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High-Level Talks on ODTP High Level Objectives 2

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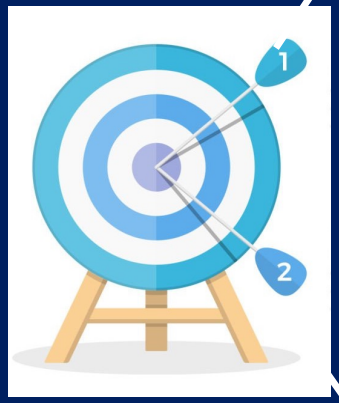
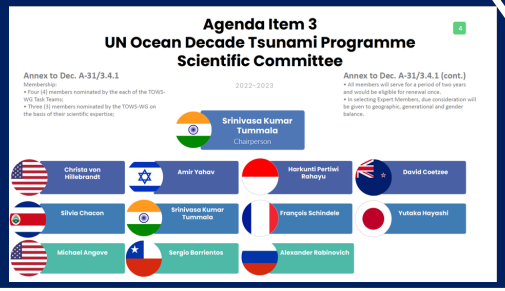
Chair of Inter ICG TOWS WG Task Team on Disaster Management And Preparedness

First Ocean Decade Tsunami Programme (ODTP) Conference, 10–11 November 2025 | INCOIS, Hyderabad, India

UN Ocean Decade Tsunami Programme





To develop the warning systems' capability to issue actionable and timely tsunami warnings for tsunamis from all identified sources to 100% of coasts at risk

100% of communities at risk be **prepared and resilient** to tsunamis by 2030 through programmes like the IOC-Tsunami Ready Recognition Programme (TRRP)

The Scientific Committee developed the draft 10-Year Research, Development and Implementation Plan for the Ocean Decade Tsunami Programme which was presented and endorsed at the IOC Assembly in June 2023

HL Objective 2 ODTP & People Center Early Warning System

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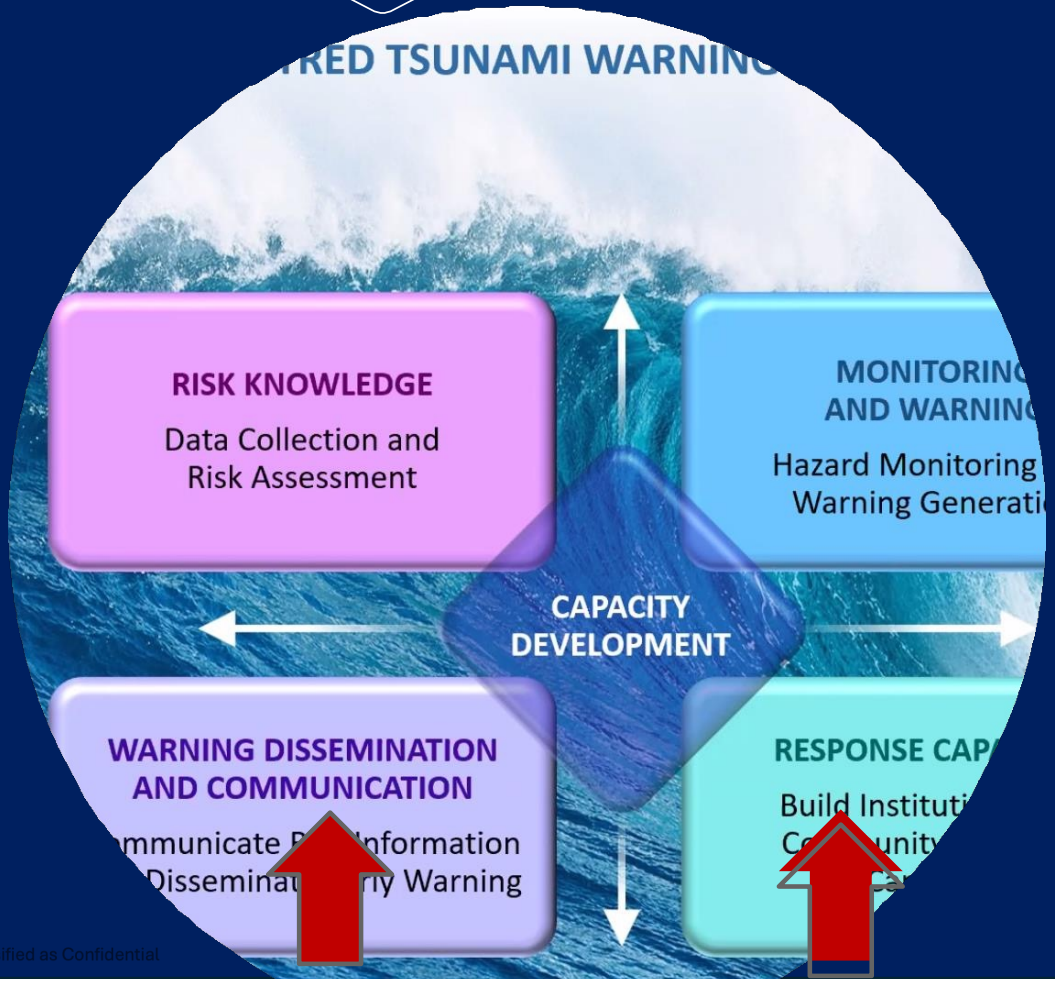

6 Key Elements ODTP:

1. **Tsunami Risk Knowledge**
2. Tsunami Detection, Analysis and Forecasting
3. **Warning, Dissemination and Communication**
4. **Preparedness and Response Capabilities**
5. Capacity Development, SIDS and LDCs, Multi-hazard Framework
6. Governance and Pathways to Implementation

Key Elements of ODTP: HL Objective 2

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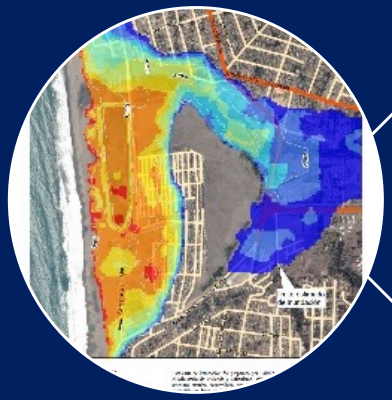

1. Tsunami Risk Knowledge: Identify and prioritise at-risk communities

- Advance Risk Knowledge
- Tsunami Hazard
  - Tsunami Hazard Assessment
  - Methodologies to Define Tsunami Parameters
  - Input data needed for THA (Tsunami Historical Records, Tsunami Source Scenarios, Non-seismic sources, High-resolution and updated digital elevation data)
- Exposure and Vulnerability
- Cascading Risk

Key Elements of ODTP: HL Objective 2

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3. Warning, Dissemination and Communication: Access to data, tools, communication platforms, protocols and training to effectively warn coastal and maritime communities

By 2030: there will be significant improvements in the national decision making to warn, and mechanisms in place for the effective and inclusive construction, dissemination and communication of warnings.

