

ICG/PTWS Working Group 3 on Disaster Risk Management and Preparedness

Report to the ICG/PTWS-XXIX December 2021

Working Group on Disaster Risk Management and Preparedness

The Terms of Reference of **Working Group 3 *Disaster Risk Management and Preparedness*** is as follows:

1. Facilitate in collaboration with TOWS Task Team on Disaster Management and Preparedness and organizations such as UNISDR, the exchange of experiences and information on risk reduction and preparedness actions, and matters related to disaster management;
2. Promote preparedness in coastal communities through education and awareness products and campaigns;
3. Facilitate SOP training across regions to strengthen emergency response capabilities of Member States and their Disaster Management Offices;
4. Facilitate the piloting of IOC-UNESCO Tsunami Ready, and report results from pilots to the ICG/PTWS and the TOWS-WG
5. Develop and promote best practice preparedness material, programs and assessment tools;
6. Promote tsunami risk reduction theory and practice;
7. Support the ITIC of the ICG.

ACTIVITIES

- 1 **Facilitate in collaboration with TOWS Task Team on Disaster Management and Preparedness (TTDMP) and organizations such as UNDRR, the exchange of experiences and information on risk reduction and preparedness actions, and matters related to disaster management**

TOWS TTDMP

The Working Group continued to play an active role in the TOWS TTDMP. It provided the chair of the Task Team, and the Director of ITIC brought an on-going prominent contribution.

Planning for the UN Ocean Decade

The Working Group contributed to a submission made under the TOWS-WG banner to the UN Decade of Ocean Sciences for Sustainable Development on minimizing uncertainty in global tsunami forecasts, warnings, and emergency response.

In June 2021 the Thirty-first Session of the IOC Assembly, approved the establishment of the Ocean Decade Tsunami Programme, a Scientific Committee to prepare the Draft 10-Year Research, Development and Implementation Plan and Tsunami Ready Coalition in support of the Programme. The Ocean Decade Tsunami Programme will support the Safe Ocean Outcome of the UN Decade of Ocean Science for Sustainable Development which was launched on January 1, 2021 and will run through 2030. The establishment of a dedicated Ocean Decade Tsunami Programme represents a once-in-a-generation opportunity to address and fill critical gaps in global tsunami detection, measurement, forecasting, and preparedness.

The Working Group will be represented in the Scientific Committee.

The Programme includes a focus area that aims to have 100% of communities at risk of tsunami prepared for and resilient to tsunamis by 2030 through the implementation of the UNESCO/IOC Tsunami Ready Programme and other initiatives.

Supporting other bodies

The Chair of the Working Group participated in the WMO RAV Ocean Side Event, presenting on synergies between the IOC Tsunami Ready Programme and the WMO Weather Ready Nations Programme.

The Director of ITIC continued to participate in the IUGG Joint Tsunami Commission (JTC). She chairs the JTC Working Group on Science-based Tsunami Warning which will contribute to the UN Decade Tsunami Programme 10-Year Research, Development and Implementation Plan. She is also a member of the WG on Tsunami Terminology which contributes to the Tsunami Glossary updates.

2. Promoting preparedness in coastal communities through education and awareness products and campaigns

World Tsunami Awareness Day

The theme for 2020 (5 November) was Target (E) of the Sendai Framework: *Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020*. Working Group 3 supported two Regional Pacific Seminars and a number of 2-minute videos on Tsunami Ready; these can be found at:

http://itic.iocunesco.org/index.php?option=com_content&view=article&id=2125&Itemid=3112

In 2021, the United Nations Office for Disaster Risk Reduction (UNDRR) positioned the day as an opportunity to advocate for reducing tsunami risk globally in the context of the "Safe Ocean" outcome of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030) and Target F of the Sendai Framework: *The*

promotion of International Cooperation to Developing Countries. The UNDRR produced a number of short videos highlighting Tsunami Ready and Tsunami Risk Mitigation in the Pacific. The videos included interviews with the ITIC Director.

Exercises – PacWave20 & 2022

The PTWS designed and carried out a ninth Exercise Pacific Wave in the months of September through to November 2020 to support International Disaster Risk Reduction Day (13 October) and World Tsunami Awareness Day (5 November).

