

ICG/PTWS Steering Committee  
6<sup>th</sup>– 9<sup>th</sup> March, 2023



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# Chairperson's Report on the IOC EC 55<sup>th</sup> Session and TOWS-WG 16<sup>th</sup> session

NISHIMAE Yuji  
Chair, ICG/PTWS



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# Report on the IOC EC 55<sup>th</sup> Session

# Overview of the IOC EC 55<sup>th</sup> session



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- Period: 14<sup>th</sup> to 17<sup>th</sup> June, 2022
- Agenda Item 3.5: Warning and Mitigation Systems for Ocean Hazard (15<sup>th</sup> June, 2022)
- Participants from ICGs
  - Chair of ICG/IOTWMS: Prof. Dwikonita Karnawati
  - Chair of ICGNEAMTWS: Prof. Maria Ana Baptista
  - Chair of ICG/PTWS: Mr. Nishimae Yuji
- TOWS-WG
  - Chair: Dr. Alexander Frolov
- IOC 32<sup>nd</sup> Assembly:
  - 20 to 30 June, 2023





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# Warning and Mitigation Systems for Ocean Hazard (1)

## ➤ ICG/IOTWMS (Chair: Prof. Dwikorita Kamawati)

- The intersessional session (online) was held 23–24 November 2021. 19 member states participated. The XIII session will be held in Bali, Indonesia, in late 2022 (actually, the XIII session was held hybrid on 28 Nov. – 1 Dec in Bali).
- Completion of the first phase of Australia-supported Project for XXX
- Implementation of capacity development training and awareness-raising activities for member states around the Indian Ocean

## ➤ ICG/NEAMTWS (Chair: Prof. Maria Ana Baptista)

- The online meeting was held in November 2021 and a new project on strengthening resilience to tsunamis and coastal hazards in Europe was approved, with the aim of improving understanding, communication, and monitoring capacity for tsunamis and other coastal hazards.
- A goal of the tsunami ready recognition program in the next two years are certified 10 communities in Mediterranean countries at least.



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# Warning and Mitigation Systems for Ocean Hazard (2)

## ➤ ICG/PTWS (Chair: NISHIMAE Yuji)

- The XXIX session was held online in December 2021.
- The Plan of the PacWave 22.
  - > Live communication test on 13 Oct. The PacWave22 was conducted from Sep. to Nov.
- The southernmost Atlantic Ocean, including the South Sandwich Islands, should be included in its ESZ in order to routinely provide tsunami information.
  - > Argentina disagreed.
- Ad hoc team under the WG2 was established in order to consider against a future event of the HTHH, Tonga. The team had been making efforts for the PTWC interim products and the user's guide in cooperation with the PTWC.
  - > The user's guide was published in September 2022.

## ➤ TOWS-WG (Chair: Dr. Alexander Frolov)

- In the tsunami early warning service, global tsunami warning systems have been established and many manuals have been published in cooperation with various partners.
- Tsunamis are predicted based on seismic data but there are new issues concerning non-seismic tsunamis. The system was examined by the HTHH tsunami in Jan 2022 and this event revealed challenges against non-seismic tsunamis.
- The Tsunami Warning Centers of Tonga and neighboring countries could use this system to issue tsunami warning against the HTHH event and this system played an extremely important role.
- The tsunami generated by the earthquake near the South Sandwich Islands impacted the South Atlantic Ocean, and that it may be important to involve the South Atlantic Ocean region in the tsunami early warning system.
- It is essential for the Tsunami Ready program to appropriately reflect the tsunami warning system.

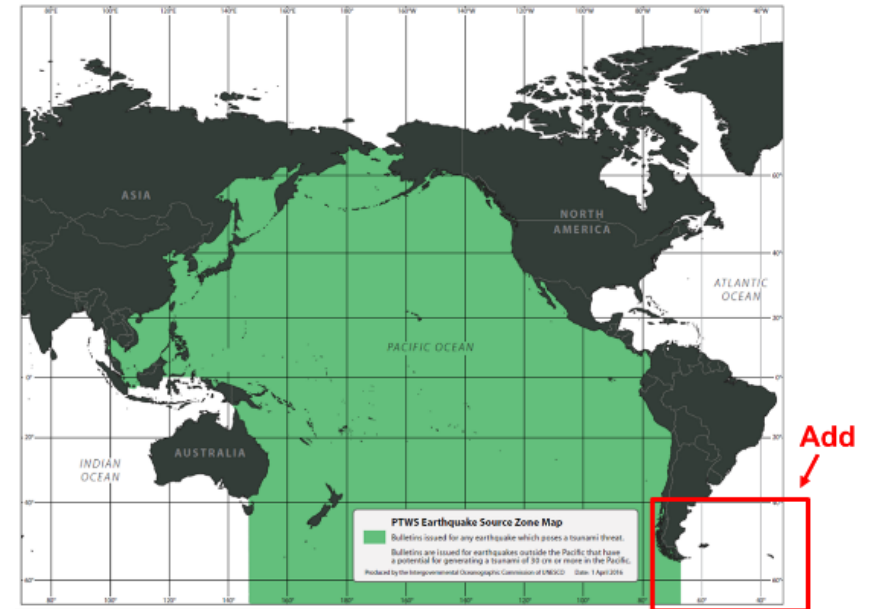
# Expansion of the ICG/PTWS Earthquake Source Zone

