



Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS) Secretariat Report: 2023 - 2024

Nora Gale

Assistant Programme Specialist

Indian Ocean Tsunami Warning & Mitigation System Secretariat

Intergovernmental Oceanographic Commission of UNESCO

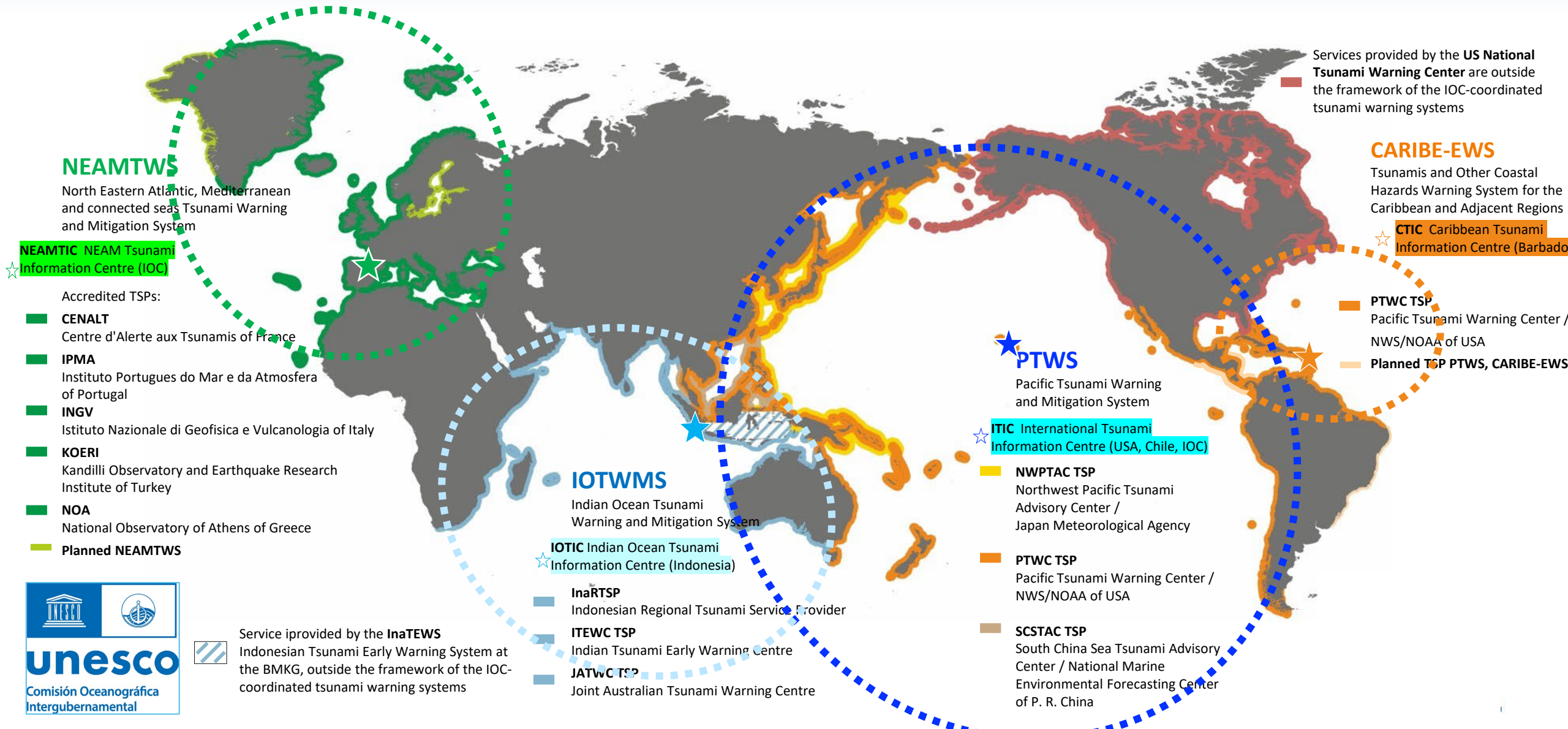
n.gale@unesco.org

*14th Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami
Warning and Mitigation System (ICG/IOTWMS-XIV), Jakarta, 17-19 November 2024*

GLOBAL TSUNAMI WARNING AND MITIGATION SYSTEM

Intergovernmental Oceanographic Commission of UNESCO

<https://tsunami.ioc.unesco.org/>



NEAMTWS

North Eastern Atlantic, Mediterranean and connected seas Tsunami Warning and Mitigation System

NEAMTIC NEAM Tsunami Information Centre (IOC)

Accredited TSPs:

- CENALT**
Centre d'Alerte aux Tsunamis of France
- IPMA**
Instituto Portugues do Mar e da Atmosfera of Portugal
- INGV**
Istituto Nazionale di Geofisica e Vulcanologia of Italy
- KOERI**
Kandilli Observatory and Earthquake Research Institute of Turkey
- NOA**
National Observatory of Athens of Greece
- Planned NEAMTWS**



Service provided by the **InaTEWS** Indonesian Tsunami Early Warning System at the BMKG, outside the framework of the IOC-coordinated tsunami warning systems

IOTWMS

Indian Ocean Tsunami Warning and Mitigation System

IOTIC Indian Ocean Tsunami Information Centre (Indonesia)

- InaRTSP**
Indonesian Regional Tsunami Service Provider
- ITEWC TSP**
Indian Tsunami Early Warning Centre
- JATWC TSP**
Joint Australian Tsunami Warning Centre

PTWS

Pacific Tsunami Warning and Mitigation System

ITIC International Tsunami Information Centre (USA, Chile, IOC)

- NWPTAC TSP**
Northwest Pacific Tsunami Advisory Center / Japan Meteorological Agency
- PTWC TSP**
Pacific Tsunami Warning Center / NWS/NOAA of USA
- SCSTAC TSP**
South China Sea Tsunami Advisory Center / National Marine Environmental Forecasting Center of P. R. China

Services provided by the **US National Tsunami Warning Center** are outside the framework of the IOC-coordinated tsunami warning systems