The exercise was originally planned with the following objectives:

- a) Test communications from the PTWS Tsunami Service Providers to Tsunami Warning Focal Points and National Tsunami Warning Centres of Member States.
- b) Test national communication and cooperation, and readiness within the country.
- c) Test regional communication and cooperation between Member States.
- d) Support the development of tsunami procedures and products by the Central America Tsunami Advisory Center (CATAC).

At its June 2020 meeting, the PTWS Steering Committee recognized the potential difficulties to conduct the exercise as originally planned in the light of the current Covid-19 pandemic. Only **objectives a) and d)** were retained for PacWave20. Several countries organized at their discretion additional PacWave20 activities in line with the four original objectives, namely emergency response and/or evacuation exercises.

The PTWS Task Team on PacWave20 will report on the outcomes. The Task Team will also propose Terms of Reference for PacWave22.

Awareness Products

The ITIC continued to update its global and regional awareness products, and to create new ones, many in collaboration with the WDS / NOAA NCEI. They can be viewed and downloaded from http://itic.ioc-unesco.org/index.php?option=com_content&view=category&layout=blog&id=1075&Itemid=1075

Updates to 2021 were done for the Global Tsunami Sources, Significant Earthquakes, and Volcanic Eruptions, and Tsunami Icosohedrons. Regional updates and new posters done for the Caribbean, Central America and Mexico, Papua New Guinea and Solomons, New Hebrides, and Hawaii. Printed copies are available on request to all Member States.

Thirteen tsunami Event Summary videos, using photos from past International Tsunami Survey Teams, are available online (1998 Sissano and 2002 Wewak, Papua New Guinea; 1999 Izmit, Turkey; 2004 Indonesia; 2007 Solomon Islands; 2009 by country (American Samoa, Samoa, Tonga); 2010 Chile; 2011 Japan; 1946-

2011 tsunamis affecting Hawaii by island (Kauai, Oahu, Maui, Big Island)).

[http://itic.ioc-](http://itic.ioc-unesco.org/index.php?option=com_content&view=article&id=2061&Itemid=2905)

[unesco.org/index.php?option=com_content&view=article&id=2061&Itemid=2905](http://itic.ioc-unesco.org/index.php?option=com_content&view=article&id=2061&Itemid=2905)

3. Facilitate SOP training across regions to strengthen emergency response capabilities of Member States and their Disaster Management Offices

Training

The COVID-19 restrictions had an obvious impact on training. Prior to the start of the pandemic, ITIC conducted the following trainings in 2019 and 2020, and had requests for 2020 and 2021:

2019

- Caribbean Regional SOP Training Workshop 22-26 July 2019 Barbados
- ITP-Papua New Guinea: Tsunami Early Warning Systems and the PTWC Enhanced Products 5-9 August 2019
- PTWS ITP-Hawaii: Tsunami Early Warning Systems and the PTWC Enhanced Products, Tsunami Evacuation Planning and Tsunami Ready Programme 3-13 September 2019
- TEMPP 1, Pacific Island Countries: Inundation Modelling and Mapping 30 Sept - 4 Oct 2019 Fiji
- PTWS ITP-Tonga: Tsunami Warning Center Operations Oct-Nov 2019 (2 weeks)
- ITP-Colombia: Tsunami Early Warning Systems and the PTWC Enhanced Products Oct-Nov 2019
- South China Sea Workshop on Tsunami Observing Systems (PTWC trainer) 21-25 Nov 2019

2020

- ITP-Indonesia: SOPs and TWC Operations (USAID USGS) 13-17 Jan 2020

2020-2021 (planned or requested)

- ITP-Hawaii in New Zealand, September 2020
- TEMPP 2/3/4, Pacific Island Countries: Evacuation Maps, Response Plans, Exercises (in collaboration with SPC)
- IOC Brunei Tsunami Preparedness 2020
- PTWS ITP-Fiji: Tsunami Warning Center Operations 2020
- ITP-Vanuatu: Tsunami Warning Center Operations 2020

Currently, the IOC with ITIC are also facilitating national SOP workshops for Fiji, Solomon Islands, Vanuatu, and Samoa.

