



United Nations
Educational, Scientific and
Cultural Organization

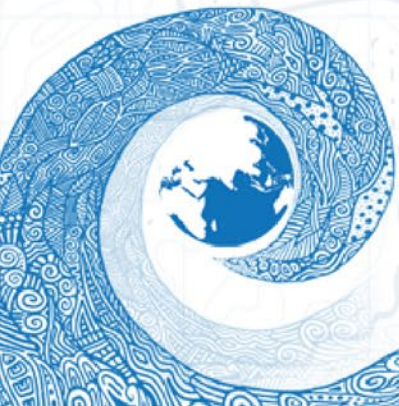


Intergovernmental
Oceanographic
Commission

TSP Indonesia Progress Report

By PGT BMKG Team

Intersessional Meeting of the ICG/IOTWMS November 2021

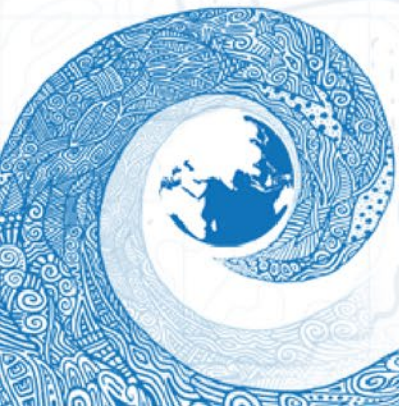


Content of the report

1. TSP Indonesia Performance 2021
2. TSP Indonesia development since last ICG
3. TSP Indonesia development plans
4. TSP Indonesia Innovation 2021
5. Capacity Building



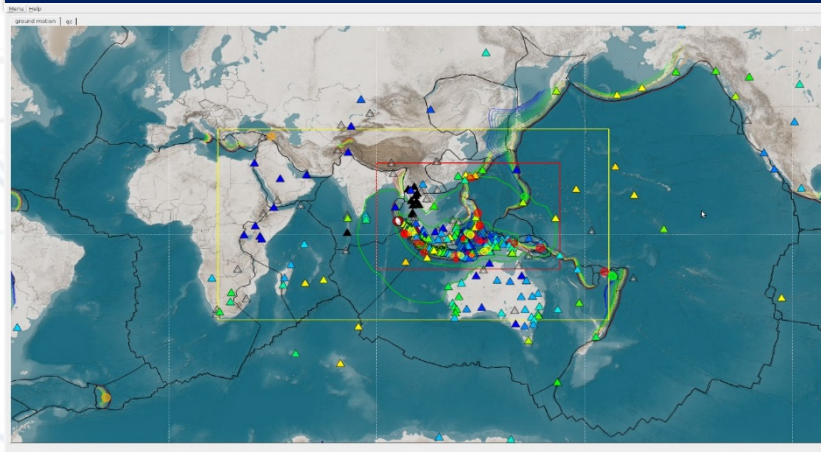
1. TSP Indonesia Performance 2021



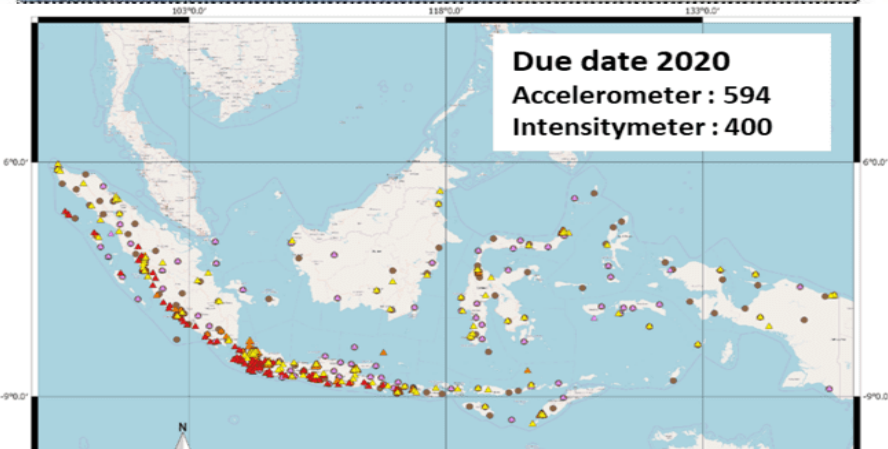
InaTEWS seismic monitoring network (code IA)
411 seismic stations until Nov 2021



