



unesco

# ICG NEAMTWS Tsunami Ready Implementation in NEAM region

Ignacio Aguirre Ayerbe      *ICG/NEAMTWS TOWS WG TT- DMP*  
*Vice-Chair ICG/NEAMTWS*

*Elena Daskalaki and Mariana Baptista – Co-chairs TT-TR*  
*Denis Chang Seng – Tech Sec. IGC-NEAMTWS*

*UNESCO IOC / TOWS WG XVIII Meeting*  
*Task Team on Disaster Management and Preparedness (TT-DMP)*  
*21– 22 February 2025. Paris, France*





## INDEX

- 1 Brief background and summary of the TRRP process in NEAM region
- 2 Progress in the Implementation of Tsunami Ready in the NEAM Region
- 3 Reflections on challenges met during TRRP implementation in NEAM region and beyond





## TSUNAMI READY RECOGNITION PROGRAMME IN THE NEAM REGION



### Brief background and summary of the process

- NEAM region **heterogeneity**: (40 Member States *Feb. 2025*).
  - Different levels of complexity in governance, institutional and legal frameworks in terms of risk management, but generally strong development, which is both an advantage and can be an obstacle in integrating the TRRP within the governance established framework.
  - North-South differences in the region.
- **Sound scientific approach**, in general, in the implementation of the program. Many scientific members in the ICG (mostly related to hazard modelling and assessment, but also evacuation planning, DRM, etc.).
- Stakeholder engagement and involvement have been successfully tested through a **science-based** and **participatory decision-making approach**.



## TSUNAMI READY RECOGNITION PROGRAMME IN THE NEAM REGION

### Brief background and summary of the process **STRENGTHENING TRRP IN THE NEAM REGION**



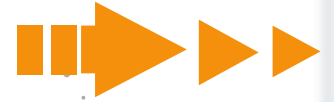
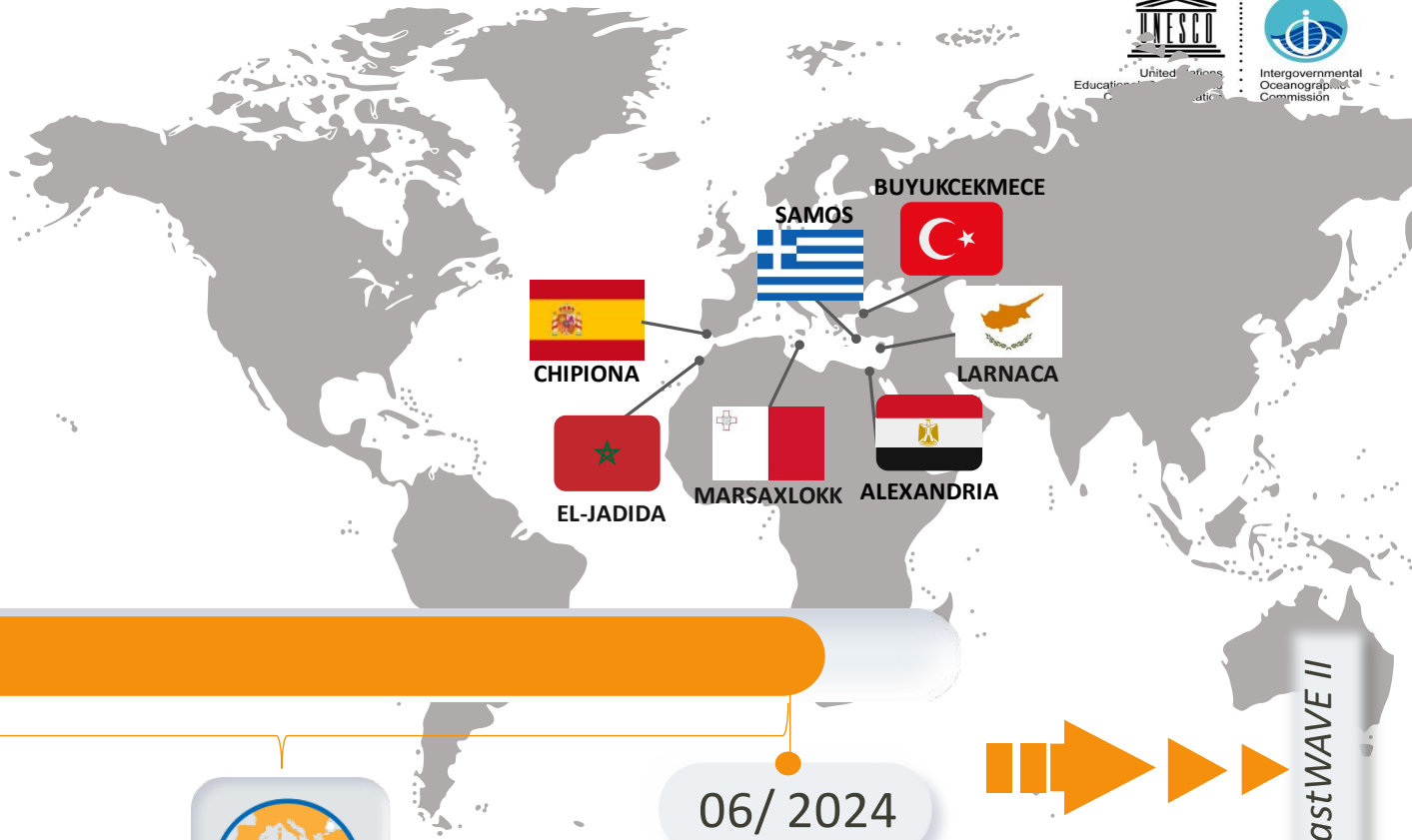
- **First communities/countries** started the TRRP process in 2020 (Cannes, Chipiona, Minturno...) by own initiative of MS and country institutions.
- ICG NEAMTWS **Task Team on Tsunami Ready** (following the efforts previously made by the co-chairs of WG4) was established on November **2021**, aiming to promote the implementation of TRRP.
- UNESCO IOC EU DGECHO **CoastWAVE** project was first launched in August **2021**, promoting and supporting to the implementation of the TRRP (project phase I ended on June 2024 and phase II began July 2025).
- ICG NEAMTWS XIX Session adopted the TT-TR **advises** the ICG to establish the role of the **National Tsunami Ready Focal Point** and to issue a Circular Letter (CL) to the Member States via official channels, requesting nominations for this position.



