XXXI Session of the Intergovernmental Coordination Group for the
Pacific Tsunami Warning and Mitigation System (ICG/PTWS-XXXI)
7-11 April 2025
Beijing, China

Philippine Institute of Volcanology and Seismology
-Department of Science and Technology

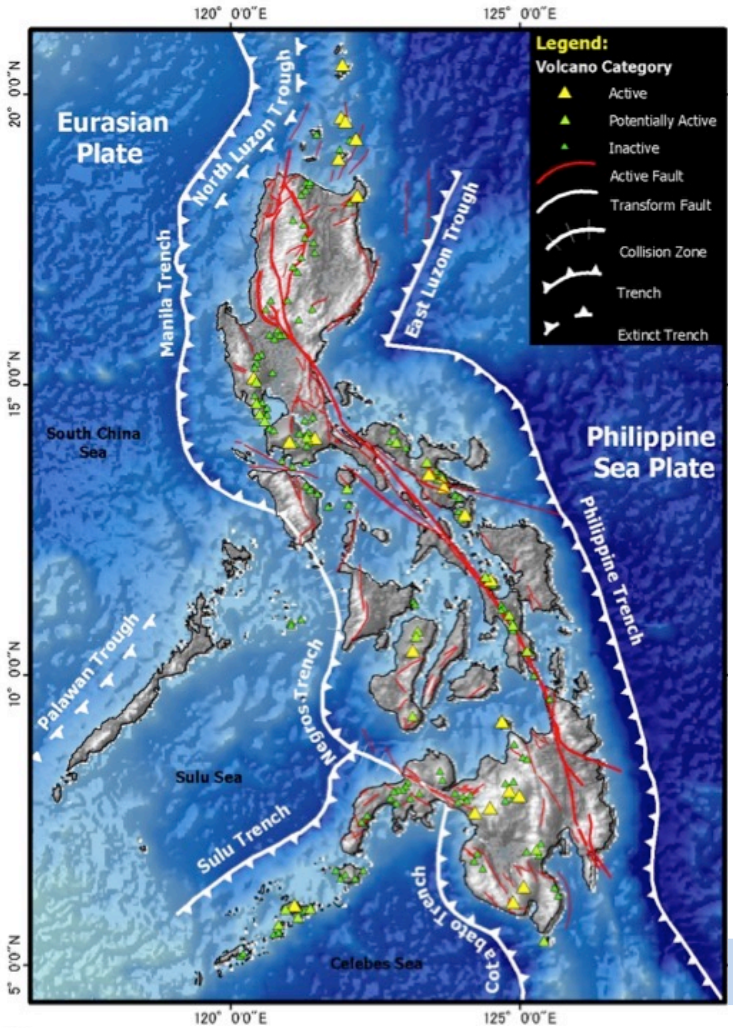
Country Report

Ma. Mylene Martinez-Villegas
Director III-PHIVOLCS

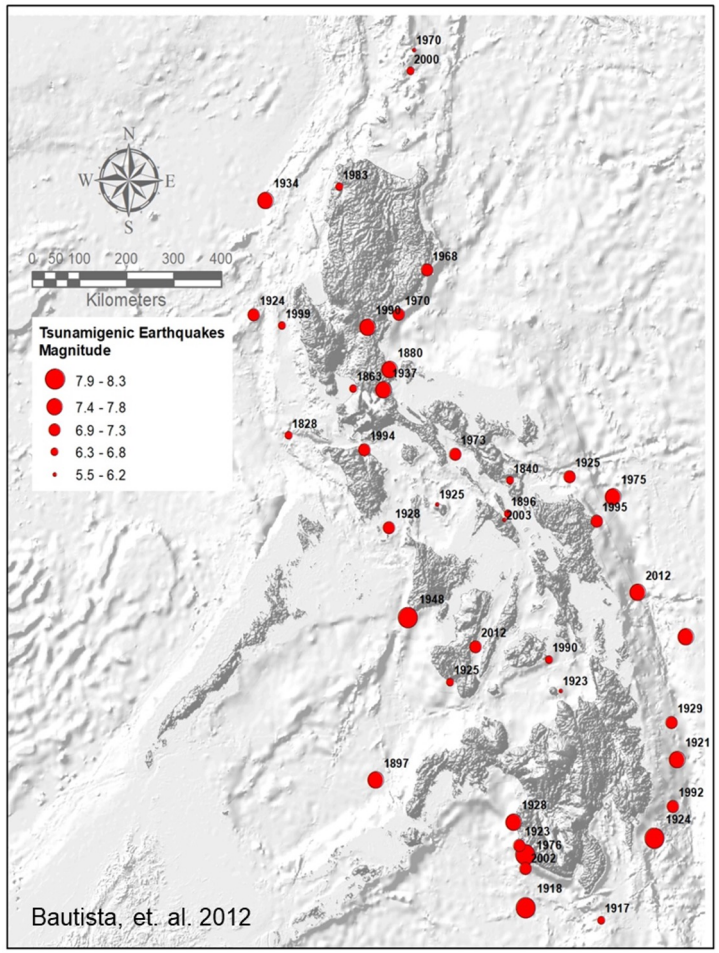
KEY ACTIONS FOR DISASTER RISK REDUCTION

- Know Hazards and Risks
  <Hazard and Risk Assessment
- Monitor
  <Monitoring
- Warn and Disseminate Information
  <Communication
- Respond Properly and Timely
  <Preparedness, Mitigation, Response, Recovery

