

Mapping the Impacts of Typhoon Kalmaegi (Tino) in Visayas

Geomatics for Environment and Development (GED) Laboratory

MANILA OBSERVATORY

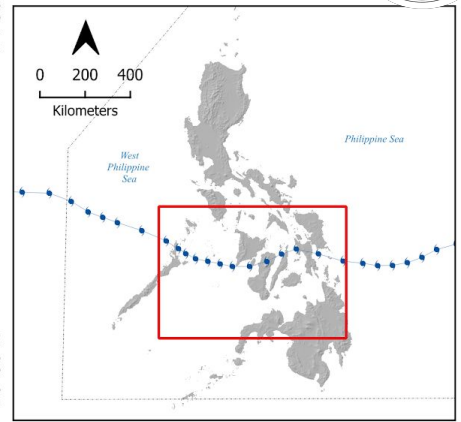
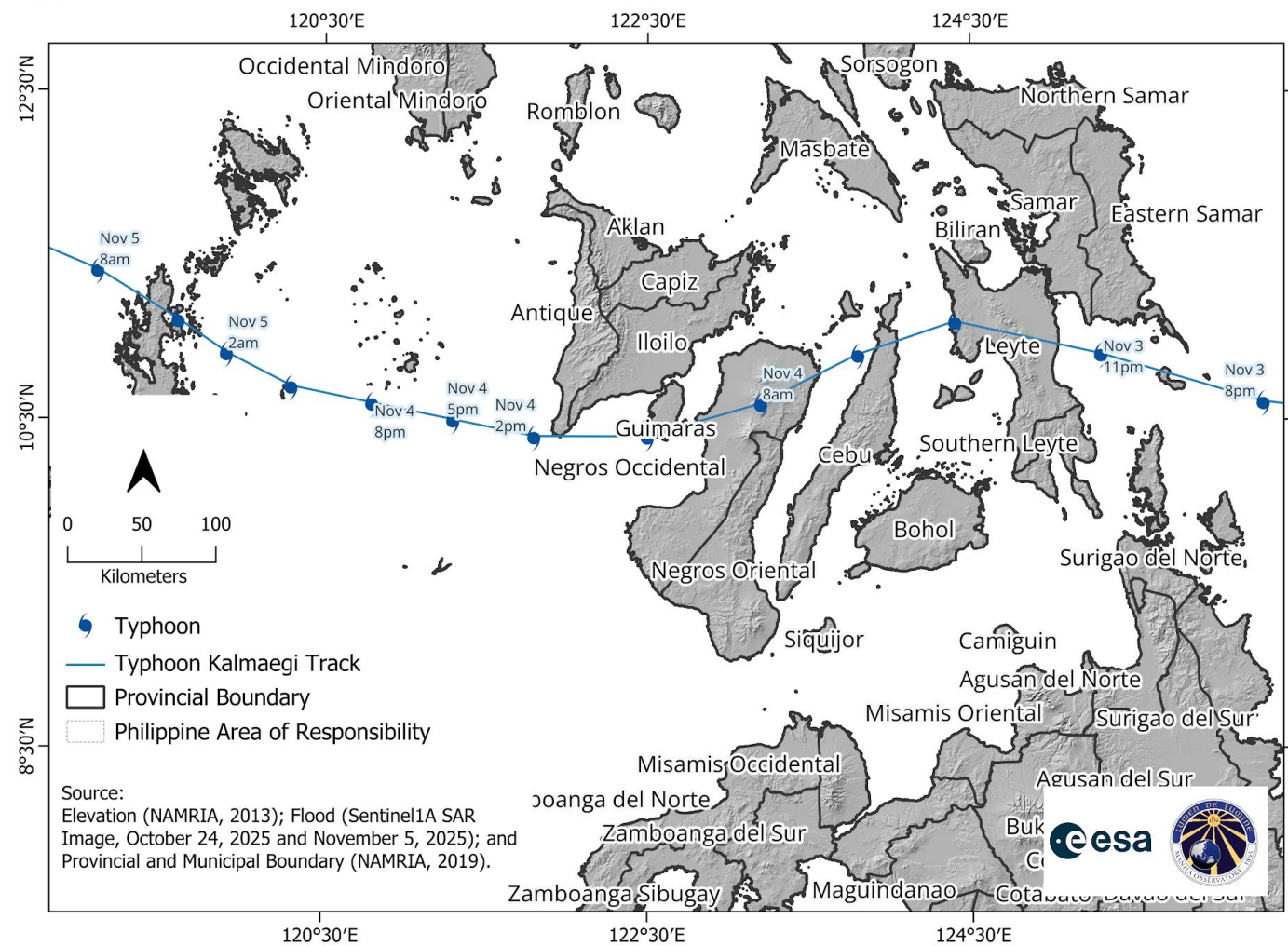
January 28, 2026

Summary

- Several areas in Visayas experienced accumulated 24-hour rainfall exceeding 200 mm during onslaught of Typhoon Kalmaegi (Tino) on November 3 to 4, 2025
- Multi-temporal Synthetic Aperture Radar images detected flooding in the Provinces of Leyte, Cebu, Negros Occidental, Capiz, and Iloilo.
- Generated map shows population density overlaid with detected flood caused by Typhoon Tino, affected population, loss and damage to agriculture, and flooded road.



Typhoon 'Tino' Track over the Philippines



Kalmaegi or 'Tino' entered the Philippine Area of responsibility (PAR) at 11:00 am Nov. 2, 2025 as Tropical Storm. It made landfall on Nov. 4, 2025 over the Province of Leyte.

