



TOWS WG TT-DMP  
21-22 February 2022  
Virtual

# TRAINING

## ITIC, IOC Ocean Teacher Global Academy

Dr. Laura Kong  
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UNESCO/IOC-NOAA SHOA  
International Tsunami Information Center



# ITIC – update

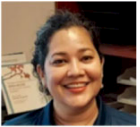


- ❑ **ITIC - established 1965 (IOC-IV.6), USA agreed to host**
- ❑ **Support Member States** (Technical improve TW (timely accurate), Capacity Building, Awareness, Event / Post-Tsunami data coll)



## OFFICE - US NOAA NWS

- ❑ Director – Dr. Laura Kong
- ❑ **Deputy Director, ITIC Caribbean Office - Christa von Hillebrandt-Andrade**  
Support CTIC, CARIBE-EWS (eff Sept 1 2021, former Caribbean Tsunami Warning Prog, est. 2010)
- ❑ **Scientist (Oceanographer) – Carolina Hincapie-Cardenas**
- ❑ Technical Information Specialist - vacant
- ❑ Information Technology Specialist – Tammy Fukuji
- ❑ Admin Support Assistant – Art Sonen
- ❑ Student interns (part, full-time): 1-2 year-round, 2-4 Summer



## ASSOCIATE DIRECTOR – established 1974( IOC/ITSU-IV.1, non-USA)

- ❑ Cdr. Carlos Zuniga (Chile, SHOA Navy), 2013 (Chile since 1998)



# ITIC - IOC TSUNAMI CAPACITY BUILDING (2005-2021, >130 trainings)

## ■ 2019

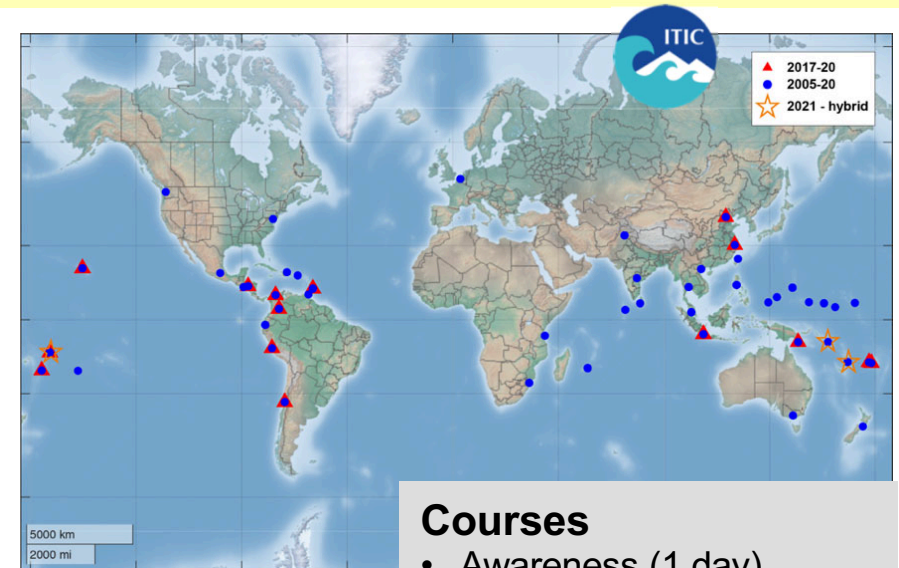
- Caribbean, SOPs
- Colombia, End-to-end, SOPs
- Hawaii (global, 2-week), End-to-end, SOPs
- Papua New Guinea, End-to-end, SOPs
- PICT, TEMP 1 - Inundation Model / Map
- Tonga (2-week), NTWC Competency pilot

## ■ 2020: January, Indonesia, TWC ops

## ■ 2021:

- **IOC Ocean Teacher Global Academy (OTGA)**  
ITIC, Indonesia BMKG Specialized Training Centres
- **Support IOC UN Decade Tsunami Programms**
- **Transition in-person to online/hybrid training**
- **November, Hybrid – live remote, in-person review / discussion**
  - Review and Update of SOPs – training workshop
  - 4 days each: Solomon Islands, Fiji, Vanuatu

## ■ 2022: Sept?, ITP-Hawaii in New Zealand – postponed from 2020



### Courses

- Awareness (1 day)
- TEWS (1 wk)
- TWC & TER SOPs (1wk)
- TEMPP (5 1-wk)





# OCEAN DECADE TSUNAMI PROGRAMME

## A SAFE OCEAN

### THE MAIN SOCIETAL OUTCOME

TO MAKE  
**100%**

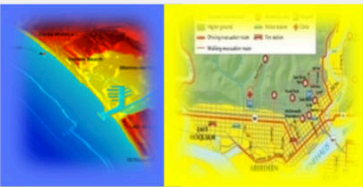
OF COMMUNITIES  
AT RISK OF TSUNAMI PREPARED FOR  
AND RESILIENT TO TSUNAMIS

BY  
**2030**



# UN OCEAN DECADE TSUNAMI PROGRAMME:

## 100% AT-RISK COMMUNITIES TSUNAMI READY



### UNESCO IOC 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 is publicly displayed
6	PREP-2. Outreach and public awareness and education resources are available and distributed
7	PREP-3. Outreach or educational activities are held at least three times a year
8	PREP-4. A community tsunami exercise is conducted at least every two years
III RESPONSE (RESP)	
9	RESP-1. A community tsunami emergency response plan (ERP) 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

