unesco
Intergovernmental Oceanographic Commission

# How to Become Tsunami Ready, Tools

## 3.5 TR Available Tools and Support


***Laura Kong***

*International Tsunami Information Centre*

***Ardito M Kodijat***

*formerly, Indian Ocean Tsunami Information Centre UNESCO-IOC*



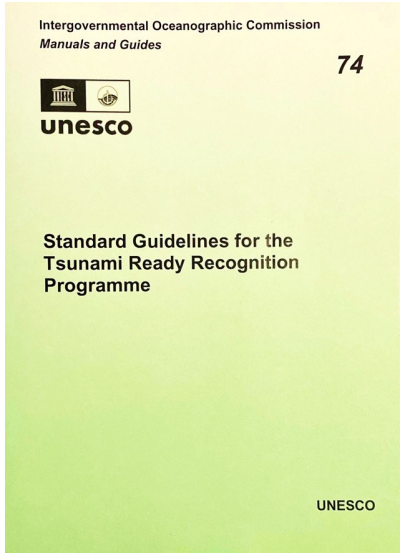
**South China Sea Region Tsunami Ready Related Training Course**

Online 0600-0930 UTC 22-23 December 2025

# 1. Definitions, Manuals and Guides, Templates

## Manual and Guides

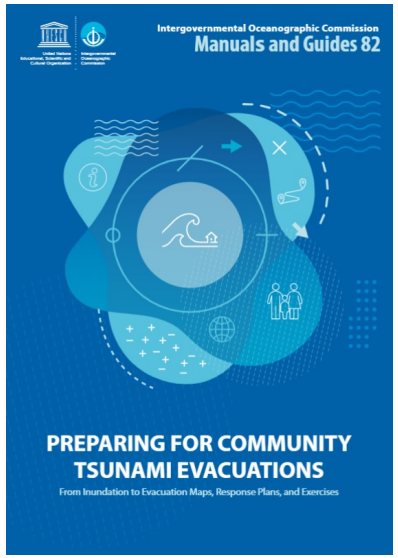
### Manual and Guide No 74




https://oceanexpert.org/downloadFile/50068

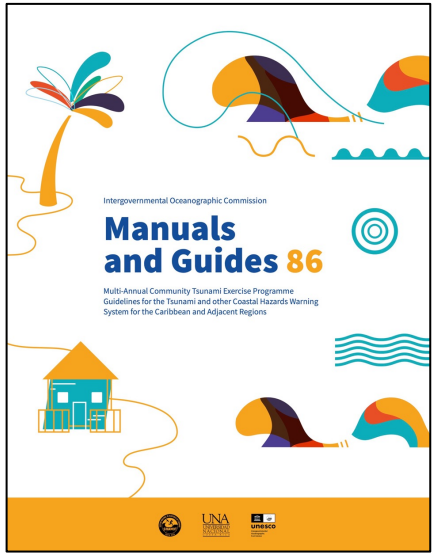
**MG 74 (2022) Revised + Toolkit (2026)**

### Manual and Guide No 82



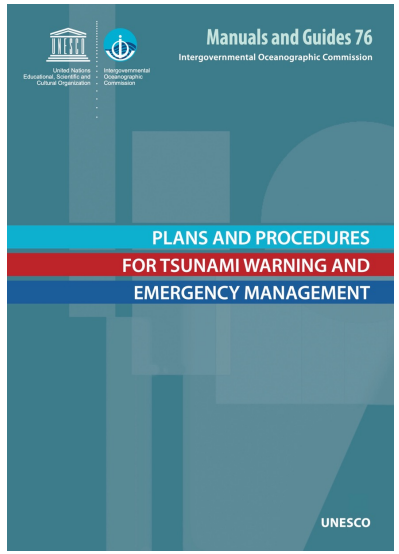

https://unesdoc.unesco.org/ark:/48223/pf0000373019?posInSet=17&queryId=947ca611-1880-4ded-bb5a-4bd61c93c161

### Manual and Guide No 86



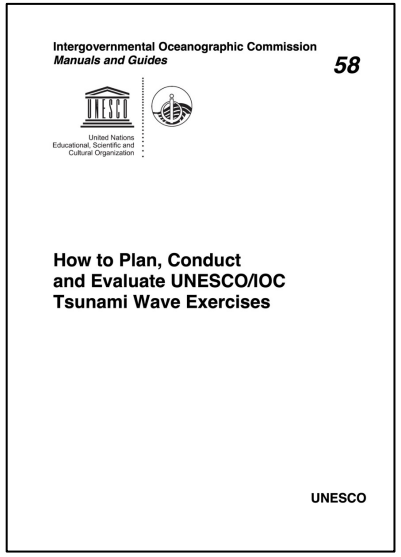

https://unesdoc.unesco.org/ark:/48223/pf0000380540.locale=en

### Manual and Guide No 76




https://unesdoc.unesco.org/ark:/48223/pf0000256552

### Manual and Guide No 58




https://unesdoc.unesco.org/ark:/48223/pf0000218967

# 1. Definitions, Manuals and Guides, Templates

- Tsunami Ready Community Definition
- Tsunami Ready Application Form (updated)
- Submission procedures (Automated tool)
- File naming and file types (file metadata)
- TR Renewal procedures (Use the same form as new application)

# 1. Definitions, Manuals and Guides, Templates

- **Communications sample letters and templates**
  - Letter of Intent, NTRB/RTRB,
  - Application submission,
  - IOC acknowledgement,
  - Recognition and Appreciation Certificate names,
  - Community summary for web page

# 1. Definitions, Manuals and Guides, Templates

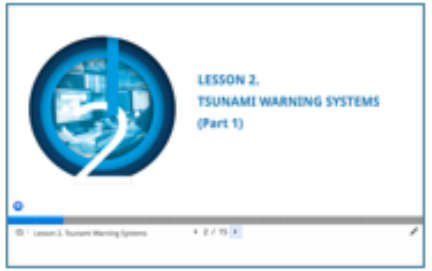
- **Recognition Sign** (Size, Color, Fonts, Placements of Logos, etc.)
- **Recognition and Appreciation Certificates** (All ICGs)
- **Recognition Ceremony – sample Concept Note and Agenda**

