Intergovernmental Coordination Group Indian Ocean Tsunami Warning & Mitigation System (IOTWMS)

Prof Dwikorita Karnawati
Chair, ICG/IOTWMS

unesco
Intergovernmental Oceanographic Commission

Tsunami **Ready**

GOVERNANCE OF INTERGOVERNMENTAL COORDINATION GROUP
INDIAN OCEAN TSUNAMI WARNING & MITIGATION SYSTEM (ICG/IOTWMS)

Chair: Prof. Dwikorita Karnawati (Indonesia)
Vice Chair: Dr. Yuelong Miao (Australia)
Vice Chair: Mr. Pattabhi Rama Rao (India)

Steering Group: Officers, WG Chairs/VCs

WG1 Tsunami Risk, Community Awareness and Preparedness
Chair: Dr. Harkunti Rahayu (Indonesia)

WG2 Tsunami Detection, Warning & Dissemination
J.Padmanaban (India)

WG3 Tsunami Ready Implementation
Chair Ms Suci Dewi Anugrah (Indonesia)
Task Team – IOWAVE23
Chair: Mrs. Weniza (Indonesia)

Sub-Regional WG: NW Indian Ocean
Chair: Dr. Mohammad Mokhtari (Iran)

IOC Tsunami Unit (Paris)
Head: Bernardo Aliaga

IOTWMS Secretariat (Perth)
hosted by Australia (BoM)
Head: Dr. Srinivas K. Tummala

IOTIC (Jakarta)
hosted by Indonesia (BMKG)
Head: Ardito Kodijat

IOC Secretariat, Tsunami Unit

TSP PROGRESS REPORT

TSP Australia
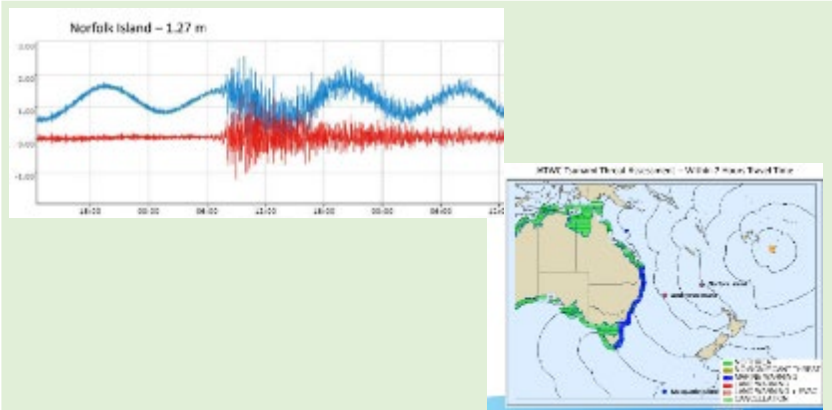
- Capability to produce Indian Ocean products for Non-Seismic events
- Capability to deliver Navarea maritime product
- Bureau-Joint Australia Tsunami Warning Center in progress with ISO 9001 recertification
- Non-seismic tsunami source SOPs worked well in the Hunga Tonga Volcanic Eruption generated tsunami

TSP India
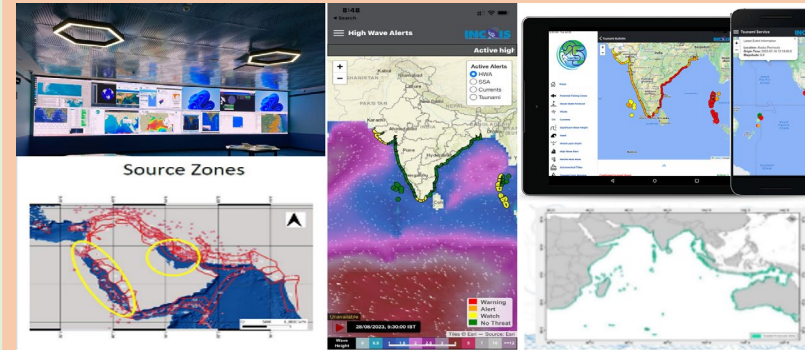
- Maintaining **CFZs Layers for IOTWMS**
- **UNESCAP PTHA Project for Makran Subduction Zone** (Phase-2b completed simulations) and Initiated Phase-2c in Nov 2023.
- **SAMUDRA Mobile App**. It is a comprehensive **multi-hazard early warning** app to the coastal communities about oceanic threats.
- Inaugurated the **state-of-the-art SynOPS lab**, enhancing ocean monitoring and prediction capabilities.
- ISO 9001 recertification

