12th Meeting of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS)
Regional Working Group on Tsunami Warning and Mitigation System in the South China Sea Region (ICG/PTWS/WG-SCS-XII)
7-8 November 2024

Philippine Institute of Volcanology and Seismology

Country Report

Ma. Mylene Martinez-Villegas

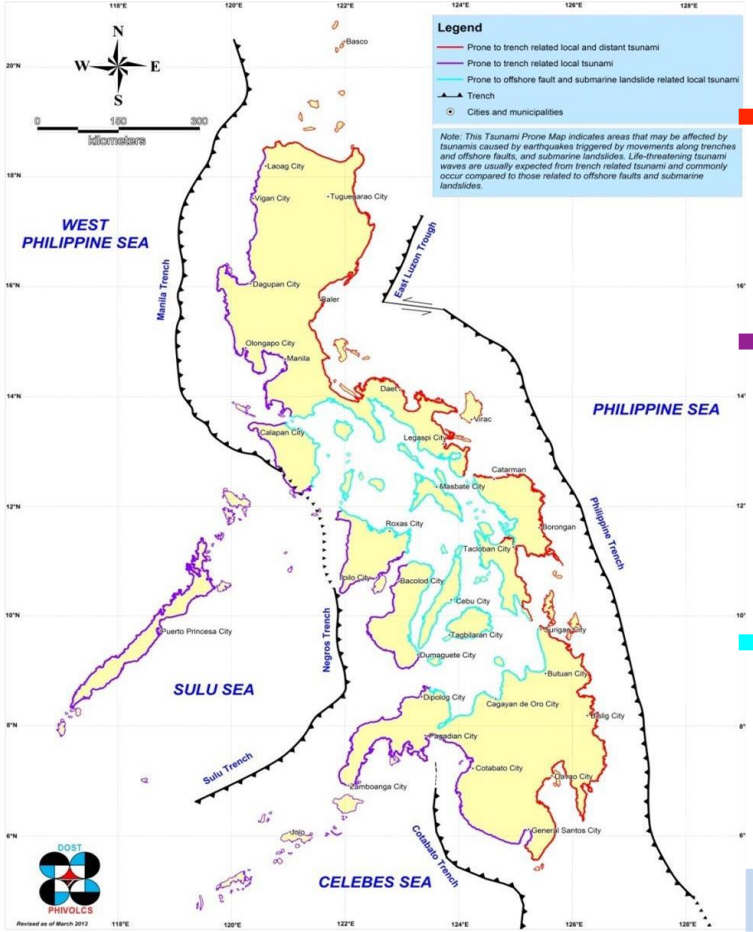
Philippine Institute of Volcanology and Seismology (PHIVOLCS)

Service institute of the Department of Science and Technology (DOST) that is principally mandated to mitigate disasters that may arise from volcanic eruptions, earthquakes, tsunami and other related geotectonic phenomena