- Decision-making to warn
- Construction of warnings: should understood by ALL people
- Warning dissemination and communication: could reach ALL people

4. Preparedness and Response Capabilities: To build tsunami-resilient communities

By 2030: 100% of communities at risk from tsunamis are prepared for and resilient to tsunamis through efforts like the IOC-UNESCO Tsunami Ready Recognition Programme

- Risk Perception and Awareness
- Preparedness
- Response Capability
- Mitigation

Key Elements of High-Level Objective 2

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5. Capacity Development, SIDS and LDCs, Multi-hazard Framework: Underpinning elements

Ensure investment in capacity development for the different stakeholders involved in the tsunami warning and dissemination processes

- National, regional and local level initiatives to reach the objective of 100% at-risk communities to be prepared and resilient to tsunami
- Facilitate equitable access to data, information, knowledge, technology, and infrastructure, leaving no-one behind
- ICG-TICs and OTGA – STCs as the means for the delivery of capacity development
- Special consideration to be capacity requirements of SIDs and LDCs

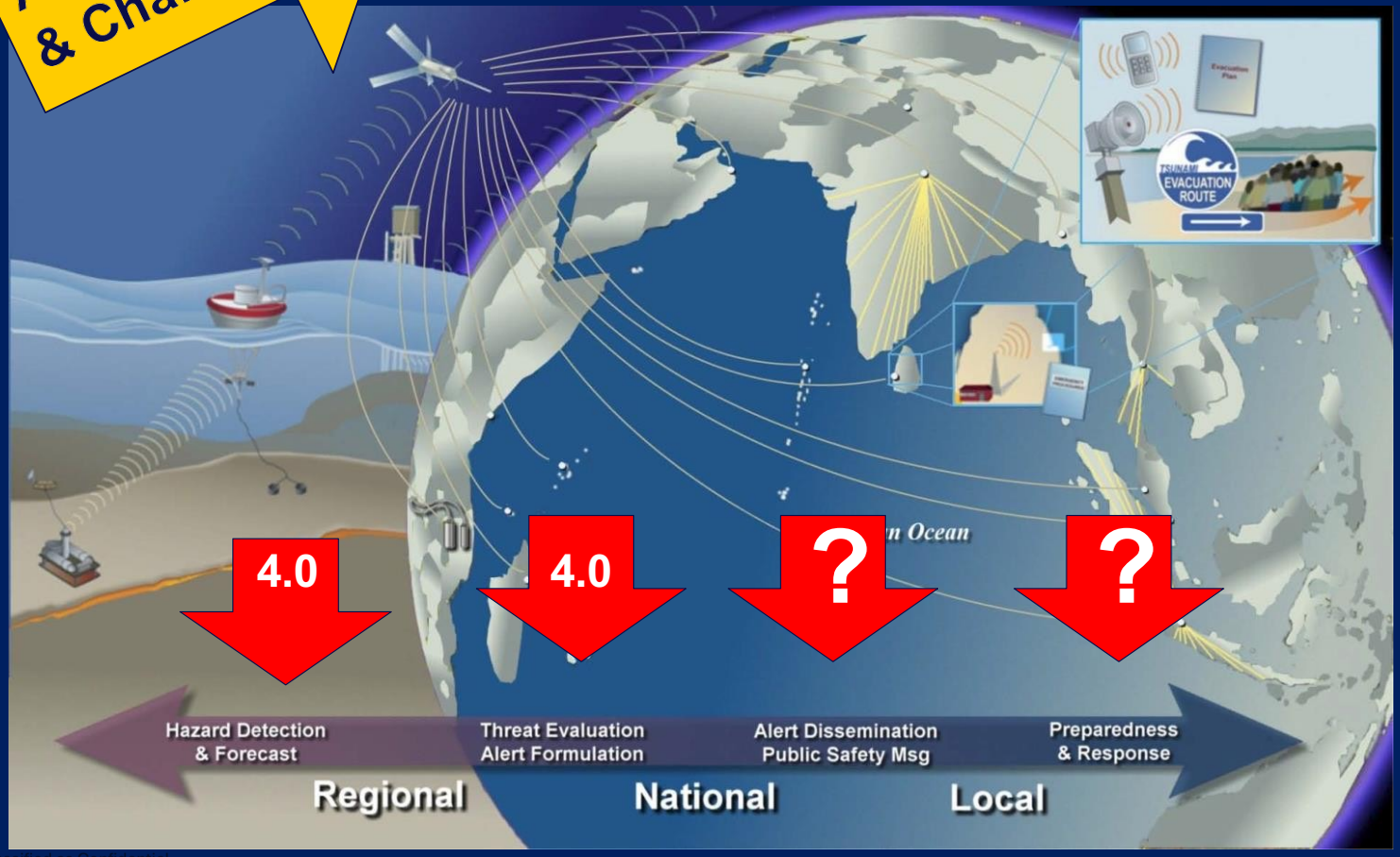
6. Governance and Pathways to Implementation

Explore opportunities and establish connections with Decade programmes, projects, contributions, DCCs and CoPs

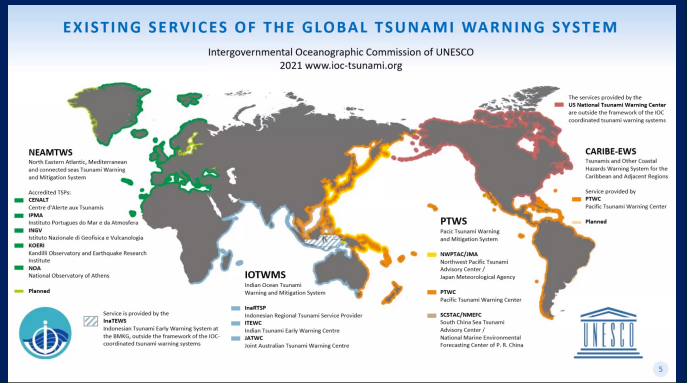
- IOC Assembly --> IOC Executive Council & IOC Secretariat --> ICGs & TOWS-WG --> TT-TWO & TT-DMP
- Alignment with International Frameworks, Calls for Action and Multi-lateral Environmental Agreements, International Cooperation, Inclusiveness, gender diversity, and youth involvement, Accountability
- Through Member States, in coordination with the ICGs and their Tsunami Information Centres, and with the collaboration of academic institutions, researchers, industry, philanthropic organizations and other stakeholders.