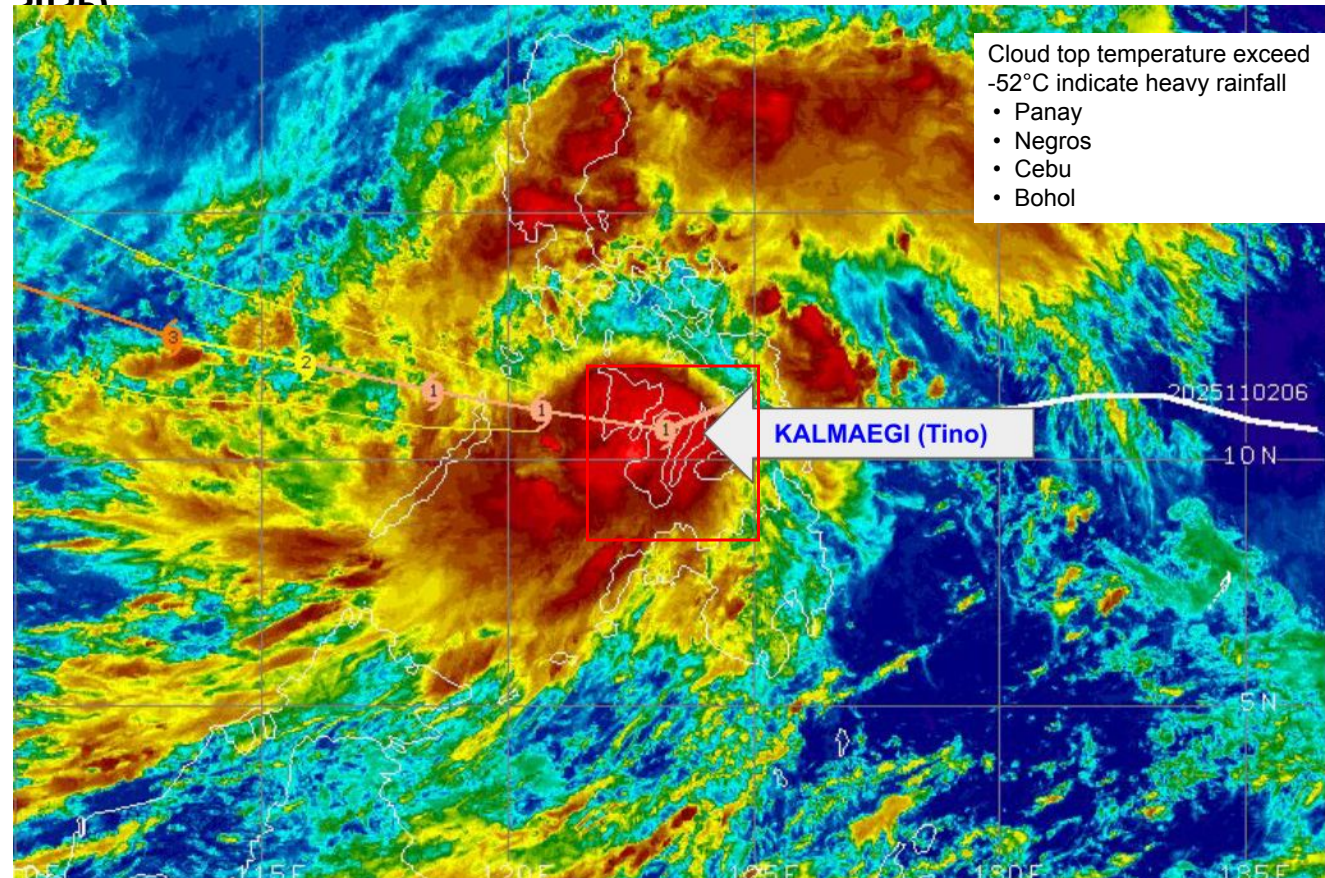
Typhoon 'Tino' (NDRRMC Situation Report No. 30)

- It made multiple landfall over Leyte, Cebu, Negros Occidental, Guimaras, Iloilo, and Palawan
- Tino exited PAR on Nov. 6, 2025, it moved past Kalayaan Islands to Vietnam.

Source:
Elevation (NAMRIA, 2013); Flood (Sentinel1A SAR Image, October 24, 2025 and November 5, 2025); and Provincial and Municipal Boundary (NAMRIA, 2019).



Typhoon Tino Rainfall over Visayas (November 4, 2025)



Cloud top temperature exceed -52°C indicate heavy rainfall

- Panay
- Negros
- Cebu
- Bohol



Affected Major River Basin:

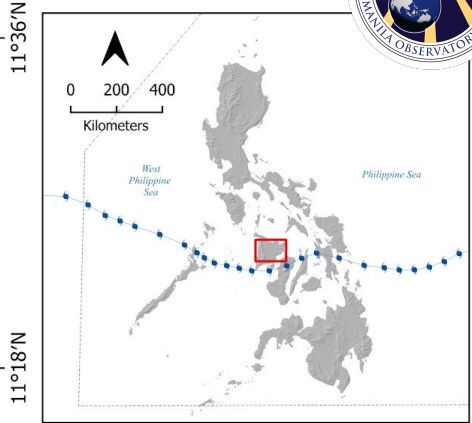
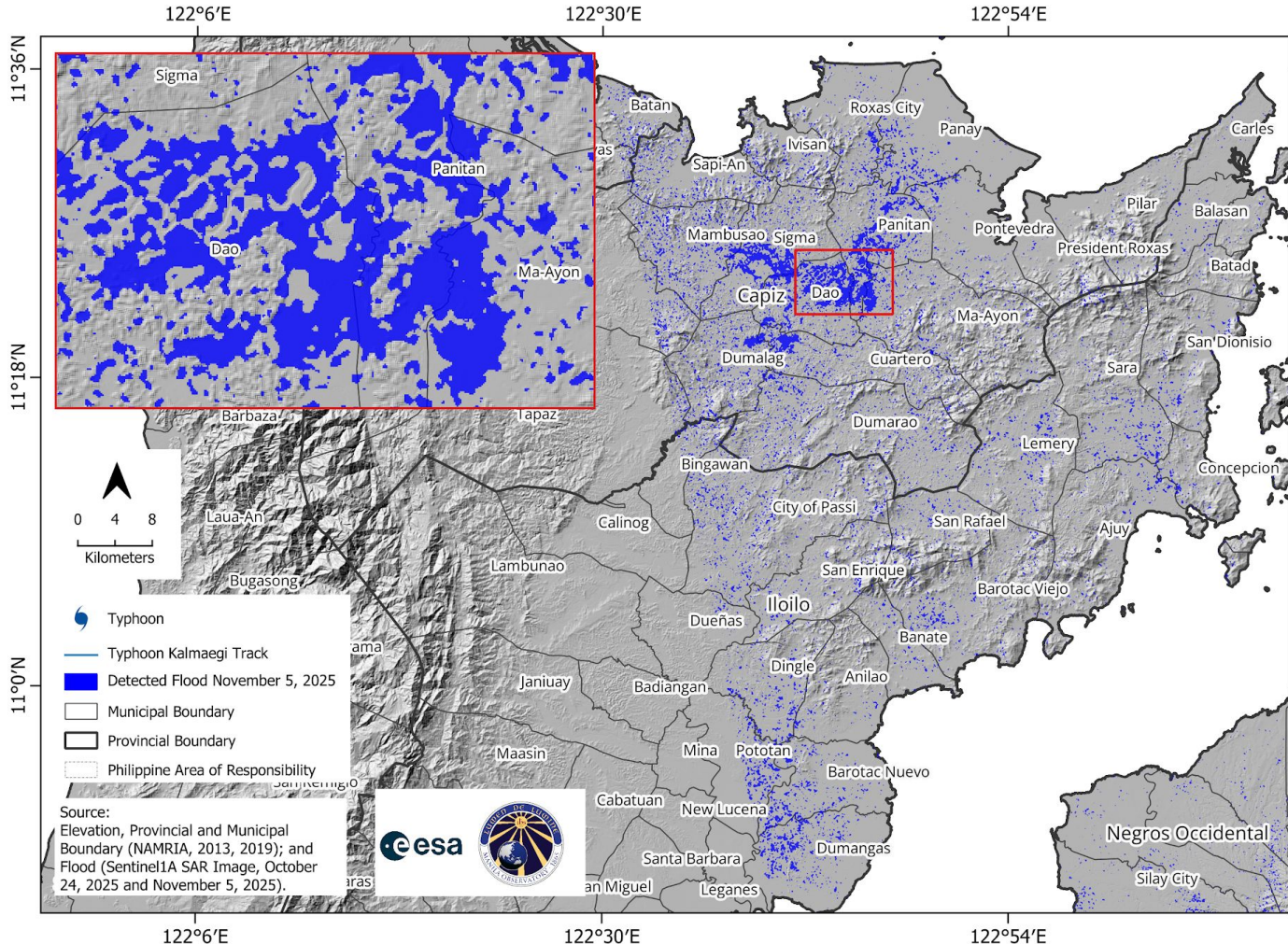
- Panay
- Jalaur
- Iloilo-Batiano
- Ilog-Hilabangan
- Central Cebu