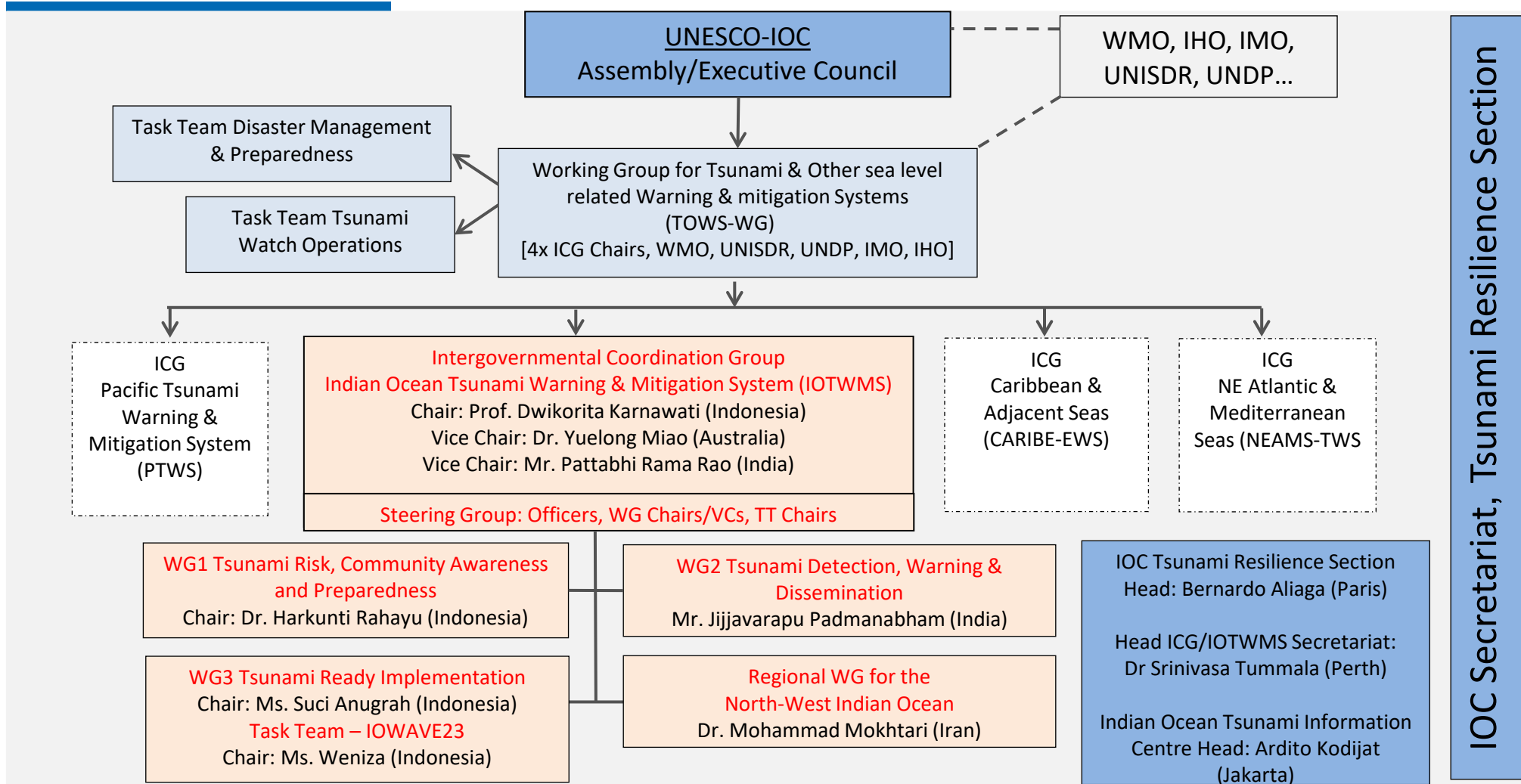
CARIBE-EWS

Tsunamis and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions

CTIC Caribbean Tsunami Information Centre (Barbado)

- PTWC TSP**
Pacific Tsunami Warning Center / NWS/NOAA of USA
- Planned TSP** PTWS, CARIBE-EWS

Governance



Staffing

Two (2) full-time Project Appointments are hosted by the Australian Government through its Bureau of Meteorology in Perth:

- *Dr Srinivasa Kumar Tummala*, Head of Secretariat (from 29 October 2024)
- *Mr Rick Bailey*, Head of Secretariat (retired on 27 June 2024)
- *Ms Nora Gale*, Assistant Programme Officer

The Tsunami Resilience Section is located at UNESCO Headquarters in Paris and led by *Mr Bernardo Aliaga*.

The Secretariat works closely with Mr Ardito Kodijat, Head of Indian Ocean Tsunami Information Center.



Bernardo Aliaga

Head of Section

Tsunami Resilience Section

UNESCO-IOC



Nora Gale

Assistant Programme Officer

Tsunami Resilience Section

ICG/IOTWMS Secretariat

UNESCO-IOC

Srinivasa Kumar Tummala

Head ICG/IOTWMS Secretariat

Tsunami Resilience Section

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Ardito Kodijat

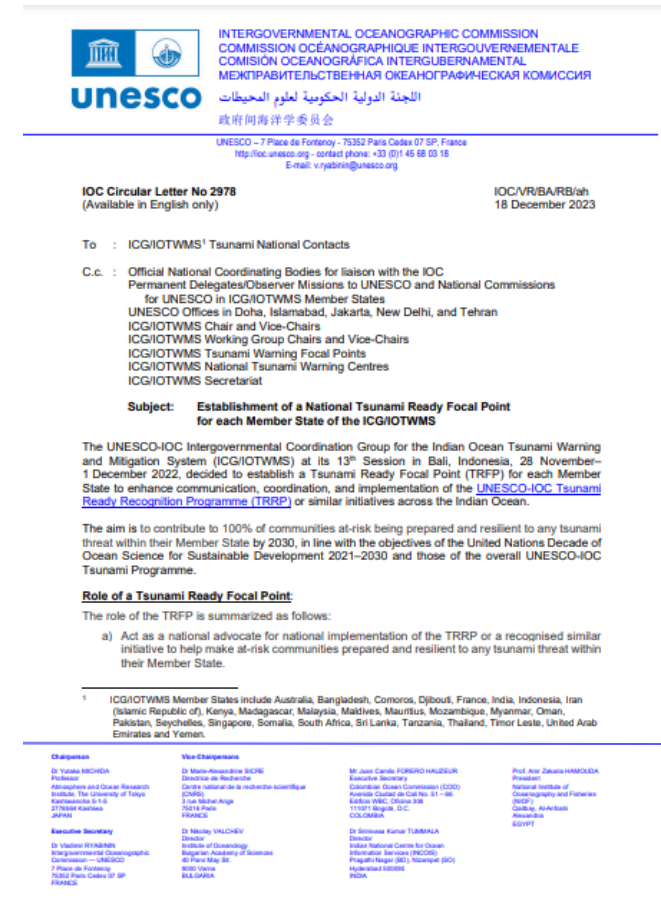
Head of IOTIC

National Professional Officer

UNESCO-IOC

ICG/IOTWMS Secretariat Terms of Reference

1. Support meetings of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning & Mitigation System (ICG/IOTWMS).
2. Facilitate the liaison among the various national contact points and national tsunami warning centres.
3. Maintain a current list of operational national contact points and facilities and make it available on request to all Member States.
4. Organize the liaison between ICG/IOTWMS and the ICG/ITSU, with the PTWC and with other tsunami warning centres to facilitate best practices in tsunami warning.
5. Initiate and support training activities and enhance and enrich tsunami warning in the Indian Ocean.



