

ICG/PTWS - XXX Session

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4.10 OCEAN DECADE TSUNAMI PROGRAMME (ODTP)

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UN Ocean Decade Tsunami Program (UNODTP)



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UNODTP Research & Development Implementation Plan was endorsed at the IOC 32nd Assembly.

Two objectives of UNODTP;

1. The first objective is to develop the warning systems' capability to issue actionable and timely tsunami warnings for tsunamis from all identified sources to 100 percent of coasts at risk.
2. The second objective is that 100 percent of communities at risk to be prepared and resilient to tsunamis by 2030 through efforts like the IOC-UNESCO Tsunami Ready Recognition Programme.

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**Research, Development and
Implementation Plan for the Ocean
Decade Tsunami Programme**

April 2023

Members of the UNODTP Scientific Committee



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Name	Institute	Country
Mr Michael ANGOVE	National Tsunami Hazard and Mitigation Programme, NOAA	United States of America
Mr Sergio BARRIENTOS	National Seismic Centre, University of Chile	Chile
Ms Silvia CHACON	Costa Rica National Tsunami Warning System, National University of Costa Rica	Costa Rica
Mr David COETZEE	National Emergency Management Agency	New Zealand
Mr Yutaka HAYASHI	Meteorological Research Institute, Japan Meteorological Agency	Japan
Ms Christa von HILLEBRANDT-ANDRADE	International Tsunami Information Center Caribbean Office	United States of America
Mr Alexander RABINOVICH	Tsunami Laboratory, P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences	Russian Federation
Ms Harkunti Pertiwi RAHAYU	Research Center for Disaster Mitigation, Institute of Technology Bandung	Indonesia
Mr François SCHINDELÉ	National Tsunami Warning Center, Atomic Energy and Alternative Energies Commission	France
Mr Srinivasa Kumar TUMMALA (Chair)	Indian National Centre for Ocean Information Services	India
Mr Amir YAHAV	National Emergency Management Authority	Israel

Key Elements of the Research, Development & Implementation Plan



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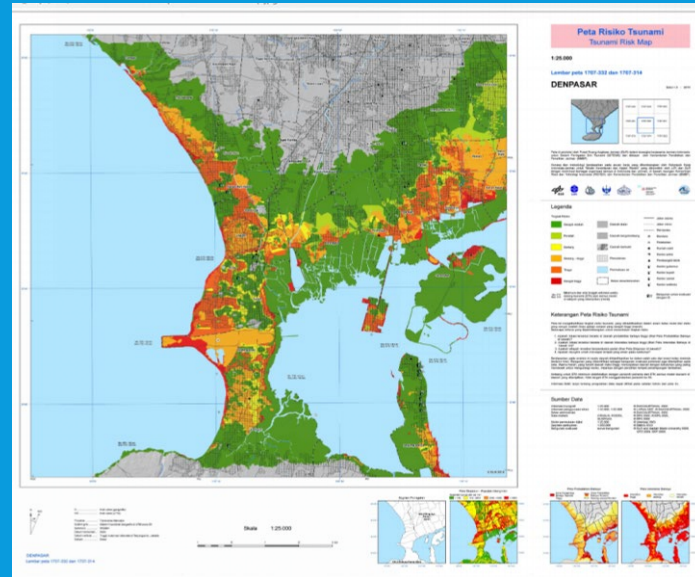
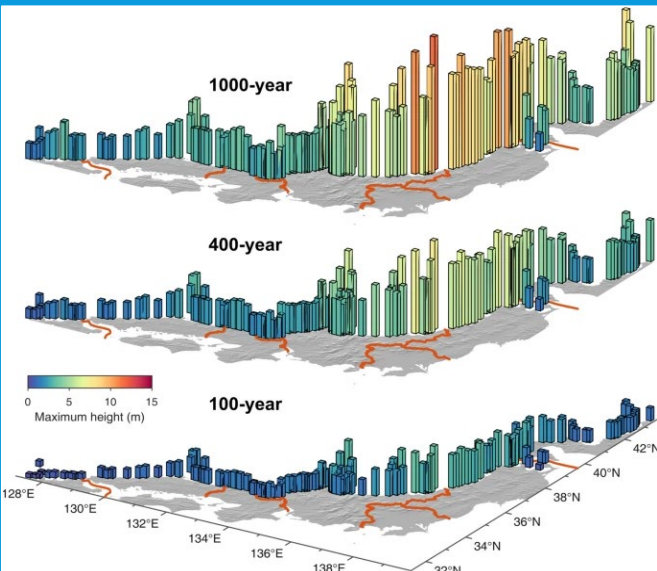
1. Tsunami risk knowledge
2. Detection, analysis and forecasting of tsunamis and associated hazardous consequences
3. Warning, dissemination and communication
4. Preparedness and response
5. Capacity Development (SIDS, LDCs)
6. Governance and Pathways to Implementation