INFRARED SATELLITE IMAGE



Detected Flood in Provinces of Capiz and Iloilo (Sentinel 1A Images, October 24, 2025 and November 5, 2025)



Highlighted in blue are the observed flooded areas in Capiz and Iloilo after >100 mm of rain due to Typhoon 'Tino' on Nov 4, 2025.

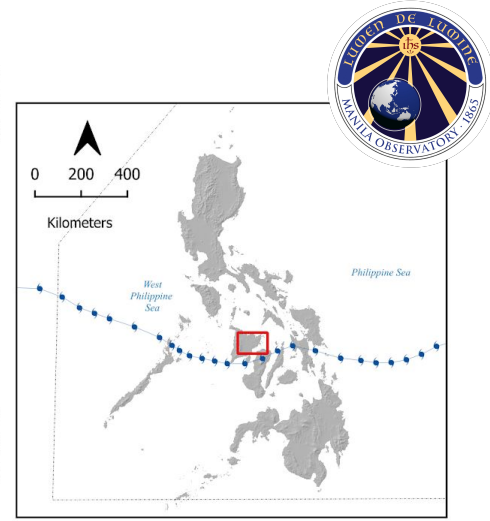
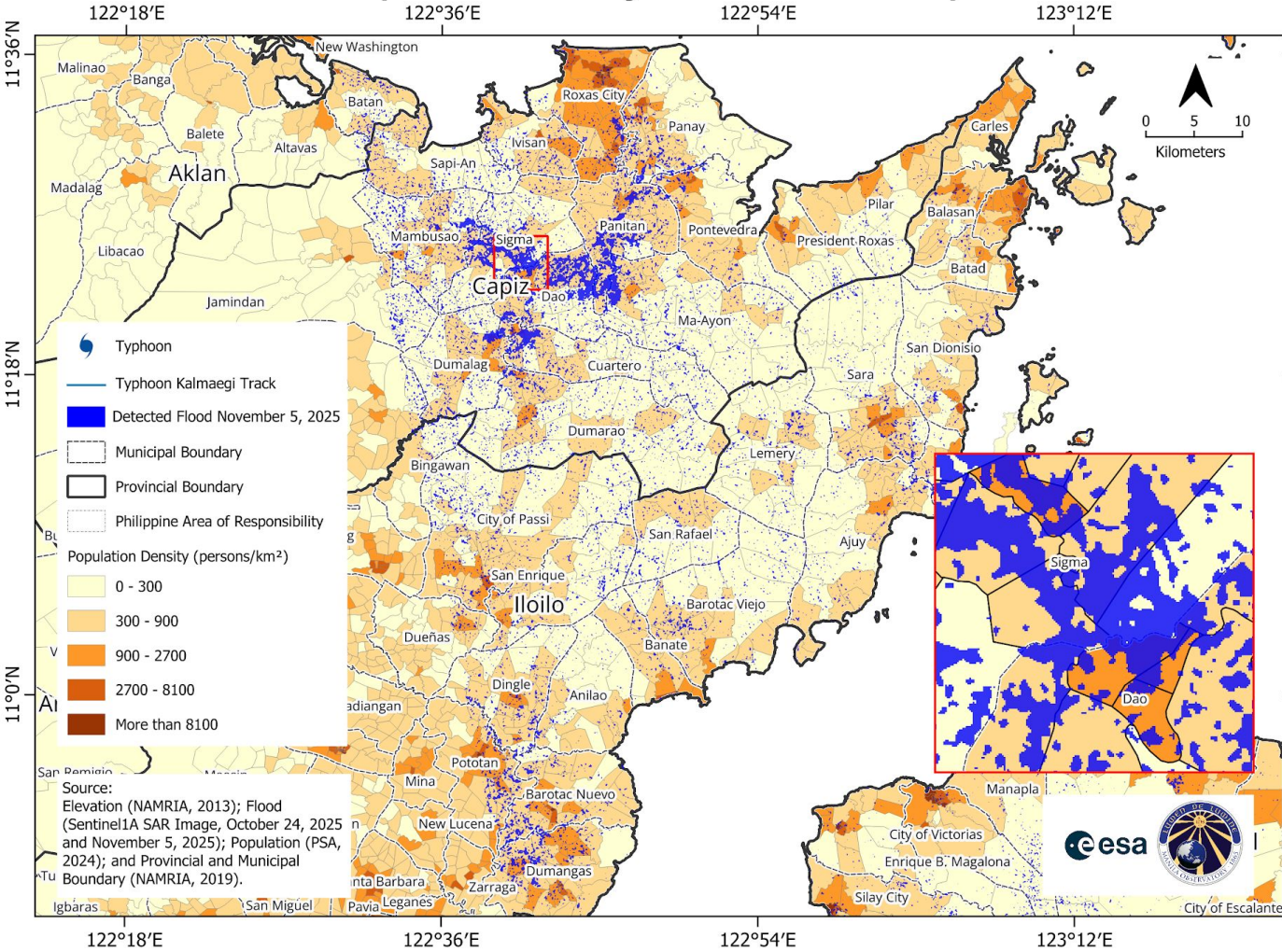
- Flood extent was detected by thresholding the difference of pixel values of Sentinel-1 SAR image taken on Oct 24, 2025 and Nov 5, 2025.*
- Please note that flood extent could be underestimated in urban areas due to complex backscattering over built surface.*
- Note also that **no ground validation** was done for this map.*

