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

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2. TSP Indonesia development since last ICG
3. TSP Indonesia development plans
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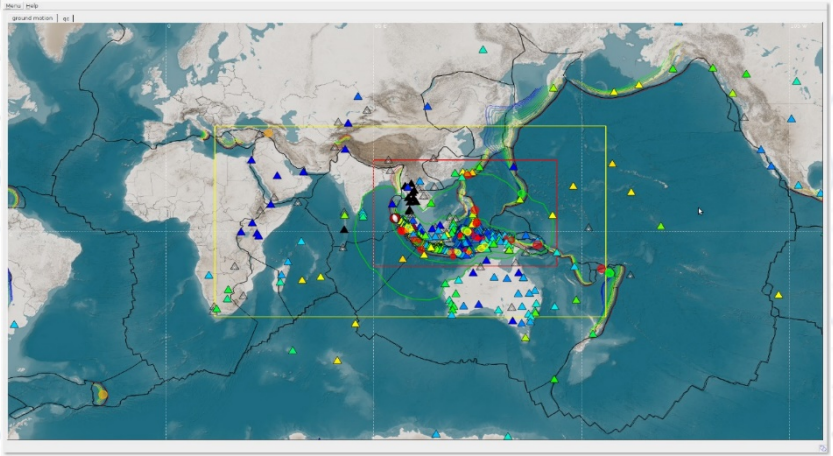
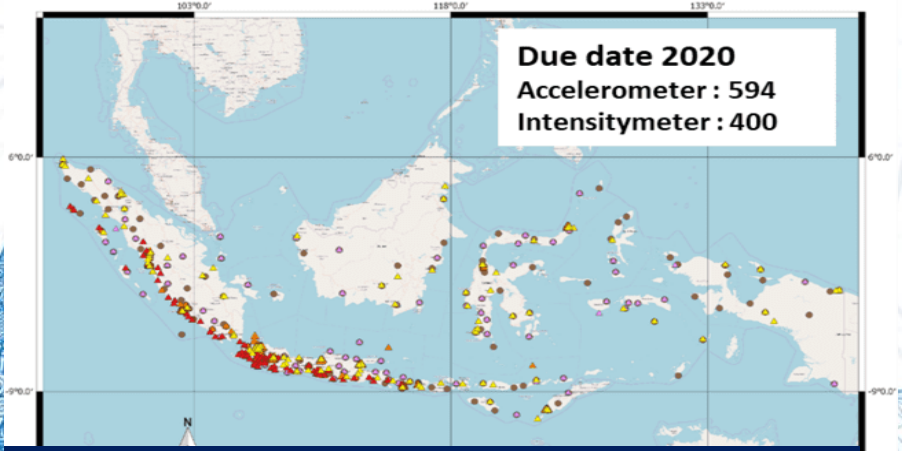
5. Capacity Building

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





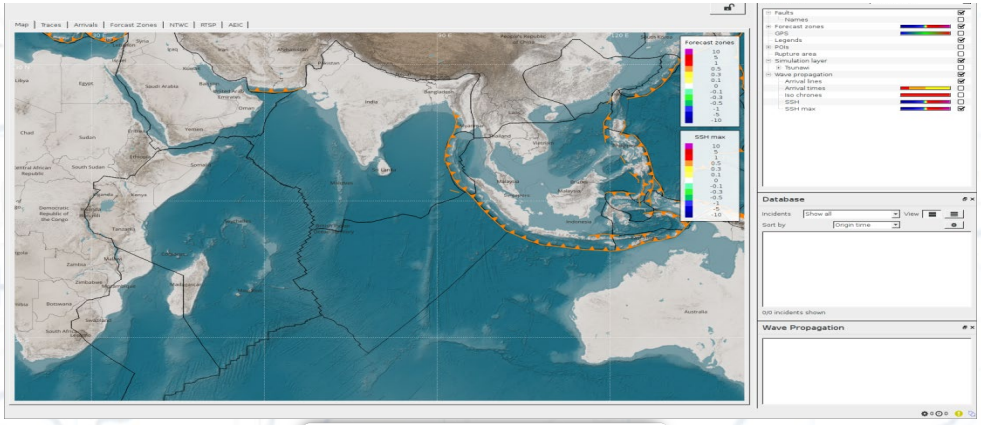
INDONESIA ACCELEROMETER NETWORK

SEA LEVEL MONITORING NETWORK USED BY INATEWS

TSP Data Processing

Seicomp 3 – Eq Analysis

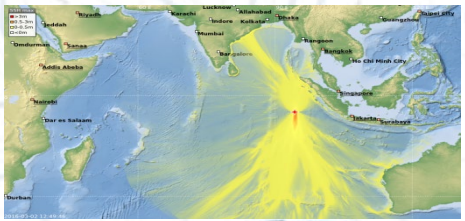
TOAST (Tsunami Observation And Simulation Terminal)