Objective II from The Perspective of End To End System" From 0.0 to 4.0

Achievement & Challenges



- Has it considered reaching the last mile and the very last mile ??
- Has it considered the response of all people to the warning message??



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Achievement of ODTP High Level Objective 2

ICG/IOTWMS Activities related to ODTP HL Objectives 2

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By 2030: 100% of communities at risk be prepared and resilient to tsunamis through programmes like the IOC-Tsunami Ready Recognition Programme

- 22 Communities in Indonesia recognized as IOC-UNESCO Tsunami Ready
- 26 Communities in India recognized as IOC-UNESCO Tsunami Ready – Endorsed as Decade Action
- 18 IOTWMS Member States nominated Tsunami Ready Focal Points
- Establishment of National Tsunami Ready Board (NTRB)
- TR ToolKit – Guideline for MG 74
- TR Coalition
- TRRP Equivalency (PTWS)
- TEMPP Training at INCOIS, Hyderabad during 09-20 March 2025
- WG-1 + WG-3 to prepare guidelines for TR Critical Infrastructure
- 2024 Capacity Assessment of Tsunami Preparedness in the Indian Ocean
- Inclusive SOP of Warning Chain for Special Needs School - EWALL
- No. 13.8 Tsunami Resilient Critical Infrastructure (SUSTAIN) – Endorsed as Decade Action
- Runami (Edutainmentof Tsunami Ready) – Endorsed as Decade Action

Building Community Resilience: Tsunami Ready Recognition Programme (TRRP)

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- TRRP is a community performance-based programme that facilitates tsunami preparedness as an active collaboration of the community, community leaders, and national and local emergency management agencies.
- The main goal of TRRP is to improve coastal community preparedness for tsunami emergencies, to minimize the loss of life, livelihoods and property, and to ensure a structural and systematic approach in building community preparedness.
- 12 TR Indicators represent People Center Early Warning System

UNESCO IOC 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
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 three times a year
8	PREP-5: A community tsunami exercise is conducted at least every two years
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

Tsunami Ready Recognition Programme
TRRP Implementation

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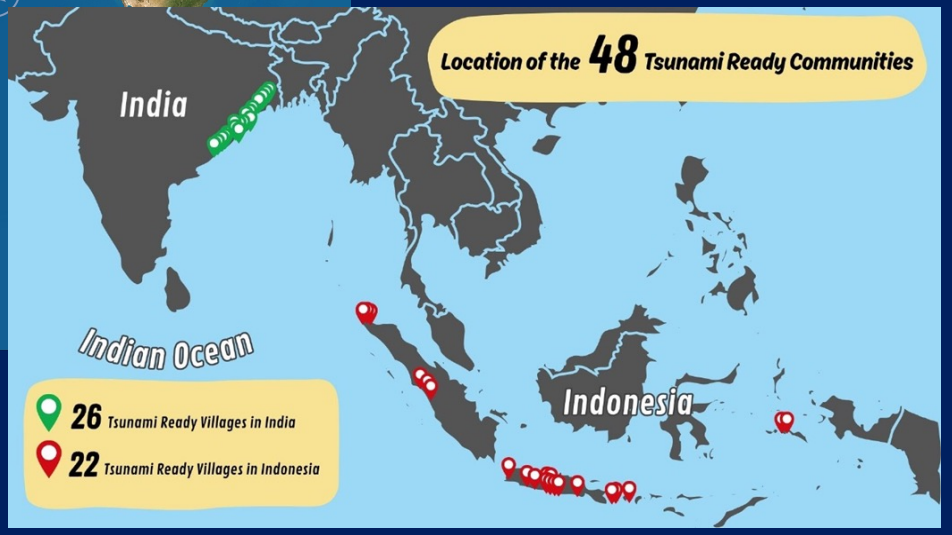
TSUNAMI READY COMMUNITIES

- 22 CARIBBEAN AND ADJACENT REGIONS
- 23 PACIFIC
- 51 INDIAN OCEAN
- 6 THE NORTH-EASTERN ATLANTIC, MEDITERRANEAN AND CONNECTED SEAS



- National Tsunami Ready Focal Point have been established for 19 Indian Ocean Member States
  - 48 Indian Ocean communities have received the UNESCO-IOC Tsunami Ready Recognition (26 in India and 22 in Indonesia)
  - National Tsunami Ready Board has been established (India, Indonesia and Seychelles)

TR Coalition

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Goal: Contribute to increasing the number of Tsunami Ready recognized communities as part of the UN Ocean Decade.

Objectives:

1. **Raise the profile** of Tsunami Ready in collaboration with critical stakeholders across the UN system, interested regional organizations, national disaster management agencies and the public,
2. **Increase funding** resources for the implementation of Tsunami Ready,
3. **Advise** the TOWS-WG, TTDMP, and TTTWO on the implementation of Tsunami Ready, including on measures related to:
   - i. **flexibility** with regards to accomplishing the indicators to allow for circumstances where formal bureaucratic frameworks/requirements may pose barriers,
   - ii. consideration of **unique regional and/or local** circumstances,
   - iii. **recognition of similar standards** already in place in some countries

TR Coalition Membership (TOR)

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Membership could include, as appropriate, representatives from international, regional and national organizations, such as:

International: (8+)
- IFRC
- International Association of Emergency Managers (IEAM)
- International Council for the Exploration of the Sea (ICES)
- Relevant ICG Working Groups and Task Teams
- Save the Children
- Tsunami Information Centers
- UNDP
- UNDRR

National: (up to 139 MS)
- AID National Agencies/Organizations
- Emergency Management Agencies/EDMAs
- French Inter- Ministerial for the Antilles Estate Major Zone (EMIZA)
- IOC & Tsunami National Contacts (TNCs) & Tsunami Ready Focal Points (TRFPs)
- National Commissions for UNESCO
- National Youth organizations, and
- relevant Members of the UN Ocean Decade Alliance with a focus on commitments towards Tsunami Ready actions;

