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Intergovernmental
Oceanographic
Commission

**IOC/ICG/NEAMTWS
XIX SESSION
UNESCO Headquarters, Paris,
France 27–29 November 2024**

WG4 REPORT

**Co-Chair
Raluca Partheniu
Cecilia Valbonesi**

REPORTS FROM

ISRAEL

ITALY INGV - CP - ISPRA

PORTUGAL

ROMANIA

SPAIN

TURKEY

PROPOSALS WILL BE DISCUSSED TOMORROW

ISRAEL

Report on tsunami preparedness activities carried out in Israel in 2024:

1. In the field of **education** - a **training kit was developed that includes a 3D video explaining the tsunami phenomenon**, and a **virtual reality simulator was developed in which the student experiences performing the correct actions during a tsunami warning**. This integrated lesson is taught to every eighth-grade student in Israel as a mandatory lesson in geography studies.
2. In the field of **tsunami alert** - all the sea **level gauges** that were installed at the time by the JRC **were replaced with new sea level gauges** and are being continuously maintained.

ISRAEL

3. A new development:

A system for directing the public during a tsunami alert :

An inter-organizational team was established to develop a system for sending messages to the public at risk in the coastal area during a tsunami alert.

The message **will be sent via CELL BROADCAST immediately after a tsunami warning**, and through it, the smartphone of the user at risk will connect to a map that will direct him to a safe assembly zone.

Guidance will be provided by connecting the smartphone to a satellite, which will identify the user's location and **indicate a safe route to the assembly zone**. The new system is supposed to **become operative within 18 months**.

WG4 NEAMTWS Activities 2024

ITALY - INGV



Education



Educational Video

directed by **Italian Civil Protection**:

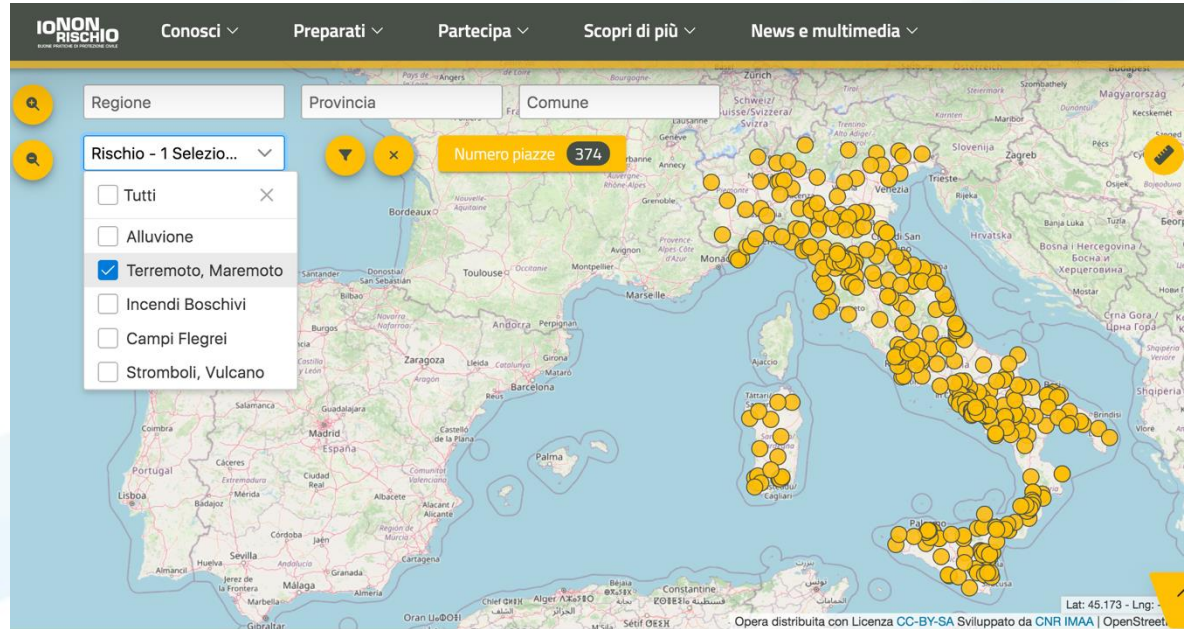
“Io non rischio - Maremoto” in Italian and subtitled in English.



Genoa Science Festival (21 October to 3 November), a tsunami corner was set up with a didactic/interactive path for students and visitors.



Education



'Io Non Rischio - Maremoto'

National information campaign for tsunami risk mitigation in the squares of coastal municipalities.
Map shows coverage for the year 2024



Education



World Ocean Day (8 June)

public events were held at major INGV centres, also to raise tsunami risk knowledge and awareness.