# IOC UNESCO DG ECHO CoastWAVE Project



2021 United Nations Decade of Ocean Science for Sustainable Development 2030



CoastWAVE II

09/ 2021

Project Start

IOC-UNESCO project begins (without partners)

09/ 2022

Contracts with institutions of Member States



COASTWAVE ACTIVITIES

06/ 2024

Project End



# Recognized 6 communities as Tsunami Ready by TRRP

CANNES



BÜYÜKÇEKMECE



ALEXANDRIA



SAMOS



CHIPIONA



MINTURNO



UNESCO IOC / Inter ICG / TOWS WG XVIII – TT DMP. 21-22 February 2025



# IOC UNESCO DG ECHO CoastWAVE Project



## OTHER ACHIEVEMENTS UNDER THE COASTWAVE PROJECT



**A NUMBER OF STARTING POINTS HAVE BEEN ACHIEVED TO EXPAND THE  
TSUNAMI READY RECOGNITION PROGRAM IN THE NEAM REGION.**

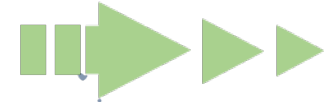
- Awareness raising/call effect, both at the community/municipal level and at the national level in MS.
- Establishment of NTRBs and governance mechanisms for TRRP applications review.
- Integration of TRRP into national governance and legal frameworks.
- Methods/approaches tested for tsunami hazard and evacuation planning.
- Community engagement methods tested.
- TEWS improved (especially in terms of integration and communication warning chain).



# IOC UNESCO DG ECHO CoastWAVE 2.0 Project



2021 United Nations Decade of Ocean Science for Sustainable Development



07/ 2024

02/ 2025

06/ 2026

Project Start

Project End

IOC-UNESCO project begins (without partners)

Contracts with institutions of Member States



COASTWAVE ACTIVITIES





IOC UNESCO DG ECHO **CoastWAVE 2.0 Project**



1. Component 1 - Build and strengthen tsunami hazard assessments, risk knowledge, risk communication, and decision-making capacities.
2. Component 2 - Scale-up and expand Tsunami Ready in selected NEAM countries.
3. Component 3 - Enhance and densify early warning, detection, monitoring, and alerting systems.
4. Component 4 - Enhance dialogues with Emergency Responders, Decision Makers on High Impact Low Probability (HILP) tsunami events within a multi-hazard context to improve strategies and effective decision-making capabilities.



