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Implementing Tsunami Ready in the Indian Ocean

Suci Dewi Anugrah

**Chair of the Working Group 3 (Tsunami Ready Implementation)
The Agency for Meteorology Climatology and Geophysics
Indonesia**

suci.dewi.sda@gmail.com

Tsunami Ready and UN Ocean Decade



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Implementation Plan for the UN Decade Tsunami Programme (TOWS WG 2021)

Contribute to achieving the societal outcome of A Safe Ocean with the aim of **making 100% of communities at risk of tsunami prepared for and resilient to tsunamis by 2030 through the implementation of the UNESCO/IOC Tsunami Ready Programme**

Tsunami Ready in Indian Ocean

The ICG/IOTWMS **encourages member states to commit to implement the UNESCO-IOC Tsunami Ready guideline and indicators** and promote open access to high-resolution near shore bathymetry and topography data for accurate inundation and evacuation mapping in support of Tsunami Ready communities (*ICG/IOTWMS Chair at the 53rd IOC EC*)

UNESCO/IOC Tsunami Ready Recognition Programme / UNESCO/IOC Tsunami Ready (TOWS WG 2022)

- Recommended that the IOC Executive Council at its 55th session consider approving the **establishment of the UNESCO/IOC Tsunami Ready Recognition Programme (UNESCO/IOC Tsunami Ready)**
- To advise countries that are currently in the process of **implementing Tsunami Ready, to now follow the MG74** when submitting/applying for Tsunami Recognition, and that **MG74** will apply for all future applications.
- Establishment of the **Tsunami Ready Coalition**.
- **ICG Tsunami Information Centres (TICs) to facilitate the UNESCO/IOC Tsunami Ready Recognition Programme** in each region.

SAFE OCEAN

Not oceans and shores that do not have coastal hazards (*i.e. Tsunami*).

..... is coastal area and ocean that is understood, observed, can be predicted, and where the people can continue to interact with the sea and oceans for their livelihood and lifestyle without having the fear of coastal hazards (**tsunamis**), as they already have the awareness, knowledge, preparedness, skills, and abilities to safe themselves in case of an emergency (**tsunami**)

Why Tsunami Ready ?



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- An advance tsunami early warning system will not save life if the **community at risk does not have the knowledge and capacity to respond** to the early warning.
 - High risk of loss of life and property in coastal community with weak or no **community preparedness** for tsunami emergencies.



- In **near field tsunami**, the community need to react and take action without official warning or guidance
- Weak or **broken warning chain** to community.
- Lack or **limited focus in community preparedness** for tsunami.

The Aims of IOC-UNESCO Tsunami Ready Recognition Program

The Tsunami Ready Recognition Programme is a **voluntary international community-based** recognition programme developed by **UNESCO/IOC**.

It aims to **build resilient communities through awareness and preparedness strategies** that will protect life, livelihoods and property from tsunamis in different regions



Tsunami Ready Community Recognition: 43 Communities

Caribbean (11 communities)

1. St. Kitts and Nevis(1)
2. Anguilla (1)
3. British Virgin Islands (1)
4. Grenada (2)
5. Haiti (1)
6. Antigua and Barbuda (1)
7. Barbados (1)
8. St. Vincent and the Grenadines (1)
9. Trinidad and Tobago (1)
10. Jamaica (1)

Pacific (21 communities)

1. Honduras (3)
2. Costa Rica (11)
3. Samoa (1)
4. El Salvador (2)
5. Guatemala (2)
6. Nicaragua (2)

Indian Ocean (11 communities)

1. Venkatraipur India
2. Noliasahi, India
3. Tanjung Benoa, Indonesia
4. Tambakrejo, Indonesia
5. Panggarangan, Indonesia
6. Glagah, Indonesia
7. Kemadang, Indonesia
8. Pangandaran Indonesia,
9. Mandalika, Indonesia
10. Purus, Indonesia
11. Lolong Belanti, Indonesia