- Flooded municipalities in Capiz and Iloilo**
- Roxas City
 - Ivisan
 - Panay
 - Sapi-An
 - Mambusao
 - Sigma
 - Panitan
 - Dao
 - Dumalag
 - Cuartero
 - Ma-Ayon
 - Sara
 - Lemery
 - Concepcion
 - Ajuy
 - Dingle
 - Anilao
 - Pototan
 - Barotac Nuevo
 - Dumagas

Source: Elevation, Provincial and Municipal Boundary (NAMRIA, 2013, 2019); and Flood (Sentinel1A SAR Image, October 24, 2025 and November 5, 2025).



Detected Flood and Population Density in Provinces of Capiz and Iloilo



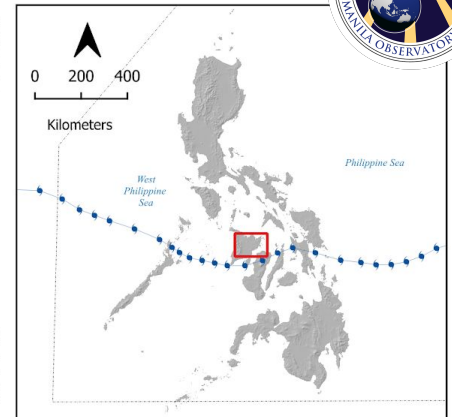
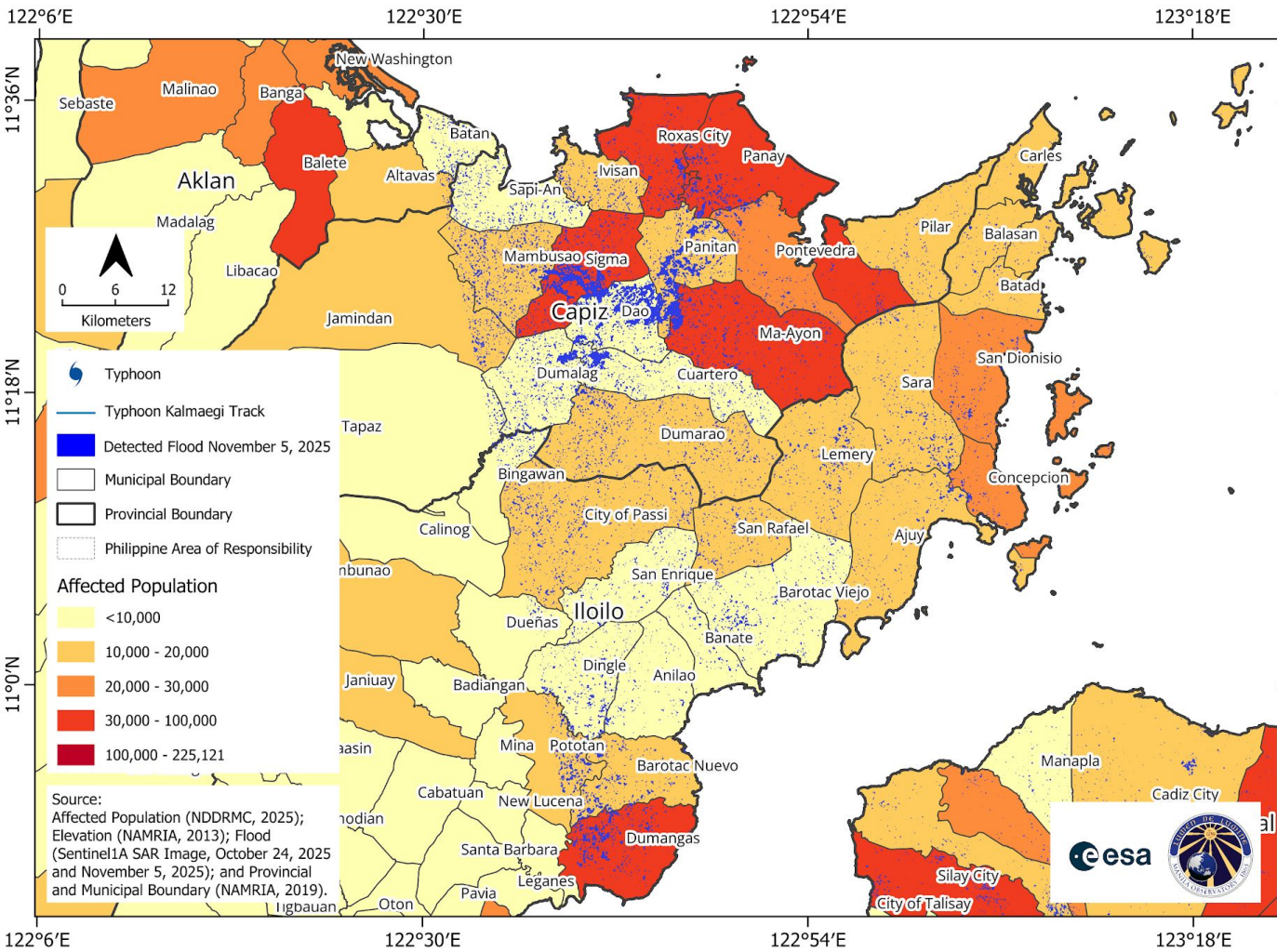
Flooded Municipalities and Cities with Densely Populated Barangays (More than 8100 persons/km²)