ICG/IOTWMS Secretariat Terms of Reference

ICG Circular Letter No 2978
(Available in English only)

ICG/VR/BA/RB/iah
18 December 2023

To : ICG/IOTWMS¹ Tsunami National Contacts

C.c. : Official National Coordinating Bodies for liaison with the IOC
Permanent Delegates/Observers Missions to UNESCO and National Commissions
for UNESCO in ICG/IOTWMS Member States
UNESCO Offices in Doha, Islamabad, Jakarta, New Delhi, and Tehran
ICG/IOTWMS Chair and Vice-Chairs
ICG/IOTWMS Working Group Chairs and Vice-Chairs
ICG/IOTWMS Tsunami Warning Focal Points
ICG/IOTWMS National Tsunami Warning Centres
ICG/IOTWMS Secretariat

**Subject: Establishment of a National Tsunami Ready Focal Point
for each Member State of the ICG/IOTWMS**

The UNESCO-IOC Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS) at its 13th Session in Bali, Indonesia, 28 November–1 December 2022, decided to establish a Tsunami Ready Focal Point (TRFP) for each Member State to enhance communication, coordination, and implementation of the [UNESCO-IOC Tsunami Ready Recognition Programme \(TRRP\)](#) or similar initiatives across the Indian Ocean.

The aim is to contribute to 100% of communities at-risk being prepared and resilient to any tsunami threat within their Member State by 2030, in line with the objectives of the United Nations Decade of Ocean Science for Sustainable Development 2021–2030 and those of the overall UNESCO-IOC Tsunami Programme.

Role of a Tsunami Ready Focal Point:

The role of the TRFP is summarized as follows:

- a) Act as a national advocate for national implementation of the TRRP or a recognised similar initiative to help make at-risk communities prepared and resilient to any tsunami threat within their Member State.

¹ ICG/IOTWMS Member States include Australia, Bangladesh, Comoros, Djibouti, France, India, Indonesia, Iran (Islamic Republic of), Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Myanmar, Oman, Pakistan, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, Timor-Leste, United Arab Emirates and Yemen.

Chairperson Dr Yulia BICHDA Professor Atmosphere and Ocean Research Institute, The University of Tokyo Katsushika 5-1-5 2788564 Ariake JAPAN	Vice-Chairpersons Dr Maria Alexandrina BICHO Directora de Resposta Centro Nacional de Informação Científica CNPq 3 rue Michel-Ange 75001 Paris FRANCE	Mr. José Carlos FERRÃO VAZQUEZ Executive Secretary Colombian Ocean Commission (COC) Avenida Guzmán de Caceres 141 - 100 Bogotá W.C. Oficina 518 11001 Bogotá, D.C. COLOMBIA	Prof. Aze Zahara HAMUDA President National Institute of Coastal Geology and Fisheries (NIGF) Galle, Maldives MALDIVES
Executive Secretary Dr Yulia BICHDA Intergovernmental Oceanographic Commission – UNESCO 7 Place de Fontenay 92525 Paris Cedex 12 FRANCE	Dr Hriday VALLCHAV Director Department of Oceanography Bhamburda Academic Building 60 Fort Road KOLKATA INDIA	Dr Sarintha Kuma TUMBANA Director Tsunami Warning Centre for Southeast Indonesia Sea Area (TWCSEI) Program Manager (PM) (Nominat 2023) Hydrology Division INDONESIA	