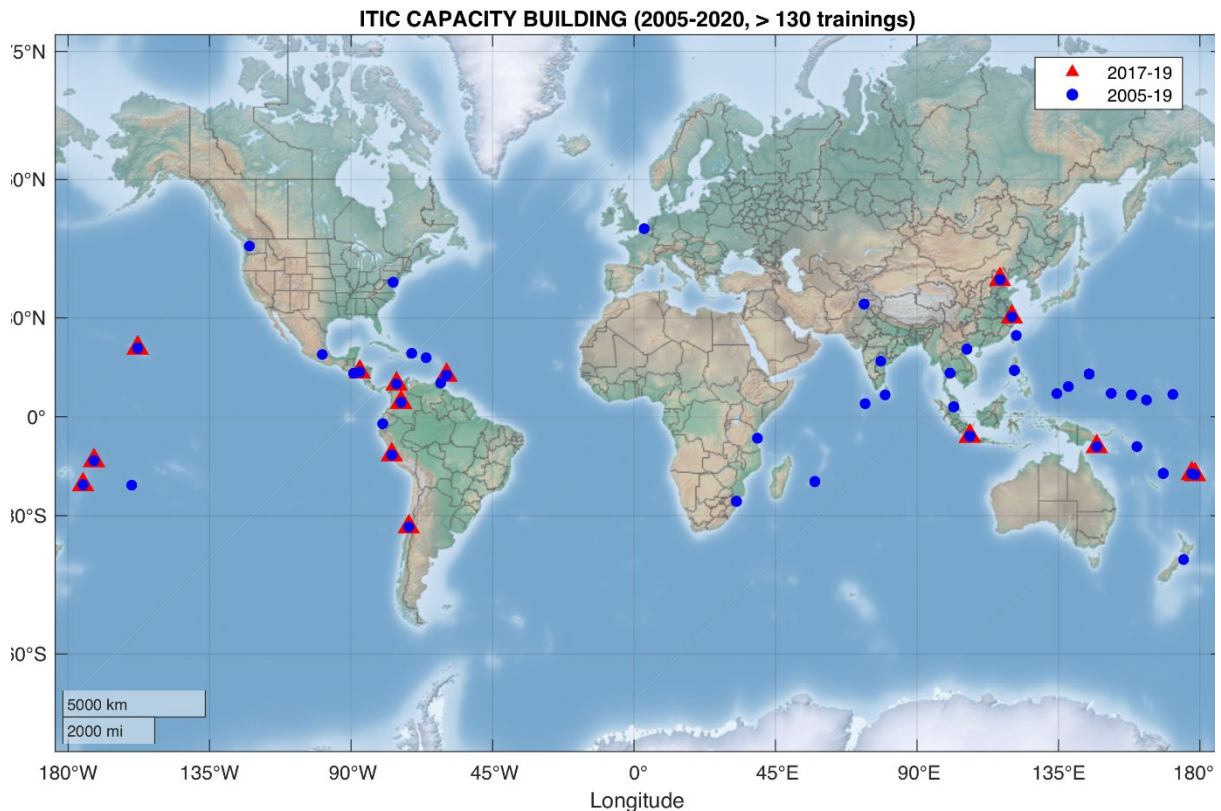
ITIC is also supporting the IOC Ocean Teacher Global Academy (OTGA) as a designated Specialized Training Center for Tsunamis, with regards to training in:

- Tsunami Awareness (2021 Q3)
- Tsunami Early Warning Systems (2021/2022)
- Tsunami TWC and TER SOPs (2022)
- TEMPP (2022/2023)

- NTWC Competencies (2023)

ITIC videos to support trainings are planned on the following topics:

- PTWC Enhanced Products and Staging. (2021 Q3)
- TWC Operations - what happens in a TWC during an event (2022 Q1)
- Tsunami Forecasting. (2022 Q2)
- PacWave video (2-min for Nov)



Evacuation Planning

To support and upscale Tsunami Ready globally, the ITIC and Indonesia BMKG (OTGA Specialized Training Centres) are developing standard training courses that can be delivered online or in hybrid formats. Currently in progress for 2021 are Tsunami Awareness (ITIC) and Tsunami Ready (Indonesia BMKG and IOTIC), and planned for 2022 and 2023 are Tsunami Early Warning Systems, TWC and TER SOPs, and TEMPP (Community Inundation Mapping, Evacuation Mapping, Response Planning, Exercises)

4. Facilitate the piloting of IOC-UNESCO Tsunami Ready, and report results from pilots to the ICG/PTWS and the TOWS-WG

The Working Group continued to participate in the development of the IOC Tsunami Ready Guideline to promote international consistency in the application of Tsunami Ready. The IOC Guideline (MG 74) is currently under preparation for publication.

