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# ICG/IOTWMS Secretariat Report

*July 2023 – June 2024*

**Nora Gale and Bernardo Aliaga**

*Assistant Programme Specialist*

*Indian Ocean Tsunami Warning & Mitigation System Secretariat*

*Intergovernmental Oceanographic Commission of UNESCO*

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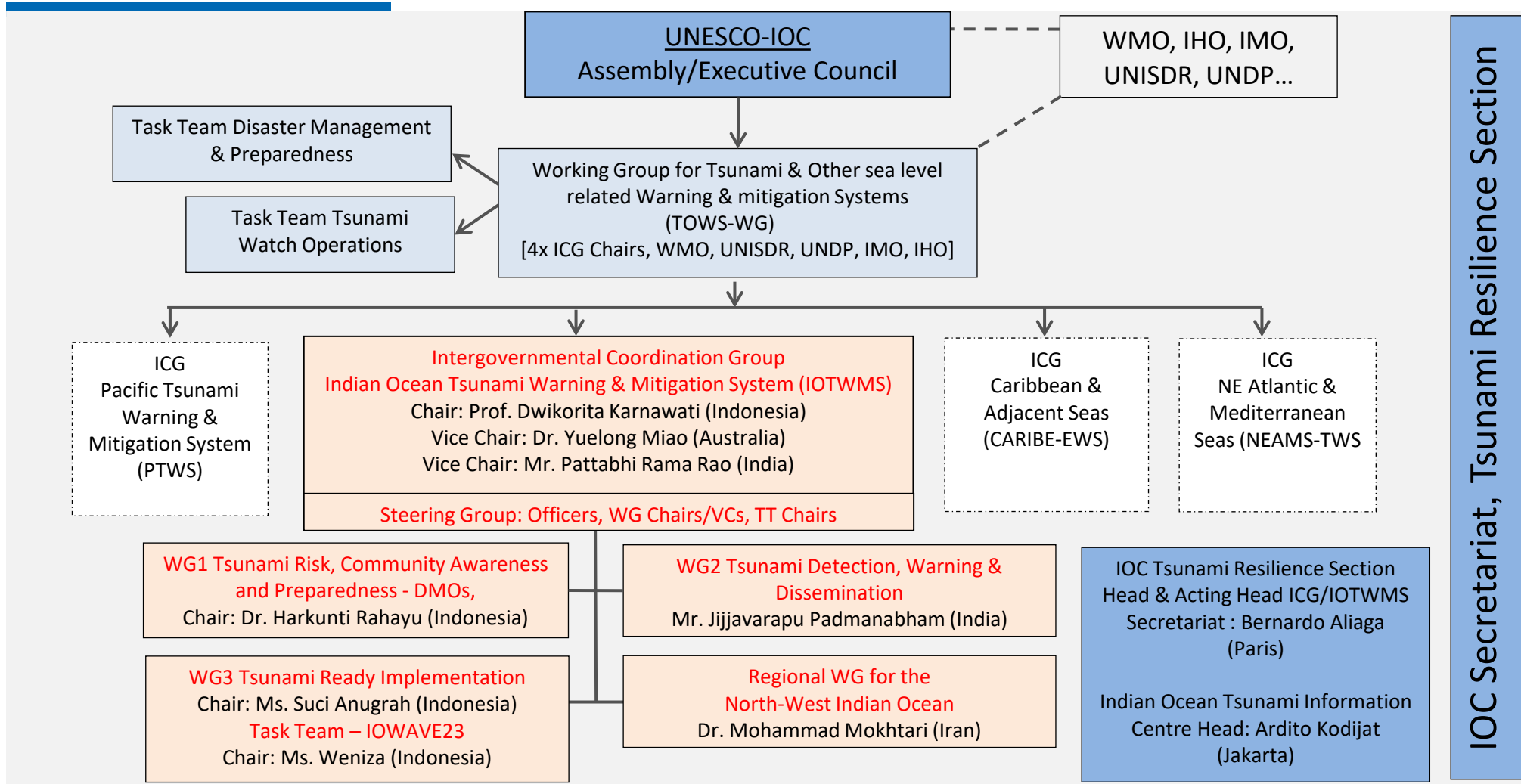
*ICG/IOTWMS Working Group 2  
Intersessional Meeting, 7 August 2024*

# ICG/IOTWMS Secretariat Terms of Reference

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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.