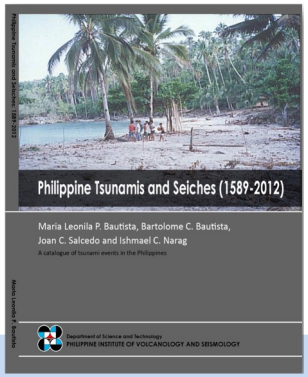
Earthquake Sources

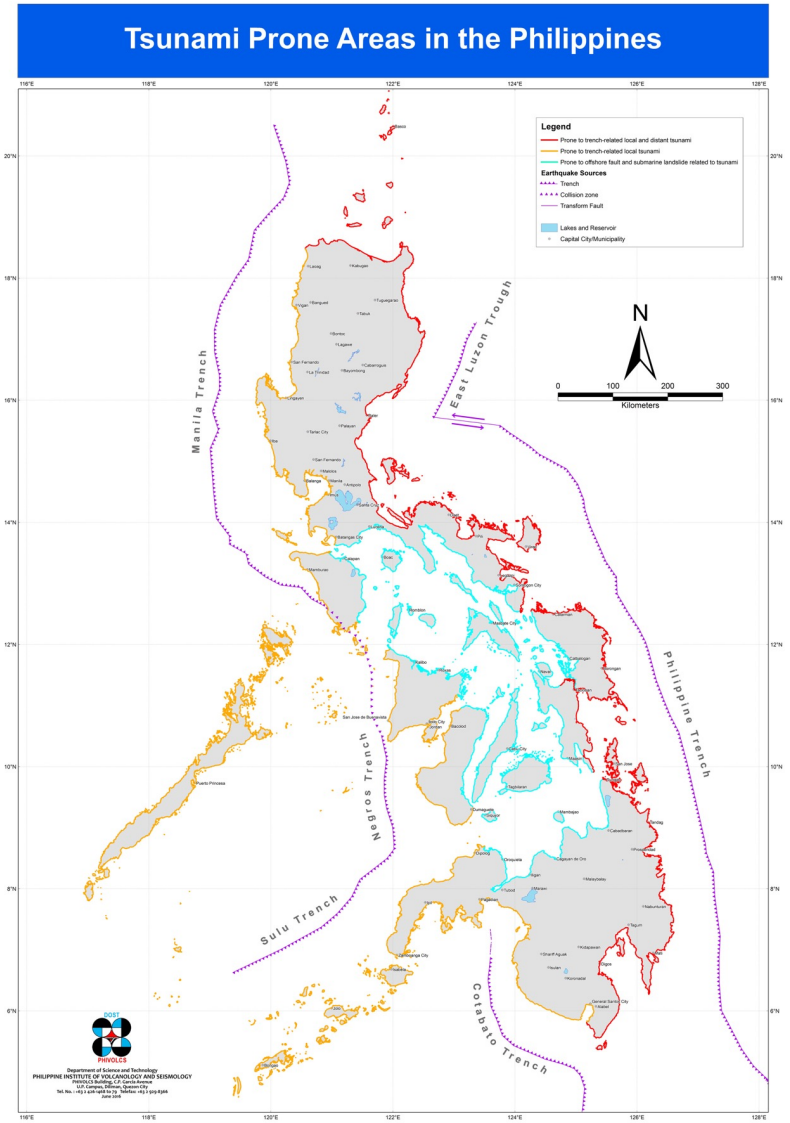


Historical Tsunami in the Philippines



41 confirmed tsunami events based on historical accounts and earthquake events catalogues from 1828 to 2012





Tsunami Prone Areas in the Philippines

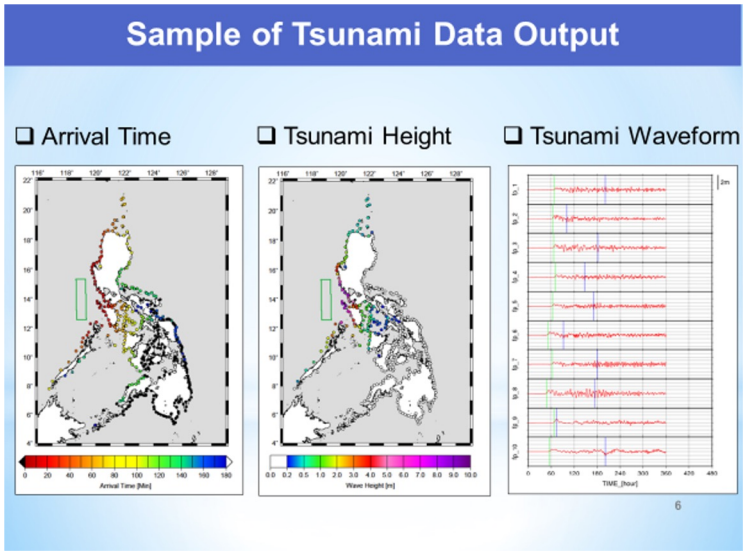
Prone to trench-related local and distant tsunami