STORIA TSUNAMI
INFORMAZIONE E PREVENZIONE

Story maps & Tsunami

Le story maps e le mappe interattive sui maremoti

Introduzione

Storymaps, uno strumento narrativo di nuova generazione basato su piattaforma ArcGIS che permette ai fruitori di navigare in modo interattivo tra contenuti di varia tipologia: testi, immagini, video, link e contenuti ipertestuali.

Le storymaps sfruttano le potenzialità delle mappe su cui vengono montate storie e percorsi che gli utenti possono navigare utilizzando scorciatoie e arrivando immediatamente alle informazioni di proprio interesse.

La flessibilità delle mappe interattive le rende uno strumento adatto alla creazione e alla divulgazione di contenuti scientifici come quelli legati ai maremoti.

Grazie alle story maps di INGVmaremoti conosceremo alcuni aspetti importanti dei nostri oceani, in particolare i rischi connessi ai maremoti e ai loro effetti sulle coste.

Tsunami Ready

In viaggio tra i maremoti del Mar Mediterraneo

28 dicembre 1908, l'alba di dolore sullo Stretto

Tsunami e relitti

Story Maps about:

- Indian Ocean 2004;
- Messina-Reggio 1908;
- Wrecks of 2011 tsunami in the Pacific Ocean;
- Tsunami Ready in Italy;
- The 2004 Indian Ocean tsunami.



Risk Perception Assessment



National Tsunami Risk Perception survey:
in 2024 we complete the survey by administering the tsunami risk perception questionnaire to the whole Italian population residing in coastal municipalities.
11.192 Questionnaire obtained



Natural Hazards
<https://doi.org/10.1007/s11069-024-06845-1>

ORIGINAL PAPER



Tsunami risk perception of the touristic population of Stromboli Island: towards effective risk communication strategies

Iacopo Moreschini¹ · Lorenzo Cugliari^{1,2} · Loredana Cerbara³ · Federica La Longa¹ · Massimo Crescimbeni¹ · Alessandro Amato¹

Received: 11 January 2024 / Accepted: 22 July 2024
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699 interviews on tsunami risk perception among **tourists**
in Stromboli (Moreschini et al., 2024)
15 in-depth interviews to local residents



Risk Perception Assessment

 ANNALS OF GEOPHYSICS, 67, 2, TP211, 2024; doi:10.4401/ag-9063
OPEN ACCESS

Tsunami at school. An experimental strategy to increase students' risk perception

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Article history: received January 05, 2024; accepted May 10, 2024



Repeated assessment (**three stages**) of tsunami risk perception studies in Tivoli's High School (Amato et al., 2024)



World Tsunami Awareness Day 2024

WTAD 2024 | The experience of the 2004 Sumatra tsunami to empower new generations



26 November is the World Tsunami Awareness Day (WTAD), established by the UN to raise awareness of tsunami risk and promote global preparedness to protect coastal communities. The year marks 20 years since the devastating Indian Ocean tsunami of 2004, triggered by a magnitude 9.1 earthquake near Sumatra, Indonesia.

The focus of **WTAD2024** is, in fact, lessons from the lessons learned following the devastating Sumatra event. The tsunami struck countries such as Indonesia, Thailand, Sri Lanka and India, causing over 230,000 casualties and destruction along coastlines across the Indian Ocean. The 20th anniversary highlights the need of **ensuring systems and the limited awareness of coastal communities** about tsunami risk.

Reflecting on the events of 2004 is not only an act of remembrance for the victims, but a **reminder to invest in warning technologies and preparedness measures** that ensure the continuity of an original focus on an informed and timely response can make all the difference. **Teaching new generations** how to **protect tsunami vulnerable** is crucial to building communities ready to deal with the frequency of high impact natural threats. The focus of today's event was shared in a **Circular Letter** from the UNESCO Intergovernmental Oceanic Commission.

The Letter emphasises the **importance of carrying out activities** that support the **global expansion of tsunami early warning systems** and encourage member states to **raise public awareness of tsunami risk** by organizing **DRR, recreational activities or walking evacuation routes** for tsunami risk by supporting the **#GoTsunamiReady** initiative.

The WTAD 2024 framed the Sendai Framework for Disaster Risk Reduction, aims to reduce disaster risks through **education and resilience building**, focusing on **children and youth** by keeping the **#GoTsunamiReady** initiative alive.