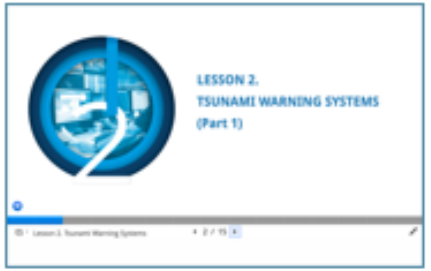
# 2. Trainings – UNESCO-IOC online courses

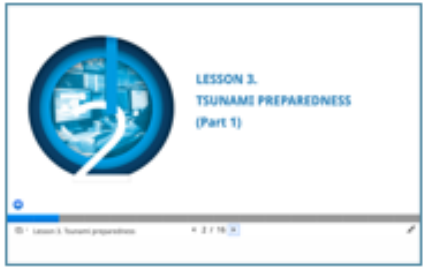
- Self-paced, no instructor – 6 hrs
- UNESCO-IOC Tsunami Awareness certificate required for later UNESCO-IOC courses

**Tsunami Awareness**

Pre-Quiz
Lesson 1: Tsunami Basics (Parts 1 and 2)
Lesson 2: Tsunami Warning Systems (Parts 1 and 2)
Lesson 3: Tsunami Ready Preparedness (Parts 1 and 2)
Post-Test




- 2 parts (18, 23 Slides)
- 2 parts (14, 18 Slides
- 2 parts (15, 23 Slides
- All Lessons have Activities, Knowledge review checks, Narration

# 2. Trainings – UNESCO-IOC online courses

- **Self-paced, no instructor – about 2-3 hrs**

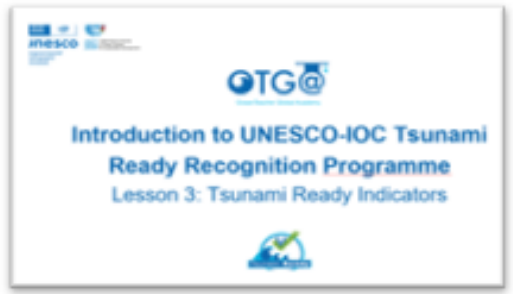
**Course 1**
**Introduction to UNESCO-IOC Tsunami Ready Recognition Programe**

**Lessons 1: Tsunami Ready Background**
**Lessons 2: Tsunami Ready Implementation Process**
**Lessons 3: Tsunami Ready Indicators**

Course 2
Facilitating Tsunami Ready
*planned*

Lessons 1: Approach to Tsunami Ready Community Capacity Building
Lessons 2: Assessment Indicators
Lessons 3: Preparedness Indicators
Lessons 4: Response Indicators

**Course 1**




- **23 Slides**
- **19 Slides**
- **22 Slides**
- **All Lessons have Activities, Knowledge review checks, Narration**

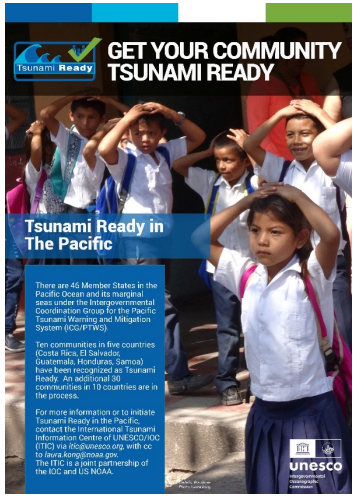
# 2. Trainings – IOTIC Online lectures

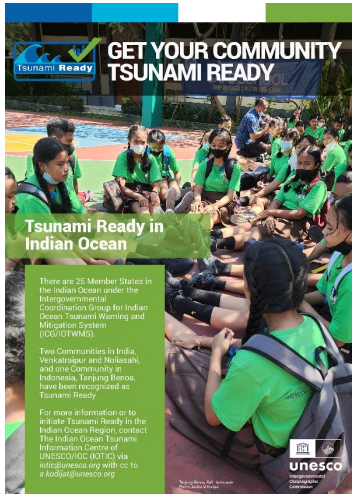
## Tsunami Ready Online Lecture Series Recording

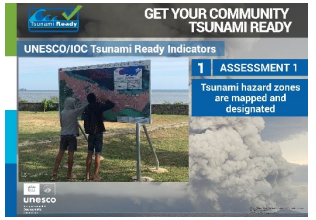
**FB IOTIC : https://www.facebook.com/iotsunami**
**IG IOTIC : https://www.instagram.com/iotsunami/**
**YouTube IOTIC: https://www.youtube.com/user/iotsunami**
**Twitter IOTIC : https://twitter.com/iotsunami**

