South China Sea Region Tsunami Ready Training Course (Online)
22-23 December 2025

National Tsunami Programme in the Philippines

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Philippine Institute of Volcanology and Seismology (PHIVOLCS)
Department of Science and Technology (DOST)

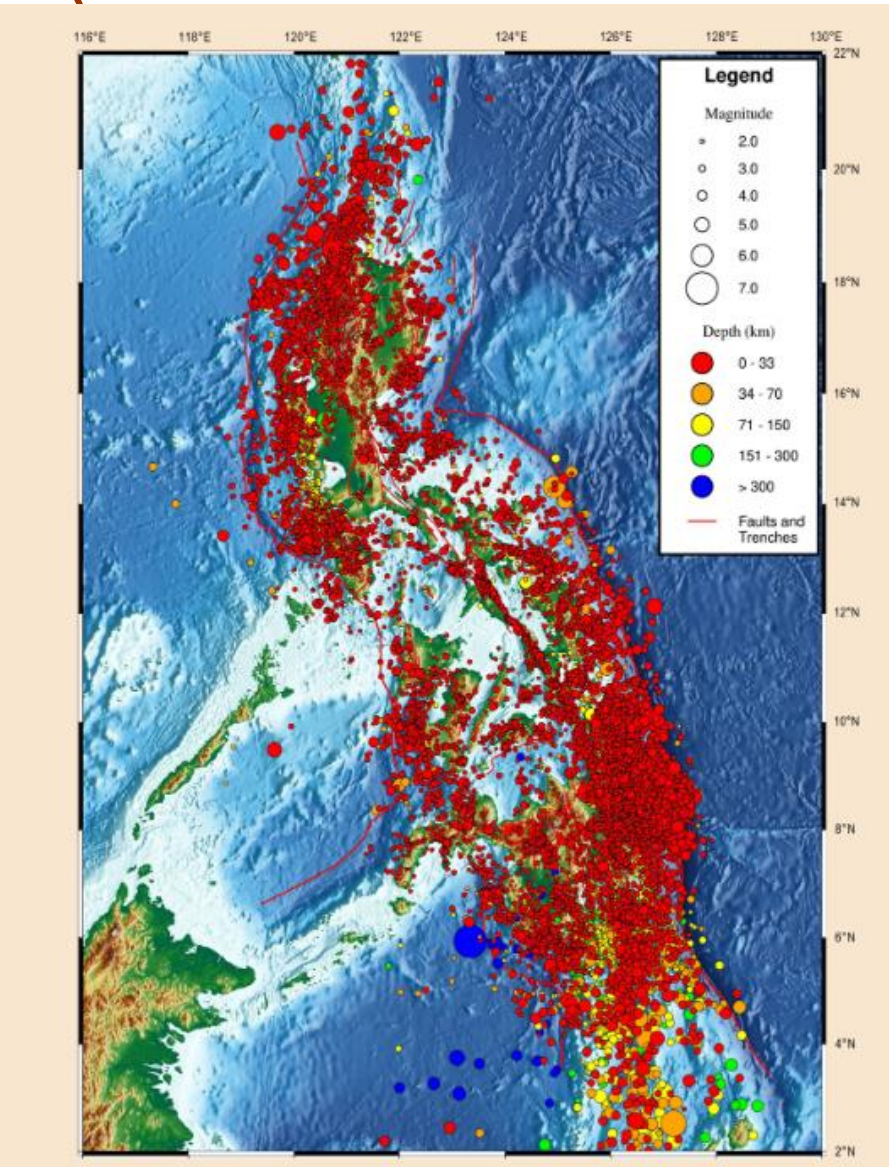
Philippine Institute of Volcanology and Seismology (PHIVOLCS)

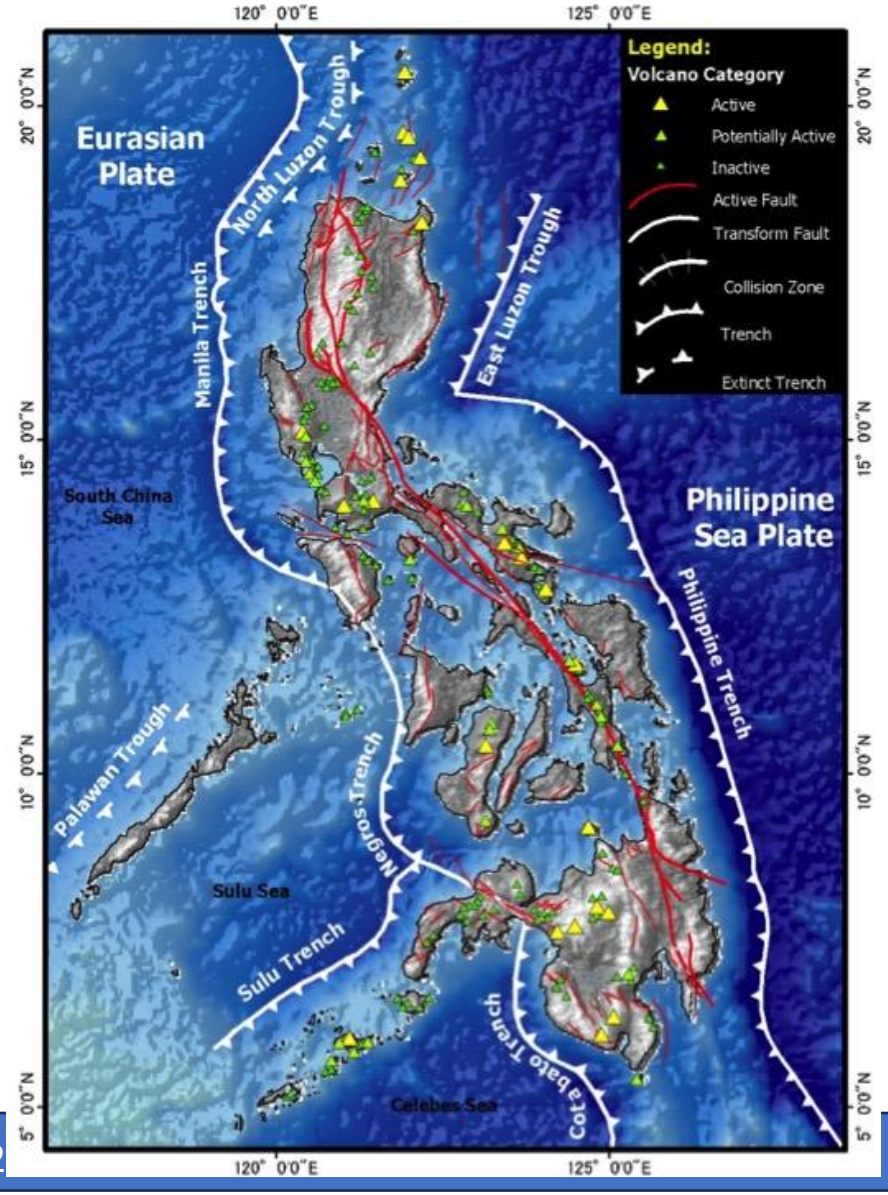
Focus on earthquakes, tsunamis, volcanic eruptions and related phenomena (ex. landslides)

- **Monitoring and warning**
- **Hazards and risk assessment**
- **Evaluation of earthquake and volcano eruption potential**
- **Public awareness, community preparedness, disaster risk reduction**

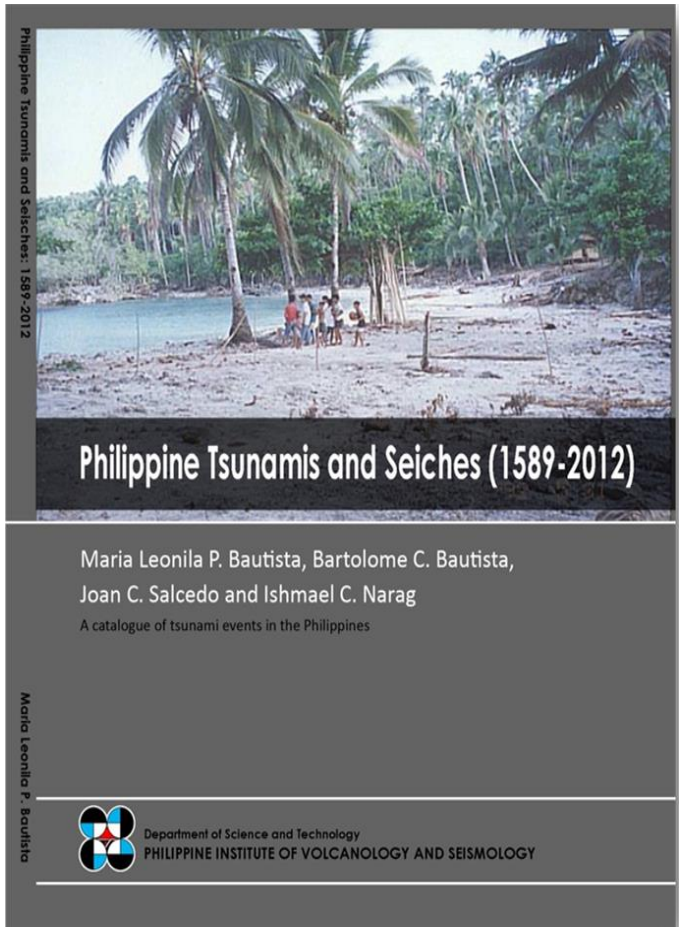
Earthquake Activity in the Philippines

(~90 destructive earthquakes for past 400 years)