Regional: (12+)
- Arab League Educational, Cultural and Scientific Organization (ALESCO)
- ASEAN
- Caribbean Disaster Emergency Management Agency (CDEMA)
- CARIDIMA Youth Platform for DRM in the Caribbean.
- Coordination Center for Disaster Prevention in Central America and the Dominican
- Republic (CEPREDENAC)
- Directorate-General for the European Civil Protection and Humanitarian Ais Operations of the EC (DG-ECHO-EC)
- Islamic World Educational, Scientific and Cultural Organization (ICESCO) (Headquarters in Rabat, Morocco).
- Joint Research Centre of the European Commission (JRC-EC)
- Pacific Community (SPC)
- U-INSPIRE Alliance (Asia and Pacific Alliance of Youth and Young Professionals in Science, Engineering, Technology, and Innovation for Disaster Risk Reduction and Resilience)
- UNESCAP

TRRP Equivalency (PTWS)

- equivalency approach aims to ensure that every country can contribute to progress reporting for the UN Ocean Decade Goal
- The Tsunami Ready Recognition Programme may not always be practical in countries which
  - Have existing tsunami preparedness programmes.
  - The implementation of formal recognition may result in additional costs, duplication of strategies, and the risk of confusion between the global, national and local frameworks.
  - It is therefore recognized that an approach is needed to enable such countries to contribute to the UN Ocean Decade goal
- The approach has three steps, designed to have the reporting effort centralised at a national level:

Identify or establish governance	Cross- referencing process	Reporting
• Provide **expert interpretation** of the tsunami ready indicators in the country's own context • Provide **expert commentary** on the definition of community in the country's own context • **Coordinate and oversee** implementation of this equivalency process	A cross-referencing guide is provided in the documentation, which is intended to be **broad enough for multiple contexts,** while **remaining a high standard of tsunami preparedness**. This process is a **self-assessment,** and countries are encouraged to **apply it according to the principles of the equivalency process**.	PTWS Member States should **report the progress** of the preparedness and resilience of at-risk communities either **through the Tsunami Ready Recognition Programme Implementation** or through the equivalency approach **through national reporting to the ICG.**

Next Steps

- In April 2025, the ICG/PTWS gave provisional approval of the draft guidance and recommended this progress to a pilot stage.
- A pilot is required to test the usability and feasibility of the equivalency approach in multiple contexts, noting the diversity of the Member States the guidance is intended to support.
- The results of the pilot will be used to prepare the guidance for final approval at the ICG/PTWS-XXXII in 2027.

Institutionalizing Tsunami Awareness and Response in Indonesia

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BERITA NEGARA
REPUBLIK INDONESIA

No.1095, 2014 BNPB. Desa/Kelurahan. Tangguh Bencana. Pedoman Umum.

PERATURAN KEPALA BADAN NASIONAL PENANGGULANGAN BENCANA
NOMOR 1 TAHUN 2012
TENTANG
PEDOMAN UMUM DESA/KELURAHAN TANGGUH BENCANA

DENGAN RAHMAT TUHAN YANG MAHA ESA
KEPALA BADAN NASIONAL PENANGGULANGAN BENCANA,

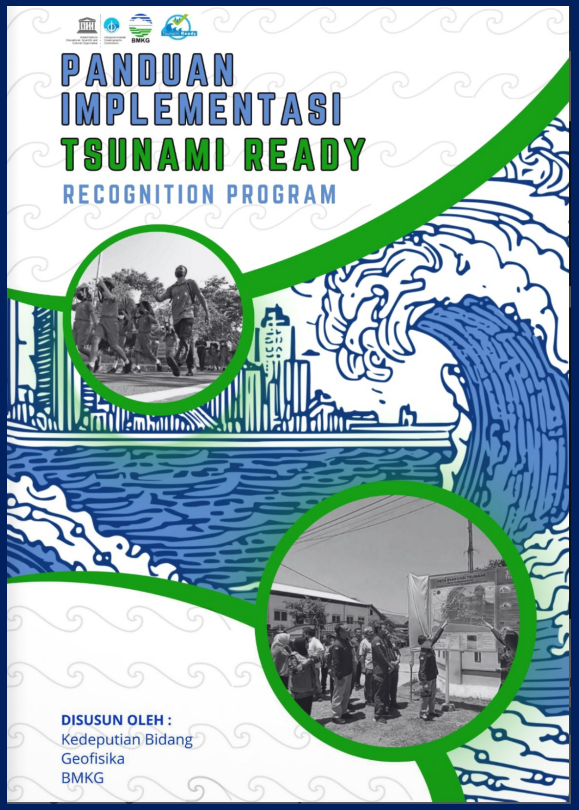
Menimbang : a. bahwa dalam rangka mewujudkan visi penanggulangan bencana Indonesia, yakni mewujudkan Ketangguhan Bangsa dalam Menghadapi Bencana, diperlukan pedoman Desa/Kelurahan Tangguh Bencana;

b. bahwa berdasarkan pertimbangan sebagaimana dimaksud dalam huruf a, perlu ditetapkan Peraturan Kepala Badan Nasional Penanggulangan Bencana tentang Pedoman Desa/Kelurahan Tangguh Bencana;

Mengingat : 1. Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah (Lembaran Negara Republik Indonesia Tahun 2004 Nomor 125, Tambahan Lembaran Negara Republik Indonesia Nomor 4437) sebagaimana telah diubah beberapa kali, terakhir dengan Undang- Undang Nomor 12 Tahun 2008 tentang Perubahan Kedua atas Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah (Lembaran Negara Republik Indonesia Tahun 2008 Nomor 59, Tambahan Lembaran Negara Republik Indonesia Nomor 4844);

Perka BNPB 1/2012 (Disaster Resilient Village)

Disaster preparedness guideline for family level



Tsunami Ready Recognition Program Implementation Guideline

Training and Capacity Building

National Tsunami Ready Training	Regional Tsunami Ready Training	Tsunami Ready Workshops	National Tsunami Ready Training
• Timor-Leste (July 2023) • Seychelles (November 2023) • Maldives (August 2024)	• Pacific Island Countries and Territories, ITIC Pacific (January 2023) – ITIC Pacific • International Tsunami Programme, ITP Hawaii (August 2023) – ITIC Pacific • TEMPP Training, Hyderabad, (March 2025) • International Tsunami Programme, ITP Hawaii (September 2025) – ITIC Pacific	• TRRP In Indian Ocean Island States, WTAD (November 2020) – Webinar • Tsunami Preparedness and TR Implementation in Odisha, India, (February 2021) – Webinar • Indian Ocean Tsunami Ready Workshop - Bali (July 2022) • CoastWave Workshop (February 2023), NEAMTWS – Online	• Training for Tsunami Ready Facilitators, Indonesia (September 2023) • CoastWave Workshop (February 2023), NEAMTWS - Online

Tsunami Ready Online Training – OTGA (IOTIC-ITIC)