## Decision in the ICG/PTWS 29<sup>th</sup> session

In the PTWS XXIX session, PTWS decided that the PTWS Earthquake Source Zone be expanded to include the southernmost Atlantic seismic region to routinely provide Member States of the PTWS with information about the frequent large earthquakes from this region and any subsequent tsunami threat.

## Comment from Argentina

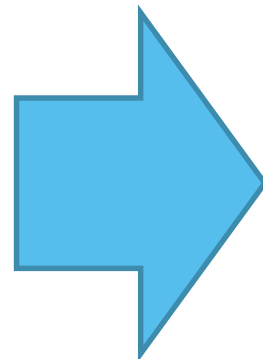
- The working document (ICG/PTWS-XXIX/3) for the EC, which corresponds to the report of the ICG/PTWS XXIX session, was posted to the EC web site on 12th June. Argentina has not been given sufficient time for assessment of the document.
- There are no detailed information about the expansion of the ESZ. The specific region of to be expanded is not also presented. Argentina cannot deeply analyzed the PTWS proposal.



## Decision quoted from IOC/EC-55/3.5.1.

### Draft Decision on the ICG/PTWS

- Notes the establishment of a Task Team of the Tsunami Service Providers (TSPs) under ICG/PTWS Working Group 2 and a Task Team on UN Ocean Decade with particular reference to the Ocean Decade Tsunami programme;
- Congratulates the ICG/PTWS for the finalization and publication of the Pacific Tsunami Warning and Mitigation System (PTWS) Strategy 2022–2030;
- Further notes the start of the Central America Tsunami Advisory Centre (CATAC)'s full functionality as interim service for PTWS as of 17 January 2022;
- Welcomes the decision to organize and conduct a tenth Exercise Pacific Wave in 2022 (PacWave 22) in the months of September through November 2022 to support International Disaster Risk Reduction Day (13 October) and World Tsunami Awareness Day (5 November), as a series of regional exercises organized through the PTWS regional working groups;
- Further welcomes the hosting of a scientific meeting of experts on the New Hebrides Trench and a scientific meeting of experts to discuss tsunami sources, hazard and risk associated with the Chile-Perú subduction zone;
- Recommends that Member States make data from their GNSS networks publicly available in real-time, and that all stations within 200 km of the coast are included since such inland stations also provide valuable constraints on tsunami excitation;
- Endorses that the PTWS Earthquake Source Zone be expanded to include the southernmost Atlantic seismic region to routinely provide Member States of the PTWS with information about the frequent large earthquakes from this region and any subsequent tsunami threat.



### Adopted Decision on the ICG/PTWS

- Notes the establishment of a Task Team of the Tsunami Service Providers (TSPs) under ICG/PTWS Working Group 2 and a Task Team on UN Ocean Decade with particular reference to the Ocean Decade Tsunami programme;
- Congratulates the ICG/PTWS for the finalization and publication of the Pacific Tsunami Warning and Mitigation System (PTWS) Strategy 2022–2030;
- Further notes the start of the Central America Tsunami Advisory Centre (CATAC)'s full functionality as interim service for PTWS as of 17 January 2022;
- Welcomes the decision to organize and conduct a tenth Exercise Pacific Wave in 2022 (PacWave 22) in the months of September through November 2022 to support International Disaster Risk Reduction Day (13 October) and World Tsunami Awareness Day (5 November), as a series of regional exercises organized through the PTWS regional working groups;
- Further welcomes the hosting of a scientific meeting of experts on the New Hebrides Trench and a scientific meeting of experts to discuss tsunami sources, hazard and risk associated with the Chile-Perú subduction zone;
- Recommends that Member States make data from their GNSS networks publicly available in real-time, and that all stations within 200 km of the coast are included since such inland stations also provide valuable constraints on tsunami excitation;