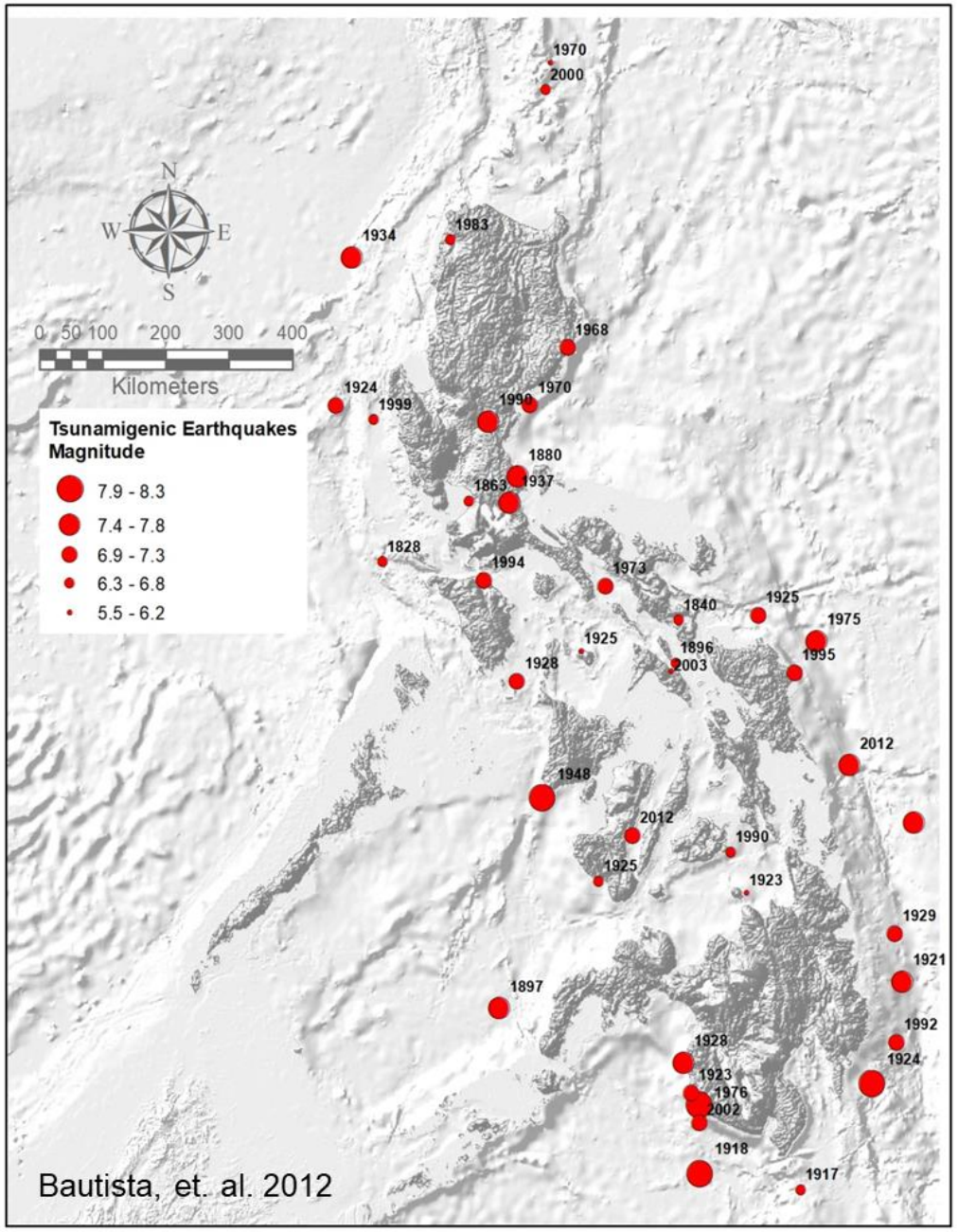


Historical Tsunami in the Philippines



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

https://www.phivolcs.dost.gov.ph/index.php/publications/books/tsunami-and-seiches



Societal Outcome: Communities have achieved resilience to volcanic eruptions, earthquakes, tsunamis, and other related hazards. **2023-2028**

Enhanced safety of communities

1. Accurately predicted and simulated geological phenomena
2. Provided highly accurate and timely warning & information
3. Developed cost-effective monitoring & warning system
4. Empowered partners to lead in reducing risks from geologic hazards down to the barangay level
5. Enhanced collaboration with stakeholders

Highly responsive and competent organization

1. Highly prominent, globally recognized experts
2. Motivated, rewarded and competent staff
3. Effective and efficient systems, procedures, structures
4. Inspiring, dynamic leadership

1. **National Volcano Monitoring & Warning (NVMW)**
2. **National Earthquake Monitoring and Information (NEMI)**
3. **National Tsunami Monitoring and Early Warning (NTMEW)**
4. **Earthquake Hazards Assessment and Research and Development (EHARD)**
5. **Volcanic Hazards Assessment and R&D (VHARD)**
6. **PHIVOLCS Risk Information Management Assessment (PRIMA)**
7. **Landslide Monitoring, Early Warning and Risk Assessment (LMEWRA)**
8. **Volcano, Earthquake, and Tsunami Disaster Preparedness and Risk Reduction (VETDPRR)**
9. **Leadership Enhancement and Development (LEAD)**
10. **Strategic Human Resource Mgmt. & Dev't. (SHRMD)**
11. **Strategic Performance Assessment & Development for Excellence (SPADE)**
12. **Strategic ICT Management and Development (StrICT)**
13. **Financial Management and Administrative Support (FMAS)**

Various activities and projects contributing to Earthquake and Tsunami Program

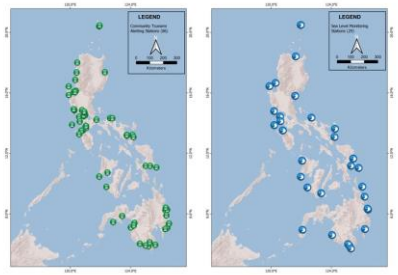
- Earthquake and Tsunami Monitoring
- Tsunami Warning and Dissemination
- Tsunami Hazard Mapping
- Community Capacity Building/Community-based Tsunami Early Warning
- Tsunami Information Materials
- Tsunami Information Dissemination for Preparedness and Awareness Promotion

1.EARTHQUAKE MONITORING and TSUNAMI WARNING

Seismic Network Development

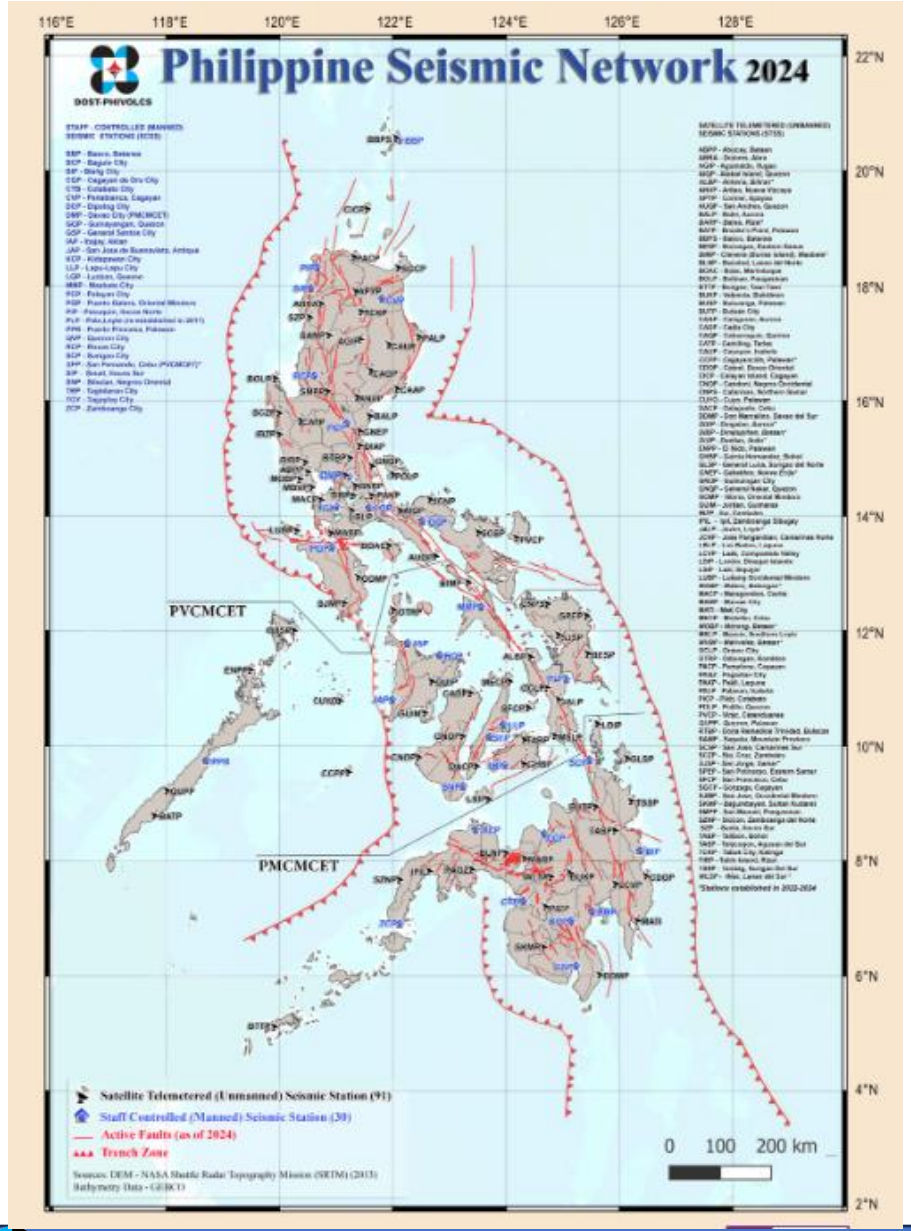
Management and Operation of Seismic Stations

Seismic and Tsunami Data Management



Management, Operations and Implementation of Systems for Tsunami Monitoring and Warning (MOIST)

EARTHQUAKE MONITORING NETWORK

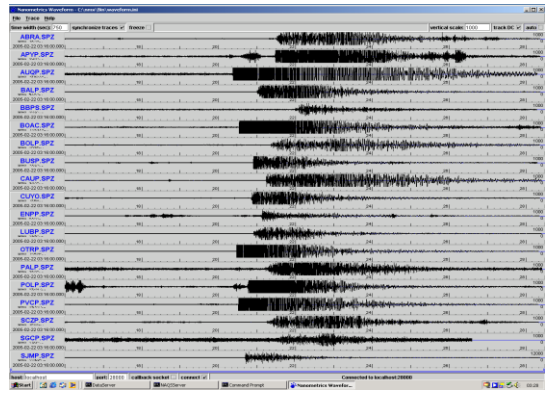


- **125** -station network (seismographs)

