



UNESCO/IOC – NOAA ITIC Training Program in Hawaii (ITP-TEWS Chile)
TSUNAMI EARLY WARNING SYSTEMS
AND THE PACIFIC TSUNAMI WARNING CENTER (PTWC) ENHANCED PRODUCTS
TSUNAMI EVACUATION PLANNING AND UNESCO IOC TSUNAMI READY PROGRAMME
19-30 August 2024, Valparaíso, Chile

UNESCO-IOC Global Tsunami Early Warning and Mitigation System

ICG/PTWS, Roles of TNCs, TSPs, TWFPs, NTWCs, and TICs

Öcal Necmioğlu

Technical Secretary of the ICG/PTWS and ICG/CARIBE-EWS

UNESCO-IOC

Tsunami Resilience Section



Mandates

- The purpose of UNESCO is to contribute to peace and security by promoting collaboration among the nations through education, science and culture...
- The work of the IOC contributes to the mission of UNESCO by promoting international cooperation in marine sciences through coordinating programmes in capacity development, ocean observations and services, ocean science, ocean literacy and tsunami warning to improve management of the ocean, coasts and marine resources...
- The IOC Tsunami Programme, through the coordination of regional meetings, capacity building activities and the support of national and regional projects, aims at reducing the loss of lives and livelihoods due to tsunamis. In order to accomplish this, the IOC Tsunami Resilience Section supports IOC Member States in assessing tsunami risk, implementing Tsunami Early Warning Systems (TEWS) and in educating communities at risk about preparedness measures.

Roles and Responsibilities of the TNC and TWFP

■ Tsunami National Contact

The person designated by an ICG Member State government to represent his/her country in the coordination of international tsunami warning and mitigation activities. The person is part of the main stakeholders of the national tsunami warning and mitigation system programme. The person may be the Tsunami Warning Focal Point from the national disaster management organization, from a technical or scientific institution, or from another agency with tsunami warning and mitigation responsibilities.

■ Tsunami Warning Focal Point

A 24x7 point of contact (office, operational unit or position, not a person) officially designated by the NTWC or the government to receive and disseminate tsunami information from an ICG Tsunami Service Provider according to established national Standard Operating Procedures. The TWFP may or not be the NTWC.

Roles and Responsibilities of the NTWC and TSPs

■ National Tsunami Warning Center

A centre officially designated by the government to monitor and issue tsunami warnings and other related statements within their country according to established national Standard Operating Procedures.