TSP Indonesia
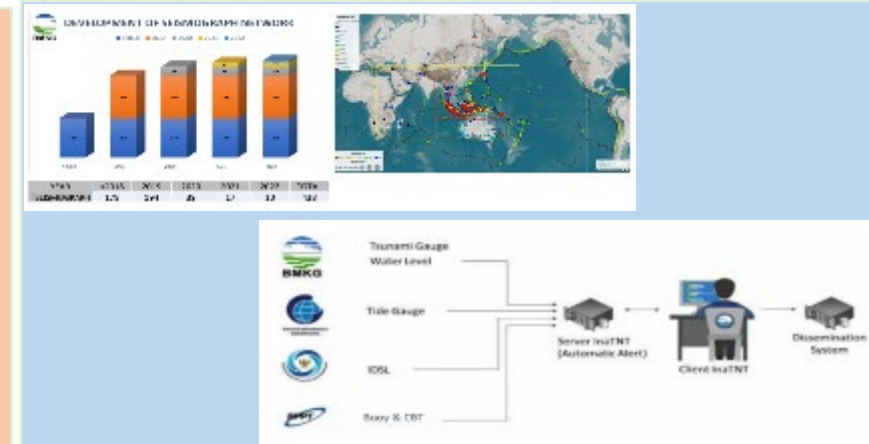
- Progressive deployment of the seismometers (535 in 2024)
- Developing Indonesia Tsunami Non-Tectonic monitoring system
- Multi-Hazard Platform (InfoBMKG mobile App)
- Establishment of the National Consortium of the EQ and Tsunami Experts
- Development new processing impact based real time system of InaTEWS supported by National Consortium
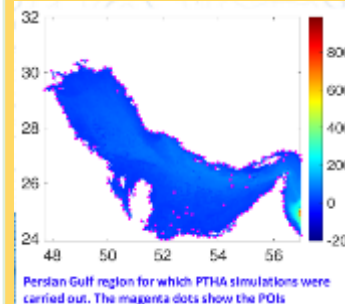
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TSP FUTURE PLAN

TSP Australia

- GA-JATWC to integrate, test and operationalise seismic array processing as input to rapid earthquake detection and characterization.
- GA-JATWC to commence work towards ISO 9001 accreditation for GA-JATWC systems
- Bureau-JATWC to replace the current tsunami Decision Support Tool with TOAST

TSP India

Persian Gulf region for which PTHA simulations were carried out. The magenta dots show the POIs

- Developing SOPs and implementing products for non-seismic tsunamis
- Implementing NAVAREA products for upcoming trails.
- Utilizing GNSS & SMA for precise rupture characterization.
- Archiving Makran source PTHA for access to member states.
- Providing on-job trainings for IO member states.
- Advancing integrated inversions for tsunami source analysis.

