unesco

Intergovernmental
Oceanographic
Commission

Overview of the IOTWMS

Rick Bailey
Head of Secretariat for ICG/IOTWMS

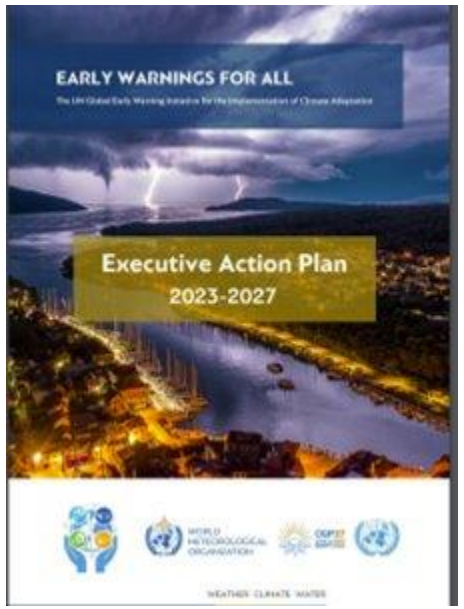
ICG Indian Ocean Tsunami Warning & Mitigation System SOP Workshops July 2023:

Standard Operating Procedures (SOPs) for
National Tsunami Warning Centres (NTWCs) and
Disaster Management Organisations (DMOs)

ICG/IOTWMS Work Programme

unesco
Intergovernmental Oceanographic Commission

In line with UN "Early Warnings for All" (EWS4ALL) initiative from COP-27, ICG/IOTWMS working groups and task teams continue to work across all four pillars:



Pillar 1
Disaster risk knowledge
Systematically collect data and undertake risk assessments

- Are the hazards and the vulnerabilities well known by the communities?
- What are the patterns and trends in these factors?
- Are risk maps and data widely available?

Pillar 2
Detection, observations, monitoring, analysis and forecasting of hazards
Develop hazard monitoring and early warning services

- Are the right parameters being monitored?
- Is there a sound scientific basis for making forecasts?
- Can accurate and timely warnings be generated?

Pillar 4
Preparedness and response capabilities
Build national and community response capabilities

- Are response plans up to date and tested?
- Are local capacities and knowledge made use of?
- Are people preapred and ready to react to warnings?

Pillar 3
Warning dissemination and communication
Communicate risk information and early warnings

- Do warnings reach all of those at risk?
- Are the risks and warnings understood?
- Is the warning information clear and usable?

ICG/IOTWMS GOVERNANCE

unesco
Intergovernmental Oceanographic Commission

UNESCO-IOC
Assembly/Executive Council

WMO, IHO, IMO, UNISDR, UNDP…

Task Team Disaster Management & Preparedness

UN Ocean Decade Tsunami Programme Science Committee

Working Group for Tsunami & Other sea level related Warning & mitigation Systems (TOWS-WG)
[4x ICG Chairs, WMO, UNISDR, UNDP, IMO, IHO]

Task Team Tsunami Watch Operations

ICG Caribbean & Adjacent Seas (CARIBE-EWS)

Intergovernmental Coordination Group
Indian Ocean Tsunami Warning & Mitigation System (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, TT Chairs

ICG Pacific Tsunami Warning & Mitigation System (PTWS)

ICG NE Atlantic & Mediterranean Seas (NEAMS-TWS

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

WG2 Tsunami Detection, Warning & Dissemination
Dr. Karyono (Indonesia)

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

RWG North-West Indian Ocean
Chair: Dr. Mohammad Mokhtari (Iran)
Task Team – Scientific Tsunami Hazard Assessment of the Makran Subduction Zone
Chair: to be elected

IOC Tsunami Resilience Section
Head: Bernardo Aliaga (Paris)

