

Tsunami Evacuation Exercises and Alerts:

1. Support for tsunami exercises. If integrated into exercises for other hazards (e.g. earthquakes) or to regional exercises like CARIBE WAVE, PACWAVE, IOWAVE and NEAMWAVE, this can significantly help reduce the cost.
2. Funding for acquisition and maintenance of equipment or systems for the reception and dissemination of tsunami alerts – sirens, bullhorns or loudspeakers, radios, EAS, Wireless Emergency Alerts (this can range up to \$40,000 (or more) each for "sophisticated" multi-hazard siren systems).
3. Resources invested towards establishing an integrated telephone messaging system and audio alert system, especially for emergency alerts.
4. Resources invested towards establishing and restoration of footpath, evacuation roads and evacuation sites.
5. Capacity development – for the technical systems to monitor and analyze tsunami threat and issue alerts, also in the development of SOPs, the education and awareness activities, communication systems.

Communications:

1. It is essential to include strategies for socialization of the Tsunami Ready products/outputs (maps, plans, etc.) and education materials with the community in order to build ownership.
2. Maintain the public and government authorities informed on the process, launch, development and recognition phases – this is essential for creating the public support to motivate the government funding for new recognition activities and the sustainability in recognized communities.
3. (Re-)dissemination of tsunami materials, including evacuation maps – both digital and in print. There are regional and international resources that can support this effort directly or be adapted for local needs, which can help reduce costs.

Expected costs:

Costs for implementing Tsunami Ready has varied from \$5,000 to \$100,000 or more, and depends on the size or population of the community, data and equipment availability, and capacity. If tsunami inundation maps are available and there is equipment in place to monitor, receive and disseminate alerts, the cost is significantly reduced.

7 Tools and References

The following list offers information resources that can be used as training or as awareness tools to work on tsunami risk reduction with community organizations, local and national authorities as well as the general population.

7.1 Tsunami Ready Resources

The following are resources for the UNESCO/IOC Tsunami Ready Recognition Programme.

7.1.1 Resources

UNESCO/IOC Tsunami Ready Recognition Programme Website

This is a comprehensive site that includes key documents for implementation of the Programme, and summaries of Tsunami Ready communities that have been recognized.

Click [here](#) to see the website.

UNESCO/IOC Tsunami Ready Communities Global Map

A web-based visualization map of UNESCO/IOC Tsunami Ready recognized communities, as well as communities seeking recognition.

Click [here](#) to see the map and Tsunami Ready recognized communities.

International Tsunami and Tsunami Evacuation Signs

- In 2008, the ISO approved international signage for tsunami hazard zones, evacuation areas and evacuation buildings.

Click [here](#) to see the signs.

- The ISO signage is recommended, but not mandatory, and many countries have developed their own signage. Sites that show examples of tsunami signage from different countries, include:
 - Resources for the United States: Click [here](#) to see the website.
 - Evacuation Signage National and ISO Standards: Click [here](#) to download the file.
 - ITIC Signs and Symbols (international summary): Click [here](#) to see the website.

7.1.2 Guides and Training

IOC Manuals and Guides 82, Preparing for Community Tsunami Evacuations: from inundation to evacuation maps, response plans and exercises (UNESCO, 2020), describes the steps required to produce reliable and practical community-level tsunami evacuation maps, and covers all of the Tsunami Ready Recognition Programme indicators. The Manual can be used as a reference and/or a training manual. It is based on a pilot, TEMPP Training Pilot, that was conducted in Honduras and Central America between 2015 and 2017. In February 2017, with the completion of the TEMPP trainings, Honduras was able to recognize the community of Cedeño as the first UNESCO/IOC Tsunami Ready community in the Pacific. This was followed soon after by Costa Rica, who had also participated in the TEMPP trainings.

Click [here](#) to see the document.

ITIC Training Programme

ITIC assists countries in establishing tsunami warning systems and improving tsunami preparedness and, for decades, has annually conducted a training programme.

Topics have covered tsunami EWS, warning and emergency response SOPs, inundation modelling, evacuation planning, and exercises, all of which are pertinent for the implementation of Tsunami Ready. Trainings and training materials typically target national warning and emergency response staff and stakeholders, as well as businesses and communities when there is interest.

Click [here](#) to see the programme and materials.

OceanTeacher Global Academy (Online Training)

OceanTeacher Global Academy (OTGA) provides a comprehensive web-based training platform that supports classroom training (face-to-face), blended training (combining classroom and distance learning), and online (distance) learning. The OTGA courses, covering a range of IOC programme topics, including DRR, contribute to the IOC Mandate and implementation of the IOC Capacity Development Strategy, and enable the equitable participation of all IOC Member States and IOC Programmes.