- Roxas City
- Dumangas
- Pototan
- Balasan
- Banate
- Barotac Nuevo

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Affected Population in Provinces of Capiz and Iloilo

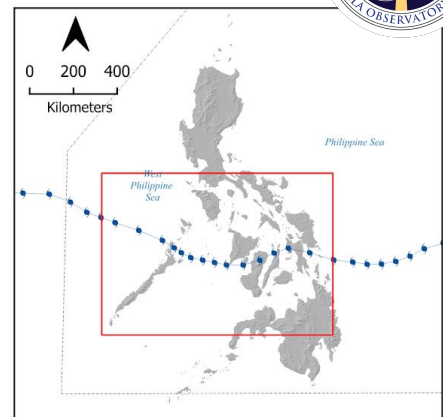
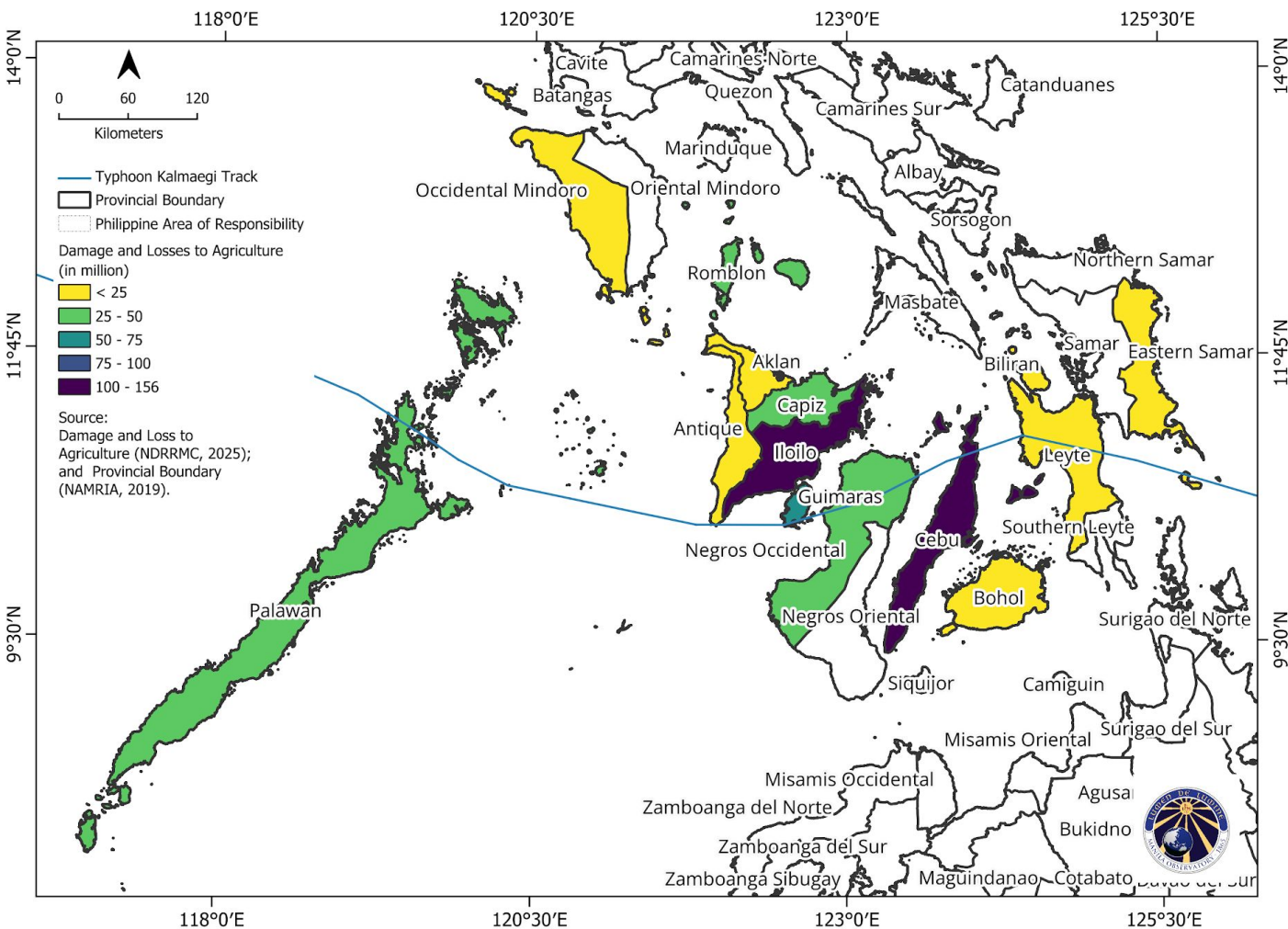


- Affected Population by City/Municipality (More than 10,000 person)**
- Sigma
 - Roxas City
 - President Roxas
 - Pontevedra
 - Pilar
 - Panitan
 - Panay
 - Mambusao
 - Ma-Ayon
 - Jamindan
 - Ivisan
 - Dumarao
 - Tigbauan
 - Sara
 - San Rafael
 - San Dionisio
 - Pototan
 - Lemery
 - Lambunao
 - Janiuay
 - Iloilo City
 - Estancia
 - Dumangas
 - Concepcion
 - City of Passi
 - Carles
 - Batad
 - Barotac Nuevo
 - Balasan
 - Ajuy

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Damage and Loss to Agriculture