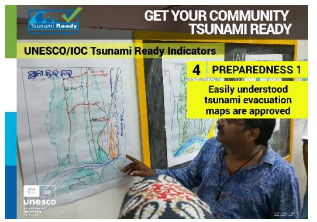
# 3. Awareness and Educational Tools

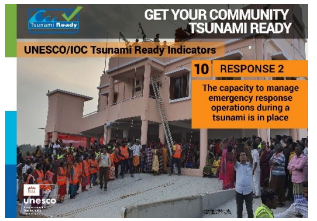
## Tsunami Ready Posters









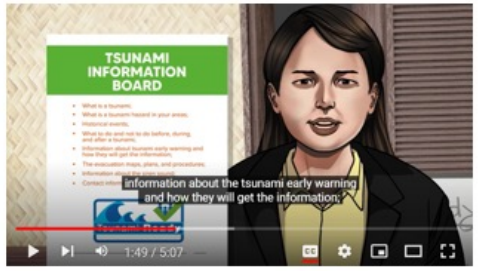


# 3. Awareness and Educational Tools

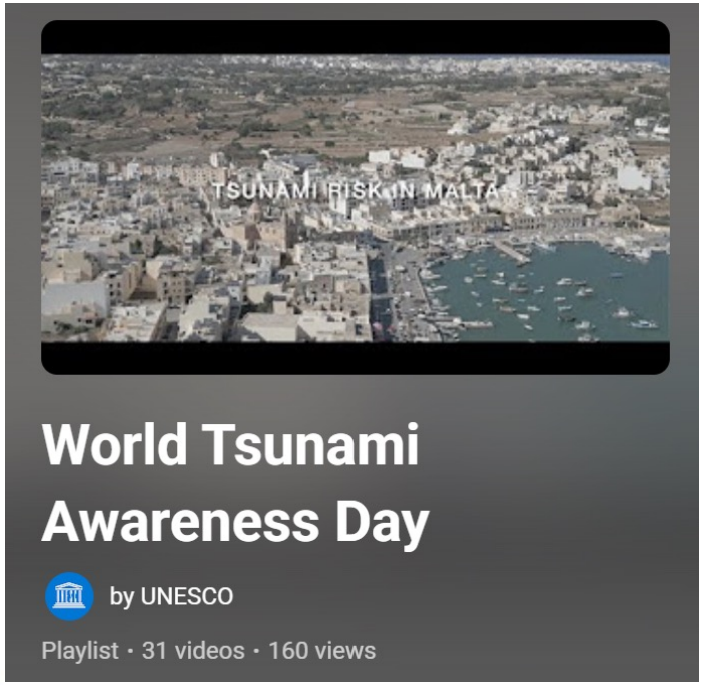
## Tsunami Ready Videos

Story line:

Following the journey of Azam, Azizah, and Adam in building their Village "Nami" to be a Tsunami Ready Community based on UNESCO-IOC Tsunami Ready Indicators



Video 1: Tsunami Ready (an introduction) + 7:10 minutes
Video 2: Tsunami Hazard for Tsunami Ready Community + 8:02 minutes
Video 3: Knowing people at risk of tsunami + 4:48 minutes
Video 4: Resource and capacity for Tsunami Ready Community + 6:57 minutes
Video 5: Public Tsunami Information in Community + 5:32 minutes
Video 6: Tsunami Evacuation Map for the community + 5:15 minutes
Video 7: Public Awareness and Education Resources + 5:07 minutes
Video 8: Outreach Activities in Tsunami Ready Community + 4:39 minutes
Video 9: Community Tsunami Exercise + 6:49 minutes
Video 10: Community Tsunami Emergency Operation Plan + 5:28 minutes
Video 11: Building Capacity in community for Emergency Response + 7:50 minutes
Video 12: Linking the Community to the Tsunami Warning Chain + 4:40 minutes
Video 13: Providing warning to the community + 5:27 minutes
Video 14: Getting Tsunami Ready Recognition + 6:50 minutes




IOTIC YouTube Channel: https://www.youtube.com/channel/UCFSPN4dJXOvFrMIkmlQdumQ
Playlist: https://www.youtube.com/playlist?list=PLDzuUvIHTe3BLFcgDGXOAkwcCdTQ6VngH

# 3. Awareness and Educational Tools

## Boardgames

### Tsunami Ready

To introduce the 12 Tsunami Ready Indicators to the stakeholders

## RUNAMI

- Tsunami Awareness
- Tsunami Preparedness
- Tsunami Evacuation
- Tsunami Drills

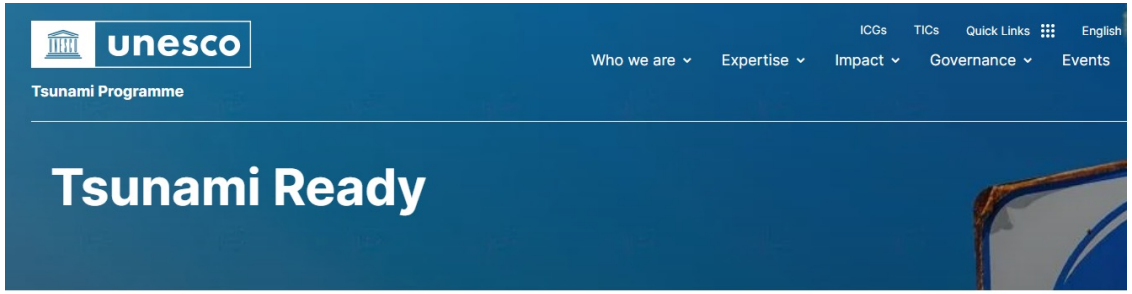
UNITED NATIONS DECADE ON
OCEAN SCIENCE
FOR SUSTAINABLE
DEVELOPMENT
2021-2030

# 4. Assessment Tools

- Capacity Assessment to Implement Tsunami Ready Indicators
- Feedback Survey on the Implementation of the UNESCO-IOCTsunami Ready Recognition Programme in ICG/CARIBE-EWS
- Assessment tools on the impact of Tsunami Ready to UNESCO-IOC Recognized Community in Indian Ocean (piloted in Indonesia)

# 5. Other Resources

UNESCO-IOC Tsunami Ready
https://tsunami.ioc.unesco.org/en/tsunami-ready




## What is Tsunami Ready?

The UNESCO-IOC Tsunami Ready Recognition Programme (TRRP) is an international community-based effort to bolster risk prevention and mitigation across global coastal zones.

It aims to build tsunami resilience through awareness and preparedness strategies that will protect life, livelihoods and property from tsunamis.

It's aimed at:

**Communities at risk**

Millions of coastal communities around the world live in constant danger of being struck by tsunamis.

**Warning and emergency management agencies**

National and local authorities play a key role in helping communities prepare for and react.

**Government authorities**

National and local administrations should include tsunami-risk mitigation in their development programmes and agendas.