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

Tsunami Prone Areas in the Philippines

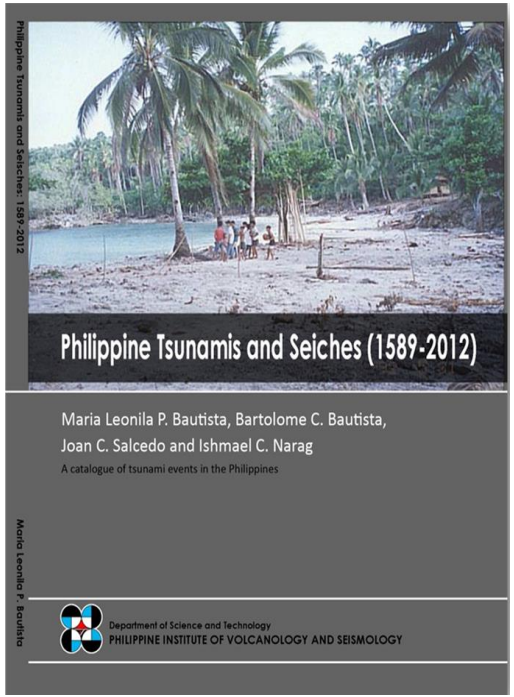


Prone to trench related local and distant tsunami

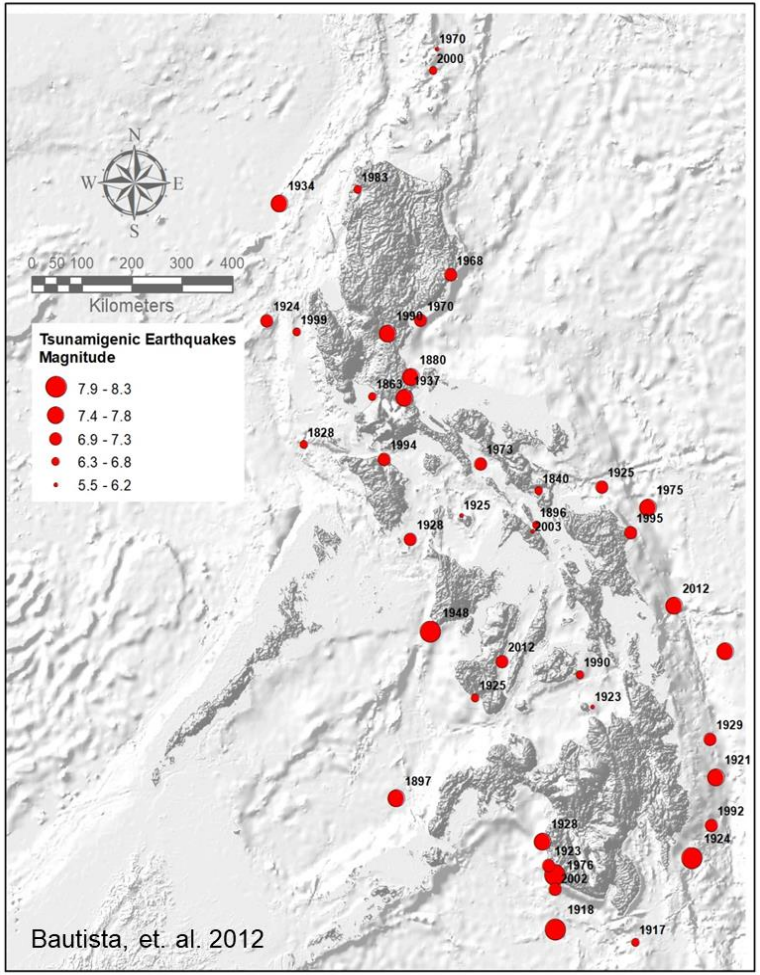
Prone to trench related local tsunami

Prone to offshore fault and submarine landslide related local tsunami

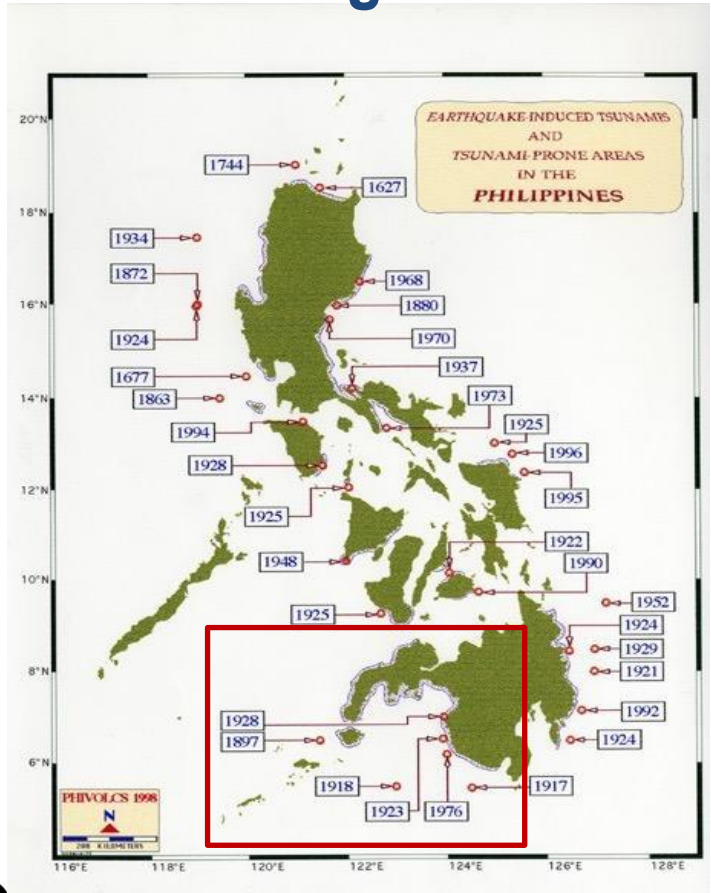
Historical Tsunami in the Philippines



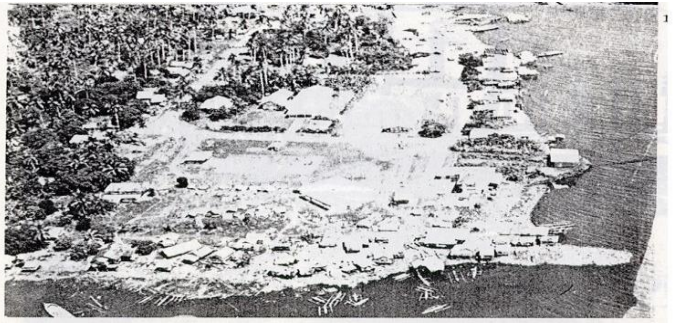
41 confirmed tsunami events based on historical accounts and earthquake events catalogues from 1828 to 2012



17 August 1976 Moro Gulf Earthquake & Tsunami

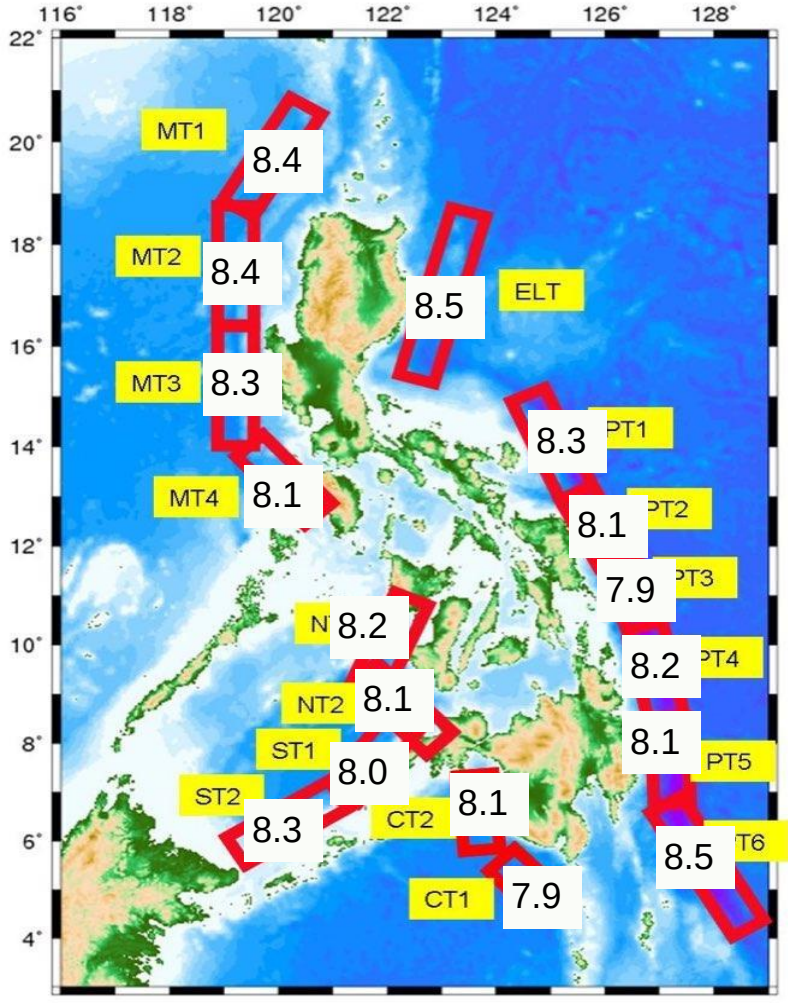


- Magnitude 8.1, Shallow depth (<33 km)
- First waves reported within 2 to 5 minutes of the main shock
- Series of waves (~3- 7 waves reported), 1-5 minutes apart
- Height up to 9 meters
- Death ~8000