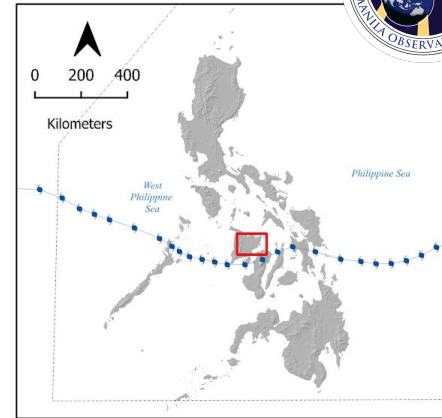
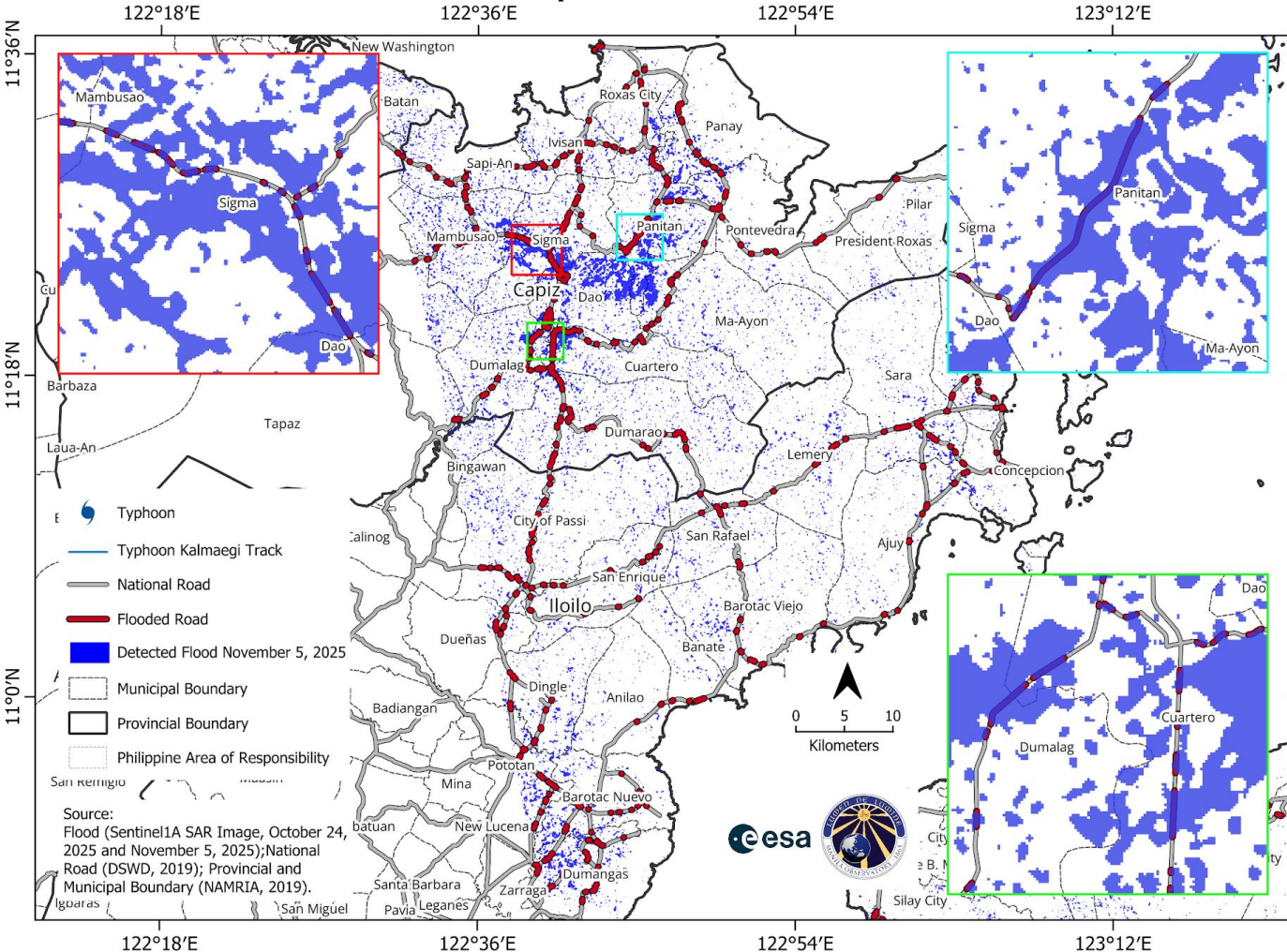
Province with Damage and Loss in Agriculture (More than 25 million)

- Cebu
- Iloilo
- Guimaras
- Romblon
- Negros Occidental
- Capiz
- Palawan





Flooded Road in Provinces of Capiz and Iloilo



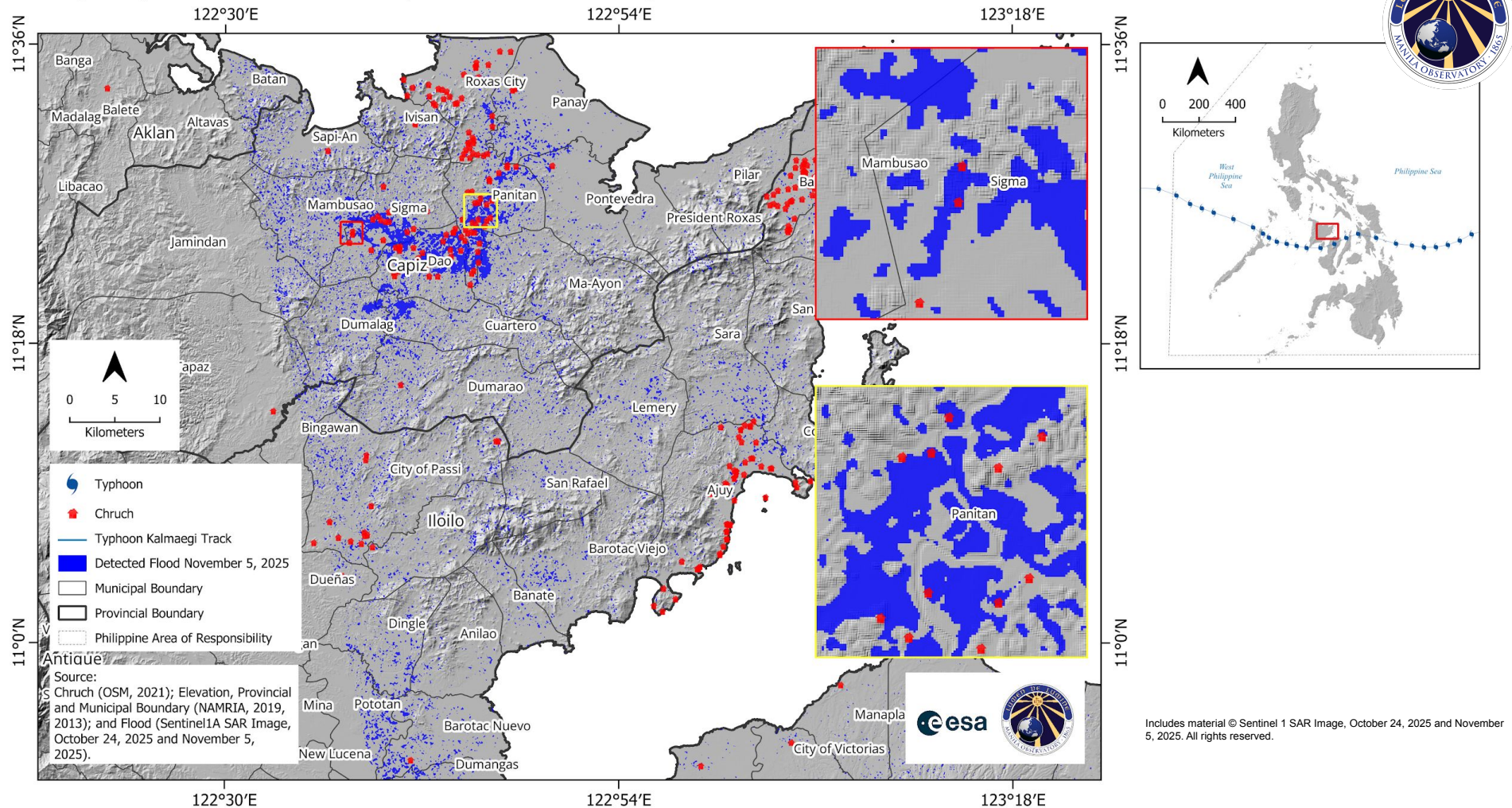
- ### Municipalities and Cities With Flooded National Road (More than 2 km)
- Dao
 - Cuartero
 - Sigma
 - Dumarao
 - Ivisan
 - Panitan
 - Pontevedra
 - Dumalag
 - Mambusao
 - Tapaz
 - Panay
 - President Roxas
 - Pilar
 - Jamindan
 - Roxas City
 - San Rafael
 - Ma-Ayon
 - Sara
 - Pototan
 - Dumangas
 - City of Passi
 - Barotac Viejo
 - San Dionisio
 - Ajuy
 - Dingle
 - Balasan
 - Barotac Nuevo
 - Batad
 - Dueñas
 - San Rafael