In Italy, UNDRP supports the process of **community awareness raising and individual and collective preparedness** through the UNESCO Tsunami Ready programme, which offers guidelines for a **safe and coordinated response** and a part of the deployment of the **DisasterRisk** in which it has been involved. This programme includes installing signs in areas of risk, training inhabitants and working with local authorities to improve evacuation plans. Moreover, in Italy, throughout the year, the **DRR4member** carries out numerous initiatives, especially in vulnerable territories, which aim to **involve children and young people** to mitigate potential risks in a participatory way.

The **Tsunami Warning Centre**, since 2017, has been working tirelessly to **improve alerting systems**, to reduce the strong and ongoing the warning chain for the population and to **ensure warning interventions** to reduce the risk for those that allows the community to be ready to receive an alert and, consequently, transfer it to the intended behaviour.

In recent months, CATMIO has carried out several activities in both directions.

WARNING, the international conference on tsunami warning systems initiated by volcanic activity, held on the island of Stromboli from 5 to 7 October, which was endorsed by UNESCO as a collaborative activity of the #GoTsunamiReady.

AMANEISS and PREDANEISS, the municipality of Metaxas, in the province of Latina, is the first Italian municipality to be recognised UNESCO Tsunami Ready.

AMANEISS and PREDANEISS are young people (senior 2024) selected finalist for children and students of all levels where, for a week, Tsunami were one of the main topics with activities, interactive exhibits, videos and drawings presented and shared among peers.

COMUNICAZIONE E INFORMAZIONE | Attualità | Spettacolo

WTAD 2024 | La Giornata Mondiale di Sensibilizzazione sugli Tsunami

5 Novembre 2024



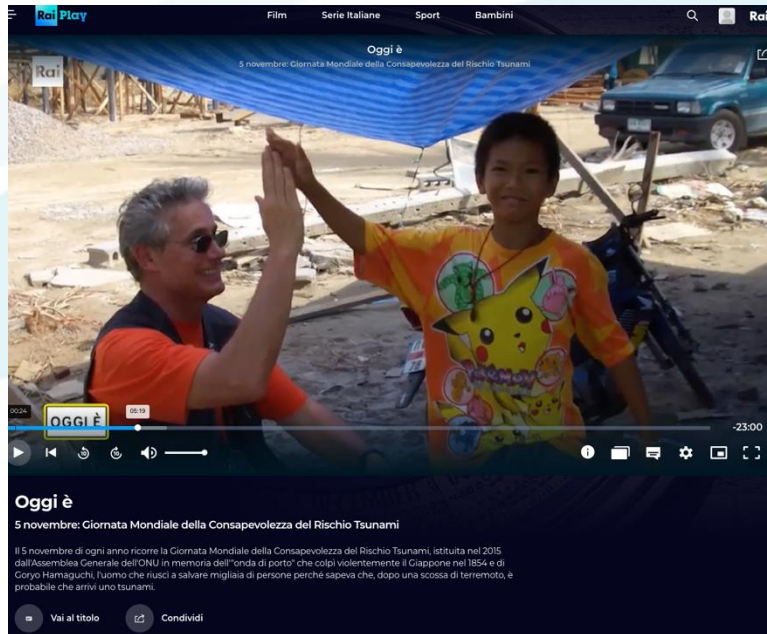
Il 5 novembre è la Giornata Mondiale di Sensibilizzazione sugli Tsunami (World Tsunami Awareness Day, WTAD), istituita dall'ONU per aumentare la consapevolezza del rischio tsunami e promuovere la preparazione globale per proteggere le comunità costiere. Quest'anno si commemorano i vent'anni di **devastanti tsunami dell'Oceano Indiano del 2004**, innescato da un sisma di magnitudo 9,1 vicino Sumatra, in Indonesia.

Il focus del **WTAD 2024**, infatti, muove dalle **lezioni apprese in seguito al distruttivo evento di Sumatra**. Lo tsunami colpì paesi come Indonesia, Thailandia, Sri Lanka e India, causando oltre 230.000 vittime e distruzioni lungo le coste di tutto l'Oceano Indiano. La tragedia del 2004 mise in luce la **mancanza di sistemi di allerta** e la **limitata consapevolezza delle comunità costiere** sul rischio tsunami.