IOC-UNESCO Tsunami Ready Recognition Programme

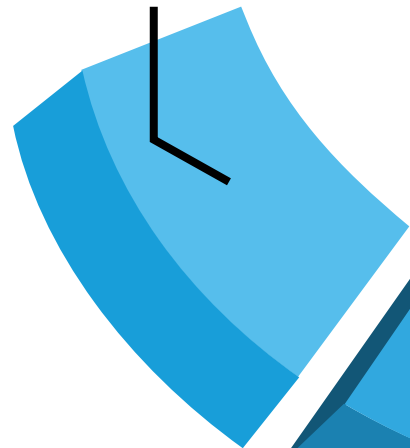


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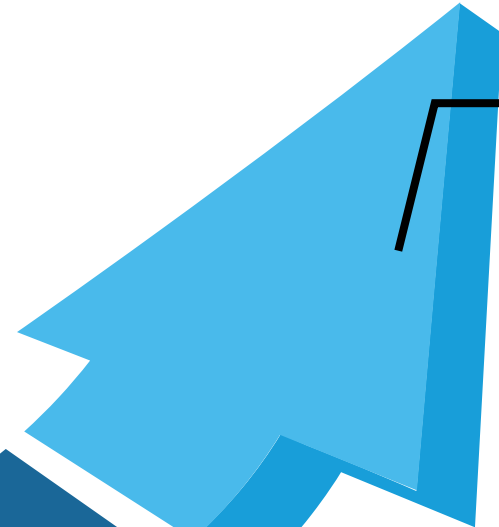
COMMUNITY-BASED

Based on community performance-based programme.



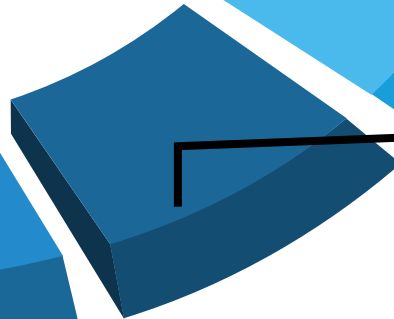
SUSTAINABLE IMPROVEMENTS

Risk assessments, early warning system, public awareness, exercises, pre-planning, preparedness actions



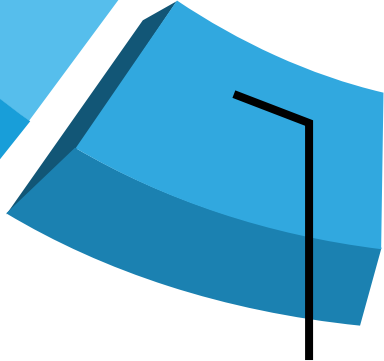
SYSTEMATIC PREPAREDNESS

Aims to improve coastal community preparedness and ensures structural, systematic, and sustainable approach.



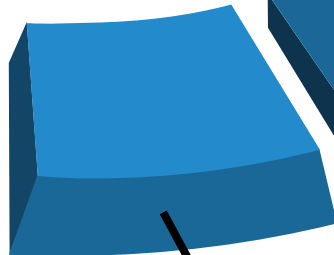
MULTI STAKEHOLDER INVOLVEMENT

Community, Community Leaders, NTWC, NDMO, LDMO, Universities, NGOs and CSOs



CREATE OWNERSHIP

Best practice guidelines and recognition as tsunami prepared community



UNESCO/IOC Tsunami Ready Indicators

TSUNAMI READY INDICATORS

I ASSESSMENT (ASSESS)

- 1 **ASSESS-1.** Tsunami hazard zones are mapped and designated
- 2 **ASSESS-2.** The number of people at risk in the tsunami hazard zone is estimated
- 3 **ASSESS-3.** Economic, infrastructural, political, and social resources are identified

Understanding the Hazard and Risk

II PREPAREDNESS (PREP)

- 4 **PREP-1.** Easily understood tsunami evacuation maps are approved.
- 5 **PREP-2.** Tsunami information including signage is publicly displayed.
- 6 **PREP-3.** Outreach and public awareness and education resources are available and distributed.
- 7 **PREP-4.** Outreach or educational activities are held at least 3 times a year.
- 8 **PREP-5:** A community tsunami exercise is conducted at least every two years

Community Awareness

III RESPONSE (RESP)

- 9 **RESP-1.** A community tsunami emergency response plan is approved.
- 10 **RESP-2.** The capacity to manage emergency response operations during a tsunami is in place.
- 11 **RESP-3.** Redundant and reliable means to timely receive 24-hour official tsunami alerts are in place.
- 12 **RESP-4.** Redundant and reliable means to timely disseminate 24-hour official tsunami alerts to the public are in place.