Source:
Flood (Sentinel1A SAR Image, October 24, 2025 and November 5, 2025); National Road (DSWD, 2019); Provincial and Municipal Boundary (NAMRIA, 2019).

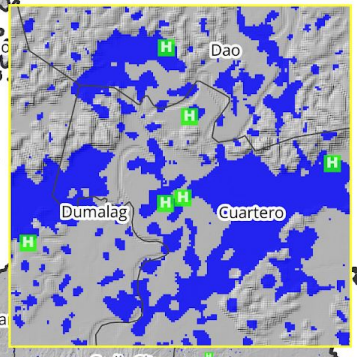
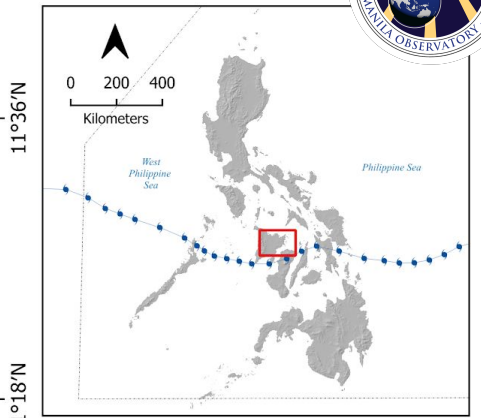
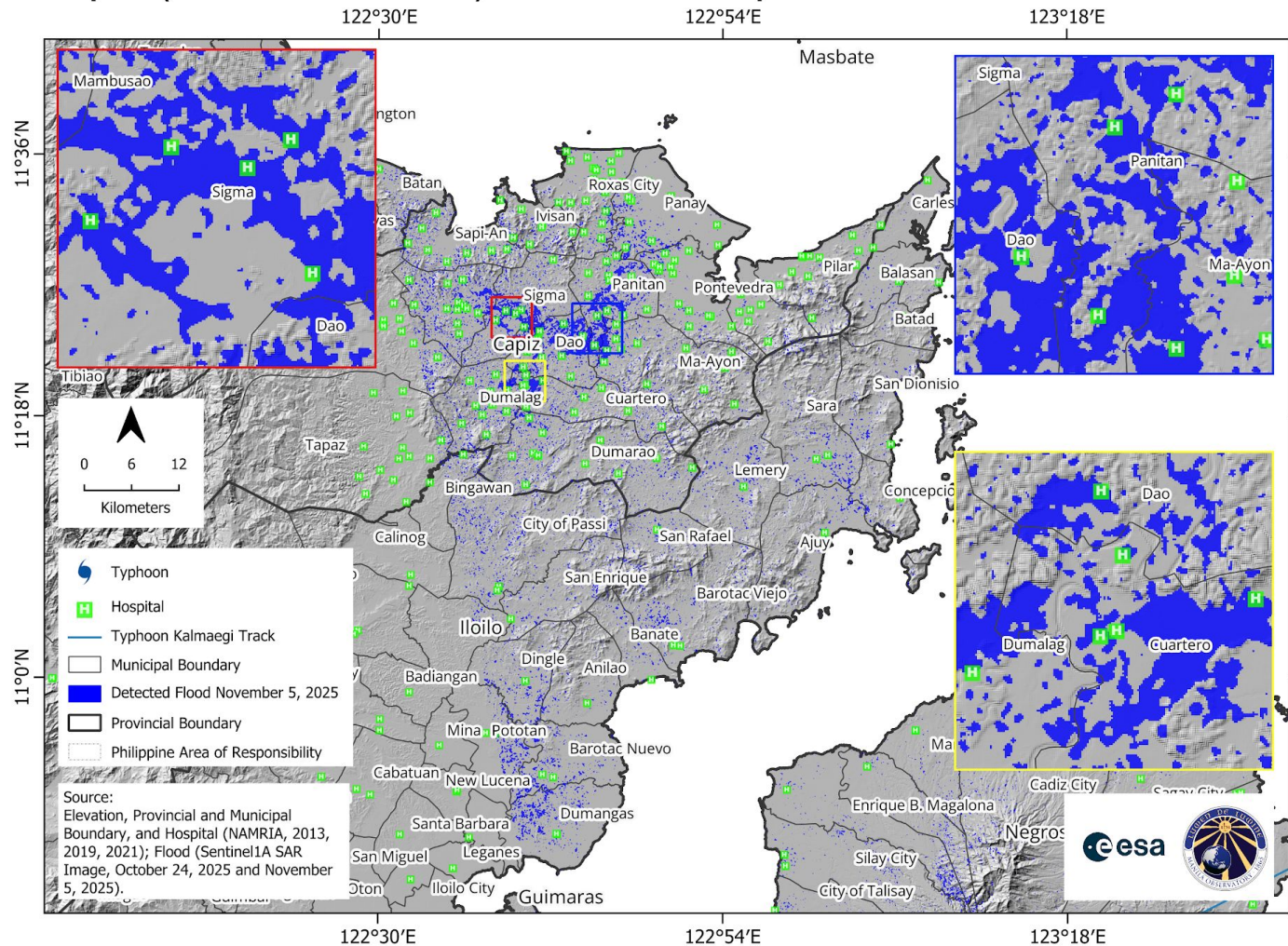


