

# Typhoon Rai Rapid Damage Assessment using Sentinel-1 and UNOSAT / UNITAR data

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**PhilSA**

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15 Feb 2022

# The Philippine Space Agency

## Key Development Areas



08 August 2019

Republic Act 11363  
“The Philippine Space Act” is signed by the President

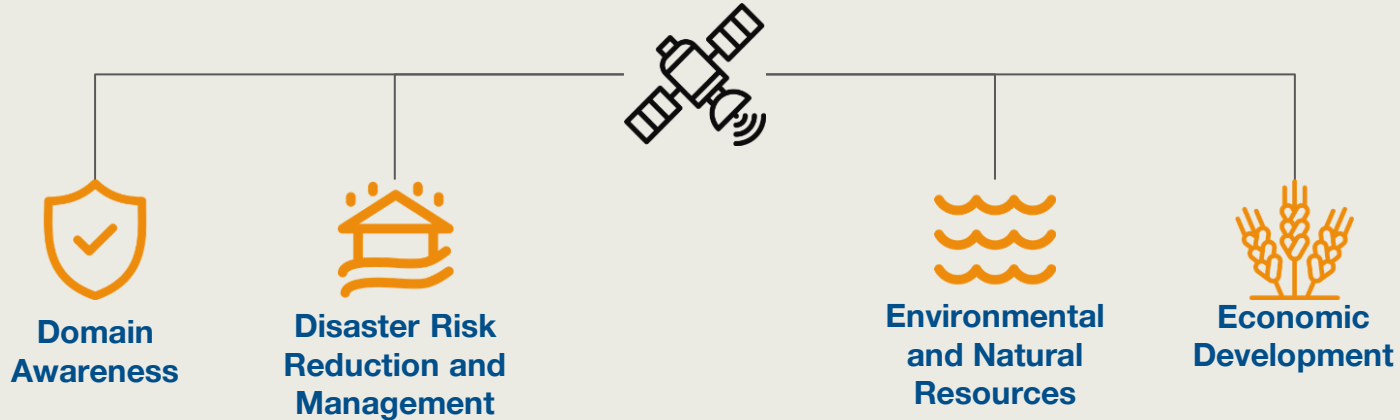
### PhilSA Mandate

The primary policy, planning, coordinating, implementing, and administrative entity of the Executive Branch of the govt that will plan, develop, and promote the national space program in line with the Philippine Space Policy.

# Mobilizing Space Data

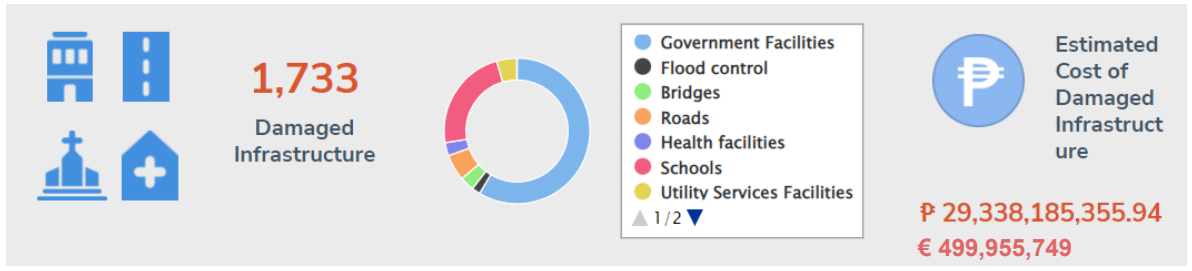
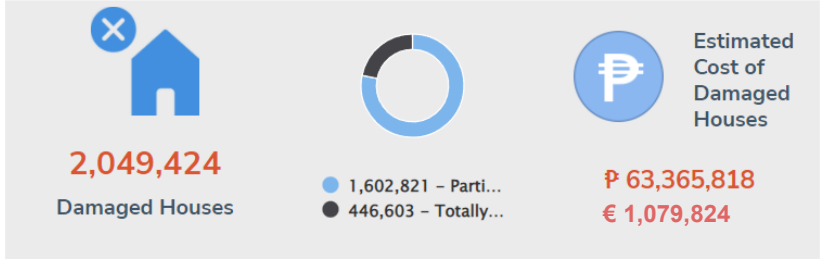
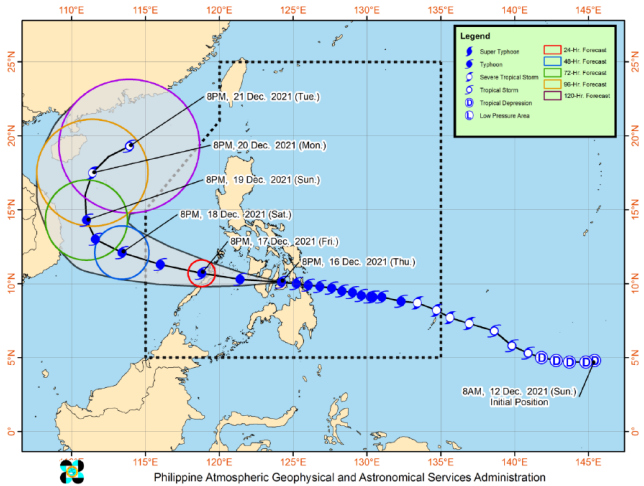
For Economic Development, Disaster Risk Reduction, & Maritime Domain Awareness