INDONESIAN : 411 STATIONS
SITES FROM OTHER COUNTRIES : 200 STATIONS



Due date 2020
Accelerometer : 594
Intensitymeter : 400



INDONESIA ACCELEROMETER NETWORK



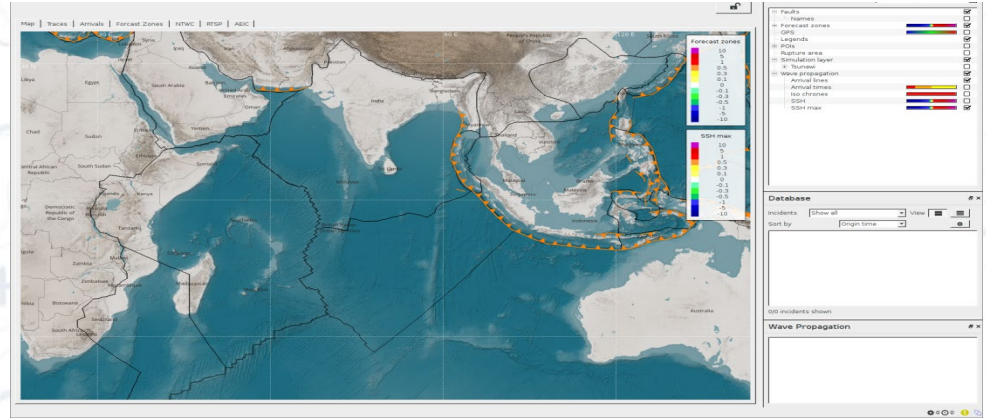
SEA LEVEL MONITORING NETWORK USED BY INATEWS

TSP Data Processing

Seiscomp 3 – Eq Analysis



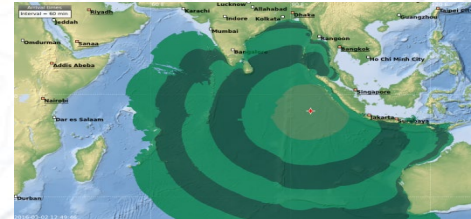
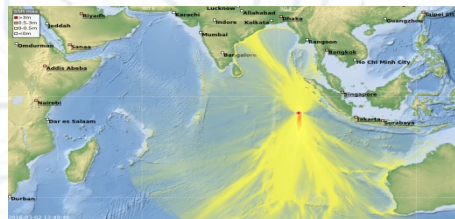
TOAST (Tsunami Observation And Simulation Terminal)



Earthquake Information

- Origin Time
- Magnitude
- Depth
- Location

Tsunami Warning



TSP Indonesia Dissemination System

SMS



FAX

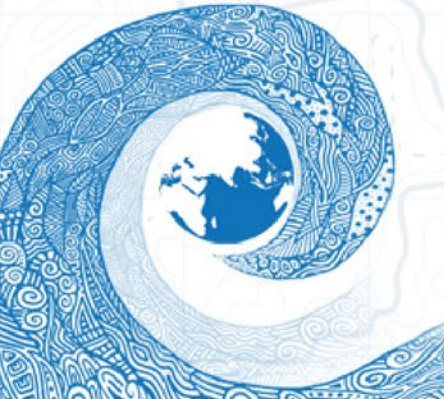


EMAIL



TSP Website

GTS



INDONESIA TSUNAMI SERVICE PROVIDER
InaTSP

InaTEWS - Indonesia Tsunami Early Warning System

Event Detail

— Back to the lists

Magnitude: **9.2**

Origin Time: 2016-09-07 03:00:00 UTC
Location: 1.905 - 99.22E (Southern Sumatra, Indonesia (ICWave-Sep-2016))
Depth: 10 Km
Bulletin: 4 ¹ (CONFIRMED TSUNAMI THREAT IN THE INDIAN OCEAN)
Type: TEST EVENT