Planning and Capacity

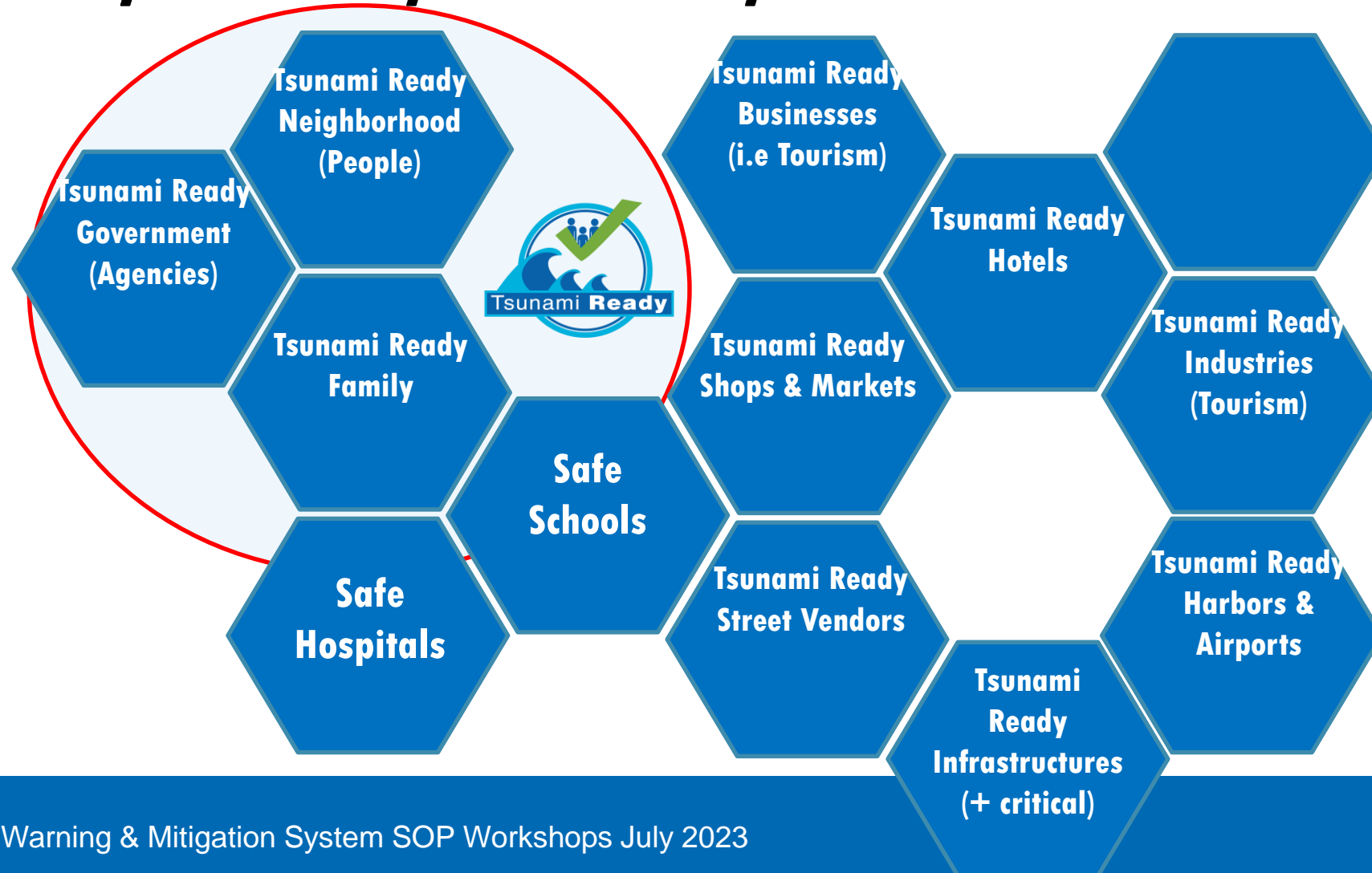
Tsunami Ready “Community”