IOTWMS Secretariat
hosted by Australia (BoM)
Head: Rick Bailey

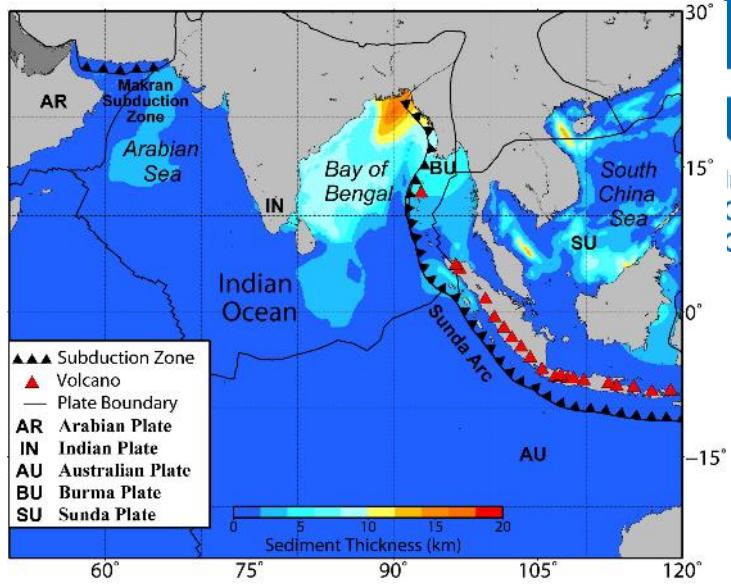
IOTIC (Jakarta)
hosted by Indonesia (BMKG)
Head: Ardito Kodijat