- *30 staff-controlled, 95 satellite-telemetered + 8 volcano stations*

Data Receiving Center at Main Office

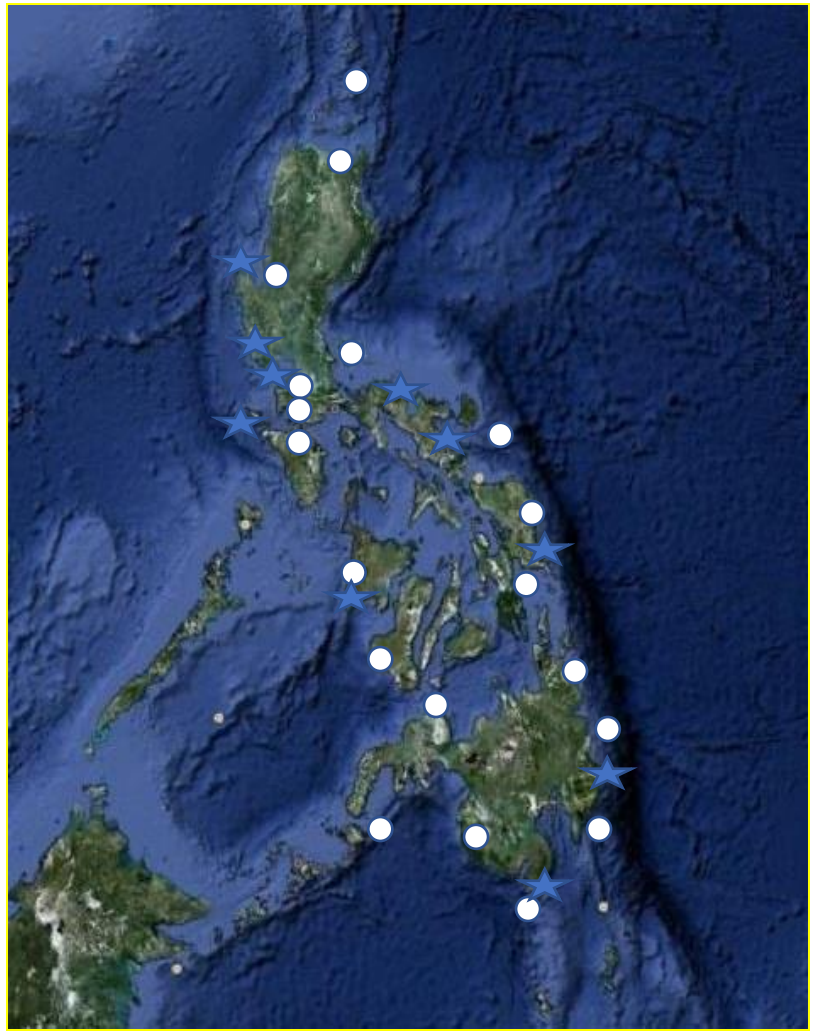
Unmanned stations with satellite communication



Digital Seismic Record

Sea Level Monitoring Network

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



○ PHIVOLCS thru JICA

★ PHIVOLCS Community Tsunami Detection

Capacity Enhancement of Technical Staff

Secondment of short-term international staff from NTWCs of WG-SCS Member States to the SCSTAC


2018

2019


2023

2024

Regional Training on "Strengthening Standard Operating Procedures for Tsunami Warning and the use of the ICG/PTWS SCSTAC Tsunami Advisory Products" May 8-11, 2018; Yu Long Hotel, Haidian District, Beijing, China

Capacity Enhancement of Technical Staff

ITIC Training Programme—Hawaii (ITP-HAWAII) on Tsunami Early Warning Systems and the PTWC Enhanced Products, Tsunami Evacuation Planning and UNESCO IOC Tsunami Ready Recognition Programme, Honolulu, Hawaii, 07-18 August 2023

ITIC Training programme (ITP) on Tsunami Early Warning Systems ITP- TEWS Honolulu, Hawaii
15-26 September 2025

2.TSUNAMI HAZARD MAPPING

Tsunami Risk Mitigation Program (2006-2007)

Nationwide Tsunami Hazard Maps (1:50,000 scale)

(READY PROJECT) (2006-2009)

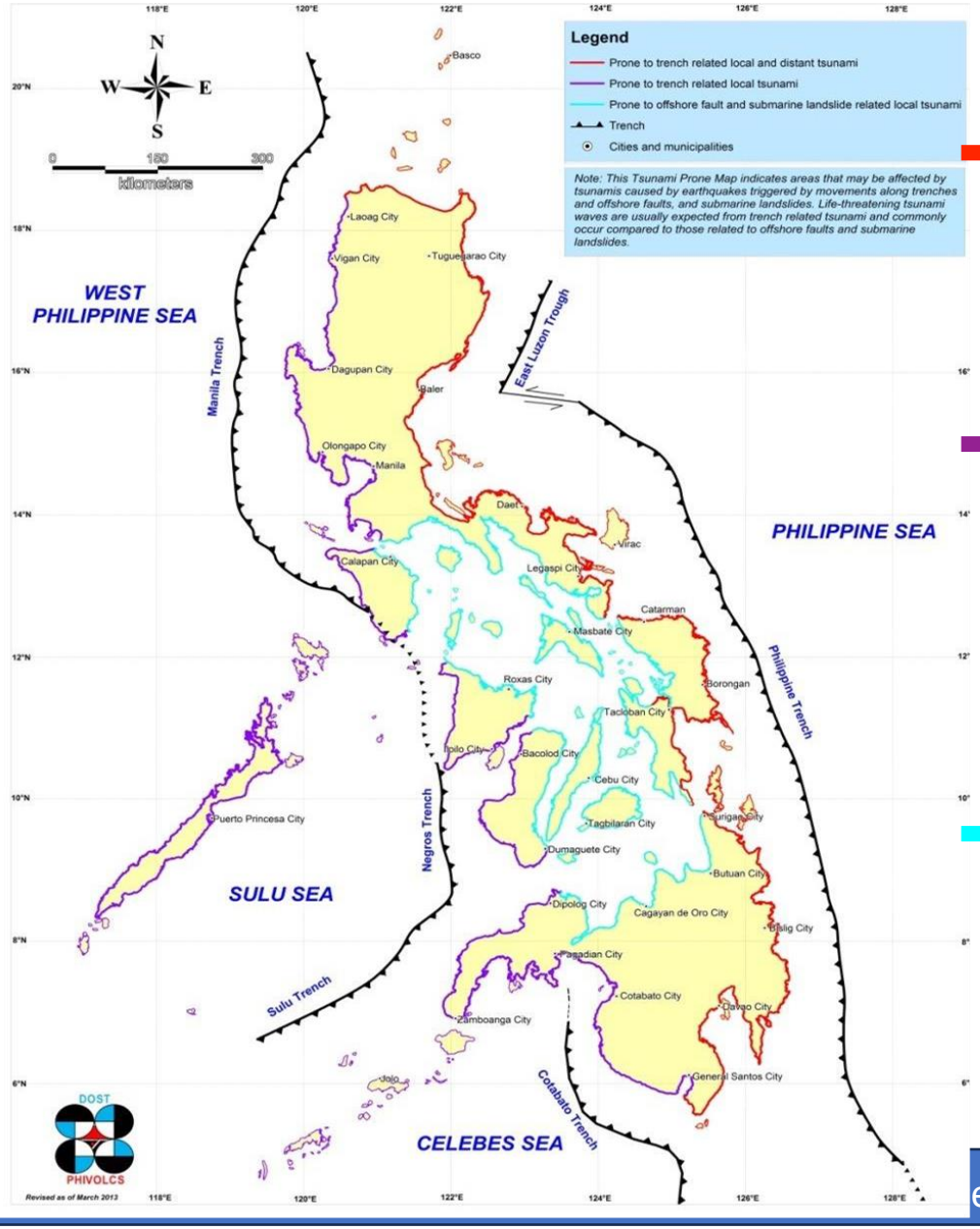
Hazards mapping and assessment for Effective Community-Based Disaster Risk Management

CoAsT PH

(2023-present)

Coast Assessment, Mapping and Research of Tsunami Hazards in the Philippines

Tsunami Prone Areas in the Philippines



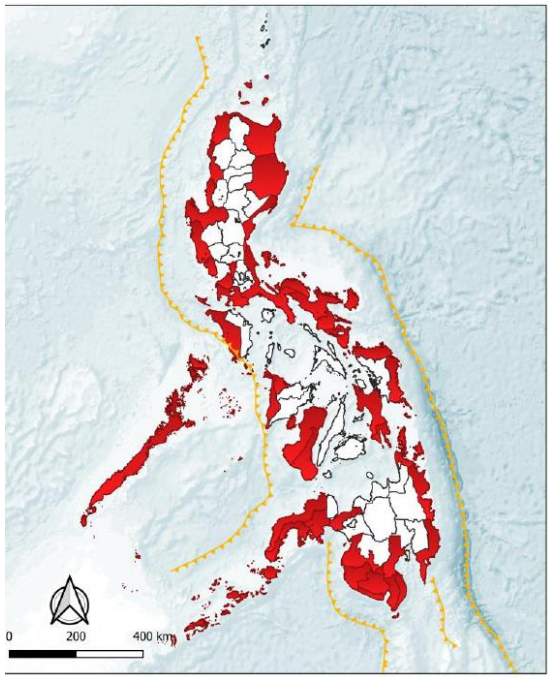
Prone to trench related local and distant tsunami