The PhilSA aims to further the **development and application of remote sensing (RS), artificial intelligence (AI), machine learning (ML), data science and other methodologies** in producing space-enabled information to support the operations of various government agencies and other end users.



# Typhoon Rai (locally known as Bagyong Odette)

## Dec 16 - 17, 2021



**10,243,607.254**  
Hectares of Crops



**120,350**  
Livestock and Poultry

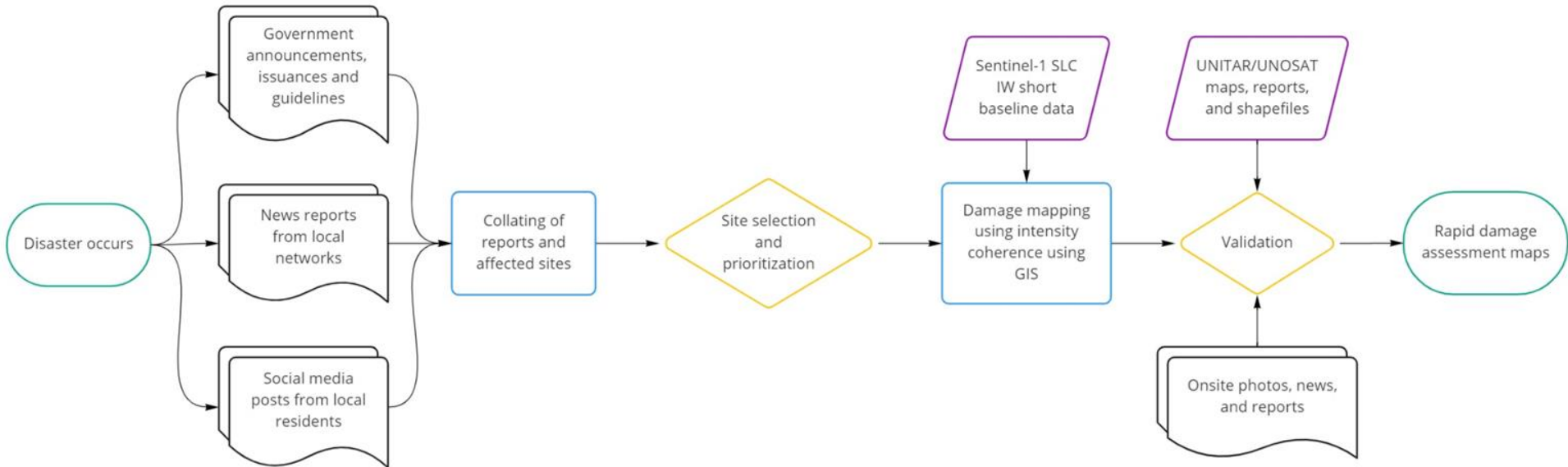


**6,267.2**  
Agricultural Infrastructure/  
Equipment



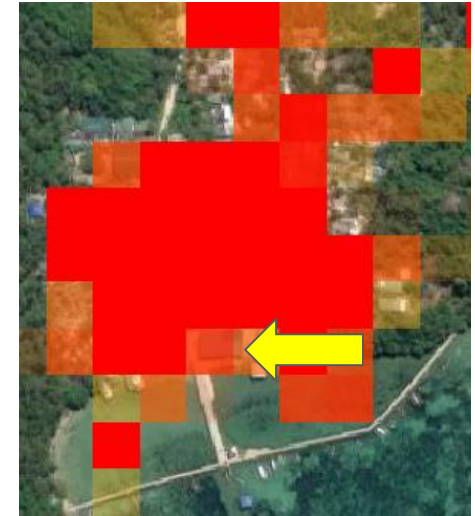
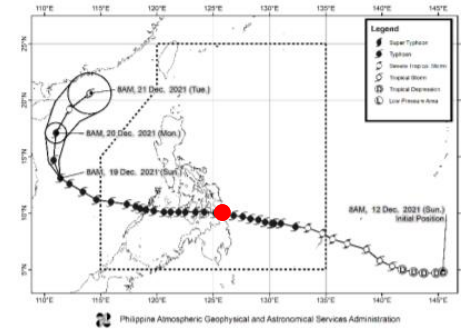
**₱ 17,756,739,907.447**  
**€ 302,594,864**

# Rapid damage estimation and mapping using SAR and other sources of data



# Rapid damage assessment maps

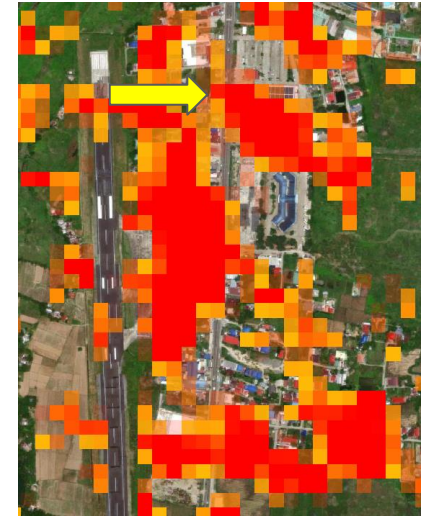
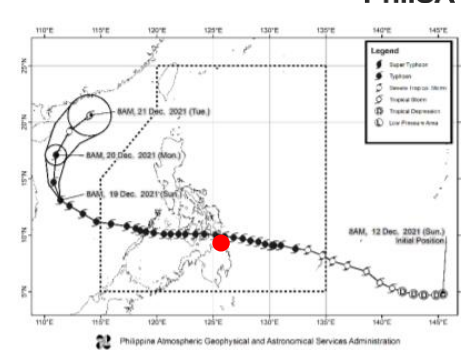
## Sta. Cruz, Siargao