Exchange Bulletin | Notification Bulletin | Threat Table | Threat Map | Evacuation Map | SIMMax Map

TEST TEST TEST TEST TEST ICWave-Sep-2016 TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST ICWave-Sep-2016 TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST ICWave-Sep-2016 TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST ICWave-Sep-2016 TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST TEST ICWave-Sep-2016

Current Time (UTC)
Dec 03, 2016
11:05:32

Miscellaneous

- Earthquake Event List
- Earthquake Event Map
- NTWC Contacts
- Performance Indicator
- User and Password Information



WRS

TSP Indonesia Password Protected Web

The screenshot displays the InaTEWS website interface. At the top, the header includes the BMKG logo, the text "AGENCY FOR METEOROLOGY CLIMATOLOGY AND GEOPHYSICS", and "Indonesia Tsunami Service Provider". Below the header, the navigation bar contains "InaTEWS - Indonesia Tsunami Early Warning System" and links for "Home", "Public Bulletin", "About InaTSP", "Seismic Network", and "Contact Us".

The main content area is titled "Public Bulletin" and features two tabs: "Event List" (selected) and "Event Map". The "Event Map" displays a world map with colored circles representing seismic events. A legend at the bottom left of the map indicates the magnitude ranges: red for $\text{Mag} \geq 8.5$, orange for $\text{Mag} > 7.5$, and yellow for $\text{Mag} < 7.5$. The map shows several events in the Indian Ocean region, with the largest ones (red and orange) clustered near the East African coast and the Indonesian archipelago.

On the right side of the page, there are two dark blue buttons: "Public Bulletin" and "User Login". Below the "User Login" button is a login form with fields for "Username:" and "Password:", a "Forgot Password?" link, and a "Login" button.

At the bottom of the page, the copyright notice reads: "Copyright © 2020 Badan Meteorologi Klimatologi dan Geofisika (BMKG)".

<https://rtsp.bmkg.go.id>

TSP Indonesia KPI 2021 (Jan – Oct) – M6.8+

	Service Level 1 EQ Bulletins					Service Level 2 Threat / No Threat Bulletins			General
TSP	KPI 1 ET First EQ Bull Target: 10 mins (% met)	KPI 2 POD EQs GE M6.8 Target: 100%	KPI 3 EQ Mag Target: 0.3 (% met)	KPI 4 EQ Depth Target: 30 km (% met)	KPI 5 EQ Location Target: 30 km (% met)	KPI 6 ET First Threat Bull Target: 20 mins (% met)	KPI 7 POD Tsunami Waves Target: 100%	KPI 8 Tsunami Height Accuracy Target: Factor of 2	KPI 9 False / Incorrect Bulletins Issued Target: 0
Indonesia	10.5 min (77.8%)	95%	0.23 (72.2%)	19.2 km (72.2%)	26.4 km (55.6%)	N/A	N/A	N/A	1

NOTES

KPI 6:
Indonesia issued 1 No Threat Bulletin.

KPI 7: No events caused threat-level tsunami waves.

KPI 8: Based on 4 observations in CFZ's from the 12 Aug South Sandwich Island event.

KPI 9: TSP Indonesia issued an EQ bulletin where the USGS final solution was <M6.2.