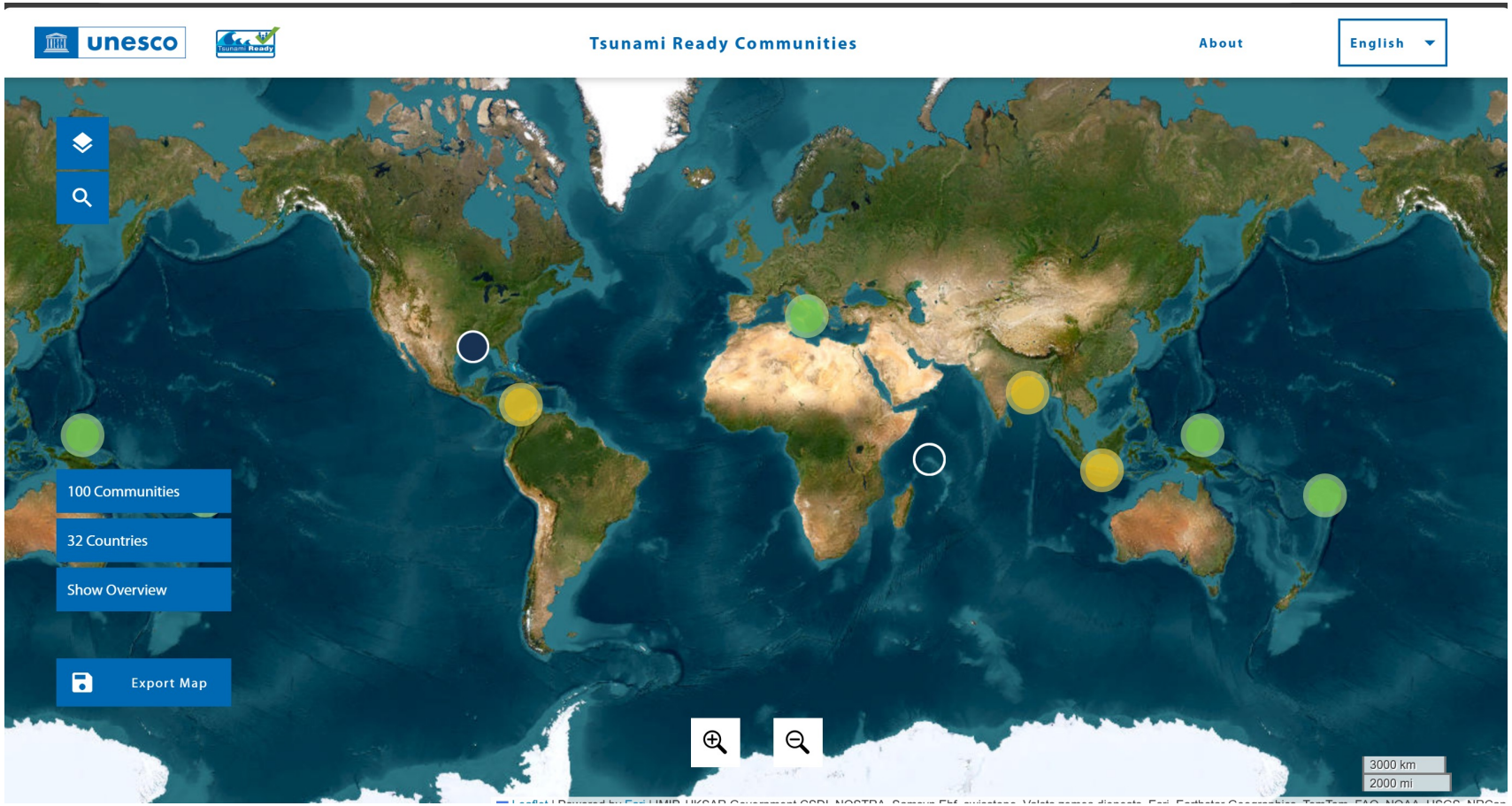
**Community leaders and the public**

Individuals with a strong influence over the general population should help get key messages across.

# 5. Other Resources

Tsunami ready viewer

https://tsunamireadyviewer.ioc-tsunami.org/



# 5. Other Resources

## Tsunami Information Centers

TIC to advocate, facilitate, guide, and support the member states in the Tsunami Ready Implementation through trainings, workshops, or capacity building as needed (regional and/or national).

PTWS - ITIC
USA NOAA – IOC Partnership 1965
Chile SHOA Associate Director 1998

NEAMTWS - NEAMTIC
EC DG ECHO
France, Greece, Italy, Portugal
2011-13

IOTWMS- IOTIC
Indonesia BMKG – IOC Partnership
2012 (formerly JTIC since 2006)

CARIBE-EWS - CARIBETIC
Barbados– IOC Partnership 2015
(approved 2007)