Riflettere sugli eventi del 2004 non è solo un atto di commemorazione per le vittime, ma un **monito per investire in tecnologie di allerta e interventi di preparazione** che coinvolgano la comunità continuamente, poiché una risposta informata e tempestiva può fare la differenza. **Insegnare alle nuove generazioni** come adottare **comportamenti proattivi in caso di tsunami** è cruciale per costruire comunità pronte ad affrontare minacce naturali a bassa frequenza ma alto impatto. Il focus della giornata odierna è stato condiviso in una **Circular Letter della Commissione Oceanica Intergovernativa dell'UNESCO**. Nella Lettera si pone l'accento sull'importanza di **svolgere attività che favoriscano l'espansione globale dei sistemi di allerta rapida** per gli tsunami e incoraggiano gli stati membri a **sensibilizzare l'opinione pubblica** sul rischio tsunami organizzando **esercitazioni, attività ludiche o a percorrere le vie di evacuazione per il rischio tsunami** supportando l'iniziativa.

Maggiori informazioni sul sito del Centro Allerta Tsunami dell'INGV: <https://cat.ingv.it/media-e-documenti/news/1647-cyfad-2024-gli-impegnamenti-dello-tsunami-del-2004-per-responsabilizzare-le-tuove-generazioni>

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ITALY - ISPRA

During 2024, mainly thanks to **Elena Giusta**, **ISPRA** ensured the **ordinary activities on the themes of tsunami risk communication, education, and awareness**, as listed below:

- **periodical updating** on the ISPRA web site of the pages dedicated to the SiAM and ICG-NEAMTWS news/activities;
- **dissemination and information activities throughout** ISPRA website and ISPRA newsletter promoting tsunami awareness;
- **publication of short news** on tsunami risk in the Pru€ Bollettino of March, July and November;

ITALY - ISPRA

- a **focus for the Ocean Literacy on the Tsunami Ready Program** activities (particularly on the exercitations) in the framework of the WG EuroGOOS (association of entities responsible for the management of marine monitoring networks);
- **contribution to the seminar** “On-the-job training (OJT) tsunami early warning, real-time seismology and geodesy - INGV- Italy - 3 July 2024”; the event was organized by INGV for the presentation of SiAM operational structure and activity to the BMKG- Meteorological, Climatological, and Geophysical Agency of Indonesia
- participation in the meeting for the nomination of Minturno as Tsunami Ready community, 25 October 2024.

ITALY - ISPRA

DURING 2024, EDUCATION ACTIVITY WITH SCHOOL REPORTED A MODERATE STOP BECAUSE OF THE INCREASE OF PNNR ACTIONS.

ITALY - ISPRA

Since 2018, ISPRA has offered an environmental education training program named **"Effetto Tsunami,"** aimed at increasing knowledge of the physical phenomenon and **public awareness of tsunami risk.**

The **training program,** mainly addressed to **high school students,** concerns the **dynamics of tsunami generation and propagation,** the potential impact on the coast and the related effects of the inundation, as well as the information on the operativity of the national (SiAM) and regional (NEAM) Tsunami Warning Systems.

The educational program is organized in theoretical lectures and also benefits from laboratory experiences.

The **laboratory experience is carried out at the fluid-dynamics laboratory** of ISPRA and is aimed at simulating a tsunami wave and its effects on a generic coastal model.

Didactic materials and tools are designed and realized by ISPRA researchers to support educational activities.

PORTUGAL - WG4 ACTIVITIES 2024 – CONTRIBUTIONS FROM CIVIL PROTECTION

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection

As part of **World Tsunami Awareness Day** (November 5th), ANEPC **organized the Annually Earthquake Awareness National Drill (ShakeOut 2024)**, involving around half a million citizens, coming from the public, private, social, etc, sectors.

The main objective of this drill was to exercise, during one minute, the three basic self-protection actions in case of an earthquake (drop/cover/hold on).

As part of this main event, **it was organized an exercise based on the evacuation of a tsunami risk area at Praia da Rocha, located at Portimão municipality** (Algarve Region), which involved the activation of the Tsunami Warning System (Sirens) with evacuation of the beach and routing along emergency routes to safe areas/meeting points.

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection



At the same time, there were **other initiatives located in municipalities, besides Portimão**, where warning systems were already implemented, **carrying out testing exercises to activate the sirens and direct awareness-raising approaches** among the population by the Municipal Civil Protection Services.

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection



In the **Risk Assessment** dimension, work was carried out **to review the National Risk Assessment, in which tsunamis are classified as a high risk level.**

On the other hand, and within the framework of Portuguese National Strategy for Disaster Risk Reduction, **ANEPC submitted an application for financing to the Algarve 2030 Regional Program, through which it will be possible to update the existing study relating to the seismic and tsunami risk in the Algarve.**

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection



Regarding Warning Systems,

1) **Several municipalities continued to install sirens and visual warning devices**, which will be activated in the event of a tsunami warning, complementing the national SMS warning system.

These systems are complemented by the installation of signs on the ground, designed to inform citizens of the most appropriate routes to safe areas.