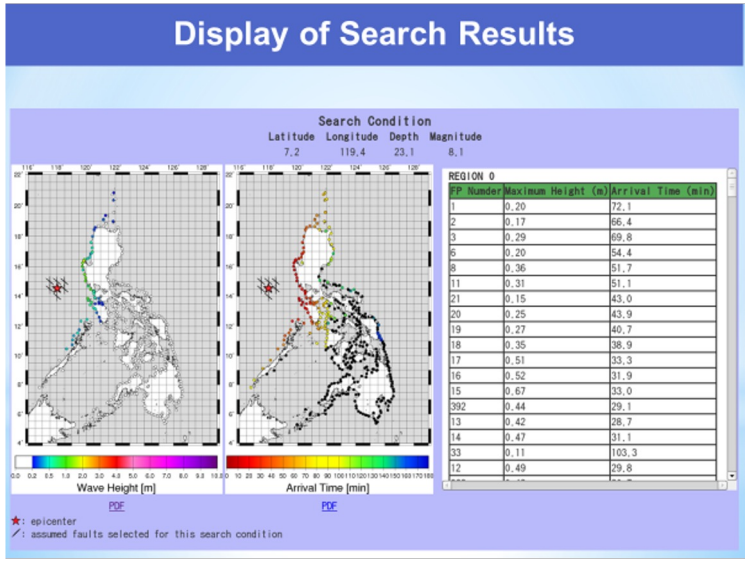
Prone to trench-related local tsunami

Prone to offshore fault and submarine landslide related local tsunami

Tsunami Detection, Warning and Dissemination

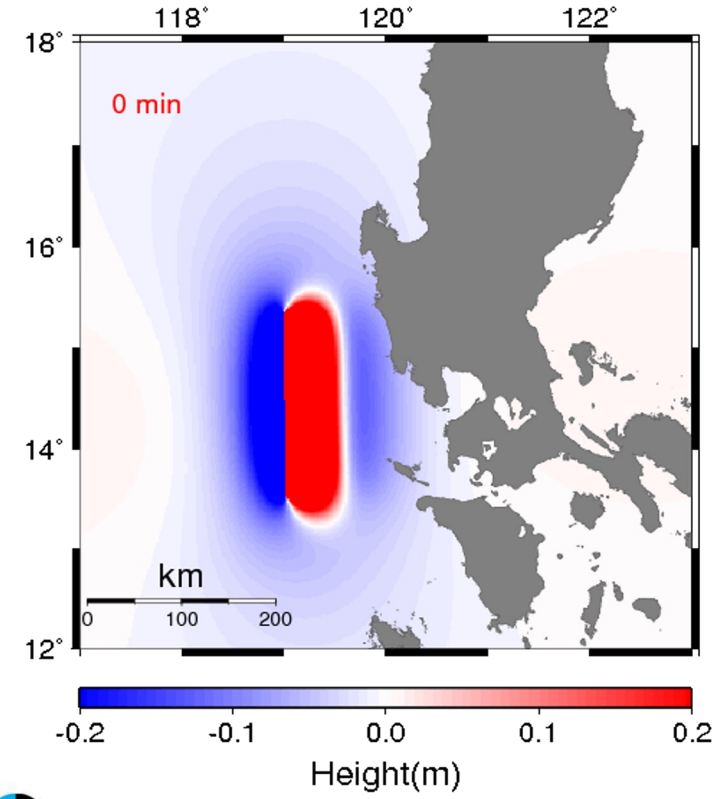
~30,000 Event-Based Tsunami Scenario Database (2012/2013)

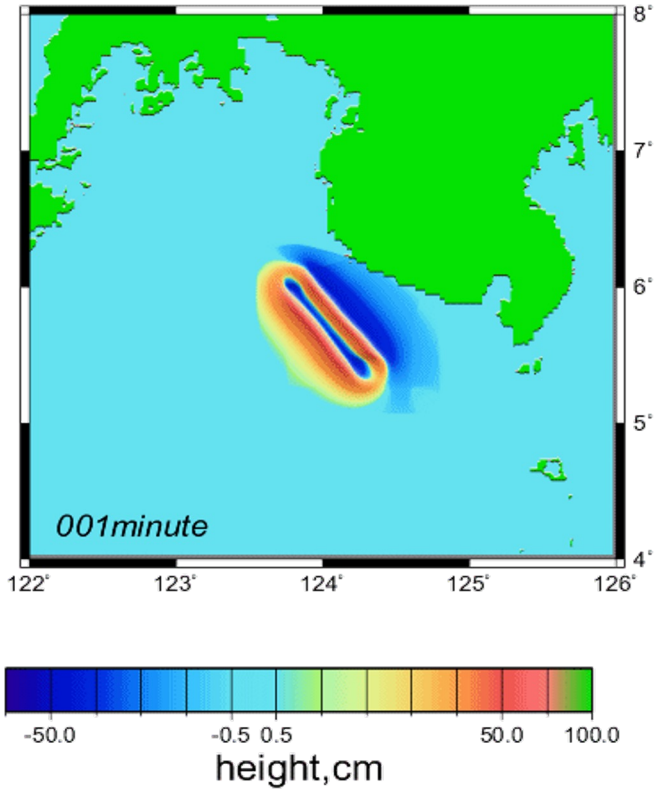




- ❑ 0.5 degree interval
- ❑ 5 magnitude cases (M8.5, M8.0, M7.5, M7.0, M6.5)
- ❑ 5 depth cases (10km, 20km, 40km, 80km, 100km)
- ❑ 2 strike angles for some faults