- STRATEGY:  
Be Aware, Be Prepared
- FRAMEWORK:
  - Harmonized global guidelines UNESCO IOC Tsunami Ready
  - Performance-based Community Recognition
- ACTION:  
National programs empower Communities
- GLOBAL MEASURE



Standard Guidelines for the Tsunami Ready Recognition Program, UNESCO IOC TS 74, 21 Oct 2021 draft

# ITIC Training – TEMPP

□ **Tsunami Evacuation Maps, Plans, and Procedures (TEMPP) –** IOC MG 82 *Preparing for Community Tsunami Evacuations: from inundation to evacuation maps, response plans and exercises (2020)*

□ Manual (English, Spanish)

□ Supplement 1 (Detail Module Explanations, Guidance) (English)

□ Specialized Documents

[http://itic.ioc-unesco.org/index.php?option=com\\_content&view=category&layout=blog&id=2166&Itemid=2640](http://itic.ioc-unesco.org/index.php?option=com_content&view=category&layout=blog&id=2166&Itemid=2640)



The screenshot shows the ITIC website interface. At the top, there are logos for UNESCO, IOC, IOC Tsunami, NOAA, US Tsunami, and NOAA Tsunami. The main header reads 'International Tsunami Information Center'. Below the header, there is a search bar and a navigation menu. The main content area is titled 'Tsunami Evacuation Maps, Plans and Procedures (TEMPP)'. It includes a 'Home' button, 'General Info' (with links to TEMPP Pilot and TEMPP Trainings), and 'Quick Links'. There are also several icons representing different tsunami-related concepts like 'Tsunami Ready', 'Tsunami Evacuation', and 'Tsunami Response'. At the bottom, there is a banner for 'Preparing for Community Tsunami Evacuations From Inundation to Evacuation Maps, Response Plans, and Exercises ... communities knowing what to do and where to go'.

The diagram shows four modules in a sequence: 1. Tsunami Inundation Mapping, 2. Tsunami Evacuation Mapping, 3. Tsunami Response Planning, and 4. Tsunami Exercising. Below the diagram is a table of specialized documents.

Document Title	Format/Type
IOC Manual and Guides 82: Preparing for Community Tsunami Evacuations: From Inundation to Evacuation Maps, Response Plans, and Exercises (2020)	
English - Guide, Supplement 1 (Supplement to Programme Modules)	PDF (27.7 MB)
Supplement 2 (How to Create Evacuation Maps from Inundation Maps - from ComMIT to QGIS: Manual and Tutorial)	PDF (3.2 MB)
Spanish - Guide only	

Number	Specialized Document Name	Module
1	Using ComMIT (MOST model) for tsunami inundation modelling for evacuation mapping: Summary, Manual, and Appendices (abridged requirements, in Spanish)  ComMIT was used in the TEMPP1 Pilot training course for inundation modelling to support evacuation map-making. <a href="http://iocunesco.org/index.php?option=com_oetask&amp;view=EventRecord&amp;eventID=1705">http://iocunesco.org/index.php?option=com_oetask&amp;view=EventRecord&amp;eventID=1705</a> (Accessed 7 November 2019)	1



# OTGA training to support Tsunami Ready - ITIC

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- Collaborative with IOC Tsunami Unit.
- Coordinate with IOC Tsunami Information Centers (CTIC, IOTIC, NEAMTIC, ITIC), and OTGA STC/RTC Indonesia BMKG for tsunami.
- All courses previously taught in-person, so have course outlines and contents
- Proposed:
  1. **Tsunami Awareness** (4-8 hr content) – introduction available to everyone
  2. **Tsunami Early Warning Systems** (40-80 hrs content) – overview, taught in-person to country government officials / scientists since 1970s
  3. **Tsunami Evacuation Maps, Plans, & Procedures** (200 hrs content) – IOC MG 82 course manual, taught since 2015, training on Tsunami Ready Indicators (Assess, Prepare, Respond)
  4. **Tsunami Warning Center and Emergency Management Response SOPs** (40 hrs content) – IOC MG 76 course manual, taught since 2006, training on operations
  5. **Tsunami Warning Center Competencies** (80 hrs content) – content under development, taught 1 pilot in 2019 in Pacific SIDS

