

## Super Typhoon Rai made landfall shortly after successful launch of a new national early warning system in the Philippines

On Dec. 15, 2021, Tropical Storm Rai strengthened into a Super Typhoon faster than any other storm system in recent memory, going from category 2 to category 5 on the Saffir-Simpson Hurricane Scale in a matter of hours. The storm made landfall on the southern islands of the Philippines with violent force, leading to the evacuation of more than 400,000 residents, injuring at least 500 people, and causing 375 deaths, according to estimates from the Philippine Red Cross. The system is used at both the national level, by Indonesia's NDMO known as Badan Nasional Penanggulangan Bencana (BNPB), down to the provincial level—allowing islands to communicate with one another.

## PhilAWARE put to the test a week after hand over to the Philippine Government

While the effects of Super Typhoon Rai—known as Typhoon Odette locally in the Philippines—were significant, the Philippine government's preparation for, and response to the storm were enhanced by a newly deployed hazard monitoring and early warning tool, PhilAWARE. This system was recently developed by the University of Hawai'i's Pacific Disaster Center (PDC), in partnership with the Philippines Office of Civil Defense (OCD). Based on PDC's DisasterAWARE platform, **PhilAWARE provides early warning and advanced modeling to support critical impact and potential needs information to aid rapid response.**

Foreshadowing the importance PhilAWARE would play during response to Super Typhoon Rai, OCD's Undersecretary Ricardo Jalad noted during his opening remarks at the Dec. 7 PhilAWARE handover ceremony that "this new platform will not



Chairman of the Philippines Red Cross, Senator Richard Gordon, pictured on BBC news with PDC's DisasterAWARE in operational use during Super Typhoon Rai.



The Philippine NDRRMC (pictured above and right) uses the new PhilAWARE system inside the national Emergency Operations Center to review Super Typhoon Rai impact, response and recovery information.



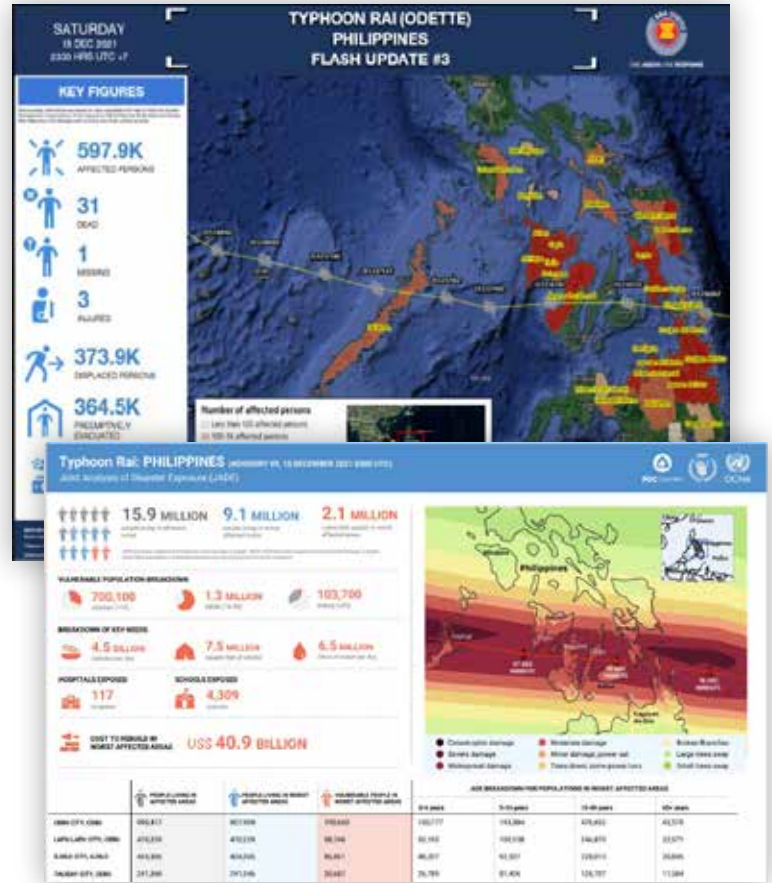
just enhance our hazard monitoring and early warning but will even help us in seamless information sharing between disaster managers and decision-makers.” The system was implemented under OCD’s leadership in close partnership with the Philippine’s National Disaster Risk Reduction and Management Council (NDRRMC). Funding support was provided by the U.S. Agency for International Development (USAID)’s Bureau for Humanitarian Assistance (BHA).

PhilAWARE provides critical information for decision making including national and provincial data, and new risk and vulnerability data. OCD’s access to this data through the PhilAWARE system proved critical to their response to Super Typhoon Rai, helping responders understand the extent of the storm impacts. Additionally, the ability of users to upload and share information products within the system allowed for more effective coordination between response stakeholders.

“While we were saddened by the death and destruction that Super Typhoon Rai left in its wake, the silver lining to this dark cloud was the support that PhilAWARE provided to OCD’s operation center and staff,” said PDC Deputy Executive Director Chris Chiesa. “It was heartening to hear how it improved their sharing of information within OCD and between NDRRMC agencies.”

PDC’s models and data sharing relationships provided critical, life-saving information to aid rapid response and **helped decision makers anticipate what was going to happen, where, how bad the impact would be, and what type of humanitarian support might be needed.** (See Joint Analysis of Disaster Exposure example below)

This information was available within PhilAWARE, enabling the Philippine government to make swift decisions to evacuate residents, suspend work and school, ground ferry and cargo vessels, and cancel domestic flights.



Pre- and post-impact analysis products were widely shared through PhilAWARE to aid planning, rapid humanitarian response, and situational awareness during Super Typhoon Rai.

## PhilAWARE Impact Summary

(Since beta release February 2020–December 2021)

**109+**  
**Million**

People in the Philippines covered by PhilAWARE

**2,000**

Inhabited Islands

**6,165**

Hazards reported and monitored via PhilAWARE

**1,005**

Analytical products shared to support situational awareness

**361**

Data layers to support evidence-based decision making

**57**

Trained OCD personnel

**18**

Hazard types monitored

**56**

PAGASA flood hazards