Prone to trench related local tsunami

Prone to offshore fault and submarine landslide related local tsunami

Tsunami Hazard Mapping through the years

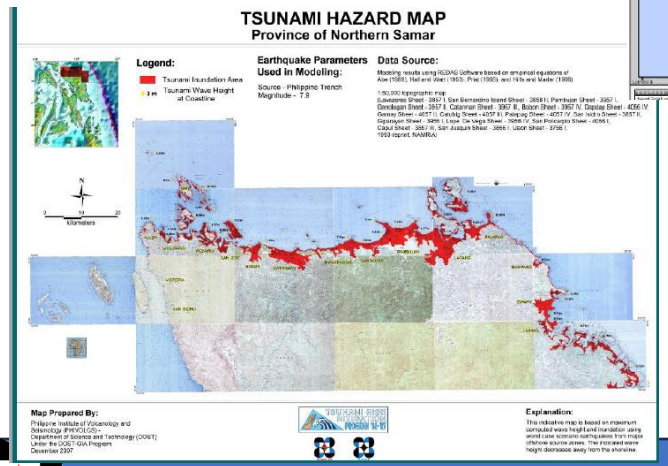
PHIVOLCS DOST-GIA 2006-2007

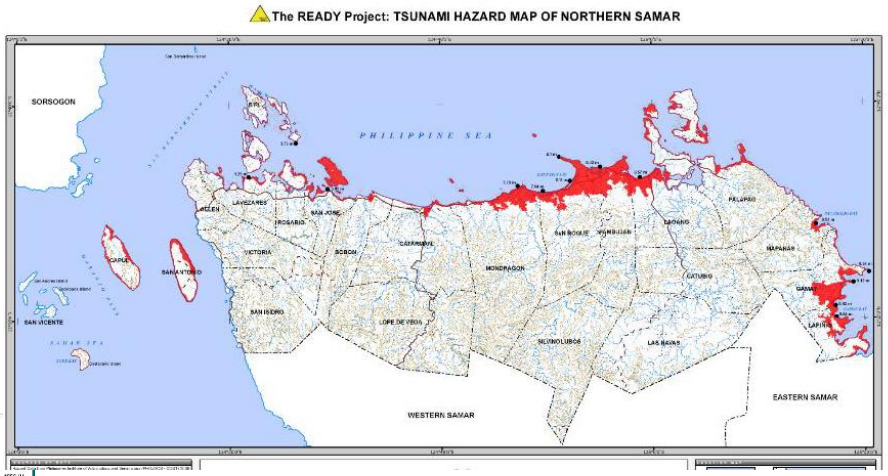


Nationwide First-Generation maps

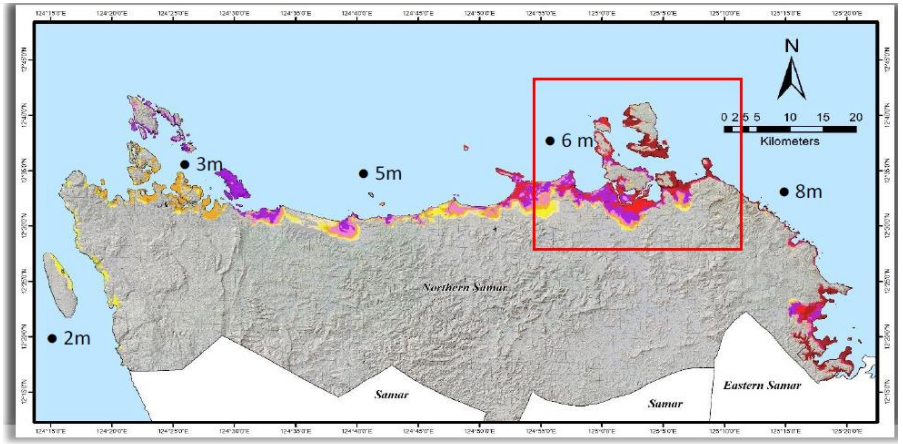
Refinement of first-generation maps with availability of more detailed information

READY PROJECT, 2006-2013





PHIVOLCS Tsunami Hazard Mapping 2019-present



3.COMMUNITY-BASED TSUNAMI MONITORING AND WARNING

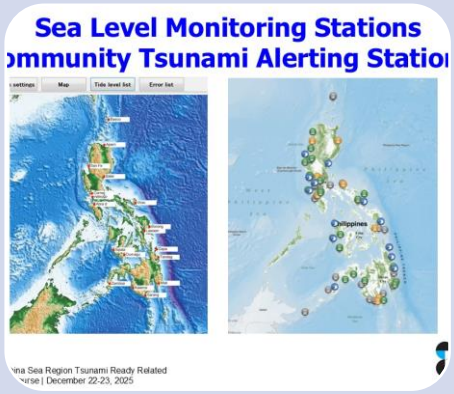
Establishment of a Cost- Effective Local Tsunami Early Warning System for Selected High-Risk Coastal Communities of the Philippines ;

2010-2012

Enhancement of Earthquake and Volcano Monitoring and Effective Utilization of Disaster Mitigation Information in the Philippines

Tsunami Scenario Database

2010-2015



Improvement of Tsunami Monitoring

2013-2018

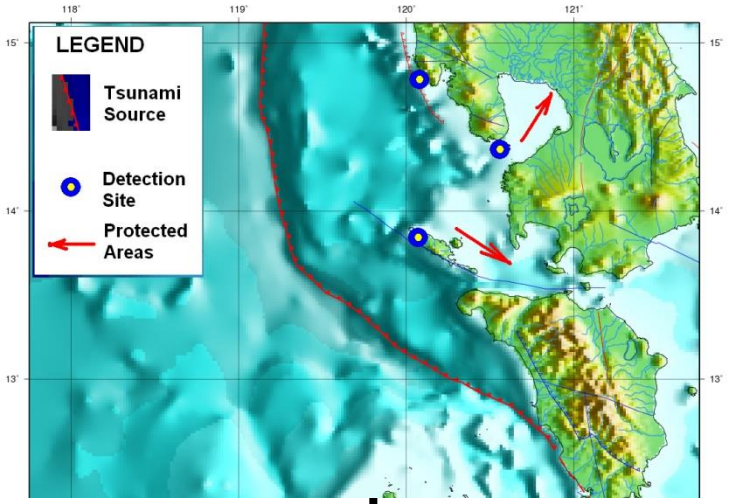
19 JMA-type sea level monitoring equipment installed

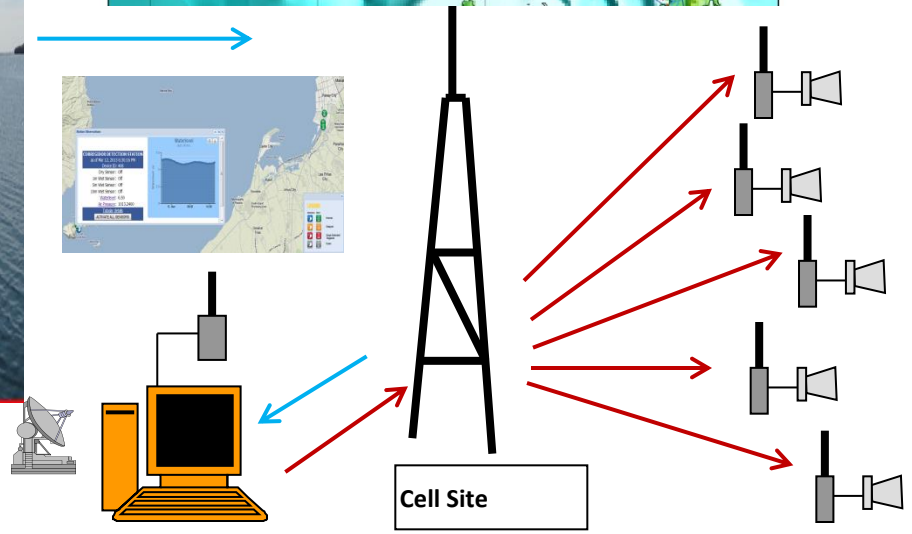
JICA

Tsunami Observation for community Warning Evacuation and Resilience (TOWER)

Community Tsunami early Warning System – PHIVOLCS

Tsunami Detection Stations





PHIVOLCS/ASTI and LGUs
Tsunami Visualization and Decision Tool

Communities

2006-2007 READY PROJECT
GMMA READY, LGU-initiated

National-Initiated Community- Based Early Warning System (CBEWS)

2006
Gen Luna, Surigao del Norte
Diatagon, Linaga, Surigao del Sur

2007
Tandag, Surigao del Sur Bislig,
Surigao del Sur Canmanico,
Valencia Bohol San Pedro, Duero,
Bohol San Roque, Tolosa, Leyte
Bulak, Abuyog, Leyte

2008
Sogod, Southern Leyte
Pondol, Hinunangan, S. Leyte
Himatagon, Malibago, Sug-angon,
St Bernard, S. Leyte
Sta Mercedes, Maragondon, Cavite
Bucana, Ternate, Cavite
Mapalad, Dinalunga, Aurora
Palanan, Isabela

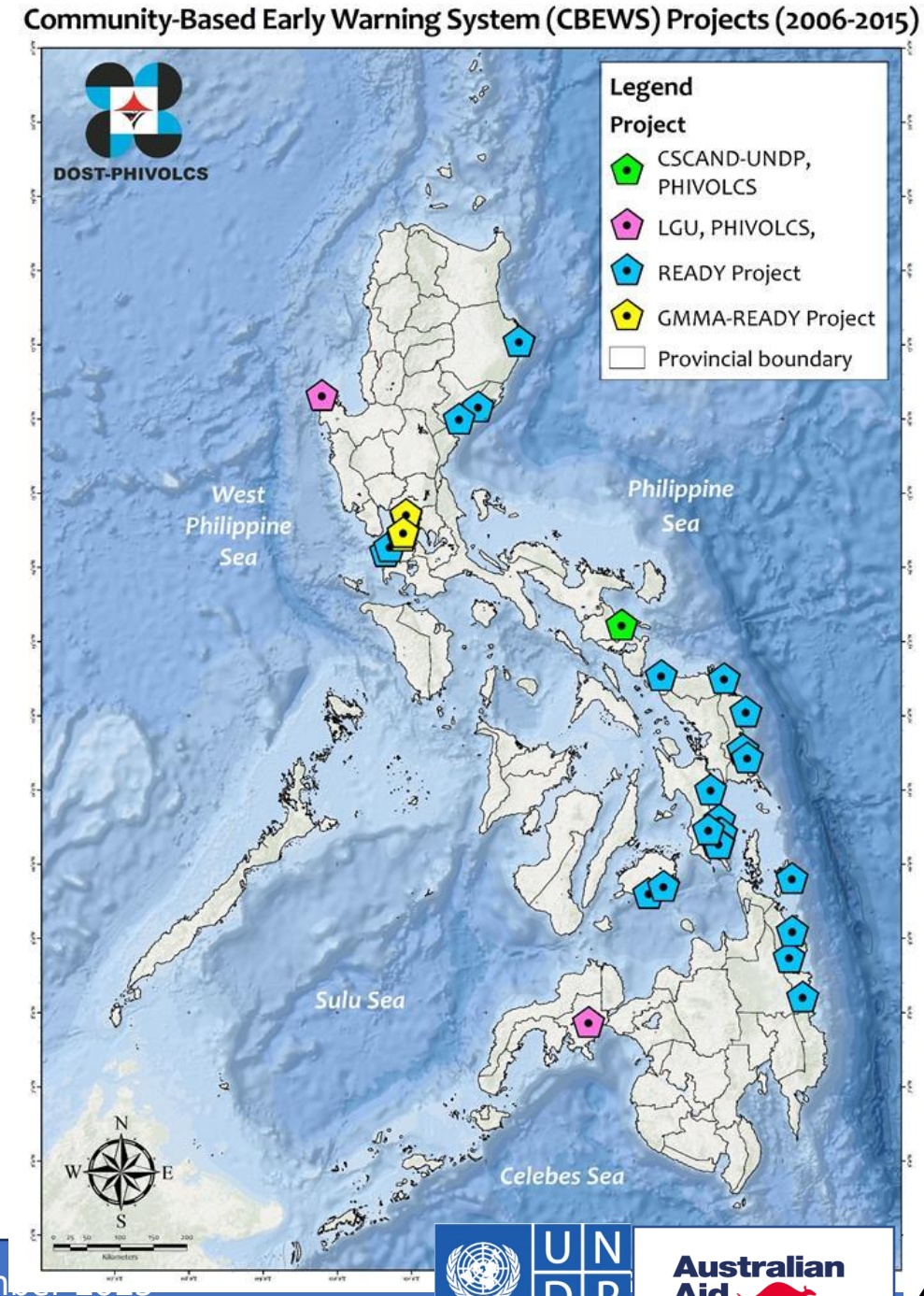
2009
Barobaybay, Lavezarez,
Northern Samar
Cabatuan, Palapag, N. Samar
Japitan, Dolores, Eastern Samar
Suribao, Borongan, E. Samar San
Miguel, Llorente, E. Samar