TSP Indonesia
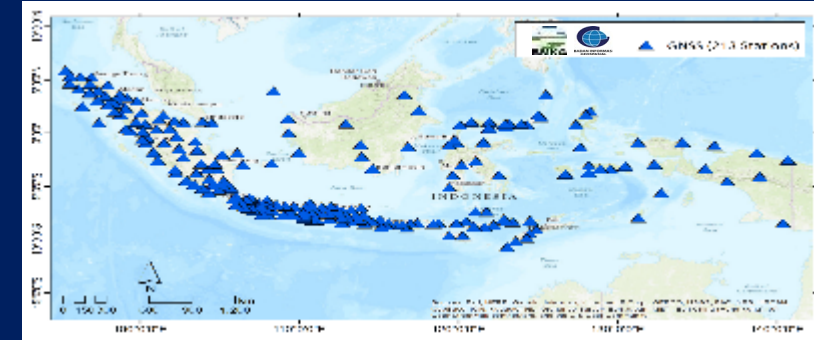
- Deployed 100 Tsunami Gauges
- Utilization of GNSS for earthquake parameter calculation
- Research on non seismic tsunami
- Provide sea level observation portal for the Indian Ocean area
- Support the On Job Training for the IO member states
- Development of processing system for Earthquake Early Warning

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CAPACITY DEVELOPMENT ACTIVITIES IN 2023 - 2024

No	Activities	Date
1	SOP Workshop for the West Indian Ocean	03-06 July
2	SOP Workshop for the Eastern Indian Ocean,	10-13 July 2023
3	SOP Workshop for the North-West Indian Ocean,	7-8 August 2023
4	Tsunami Ready Training Timor Leste	31 July- 1 August 2023
5	Tsunami Ready Training Seychelles	31 July- 1 Agustus 2023
6	On job trainings for the Indian Ocean Member States (Oman and Timor Leste)	13-21 March 2023
7	TSP-India at INCOIS, has conducted a two weeks in-person on-job training course for Oman on "Tsunamis & Other Ocean Hazards"	11-22 December 2023
	Workshop on the UNESCAP Capacity Assessment Validation to result recommendation	4-6 September 2024
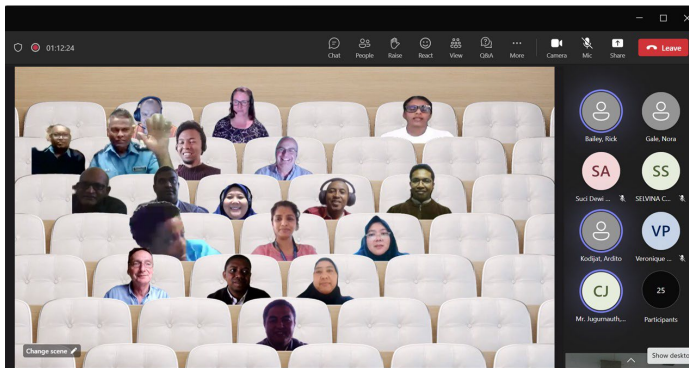
SOP Training

Tsunami Ready Training in Seychelles

Tsunami Ready Training in Timor Leste

Oman, On Job Training

INDIAN OCEAN CAPACITY ASESSMENT

Capacity Assessment Result and Recommendation for the Indian Ocean under the UNESCAP project had been launched;
"Gaps including Tsunami Warning SOP, Tsunami Ready Initiative and Data Exchange still found in the IOTWMS"

48 Communities of India and Indonesia had been recognized as a UNESCO-IOC Tsunami Ready Communities

36 Communities of India and Indonesia are newly inaugurated during the Global Tsunami Symposium

IOWAVE 2023 (4, 11, 18, and 25 October 2023)

IOTWMS Member States participation in the scenarios included:

- 4 scenarios including a non-seismic tsunami scenario
- 20 countries participated
- More than 45.000 people conducted tsunami evacuation drill, including disabilities people
- The exercise also been participated by the critical infrastructure, and decision makers

Propose for the next Exercise:

- to conduct sub regional exercise, based on the needs and potential tsunami hazards
- to carry out the Multi-Hazard exercise

UNESCO-IOC 2nd Global Tsunami Symposium, Banda Aceh

Outcomes:

- Participants:
  - 682 participants
  - 170 online participants
  - 1200 viewer of Youtube
  - From about 32 countries
- Engaged many parties including: scientist, policy maker, academia, professional, practitioner, private sector, school, communities,Youth, NGO, UN Organization

- Showing the achievement of the technical development of tsunami warning and mitigation system
- Showing the achievement of the community's engagement in the Tsunami Preparedness capacity and response
- Identifying priorities and Gaps

Banda Aceh Statement:

Global Tsunami Warning and Mitigation: Building Sustainability for THE next decade through Transformation and Innovation.