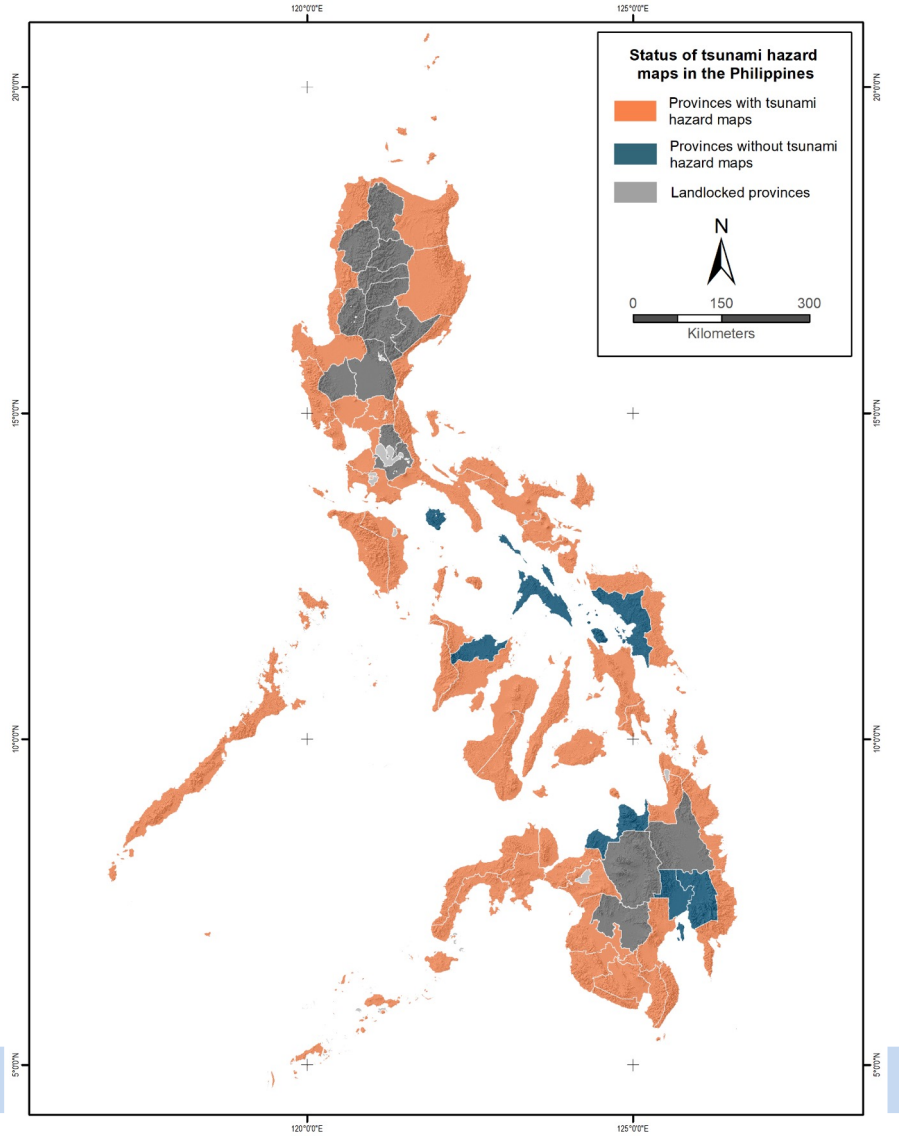
Tsunami simulation





Status of Tsunami Hazard Maps in the Philippines

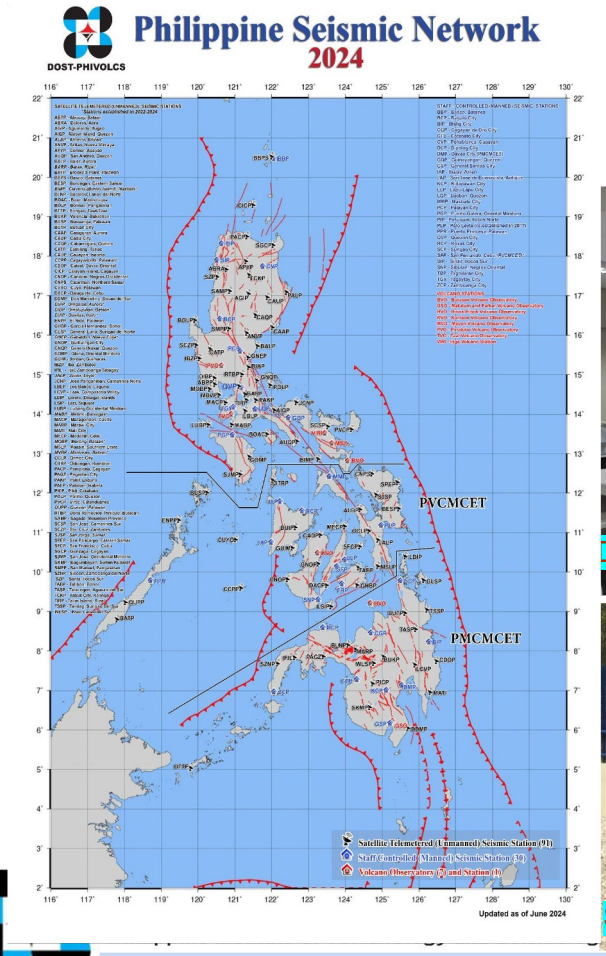
	No. of Provinces	Year Generated
Tsunami Prone Areas with Hazard Map	30	2007-2013
Tsunami Inundation Maps (with specific inundation depths)	29	2018-2022 as of 2024 Tsunami Hazard Maps:80 **municipal scale** maps
No tsunami hazard map	8	
Landlocked Provinces	15	



Coastal Assessment, Mapping, and Research of Tsunami Hazards in the Philippines (CoAsT PH)

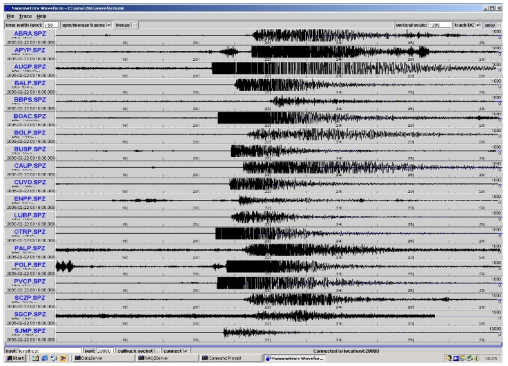
Tsunami Detection, Warning and Dissemination

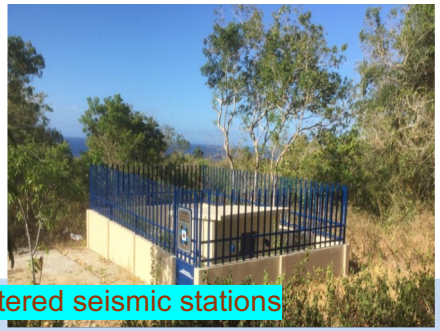
EARTHQUAKE MONITORING NETWORK



- **123**-station network (seismographs)
  - *29 staff-controlled seismic stations, 94 satellite-telemetered seismic stations*
  - *7 volcano observatories*