Tsunami Risk Knowledge - Goals



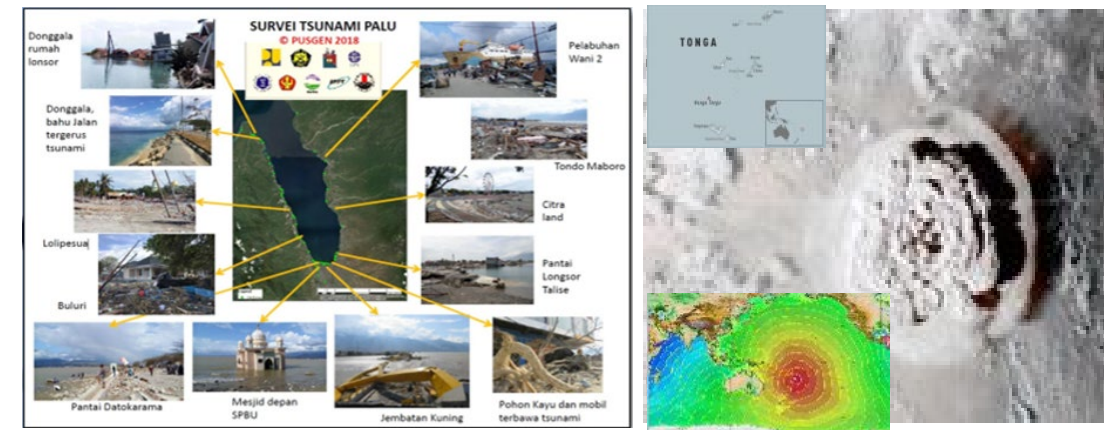
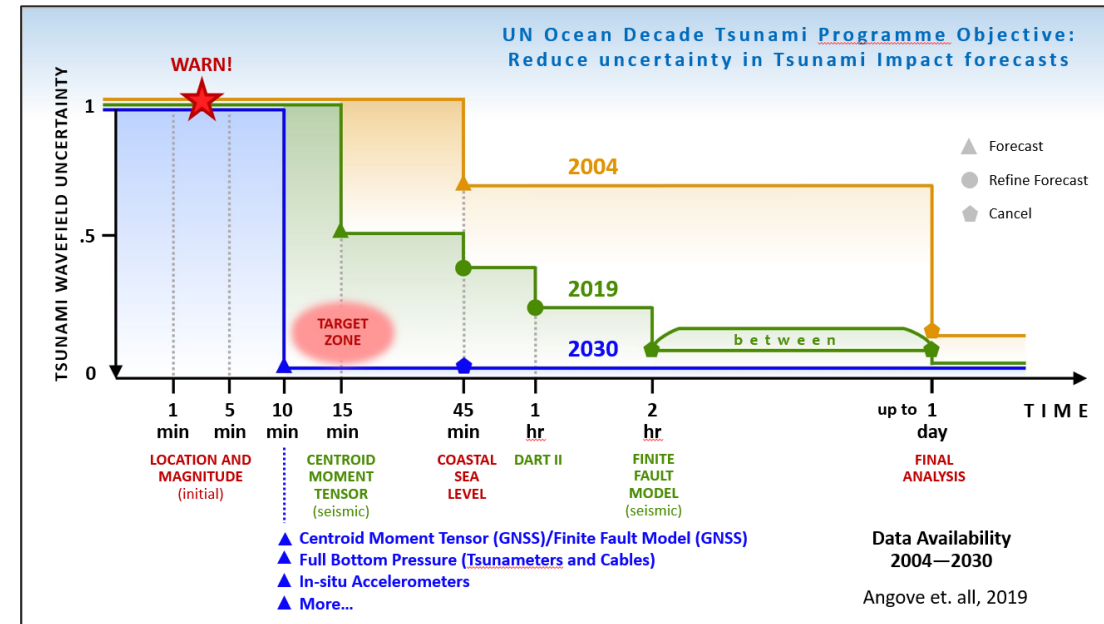
- **Tsunami hazard zones** should be mapped for all at-risk locations, specific “hot spots” of the strongest expected tsunamis have to be identified including maximum values of runup, inundation area and flow depth, and minimum values of arrival times should be known by emergency planners, responders and communities exposed to tsunami hazard by 2030
- Each ICG to have a **database of tsunami source scenarios**, including non-seismic by 2030
- Each country to **identify vulnerable groups** and identify total and disaggregated numbers for population at risk within **tsunami inundation areas** by 2026 and **identify and prioritize critical infrastructure** by 2030
- Develop **methodologies for tsunami risk assessments** including multi-scenario, location-based risk assessment of tsunami hazard characteristics, vulnerability, exposure, likelihood and consequences by 2026