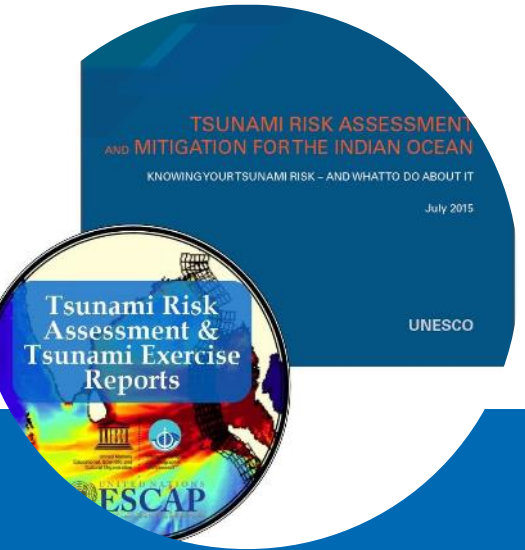
IOC Secretariat, Tsunami Unit

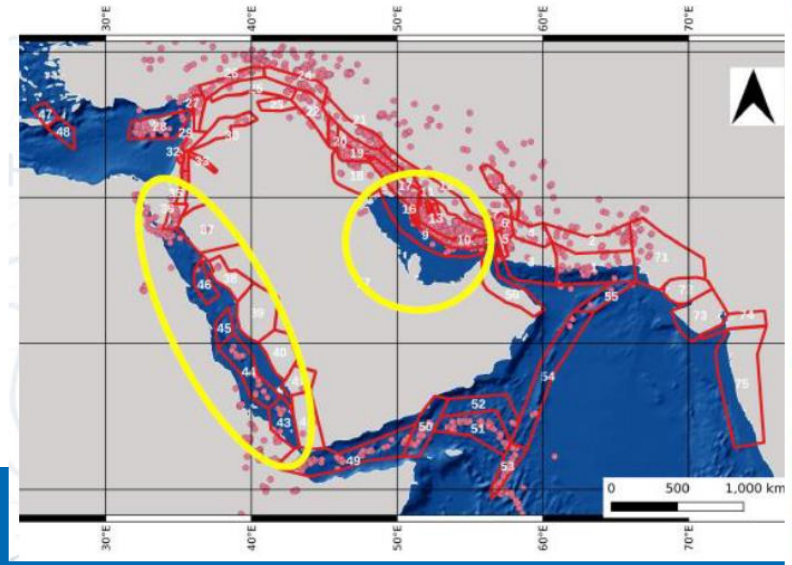
PILLAR I: TSUNAMI RISK ASSESSMENT

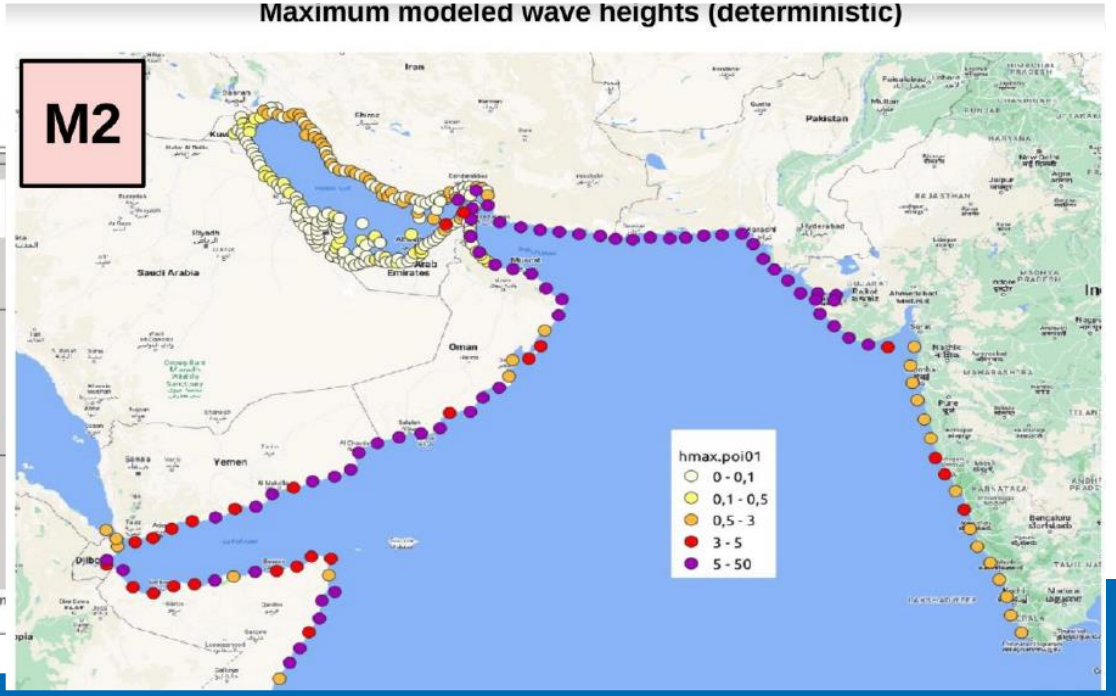
Tsunami Hazard Assessment

- Underpins better understanding of the risk and guide preparedness by authorities and communities
- Probabilistic Tsunami Hazard Assessment (PTHA) V1.0 developed for NW Indian Ocean by UNESCAP funded project
- Future versions to include other sources, such as splay faulting, submarine landslides, etc