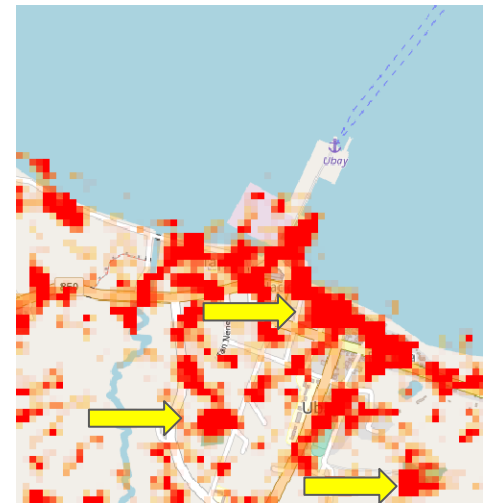
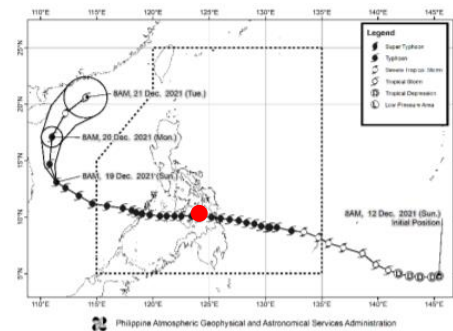
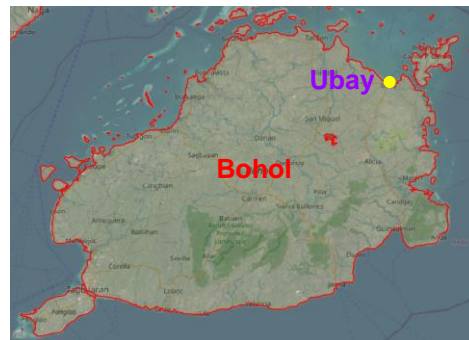
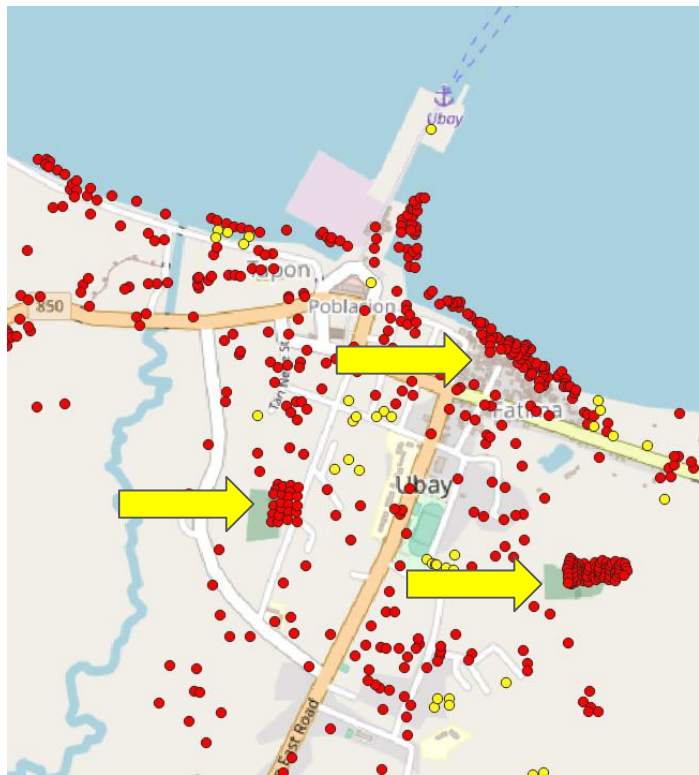
# Rapid damage assessment maps

## Surigao del Norte



# Rapid damage assessment maps

## Ubay, Bohol





# Benefits and moving forward

- Utilization of satellite-based data (i.e. Sentinel-1 SAR) to create regional damage assessment maps
- UN support is essential
  - Disaster Charter activation
  - UNITAR/UNOSAT
  - UN SPIDER
- Geodata scraping for disaster response
- Perform detailed spatial analysis
- Operationalize the process and disseminate results
- Monitor rehabilitation and develop forecasting capabilities

## Our Vision

The PhilSA envisions a Filipino nation **bridged, uplifted, and empowered** through the peaceful uses of outer space.

## Our Mission

We will promote and sustain a robust Philippine space ecosystem that **adds and creates value** in space **for and from Filipinos and for the world.**

# Thank you. Maraming salamat.



**Philippine  
Space  
Agency**

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