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Report from the ICG/PTWS

NISHIMAE Yuji
ICG/PTWS Chair

The Thirtieth Session of the ICG/PTWS (ICG/PTWS-XXX)



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- Venue: Nuku'alofa in Kingdom of Tonga
- Date : 12th - 15th September, 2023
- 18 Member States
- 8th JOINT ICG/PTWS– IUGG JOINT TSUNAMI COMMISSION TECHNICAL WORKSHOP (11th September, 2023)



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Understanding and lessons learned from the tsunami generated by the Hunga Tonga-Hunga Ha'apai volcano eruption on 15 January 2022 for development of Tsunami Warning and Mitigation System for tsunamis generated by volcanoes and other non-seismic sources

- Session 1: Overview of tsunami caused by eruption of the Hunga Tonga-Hunga Ha'apai volcano on 15 January 2022
- Session 2: Mechanism of tsunami generation for HTHH
- Session 3: Lessons and learned on tsunami warning and mitigation
- Session 4: Panel Discussion Theme: How can we predict and mitigate for tsunami generated by volcanoes?



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Recommendations adopted in the ICG/PTWS-XXX

- Recommendation ICG/PTWS-XXX.1: ICG/PTWS Governance
- Recommendation ICG/PTWS-XXX.2: Understanding Tsunami Risk
- Recommendation ICG/PTWS-XXX.3: Tsunami Detection, Warning and Dissemination
- Recommendation ICG/PTWS-XXX.4: TSP Messages for the Maritime Community
- Recommendation ICG/PTWS-XXX.5: Disaster Risk Management and Preparedness
- Recommendation ICG/PTWS-XXX.6: Start of Operation of Central America Tsunami Advisory Center (CATAC)
- Recommendation ICG/PTWS-XXX.7: Minimum competency levels for National Tsunami Warning Center (NTWC) operations staff
- Recommendation ICG/PTWS-XXX.8: UN Decade of Ocean Science for Sustainable Development (2021 – 2030)

ICG/PTWS Organizational Structure (Recommendation ICG/PTWS-XXX.1)



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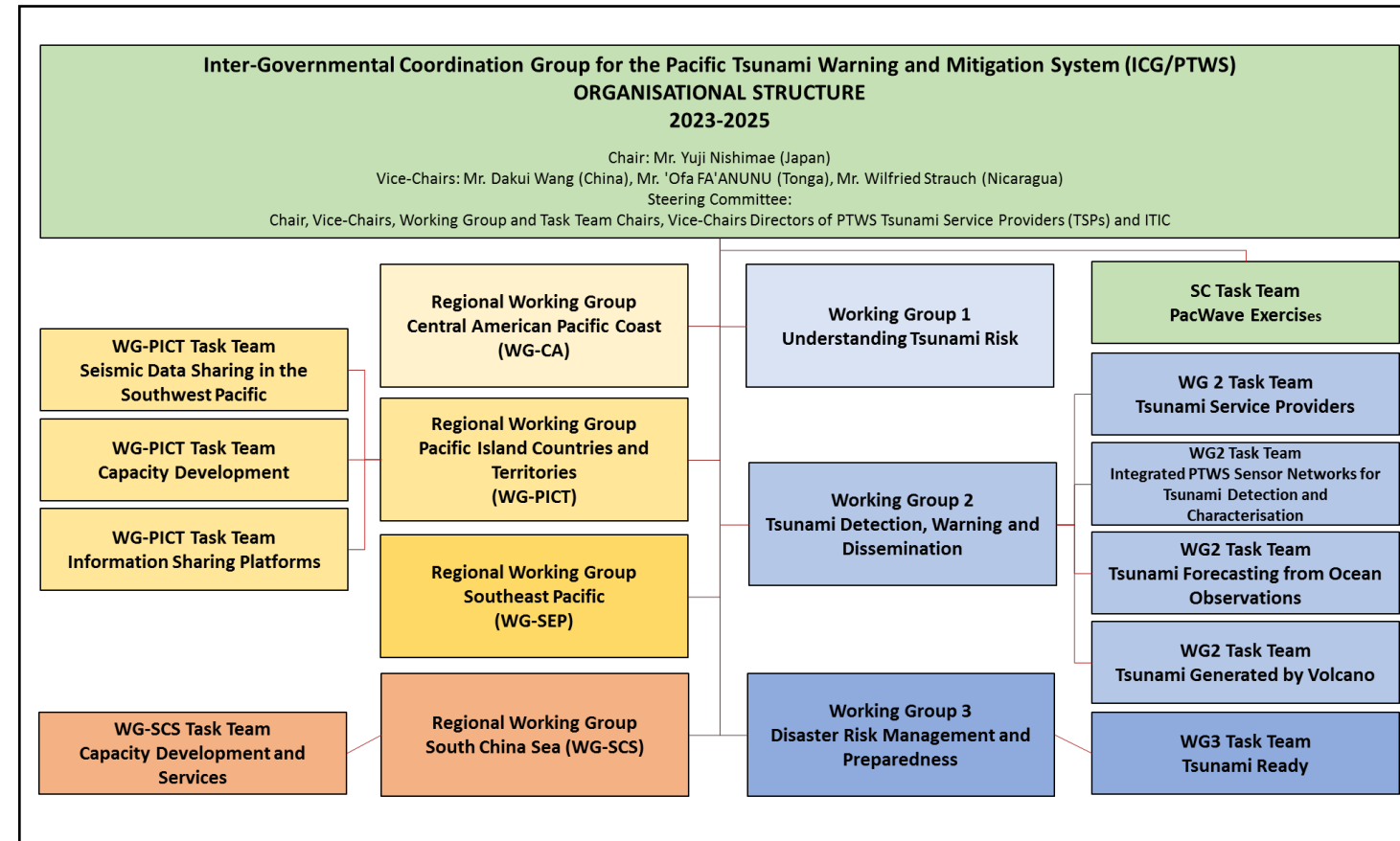
Chair: Mr. Yuji Nishimae (Japan)
Vice-Chairs: Dr. Dakui Wang (China)
Dr. Wilfreid Strauch (Nicaragua)
Mr. 'Ofa Fa'anunu (Tonga)