21/02/2025  
6 communities  
recognized



11 Countries  
20 Communities  
...more coming!

### UNESCO/IOC Tsunami Ready Recognition Programme



Recognised communities in NEAM region (Oct. 2024)

- Recognised
- Ongoing\*
- Ongoing\*\*

\* Communities that have officially notified the ICG/NEAMTWS Secretariat to initiate the TRRP process and are in progress.

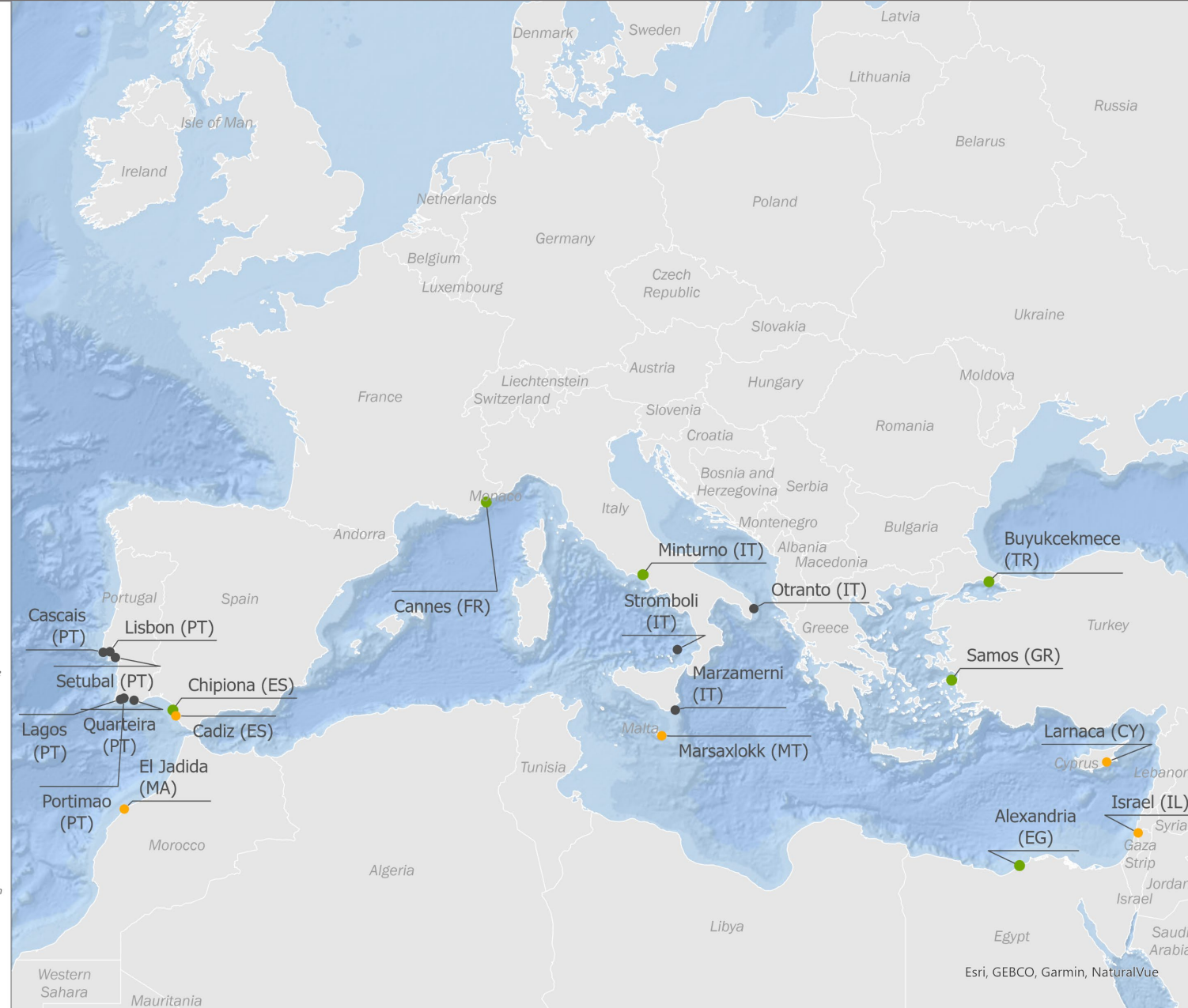
\*\* Communities at different levels of progress that intend to implement the TRRP pending notification to the ICG/NEAMTWS.