UNESCO and its partners call on States and civil society to drastically step up their investments and efforts to achieve 100% of Tsunami Ready Communities across the world by 2030

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IMPLEMENTING TSUNAMI READY FOR CRITICAL INFRASTRUCTURES

- **Implementing Tsunami Ready to critical infrastructure**: The Yogyakarta International Airport (YIA) in South Java, Ngurah Rai, Minangkabau International Airport). The YIA facilitate a shelter evacuation for the Tsunami Ready Community of Glagah

- **Collaborative works with Private Sector** such as tourist management (Hotel): The community of Tanjung Benoa Village-Bali has a support from the hotel to utilize the hotel's roof top for evacuation place.

- **Implementing Tsunami Ready for the Industrial Estate**: develop the Standard Operating Procedures and other communication chain, Tsunami Hazard map, Simulation, Capacity Development activities. The Industrial Estate facilitated the Siren, Assembly Point, and Evacuation Sign for the fishing community

- **Optimizing the existing program of Coastal Community Preparedness to be focused on Tsunami Ready**

Sekolah Lapang Gempabumi dan Tsunami, Existing Community Prepaparedness program is now focusing on Tsunami Ready
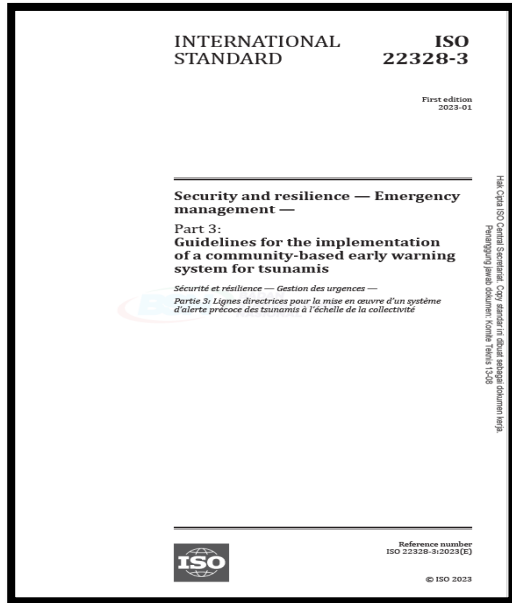

Evacuation shelter for tsunami in the YIA and Hotel that also used by the community surrounding as the evacuation place

Tsunami Ready in Krakatau and Cilacap Industrial Estate

ISO22328-3: ENFORCE THE IMPLEMENTATION COMMUNITY-BASED TSUNAMI EARLY WARNING SYSTEM

- The ISO of a Community-Based Tsunami Early Warning System, is a practical instrument **to be referred by Private Sector as well as Cities prone to tsunam**i to develop the Tsunami Early Warning System as a part of Tsunami Ready Community program

- As recommendation of ISO Annual Meeting in Sydney that ISO **need to promote for reaching the wide implementation. The implementation of ISO would be monitored by ISO Secretariat.**

- On 26 November – 1 December 2023, **BMKG has already promoted ISO 22328-3**: Guideline for the Implementation of Community-Based early warning system for tsunami to Pacific Tsunami Early Warning System (PTWC) and International Tsunami Information Center (ITIC) in Hawaii.

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ISSUES AND CHALLENGES

- Developing Standard Operating Procedures for non-seismic tsunami
- Providing information for maritime communities through the NAVAREA Coordinator
- Guidance in evacuation/receiving tsunami warning for implementation of Tsunami Early Warning For All including the vulnerable group, and Communities at remote area
- Mainstreaming the Tsunami Ready Implementation to get more collaboration (Critical Infrastructure, Industrial Zone, Private Sector, Tourism Management/hotel)

THANK YOU