Dissolved Task Teams;

- Task Team on UN Ocean Decade,
- Task Team on Future Goals and Performance Monitoring,
- WG2 Task Team on the Minimum Competency Levels for National Tsunami Warning Centre (NTWC) Operations Staff

Established Task Teams;

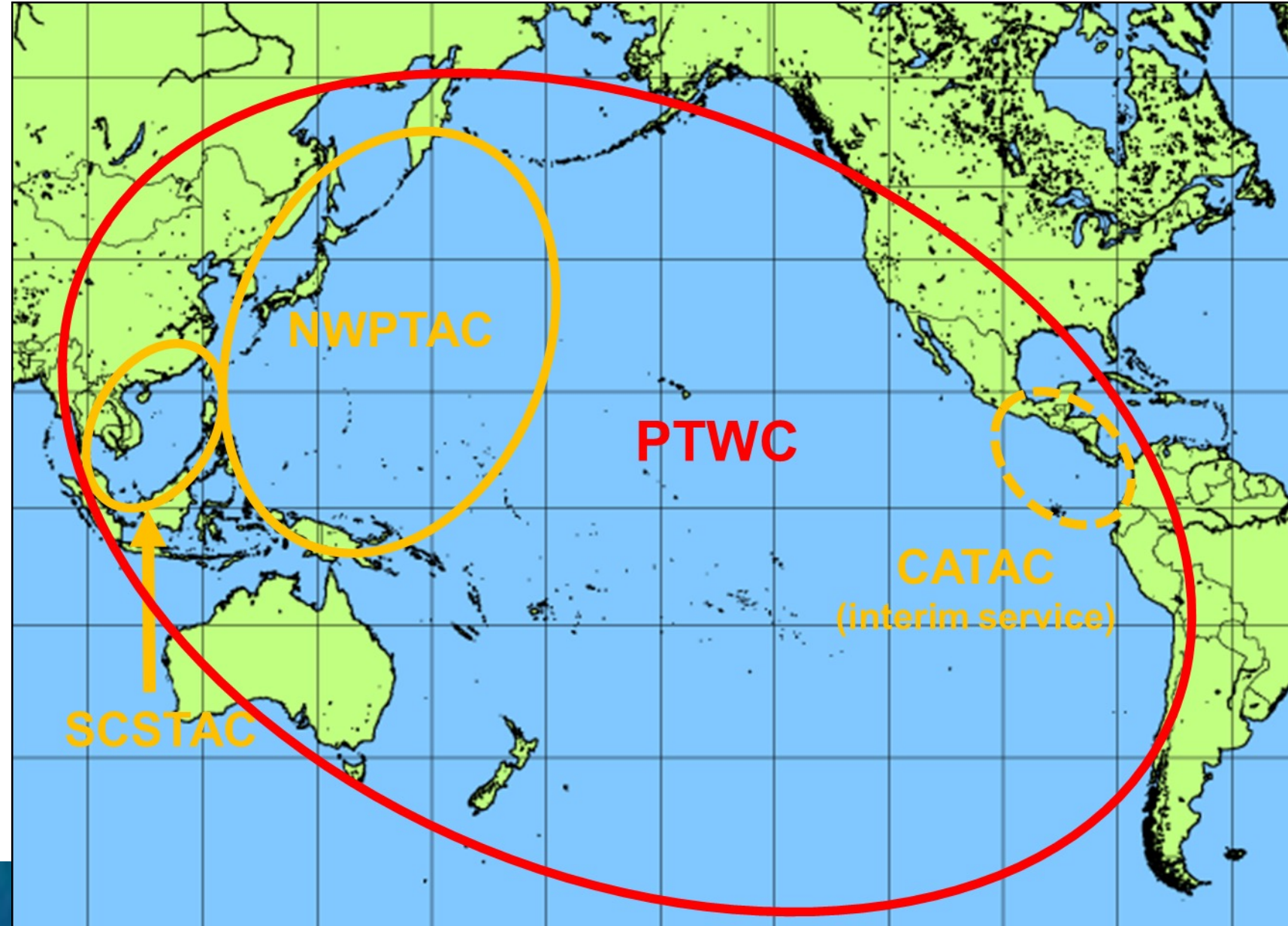
- WG2 Task Team on Tsunami Generated by Volcanoes (TGV)
- WG2 Task Team on Forecasting from Ocean Observations (TT-FOO)
- WG3 Task Team on Tsunami Ready
- Pacific Island Countries and Territories Working Group Task Team on Information Sharing Platforms