Scale: 1:23,000,000

Spatial Reference:  
WGS 1984 Web Mercator  
Auxiliary Sphere

Notice that the names and divisions of the countries and communities are from an open cartographic data source. These data have not been thoroughly reviewed and may contain errors or inaccuracies.

Ignacio Aguirre Ayerbe, 2025





21/02/2025  
6 communities  
recognized



11 Countries  
20 Communities  
...more coming!

### UNESCO/IOC Tsunami Ready Recognition Programme



Recognised communities in NEAM region (Oct. 2024)

- Recognised
- Ongoing\*
- Ongoing\*\*

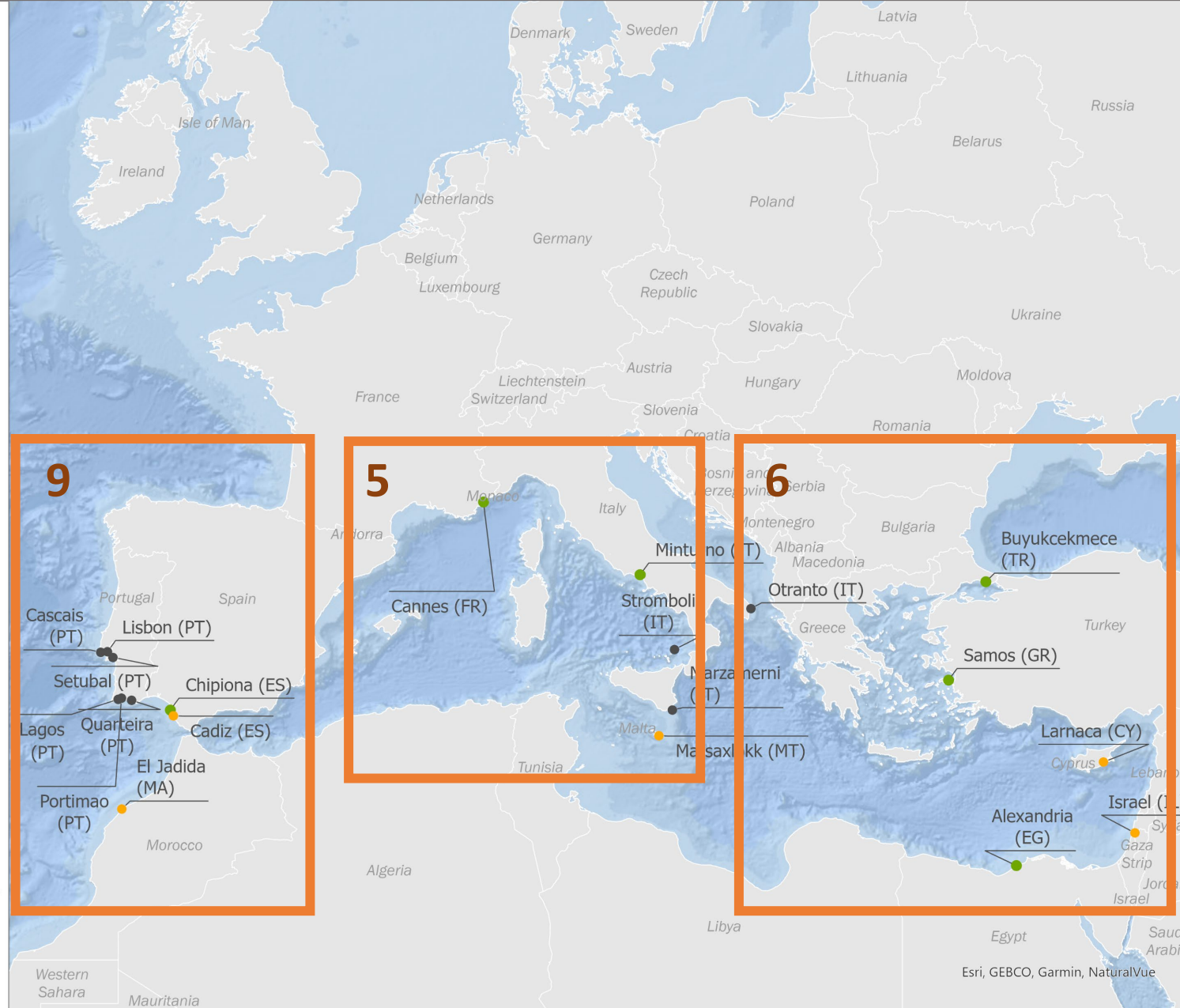
\* Communities that have officially notified the ICG/NEAMTWS Secretariat to initiate the TRRP process and are in progress.