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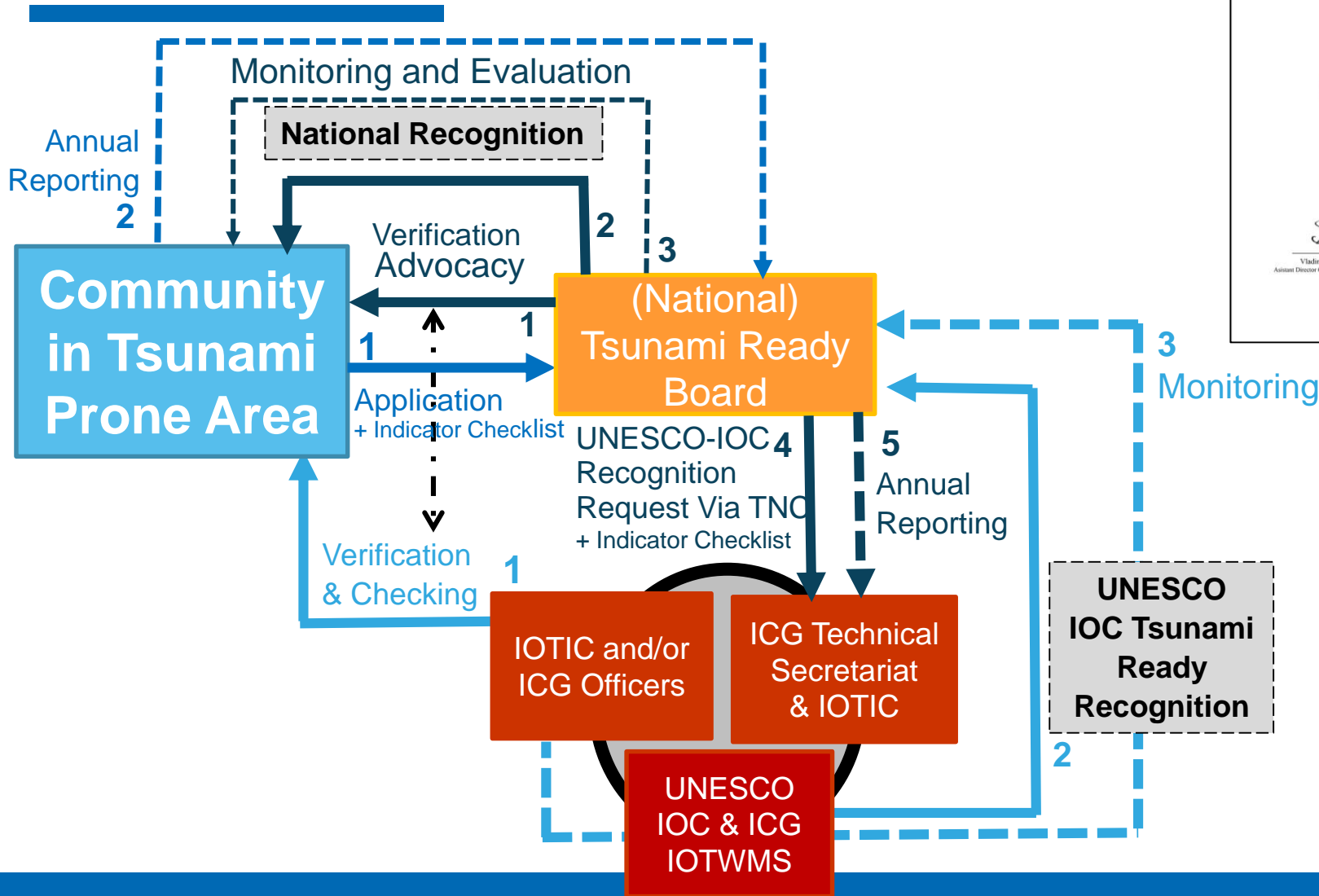
Community → an ecosystem of society