Tsunami Service Providers in the Pacific

Four Tsunami Service Providers

- **Pacific Tsunami Warning Center (PTWC)** operated by USA
- **Northwest Pacific Tsunami Advisory Center (NWPTAC)** operated by Japan
- **South China Sea Tsunami Advisory Center (SCSTAC)** operated by China
- **Central America Tsunami Warning Center (CATAC)** operated by Nicaragua
- The CATAC is fully operated (24hours/7days) on the interim service.



Expansion of the ICG/PTWS Earthquake Source Zone (Recommendation ICG/PTWS-XXX.3)



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Decision in the ICG/PTWS-XXX session

Decides to expand the PTWS Earthquake Source Zone to include an area from 63° to 52° south latitude and from 72° to 18° west longitude to include the Scotia Arc and its adjacent seismic zones.

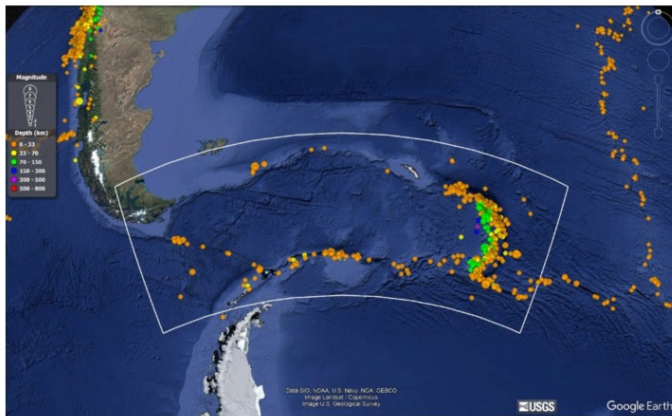


Figure 5. Seismicity in the southern Atlantic Ocean including the Scotia Arc Subduction Zone. The polygon surrounding this seismicity, extending from 63° to 52° South latitude and from 72° to 18° West longitude, is the proposed extension of the PTWS Earthquake Source Zone.