Meets Target

Near
Target

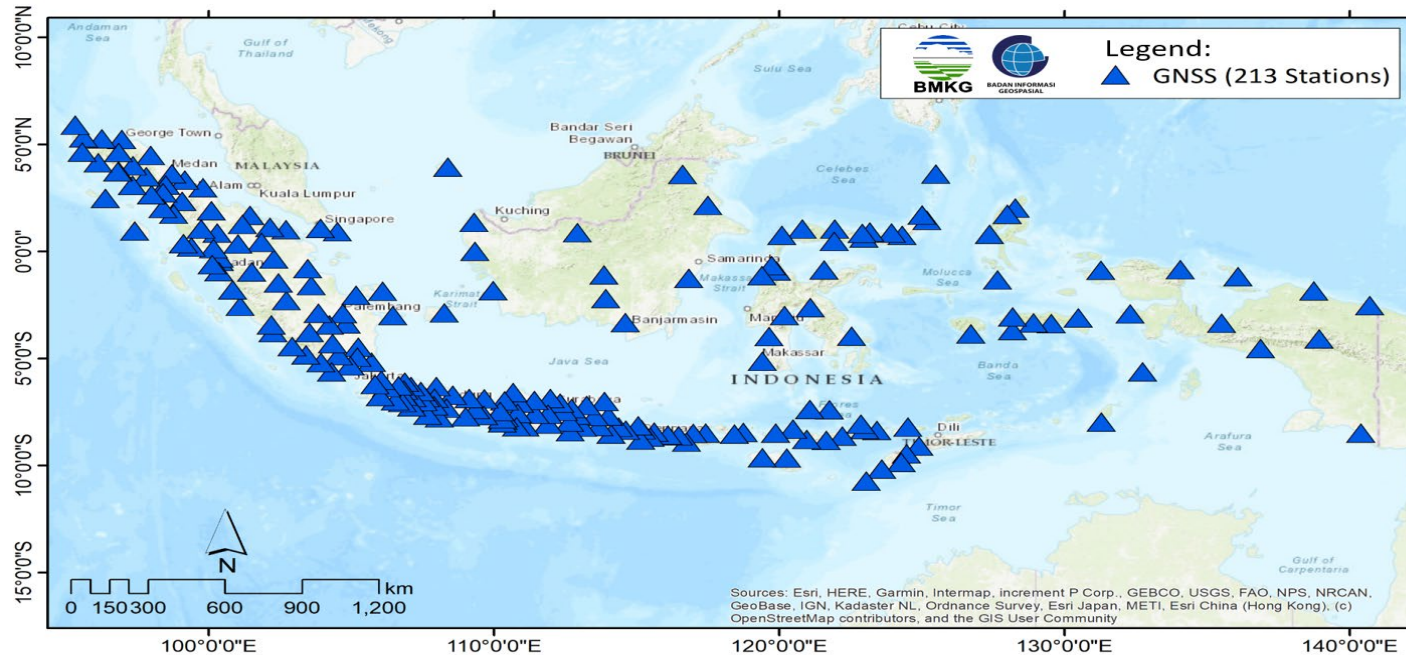
Misses
Target

2. TSP Indonesia development since last ICG

- **Deployed 39 new seismic stations (2020).**
- **Deployed 17 new seismic stations (2021).**
- **Participation on the regular IOTWMS communication test in 2020 and 2021.**
- **Hardware upgrade of TSP web site 2021.**
- **Inundation modeling 2021 and evacuation route maps**
- **First stage of GNSS integration into processing system 2021.**
- **Web base MHEWS.**
- **SOP for atypical tsunami.**
- **InaTEWS is awarded QMS ISO 9001:2015 on September 2021.**



GNSS Network Will Be Used In InaTEWS (source: BIG)



3. TSP Indonesia Development Plans

- Deploy 110 new seismic stations 2022
- Establishment of national consortium to support development of InaTEWS enhancement.
- Develop system to handle atypical tsunami event (Ina BOUYS, Ina CBT, Tide gauge, HF Radar, ADSL → integrated in one system monitoring – InaTNT.)
- Upgrade WRS TSP 2022
- Development InaTEWS impact base real time system
- To Participate UN DECADE ON OCEAN science
- Sirine system base Android (SIRITA)
- Radio Broadcast for information dissemination
- EEWS (Earthquake early warning System)
- Joint SOP Atypical tsunami (BMKG,PVMBG,BIG,BPPT)
- Collaborative effort for augmented tsunamimeter on ship and rig.
- Establishment of ISO on the Guideline for Tsunami EWS. (on going proses)



4. TSP Indonesia Inovation 2020-2021

WRS-TSP Indonesia (stands for Warning Receiver System of TSP Indonesia) is the real-time system to receive tsunami bulletin using a recommended set of hardware such as a large or **smart display**. WRS-TSP connected online to the processing and dissemination system of TSP Indonesia at BMKG head quarter Jakarta.