The 12 'indicators' have now been finalized as follows under three categories:

TSUNAMI READY INDICATORS	
I	ASSESSMENT (ASSESS)
1	ASSESS-1. Tsunami hazard zones are mapped and designated
2	ASSESS-2. The number of people at risk in the tsunami hazard zone is estimated
3	ASSESS-3. Economic, infrastructural, political, and social resources are identified
II	PREPAREDNESS (PREP)
4	PREP-1. Easily understood tsunami evacuation maps are approved.
5	PREP-2. Tsunami information including signage is publicly displayed.
6	PREP-3. Outreach and public awareness and education resources are available and distributed.
7	PREP-4. Outreach or educational activities are held at least 3 times a year.
8	PREP-5: A community tsunami exercise is conducted at least every two years
III	RESPONSE (RESP)
9	RESP-1. A community tsunami emergency response plan is approved.
10	RESP-2. The capacity to manage emergency response operations during a tsunami is in place.
11	RESP-3. Redundant and reliable means to timely receive 24-hour official tsunami alerts are in place.
12	RESP-4. Redundant and reliable means to timely disseminate 24-hour official tsunami alerts to the public are in place.



The Working Group, through the lead of ITIC, continued to facilitate the piloting of Tsunami Ready, and reporting the results from pilots to the ICG/PTWS and the TOWS-WG. ITIC has funding to assist Marshall Islands, Micronesia, and Palau to achieve Tsunami Ready over the next two to three years.

An ambitious target has been set by the IOC under the Ocean Decade Tsunami Programme, namely that 100% communities at risk of tsunami are Tsunami Ready by 2030. This means that the PTWS needs to adopt a similar target over the next ten years. The Working Group will participate in the establishment of an international coalition of stakeholders to help achieve this goal; this will be a topic of our next report.

The global initiative with regards to tsunami Ready and the relevant IOC resolution adopted at the Thirty-first Session of the Assemble in June 2021 will be covered under Agenda Item 4.1

The following is a summary of the current status with regards to Tsunami Ready in the PTWS. 14 communities have completed pilots in 6 countries, and campaigns are underway or planned in 28 additional communities in 10 countries.

Note: Regional Working Groups reported on the impact of COVID-19 in communities on the ability to advance Tsunami Ready programs.

Country	TR Completed	TR Underway / Planned	Interest/ TR Planned Later
Chile		1: Cartagena	
Costa Rica	4: Ostional, 2017; El Coco 2019; Samara, 2021; Tamarindo, 2021	3: Puntarenas, Tirivves, Jaco, Esterillos oeste, Quepos	42 other communities
Ecuador		2: Gad Santa Cruz, Galapagos; Cad San Cristobal, Galapagos	Galapagos Islands
El Salvador	2: La Libertad, Tamanique, 2019		Isla Mendez
Fiji		2: Ono-i-Lau, Yasawa-i-rara	National workshop planned 2022
Guatemala	2: Sipacate, San Jose Port, 2020		
Honduras	3: Cedeno, 2017; Omoa; Tornabe/Tela, 2019		
Nicaragua	2: Corn Islands; Bluefields, 2019 (Caribbean coast)	4: Corinto, Puerto Sandino, Masachapa, San Juan del Sur	Las Salinas Grandes y Poneloy
Panama		1: Puerto Armuelles	
Philippines			Unspecified # piloted
Samoa	1: Savaia Lefaga, 2017		
Solomon Islands		7: Babanga, Tambaka, Goldie, Nusa Simbo, Lengana, Banga, Titiana	
Tonga		2: Tongatapu, Moungaone	
Vanuatu		4: Mele, Pango, Lakatoro, Lenakel	
Vietnam		2: Danang; Quang Nam Provinces	

The ITIC currently hosts the UNESCO IOC Tsunami Ready web site, www.tsunamiready.org. It includes a summary of the guidelines and application process, and information on recognized communities around the world. Through an external contract, the IOC with each ICG Tsunami Information Center, is developing an interactive map that will enable users to mouse-over to obtain metadata on Tsunami Ready communities.