Post-READY Project

2011
Patar, Bolinao, Pangasinan

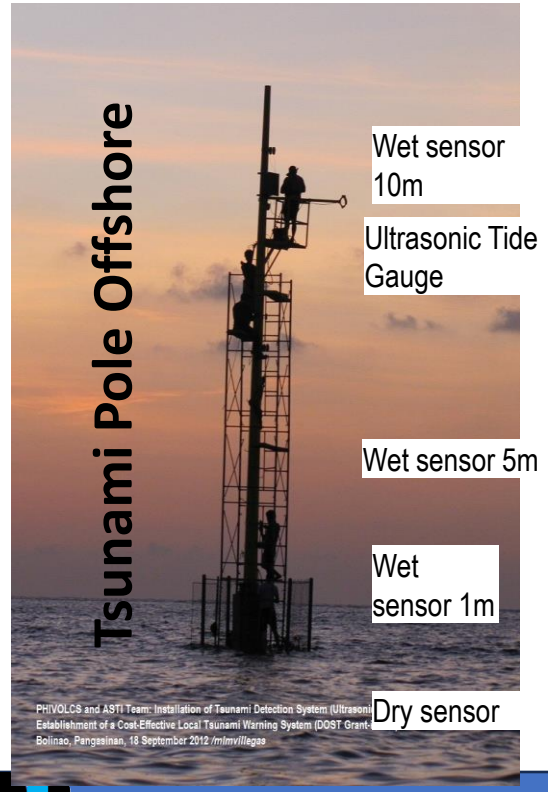
2014
Tanza, Navotas City
Hulo, Obando, Bulacan

2015
Lao-Lao, Cavite City
San Rafael, Novoleta

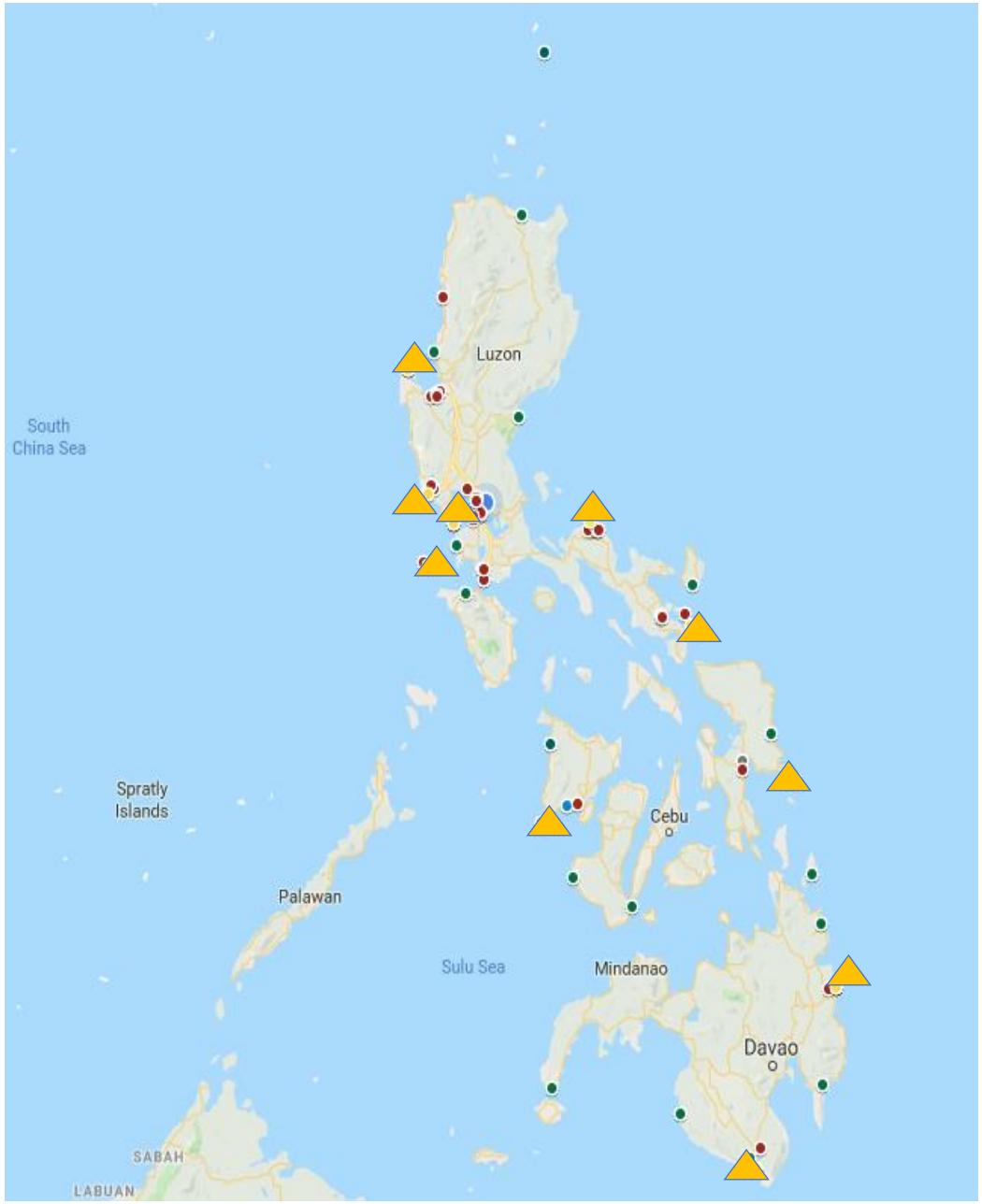


2010-2012: Establishment of a Cost-Effective Local Tsunami Early Warning System for Selected High-Risk Coastal Communities of the Philippines

▲ 10 detection sites



● 47 warning sirens



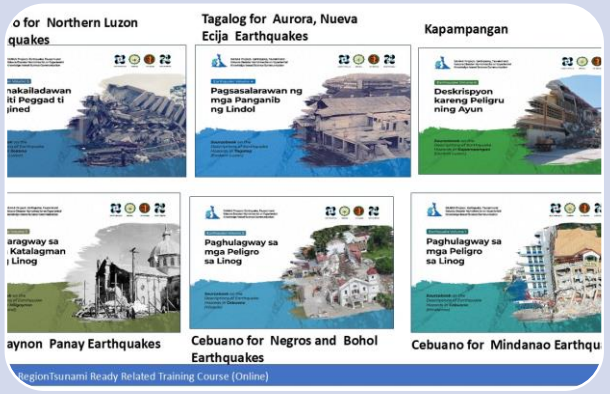
4.TSUNAMI INFORMATION MATERIALS DEVELOPEMNT

Tsunami Risk Mitigation Program (2006-2007)

Development of Tsunami Information materials

Enhancement of Earthquake and Volcano Monitoring and Effective Utilization of Disaster Mitigation Information in the Philippines