Tsunami Ready Recognition Process



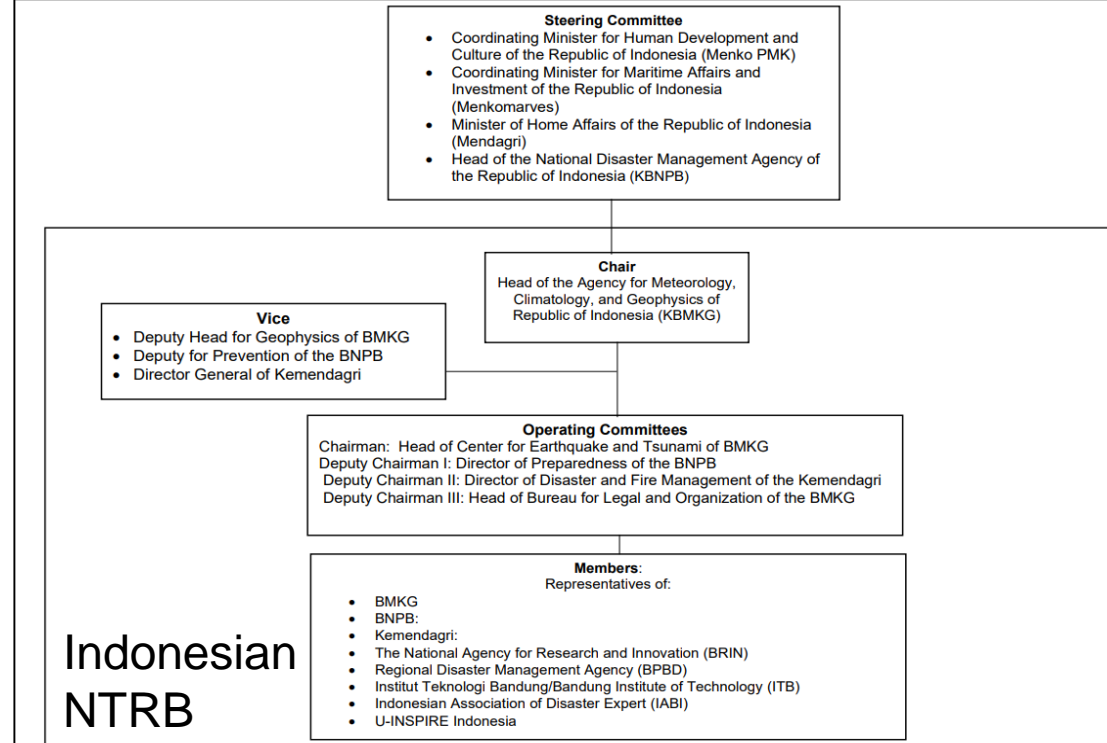
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Tsunami Ready Board

National Tsunami Ready Board

1. Coordinating the implementation of the Tsunami Ready Community through advocacy, promotion, and socialization
2. Ensuring consistency in the implementation of guidelines and UNESCO-IOC Tsunami Ready indicator
3. Checking and providing direction on assessments Tsunami Ready Community on the national level for the proposed coastal communities prone to tsunami;
4. Review, evaluate, and approve requests Tsunami Ready Community Recognition at the national level in accordance with UNESCO-IOC Tsunami Ready guide and indicators
5. Monitor, collect reports, and evaluate Tsunami Ready Community which has received recognition annually;
6. Recommend the Tsunami Ready Community to gain UNESCO-IOC Tsunami Ready Recognition,
7. Monitor and report on annual activities Tsunami Ready Community which has been recognized as UNESCO-IOC Tsunami Ready Community to ICG/IOTWMS;



National Board to implement and the monitor Tsunami Ready Recognition programme and IOWave18 exercises in India

- | | | |
|---|--|------------------|
| 1 | Director, INCOIS | Chairman |
| 2 | Representative from NDMA | Member |
| 3 | Representative from MHA | Member |
| 4 | Representative from MoES | Member |
| 5 | Representative from DMO, Andaman & Nicobar Islands | Member |
| 6 | Representative from DMO, Odisha | Member |
| 7 | Head-TWG, INCOIS | Member Secretary |

Indian NTRB

The Benefit of Tsunami Ready Recognition



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- Strengthens tsunami preparedness of coastal communities**
 - Improved **assessments of Hazards**, Risk, Inundation, and Evacuation
 - Improved **early warning systems/warning chain**, EOP, and EOC
 - Improved/Increases **public awareness, understanding of tsunami threat, build preparedness, and ensures exercises.**
- Strengthen **preparedness for other hazards****
- Encourages a consistent and sustainable approach**
- Contributes to the UN Decade Program**
- Received **Recognition** from IOC UNESCO as Tsunami Ready Community**

Tsunami Ready Recognition in the Indian Ocean



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INDIA:

1. Venkatraipur
2. Noliasahi

INDONESIA:

1. Tanjung Benoa Village - Badung
2. Glagah Village - Kulonprogo
3. Kemadang Village - Gunung Kidul
4. Pangandaran Village - Pangandaran
5. Panggarangan Village - Lebak
6. Desa Tambakrejo - Malang
7. Kuta Mandalika Village - Lombok Tengah
8. Purus Village - Padang Barat
9. Lolong Belanti Village - Padang Utara

Map labels: Noliasahi, Venkatraipur, Purus Village, Lolong Belanti Village, Kemadang Village, Tambakrejo Village, Kuta Mandalika Village, Panggarangan Village, Pangandaran Village, Glagah Village, Tanjung Benoa Village.