# Governance



# Staffing

During the reporting period, two (2) full-time Project Appointments were hosted by the Australian Bureau of Meteorology:

- *Mr Rick Bailey*, Head of Secretariat, contract finished on 27 June 2024
- *Ms Nora Gale*, Assistant Programme Officer, based in Perth, Australia

The Acting Head ICG/IOTWMS Secretariat is now *Mr Bernardo Aliaga*, Head of UNESCO-IOC Tsunami Resilience Section.

The recruitment processes for the new Head ICG/IOTWMS Secretariat will be finalised soon.

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



**Ardito Kodijat**

Head of IOTIC

National Professional  
Officer

UNESCO-IOC

# Intersessional Meetings

## *July 2023 to June 2024*

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- Intersessional Meeting of ICG/IOTWMS Working Group 3 on Tsunami Ready Implementation, online, 24 August 2024
- ICG/IOTWMS Steering Group Strategic Planning Meeting, online, 17 January 2024
- Intersessional Meeting of ICG/IOTWMS Steering Group, Hyderabad, India, 5-6 February 2024
- Intersessional Meeting of Working Group 3 on Tsunami Ready Implementation, Hyderabad, India, 7 February 2024
- 7th Meeting of the Working Group on Tsunamis and Other Hazards related to Sea Level Warning and Mitigation Systems (TOWS WG) and its Task Teams, Sendai, Japan (hybrid), 19-23 February 2024

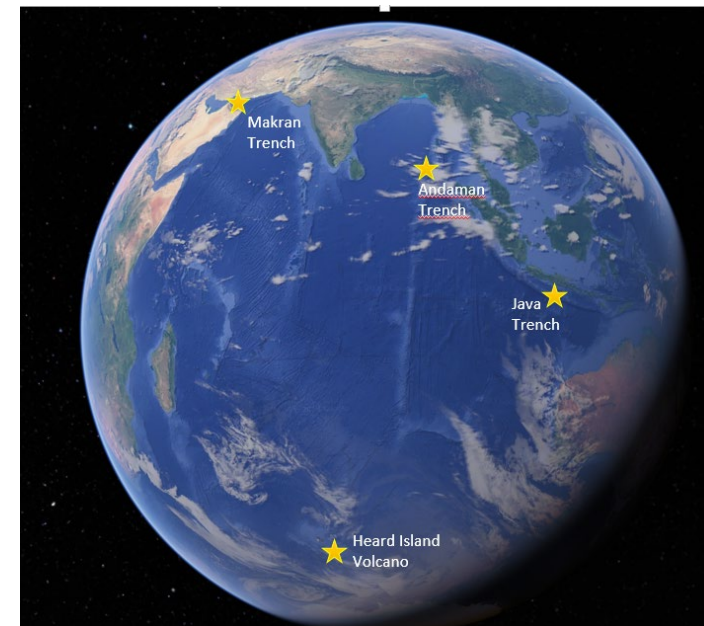
# Training Workshops

## *June 2023 to July 2024*

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- ICG/IOTWMS Western Indian Ocean Member States Training Workshop on Standard Operating Procedures (SOPs) for National Tsunami Warning Centres (NTWCs) and Disaster Management Organisations, online, 3-6 July 2023
- ICG/IOTWMS Eastern Indian Ocean Member States Training Workshop on Standard Operating Procedures (SOPs) for National Tsunami Warning Centres (NTWCs) and Disaster Management Organisations, online, 10-13 July 2023
- North-West Indian Ocean Standard Operating Procedures (SOPs) Hybrid Training Workshop, online 7-8 August 2023
- 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.

# Exercise Indian Ocean Wave 2023



- Held during 4-24 October 2023
- Exercise IOWave23 was comprised of four scenarios with simulated tsunami waves travelling across the Indian Ocean Basin

1. **Andaman Trench Scenario:** 4 October 2023, Magnitude ~9 earthquake off the west coast of Nicobar Islands, India.
2. **Makran Trench Scenario:** 11 October 2023, Magnitude ~9 earthquake in the North-West Indian Ocean.
3. **Heard Island Volcano Scenario:** 18 October 2023: Volcanic eruption in the Kerguelen Islands Region.
4. **Java Trench Scenario:** 25 October 2023, Magnitude ~9 earthquake south of Java, Indonesia.