Inundated Village

Earthquake Sources

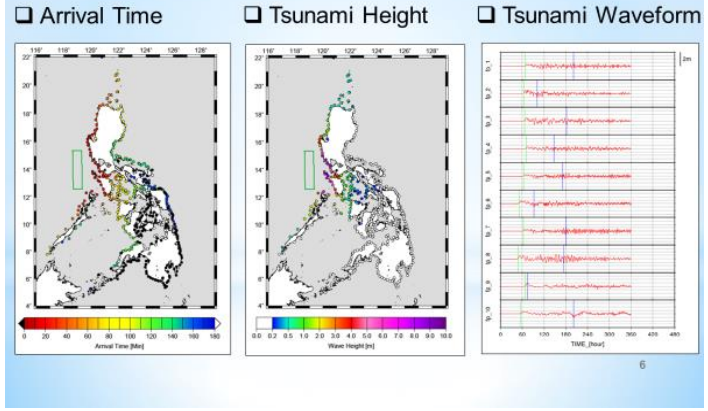


(Salcedo, 2010)

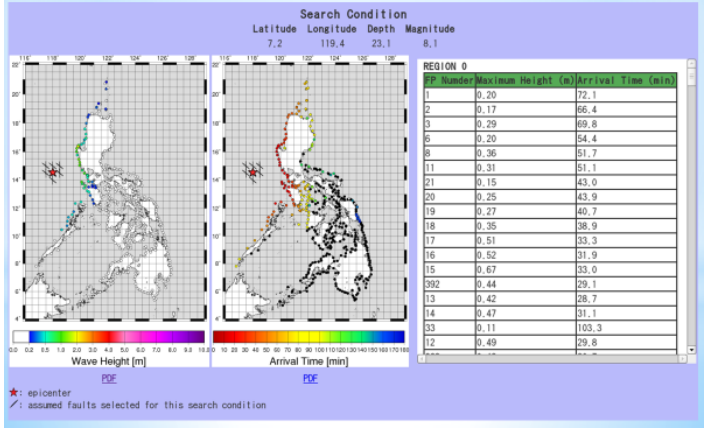
Tsunami Detection, Warning and Dissemination

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

Sample of Tsunami Data Output



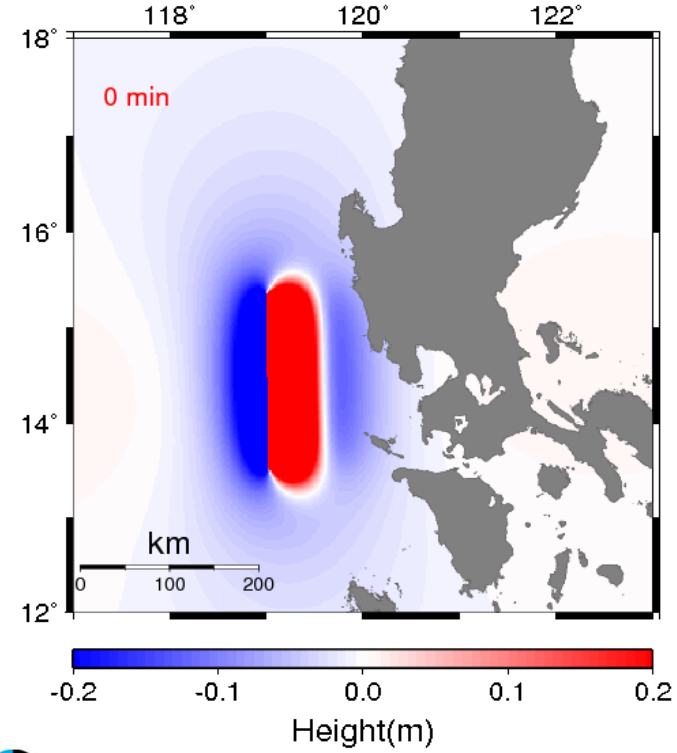
Display of Search Results

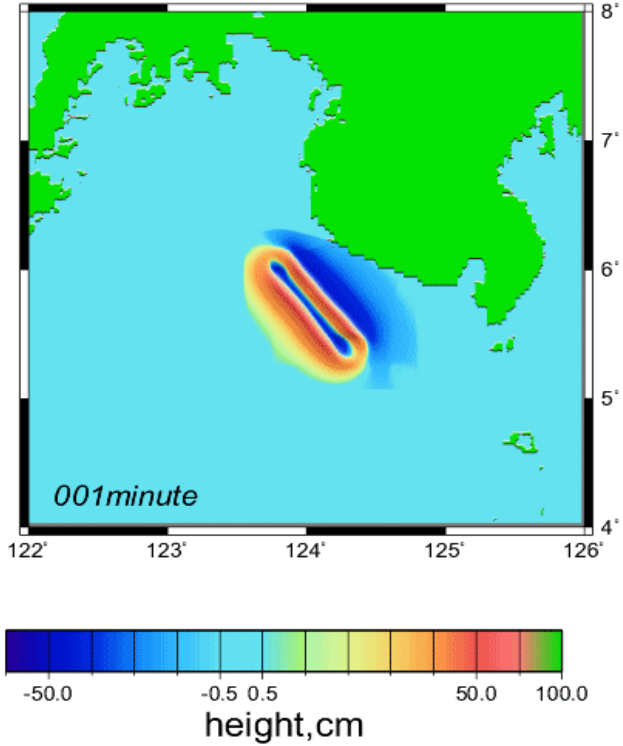


- ❑ 0.5 degree interval
- ❑ 5 magnitude cases (M8.5, M8.0, M7.5, M7.0, M6.5)
- ❑ 5 depth cases (10km, 20km, 40km, 80km, 100km)
- ❑ 2 strike angles for some faults