■ Tsunami Service Provider

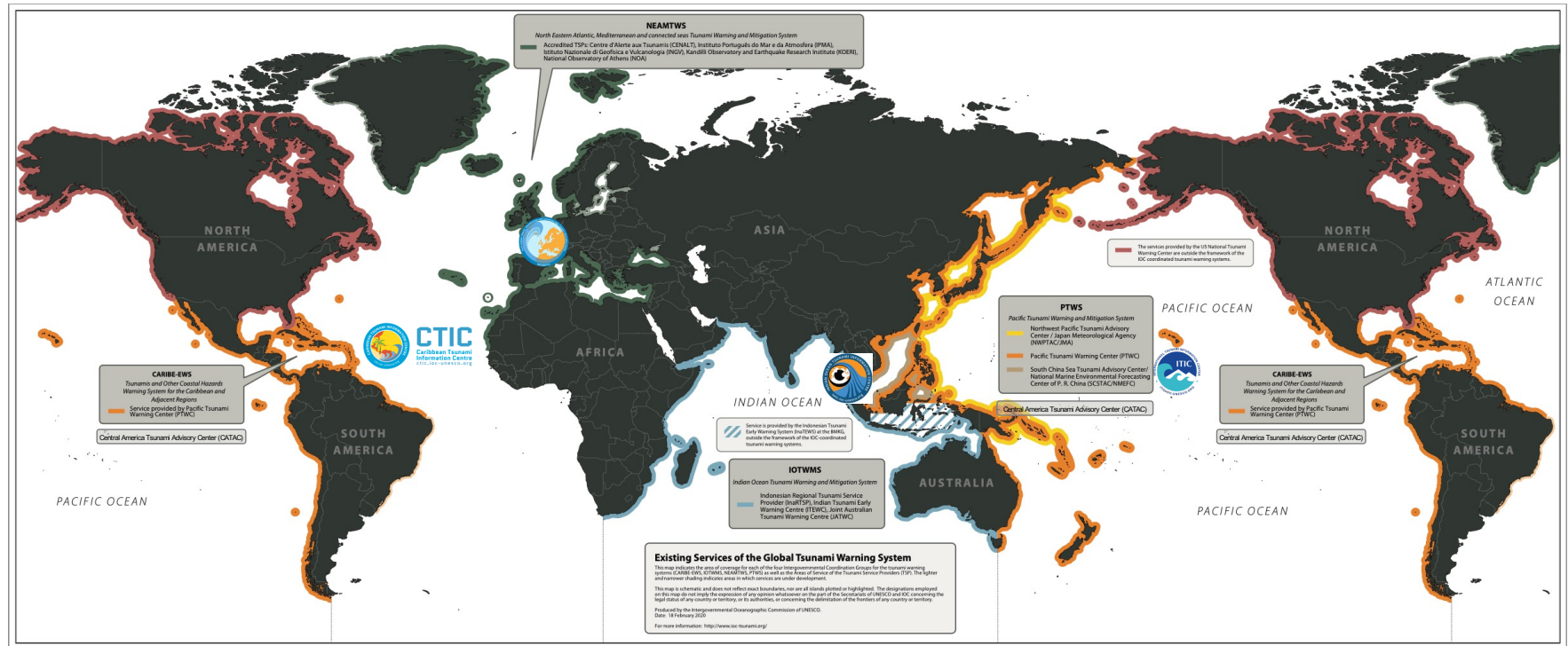
Centre that monitors seismic and sea level activity and issues timely tsunami threat information within an ICG framework to National Tsunami Warning Centres/Tsunami Warning Focal Points and other TSPs operating within an ocean basin. The NTWCs/TWFPs may use these products to develop and issue tsunami warning for their countries. TSPs may also issue Public messages for an ocean basin and act as National Tsunami Warning Centres providing tsunami warnings for their own countries.

Roles and Responsibilities of the TIC

■ Tsunami Information Center

Centres that provide education, outreach, technical and capacity building assistance to Member States and the public in preventing, preparing, and mitigating measures for tsunamis. Among other activities, the centres manage post event performance surveys, serve as a resource for the development, publication, and distribution of tsunami education and preparedness materials and information on tsunami occurrences, and may support risk assessment and mitigation activities. A Tsunami Information Centre has been established in each of the regional tsunami warning systems within the ICG framework.

Global Tsunami Warning and Mitigation System



Global Tsunami Warning and Mitigation System

Significant progress since 2004

- 4 Regional Systems coordinated by the IOC UNESCO - PTWS, IOTWMS, CARIBE EWS, NEAMTWS
- Operate as inter-operable “system-of-systems”
- Network of NTWC/TWFPs receiving tsunami forecast information from one/more TSPs
- Sovereign responsibility of NTWCs/TWFPs to provide warnings, watches, and advisories to their citizens
- Seismic & Sea Level Observing networks, models, computational, communication facilities, DSS and SOPs
- Tsunami Ready
- Successfully monitored and issued warnings for several events

Several challenges evidenced from recent events

- Tsunami warning is race against time -
Uncertainties in tsunami warning
- Gaps in Warning and Response capabilities, specially for non-seismic and near-field sources
- Gaps in SOPs and Early Warning Chains
- Gaps in preparedness & response.

