

# TOWS-WG and Task Teams

**Dr Srinivasa Kumar Tummala**  
**Chair, TOWS-WG**

Presented to the ICG/IOTWMS Steering Group Meeting  
INCOIS, Hyderabad, India  
5 – 6 February 2024

## **Annex to Resolution XXIV-14: Terms of Reference**

1. The TOWS-WG will:

(a) Advise on co-ordinated development and implementation activities on warning and mitigation systems for tsunamis and other hazards related to sea level of common priority to all ICG/TWSs, with special emphasis on:

(i) harmonization and standardization of relevant observation, data management and communication, forecast and warning practices

(ii) development of synergies in capacity-building and outreach activities

(iii) reinforcement of intergovernmental, international and national capabilities on hazard knowledge, vulnerability, and impact assessment

(iv) effective coordination with all related subsidiary bodies, experts groups and partner organizations with relevant mandates.

(b) Report to the IOC Executive Council and Assembly on these common activities and propose new actions, as required.

(c) Advise the IOC Executive Council and Assembly regarding:

(i) instructions to the relevant subsidiary bodies responsible for coordinating the implementation of TOWS-WG actions

(ii) any liaison or consultation required with relevant international and intergovernmental stakeholders in implementing TOWS-WG actions not under the unique mandate of IOC.

2. The TOWS-WG shall review and provide guidance on establishing the framework mechanism for a comprehensive, sustained and integrated end-to-end global system covering tsunami and other hazards related to sea level, exploiting existing IOC mechanisms, capacities and capabilities, and facilitating priority projects and programmes, in alignment with the IOC Strategic Plan and IOC Executive Council decisions and in coordination with relevant stakeholders.

The membership of the TOWS-WG will be constituted by:

- a) The Chairpersons of the four ICG-TWSs, and GOOS, JCB, IODE
- b) Three Members of the IOC Executive Council, nominated by the Chairperson, taking into account geographical distribution – (TNCs of Chile, USA)
- c) High-level representatives invited from the key TOWS-WG stakeholders in disaster risk reduction outside IOC (CTBTO, FDSN/GSN, GEBCO, IHO, IMO, UNDRR, WMO)
- d) Appointed members of the Executive Council may be re-appointed for a second two-year term.

The TOWS-WG shall be chaired by one of the Vice-Chairpersons of IOC and co-chaired by one of the Chairpersons of an IOC Subsidiary Body, on the recommendation of the Chairperson of the Commission after consultations with the IOC Officers


The TOWS-WG shall meet once a year, prior to the IOC Executive Council or the Assembly. The IOC Executive Secretary shall provide the secretariat for the TOWS-WG.

# TASK TEAM ON TSUNAMI WATCH OPERATIONS

2024-2025



**Mr Yuichi Nishimae**  
Chair



**Ms Elizabeth Vanacor**  
ICG/CARIBE EWS



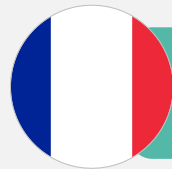
**Mr Charles McCreery**  
ICG/CARIBE EWS



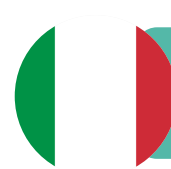
**Ms Noura Alkaabi**  
ICG/IOTWMS



**Mr Karyono**  
ICG/IOTWMS



**Ms Helene Hebert**  
ICG/NEAMTWS



**Mr Alessio Piatanesi**  
ICG/NEAMTWS



**Mr Yuichi Nishimae**  
ICG/PTWS



**Mr Dakui Wang**  
ICG/PTWS

IOC/TOWS-WG-X/3, Annex II (Appendix 1): Terms of Reference of the Inter-ICG Task Team on Tsunami Watch Operations

- Provide a mechanism to the ICGs for coordination of tsunami watch operations among the Tsunami Warning Systems;
- Maintain an inventory of current and proposed products and their dissemination methods;
- Recommend and promote harmonized terminology;
- Maintain an inventory of areas of responsibilities, geographical coverage, system architectures, and other relevant characteristics;
- Recommend operational standards, procedures and guidelines for regional and national providers of tsunami forecast information;
- Share and harmonise methods of detection and characterization, forecasting techniques and dissemination to enhance the accuracy and effectiveness of tsunami forecast information for users;
- Monitor status of the regional provision of tsunami forecast information; Report to TOWS-WG.