Tsunami Detection, Warning and Dissemination

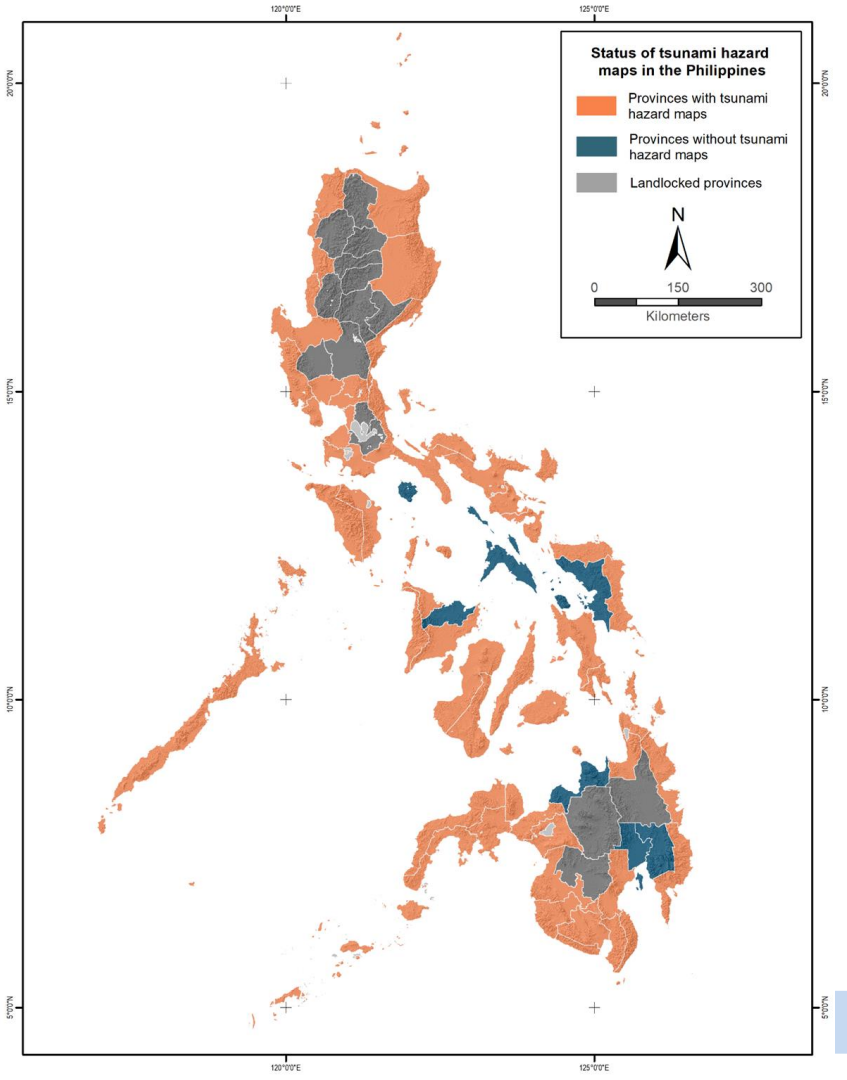
Tsunami simulation



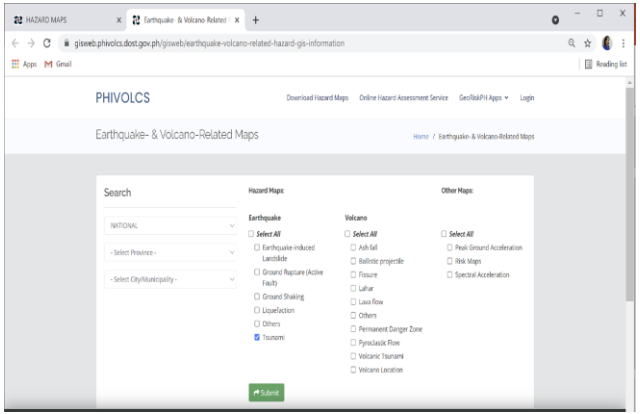


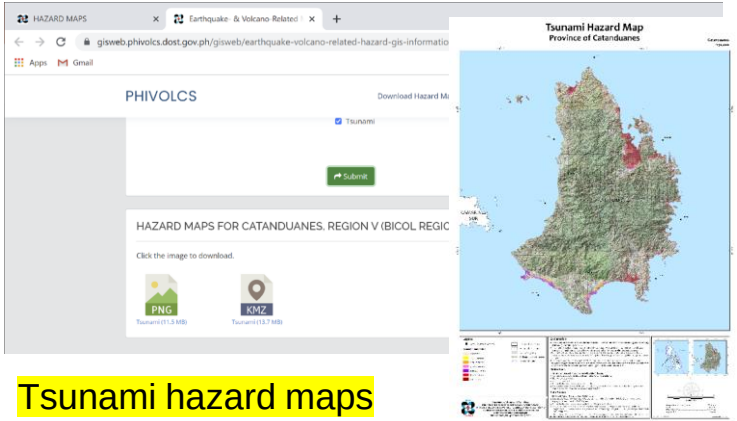
Status of Tsunami Hazard Maps in the Philippines

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

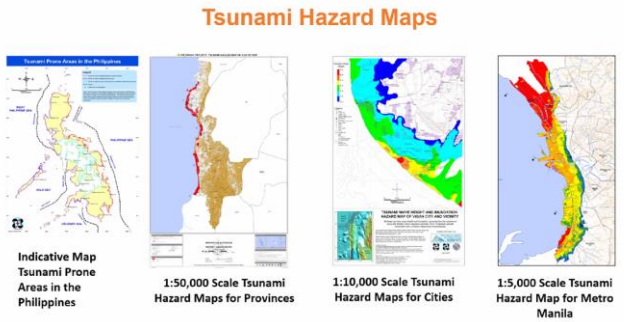


Status of Tsunami Hazard Maps in the Philippines





Tsunami hazard maps



KEY ACTIONS FOR DISASTER RISK REDUCTION

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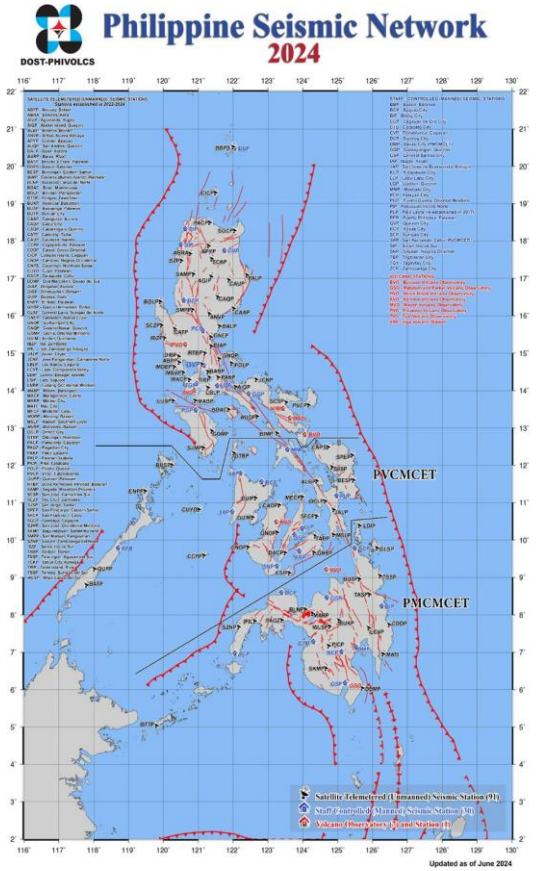
- **Warn and Disseminate Information**
  <Communication