Digital Seismic Record




Satellite-telemetered seismic stations

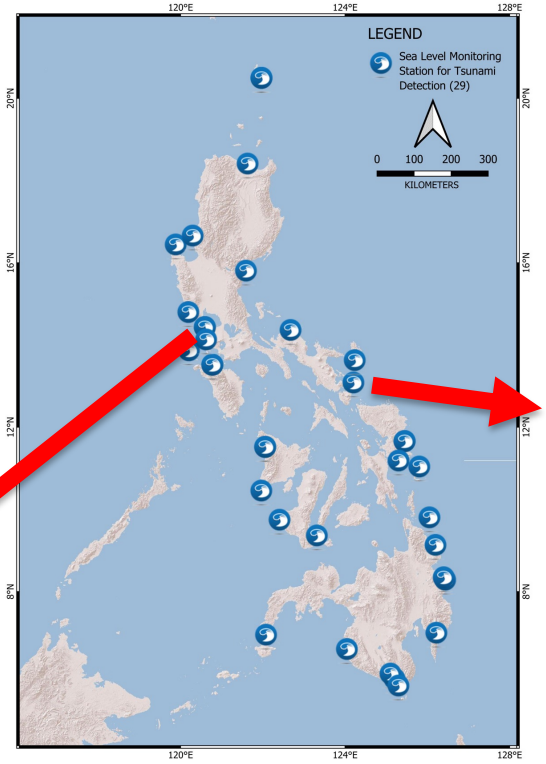
- **PMCMCET - PHIVOLCS Mindanao** Cluster Monitoring Center for Earthquake and Tsunami
- **PVCMCET - PHIVOLCS Visayas** Cluster Monitoring Center for Earthquake and Tsunami
- **Tagaytay City Mirror Station**

Tsunami Detection, Warning and Dissemination

TSUNAMI MONITORING NETWORK

Network	Existing
Sea Level Monitoring Station for Tsunami Detection	19 (PHIVOLCS thru JICA) 10 (PHIVOLCS thru TeWS Project) +5 (PTWC, RIMES, GLOSS)

CORREGIDOR ISLAND CAVITE SLMS (CITP)
(a) TeWS, (b) DTS and (c) TWD donated by JICA



PRIETO DIAZ ALBAY GULF SLMS (PATP)

29 Sea Level Monitoring Stations

Department of Science and Technology
Philippine Institute of Volcanology and Seismology

https://www.phivolcs.dost.gov.ph/index.php/tsunami/tsunami-monitoring

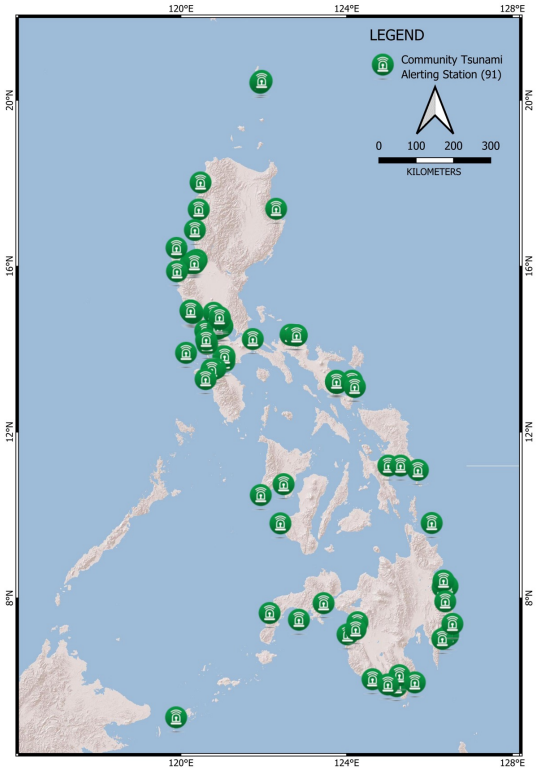
Tsunami Detection, Warning and Dissemination

TSUNAMI MONITORING NETWORK

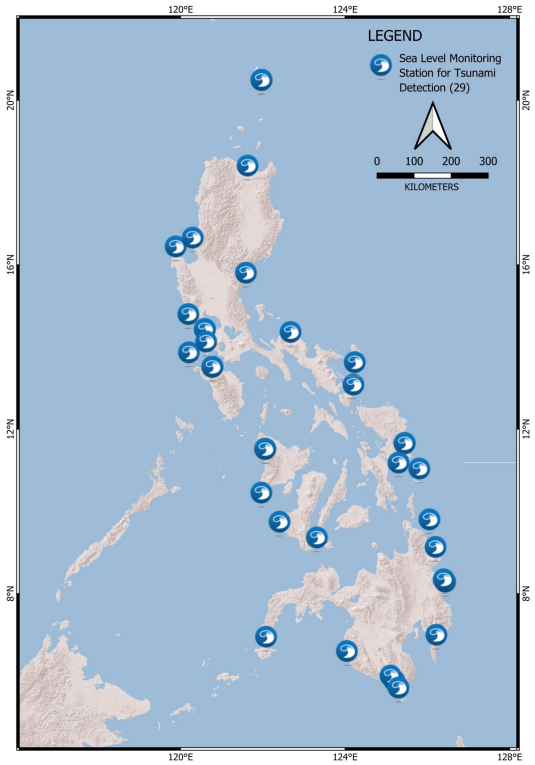
91st Community Tsunami Alerting Stations (CTAS)

San Roque Sirawai CTAS

Barangay San Roque, Sirawai, Zamboanga del Norte donated by the Provincial Science and Technology Office – Zamboanga del Norte



Strategic Locations In tandem with CTAS



29 Sea Level Monitoring Stations

PHILIPPINE TSUNAMI INFORMATION

Tsunami Information	Threat to the Philippines	Recommended Action for Affected Places
Advisory **NO TSUNAMI THREAT**	A large earthquake is generated but either (1) there is no tsunami generated by this event or (2) a tsunami was generated but will not reach the Philippines.	**No evacuation needed.** The advisory is issued for information purposes only.
Advisory **SEA LEVEL CHANGE MONITORING**	**PHIVOLCS will monitor sea level changes and provide updates.**	**No evacuation order is in effect.** Public is advised to wait and listen for updates.
Advisory **MINOR SEA LEVEL DISTURBANCE**	**Minor sea level disturbance is expected** in some coastal areas with wave heights of less than one (1) meter above the expected ocean tides.	People are advised to **stay away from the beach and not to go to the coast.** People whose houses are located very near the shoreline are advised **to move farther inland.** Owners of boats in harbors, estuaries or shallow coastal waters of the affected provinces should secure their boats and move away from the waterfront. Boats already at sea are advised to stay offshore in deep waters until further notified.
TSUNAMI WARNING	**Destructive tsunami is generated with life threatening wave heights.** (A destructive tsunami is expected to arrive to Philippine coastlines with **wave heights of greater than one (1) meter** above the expected ocean tides.)	**Immediate evacuations** of coastal communities that maybe affected are strongly advised. Owners of boats in harbors, estuaries or shallow coastal waters of the affected provinces should secure their boats and move away from the waterfront. Boats already at sea are advised to stay offshore in deep waters until further notified.