- Webinar on Lessons Learnt during Exercise Indian Ocean Wave 2023, online, 12-13 December 2023
- Reported Activities

## 20 countries participated

**Community evacuations** held in 7 Member States : India, Indonesia, Iran, Maldives, Mauritius, Sri Lanka, UAE  
The evacuation drills involved around **45,000 people**.

**Tsunami Ready indicators** tested in 7 Member States

**New non-seismic products** produced by TSP Australia were utilised



- The outcomes from IOWave23 will be published in an Exercise Report (in preparation).



# Non-Seismic and Complex Source Tsunami

- **IOTWMS**

- IOTWMS Tsunami Service Providers (Australia, India, Indonesia) have developed new products and enhancements to operational procedures for responding to such events.
- The new products were tested during Exercise Indian Ocean Wave by a scenario from Heard Island Volcano in the Southern Ocean.

- **TOWS-WG**

- UNESCO-IOC Technical Series #183: *Monitoring and Warning for Tsunamis Generated by Volcanos* was written by TOWS-WG Ad Hoc Team on Tsunamis Generated by Volcanos.
- *A Review of Tsunamis Generated by Volcanos (TGV) Source Mechanism, Modelling, Monitoring and Warning Systems* was published in Pure and Applied Geophysics by Francois Schindele et al., June 2024.

Intergovernmental Oceanographic Commission  
Technical Series

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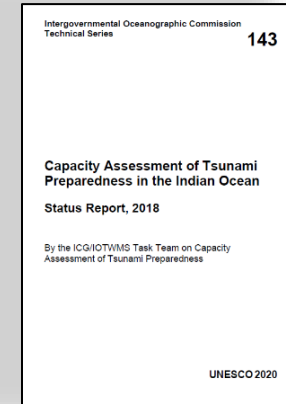
**Monitoring and Warning for Tsunamis  
Generated by Volcanoes**

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# Capacity Assessment

- The 2024 UNESCO-IOC Capacity Assessment of Tsunami Preparedness in the Indian Ocean will track regional change and identify gaps and challenges that could be addressed through donor supported projects.
- 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 will meet in Bangkok during 4-6 September to review the report and formulate the recommendations.
- The draft report and executive summary will be presented to the 14<sup>th</sup> Session of the ICG/IOTWMS (Jakarta, 16-19 November 2024) for adoption.
- ICG/PTWS is discussing carrying out the Capacity Assessment of Tsunami Preparedness in the Pacific Ocean during 2025.



Part	Topic of the Survey	Stakeholder Inputs
I	<b>Basic Information:</b> TNC/NTWC/TWFP contact details	<b>Tsunami National Contact</b> Secretariat will follow up separately formally incorporate any updates on Member State nominations of the TNC through official channels
II	<b>Risk Assessment &amp; Reduction:</b> Hazard Assessment, Risk Assessment, Policies, Plans, Guidelines	Inputs to be obtained from the <b>Disaster Management Agency</b> and/or other agency responsible for Hazard / Risk Assessment in the Country
III	<b>Detection, Warning &amp; Dissemination</b>	Inputs to be obtained from the <b>National Tsunami Warning Centre</b> and/or other agency responsible for generation and dissemination of tsunami early warnings within the country
IV	<b>Public Awareness, Preparedness &amp; Response:</b> SOPs, Evacuation Infrastructure, Tsunami Exercises, Public Awareness	Inputs to be obtained from the <b>Disaster Management Agency</b> and/or other agencies responsible for public awareness, preparedness, and response in the country
V	<b>Tsunami Ready Recognition Programme (TRRP)</b>	Inputs to be obtained from the <b>Tsunami Ready Focal Point (TRFP)</b> and/or other agency responsible for the TRRP or other recognised similar initiative in the country
VI	<b>Narrative:</b> Important developments since the last report and summary of future plans	<b>Tsunami National Contact</b>

# UN Ocean Decade (2021-2030)



- **Events**

- 4<sup>th</sup> meeting of Scientific Committee for the UN Ocean Decade Tsunami Programme, Paris, 25-26 January 2024
- Indian Ocean Regional Decade Conference 2024, Hyderabad, India, 1-3 February 2024
- 2024 UN Ocean Decade Conference, Barcelona, 10-12 April 2024

- **Safe Ocean Outcome**

- **UNESCO-IOC Tsunami Programme**

- **Goal 1:** Enhance existing tsunami detection systems and utilise new technologies to enhance tsunami warning accuracy and timeliness
    - **Goal 2:** 100% at-risk coastal communities are prepared and resilient to the tsunami threat through implementation of the UNESCO-IOC Tsunami Ready Recognition Programme or similar national initiatives