Course 1
Introduction to UNESCO-IOC Tsunami Ready Recognition Programe

- **Lessons 1:Tsunami Ready Introduction**
- **Lessons 2:Tsunami Ready Implementation Process**
- **Lessons 3:Tsunami Ready Indicators**

Course 2
Facilitating Tsunami Ready

- **Lessons 1: Approach to Tsunami Ready Community Capacity Building**
- **Lessons 2: Assessment Indicators**
- **Lessons 3: Preparedness Indicators**
- **Lessons 4: Response Indicators**

https://classroom.oceanteacher.org/

Regional Capacity Building: TEMPP Training

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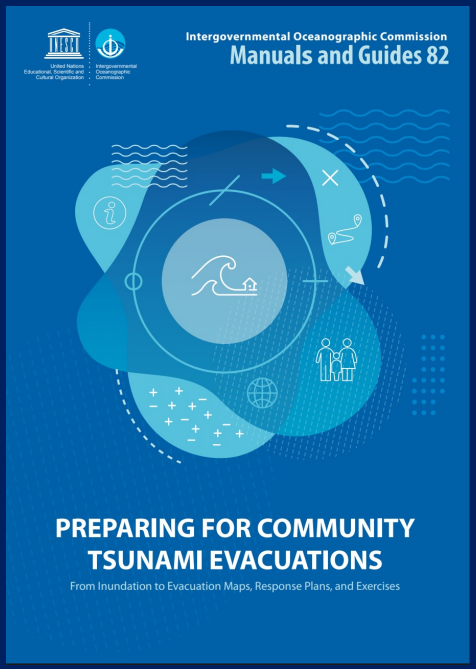
Tsunami Evacuation Map, Plan, and Procedure



The WG3 was part of the TEMPP Training in INCOIS Hyderabad 2025. Promoting:

a) Tsunami Ready Recognition Program
b) National Tsunami Ready Board
c) Learning Tsunami Ready from other countries

Assessment Tool for Tsunami Incidents and Exercises at the Local Level

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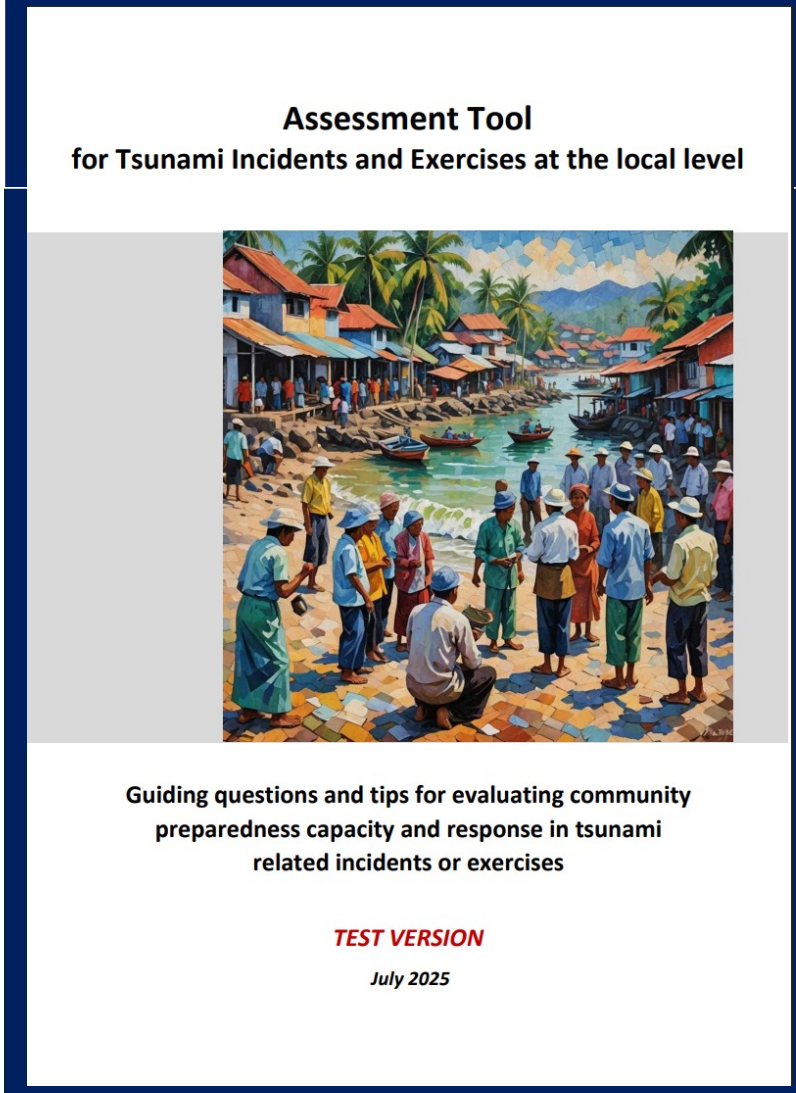

A practical evaluation tool to assess:

- Community **preparedness capacity** before an incident/exercise
- Community **response performance** during a tsunami threat

Purpose:

- Capture **actual experiences** from communities and stakeholders
- Identify **strengths and gaps** in end-to-end tsunami early warning
- Support **learning and improvement** of preparedness systems

The assessment covers five key components:

1. **Context Information** (incident/exercise details, warning chain issued, methods of the assessment and sources of information used)
2. **Analyzing Pre-existing Capacities** (local risk knowledge, warning service capacities, evacuation capacities, emergency response capacities, tsunami awareness and knowledge of the population)
3. **Assessing the Performance During Event** (warning dissemination process, warning process at the local level, performance of broadcast media warning dissemination, early action taken, warning reception, community reaction, inappropriate response due to panic & confusion)
4. **Evaluation, Lessons to be learnt and Recommendations** (lessons learned, final observation)
5. **Overall Result Chart** (color-coded summary for quick overview)

Tsunami Ready Guideline for Critical Infrastructure (WG1 + WG 3)

- Critical infrastructure (airports, ports, industrial zones, etc.) **provides essential services** and must maintain operational continuity.
- Many critical infrastructures are **located in coastal areas** and operate 24/7, making **tsunami preparedness crucial**.
- There are **currently no standardized guidelines** specifically developed for recognizing Tsunami Ready for critical infrastructure community.
- **Tsunami Ready Guideline for Critical Infrastructure** approach **adopts the 12 UNESCO-IOC Tsunami Ready indicators**, **adjusts** them based on the type and function of each critical infrastructure (e.g., airport, port, industrial zone).
- **Breakdown** Each indicator is **interpreted in context**:
  - Assessment
  - Preparedness
  - Response