In parallel, at national level, **preparatory work was carried out** to prepare the **implementation of other solutions** for mass warning of the population (complementary to the already existing SMS warning system).

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection



Thus, as a result of **Order No. 3376/2023, of March 15, ANEPC**, the **National Communications Authority and the General Secretariat of the Ministry of Internal Affairs** proceeded with the preparation of a report relating to the actions leading to the implementation of a warning system to the population by cellular broadcast (Cell Broadcast).

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection



2) On the other hand, **ANEPC continued to evaluate the possibility of implementing the Galileo warning system**, which arises from an initiative by the European Commission aimed at using existing global navigation technology to disseminate warnings to the population.

In this context, **ANEPC maintained collaboration with the European Commission in defining requirements for the interconnection interfaces between Galileo and the Civil Protection Services**, participating in demonstration exercises that allowed the System's technical specifications to be refined.

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection



Regarding the area of **Public Awareness**, and in addition to the participation of citizens in exercises and other actions within the scope of WTAD2024, **several municipalities have made efforts to communicate the risk in vulnerable areas** (in particular through the installation of signage and warning systems and of direct actions within the educational community).

The development of local evacuation plans has also provided an **opportunity for citizen involvement**, raising awareness of the existing risk and the most appropriate self-protection behaviors to adopt.

PORTUGAL - WG4 activities 2024 - Contributions from Civil Protection



It is also worth highlighting the fact that **ANEPC acted as a facilitator for UNESCO-IOC's participation in the 8th National Meeting of Resilient Cities and Towns, held in May 2023**, in Loulé, in which the Tsunami Ready initiative was announced

ROMANIA - WG4 ACTIVITIES 2024

NIEP ACTIVITES FOR 2024

NIEP ACTIVITIES FOR 2024



NIEP is member in the following international projects:

COST Action Proposal: Tsunami Hazard and Risk Education through Accessible Training (THREAT), continuation of AGITHAR (Accelerating Global Science in Tsunami Hazard and Risk Analysis) project.

ARISTOTLE - All Risk Integrated System TOwards Trans-boundary hoListic Early-warning - enhanced European Natural Hazards Scientific Partnership (ARISTOTLE-eENHSP) Project. In 2024, INFP, among other partners from Earthquake-Tsunami Hazard Group (EQ-TS HG), contributed to the Emergency Full Reports and Lite Reports (based on ERCC activations) and Routine Operational Reports (three times / week, when Red or Orange EQ - TS events are open). Usually, only for very rare events, Tsunami is representing the main hazard, whereas in most of the cases Aristotle is assessing earthquake-triggered tsunamis.

NIEP ACTIVITIES FOR 2024

1. Education (activities with schools, lessons, seminars...)

Oral presentation at “ENVIRONMENT & PROGRESS, Natură – mediu – educație Marcian Bleahu – 100 de ani de la naștere”, 13-15 June 2024, Cluj-Napoca, Romania, by Partheniu R., Tolea A., with the title “Tsunami education and research implemented by the National Institute for Earth Physics”,

Translation in Romanian of the NIEP tsunami research & education flyer (already available in English),

Translation in Romanian of the following tsunami related flyers from NEAMTIC and ICG/NEAMTWS: “tsunami fact sheet” and “What to do”

NIEP ACTIVITIES FOR 2024

- **2 Risk perception assessment:**
- Local exhibition of posters, both at Magurele main Center, but also at Eforie Center (on the Black Sea coast) regarding:
 - - “1st of January 1091 earthquake and tsunami in Shabla area, Black Sea”,
 - - “Black Sea tectonics”,
 - - tsunami monitoring, modeling and awareness (poster papers from different conferences),
 - - past and current activities of NIEP regarding different tsunami related projects (**MARINEGEOHAZARDS, ESNET, ASTARTE, GTIMS, ARISTOTLE, AGITHAR**)
 - - national educational project which also emphasizes the tsunami risk (**MOBEE - Mobile earthquake exhibition**)

NIEP ACTIVITIES FOR 2024



- **5 WTAD 2024**
- Availability of the information regarding WTAD (World Tsunami Awareness Day) 2024 on NIEP website (prior to event date) and local (in coastal areas) population dissemination and awareness regarding tsunami risks.
- <https://www.facebook.com/share/p/1B989SYXoe/>
- For a better dissemination of the info regarding tsunamis, and also for monitoring the area of interest (Black Sea worldwide), see the available website <http://ctwc.infp.ro/index.php>

ȘTIATI CĂ..?