- Respond Properly and Timely
  <Preparedness, Mitigation, Response, Recovery

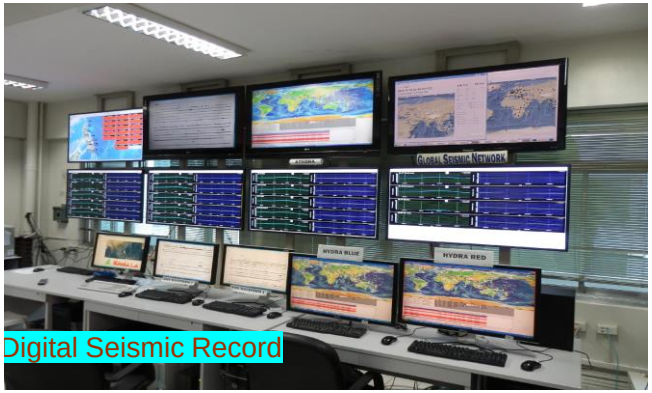
Tsunami Detection, Warning and Dissemination

EARTHQUAKE MONITORING NETWORK

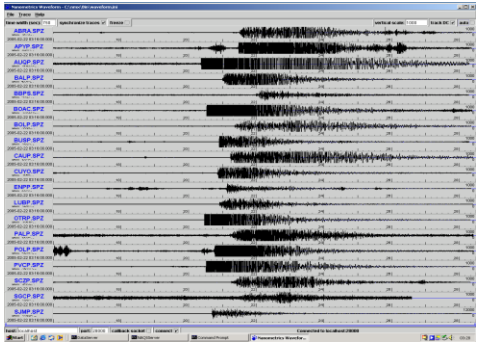


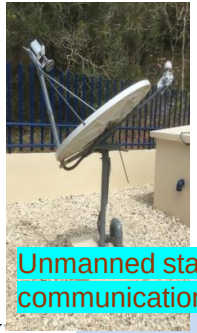
- **121**-station network (seismographs)

- 30 manned seismic stations, 91 unmanned seismic stations with satellite telemetry communication, 6 volcano-seismic station with satellite telemetry



Digital Seismic Record





Unmanned stations with satellite communication

- 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
Real-time tide gauges	*19 (PHIVOLCS thru JICA) 5 (PTWC, RIMES, GLOSS)
Community tsunami detection and warning system	10 (PHIVOLCS)

PHIVOLCS thru JICA

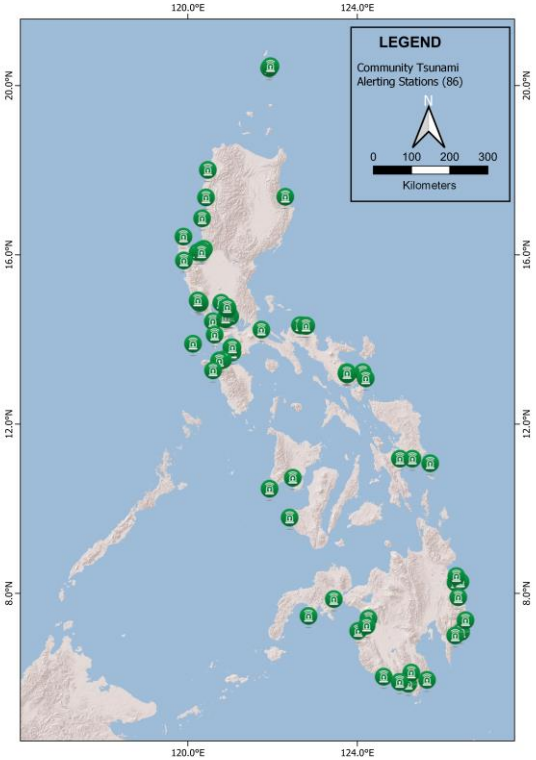
PHIVOLCS Community Tsunami Detection

* Unmanned sea level stations need to be set up in more areas

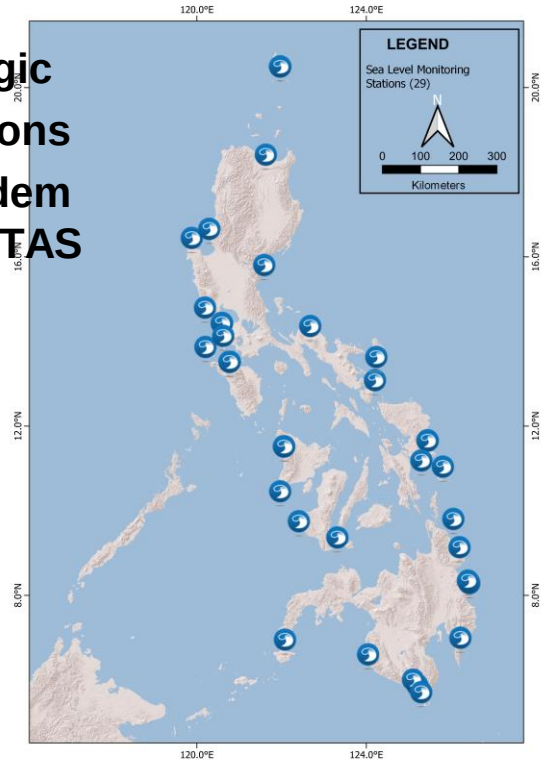
Tsunami Detection, Warning and Dissemination