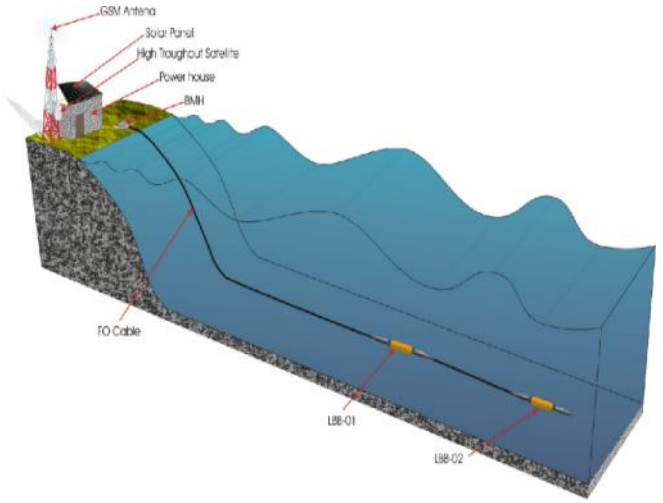


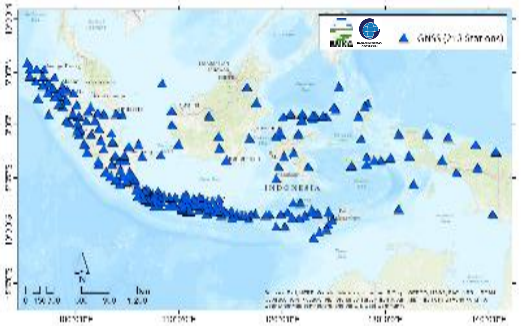


PILLAR II: TSUNAMI DETECTION AND WARNING

Tsunami Service Providers

- Operated by **Australia, India, and Indonesia**
- Developing within **multi-hazard** environments
- **ISO compliant:** ISO 9001 (Australian and India) and ISO 22328-3 (Indonesia)
- **Performance monitoring** against 9 KPIs
- Threat information provided for **non-seismic source tsunami** by Australia from 2023
- **Maritime products for NAVAREAs** to be trialed in 2023 and implemented from 2024
- **Warning tools & systems being enhanced** by TSPs
- Indonesia deployed Feb22 **undersea cable-based tsunameter (CBT) system and more seismometers**
- **More support for observations required reach Ocean Decade Goal increased accuracy and timeliness of tsunami warnings**

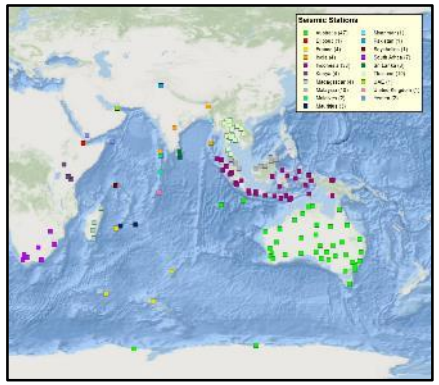


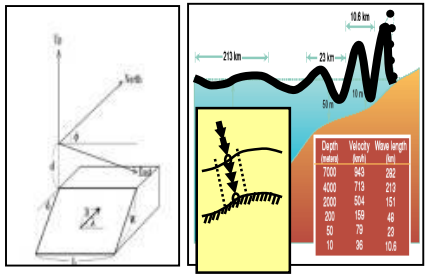


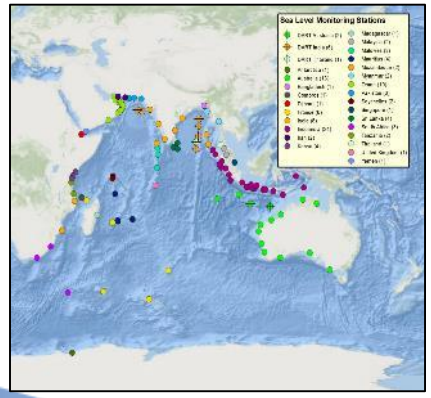
unesco
Intergovernmental Oceanographic Commission