Tsunami Detection, Analysis And Forecasting - Goals

- Tsunami Threat Life Cycle : Initial indicators, confirmation, forecasting, validation and cancellation
- Throughout the threat life cycle it is possible to provide information on the potential threat
- Initial indicators based on seismic proxy provide necessary timelines but can be inaccurate
- Additional challenges with non-seismic and near-source tsunamis

- **Greatly expand international cooperation in tsunami warning and mitigation, to improve capability to directly detect and measure tsunamis and reduce reliance on seismic proxy relationships in terms of projecting impacts**
- 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**
- Most urgently, the ODTP will aim to **provide tsunami confirmation within 10 minutes or less of origin for the most at-risk coastlines**



Tsunami Warning, Dissemination and Communication – Goals

The ODTP goal is that 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.

- Most importantly, 100% of the national authorities will be able to effectively warn the communities and population at risk.
- The communities at risk will be able to use these advances to improve local tsunami preparedness and response capabilities and become Tsunami Ready

Key elements that need to be addressed

- **Effective decision making to warn** - National/local tsunami warning chains and procedures; Decision support tools; Capacity building
- **Effective construction of warnings** – Time constraints, Inclusive, Actionable content
- **Effective dissemination and communication of warnings** – Institutional capacity, Communication mechanisms, Multi-Hazard Warning Systems, Multiple sources of information



Preparedness and Response Capabilities - Goals

Aspirational social outcome of the Ocean Decade Tsunami Programme is that 100% of communities at risk from tsunamis are prepared for and resilient to tsunamis by 2030 through efforts like the IOC-UNESCO Tsunami Ready Recognition Programme

Key elements to be addressed

- **Risk Perception and Awareness** – Risk perception studies need to be encouraged across all regions and targeted for the ODTF
- **Preparedness**
 - All at-risk communities have tsunami evacuation maps
 - Public display of tsunami information
 - Locally relevant education and awareness resources
 - promote communities to actively participate in the World Tsunami Awareness Day (5 November)
 - 100% of communities at risk conduct a local tsunami exercise every two years
- **Response Capability**
 - All countries with tsunami risk should have agreed parameters at the national and local level for warning systems. Inclusiveness should be addressed in these plans
 - 100% of at-risk communities have multiple effective and sustainable communication methods in place
- **Mitigation**
 - Communities have access to an inventory of best practices of plans and structural and nature-based solutions and that more communities have implemented plans and measures to minimize impacts to critical infrastructure and marine assets from tsunamis and other coastal hazards, and importantly mainstreaming disaster risk reduction into urban planning