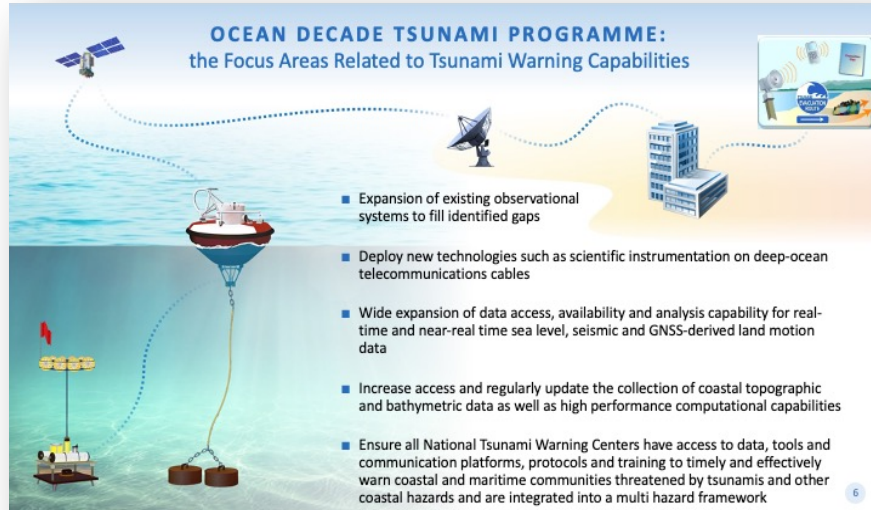
Ocean Decade Tsunami Programme (ODTP)

- UN Ocean Decade (2021-30): Once-in-a-generation opportunity to achieve “transformational gains” in tsunami warning and mitigation system by addressing gaps in tsunami warning and enhancing community preparedness.
- IOC Assembly 31 in June 2021 (Dec. A-31/3.4.1) established the “Ocean Decade Tsunami Programme” and “Scientific Committee” to Develop Research, Development & Implementation Plan
 - Technological & Observational Advances to reduce uncertainties in tsunami warning
 - 100 % at risk communities prepared & resilient to tsunamis by 2030 (Tsunami Ready, etc.)

Ocean Decade Tsunami Programme (ODTP)

1. 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

2. 100% of communities at risk be prepared and resilient to tsunamis by 2030 through programmes like the IOC-UNESCO Tsunami Ready Recognition Programme (TRRP)



The SC-ODTP 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.

ICG/PTWS Governance Structure

Inter-Governmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS)

ORGANISATIONAL STRUCTURE

2023-2025

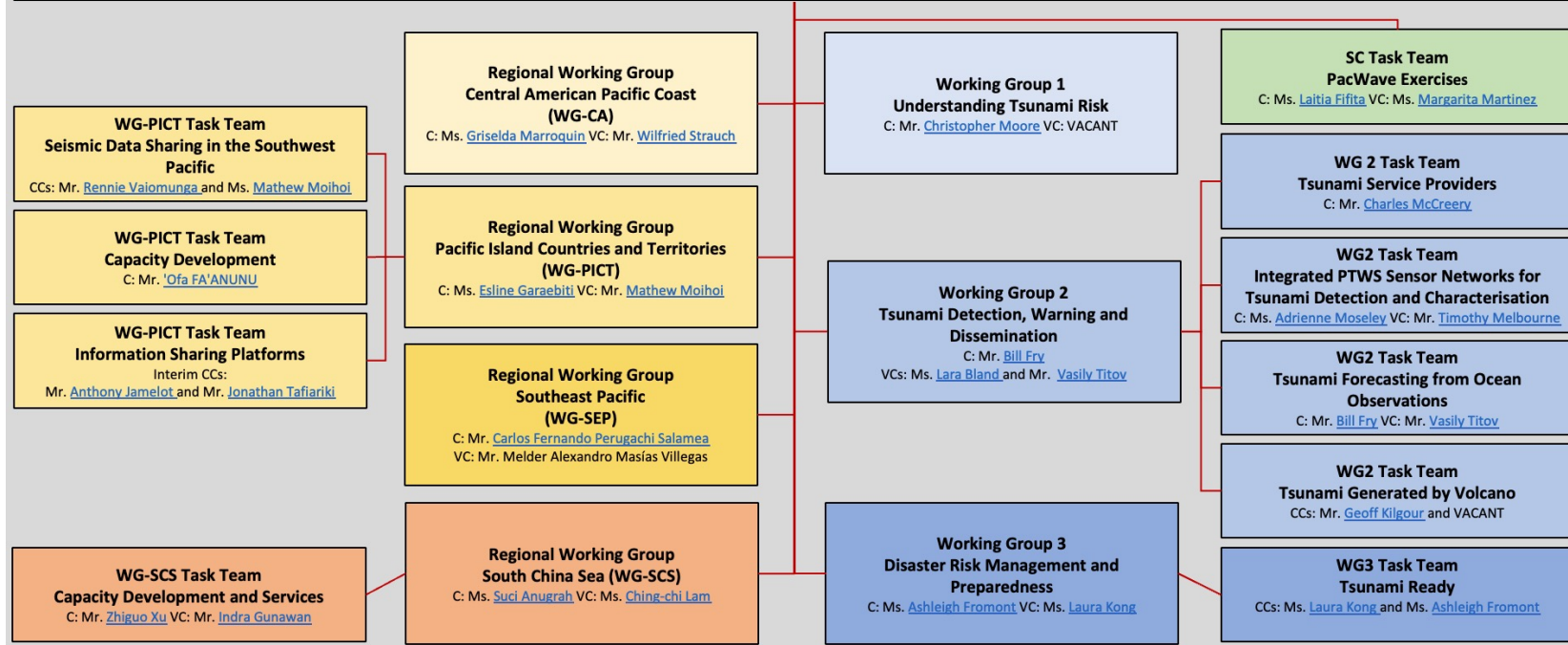
Chair: Mr. [Yuji Nishimae](#) (Japan)