- În anul 345 AD, un tsunami produs în Creta a afectat întreaga zonă din estul Mării Mediterane și a distrus orașul Alexandria din Egipt.
- Cutremurul și tsunami-ul din Lisabona, din anul 1755, au dus la pierderea a zeci de mii de vieți omenești și, de asemenea, au avut efecte și în țările vecine.
- Cutremurul și tsunami-ul din 1908 din Messina Italia, a dus la pierderea a zeci de mii de vieți omenești.
- În ultima an, au fost înregistrate câteva tsunami-uri în Marea Mediterană: evenimentul din Bodrum-Kas, din data de 20 iulie 2017, cel din Creta, din 2 mai 2020, și evenimentul din Samos-Ismir, din 30 octombrie 2020.

FII PREGĂTIT! ÎN UNELE CAZURI, POT FI OBSERVATE SEMNE NATURALE DE ALERTAREA LA TSUNAMI:

- Creșterea anormală a nivelului apei mării sau o retragere rapidă a apei din zona costieră.
- Schimbarea rapidă a nivelului apei, a unui riu din apropierea coastelor.
- Zgomot ciudat sau huruit care vine dinspre mare.



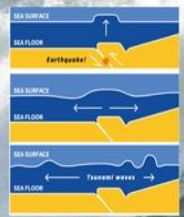
Dacă locuiești într-o zonă costieră, fi pregătit și cunoaște semnele naturale de avertizare la tsunami.

Deoarece semnele naturale nu sunt întotdeauna vizibile, este foarte important să urmezi sfaturile și instrucțiunile oficiale ale autorităților locale.

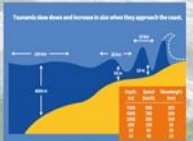
PLIANT DESPRE TSUNAMI

CE ESTE UN TSUNAMI?

Tsunamiurile sunt valuri care traversează oceanul de lungime până la 200 km și perioadă mare (de la 5 la 60 minute), generate de o perturbare/distorsiune a câmbului de apă, cauzată de cutremure, alunecări de teren submarine, erupții vulcanice sau impactul unei meteoroite și perturbări similare (meteotsunami-uri).



Generarea unui tsunami de către un cutremur.



Înălțimea, lungimea și viteza valurilor variază în funcție de adâncime. În larg, în ocean, un tsunami este de obicei de doar câțiva zeci de centimetri înălțime, dar înălțimea sa crește rapid spre țărm.

DETECTAREA, PROGNOZA ȘI ALERTAREA LA TSUNAMI

Avertizarea la tsunami implică detecta rapidă și evaluarea potențialilor factori declanșatori precum cutremurele, cât și confirmarea apariției tsunami-ului și prognoza cât mai precisă a înălțimii valurilor, identificarea regiunilor vulnerabile, cât și distribuția imediată a informațiilor privind pericolul.

Tsunami-urile pot fi detectate folosind:

- GNSS și Calluri tip Smart
- Maregrafe
- Balize de tip DART (Deep Ocean Assessment of Tsunami)
- Tsunami-urile pot fi prognozate prin:
 - Mădularie numerică
 - Evaluarea probabilității a hazardului la tsunami
- O alertă de tsunami este dată de:
 - Formator de servicii referitoare la tsunami (ITSP)
 - Centrul național de avertizare tsunami (NTWC)
 - Puncte locale de avertizare tsunami (LTWP)



Înainte

- Primește avertizările prin mai multe mijloace precum email, telefon, radio, etc.
- Pregătește un plan de urgență cu familia pentru comunicare și evacuare.
- Pregătește un kit de supraviețuire care să includă medicamente și produse de prim ajutor.
- Identifică zonele periculoase, zonele de adunare, rutele predefinite de evacuare sau cel mai rapid mod de a ajunge într-o zonă mai înaltă, cu ajutorul autorităților locale care se ocupă de dezastru.

În timpul

- Menține siguranța în caz de cutremur**
 - DROP**
 - COVER**
 - HOLD**
- Aleargă către zone înalte dacă apare oricare din aceste avertizări pe litoral**
 - Simți un cutremur foarte puternic;
 - Vezi o ridicare sau coborâre bruscă a mării (vezi fundul apei, corali, pești);
 - Auzi un zgomot ciudat și puternic venind dinspre mare;
 - Primești mesaje oficiale de avertizare prin sirene, radio, TV, mail, etc.
- Aleargă departe de zonele de hazard (în funcție de locale și situație)**
 - Aleargă departe de zona de coastă, către un punct de adunare sau o zonă mai înaltă;
 - Cațără-te într-un copac;
 - Dacă timpul permite, ambarcațiunile ar trebui să navigheze în larg, în ape cu adâncimi între 100-400 m.