	TSUNAMI READY INDICATORS FOR CRITICAL INFRASTRUCTURE COMMUNITIES
I	**ASSESSMENT (ASSESS)**
1	**ASSESS-1.** Tsunami hazard zones within and surrounding the critical infrastructure are mapped and formally designated, considering vulnerabilities such as access routes, power systems, and key operational facilities.
2	**ASSESS-2.** The number of personnel, service users, and operational assets at risk within the tsunami hazard zone is identified and quantified.
3	**ASSESS-3.** Essential economic, infrastructural, technical, and organizational resources available for tsunami preparedness, response, and recovery are identified and documented.
II	**PREPAREDNESS (PREP)**
4	**PREP-1**. Clear and easily understandable tsunami evacuation maps specific to the infrastructure are developed, approved, and integrated into emergency plans.
5	**PREP-2.** Standardized signage and information boards clearly display tsunami information, evacuation routes, and safe zones for employees, visitors, and stakeholders.
6	**PREP-3**. Educational, communication, and training materials on tsunami awareness and preparedness are accessible and disseminated to all personnel and relevant contractors.
7	**PREP-4**. Outreach or capacity-building activities are conducted at least three times a year, involving both management and operational staff.
8	**PREP-5**. Full-scale or tabletop tsunami drills are conducted at least once every two years with participation from internal emergency teams and external response agencies.
III	**RESPONSE (RESP)**
9	**RESP-1**. A tsunami emergency response plan specific to the infrastructure is developed, approved, and aligned with national and local frameworks.
10	**RESP-2**. Adequate capacity, personnel, and resources are in place to manage emergency operations and maintain critical functions during a tsunami.
11	**RESP-3**. Reliable, redundant communication systems ensure timely receipt of official 24/7 tsunami alerts from authorized warning agencies.
12	**RESP-4.** Reliable, redundant communication and dissemination systems are available to promptly convey alerts and safety instructions to all staff, contractors, and users.

Example of Implementation Tsunami Ready for Critical Infrastructure

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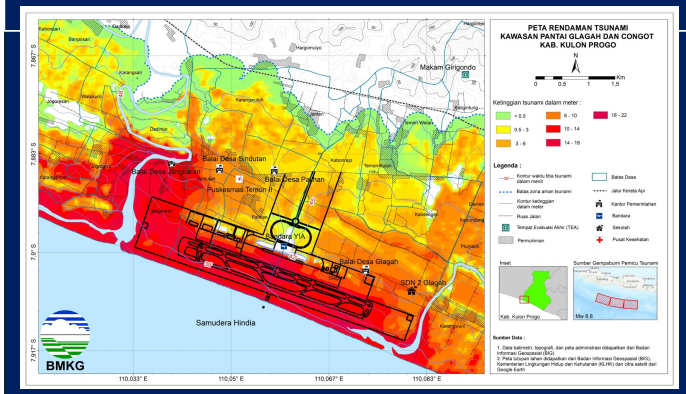
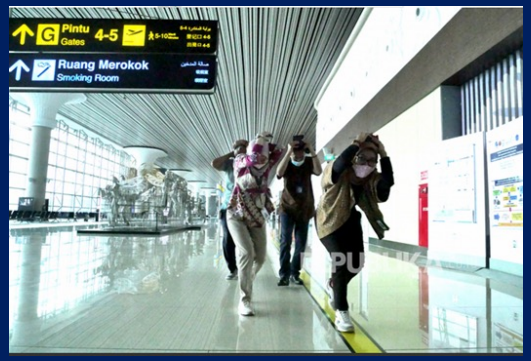


Evacuation routes of Yogyakarta Airport

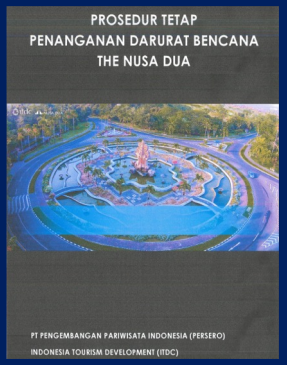
Printed Disssemination Material

Standardized signage



Tsunami Drill

Regular Outreach/ Capacity Building



Emergency response plan specific to the critical infrastructure facility

2024 Capacity Assessment of Tsunami Preparedness in the Indian Ocean

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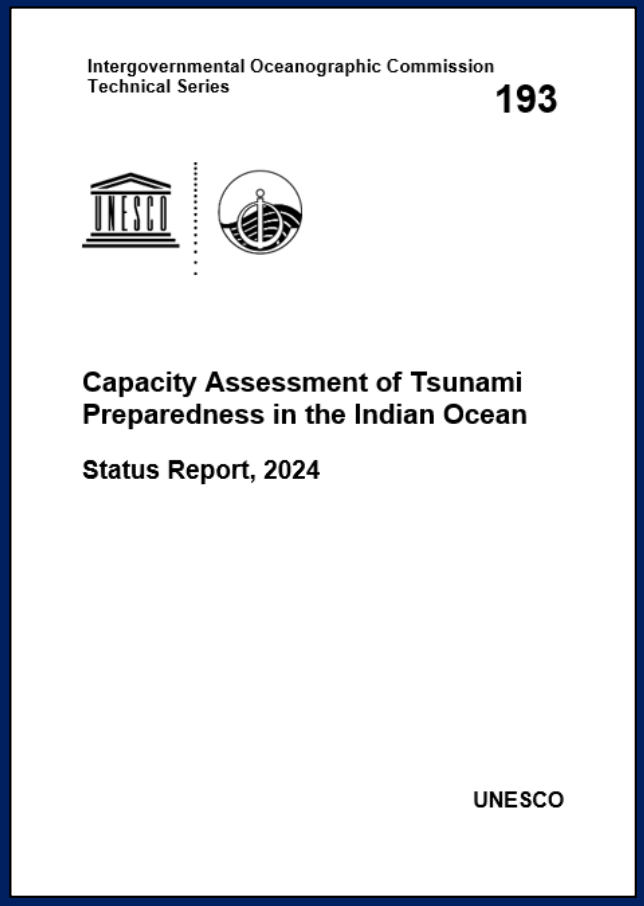

Participants at the ICG/IOTWMS Capacity Assessment of Tsunami Preparedness Validation Workshop, Bangkok, 4-6 September 2024.