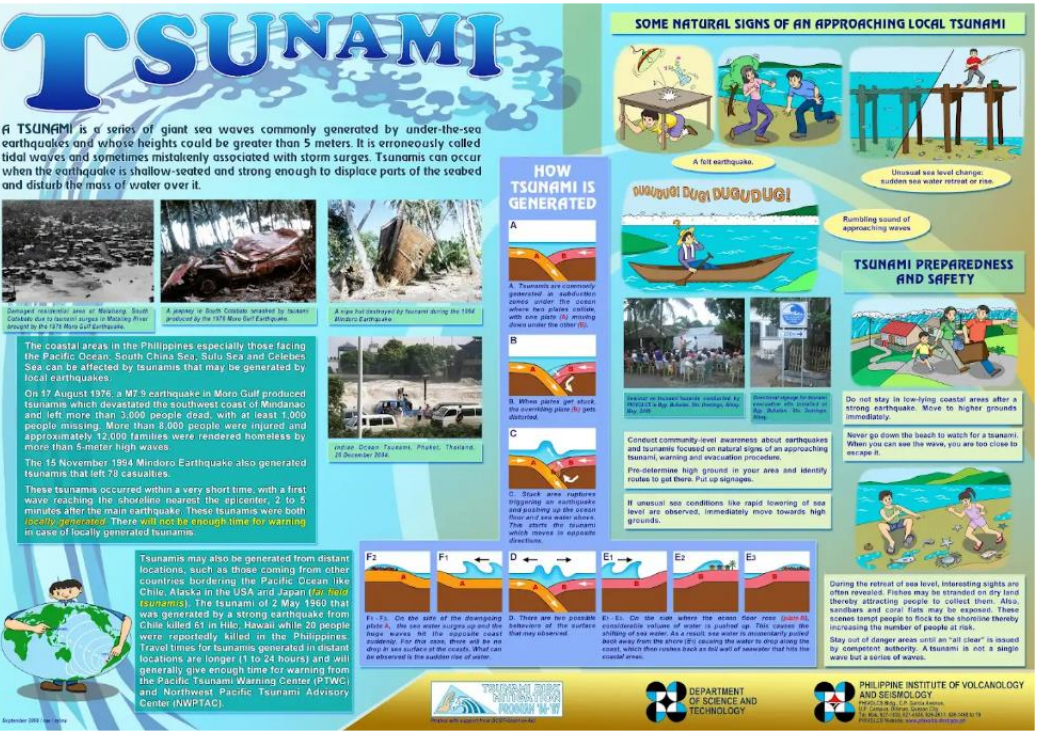
Tsunami Comics on the 2011 event

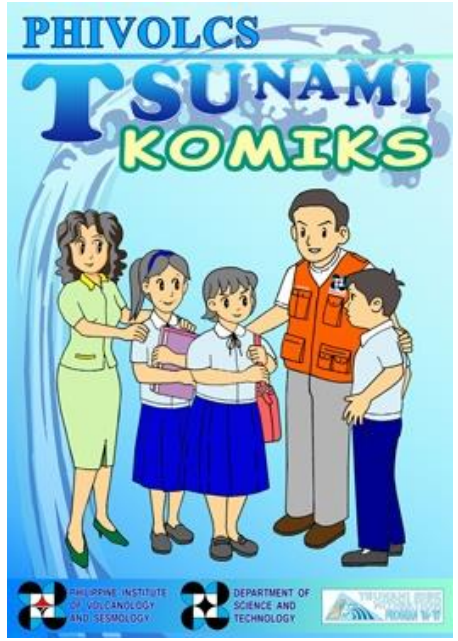


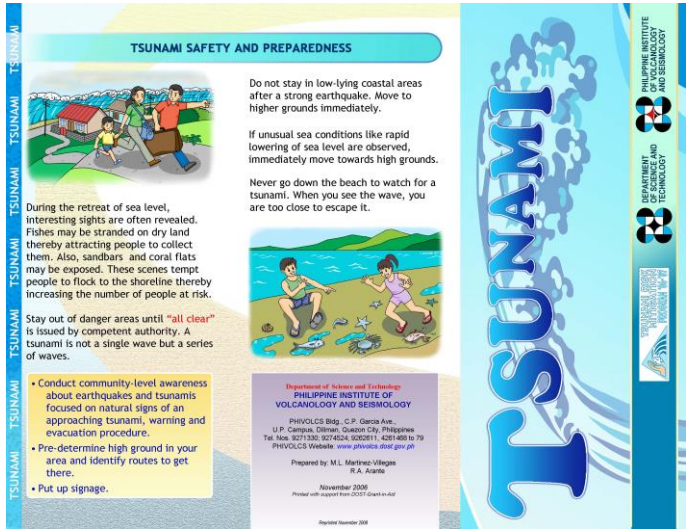
DANAS Project: Earthquake, tsunami and Volcano Disaster Narratives for an Experiential Knowledge-based Science Communication

Earthquake and Tsunami descriptions in the local languages: Tagalog, Kapampangan, Ilocano, Cebuano (Visayas), Cebuno (Mindanao) and Hiligaynon

2006-2007 DOST GIA Risk communication at the local level



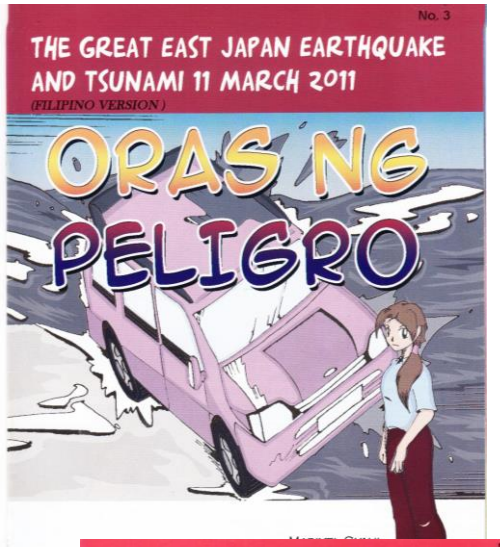


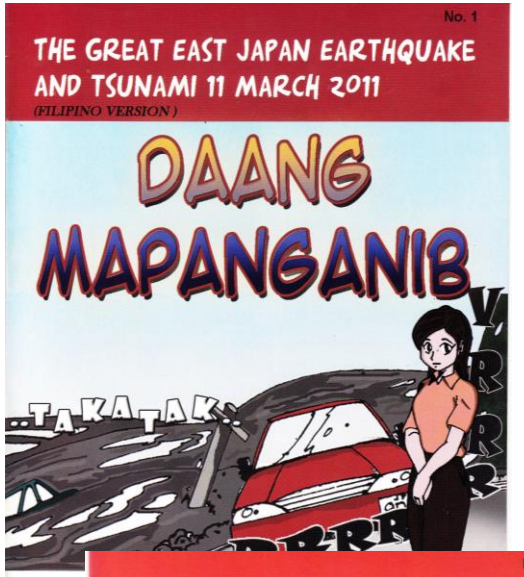


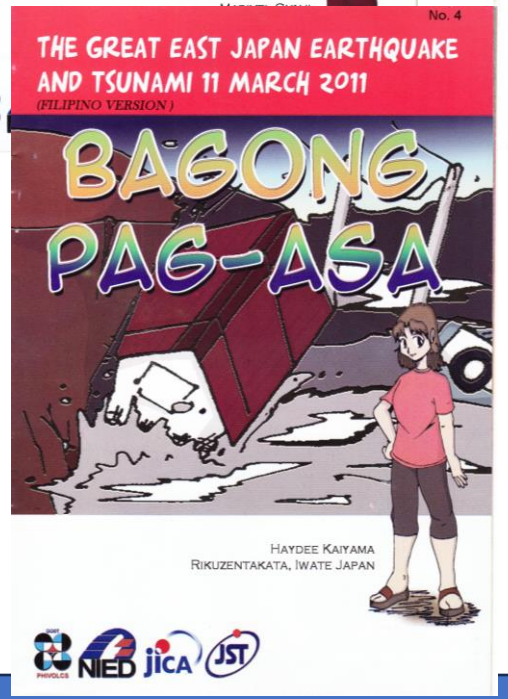
TSUNAMI RISK MITIGATION PROGRAM '06-'07

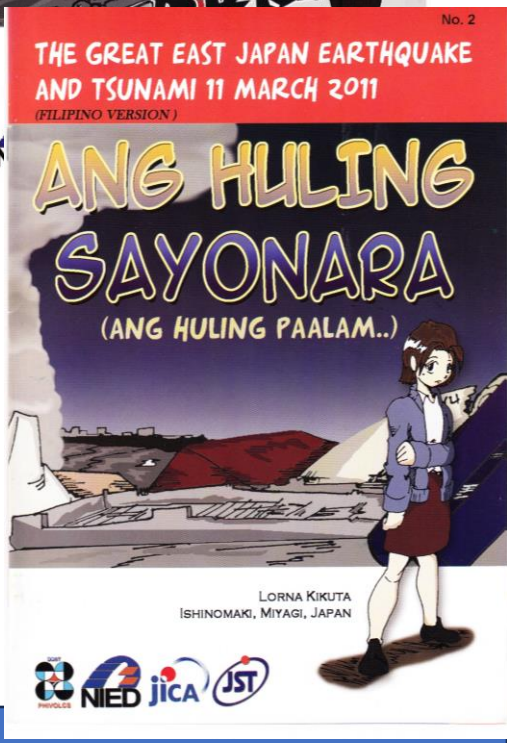
2010-2015 Learning from the experiences of others