\*\* Communities at different levels of progress that intend to implement the TRRP pending notification to the ICG/NEAMTWS.

Scale: 1:23,000,000  
Spatial Reference: WGS 1984 Web Mercator Auxiliary Sphere

Notice that the names and divisions of the countries and communities are from an open cartographic data source. These data have not been thoroughly reviewed and may contain errors or inaccuracies.

Ignacio Aguirre Ayerbe, 2025





UNESCO IOC / Inter ICG / TOWS WG XVIII – TT DMP. 21-22 February 2025



11 Countries  
20 Communities  
...more coming!

### UNESCO/IOC Tsunami Ready Recognition Programme



Recognised communities in NEAM region (Oct. 2024)

- Recognised
- Ongoing\*
- Ongoing\*\*

\* Communities that have officially notified the ICG/NEAMTWS Secretariat to initiate the TRRP process and are in progress.

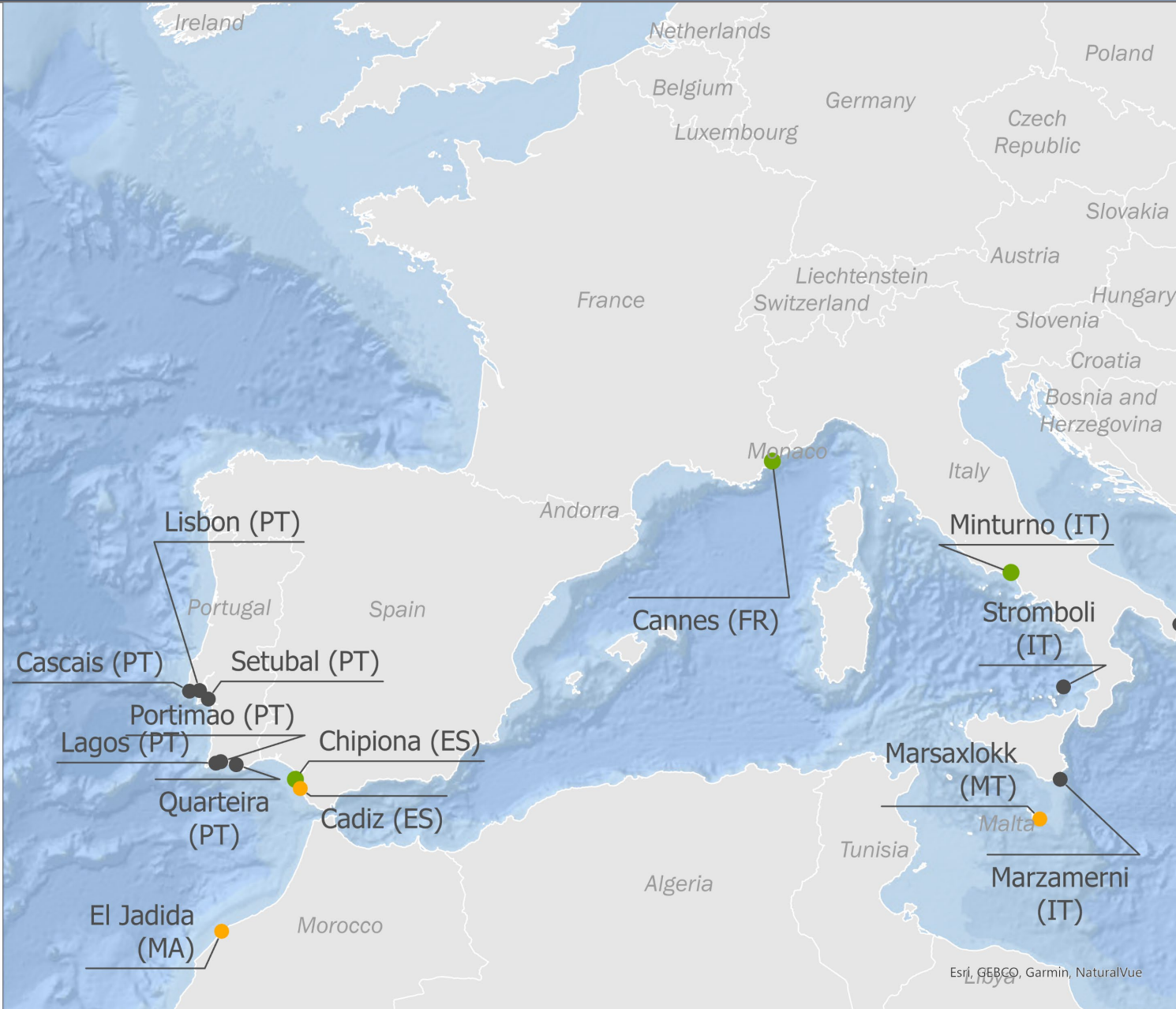
\*\* Communities at different levels of progress that intend to implement the TRRP pending notification to the ICG/NEAMTWS.