unesco
Intergovernmental
Oceanographic
Commission

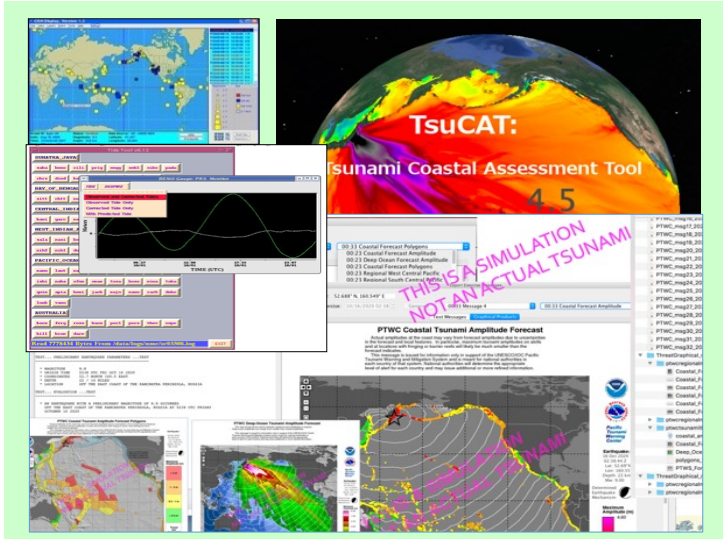
# How to Become Tsunami Ready, Tools

## 3.5 TR Available-Tools-and-Support International Tsunami Information Centre

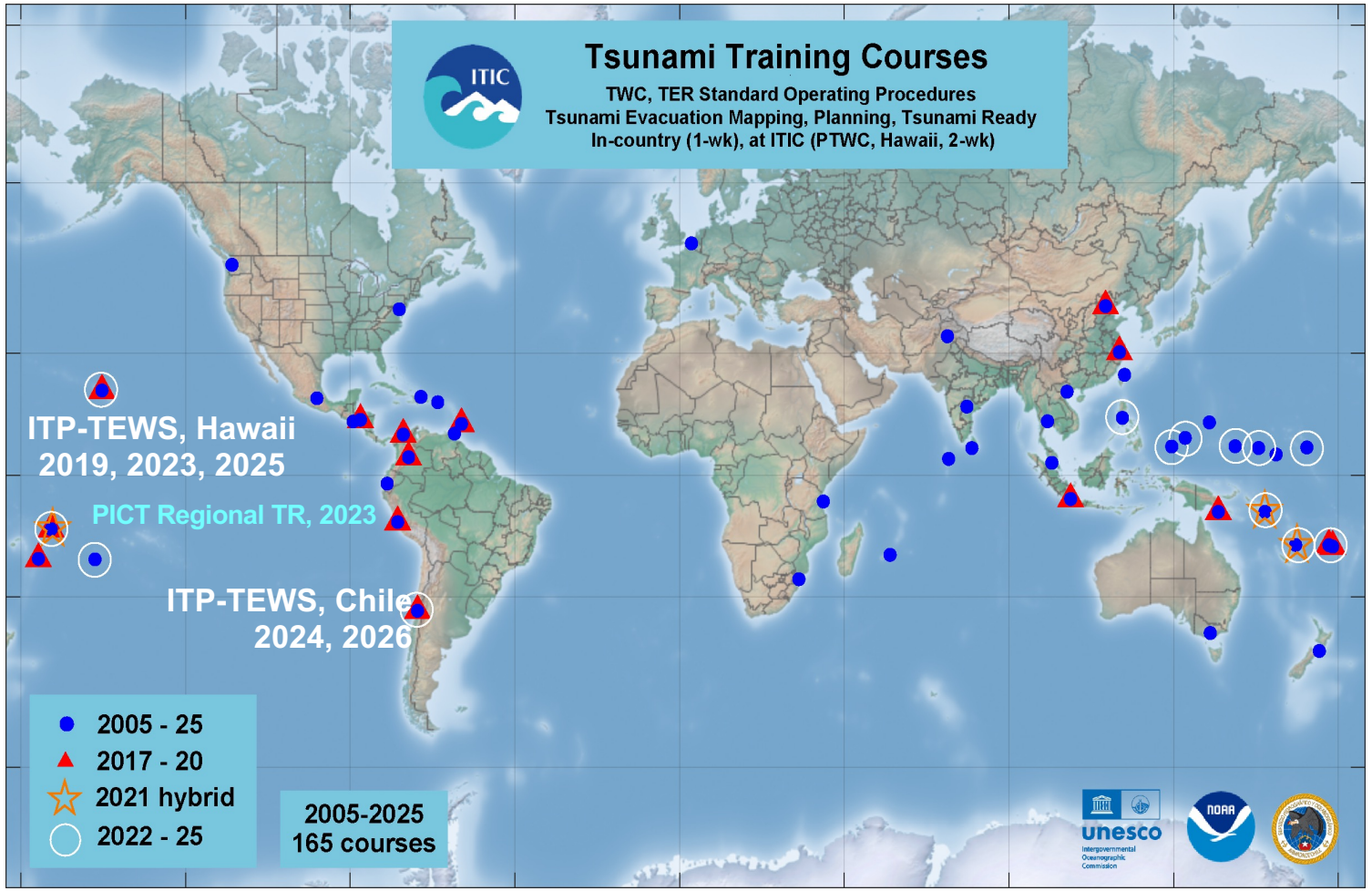
*Dr. Laura Kong*
*International Tsunami Information Centre (ITIC)*
*laura.kong@noaa.gov*

# International Tsunami Information Centre

- Serve as OTGA Specialized Training Center – Tsunamis
- PTWS TIC - est 1965 (IOC-IV.6), hosted by US NOAA
  - Chile SHOA provides Associate Director
  - Co-located with PTWC in Honolulu
  - ITIC Caribbean Office (Puerto Rico) supports CTIC/CARIBE-EWS
- Support Member States: Recommend TW improvements (timely accurate), Capacity Building, Decision support tools, Tsunami Ready, PacWave exercises, Awareness, Event / Post-Tsunami data coll



# ITIC - IOC Tsunami Capacity Building




## Current Focus, 2022+

1. **Tsunami Ready (TR)**
   - ➢ Recognize communities
     - ❖ 2 OTGA: Awareness, TR
2. **Capacity Building - TEWS**
   - ➢ TWC/TER SOPs, TEMPP
     - ❖ 1 OTGA multiple-modules: TWC Staff Competencies

### In Country:

- **Awareness (1 day) <= OTGA**
- Tsunami Early Warning Systems (TEWS) (1 wk)
- Tsunami Warning & Emergency Response Standard Operating Procedures (SOPs), Tsu Decision Support Tools (TWTools) (1 wk)
- Tsunami Evacuation Maps, Plans, Procedures (TEMPP) (5 1-wk)