TSUNAMI MONITORING NETWORK

87 Community Tsunami Alerting Stations (CTAS)



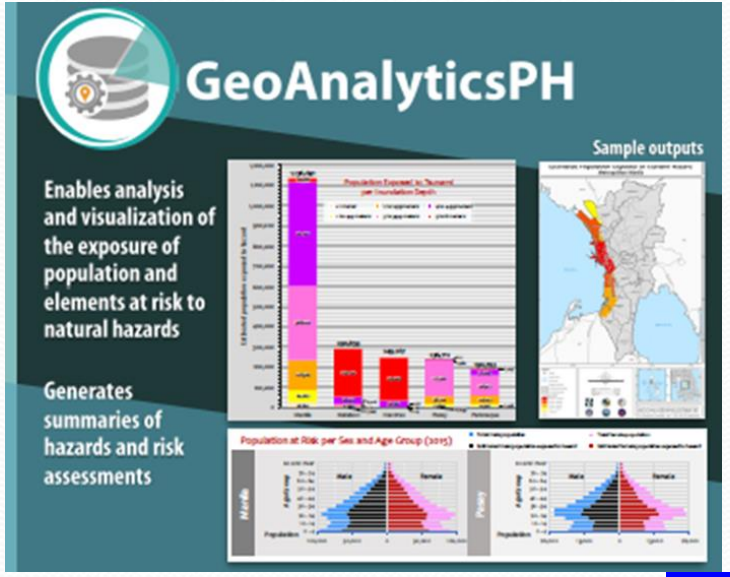
Strategic Locations In tandem with CTAS

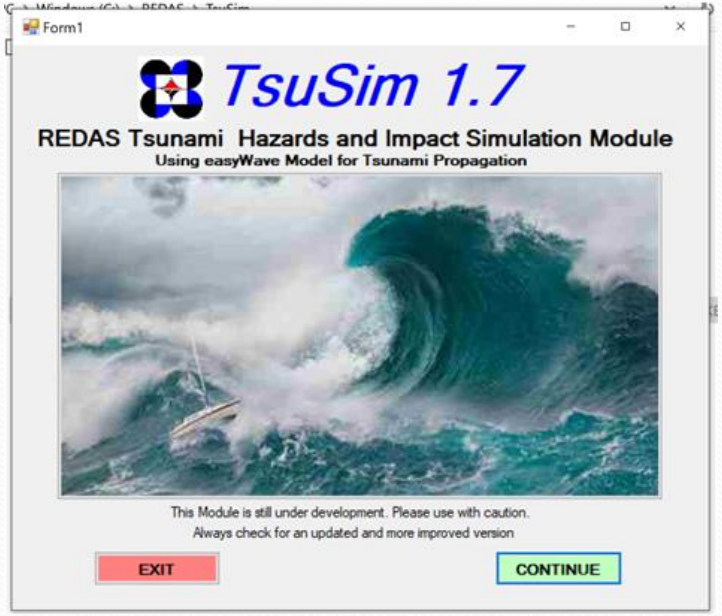


29 Sea Level Monitoring Stations

Tsunami Detection, Warning and Dissemination

Hazard and Impact Assessment Software





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

KEY ACTIONS FOR DISASTER RISK REDUCTION

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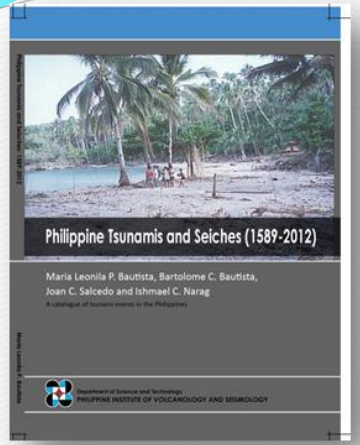
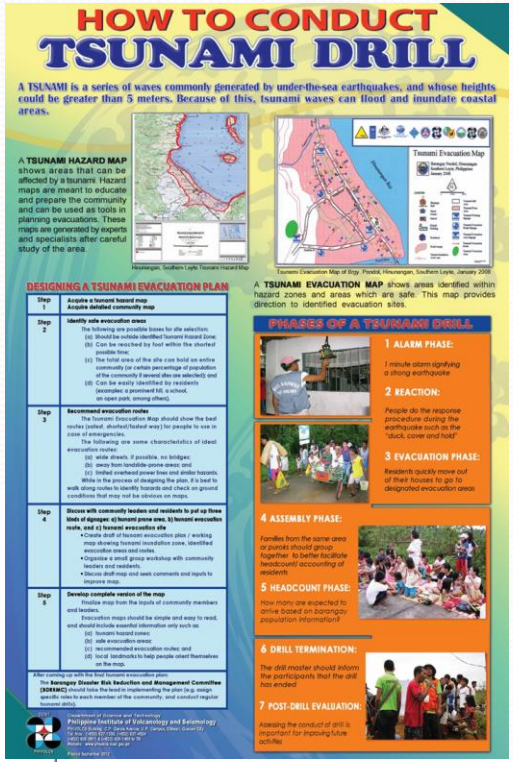
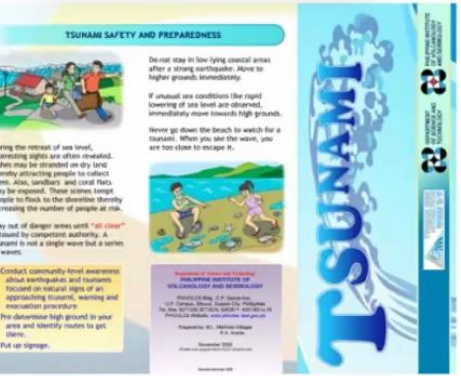
DOST-PHIVOLCS

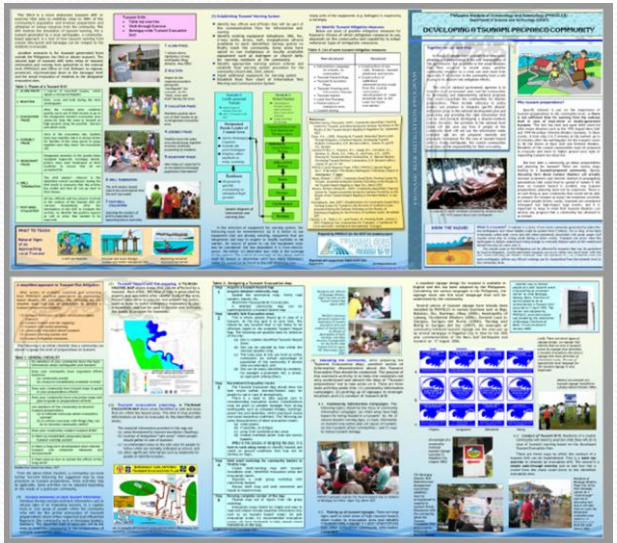
Increase awareness on basic tsunami information