WRS-TSP ensures NTWCs of the Indian Ocean Countries **keep informed tsunami bulletin** timely and properly.

NTWCs could immediately take further essential actions right after they received the tsunami bulletin.

Earthquake



TSP Indonesia



WRS-TSP
Indonesia



WRS URL <https://inatews.bmkg.go.id/wrs/tsp/index.html>



FEATURES

WRS-TSP Indonesia



Text2voice Sound Alert (when new information available)



Real time Earthquake Information (M>6.5) with visualization of time propagation of P and S wave



TSP Tsunami Bulletin with popup window



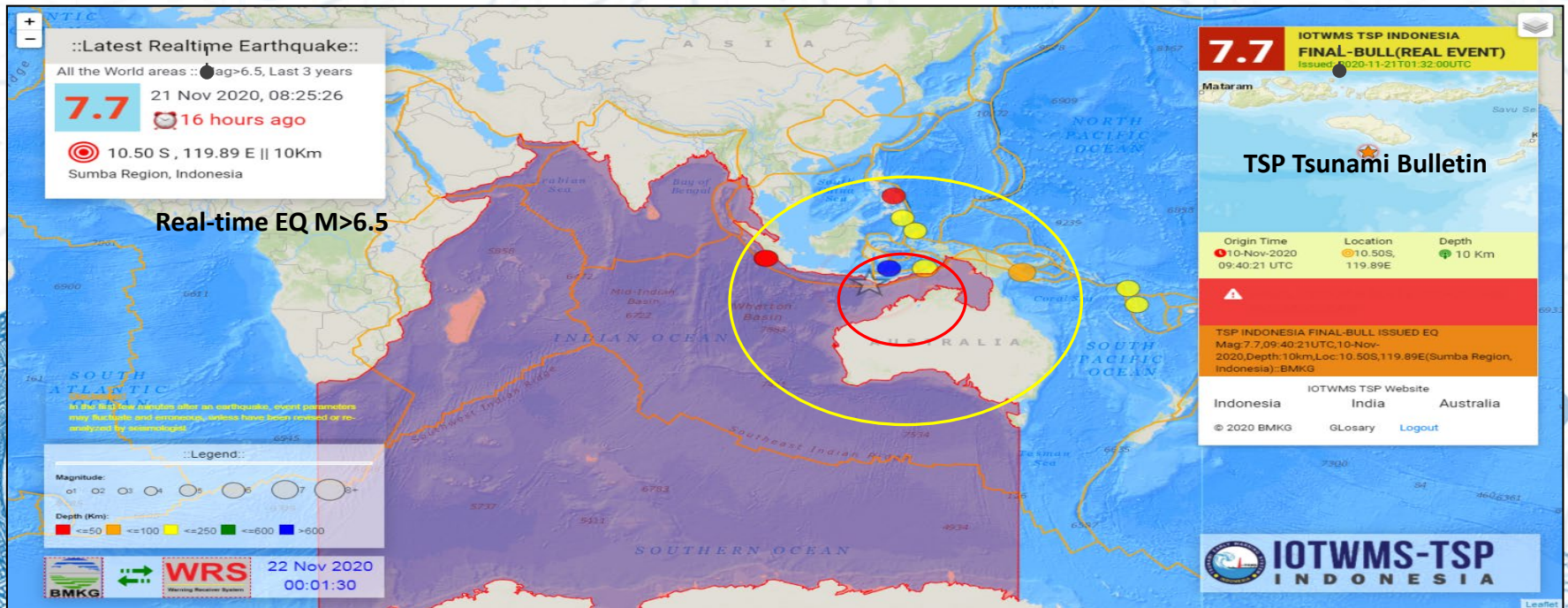
Historical events on TSP web sites.