**At ITIC:** TEWS using Hawaii or Chile as example (ITP-TEWS, 2-wk)

ITP-HAWAII IN CHILE, 2018

PEACE CORPS, SUVA

ITP-FIJI, 2017

ITP-PNG, 2018

ITP-TONGA, 2019

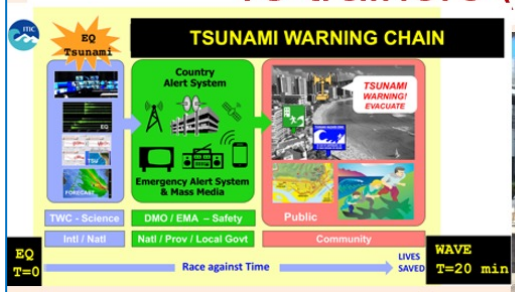
ITP-INDONESIA, 2020

TWC & TWC SOPs, SOLOMONS, 202

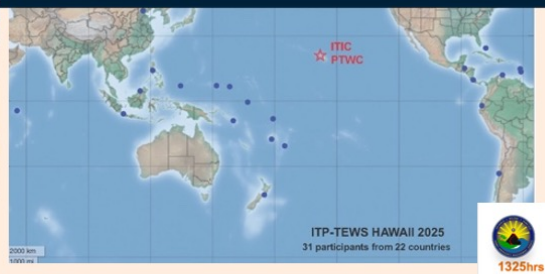
# ITIC Training Programme (ITP-TEWS) – Hawaii 2025

## 31 participants from 22 countries

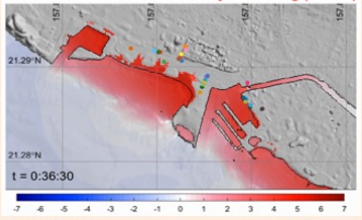
## 18 trainers (ITIC, IOTIC, PTWC, NOAA, Univ Hawaii, Hawaii State and Honolulu County EM)

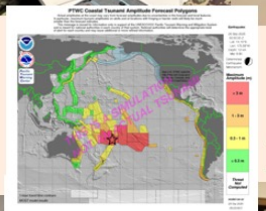


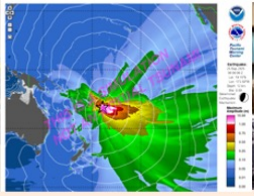
RUNAMI



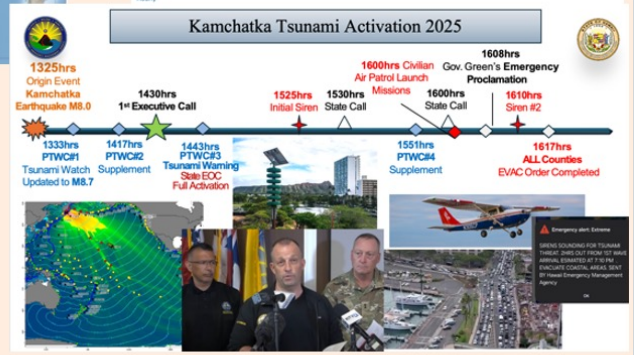
AMWave25 – Evacuation – Delay in Starting (30 min)





Exercise Hawaii Wave 2025



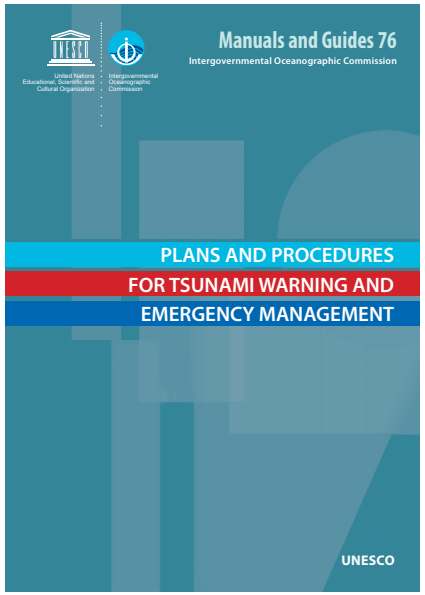

**In 2026, ITP-TEWS will be held in Chile, hosted by SHOA - AUGUST**

# ITIC, IOTIC Training - TWC / TER SOPs

- **Tsunami Warning Center and Tsunami Emergency Response Standard Operating Procedures (TWC TER SOPs)**

IOC MG 76 (English)

*Plans and Procedures for Tsunami Warning and Emergency Management, Guidance for countries in strengthening tsunami warning and emergency response through the development of Plans and Standard Operating Procedures for their warning and emergency management authorities (2017)*

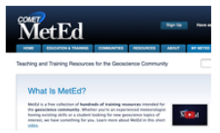


# ITIC Training – TWC SOPs - Competencies

## PTWS NTWC Minimum Staff Competencies Training - Pilot

- **PTWS NTWC Minimum Staff Competencies Training**
  - ITIC to create training, with advanced TWC country partners
  - Funding:  US funding, IOC Ocean Training Interns (2024, Tonga, Indonesia)

- **Series of courses - from self-paced to in-person housed under OTGA**
  - In order to take next Course, must pass previous Course.
    Start with OTGA UNESCO-IOC Tsunami Awareness and Tsunami Ready
  - Modules (individual OTGA courses, or US COMET MetEd courses)
    1. Core Science (multiple Lessons)
    2. Core Operations (multiple Lessons)
    3. Core Agency (multiple Lessons) – National actions



  - Final training will be in-person (3-4 weeks at ITIC/PTWC)
- **Finish Training and pilot in 2026 with 1 small cohort (PIC)**
- **Consult with PTWS WG 2 and PICT WG Task Team on Capacity Development**