Intersessional Meetings: 2023 to 2024

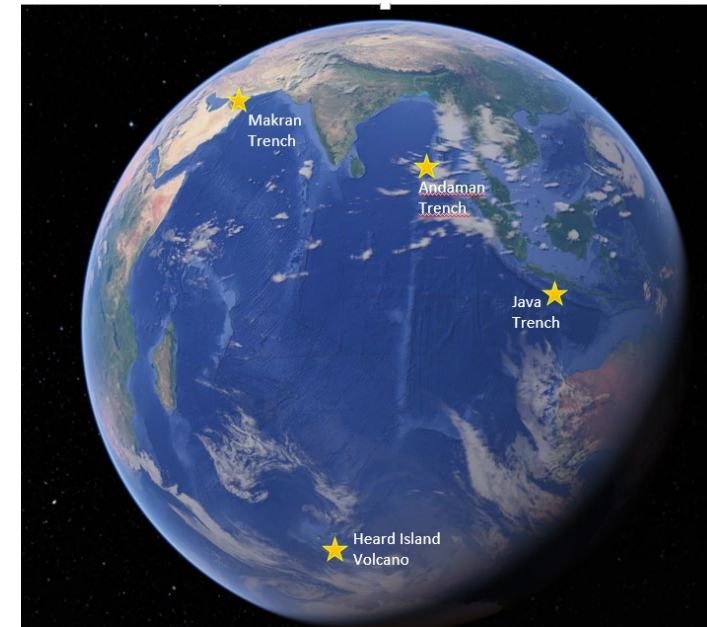
- Working Group on Tsunamis and Other Hazards related to Sea Level Warning and Mitigation Systems (TOWS WG) and its Task Teams
 - ✓ 6th Meeting of TOWS WG, Paris, France (hybrid), 27 February – 3 March 2023
 - ✓ 7th Meeting of TOWS WG, Sendai, Japan (hybrid), 19-23 February 2024
- ICG/IOTWMS Steering Group
 - ✓ Hyderabad, 5-6 February 2024 (hybrid) & Various planning meetings
- Working Group 1 on Tsunami Risk, Community Awareness and Preparedness
 - ✓ 17-18 March 2023 (online) & 19 August 2024 (online)
- Working Group 2 on Tsunami Detection, Warning and Dissemination
 - ✓ 5-6 April 2023 (online) & 7 August 2024 (online)
- Working Group 3 on Tsunami Ready Implementation
 - ✓ 24 August 2023 (online); 7 February 2024 (Hyderabad – hybrid); 29 August 2024 (online)
- Regional Working Group for the North-West Indian Ocean
 - ✓ 30 May 2023 (online) & 22 July 2024 (online)
- Task Team on Exercise Indian Ocean Wave 2023 (IOWave23)
 - ✓ Various planning meetings of full Task Team as well as TSP representatives

Training Workshops on Standard Operating Procedures (SOPs)

- The Training Workshops helped countries to refine their tsunami SOPs in the lead-up to Exercise IOWave23 and contribute to reaching the UN Ocean Decade goal of 100% at-risk coastal communities prepared for and resilient to the tsunami threat by 2030.
- ICG/IOTWMS Western Indian Ocean Member States Training Workshop on Standard Operating Procedures (SOPs) for National Tsunami Warning Centres (NTWCs) and Disaster Management Organisations, 3-6 July 2023 (online)
- ICG/IOTWMS Eastern Indian Ocean Member States Training Workshop on Standard Operating Procedures (SOPs) for National Tsunami Warning Centres (NTWCs) and Disaster Management Organisations, 10-13 July 2023 (online)
- North-West Indian Ocean Standard Operating Procedures (SOPs) Training Workshop, 7-8 August 2023 (online)

Exercise Indian Ocean Wave 2023

- 4-24 October 2023
- Four scenarios with simulated tsunami waves travelling across the Indian Ocean Basin
 - Andaman trench
 - Makran trench
 - Heard Island volcano
 - Java trench
- Webinar on Lessons Learnt during Exercise Indian Ocean Wave 2023, online, 12-13 December 2023
 - 20 countries participated
 - Community evacuations held in 8 Member States with ~45,000 people evacuating
 - Tsunami Ready indicators testes in 7 Member States
 - New non-seismic products produced by TSP Australia were utilised
- The outcomes from IOWave23 will be published in an UNESCO-IOC Exercise Report.



Capacity Assessment

- The 2024 UNESCO-IOC Capacity Assessment of Tsunami Preparedness in the Indian Ocean tracks regional change and identify gaps and challenges that could be addressed through future projects and activities.
- The initiative is supported by the ESCAP Tsunami Trust Fund and Asian Development Bank
- Survey responses from twenty-two (22) Member States have been received.
- The University of Huddersfield has analysed the data and compared with the results of the 2018 Assessment to produce a draft report.
- The Capacity Assessment Team met in Bangkok during 4-6 September to formulate the recommendations.
- The preliminary draft report and executive summary are now available on meeting website for review.
- ICG/PTWS will implement the Capacity Assessment of Tsunami Preparedness in the Pacific Ocean in 2025.

Intergovernmental Oceanographic Commission



**2024 Capacity Assessment of
Tsunami Preparedness
in the Indian Ocean**

Executive Summary

Makran Project

- The project on “**Strengthening tsunami warning in the North-West Indian Ocean through regional cooperation – Phase 2c**”, was launched online on 15 November 2023
- Phase 2c funded by the ESCAP Tsunami Trust Fund over a 12-month period
- The focus is on training in development of tsunami inundation maps and tsunami evacuation plans to facilitate effective community responses to local and distant tsunamis.
- Training workshops held in Muscat, Oman during 22-25 April 2024
- Ongoing backstopping to support Phase 2c of the project is supported by two (2) international and three (3) national consultants.
- A capacity building workshop on Tsunami Evacuation Maps, Plans, and Procedures is being planned for early 2025.





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THANK YOU