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



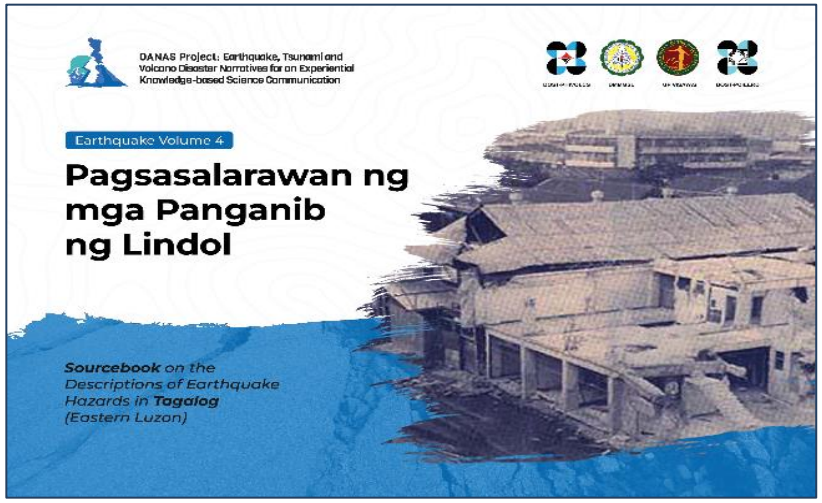




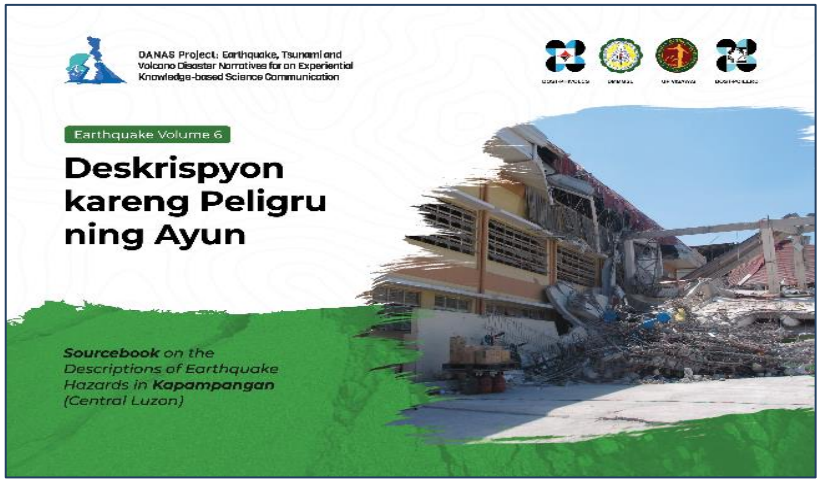


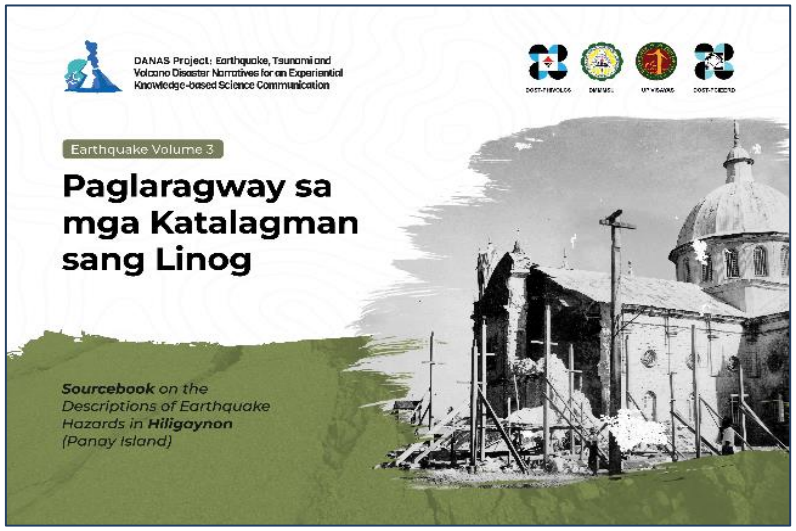
Ilocano for Northern Luzon Earthquakes

Tagalog for Aurora, Nueva Ecija Earthquakes

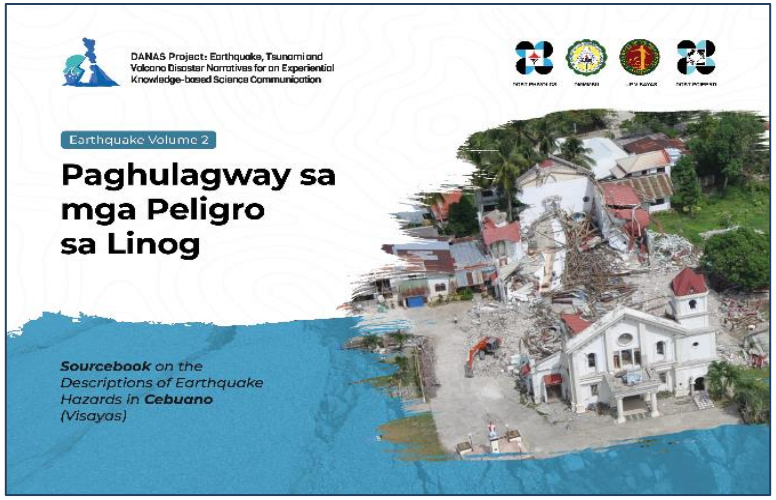


Kapampangan





Hiligaynon Panay Earthquakes



Cebuano for Negros and Bohol Earthquakes

Cebuano for Mindanao Earthquakes

5.COMMUNITY CAPACITY BUILDING

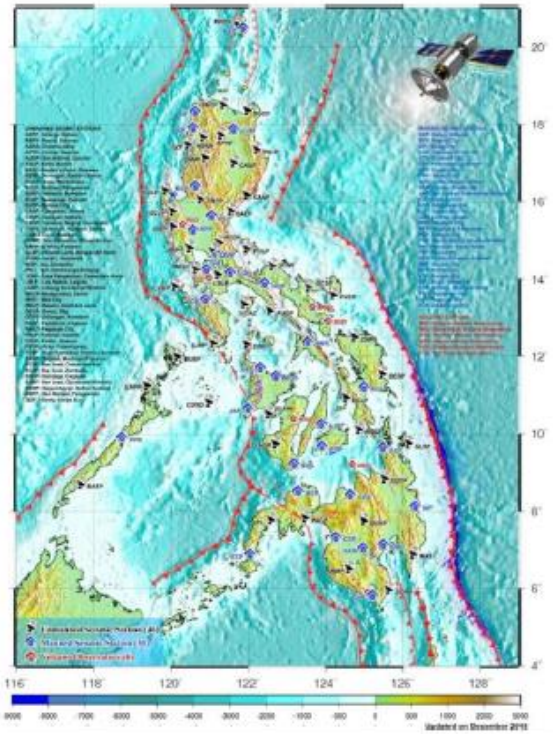
3R LGU (multi-hazard IEC campaign and includes topics about tsunami)

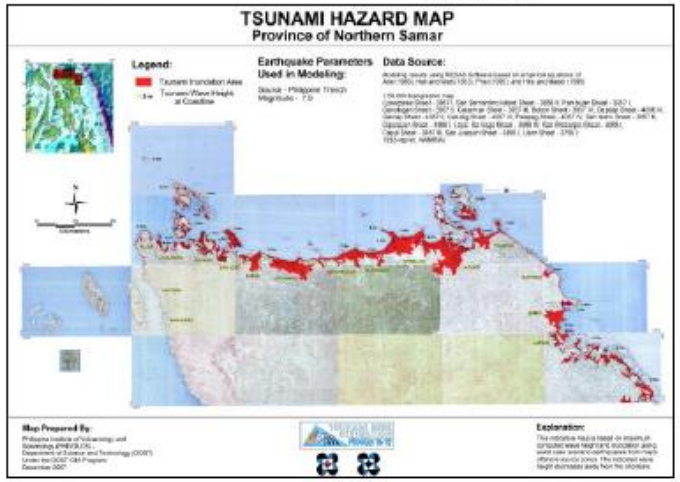
Developed roll out plan for provinces and monitoring tool

3R Tsunami Ready Community

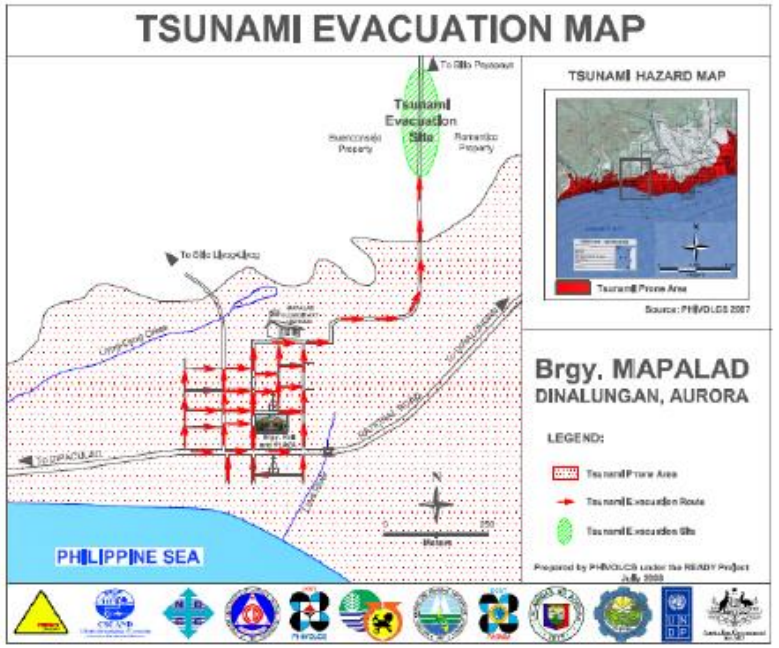
Develop Communities that are ready to evacuate in the event of tsunami occurrence

PHIVOLCS





COMMUNITY

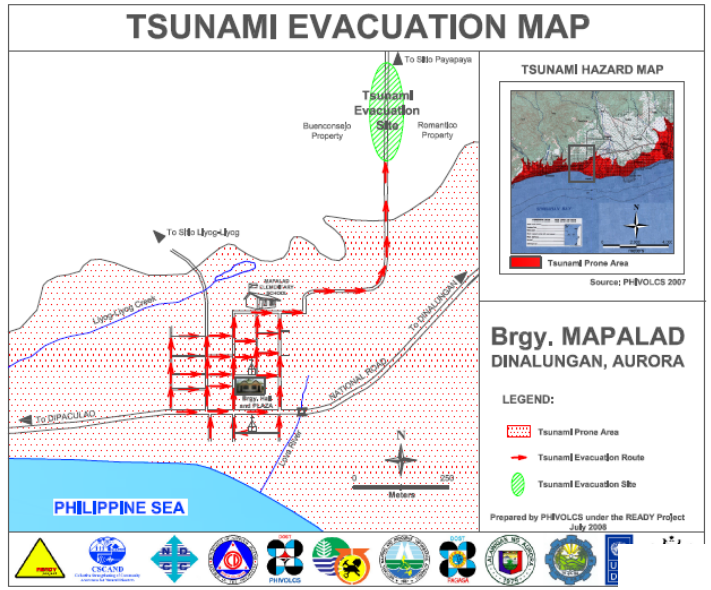


2006-2007 READY PROJECT

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

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

Installed by partnership LGUs and implementing NGAs



6.PROMOTION OF AWARENESS AND PREPAREDNESS

Media Seminar

PressCons

Exhibit

Tsunami tank

WORLD TSUNAM
AWARENESS DA
5 NOVEMBER

World Tsunami Awareness Day

National Consultation Workshop for Harmonized Tsunami Program 2019

- Venue for a coordinated multi-agency, multi-stakeholder discussion
- Identify current, ongoing initiatives of various organizations on Tsunami DRR
- Identify timetable of implementation of existing Tsunami DRR activities from various organizations for more coordinated activities

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 plans/programs on Tsunami DRR
- Create and maintain platform for reporting Tsunami DRRM-related initiatives that is accessible to all partners

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 accomplishments, current initiatives and short-term plans/programs on Tsunami DRR
- Create and maintain platform for reporting Tsunami DRRM-related initiatives that is accessible to all