# ITIC Training – TWC SOPs - Competencies

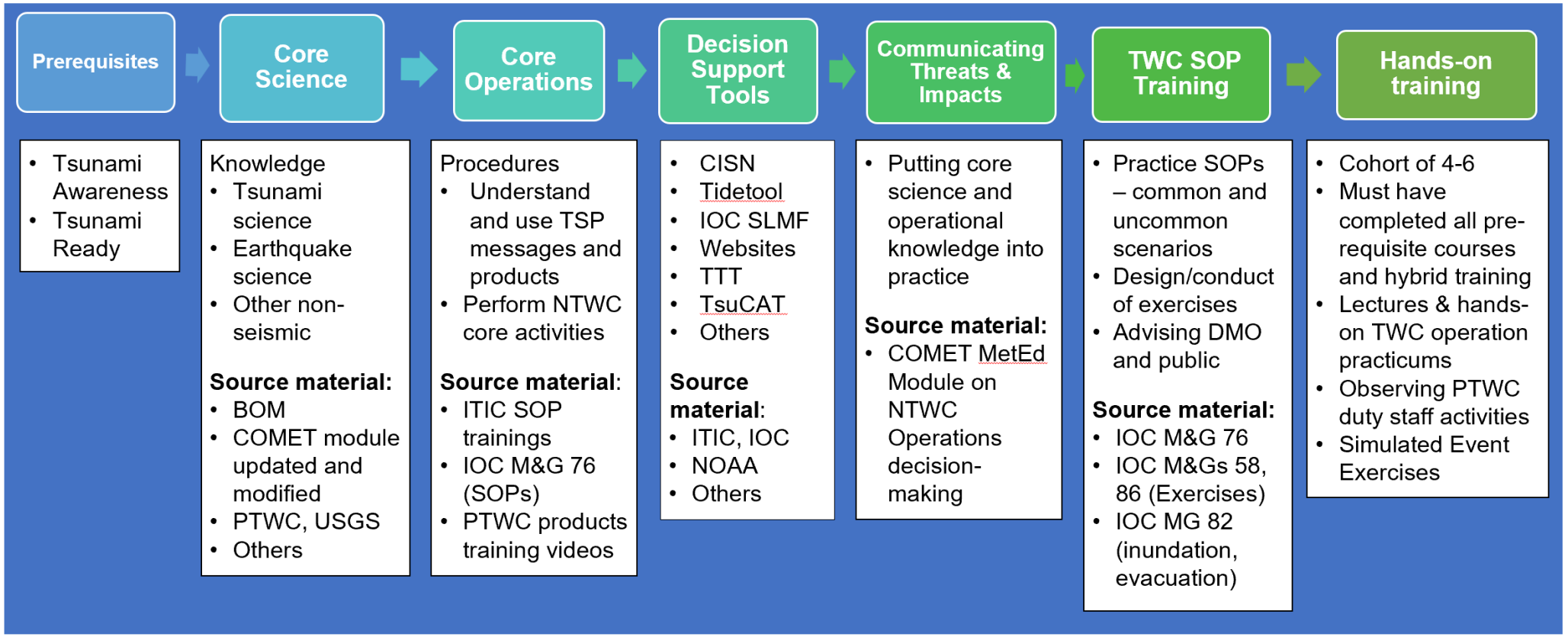
## PTWS NTWC Minimum Staff Competencies Training - Pilot

OceanTeacher Global Academy

unesco Intergovernmental Oceanographic Commission

International Tsunami Information Center

***Self-paced, online*** ..... => ***Hybrid*** ..... => ***In-person***

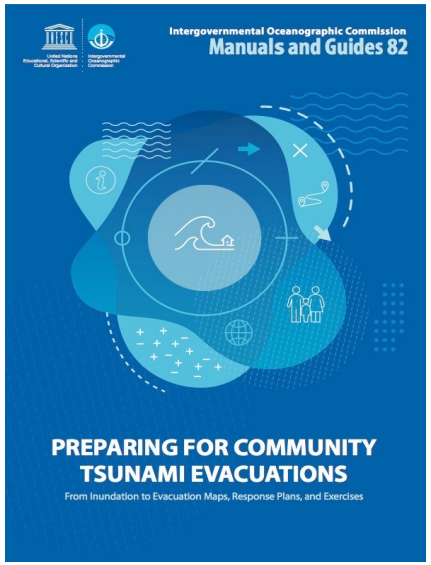


# ITIC, IOTIC Training

- **Training to achieve TR Indicators**
- **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




| 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 |

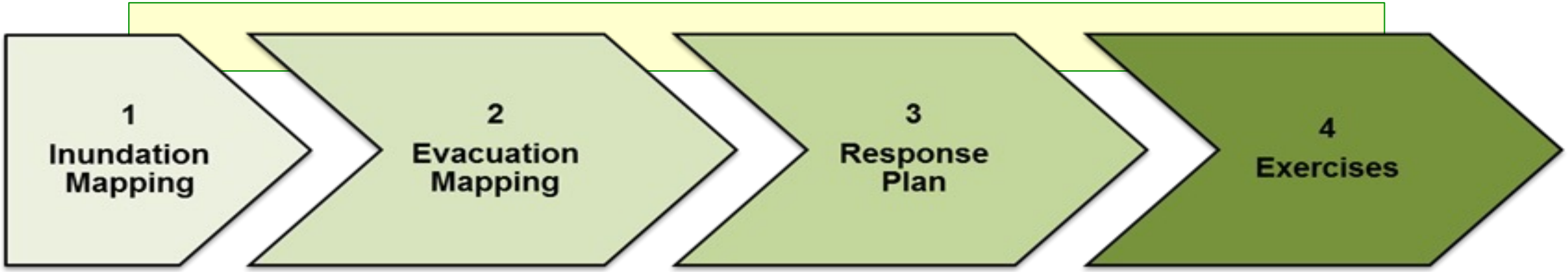
**Preparing for Community Tsunami Evacuations**

**From Inundation to Evacuation Maps, Response Plans, and Exercises** ... communities knowing what to do and where to go

*IOC ITIC Tsunami Evacuation Maps, Plans, and Procedures (TEMPP) Pilot Capacity Building, Honduras and Central America, 2015-17*