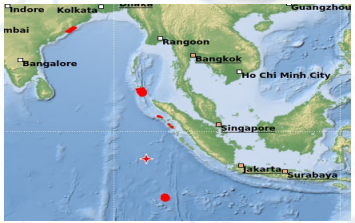


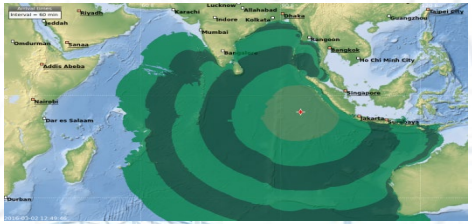
Earthquake Information

- Origin Time
- Magnitude
- Depth
- Location

Tsunami Warning







TSP Indonesia Dissemination System

SMS

FAX

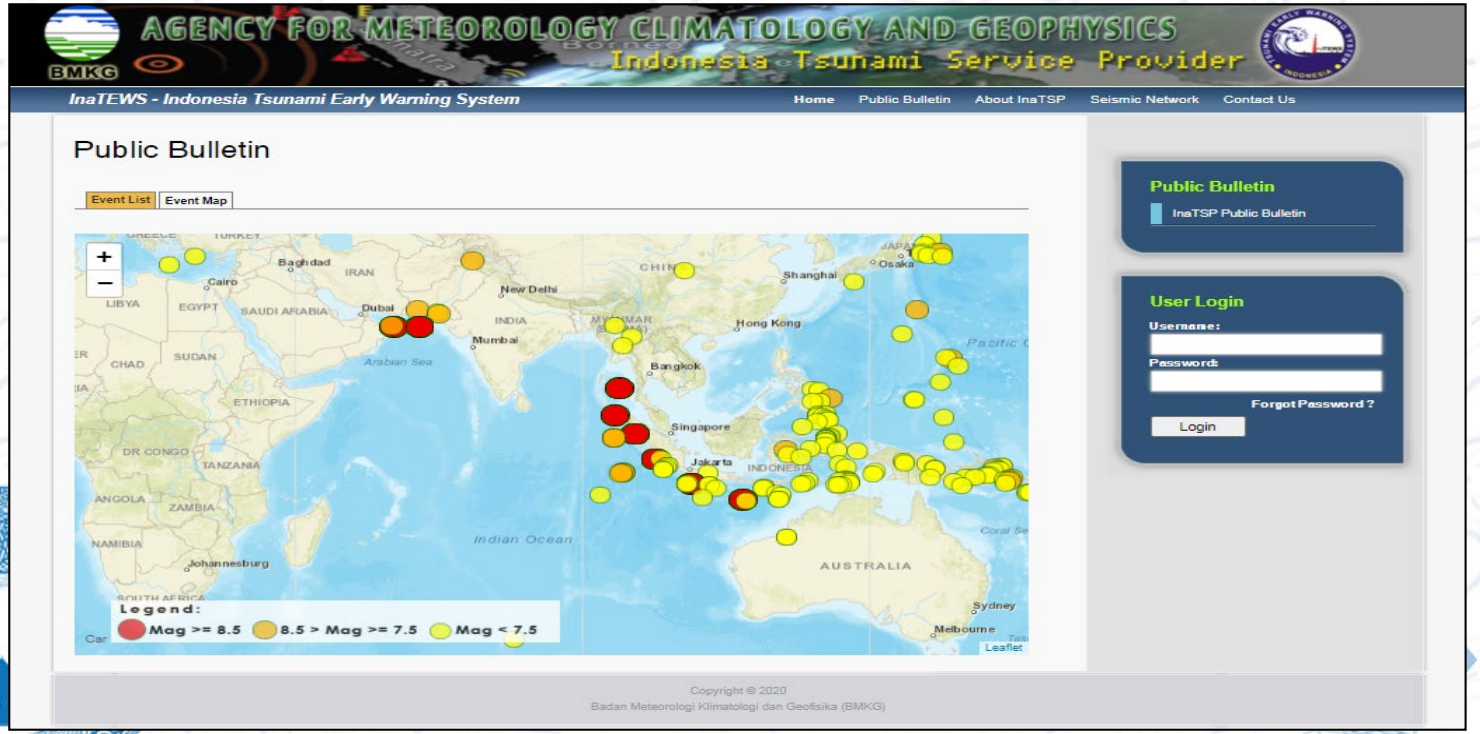
EMAIL

GTS

TSP Website

WRS

TSP Indonesia Password Protected Web



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