The **Philippine Institute of Volcanology and Seismology (PHIVOLCS)** is the Tsunami Warning Focal Point of the Philippines.
PHIVOLCS Building, C.P. Garcia Avenue, U.P. Campus, Diliman, Quezon City 1101
Tel. Nos.: +632 4261468 to 79; +632 9299254 Fax Nos.: +632 9271087; +632 9298366
Website: www.phivolcs.dost.gov.ph

June 2013

Tsunami Information is released if an earthquake with the potential to generate a tsunami occurred. The information is either an Advisory or Warning, a threat to the Philippines, and the recommended action for possible affected places. It also shows the earthquake parameters of the event.

DOST
PHIVOLCS
Republic of the Philippines
Department of Science and Technology
PHILIPPINE INSTITUTE OF VOLCANOLOGY AND SEISMOLOGY

Tsunami Information No.:
Date Issued: September 6, 2020
Time Issued: 11:38 PM

ADVISORY
No Tsunami Threat

A strong earthquake with a preliminary magnitude of ***6.4*** occurred in ***Mindanao, Philippines*** on ***06 September 2020*** at **11:23** PM (Philippine Standard Time) located at ***6.36 °N, 125.97 °E*** with depth of **98** km. No destructive tsunami threat exists based on available data.

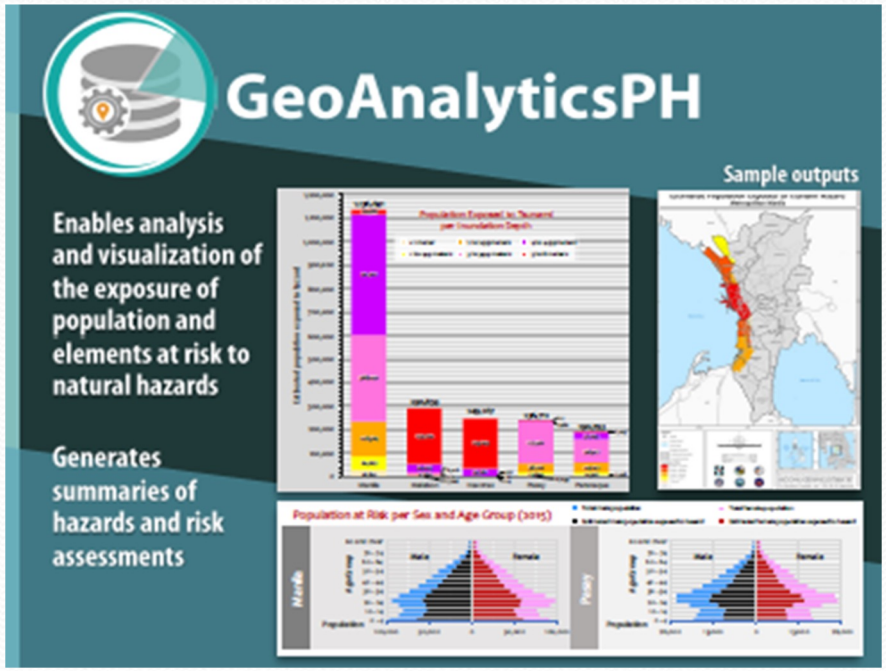
This is for information purposes only and there is no tsunami threat to the Philippines from this earthquake.

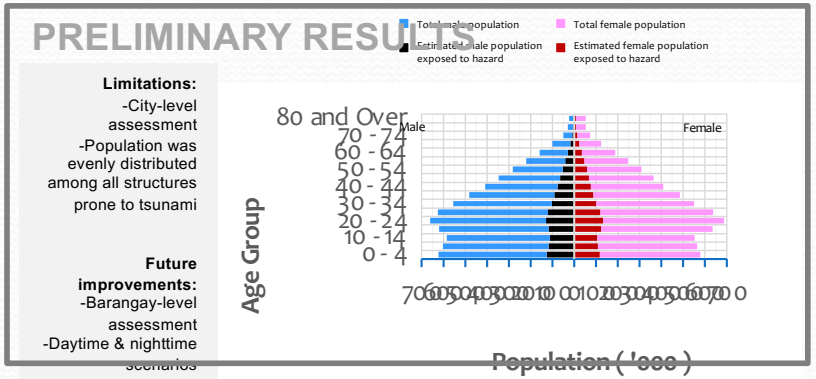
DOST- PHIVOLCS
GCP/DNC/WZT/BR/PPS/JBCR/RJP