## Intergovernmental Coordination Groups (ICGs) representatives

The representatives to the Inter-ICG Task Team on Tsunami Watch Operations shall be nominated by their respective ICG Chairpersons. The membership shall consist of two representatives from each ICG and include representatives from the regional providers of tsunami threat information. The IOC Chair will appoint the Chair of the Task Team.

# TASK TEAM ON DISASTER MANAGEMENT & PREPAREDNESS

2024-2025

## Intergovernmental Coordination Groups (ICGs) representatives

**Harkunti Pertiwi Rahayu**  
Chair

## Tsunami Information Center (TICs) representatives

IOC/TOWS-WG-VI/3, Annex II: Terms of Reference of the Inter-ICG Task Team on Disaster Management and Preparedness

Facilitate in collaboration with organization such as UNISDR, the exchange of experiences and information on preparedness actions, education/awareness raising campaigns and other matters related to disaster management and preparedness;

Promote preparedness in coastal communities through education and awareness products and campaigns;

Facilitate SOP training across ICGs to strengthen emergency response capabilities of Member States and their Disaster Management Offices;

Promote preparedness programs and assessment tools that have been successful in one regional Tsunami Warning and Mitigation System in the others as appropriate;

Facilitate the coordination of the TICs of the ICGs;

Report to the TOWS-WG



**Ms Silvia Chacon**

ICG/CARIBE EWS



**Ms Harkunti Pertiwi Rahayu**

ICG/IOTWMS



**Mr Ignacio Aguirre**

ICG/NEAMTWS



**Ms Ashleigh Fromont**

ICG/PTWS



**Ms Alison Brome**

Caribbean Tsunami Information center



**Mr Ardito M. Kodijat**

Indian Ocean Tsunami Information center



**Mr Marino Champalakis**

ICG/NEAMTWS



**Ms Laura Kong**

International Tsunami Information Center

The representatives to the Inter-ICG Task Team on Disaster Management and Preparedness shall be nominated by their respective ICG Chairpersons. The membership shall consist of two representatives from each ICG, one of which should represent the ICG's Tsunami Information Center. The IOC Chair will appoint the Chair of the Task Team.

# Decisions at the 32<sup>nd</sup> IOC Assembly related to the TOWS-WG XVI

## IOC Decision A-32/3.4.1 - Warning and Mitigation Systems for Ocean Hazards

6

Restricted distribution



unesco

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
(of UNESCO)

Thirty-second Session of the Assembly  
UNESCO, Paris, 21–30 June 2023

### ADOPTED DECISIONS & RESOLUTIONS

[https://www.iode.org/index.php?option=com\\_oe&task=viewEventRecord&eventID=3694](https://www.iode.org/index.php?option=com_oe&task=viewEventRecord&eventID=3694)

IOC/A-32/Decisions  
Paris, 30 June 2023  
Original: English

### III. Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG)

**Decides** that warning systems for tsunamis generated by volcanoes should be considered and coordinated as part of the UNESCO/IOC Global tsunami and other Ocean-related Hazards Warning and Mitigation System (GOHWMS), and also when possible be part of a MHEWS;

**Acknowledges** the WMO request to the WMO-IOC Joint Collaborative Board to review tsunami issues as they relate to meteotsunamis, to clarify the roles and responsibilities for the WMO and UNESCO-IOC, and to determine how best to strengthen collaboration in support of Member States;