Meets Target	Near Target	Misses Target

NOTES

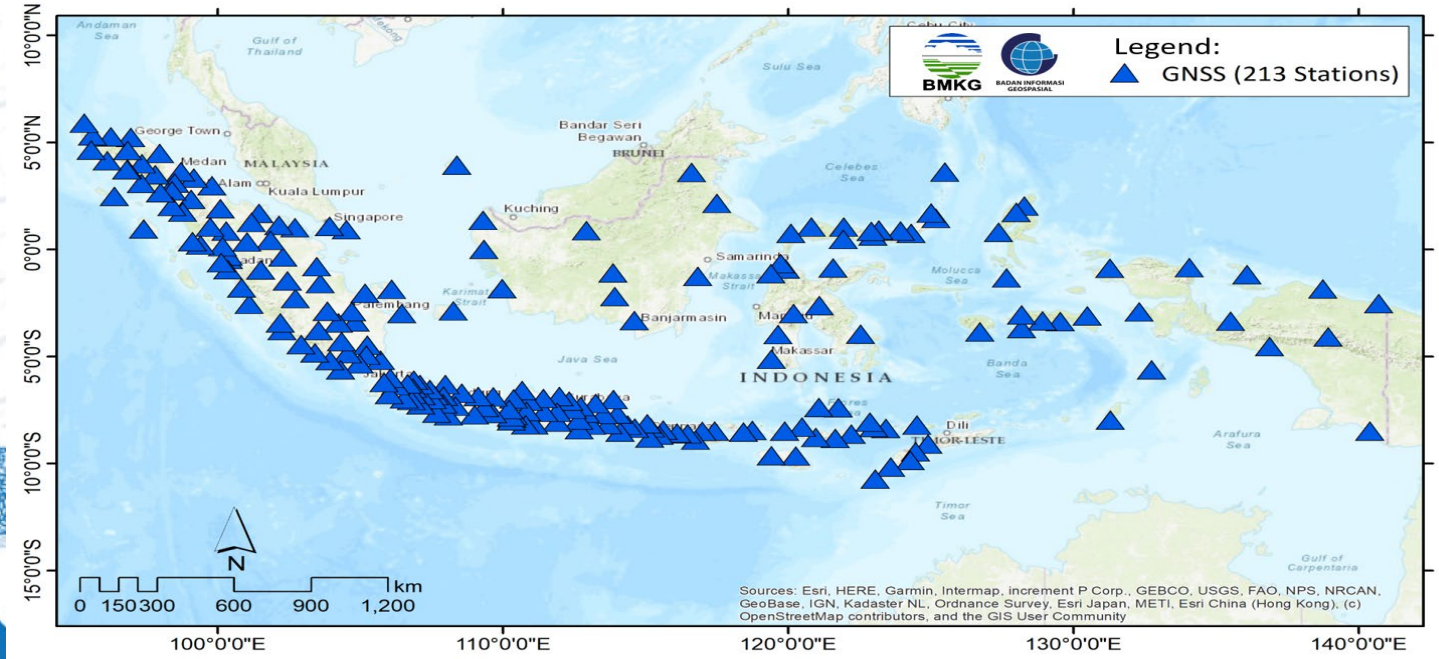
KPI 6:
Indonesia issued 1 No Threat Bulletin.

KPI 7: No events caused threat-level tsunami waves.
KPI 8: Based on 4 observations in CFZ's from the 12 Aug South Sandwitch Island event.
KPI 9: TSP Indonesia issued an EQ bulletin where the USGS final solution was <M6.2.

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.