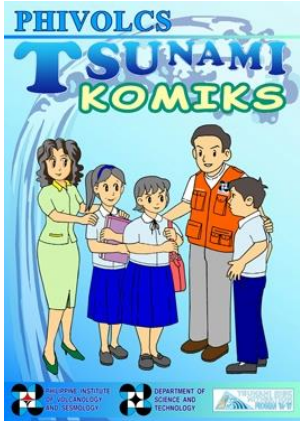
PHIVOLCS TSUNAMI AVP_Final
High Res 720p

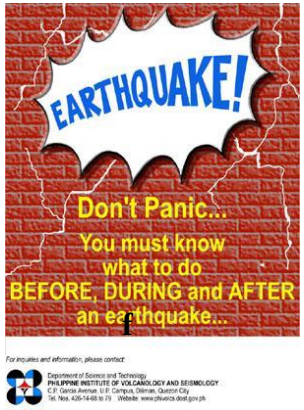




- **Enhancing Tsunami Preparedness for Effective Community Response**

Education, Awareness, Preparedness Campaigns





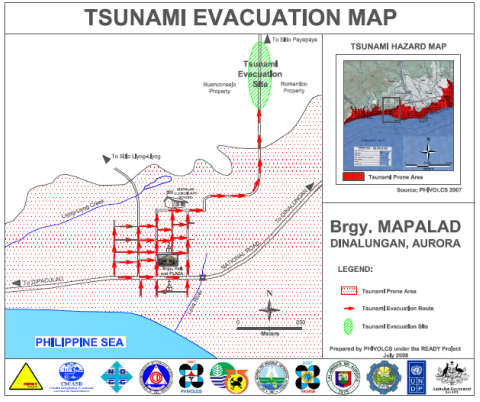
Educational materials (print, digital, video, you tube) seminars, drills, press conferences, media programs

Educational Tour

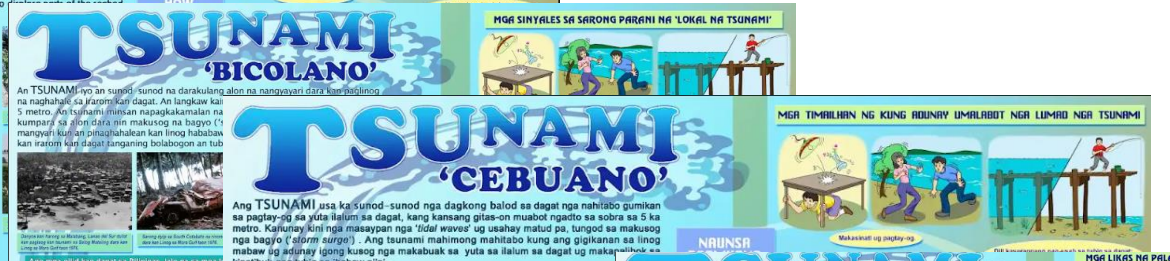
Establish community-based early warning system for tsunami and conduct tsunami preparedness drills in communities

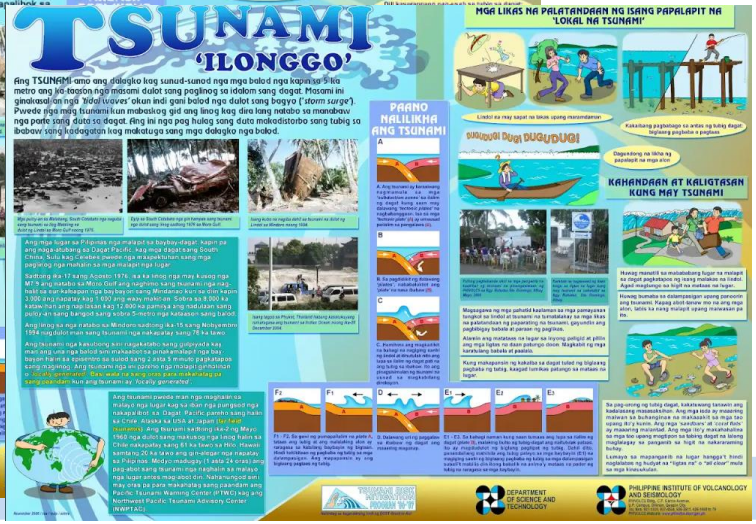
Evacuation plans and maps

- *Signage installation*
- *IEC seminars*
- *Community Drills*



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





Department of Science and Technology
Philippine Institute of Volcanology and Seismology

Stories of Filipinos in Japan during the Great East Japan Earthquake and Tsunami 2011

Learning from the experiences of others

Fig. 6. A JICA-Philippines representative with the Director of PHIVOLCS unveiling the first two comics at the launching event, March 2013.

Filipino

English

DANAS

Earthquake, Tsunami and Volcano Disaster Narratives for an Experiential Knowledge-based Science Communication

National Consultation Workshop for Harmonized Tsunami Program 2019

- Venue for a coordinated multi-agency, multi-stakeholder discussion

National Harmonized Tsunami DRR 2020 (virtual, focus on Clusters 1,2,3 (Mindanao)

- Platform/venue for a coordinated multi-agency, multi-stakeholder discussion
- Toolkit/manual/unified template for reporting past accomplishments, current initiatives and short-term

National Harmonized Tsunami DRR 2021 (virtual, Clusters 1-9)

- Platform/venue for a coordinated multi-agency, multi-stakeholder discussion
- Toolkit/manual/unified template for reporting past

Introduced to NDRRMC in 2022

UNESCO/IOC Tsunami Ready Recognition Programme

The Tsunami Ready Recognition Programme is an international community-based recognition programme developed by Intergovermental Oceanographic Commission (IOC) of UNESCO. It aims to build resilient communities through awareness and preparedness strategies that will protect life, livelihoods and property from tsunamis in different regions.

http://ntic.pc-unesco.org/index.php?option=com_content&view=category&id=2234&Itemid=2758