Vice-Chairs: Mr. [Dakui Wang](#) (China), Mr. ['Ofa Fa'anunu](#) (Tonga), Mr. [Wilfried Strauch](#) (Nicaragua)

Steering Committee: ICG/PTWS Officers (Chair and the Vice-Chairs), Chairs of the Technical and Regional Working Groups, Directors of the TSPs and ITIC, or their delegates, and other members' representatives by invitation of the Chair.

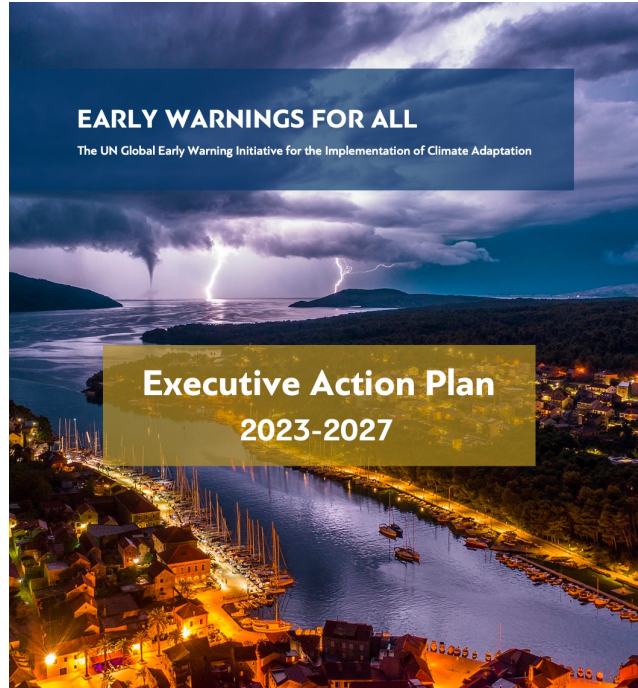
International Tsunami Information Center (ITIC): Ms. [Laura Kong](#)

Technical Secretary: Mr. [Öcal Necmioğlu](#) (Türkiye)





EW4II



In March 2022, United Nations Secretary-General, António Guterres, announce that the United Nations would spearhead new action to ensure every person on Earth is protected by early warning systems within five years (EW4All).

It prioritizes the top technical actions required to enhance capacity to detect hazards, close the observations gap, and advance global forecast data processing systems and data exchange, optimizing international efforts, and highlights both the infrastructure, governance and people-centered approach required to effectively disseminate and communicate warnings. Furthermore, it outlines the policies, capacities, finance and collaboration needed to improve preparedness and response capabilities over the next five-years.



The Global Tsunami Early Warning System coordinated by the UNESCO-IOC is a key element of the EW4All initiative connecting hydrometeorological hazards with geohazards.



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Thank You

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