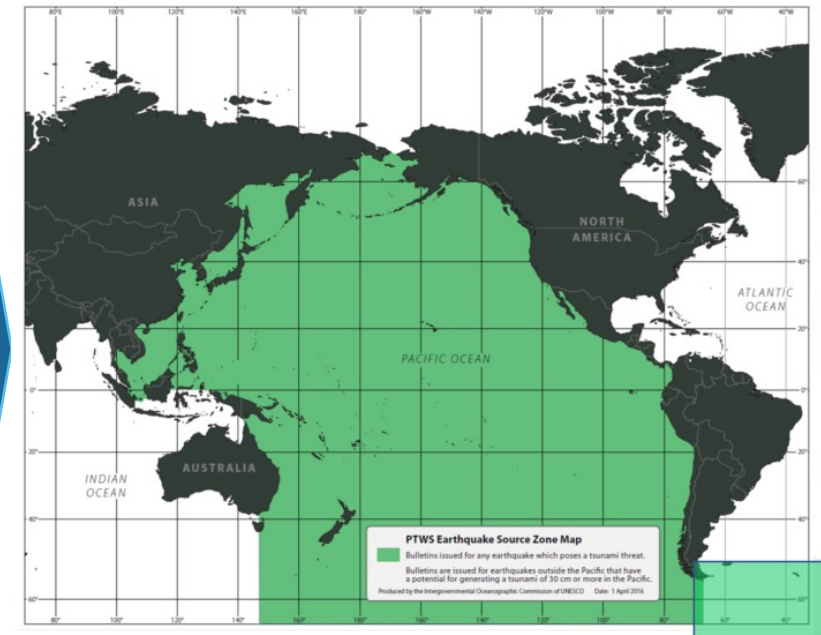
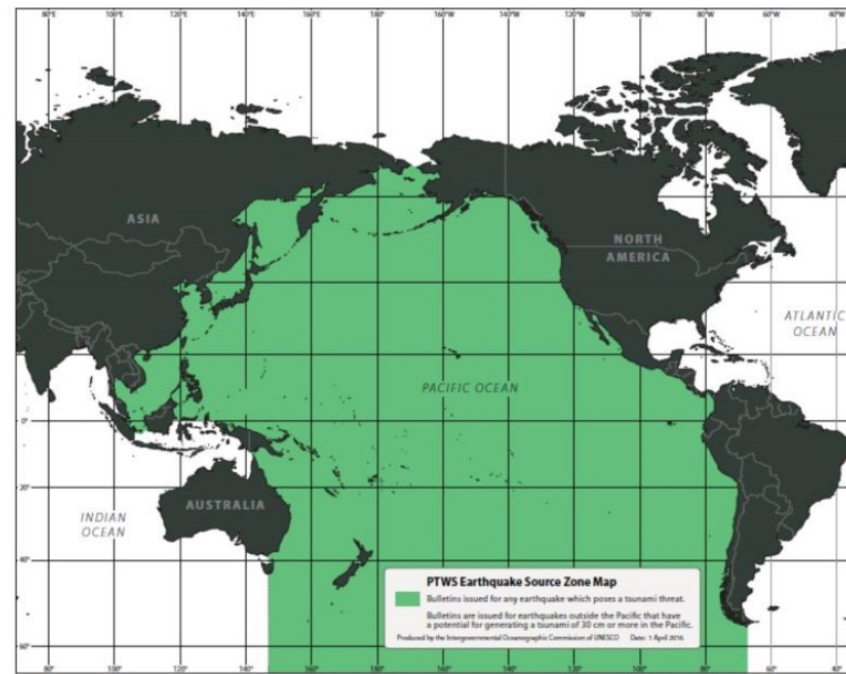


Figure 4. The current PTWS Earthquake Source Zone is indicated in green. The transparent green box at the lower right indicates the approximate proposed addition to the PTWS ESZ that would include the seismic zone associated with the Scotia Arc and South Sandwich Islands.

Establishment of Task Teams for Tsunami Forecasting under the WG2 (Recommendation ICG/PTWS-XXX.1 and ICG/PTWS-XXX.3)



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The first objective of the Ocean Decade Tsunami Programme 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.

WG2 Task Team on Tsunami Generated by Volcanoes (TGV)

Terms of Reference

WG2 Task Team: Tsunami Generated by Volcanoes (TGV)

1. To confirm the list of volcanoes identified by the TGV as posing a potential threat to the Pacific (referred in Annex 4 Technical Series 183), to identify additional potential threat volcanoes, and continually review the list.
2. Among the volcanoes with potential tsunami threat, to identify those with implemented tsunami hazard assessment, monitoring, warning, and preparedness systems.
3. To establish direct collaboration between ICG/PTWS member states and IAVCEI to facilitate the contribution of PTWS tsunami expertise to the monitoring and warning capability of existing volcano monitoring centres or NTWCs, as appropriate.
4. To Identify potential volcanic partners in countries and international bodies, and recommend collaboration opportunities with them to improve tsunami early warning and to support the downstream decision makers affected by the volcanically-generated tsunami
5. To develop guidelines on SOPs to monitor, detect, warn, and prepare for any volcano-induced tsunami waves.
6. To develop guidelines on SOPs to monitor, detect, warn, and prepare for any volcano process that could induce tsunami waves.