Tsunami Detection, Warning & Dissemination

Observations







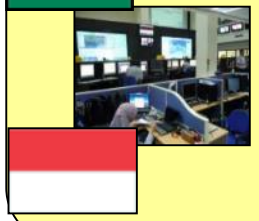
Seismological Data

Model Results

Sea level Data

Regional Analysis

Tsunami Service Providers



Threat Information

National Tsunami Warning Centre- 1

Warning Status

Threat Information

National Tsunami Warning Centre- 2

Warning Status

Threat Information

National Tsunami Warning Centre- N

Warning Status

National Warnings

National DMO
Local DMO
Media
Public

TV
Radio
SMS
Email
Web
SIRENS

MEDIA ROLE

Issue

Communicate

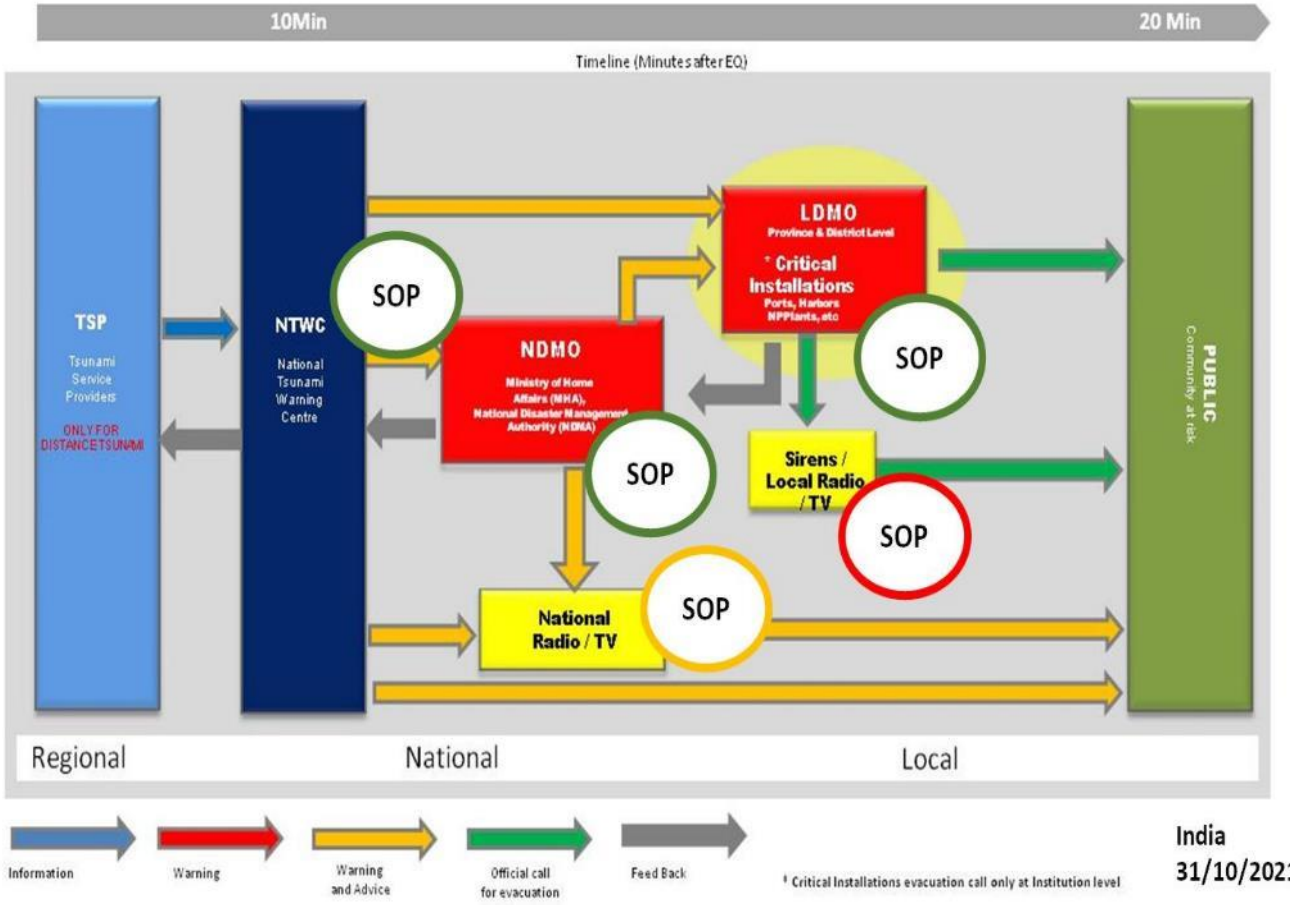
GTS
SMS
FAX
Email
Web

IOTWMS

PILLAR III: TSUNAMI WARNING DISSEMINATION

National Tsunami Warning Chains and SOPs

- National tsunami warning chains involve National Tsunami Warning Centres (**NTWCs**), Disaster Management Organisations (**DMOs** at national, provincial, and local level), and **Broadcast Media**
- **Standard Operating Procedures (SOPs)** underpin each link.
- **Extend UNESCAP funded project outcomes to provide SOP Training Workshops for all MS Jul23**
- **Routine 6-monthly communication tests** Jun and Dec every year (email, GTS, SMS, Fax)
- Test national tsunami warning chains and SOPs in **Exercise IOWave23 in Oct23**



PILLAR IV: COMMUNITY AWARENESS & PREPAREDNESS

Tsunami Ready Recognition in the Indian Ocean

unesco
Intergovernmental Oceanographic Commission

- ✓ **11 communities now Tsunami Ready recognized**
- ✓ **Australia, Iran, Maldives, Oman, Pakistan, Seychelles, Sri Lanka, Thailand, and Timor Leste planning to implement**
- ✓ **More support required reach Ocean Decade Goal 100% communities at risk Tsunami Ready**

unesco
Intergovernmental
Oceanographic
Commission

THANK YOU