Summary:

2005–2018: Strong progress in warning & mitigation systems

2018–2024:

- Policies & plans stable or improved
- Hazard assessments widespread; risk assessments increasing
- Community preparedness growing:
  - More evacuation SOPs & drills
  - Increased signage & information boards
  - ➢ UNESCO-IOC Tsunami Ready Programme driving growth

Reaching the last mile: Significant Role of Intermediate Actors in People-Centered Early Warning Chain in Communities

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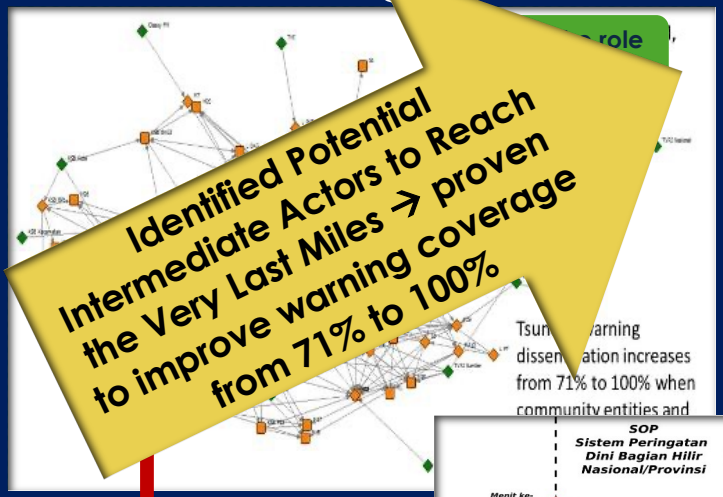
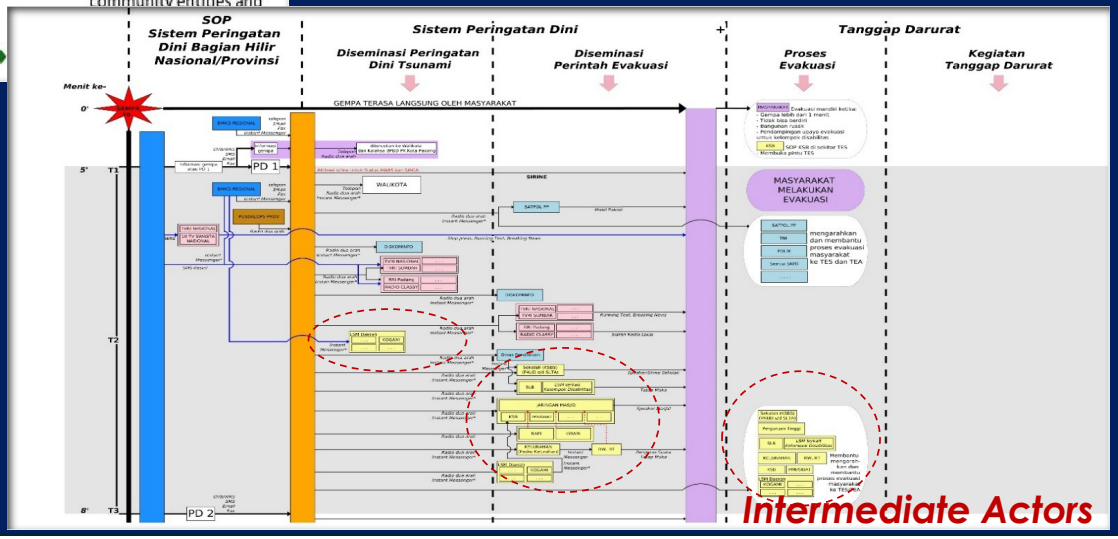


Identified Potential Intermediate Actors to Reach the Very Last Miles → proven to improve warning coverage from 71% to 100%



Improving the SOP tsunami warning system **by including potential intermediate actors** can enhance tsunami early warning coverage, ensuring that **100% of people at risk receive early warning information**.

Rahayu, et al., 2020

Indonesia Tsunami DRR Masterplan and Guidelines

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Tsunami DRR Masterplan 2012-2017

Technical Guideline (2014-2015) for:

1. Tsunami Inundation Maps
2. Tsunami Evacuation Shelter Planning
3. Design Criteria for Tsunami Evacuation Shelter Building Structures
4. Design Criteria of Artificial Hill Structures for Tsunami Evacuation Shelter

Guideline for Planning Tsunami Evacuation Signage and Routes

Structural Mitigation Intervention

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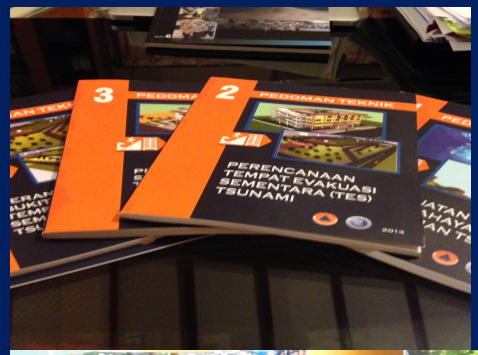
Critical Facilities:
Tsunami Vertical Evacuation Center in Padang City



Challenges: Impact of DRR Intervention to Long Term Land Use and Spatial Plan

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Impact of DRR TES on: Trust, Land Use and Land Price