Scale: 1:15,000,000

Spatial Reference:  
WGS 1984 Web Mercator  
Auxiliary Sphere

Notice that the names and divisions of the countries and communities are from an open cartographic data source. These data have not been thoroughly reviewed and may contain errors or inaccuracies.

Ignacio Aguirre Ayerbe, 2025





UNESCO IOC / Inter ICG / TOWS WG XVIII – TT DMP. 21-22 February 2025



11 Countries  
20 Communities  
...more coming!

### UNESCO/IOC Tsunami Ready Recognition Programme



Recognised communities in NEAM region (Oct. 2024)

- Recognised
- Ongoing\*
- Ongoing\*\*

\* Communities that have officially notified the ICG/NEAMTWS Secretariat to initiate the TRRP process and are in progress.

\*\* Communities at different levels of progress that intend to implement the TRRP pending notification to the ICG/NEAMTWS.

Scale: 1:15,000,000

Spatial Reference:  
WGS 1984 Web Mercator  
Auxiliary Sphere

Notice that the names and divisions of the countries and communities are from an open cartographic data source. These data have not been thoroughly reviewed and may contain errors or inaccuracies.

Ignacio Aguirre Ayerbe, 2025





# SCIENCE-BASED AND PARTICIPATORY DECISION-MAKING APPROACH. CHIPIONA (SPAIN)

## Community-based Tsunami Evacuation maps. Technical & participatory approaches (co-design)

UNESCO IOC / Inter ICG / TOWS WG XVIII – TT DMP. 21-22 February 2025



Ignacio Aguirre Ayerbe – TOWS TT DMP ICG NEATWS Rep



### QUÉ HACER EN CASO DE TSUNAMI WHAT TO DO

Mapa de evacuación ante maremotos Tsunami evacuation map

Chipiona Cádiz (Andalucía, España)

**¿Cuándo evacuar? When to evacuate?**

- Observa las rutas de evacuación. Look at the evacuation routes.
- Si escuchas, escuchas, sientas... If you hear, hear, feel... (earthquake signs)
- Si recibes una alerta oficial. If you receive an official warning.

**¿Cuándo regresar? When to come back?**

- Cuando te dispongas las autoridades. When the authorities so provide.
- Un tsunami es una serie de olas que transportan un enorme volumen de agua que puede resultar fatalmente destructiva.