Dacă te afli în afara zonei de hazard la tsunami și primești o avertizare, rămâi unde ești atâta timp cât autoritățile locale nu îți spun altceva.

După

Rămâi în afara zonei de hazard la tsunami, până când autoritățile anunță că ești în siguranță. Anularea unei avertizări nu înseamnă că pericolul a trecut.

Rămâi în afara clădirilor avariate sau înconjurate de apă, până când autoritățile anunță că ești în siguranță.

Informează-te cu privire la instrucțiunile de siguranță de la radio, TV sau telefon (text sau date), din surse oficiale.

Pentru a începe implementarea programului Tsunami Ready în zona Atlanticului de N-E, Marea Mediterană și mările conexe (NEAMTIC), contactați Centrul de informare pentru Tsunami (NEAMTIC) al UNESCO-IOC la adresa neamtic@unesco.org

NIEP ACTIVITIES FOR 2024

- **Proposals**
 - Participation in future NEAMWAVE exercises
 - Continue to disseminate each year WTAD on NIEP website
 - Romanian translation of more official NEAMTIC flyers, posters, booklets, guides, on tsunami awareness and education.
 - Distribution of **NIEP tsunami research & education flyer** at different meetings and conferences, plus previous point products.
-

2024 | UNESCO-IOC ICG/NEAMTWS XIX SESSION

EXAMPLES OF SOME TSUNAMI AWARENESS AND
EDUCATIONAL ACTIVITIES IN SPAIN



GOBIERNO DE ESPAÑA

MINISTERIO DEL INTERIOR



DIRECCIÓN GENERAL DE PROTECCIÓN CIVIL Y EMERGENCIAS

2024 | NATIONAL LEVEL



GUÍAS DE AUTOPROTECCIÓN

1-21-025-9

PREVENCIÓN: Qué tener en cuenta ante un posible maremoto o tsunami

Si estás en una embarcación, dirígete mar adentro. Un maremoto es destructivo sólo cerca de la costa.

Un maremoto puede producir diez o más olas destructivas durante 12 horas.

Ten en cuenta que un maremoto puede penetrar por ríos, ramblas, marismas varios kilómetros hacia el interior.

Salen hacia la costa con velocidades de 100 km/h.

El nivel de los mares puede verse alterado por el movimiento del mar que deja secas grandes extensiones de fondo marino.

Zona segura | Zona muy peligrosa

AUTOPROTECCIÓN: Qué hacer ante un maremoto o tsunami

Si vives en la costa y sientes un terremoto que sea fuerte, en los siguientes 20 minutos es posible que se produzca un maremoto.

Si eres alertado de un posible tsunami, sitúate en zonas altas de al menos 30 metros por encima del nivel del mar.

Ten previstas rutas de evacuación y posibles lugares de reunión.

Procura llevar ropa de abrigo, así como radios portátiles que te permitan estar informado. Si es posible, lleva el teléfono móvil contigo.

2024 | Educational guides - Public information on disaster risk

- Public information guide on tsunami risks (Nov. 2024)

2024 | UNESCO-IOC Tsunami Ready Recognition Programme

- Establishment of NTRB (May 14, 2024).



GOBIERNO
DE ESPAÑA

MINISTERIO
DE TRANSPORTES, MOVILIDAD
Y AGENDA URBANA

INSTITUTO
GEOGRÁFICO
NACIONAL



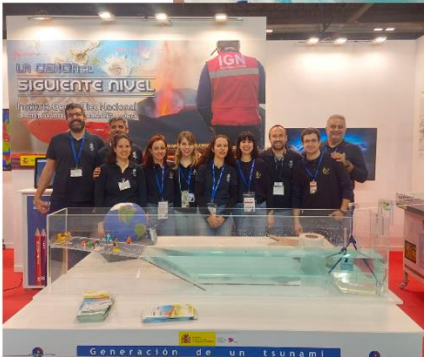
2024 | NATIONAL LEVEL

2024 | NTWC - Awareness and educational activities

- Madrid for science (March 2024).
- Week of science (November 2024).

2024 | UNESCO-IOC Tsunami Ready Recognition Programme

- Establishment of NTRB (May 2024).



