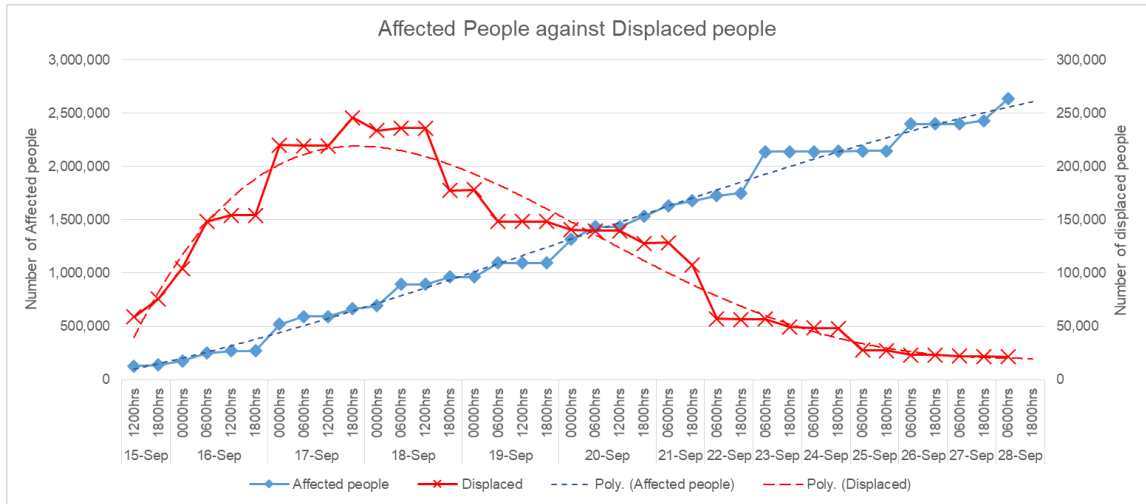


Figure 16: Affected individuals and affected households against displaced individuals

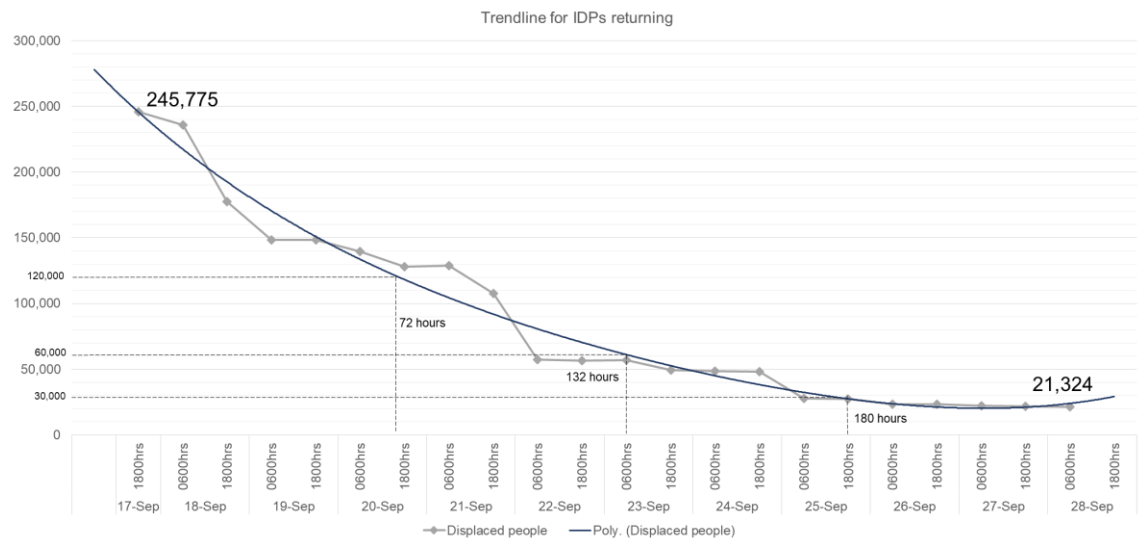


Figure 18: Trend line of IDPs returning

*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

Prepared by:

AHA Centre - Emergency Operations Centre (EOC) and ASEAN-ERAT Information Management Team in cooperation with MapAction.

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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