**Welcomes** the organisation of a Global Scientific Symposium and establishment of an Organizing Committee composed of two Co-chairs nominated by the TT-TWO and TT-DMP, the Chair of the ODTP Scientific Committee, a representative from the Indonesian Agency for Meteorology, Climatology and Geophysics (BMKG), a representative of the IUGG-Joint Tsunami Commission, and a representative of each of the Tsunami Information Centres to be hosted by the Government of Indonesia in December 2024 as part of the plans by the ICG/IOTWMS to commemorate the 20th Anniversary of the Indian Ocean Tsunami of 2004;

**Decides** to endorse the 10-Year Research, Development and Implementation Plan of the Ocean Decade Tsunami Programme as presented in document IOC/A-32/3.4.1.2.Doc(1);

**Instructs** the regional Intergovernmental Coordination Groups (ICGs) to:

- (i) encourage sea level data is sampled at one second intervals and with the highest available accuracy and transmitted in real-time as a matter of priority, given the critical need to resolve and understand the near-field threat to high at-risk communities where a tsunami generated by non-subduction earthquake sources as well as non-seismic sources (e.g. generated by volcanoes) may arrive in minutes;
- (ii) encourage sea-level network operators to undertake regular and routine calibration of their sea-level monitoring instrumentation, following recommendations of IOC Manuals & Guides 3 and 14 (Volumes I–V);
- (iii) routinely monitor the status of seismic and sea level related observing networks to identify and better help rectify gaps in coverage and free and open data exchange;
- (iv) Consider and implement the recommendations of the Ad Hoc Team on Tsunamis Generated by Volcanoes with respect to the hazard assessment, monitoring and warning requirements, including costs of deploying and maintaining such systems. Where identified tsunamis generated by volcanoes may impact multiple Member States, TSPs for the relevant ocean basin tsunami warning and mitigation systems

should consider if they need to be involved in monitoring and provision of threat advice;

- (v) 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;
- (vi) add the task to the Terms of Reference of the ICGs and TICs to facilitate the implementation and functioning of the UNESCO/IOC Tsunami Ready Recognition Programme;
- (vii) add the role of ICGs as regional Steering Committees for the ODTP in their Terms of Reference;
- (viii) undertake sub-regional exercises as part of WAVE Exercises as an efficient way to further engage Member States on exercises as appropriate;
- (ix) follow the initiative of ICG/PTWS to enable sub-regional live information sharing during tsunami events to inform neighbouring country decision-making;
- (x) investigate mechanisms for recognition of standards mechanisms similar to UNESCO/IOC Tsunami Ready Recognition Programme already in place in some countries and inform the TOWS-WG TT-DMP;
- (xi) Caribbean Tsunami Information Center (CTIC) to share UNESCO/IOC Tsunami Ready survey questionnaire and feedback forms on implementation process to receive information from the UNESCO/IOC Tsunami Ready communities;
- (xii) encourage the standard text in the UNESCO/IOC Tsunami Ready signage for vertical evacuation, such as "Go to the designated building for vertical evacuation";
- (xiii) properly inform the public on the validity of the recognition, as indicated on the UNESCO/IOC Tsunami Ready signage and certificate under the UNESCO/IOC Tsunami Ready logo;
- (xiv) ITIC to pilot the draft PTWS National Tsunami Warning Centre (NTWC) Competency Framework (2019) for endorsement by ICG/PTWS with the goal to develop a global framework for all ICGs to use;

Encourage Member States to provide voluntary financial contributions to the IOC special account and in-kind contributions to support the Ocean Decade Tsunami Programme and UNESCO/IOC Tsunami Ready Recognition Programme;

Requests the IOC Secretariat:

- (i) provide a timelier update of the UNESCO/IOC Tsunami Ready database;
- (ii) explore how to develop an automated application system for UNESCO/IOC Tsunami Ready application and renewal;
- (iii) enhance the renewal process of UNESCO/IOC Tsunami Ready and learning about the renewal experience in the United States TsunamiReady® program;

IOC/A-32/Decisions  
page 9

- (iv) facilitate the finalization of the OTGA basic tsunami training materials as soon as possible to support the UNESCO/IOC Tsunami Ready Recognition Programme;
- (v) develop a paper on the tsunami threat on coasts along the Southern Atlantic Ocean to assist concerned Member States of IOC on the decision to be part of the global Tsunami Warning and Mitigation System;
- (vi) help inform Member States widely on the potential tsunami hazard from volcanoes by distributing the Tsunamis Generated by Volcanoes Report, including the List of Tsunamigenic Volcanoes, to:
  - Volcano Observatories;
  - UNESCO/IOC Member States.