**112 Emergencias**

Ayuntamiento de Chipiona aytochipiona.es



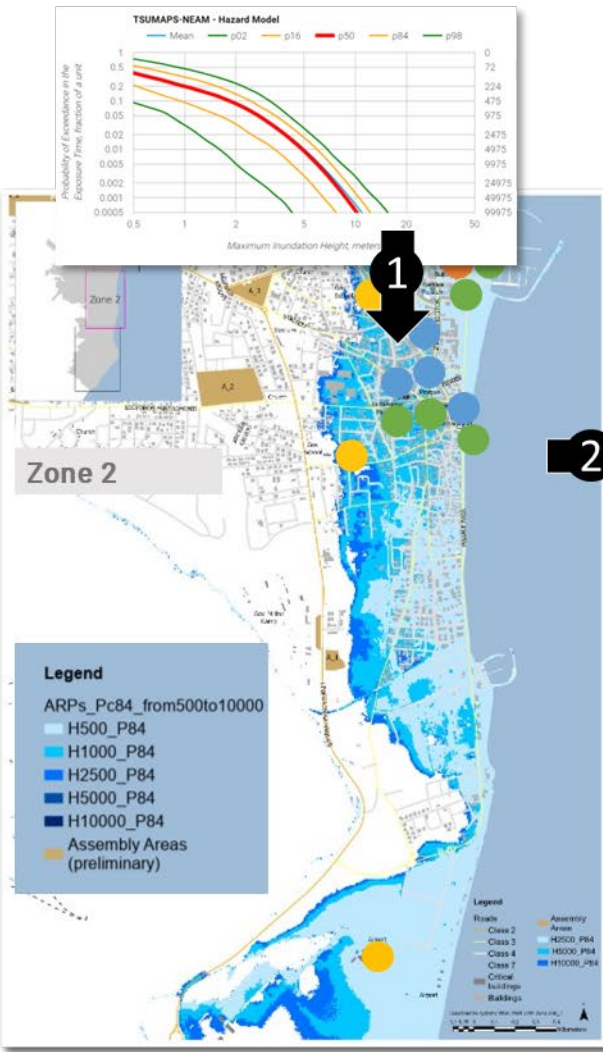


## SCIENCE-BASED AND PARTICIPATORY DECISION-MAKING APPROACH.

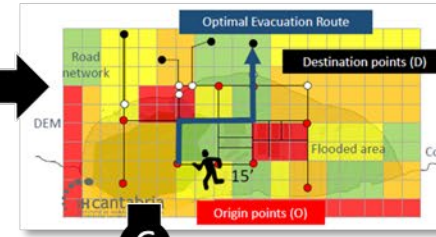
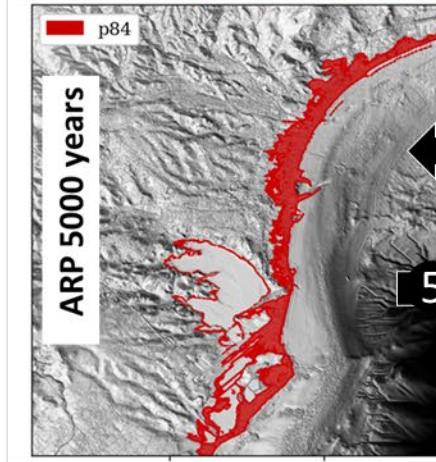
## LARNACA (CYPRUS)



### Multi-stakeholder development of evacuation maps based on PTHA and Evacuation models



Perc.	ARP	Annual probability (%)	50 years probability (%)	Area (km <sup>2</sup> )	Max Inun. depth (m)	Population Exposed	Crit. Bld. Exposed
P50	500	0.2	10	1.56	2.64	736	9
P50	1000	0.1	5	3.04	3.1	1976	16
P50	2500	0.04	2	4.93	3.8	4946	33
P50	5000	0.02	1	5.77	4.1	6202	34
P50	10000	0.01	0.5	6.22	4.3	7435	35
P84	500	0.2	10	2.57	3	1474	13
P84	1000	0.1	5	4.43	3.6	4198	30
P84	2500	0.04	2	5.82	4.2	6265	34
P84	5000	0.02	1	7.84	4.5	10597	51
P84	10000	0.01	0.5	8.56	4.9	11320	77
P98	500	0.2	10	4.45	3.7	4190	30
P98	1000	0.1	5	5.13	4.1	5360	33
P98	2500	0.04	2	7.49	4.4	9623	46
P98	5000	0.02	1	8.55	4.8	11303	77
P98	10000	0.01	0.5	9.29	5	11562	86



UNESCO IOC / Inter ICG / TOWS WG XVIII – TT DMP. 21-22 February 2025

## SIGNAGE

### CANNES (FRANCE)



Installation of tsunami evacuation signage (mosaic tile encrusted in the ground, stickers and aluminum support)



Online evacuation map assessable to the public through QR code and GIS based online cartography



**ΚΙΝΔΥΝΟΣ ΓΙΑ ΤΣΟΥΝΑΜΙ  
TSUNAMI HAZARD**

**ΣΕ ΠΕΡΙΠΤΩΣΗ**

- Σεισμού
- Απότομης απόσυρση της θάλασσας
- Προειδοποίησης τσουνάμι

**ΑΠΟΜΑΚΡΥΝΘΕΙΤΕ ΑΠΟ ΤΗΝ ΠΑΡΑΚΤΙΑ ΠΕΡΙΟΧΗ ΑΜΕΣΩΣ  
ΜΕΤΑΒΕΙΤΕ ΓΡΗΓΟΡΑ ΣΕ ΜΕΓΑΛΥΤΕΡΟ ΥΨΟΜΕΤΡΟ  
ΑΚΟΛΟΥΘΗΣΤΕ ΤΙΣ ΔΙΑΔΡΟΜΕΣ ΔΙΑΦΥΓΗΣ**  
Επισκεφτείτε την ιστοσελίδα <http://arcg.is/1vKu5q>  
Πληροφορηθείτε για το τοπικό σχέδιο πολιτικής προστασίας του Δήμου