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**

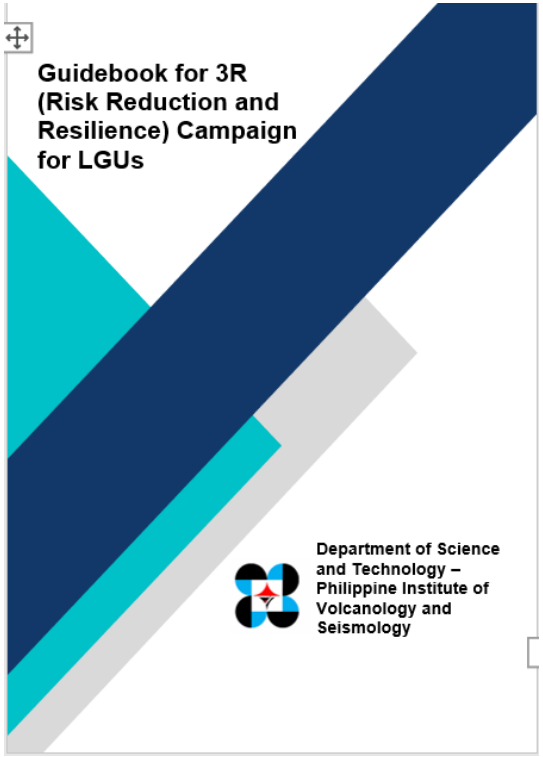
- **2023: DEVELOPING A TSUNAMI-READY COMMUNITY: BRGY. CONCORDIA, BOLINAO, PANGASINAN**
- **-2024: DEVELOPING A TSUNAMI-READY COMMUNITY: CALATAGAN, BATANGAS**

TSUNAMI READY INDICATORS

collaboration effort to meet a **standard level of tsunami preparedness** through the fulfillment of a set of established indicators

	TSUNAMI READY INDICATORS
I	**ASSESSMENT (ASSESS)**
1	**ASSESS-1**. Tsunami hazard zones are mapped and designated.
2	**ASSESS-2**. The number of people at risk in the tsunami hazard zone is estimated.
3	**ASSESS-3**. Economic, infrastructural, political, and social resources are identified.
II	**PREPAREDNESS (PREP)**
4	**PREP-1**. Easily understood tsunami evacuation maps are approved.
5	**PREP-2**. Tsunami information including signage is publicly displayed.
6	**PREP-3**. Outreach and public awareness and education resources are available and distributed.
7	**PREP-4**. Outreach or educational activities are held at least 3 times a year.
8	**PREP-5**: A community tsunami exercise is conducted at least every two years.
III	**RESPONSE (RESP)**
9	**RESP-1**. A community tsunami emergency response plan is approved.
10	**RESP-2**. The capacity to manage emergency response operations during a tsunami is in place.
11	**RESP-3**. Redundant and reliable means to timely receive 24-hour official tsunami alerts are in place.
12	**RESP-4**. Redundant and reliable means to timely disseminate 24-hour official tsunami alerts to the public are in place.

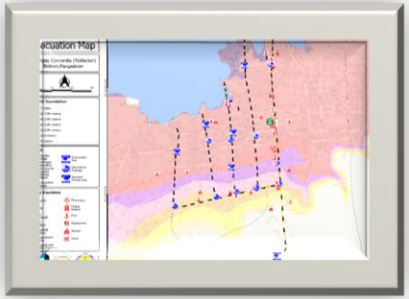
Guidebook for 3R (Risk Reduction and Resilience) Campaign for LGUs



- This Guidebook serves as a document that will provide reference and guide for local government unit officials on information about volcano, earthquake and tsunami impacts.
- It also aims to provide a step-by-step guide to **access the DOST-PHIVOLCS information materials, tools and services** that will aid them in the development of their disaster risk reduction and management plans and other related plans.

Consultations, Lectures, IECs, Workshops

Tsunami Exercise/Drill



Evacuation Planning

Coordination Meetings for the 3R Campaign project – Tsunami Ready Community

3R Campaign Project conducted a community-level survey in all coastal barangays of Calatagan, Batangas

Validation of evacuation maps and signage locations

Poblacion 3

Poblacion 4

Poblacion 1

Balibago

Gulod

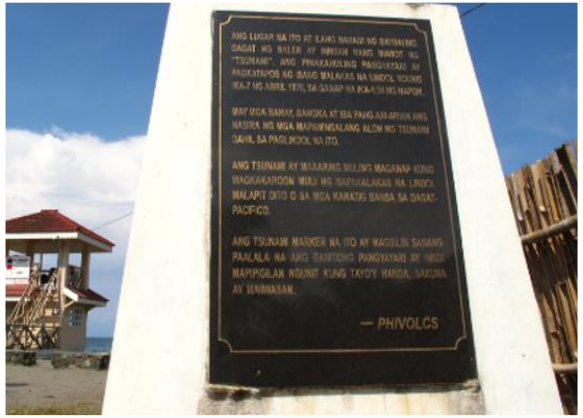
Poblacion 2

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

The Philippines is one with the whole world in commemorating the World Tsunami Awareness Day

WTAD 2016

PHIVOLCS Open House Exhibit and Tsunami Orientation (PHIVOLCS, Quezon City)

WTAD 2017

Interactive Exhibit and Tsunami Orientation (Iba, Zambales)

WTAD 2018

Interactive Exhibit and Tsunami Orientation; Partnership with Smart (Parañaque City)

WORLD TSUNAMI AWARENESS DAY
5 NOVEMBER

WTAD 2019

Press Briefing, Tsunami Forum for Oriental Mindoro LDRRMOs, Interactive Exhibit, Unveiling of Tsunami Signage in Calapan City, SMS Broadcasting (Globe), Partnership with Smart

WTAD 2020

Online Press Briefing, Slogan and Digital Poster-Making Online Contests, Webinars, SMS Broadcasting (Smart)

WTAD 2021

PHIVOLCS-DOST NCR Ceremonial MOU Signing, Webinars, Tsunami Planning Workshops, and Online Press Briefing

Tsunami Preparedness and Response Planning for MSMEs in Metro Manila (partnership with DOST-NCR)

WTAD 2020

The Philippines: Joining the global Tsunami Ready community

United Natio...
18.1K subscribers

Subscribed

11

Share

WORLD TSUNAMI AWARENESS DAY
5 NOVEMBER

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