# IOC Manual and Guide 82 (2019) - TEMPP

## PREPARING FOR COMMUNITY TSUNAMI EVACUATIONS: FROM INUNDATION TO EVACUATION MAP, RESPONSE PLANS, AND EXERCISES




**4 Foundation Blocks**

- *Key element of tsunami response involves evacuation, including self-evacuation of exposed people & key assets to safer areas*
- *Effective and successful evacuations require proper planning by relevant authorities.*

# Module 1 – Inundation Mapping

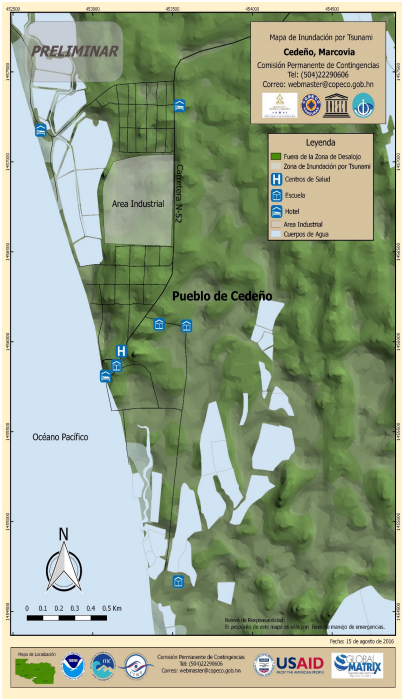
1 Establish the required information

2 Learn the basics of tsunami science and numerical modelling

3 Conduct tsunami modelling or no modelling

4 Create an inundation map

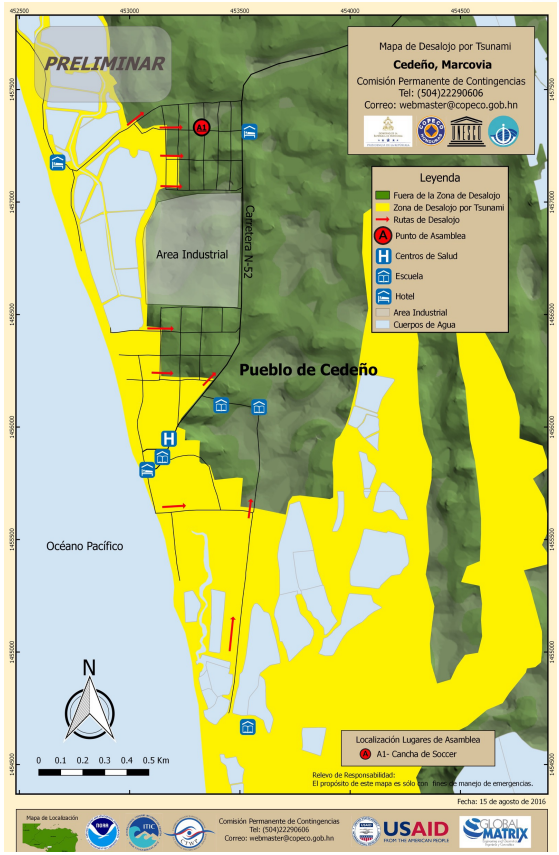
Inundation/flooding map developed for Cedeño, Honduras.



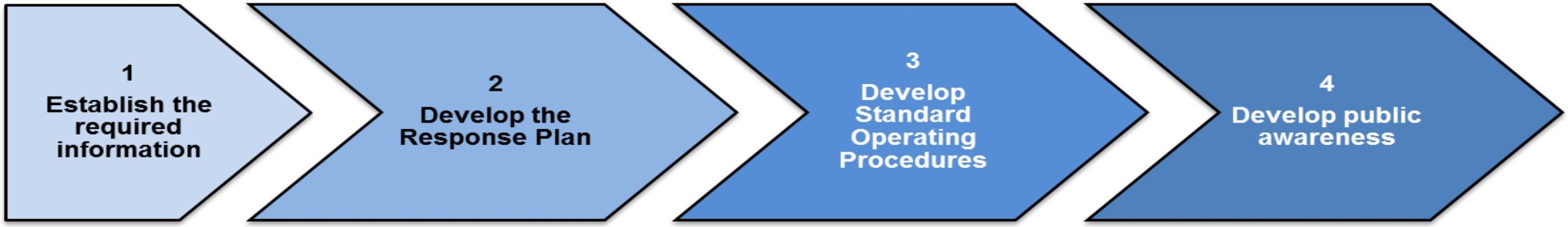
# Module 2 – Evacuation Mapping

1. Acquire required information
2. Identify Evacuation Zone
3. Identify Evacuation Sites, Assembly Areas, and Routes
4. Engage Community
5. Finalise Evacuation Map and Signage
6. Obtain Official Approval

Evacuation map developed for Cedeño, Honduras.



# Module 3 – Tsunami Response Planning




| TSP Notification | Earthquake | Wave forecast | ETA | NTWC Alert Level | Emergency Response Action |
|---|---|---|---|---|---|
| Tsunami Threat Message | **Magnitude:** >7.0 **Depth:** <100km | ≥ 1 m | <3 hrs | WARNING | Evacuate xxx zones |
| | | | 3 - 6 hrs | WATCH | Prepare to evacuate |
| | | | >6 hrs | INFORMATION | Monitor for subsequent forecasts |
| | | 0.3 to 1 m | <3 hrs | ADVISORY | Evacuate beaches and harbours |
| | | | 3 - 6 hrs | WATCH | Prepare to evacuate |
| | | | >6 hrs | INFORMATION | Monitor for subsequent forecasts |
| | | < 0.3 m | - | INFORMATION | Monitor for subsequent forecasts |

# Module 4 – Evacuation Exercising

1. Establish the required information
2. Plan the exercise
3. Conduct the exercise
4. Evaluate the exercise
5. Implement recommen-dations

# Thank you

***Dr. Laura Kong***
***International Tsunami Information Centre (ITIC)***
*laura.kong@noaa.gov*