Photos show award ceremonies and workshop participants receiving certificates.

✓ **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**

Tsunami Ready for critical infrastructure



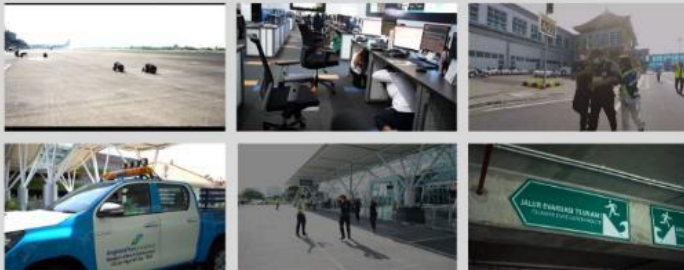
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Implementing Tsunami Ready to the Critical Infrastructures

I Gusti Ngurah Rai Airport, Bali



Yogyakarta International Airport



Cilegon Industrial Area

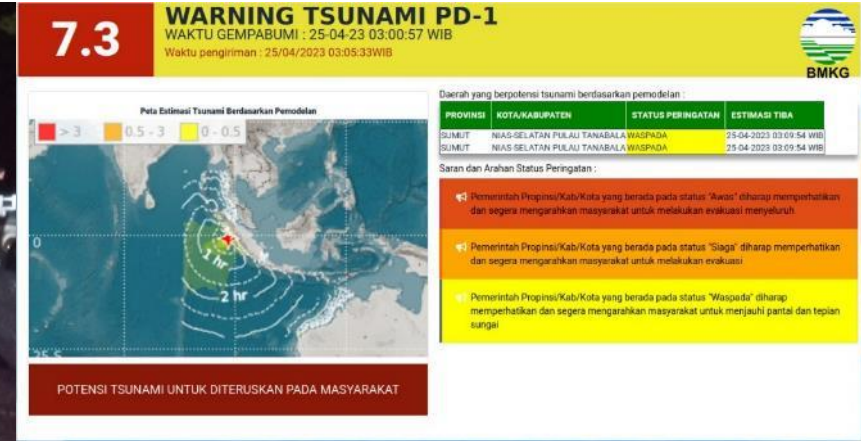


Port Of Benoa, Bali



- ✓ Tsunami Ready for critical infrastructure eg Airport Tsunami Ready in Indonesia, port, and industrial zones

Lesson Learnt from Recognized Tsunami Ready Communities (Purus and Lolong Belanti) in responding to the recent 25 Apr 23 Mentawai Earthquake



BMKG issued the tsunami warning for the Mentawai Earthquake M7,3, 25th April 2023

- Responded well based on capacities built through 12 Tsunami Ready indicators
- Conducted self–evacuation protocols
- Well-aware of tsunami evacuation plans, routes, and evacuation sites
- Vulnerable people evacuated by their family and assisted by Local Disaster Ready Group
- Understanding of official warnings issued by National Tsunami Warning Centre and able to take action accordingly
- Understanding about hazard in their area reduced panic.
- Although there was no significant tsunami (detected only 11 cm), community accepted action taken was necessary