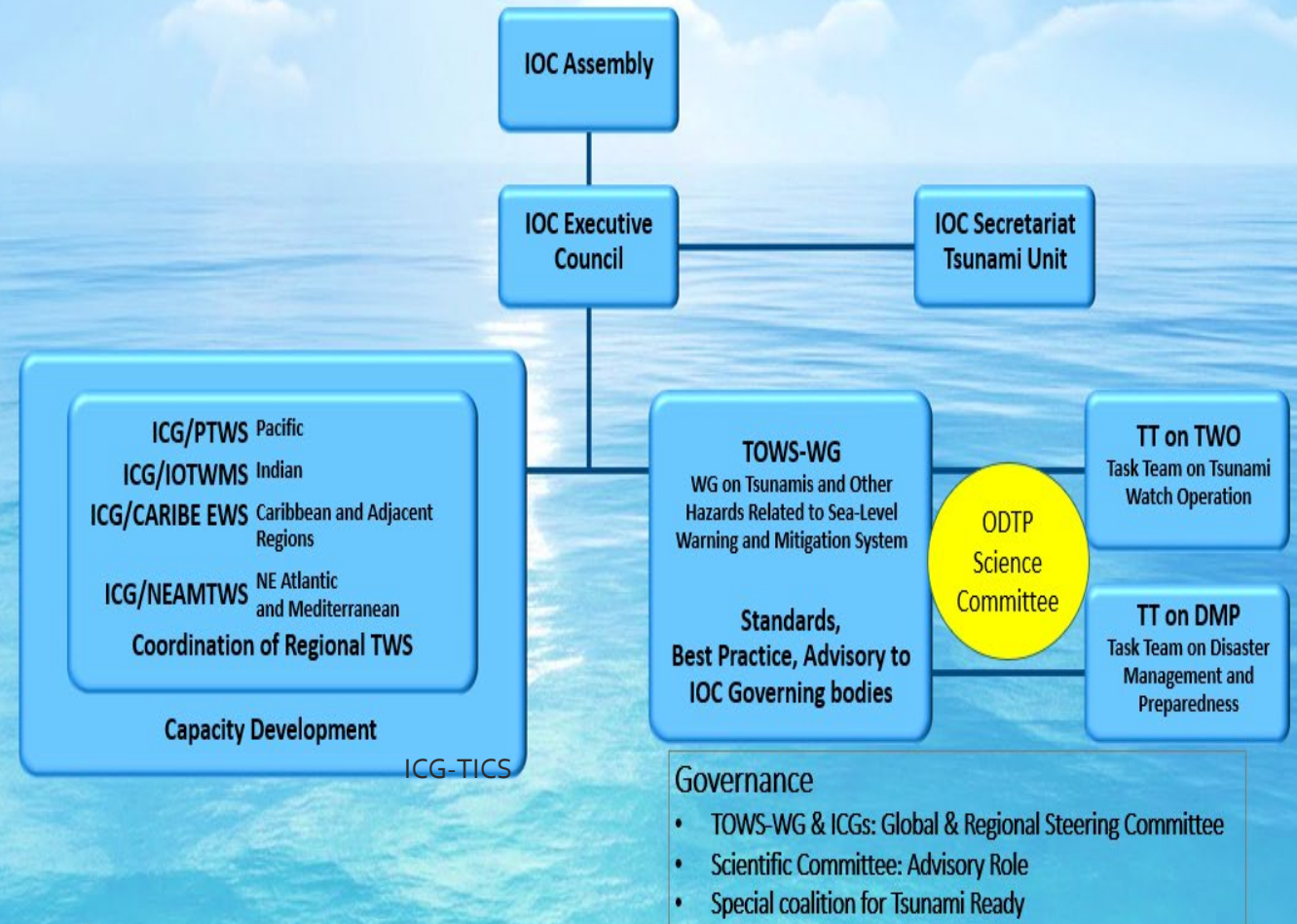
Capacity Development - Goals

- Ensure investment in **capacity development for the different stakeholders** including the generators and the users of the tsunami early warning system
 - 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