GeoRiskPH™ Nationwide Tsunami Coping Capacity Initiatives

GeoRiskPH
INNOVATIONS FOR RESILIENCE

Dashboard

OTHER GEORISKPH PLATFORMS

GeoAnalyticsPH

HazardHunterPH

PlanSmartPH

Philippine Standard Time: Friday, April 25, 2025 at 4:21:28 PM

Mara Joy Pancho

Data Collection Tool - For Trainings Only

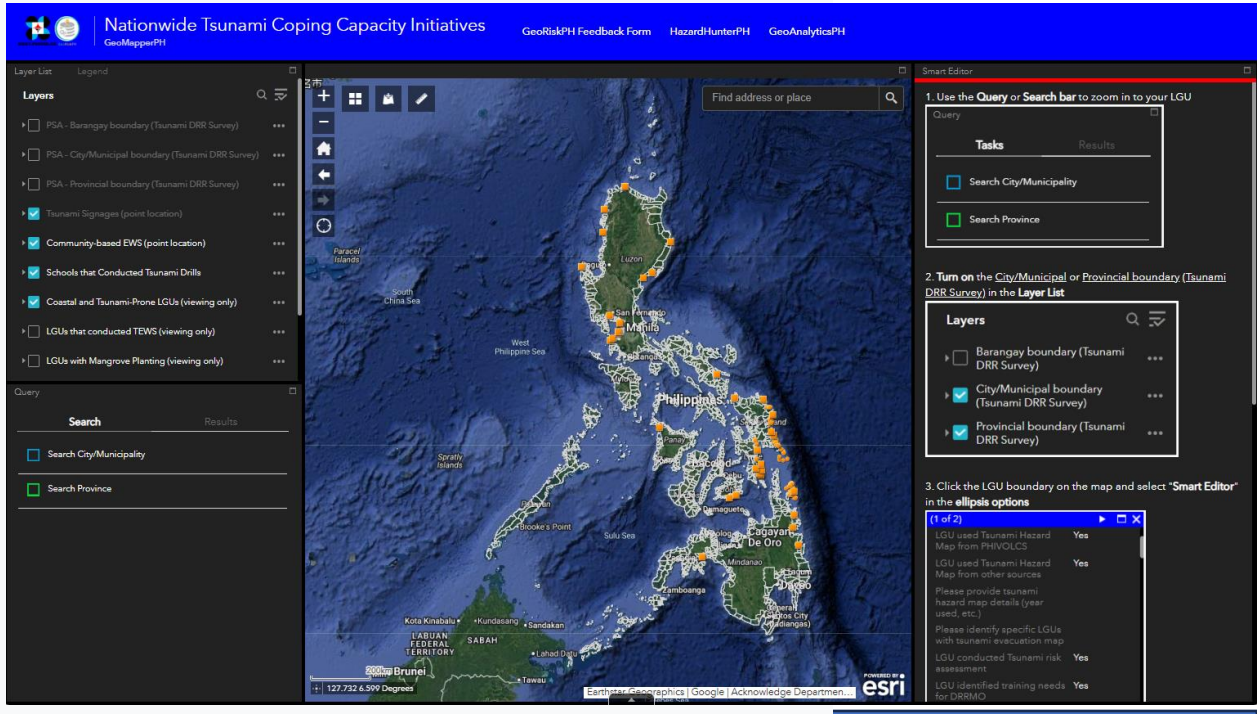
Training GeoMapperPH

View Application

Data Collection Tool - For Trainings Only

Training GeoMapperPH

View Application



2019-2021 Tsunami Summit → National Tsunami Ready Board (NTRB) creation

2022

- Dec. 6/15 – PHIVOLCS request to OCD to create NTRB
- Dec 19 – OCD acknowledged and assigned PDPS

2023

- March 6 -Oct-Dec – Series of meetings, presentations and discussions, Writeshop, Drafting of MC

2024

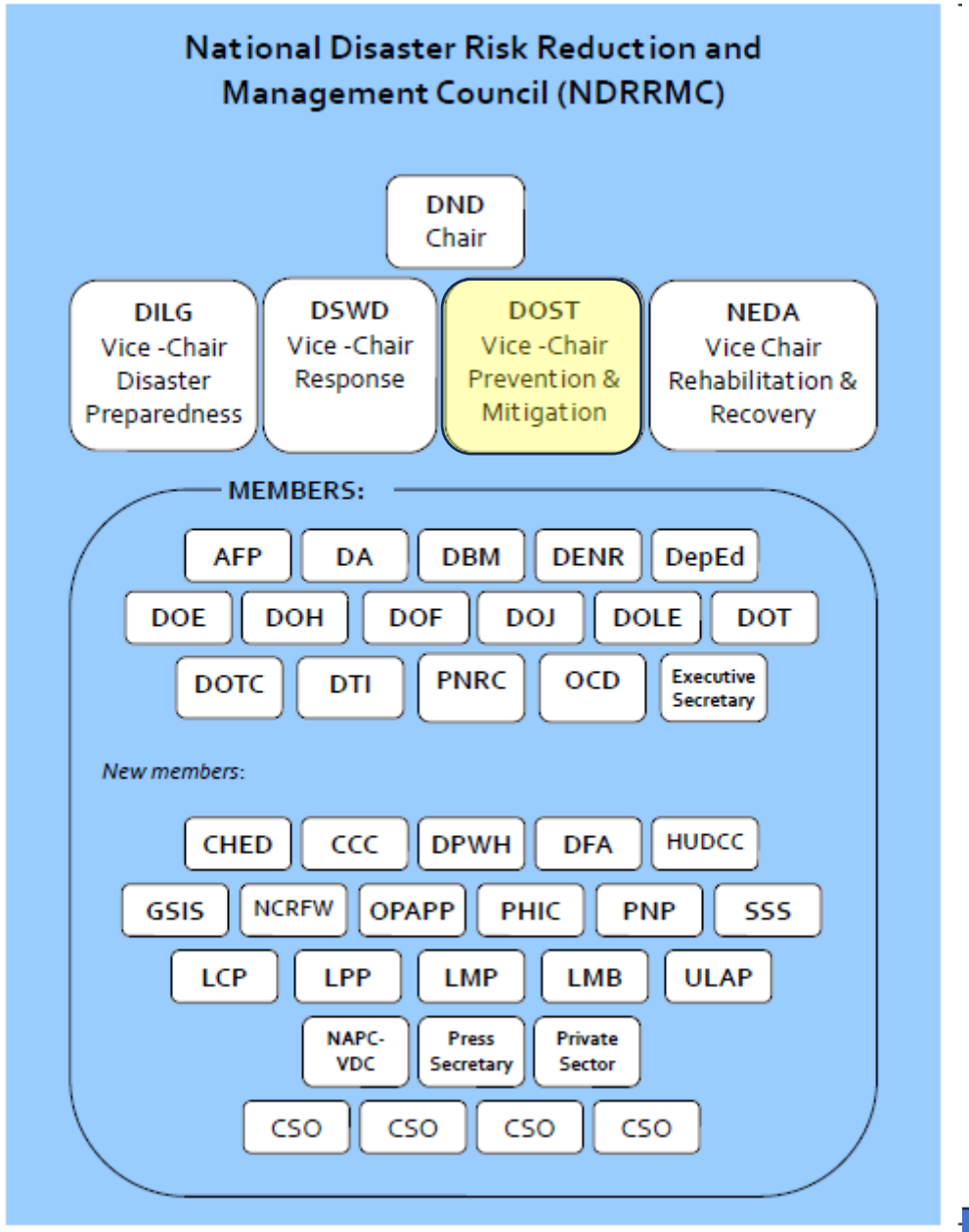
- Jan 17 – submitted draft MC to P&M Pillar
- Jan – Feb – series of discussions re MC

2025

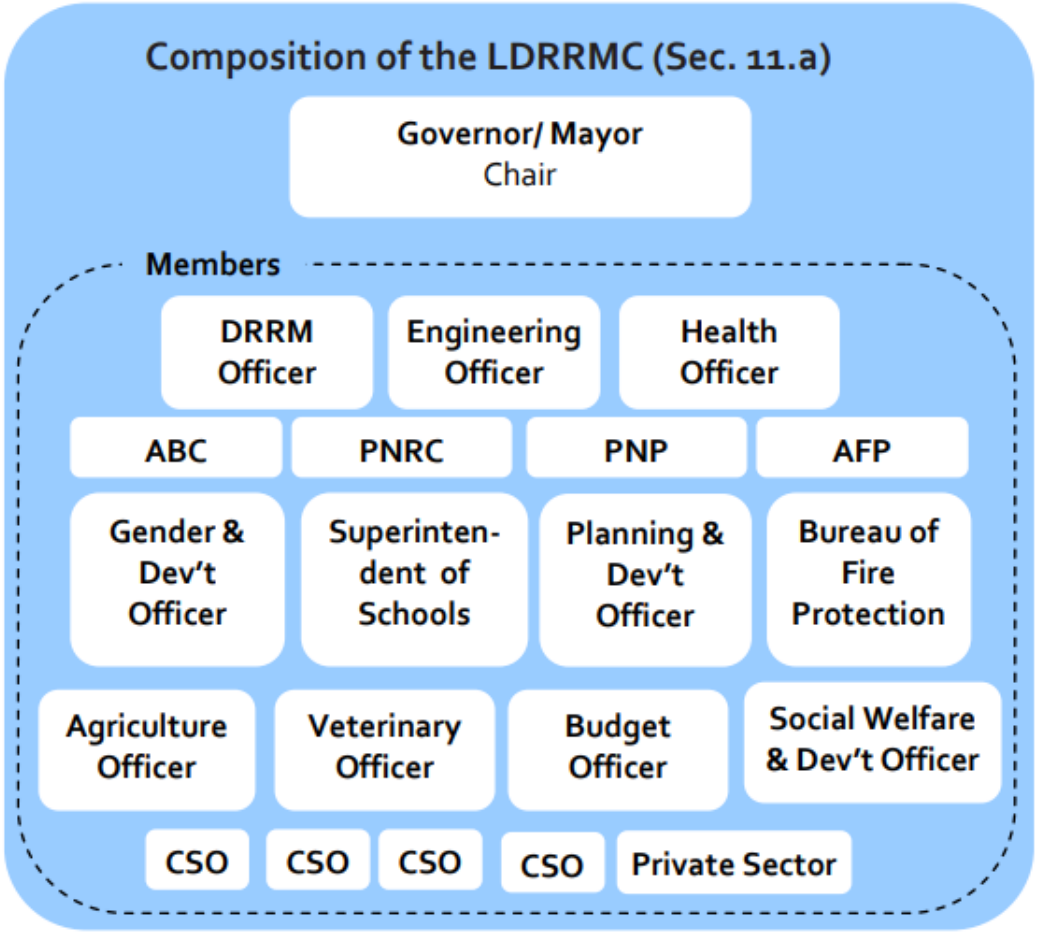
Ways Forward
Series of meetings
October 2025

Composition
Office of Civil Defense
PHIVOLCS
DILG
+other agencies

National Structure for DRRM



R.A. 10121 of 2010- DRR Law



Tsunami Ready Philippines National Workshop
8-9 December 2025

2026-2030

- Establishment of the National Tsunami Ready Board (with NDRMO as Head, multi agency membership)
- Implementation of the Tsunami Ready Philippines Program