# Tsunami Ready



## Working Group 3 on Tsunami Ready Implementation

- Intersessional Meeting of ICG/IOTWMS WG3, online, 24 August 2024
- Intersessional Meeting of WG3, Hyderabad, India, 7 February 2024
- Next meeting of WG3 to be held in August 2024 (TBC)

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

- IOC Circular Letter No 2978 issued on 18 December 2023
- 13 Member States have nominated including Bangladesh, India, Indonesia, Iran, Kenya, Madagascar, Malaysia, Mauritius, Seychelles, South Africa, Sri Lanka, Timor Leste, and United Arab Emirates.

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اللجنة الدولية الحكومية لعلوم المحيطات  
政府间海洋学委员会

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**IOC Circular Letter No 2978** (Available in English only) **IOC/VR/BA/RB/ah**  
18 December 2023

To : ICG/IOTWMS<sup>1</sup> Tsunami National Contacts

C.c. : Official National Coordinating Bodies for liaison with the IOC  
Permanent Delegates/Observer 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 13<sup>th</sup> 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.

<sup>1</sup> 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	Vice Chairpersons	Executive Secretary	President
Dr Yvette MICHON Professor Atmosphere and Ocean Research Institute, The University of Tokyo Kashiwanoha 5-1-5 213-8501 Kashiwa JAPAN	Dr Marie-Hélène BÉGIN Director de Recherche ICRSB Centre national de la recherche scientifique 2 rue de l'Université 75231 Paris FRANCE	Dr José Carlos DOMÍNGO HERNÁNDEZ Executive Secretary Coastal and Ocean Commission (COO) Avenida Ciudad de Cali No. 51-100 Edificio WEC, Oficina 208 11001 Bogotá, D.C. COLOMBIA	Prof. Anis Zakaria HANNOUDA President General Member of Coastal and Ocean Commission (COO) Dokki, Al-Ain Helwan EGYPT
Executive Secretary	Dr Nicolas VALCHÉV Director Institute of Oceanography Bulgarian Academy of Sciences 40 Sofia Blvd. 101 1000 Sofia BULGARIA	Dr Srinivas Kumar THIRUBALA Director National Natural Centre for Ocean Information Services (NCOIS) Program Manager (PM), Hyderabad (PO) Hyderabad 500001 INDIA	
Dr Vladimir RYKHOV Intergovernmental Oceanographic Commission - UNESCO 7 Place de Fontenay 75352 Paris Cedex 07 SP FRANCE			

# 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 5 consultants.

Two (2) international consultants with expertise in inundation modelling and evacuation mapping, respectively.

Three (3) national consultants to promote and support national project activities in India, Iran, and Pakistan.

- The project will provide a template for training of other ICG/IOTWMS Member States in latest techniques in inundation modelling and evacuation mapping to support Tsunami Ready recognition for at-risk communities.



# Upcoming Events (2024 – 2025)

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- ICG/IOTWMS Working Group (4) Intersessional Meetings (online), July and August 2024
- ICG/IOTWMS Steering Group Intersessional Meeting, August or September 2024 (tbc)
- Workshop on the 2024 Capacity Assessment of Tsunami Preparedness in the Indian Ocean, Bangkok, 4-6 September 2024
- 24<sup>th</sup> Advisory Council Meeting of the ESCAP Multi-Donor Trust Fund for Tsunami, Disaster and Climate Preparedness, Bangkok, ~5 November 2024
- World Tsunami Awareness Day Webinar, ~5 November 2024
- 2<sup>nd</sup> UNESCO-IOC Global Symposium, Banda Aceh, 11-14 November 2024
- 14<sup>th</sup> Session of ICG/IOTWMS, Jakarta, 16-19 November 2024
- 28<sup>th</sup> ICG/IOTWMS Communications Test, 11 December 2024
- 18<sup>th</sup> Meeting of the Working Group on Tsunamis and Other Hazards related to Sea Level Warning and Mitigation Systems (TOWS-WG) and its Task Teams, Paris, February 2025
- 29<sup>th</sup> ICG/IOTWMS Communications Test, 11 June 2025
- 33<sup>rd</sup> Session of the IOC Assembly, Paris, June 2025

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