5. Develop and promote best practice preparedness material, programs and assessment tools

Guidelines on tsunami warnings during COVID-19

The world-wide response to COVID-19 required changes in workloads, work venues as well as physical distancing practices worldwide. Working Group 3 recognised this may create ambiguity or confusion with regards to warning services and tsunami response actions, like evacuation. Working Group 3 subsequently developed guidelines for member states on the status of the regional tsunami services during

COVID-19, and best practices for local and national actions during warnings under COVID-19 conditions.

The PTWS guidelines served as a model for other ocean systems, and can be found here: [Tsunami Services and Evacuation/Sheltering Considering Physical Distancing Practices](#)

TsuCAT

TsuCAT (2017, ITIC, NOAA PMEL) is a tool for quick hazard assessment using pre-calculated scenarios for Tsunami Response Planning, and Exercise Development and includes a tool to generate the PTWC message products. The current version, v4.2, was made available in Quarter 3 of 2021; this version will introduce stronger security and will include the Expert Meeting Sources. Planned improvements for 2022 are in support of Tsunami Ready and community tsunami exercise planning and inject development.

Structural Design and Vertical Evacuation Guidance

At the request of the TOWS, the ITIC compiled global best practices in tsunami-resistant building design and vertical evacuation guidance. As of July 2020, the compilation consists of 117 references from 15 countries, with the 79 references from the Pacific

http://itic.ioc-unesco.org/index.php?option=com_content&view=article&id=2070&Itemid=2927

Marine Ports Guidance

At the request of the TOWS, the ITIC compiled global best practices and guidance in marine preparedness in ports and harbours. As of July 2020, the compilation consists of 99 references, with 92 references from the Pacific.

http://itic.ioc-unesco.org/index.php?option=com_content&view=article&id=2071&Itemid=2926

6. Promote tsunami risk reduction theory and practice

Draft PTWS Strategy – 2022-2029

Noting that the current PTWS Medium Term Strategy stands until 2021, in 2019 the ICG/PTWS tasked the Working Group 3 chair with the development of a draft Medium-term Strategy 2022-2029. A draft Strategy was subsequently presented to the Steering Committee in 2020, and following feedback it was re-drafted again by the co-chair of Working Group 1 (Sarah-Jayne McCurrach), supported by the chair of Working Group 3.

The draft Strategy has been developed to set our tsunami resilience aspirations for the Pacific Ocean and its marginal seas, with a clear Goal on how to achieve them. Embedded under this Goal are key objectives that will drive our work programmes,

projects, and the key performance and monitoring framework we use to deliver on this Strategy.

The draft Strategy was presented to the Steering Committee of the ICG/PTWS in September 2021 and subsequently adjusted again. The draft Strategy will be presented to this meeting of ICG/PTWS under Agenda Item 4.4 for adoption.

The draft Strategy is aligned with:

- The United Nations Ocean Decade of Ocean Science for Sustainable Development (2021-2030).
- UNESCO's strategic planning cycle.
- The IOC Strategy.
- The global targets and priorities for action of the Sendai Framework for Disaster Risk Reduction (SFDRR) 2015–2030 – specifically Target G of the SFDRR.
- The PTWS Key Performance Monitoring and Assessment framework – 'Future Goals and Performance Monitoring for Tsunami Risk Reduction, Warning and Mitigation'.

Recommendations:

It is recommended that the ICG/PTWS-XXIX:

- **Notes** the report of Working Group 3 (Disaster Management & Preparedness);
- **Notes** that the Working Group will participate in the establishment of an international coalition of stakeholders to help achieve this goal, and
- **Adopts** and continues to implement the UNESCO-IOC Tsunami Ready Guidelines and Indicators as the international standard for evidence-based community preparedness for tsunamis, and
- **Encourage** Member States to apply the Tsunami Ready Indicators 'test' for communities that are already considered compliant, and report outcomes to Working Group 3, and
- **Mandates** the International Tsunami Information Centre (ITIC) to facilitate implementation and data collation re Tsunami Ready compliance in the PTWS;
- **Considers** the Draft Medium-term Strategy 2022-2029 under Agenda Point 4.4

David Coetzee
Chair, ICG/PTWS Working Group 3