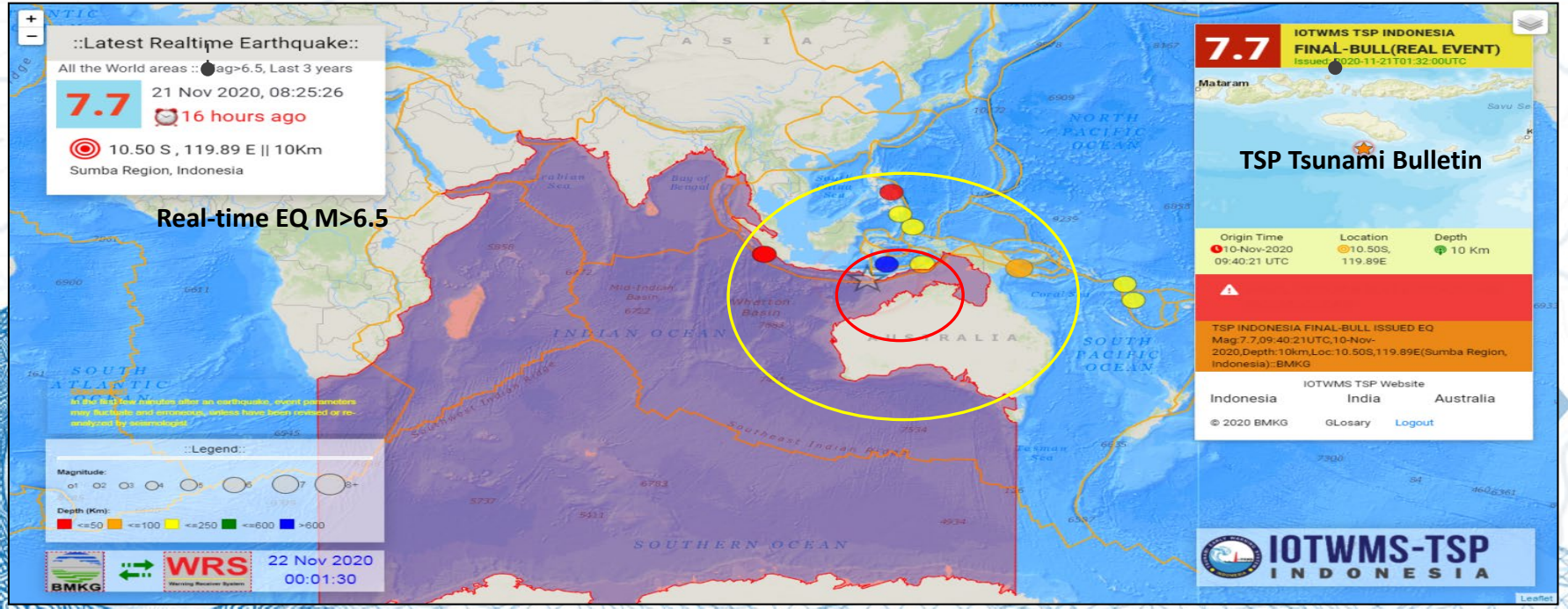
Earthquake ⇒ TSP Indonesia ⇒ WRS-TSP Indonesia

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

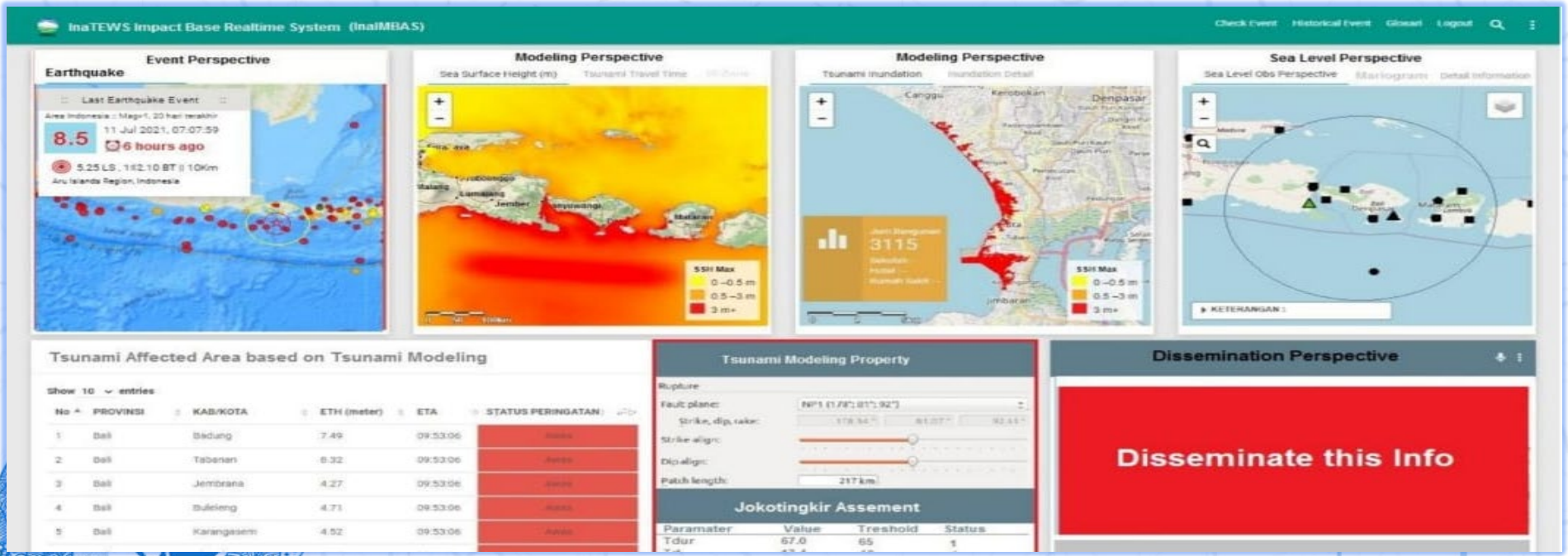
FEATURES

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 base d 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