IMPLEMENTATION OF EARLY WARNING SYSTEMS (Long Range Sirens)

- Central operating console
- Two sirens installed



INSTALLMENT SIGNAGE AT EVACUATION ROUTES AND ASSEMBLY POINTS

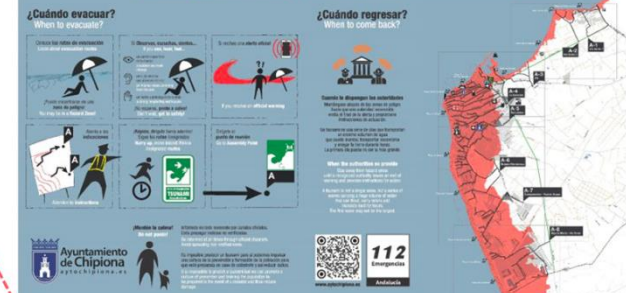


2024 | MUNICIPAL LEVEL
CHIPIONA

INSTALLMENT TSUNAMI INFORMATION BOARDS



QUÉ HACER EN CASO DE TSUNAMI WHAT TO DO



FIRST EVER MUNICIPAL TSUNAMI EMERGENCY PLAN IN SPAIN

June 14, 2024, Public Consultation
Sept.2, Final local approval



Emo. Ayuntamiento de Chipiona

2024 | MUNICIPAL LEVEL
CHIPIONA

UNESCO-IOC TSUNAMI READY RECOGNITION CEREMONY June 21, 2024



News >

Chipiona Honoured as Spain's First UNESCO-IOC Tsunami Ready Recognized City

On 21 June 2024, Chipiona became the first city in Spain to receive UNESCO-IOC Tsunami Ready Recognition. Denis Chang Seng, Programme Specialist from UNESCO-IOC's Tsunami Resilience section, congratulated stakeholders for this important step to "making our coasts more resilient and safer."



UNESCO / Innova Films



TSUNAMI RISK AWARENESS AND OUTREACH ACTIVITIES.

WORLD TSUNAMI AWARENESS DAY, 2024



Emo. Ayuntamiento de Chipiona

2024 | MUNICIPAL LEVEL CHIPIONA

Actividades en Commemoración del maremoto de Lisboa de 1755. *Chipiona 2024*

Viernes 1 noviembre

Presentación sirenas de alerta (simulacro sonoro)
10:00h - Playa Cruz del Mar y Playa de Riega

Procesión Cristo de las Misericordias
18:30h - Parroquia Nra. Sra. de la O

Martes 5 noviembre

Jornada formativa sobre el riesgo de tsunami
10:00h - Edificio San Fernando

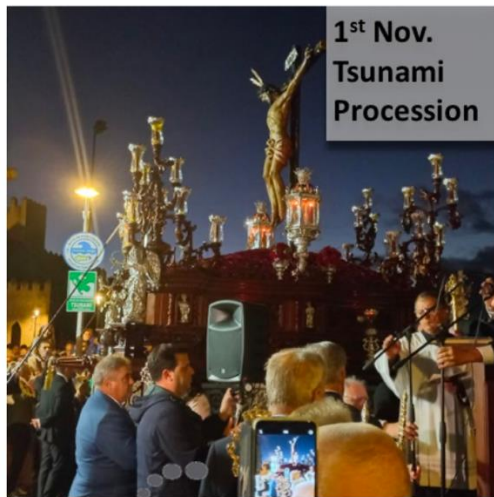
Visitas escolares
12:00h - Ermita del Cristo de las Misericordias

Miércoles 6 de noviembre

Ejercicio de simulacro de e
10:00h - IES Salmedina

DELEGACIÓN D

1/11/2024 - PROCESSION OF CHRIST OF MERCIES TO COMMEMORATE THE LISBON TSUNAMI OF 1755



6/11/2024 - EVACUATION EXERCISE OF A HIGH SCHOOL

**Ejercicio de evacuación
IES Salmedina**



Designed by María Morera Alvarez

WG4 UPDATES - TÜRKİYE

ICG/NEAMTWS XIX Session
27-29 November 2024
Paris, France

Tsunami Ready Recognition Programme - Büyükçekmece İstanbul Türkiye Certification Ceremony in İstanbul, 15 March 2024




KANDİLLİ
RASATHANESİ VE
DEPREM ARAŞTIRMA
ENSTİTÜSÜ
1868



AFAD 



5 November Word Tsunami Awareness Day

KOERI SOP WORKSHOP & Marmara Sea Coastal Municipalities

- **KOERI (TSP/NTWC, TÜRKİYE)**
- **ISTANBUL METROPOLITAN MUNICIPALITY**
- **Istanbul AFAD**
- **Gebze Technical University**
- **17 Coastal Municipalities**
- **Turkish Wireless and Radio Amateur Society (TRAC)**





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Intergovernmental
Oceanographic
Commission

THANK YOU