https://www.phivolcs.dost.gov.ph/index.php/tsunami/tsunami-advisory-and-warning3

Tsunami Detection, Warning and Dissemination

Hazard and Impact Assessment Software

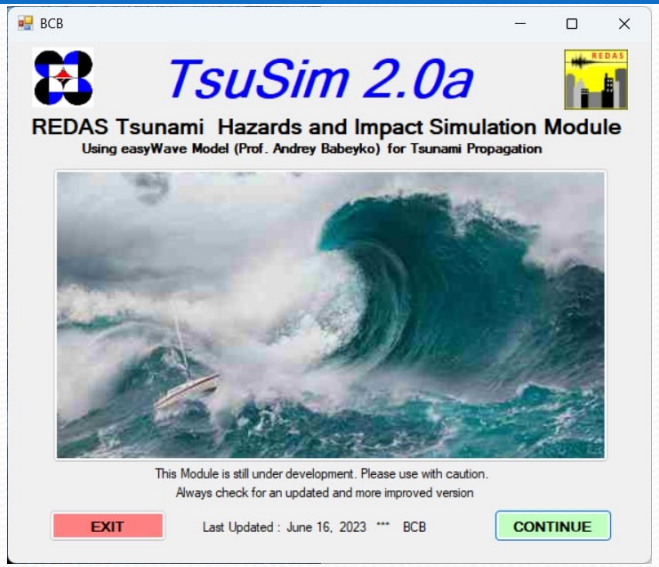


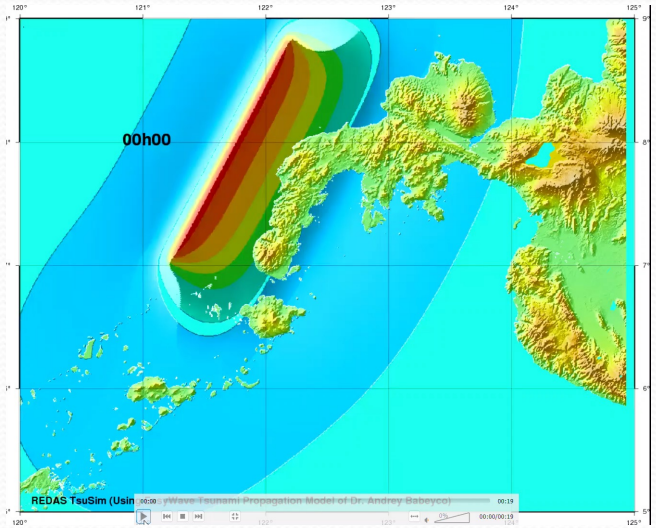


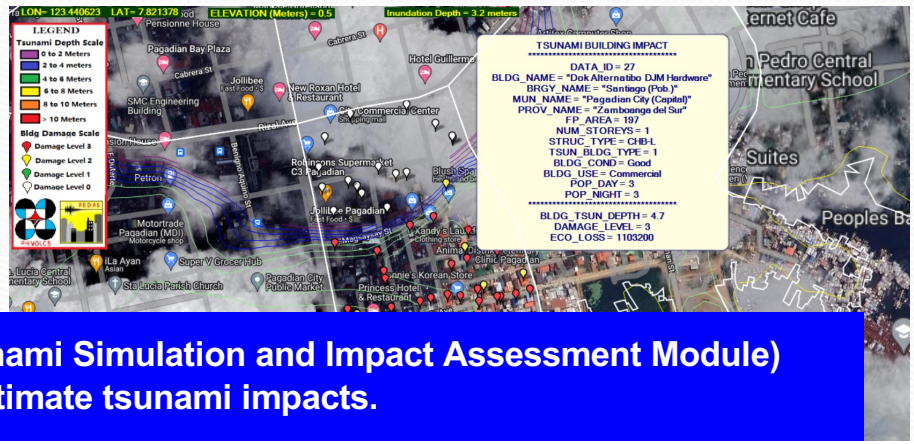
Building Use	Number of Structures Exposed
Residential	169,925
Mixed Residential and Commercial	95,331
Commercial	14,972
Industrial	6,012
Institutional	6,116
Cultural	1,765
Infrastructure and Utilities	3,276
Recreational	658
Agriculture	810
	Total: 299,044

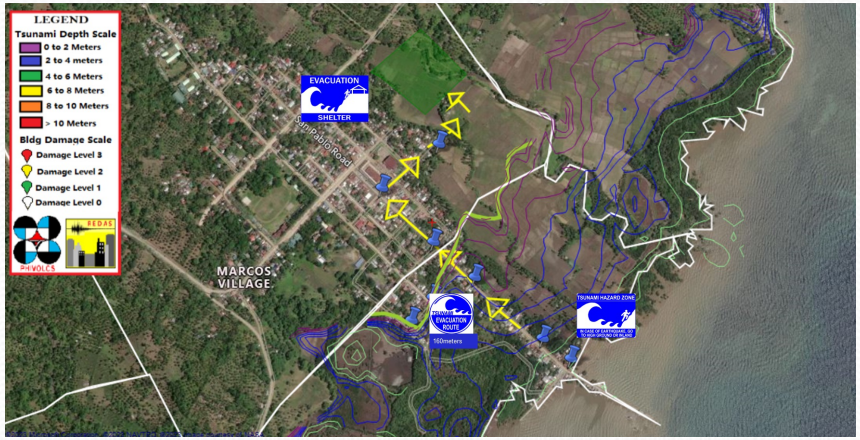
REDAS Tsunami Simulation Module (REDAS-TSUSIM)

REDAS Tsunami Simulation and Impact Module can simulate tsunami hazard, perform simulation and animation, compute for tsunami impacts, and plot tsunami evacuation map.









TsuSIM (Tsunami Simulation and Impact Assessment Module) which can estimate tsunami impacts.

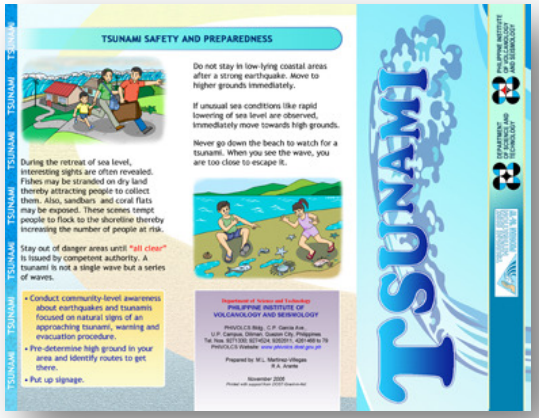
- **Enhancing Tsunami Preparedness for Effective Community Response**