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Hospital (Critical Infrastructure) in Provinces of Capiz and Iloilo

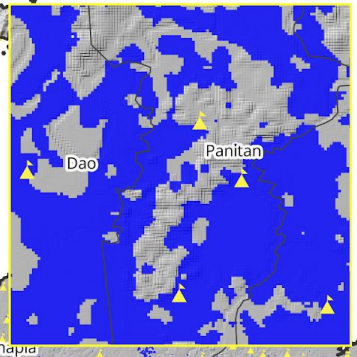
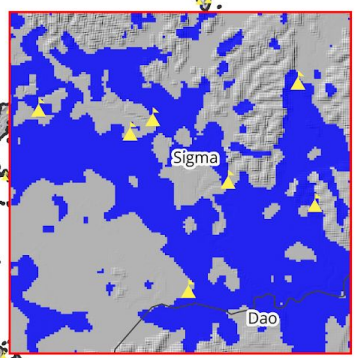
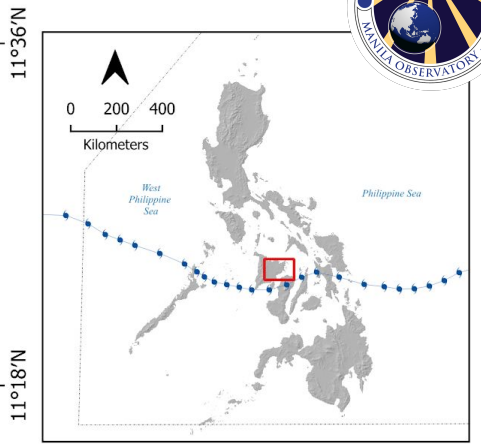
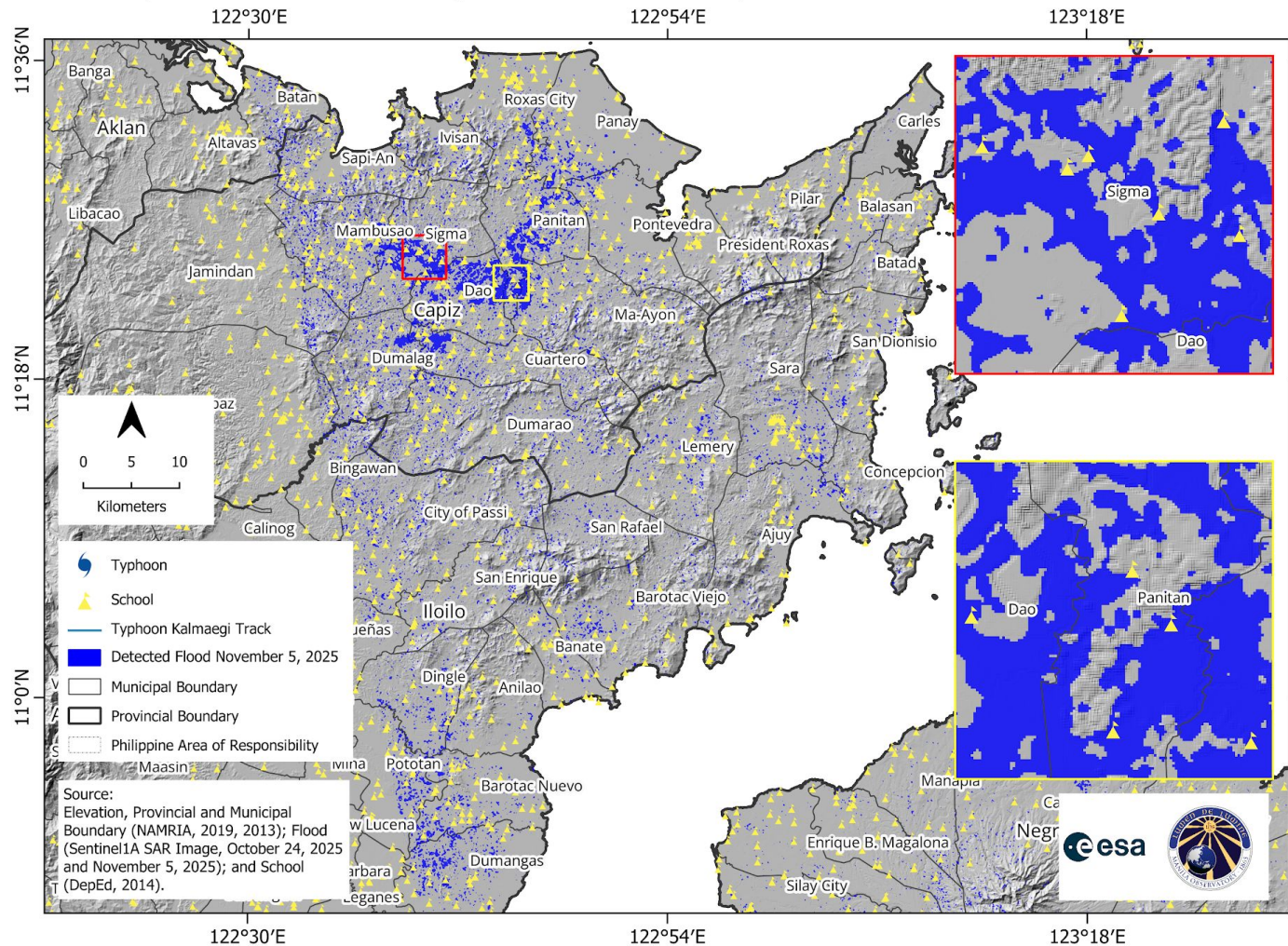


Hospital (Critical Infrastructure) in Provinces of Capiz and Iloilo



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School (Critical Infrastructure) in Provinces of Capiz and Iloilo



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For queries, request, comments, suggestions, please email
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