## OTGA work plan (2021-2023): ITIC and Indonesia BMKG, work with other TICs

Course	Length (hrs)	Date	Audience - TWM tsunami warning and mitigation	Language	Comments * Interest by other RTCs to teach
<b>ITIC: Tsunami Awareness</b> - overview covering hazard assessment, warning, preparedness, mitigation, response	4-8 hrs	<b>Q1 2022</b>	All levels, no background necessary.	Eng, Span	Standard content with options for regional customization. (*)
<b>BMKG/IOTIC: Tsunami Ready (IOC MG 74)</b> - Overview of guidelines, process for establishing TR Programmes and recognizing TR communities	4-8 hrs	<b>Q4 2021</b>	Govt and NGOs responsible or interested in preparedness, in TR	Eng, Span	Standard content with options for regional customization.
<b>ITIC: Tsunami Early Warning Systems (TEWS)</b> - components of, requirements for robust, reliable, effective TWS	40 hrs	<b>2022</b>	Agencies responsible for TWM in country	Eng, Span	Standard content with options for regional customization. (*)
<b>TEMPP (Tsunami Evacuation Maps, Plans, and Procedures, IOC MG 82)</b> 1. Identifying Inundation Areas, 2. Developing Evacuation Maps, 3. Developing Response Plans and Standard Operating Procedures, 4. Exercising	4 40-hr module, Tot 160 hrs	<b>2022 - 2023</b>	Scientists, govt, and NGOs involved in preparedness	Eng	(*) Sequential training and product development with outcome community recognize UNESCO IOC Tsunami Ready
<b>ITIC: Tsunami Warning and Emergency Response Standard Operating Procedures (SOPs) (IOC MG 76)</b> - procedures and protocols used successful tsunami warning		<b>2022</b>	Agencies involved in TW and TER	Eng	Standard content. (*)
<b>ITIC: TWC Staff Basic Competencies</b> - Information and skill requirements for TWC staff. Topics: science of earthquakes and tsunamis, analysis methods, tools and techniques for monitoring, assessing tsunami threat, issuing alerts, cancelling tsunami warnings	120 hrs	<b>2023</b>	TWC staff	Eng, Span	Standard content with options for regional customization. (*)
<b>BMKG/IOTIC: Tsunami Hazard and Risk Assessment</b> (IOC MG 49 Japan example, IOC MG 52 Indian Ocean)	40 hrs	<b>2022</b>	Scientists, univ, agency resp for TWM	Eng, Span	Standard content with options for regional customization. (*)



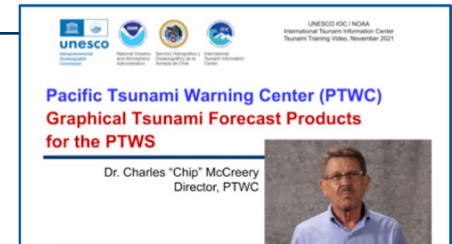
# Training and Informational Videos – 2021-2022



- 1. PTWC Enhanced Products (Pacific, Caribbean) (EN-SP-FR)** 22,15 min each – Oct-Dec 2021

Link: <https://vimeo.com/showcase/8956022>

Password: training (password protect since products not public)



- 2. TWC Operations – What happens at PTWC during an event? (EN)**

45-60 min in 2-3 parts – April 2022

- 3. Tsunami Forecasting (EN)** (request from 4 Mar 2021 debrief)

30 min – July 2022

- 4. Exercise Informational Videos (EN, SP, FR): 3 min each**

- **Get Pacific Tsunami Ready Shout-out (Western, PICT, Eastern) – WTAD 2021**
- **Exercise Pacific Wave – Dec 2021**
- **Exercise Caribbean Wave, Public Service Announcement – Feb 2022**





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# Training during COVID Pandemic

## Issues and Challenges

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# OTGA – Tsunami Awareness

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- ❑ **1<sup>st</sup> effort – taken much longer than anticipated**
- ❑ **Content being finalized, followed by testing**
- ❑ **Live: March 2022**
- ❑ **Issues**
  - **Format for online delivery. Use of Moodle & OTGA platform**
  - **What to convey - how much goes into this course, vs taught later courses (Tsunami Ready, Tsunami Early Warning System, TWC & TER SOPs, TEMPP)**
  - **How to convey – How many words on slides. What to narrate**
  - **What to add for interaction or learning activities**

# Hybrid Training Workshops

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- ❑ **Review and Update of Regional and Local Tsunami SOP (TWC & TER SOPs)**
- ❑ **Solomon Islands, Fiji, Vanuatu**
- ❑ **Modality**
  - In-person (same room, with projector/screen) – country
  - Remote – trainers (Hawaii, New Zealand, Fiji)
  - Microsoft Teams software
- ❑ **Live: Lectures, Q & A (used mic), Facilitated Discussions**
- ❑ **Offline: Group Activities, followed by live report-back**



## Issues and Challenges

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- **Internet bandwidth** – audio, video not always clear or good
- **Meaningful interaction of trainer / participants difficult**
  - Cannot see classroom, or each person in close up
  - Cannot tell if there is understanding, or if lost
  - Do not know who is who in classroom
- **Logistics Issues – can be solved**
  - Only electronic materials, but participants did not have computers, and no print out made for note-taking
  - Time zone differences make it not always convenient
  - Difficult for trainers to participate for entire time (day job conflict)
  - Agenda not on time, making remote lecturing difficult



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# Thank You

# Muchas Gracias

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