**IN CASE OF**

- Earthquake
- Sudden withdrawal of the sea
- Tsunami Alert

**LEAVE THE COASTAL AREA IMMEDIATELY  
QUICKLY REACH HIGH GROUND  
FOLLOW THE EVACUATION ROUTES**  
Go to <http://arcg.is/4e8mu0>  
Get informed on the civil protection plan of the municipality

**ΚΙΝΔΥΝΟΣ ΓΙΑ ΤΣΟΥΝΑΜΙ  
TSUNAMI HAZARD**

**ΣΕ ΠΕΡΙΠΤΩΣΗ**

- Σεισμού
- Απότομης απόσυρση της θάλασσας
- Προειδοποίησης τσουνάμι

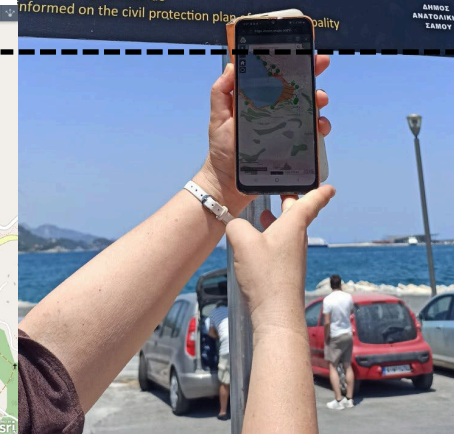
**ΑΠΟΜΑΚΡΥΝΘΕΙΤΕ ΑΠΟ ΤΗΝ ΠΑΡΑΚΤΙΑ ΠΕΡΙΟΧΗ ΑΜΕΣΩΣ  
ΜΕΤΑΒΕΙΤΕ ΓΡΗΓΟΡΑ ΣΕ ΜΕΓΑΛΥΤΕΡΟ ΥΨΟΜΕΤΡΟ  
ΑΚΟΛΟΥΘΗΣΤΕ ΤΙΣ ΔΙΑΔΡΟΜΕΣ ΔΙΑΦΥΓΗΣ**  
Επισκεφτείτε την ιστοσελίδα <http://arcg.is/1vKu5q>  
Πληροφορηθείτε για το τοπικό σχέδιο πολιτικής προστασίας του Δήμου

**IN CASE OF**

- Earthquake
- Sudden withdrawal of the sea
- Tsunami Alert

**LEAVE THE COASTAL AREA IMMEDIATELY  
QUICKLY REACH HIGH GROUND  
FOLLOW THE EVACUATION ROUTES**  
Go to <http://arcg.is/4e8mu0>  
Get informed on the civil protection plan of the municipality

### SAMOS (GREECE)







## Reflections on challenges met during TRRP implementation in NEAM region and beyond

1. There is general opinion on the **difficulties** related to the financial, technical, human and time **resources** required for the implementation of the TRRP.
2. It has been recognized that effective **coordination** between national, regional and local authorities is essential.
3. Concern about the need to establish **peer reviewed guidelines** for the development of some indicators, and evaluate whether **MG74** should be **adapted** to the **NEAM** region.
4. A discussion is ongoing on the **applicability of MG74 on a country-wide scale** (not SIDs). A **NEAMTWS Regional Tsunami Ready Board** (RTRB) has been set aiming to address this matter. This may be expanded to **specific strategic infrastructures** (airports, ports, hazardous industries).
5. The TRRP application **review procedure is not standardized**. We do not have a “review SOP”!
6. **Sustainability of the communities recognized by the TRRP**. How to maintain community ownership. Need for continued human, technical and financial support and resources.
7. Concern on how to **realistically expand the implementation of the TRRP**. Tools to facilitate communities to progress as much as possible in the implementation of the TRRP on their own (?) (there is ongoing work in NEAM COMMITMENT project 2025-2026, EPOS TCS Tsunami).



unesco

# Thank you!

## ICG NEAMTWS Tsunami Ready Implementation in NEAM region

Ignacio Aguirre Ayerbe      *ICG/NEAMTWS TOWS WG TT- DMP*  
*Vice-Chair ICG/NEAMTWS*

*Elena Daskalaki and Mariana Baptista – Co-chairs TT-TR*  
*Denis Chang Seng – Tech Sec. IGC-NEAMTWS*

*UNESCO IOC / TOWS WG XVIII Meeting*  
*Task Team on Disaster Management and Preparedness (TT-DMP)*  
*21– 22 February 2025. Paris, France*