UNESCO/IOC Tsunami Ready Tools

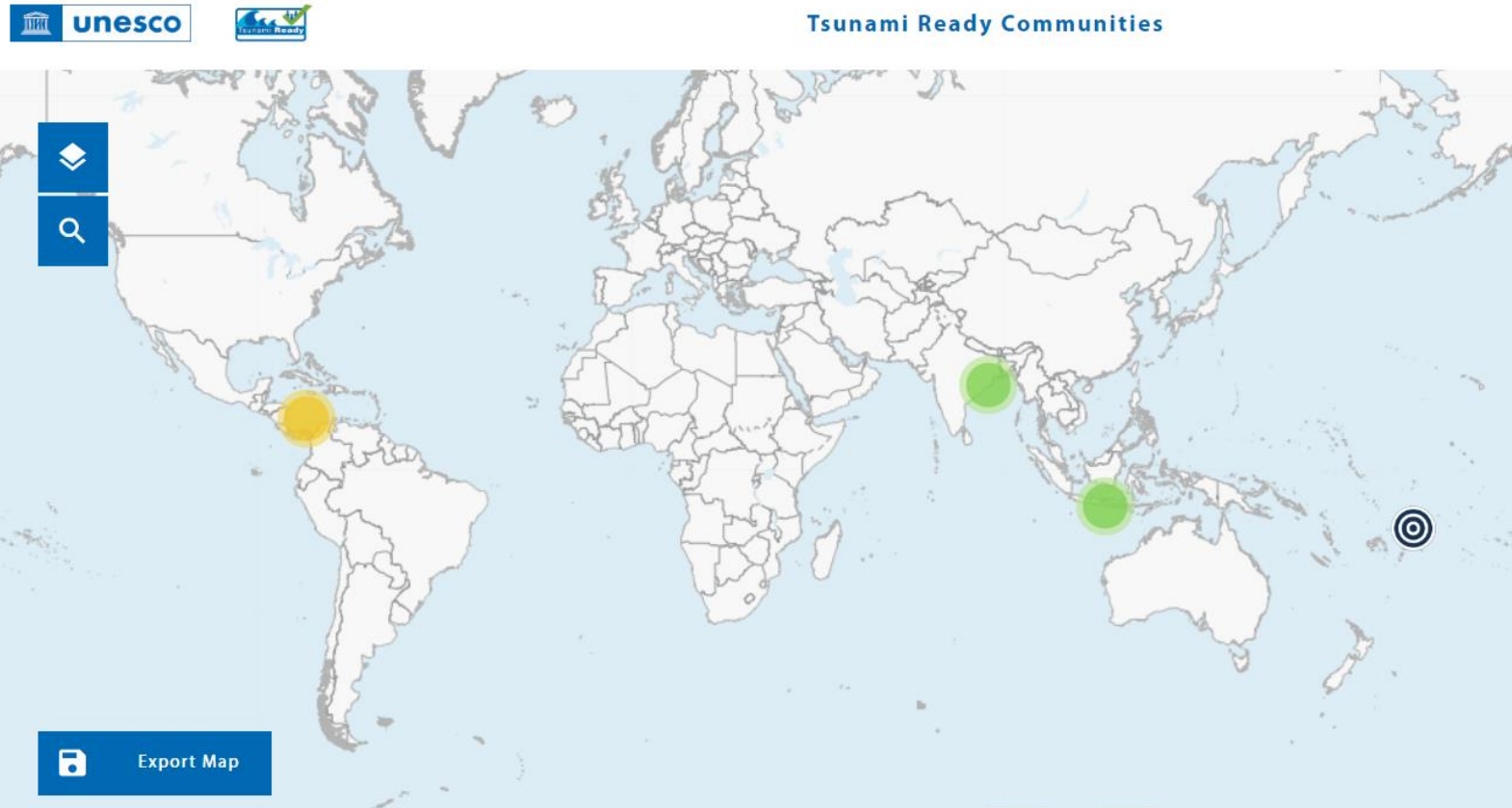


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UNESCO/IOC Tsunami Ready Viewer

Showing UNESCO/IOC Tsunami Ready Recognized Community Globally



<https://tsunamireadyviewer.ioc-tsunami.org/>

UNESCO/IOC Tsunami Ready Tools



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UNESCO/IOC Tsunami Ready Website

The screenshot shows the homepage of the International Tsunami Information Center (ITIC). The header includes navigation links for UNESCO, IOC, IOC Tsunami, NOAA, US Tsunami, and NOAA Tsunami. The main banner features the ITIC logo and the text 'International Tsunami Information Center' over a background image of a tsunami wave. Below the banner is a breadcrumb trail: 'You are here: Home > Intergovernmental > UNESCO/IOC Tsunami Ready Programme'. A search bar is located on the right side of the header.