The Task Team will be composed of members nominated by Member States, a representative from ITIC, and invited observers. Co-chairs to be elected by the ICG.

WG2 Task Team on Forecasting from Ocean Observations (TT-FOO)

Terms of Reference

WG2 Task Team: Tsunami Forecasting from Ocean Observations (TT-FOO)

1. Compare and document existing strategies for source-independent tsunami early warning and quantify and document their operational usefulness. Efforts will include consideration of both existing and emerging ocean observations technologies and techniques.
2. Connect with appropriate entities in the WMO and IOC Oceanographic communities to allow best-practice direct observation driven forecasting techniques to be assessed for their usefulness in Tsunami Forecasting from Ocean Observations.
3. Align efforts with the Task Team Integrated PTWS Sensor Networks to ensure that existing and likely future monitoring systems support TT recommendations.

The Task Team will be open to members nominated by Member States, invited experts. Co-chairs to be elected by the ICG.

TSP Messages for the Maritime Community

(Recommendation ICG/PTWS-XXX.4)



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Recommendation ICG/PTWS-XXX.4

Recalling the TOWS-WG approved the proposal on TSP Messages for the Maritime Community and requested the ICGs to consider the proposal for implementation in their respective basins in the TOWS-WG XII session,

Recalling IOC Assembly instructs the regional Intergovernmental Coordination Groups (ICGs) TSPs in collaboration with NAVAREA operators of the International Hydrographic Organization (IHO) test the tsunami maritime safety products in 2023/24, with a view to operationally implementing them in 2024-2025 in IOC Decision A-32/3.4.1,

Noting necessity of coordination with the IHO with regard to provision of tsunami maritime safety products,

Affirming that the Pacific basin is covered by seven NAVAREAs and NAVAREA coordinators,

Noting the NTWCs of some member states have provided the information to the tsunami at near coasts,

Considering differences of tsunami threat to vessels or ships offshore and near the coasts,

Noting recommendations from the WG2,

Recommends the PTWC to finalize necessary preparations to provide special tsunami maritime safety products specifically for ships for all NAVAREA Coordinators in the Pacific and in the Southwest Atlantic (e.g. NAVAREAs VI, X, XI, XII, XIII, XIV, XV, and XVI) to transmit to the NTWCs to be forwarded to the NAVAREA Coordinators of their countries, or upon their request directly to the NAVAREA Coordinators in the absence of a NTWC,

Requests the PTWS Steering Committee to finalise its decision at its next meeting on the provision of these products for a period of testing to be followed by a full operational implementation by the PTWC in 2024-2025,



Recommends the PTWC to finalize necessary preparations to provide special tsunami maritime safety products specifically for ships for all NAVAREA Coordinators in the Pacific and in the Southwest Atlantic (e.g. NAVAREAs VI, X, XI, XII, XIII, XIV, XV, and XVI) to transmit to the NTWCs to be forwarded to the NAVAREA Coordinators of their countries, or upon their request directly to the NAVAREA Coordinators in the absence of a NTWC,

Start of Operation of Central America Tsunami Advisory Center (CATAC) (Recommendation ICG/PTWS-XXX.6)

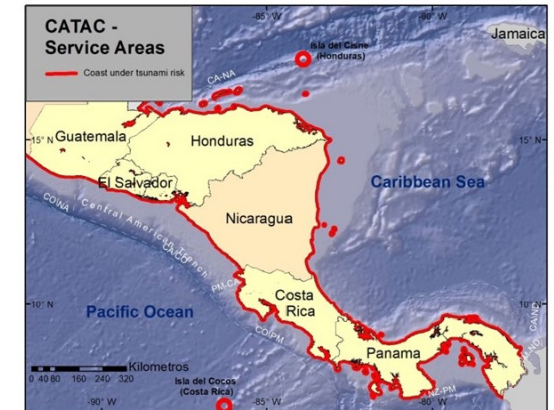


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➤ Recommendation from the ICG/CARIBE-EWS-XVI

- **The ICG recommended** the start of CATAC's full functionality in an interim manner for the Caribbean coast of Central America, starting in June 2023 (as already decided by the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS-XXIX) for the Pacific coast of Central America, as from December 2021).
- **The ICG further recommended** the consideration of Central America Tsunami Advisory Centre (CATAC) as a Tsunami Service Provider (TSP) at its 17th session in 2024 to enable the IOC Executive Council to consider the final admission of CATAC as TSP in June 2024.