Courtesy: Harkunti et al and PEER Science 2016

Impact of Trust to DRR Intervention → Changing Evacuation Plan

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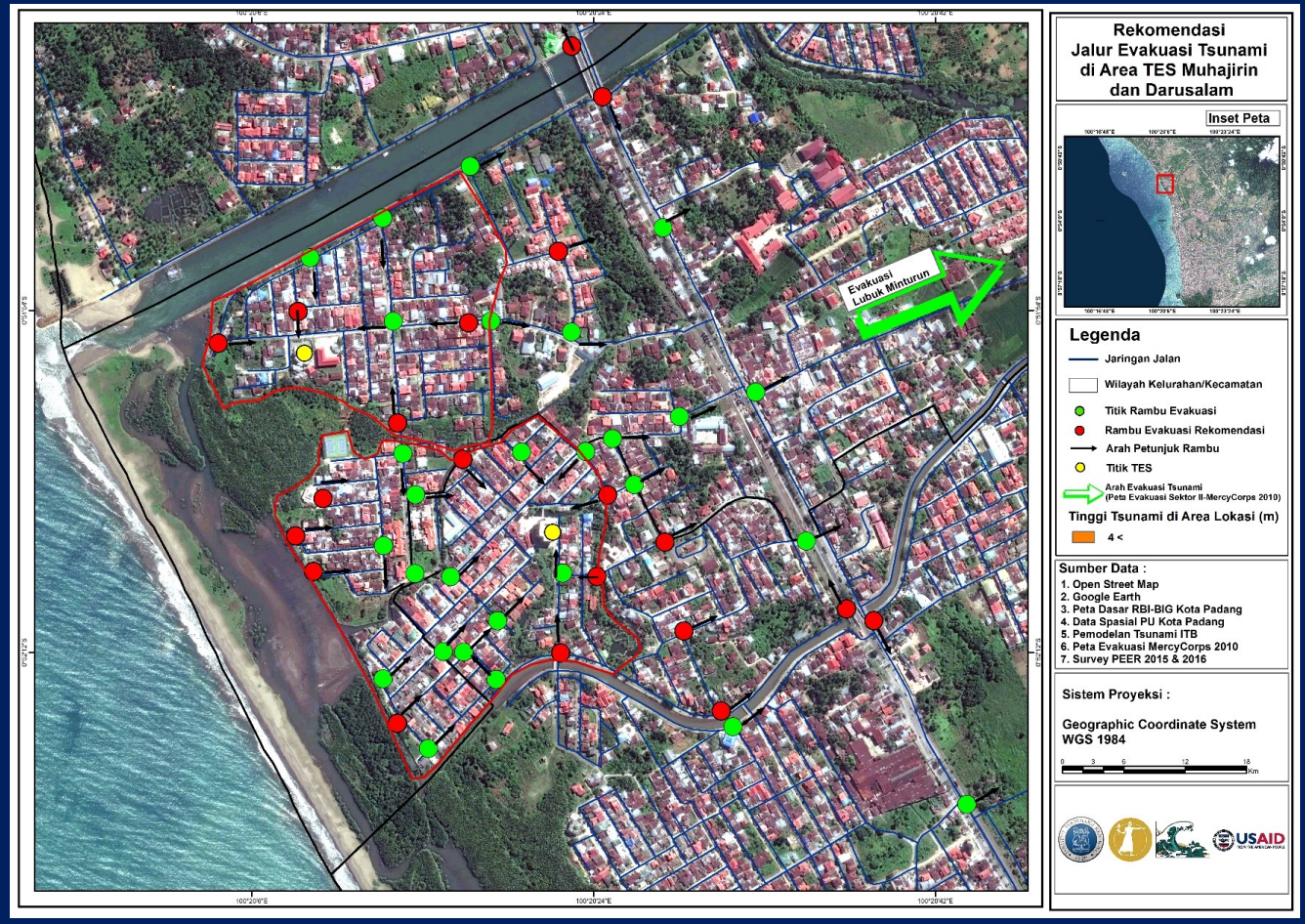
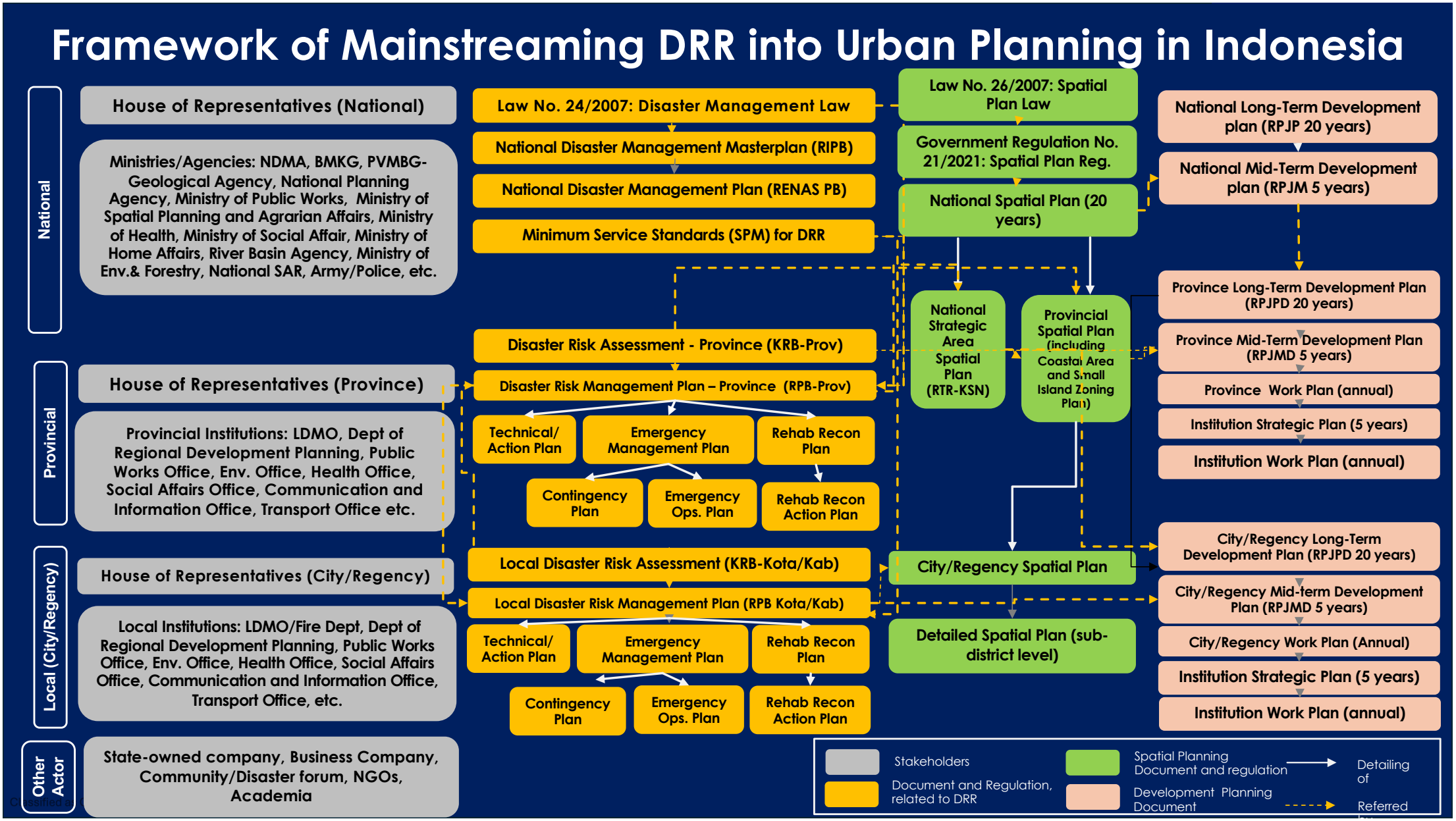


Framework of Mainstreaming DRR into Urban Planning in Indonesia



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THANK YOU