Home
Contact ITIC

General Info
World Tsunami Day
Hawaii Information
American Samoa Info
About Tsunamis
Am I in Danger?
What to Do?
Aware, Educate
Photo, Video, Graphic
Quick Info - Media
FAQs
About ITIC

Technical Info
Current Warnings
About Warnings
Tsunami Events
Earthquake Monitors
Sea Level Monitors
Research
Meetings
Tools & Products
Library
ITST Tsunami Survey
Marine Ports Guide
Vertical Evac Guide

UNESCO/IOC Tsunami Ready Programme

- Caribbean
- Pacific
- Indian Ocean
- North Atlantic and Mediterranean
- Background
- Pilot Programme

UNESCO/IOC Tsunami Ready Recognition Programme

The logo consists of a blue wave icon on the left, a green checkmark on the right, and the text 'Tsunami Ready' in a blue box below. To the left of the logo is the UNESCO IOC logo.

IOC Tsunami Information Centres

- ITIC
- CTIC
- IOTIC
- NEAMTIC

ITIC CARIBBEAN OFFICE (ITIC-CAR)

Quick Links

http://itic.ioc-unesco.org/index.php?option=com_content&view=category&id=2234&Itemid=2758

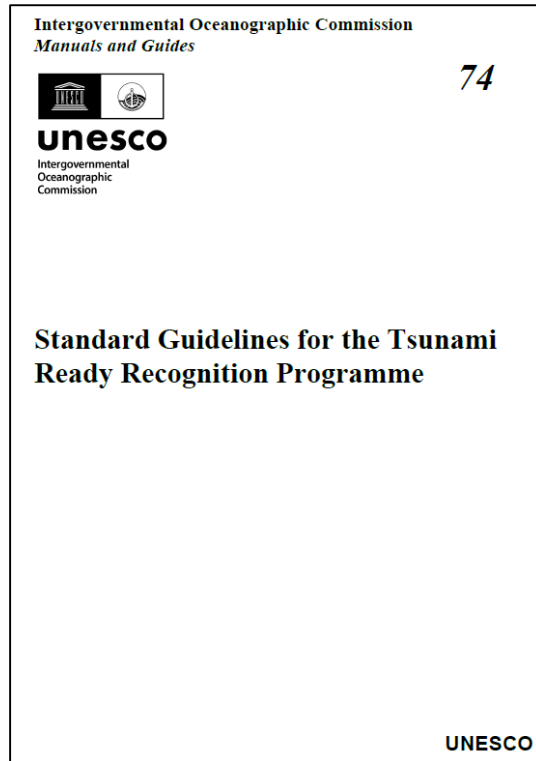
UNESCO/IOC Tsunami Ready Tools



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Manual and Guide No 74

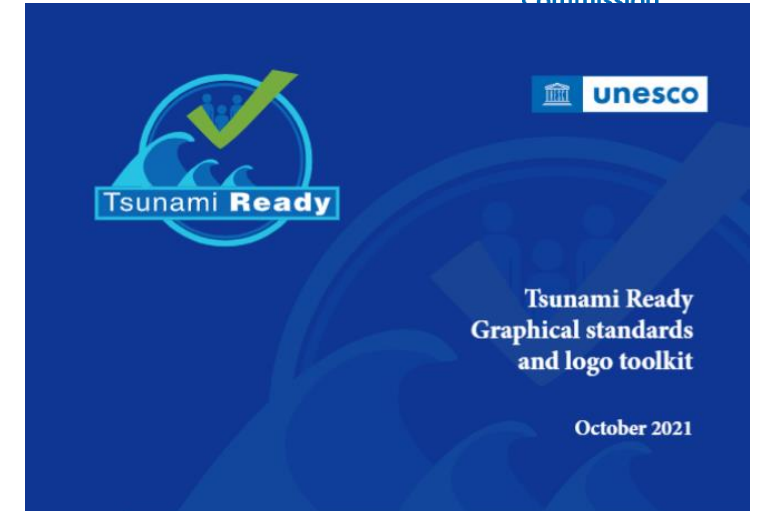


<https://oceanexpert.org/downloadFile/50068>

Manual and Guide No 82



<https://unesdoc.unesco.org/ark:/48223/pf0000373019?posInSet=17&queryId=947ca611-1880-4ded-bb5a-4bd61c93c161>



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<https://unesdoc.unesco.org/ark:/48223/pf0000380936>



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THANK YOU