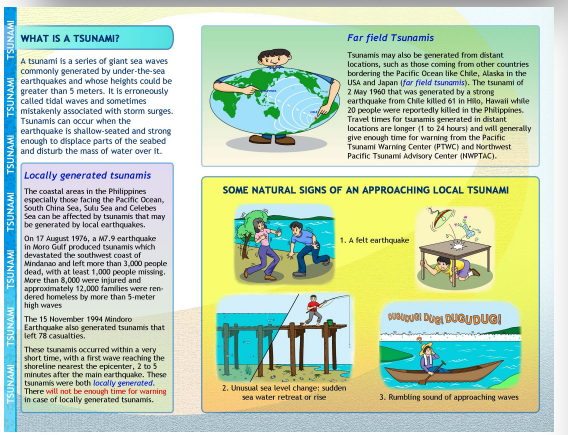
Education, Awareness, Preparedness Campaigns

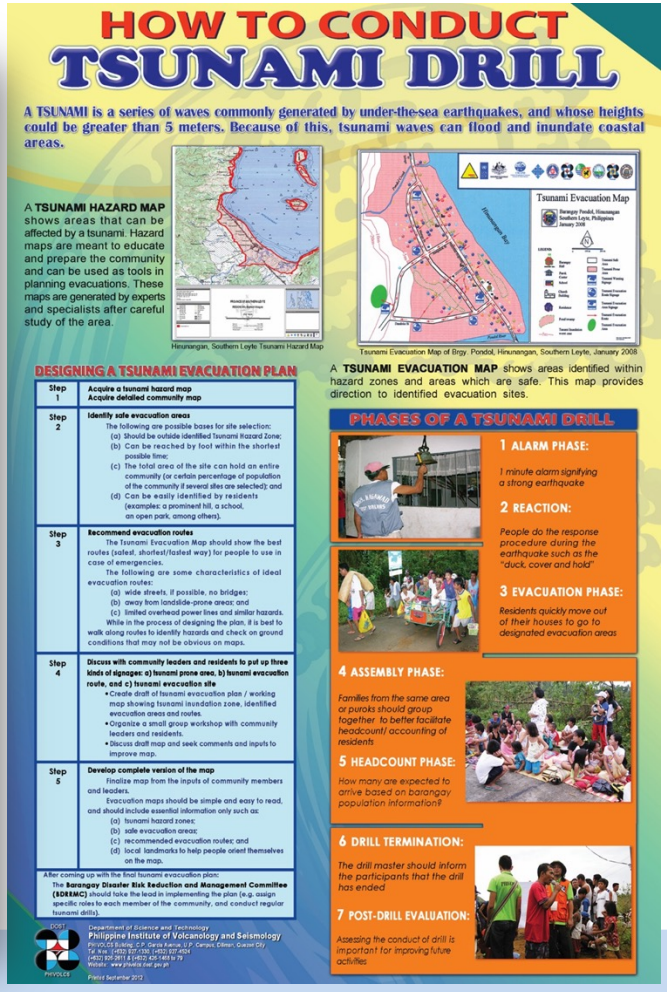
Educational Tours

Educational materials (print, digital, video, you tube) seminars, drills, press conferences, media programs

- # Enhancing Tsunami Preparedness for Effective Community Response







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Philippine Institute of Volcanology and Seismology

Disaster Risk Communication in multilingual country

Local Language Versions
Ilocano, Bicolano, Maguindanaoan, Cebuano, Ilonggo (2006-2007)

In local languages:

- Ilocano
- Tagalog
- Kapampangan
- Cebuano-Visayas
- Cebuano-Mindanao
- Hiligaynon

(2024-2025)

2022 onwards

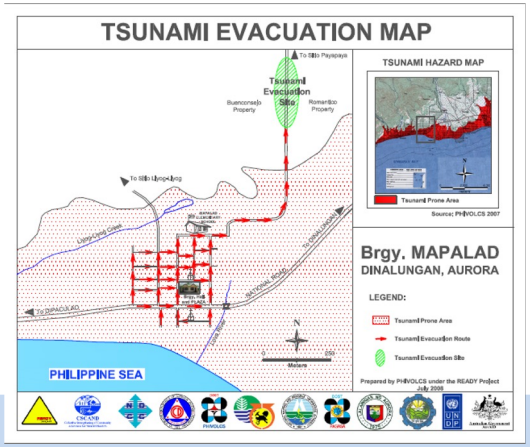
TSUNAMI READY PHILIPPINES – in coordination with NDRRMC, OCD

- **December 2022 - Letter to OCD, for exploratory meeting**
- **March 2023 exploratory meeting for the establishment of National Tsunami Ready Board (NTRB)**
  - **Ways forward:**
    - **List of activities the 12 indicators of Tsunami Ready Recognition Program drafted**
    - **OCD-PDPS to present to heads the need to establish NTRB**

- **2023: DEVELOPING A TSUNAMI-READY COMMUNITY: BRGY. CONCORDIA, BOLINAO, PANGASINAN**
- **-2024: DEVELOPING A TSUNAMI-READY COMMUNITY: CALATAGAN, BATANGAS**
- **2025- draft creation of NTRRB**

Establish community-based early warning system for tsunami and conduct tsunami preparedness drills in communities

- *Evacuation plans and maps*
- *Signage installation*
- *IEC seminars*
- *Community Drills*



Tsunami Markers

Local government initiated in collaboration and technical support from PHIVOLCS

For the 1994 Mindoro Tsunami

For the 1976 Moro Gulf Tsunami

For the 1970 Baler Tsunami

WORLD TSUNAMI AWARENESS DAY
5 NOVEMBER

Since 2016, the Philippines is one with the whole world in commemorating the World Tsunami Awareness Day

WTAD 2024

Philippine Institute... was live.
7h ·

WORLD TSUNAMI AWARENESS DAY

#TsunamiReadyPH
#wtad2024
#tsunamiready
#HandaAngMayAlam
#gettothehighground

Philippine Institute of...
9h ·

MORE RUN PHOTOS

More than 1,600 participa... See more

Philippine Institute... was live.
8h ·

ATM: Ribbon-cutting and opening of exhibit in observance of the World Tsunami Awareness Day

Short-term secondment of international staff from NTWCs of WG-SCS Member States to the SCSTAC.

South China Sea Tsunami Advisory Center, Beijing, China
24 July- 23 September 2024 (2 months)

THANK YOU