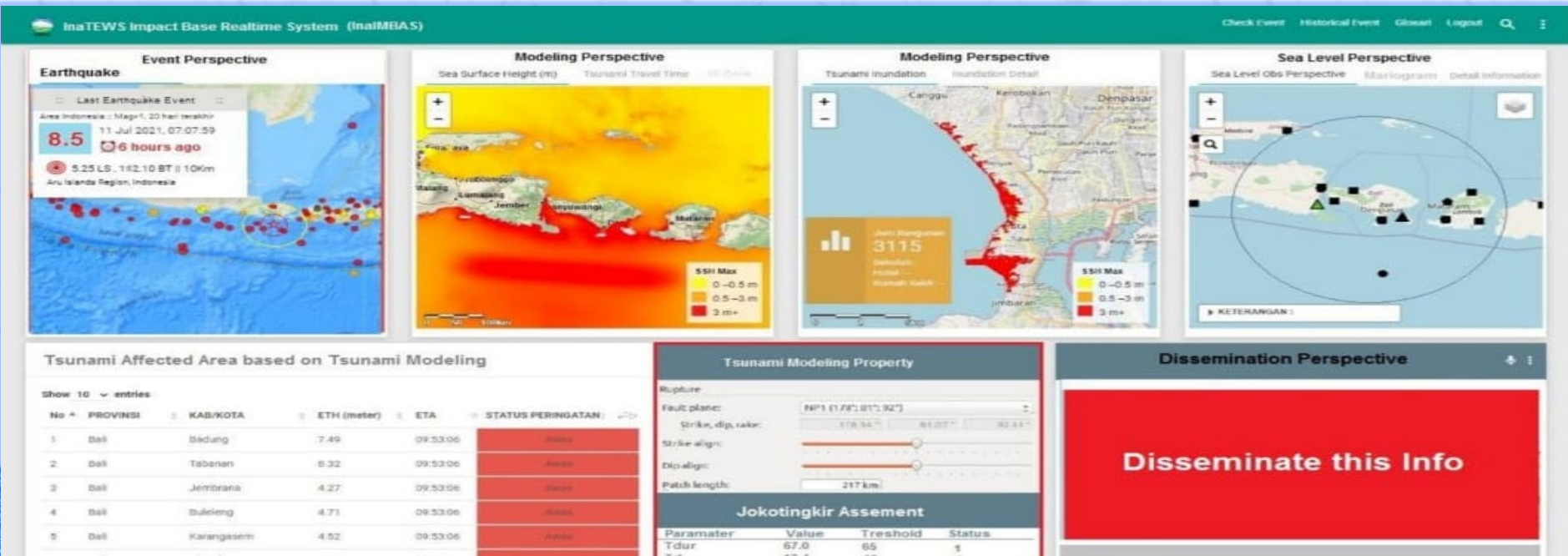
Cloud web based application



User password protected access

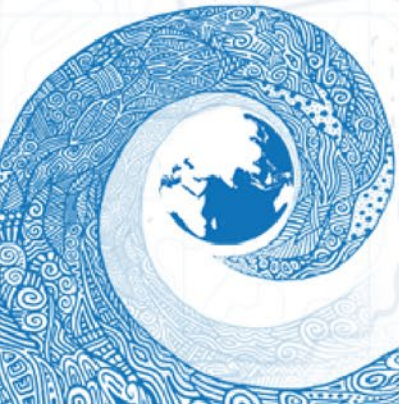


InaTEWS Impact Base Realtime Sistem (on going)



5. Capacity Building

- Formal degree and training for Staff.
- Outreach Activities (INDONESIAN TSUNAMI READY).
- Capacity development on operation of earthquake and tsunami analysis and warning dissemination (BMKG-JICA).
- Other International cooperation(USGS, CEA, NOAA).



Thank you