Extends the tenure of the Working Group on Tsunamis and Other Hazards related to Sea-Level Warning and Mitigation Systems and its Task Teams on: (i) Disaster Management & Preparedness (TTDMP), and (ii) Tsunami Watch Operations (TTTWO), with terms of reference as given in IOC Resolution XXIV-14 [for TOWS-WG], report IOC/TOWS-WG-VI/3, Annex II [for TTDMP] and report IOC/TOWS-WG-X/3, Annex II (Appendix 1) [for TTTWO].

Notes that the regular budget for these activities will be identified as part of the overall Resolution on Governance, Programming and Budgeting matters of the Commission.

# Plans for the TOWS-WG XVII

The screenshot shows a web browser window with the URL [oceanexpert.org/event/4016#overview](https://oceanexpert.org/event/4016#overview). The page header includes the OceanExpert logo and navigation links for Event Calendar, Documents, Institutes, Groups, Search, Register, and Login. The main content area is titled "Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems XVII Meeting" and includes a summary, location information (Sendai, Japan), and a list of organizers and staff. The summary text states that the group was established through Resolution XXIV-14 in 2007 and is tasked with advising the IOC Governing Bodies on coordinated development and implementation activities of warning and mitigation systems for tsunamis and other hazards related to sea level of common priority to all Intergovernmental Coordination Groups of Regional Tsunami Warning and Mitigation Systems. It also mentions a decision by the IOC Assembly in June 2023 reaffirming the need for continued inter-ICG coordination through TOWS and the extended tenure of its two inter-ICG Task Teams on: Disaster Management and Preparedness (DMP), and Tsunami Watch Operations (TWO). The page also features three summary boxes: "28 Participants, 5 Provisional", "View detailed participants list / View a printable participants list", and "Agenda Documents: 2, Background Documents: 2".

**Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems XVII Meeting**  
TOWS-WG XVII  
Meeting  
22 - 23 February 2024

**Location**  
Sendai,  
Japan

**Organizer & Staff**  
Organizer  
Mr Bernardo ALIAGA ROSSEL  
Mr. Rick BAILEY  
Mr. Denis CHANG SENG  
Mr Angelos HAIDAR  
Dr. Erick MAS  
Mr Öcal NECMIOGLU  
Dr. Srinivasa Kumar TUMMALA

**Summary**  
Through Resolution XXIV-14, the IOC Assembly at its 24th session (2007) decided on the establishment of a Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG). The group is tasked primarily to advise the IOC Governing Bodies on coordinated development and implementation activities of warning and mitigation systems for tsunamis and other hazards related to sea level of common priority to all Intergovernmental Coordination Groups of Regional Tsunami Warning and Mitigation Systems.

By its Decision [IOC A-32/3.4.1](#) on Warning and Mitigation Systems for Ocean Hazards, the IOC Assembly in June 2023 reaffirmed the need for continued inter-ICG coordination through TOWS and the extended tenure of its two inter-ICG Task Teams on:

- Disaster Management and Preparedness (DMP), and
- Tsunami Watch Operations (TWO).

28 Participants  
5 Provisional  
More...

View detailed participants list  
View a printable participants list  
More...

Agenda Documents: 2  
Background Documents: 2  
More...

Group(s): CTIC, IOC, ITIC, Tsunami.  
Label(s): Tsunami official meeting  
Created at 16:22 on 15 Nov 2023 by Angelos Haidar  
Last Updated at 12:34 on 05 Feb 2024 by Bernardo Aliaga Rossel

<https://oceanexpert.org/event/4016#overview>