Deleted in the  
draft decision



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Report on  
the TOWS-WG 16<sup>th</sup> session



# Overview of the TOWS-WG 16<sup>th</sup> session and Task Team Meeting

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- Task Team Meetings on Disaster Management Preparedness and Tsunami Watch Operations: 27<sup>th</sup> to 28<sup>th</sup> February, 2023
- TOWS-WG 16<sup>th</sup> session: 2nd to 3rd March, 2023

# Report from Ad Hoc Team Tsunami Generated by Volcanoes



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## Members of Ad Hoc Team

- François Schindelé (Chair), France, international expert on seismology and tsunami warning systems
- Laura Kong, USA, Director International Tsunami Information Center (ITIC)
- Emily Lane, New-Zealand, physicists, modelling of tsunami
- Raphaël Paris, France, volcanologist, expert on volcanic tsunamis
- Maurizio Rippepe, Italy, geophysicist responsible of the tsunami warning at the Stromboli
- Vasily Titov, USA, physicist, modelling of tsunamis

## Outline of the Report

- ✓ Questionnaire survey to volcano observatories around the world to gather examples and knowledge from around the world. 25 volcano observatories from 15 countries have responded.
- ✓ Volcanic phenomena that generate tsunamis, numerical models of volcanic tsunamis, disaster assessment of volcanic tsunamis, and examples of volcanic tsunami warning systems (Stromboli and Krakatau) were summarized in the report.
- ✓ According to the questionnaire survey, The current practice is to detect and then warn.
- ✓ There are two triggers for tsunami: VAAC notice of activity and wave detection.
- ✓ Most volcano observatories do not have sea level stations. Since most volcanic observatories do not have 24x7 operations, they cannot be tsunami warning centers.p

# Report from Ad Hoc Team Meteo-tsunamis



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## Members of Ad Hoc Team

Mike Angove (Chair)

Alexander Rabinovich

Ivica Vilibic

Jadranka Sepic

Emile Okal

Sebastian Monserrat

Vasily Titov

Mohammad Heidarzadeh

Chari Pattiaratchi

- ✓ Meteotsunamis form when a transitory weather disturbance moves over a body of water at roughly the depth-dependent tsunami phase velocity.
- ✓ This can create ocean resonance and a tsunami wave that becomes disconnected from the source disturbance and propagates according to the shallow water wave equations and Green's Law.
- ✓ Responsibility for issuing public alerts related to meteotsunami currently is typically addressed by national or regional Met services offices, but usually in the context of storm surge or anomalous coastal flooding events.

# UN Ocean Decade Tsunami Program

## Ten Year Research, Development and Implementation Plan

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- The IOC Ocean Decade Tsunami Programme (ODTP) was established in 2021 and registered as UN Decade Action 31 – "The Ocean Tsunami Programme".
- The Scientific Committee for the ODTP was formed in early 2022 to develop a draft 10-Year Research, Development and Implementation Plan for the ODTP (ODTP R&D).
- The first draft ODTP R&D Plan was circulated for comments in December 2022.
- The second draft was submitted to the TOWS-WG for discussion in February 2023.

**The Group recommended** the IOC Assembly at its 32<sup>nd</sup> Session in 2023 **to endorse** the 10-Year Research, Development and Implementation Plan of the Ocean Decade Tsunami Programme with the proposed modifications, including those proposed by the inter ICG Task Teams;



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# Tsunami Glossary Update

- **The Tsunami Glossary update was postponed to 2023.**
- **Update**
  - ✓ Global, Regional, deadly tsunami maps and tables
  - ✓ Meteotsunami (revised, plus add image)
  - ✓ Tsunami Generation Theory (simpler)
  - ✓ Tsunami Numerical Modeling (simpler)
  - ✓ Minor word edits (not changing meaning)
- **New**
  - ✓ Lamb Wave
  - ✓ Tsunami Ready Recognition Programme
  - ✓ Volcanic Tsunamis

# Tsunami Symposium

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- Sep 2023: IUGG JTC -PTWS Tsunami Symposium
  - ✓ ICG/PTWS-XXX, Tonga
  
- Dec 2024: IUGG JTC - IOC 2<sup>nd</sup> International Tsunami Symposium
  - ✓ To commemorate the 20<sup>th</sup> Anniversary of the Indian Ocean Tsunami of 2004.



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Thank you very much for  
your kind attention.