Governance

- To explore opportunities and establish connections with Decade programmes, projects, contributions, DCCs and CoPs, Calls for Action
- To align with international frameworks, call for action and multi-lateral environmental agreements – SFDRR, SDGs (3, 8, 11, 14), Paris Agreement on climate change, early warnings for all, UN Global Early Warning Initiative (2023-2027) etc.
- To provide new cooperation opportunities by laying out the building blocks, through an international Science Committee and International Tsunami Ready Coalition while renewing and strengthen existing cooperation with partners
- To encourage and promote inclusiveness and gender diversity, and that youth and early career professionals engage and involve in tsunami early warning systems and actions
- To develop and operationalize a transparent performance monitoring system based on international norms, standards and agreements



The IOC-UNESCO tsunami programme will oversee the overall implementation of the ODTP through contributions and engagement of Member States, in coordination with the ICGs, and with the collaboration of academic institutions, researchers, industry, philanthropic organisations and other stakeholders

Pathways to Implementation

- The ODTP provides a framework for identifying gaps, suggesting solutions, prioritise resources, and implementing actions within the timeframe of the Ocean Decade
- This plan outlines the pathways for achieving overall objectives of ODTP including challenges, solutions, performance indicators, milestones and target dates for the four main components of the tsunami early warning system
- Considering the nature of tsunami hazard, the optimal solutions should have a global design, address regional imperatives, and be implemented through contributions and actions of Member States and other stakeholders
- Scientific objectives of the tsunami warning enhancements will be achieved by maximizing and expanding current capabilities, identifying capabilities that exist but are not currently applied to tsunami, and developing new capabilities through innovation and research
- **Member States should endeavour to dovetail their national tsunami warning system plans/programmes with the ODTP objectives**
- **Member states, academic institutions and industries will seek, possibly through ICG consultation to identify candidate proposals aimed at addressing the solutions**
- R&D community and Industry has the opportunity to develop and contribute to scientific understanding, technological solutions, product development and capacity building.
- **The intent of the plan is to offer contribution pathways that cover the full spectrum or financial commitment by targeting the objectives most important to advancing Member State capabilities**

Task Team on UN Ocean Decade

Terms of Reference

1. Provide input to the Ocean Decade Tsunami Programme on behalf of the ICG/PTWS.
2. Identify, facilitate, compile and maintain a list of PTWS contributions to the UN Ocean Decade Tsunami Programme in support of its 10-year Scientific Research, Implementation and Development Plan.
3. Serve as a clearinghouse for the coordination of UN Decade efforts with other ICGs, regional partners and other stakeholders including the private sector.
4. Engage in the next IOC Tsunami Symposium and other events related to actions of the Ocean Decade.
5. Report to ICG/PTWS on a bi-annual basis and to the ICG/PTWS Officers on a regular basis.

Co-Chair

- Carlos Zuniga (Chile)
- Francois Schindele (France)
- Nishimae Yuji (Japan)



Discussion Items

1. Change of the Terms of Reference; to add the following TOR to item (2):
 - Establish framework by which PTWS Member States can contribute to achieving UNODTP Research, Development & Implementation Plan goals
 - Monitor progress of the achievement of UNODTP Research, Development & Implementation Plan goals. Possibly combine with
 - Note: Consider aligning/combining with ***Task Team on Future Goals and Performance Monitoring***
2. Selection of new Co-chairs of the Task Team
 - Goal 1: Tsunami Detection, Forecasting, and Warning Systems
 - Goal 2: Tsunami Preparedness and Resilience
3. How should the ICG/PTWS be involved in the Second Tsunami Symposium?





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THANK YOU