➤ Recommendation ICG/PTWS-XXX-6

- **Decides** to admit the start of the official full functional operations of CATAC, starting after the IOC governing body meeting in 2024, with the specific starting date to be decided after the coordination with the ICG/CARIBE-EWS



Minimum competency levels for National Tsunami Warning Centre (NTWC) operations staff (Recommendation ICG/PTWS-XXX.7)



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Recommends the approval of the PTWS National Tsunami Warning Centre competencies, framework, and training requirements, as described in IOC ICG/PTWS-XXX Working Document (Agenda 4.5) Report from the Task Team on the Minimum Competency Levels for National Tsunami Warning Centre (NTWC) Operational Staff.

➤ **Framework -2 Tiers (1. TSP Products, 2. TSP + National analyses)**

- **NTWC Staffing Role 1: Tsunami incident controller (or manager)**

This tier 1 role requires a comprehensive understanding of tsunami causes and impacts, expert interpretation of TSP products, and competent performance of all key national warning procedures.

- **NTWC Staffing Role 2: Tsunami incident assistant**

This tier 2 role requires a basic understanding of tsunami causes and impacts, simple interpretation of TSP products, and ability to perform some tasks of the national warning procedures.

➤ **Minimum Competencies**

- Core science knowledge
- Advanced science knowledge
- Core operational competency
- Advance agency competency

➤ **Training Requirements**

An NTWC Competency Programme should

- Include a NTWC Staffing Profile, including positions, qualifications, and capabilities,
- Establish standardized training modules, covering science, operational, and agency competencies, that have measureable assessments, performance criteria, and/or tests.

The second objective of the Ocean Decade Tsunami Programme 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.

20 communities of 8 countries has been certified as of January, 2024

- Honduras (1)
- Costa Rica (10)
- Samoa (1)
- Guatemala (2)
- Panama (1)
- Ecuador (1)
- El Salvador (2)
- Fiji (2)

Establishment of Task Teams for Tsunami Ready under the WG3

Terms of Reference

WG3 Task Team: Tsunami Ready

This expert Task Team will facilitate and coordinate efforts relating to the Tsunami Ready Recognition Programme and within the ICG/PTWS, in support of UN Ocean Decade Goals.

1. Develop formal PTWS guidelines following the 'Tsunami Ready Equivalency Approach' for recognition of tsunami readiness of communities not implementing the IOC Tsunami Ready Recognition Programme,
2. Monitor Tsunami Ready campaigns and outcomes, and report results,
3. Ensure the advocacy for Tsunami Ready is aligned with other PTWS and IOC documents,
4. Advise on the Tsunami Ready workflow as it pertains to the PTWS and regions,
5. Support ITIC in its efforts to facilitate the implementation of Tsunami Ready in PTWS Member States,
6. Support ITIC's efforts to develop standardized training supporting Tsunami Ready under the framework of OTGA, such as through feedback on content and helping to test trainings before officially deployed,
7. Help to identify sources of funding in support of the implementation of Tsunami Ready,
8. Report progress on encouraging the standard text in the UNESCO-IOC Tsunami Ready signage for vertical evacuation, such as "Go to the designated building for vertical evacuation",
9. Report progress toward informing the public on the validity of the recognition, to be indicated on Tsunami Ready signage and on the certificate under the UNESCO-IOC Tsunami Ready logo.

The Group will be composed of members nominated by the Member States, representative of ITIC, with two co-chairs to be elected by the ICG.

Future Plans of the ICG/PTWS

➤ ICG/PTWS Steering Committee Meeting

- Venue and Date: TBD

➤ ICG/PTWS 31th Session

- Venue: Beijing, China
- Date: April, 2025

➤ Exercise Pacific Wave 2024

- September to November, 2024 to support IDDRR (13 Oct. 2024) and WTAD (5 Nov. 2024)
- Live Communications Test from the PTWS TSPs on 5 November





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THANK YOU