For the Tsunami Ready Recognition Programme, the OTGA provides a standard set of training courses to assist countries and communities in implementing Tsunami Ready.

Click [here](#) to go to the OTGA home page.

7.1.3 Videos and Games

Tsunami Ready Boardgame

The Indian Ocean Tsunami Information Center (IOTIC) has developed an educational game as a communication and education tool aiming to create awareness and understanding of the 12 Tsunami Ready Indicators.

Click [here](#) to know more about the game.

Tsunami Ready Communities Around the World

In 2020 and 2021, as part of the World Tsunami Awareness Day, the United Nations Office for Disaster Reduction (UNDRR) in collaboration with UNESCO/IOC produced short videos to showcase the importance of Tsunami Ready community planning to save lives from tsunamis. The videos also show how international cooperation to and from countries and partners have worked together to build tsunami preparedness. Additionally, tsunami survivor videos share their valuable stories and lessons learned.

Click [here](#) to for the entire playlist of more than 70 videos.

Tsunami Ready Implementation in Communities

Series of short animation videos on Tsunami Ready information for communities developed by IOTIC. There are 13 videos explaining each of the Tsunami Ready Indicators used in the Indian Ocean.

Click [here](#) to see the videos.

7.2 Tsunami Awareness and Preparedness Resources

There are many tsunami education, awareness, and preparedness websites. Use your search engine to look for these websites.

7.2.1 Resources

Get Up to High Ground (Children's book)

Launched on the occasion of the 2018 World Tsunami Awareness Day, the child-friendly booklet is for children aged 6-12 years old to generate tsunami awareness through animated characters and simple but strong messages. The booklet provides relevant tsunami facts and explains both how to identify a tsunami and how to cope with one.

Click [here](#) to download the document.

I don't take risks (Campaign)

The campaign "I don't take risks Tsunami" was tested for the first time in 2014, at the occasion of the international drill Twist – Tidal Wave in Southern Tyrrhenian Sea and was financed by the European Commission. Since then, it has been a part of a promoted national campaign.

Click [here](#) to see the campaign.

Click to see the [leaflet](#) and [card](#).

ITIC Tsunami Awareness Materials

The International Tsunami Information Center (ITIC) has developed a database of materials focused on tsunami preparedness and to support trainings. The materials have been developed for various audiences, including teachers, students, community members and emergency officials.

Click to visit and explore the [Aware/Educate](#) web pages.

New Zealand Preparedness Resources: Get Tsunami Ready

All of New Zealand is at risk of earthquakes and all coastlines are at risk of tsunamis. *If an Earthquake is Long or Strong, Get Gone – Move immediately to the nearest high ground or as far inland as possible. Don't wait for an official tsunami warning.* Find out what to do before, during and after a tsunami.

Click [here](#) to explore this valuable content.

Stop Disasters! (Online Game)

In 2007, as part of its education campaign *Disaster risk reduction starts at school*, the UNDRR created an online game aimed at teaching children aged 9 to 16 how to build safer villages and cities against disasters. Children learn how the location and construction materials can make a difference when disaster strikes and how EWS, evacuation plans and education can save lives and livelihoods. Players have different types of missions to accomplish within a specific budget and time limit before a simulated hurricane, earthquake, flood, tsunami or wildfire strikes. They have to choose between five scenarios with three levels of difficulty and the winners will be the ones who save more people and livelihoods.

Click [here](#) to access the game.

Tanah: The Tsunami and Earthquake Fighter – A Mobile App Helping Kids Be Prepared (Online Game)

This is a disaster preparedness educational mobile app designed for kids and families. The game follows heroine Tanah as she learns to prepare and protect herself from tsunamis and earthquakes. Through helping Tanah navigate fun and interactive challenges, users enhance their hazard awareness while learning key concepts of DRR.

Click [here](#) to download the game.

Tsunami Kit

The TSUNAMI*Kit* aims to support communities and save lives with timely preparedness and warning. The kit shares experiences from the work of a joint German-Indonesian Project in coastal regions of Bali, Lombok, Java and Sumatra as well as other initiatives. Modules introduce the key elements of early warning, provides checklists and tools for practical implementation, portrays experiences and best practices, presents a compilation of various outreach materials and offers further resources.

Click [here](#) to see the modules.

UNDRR Prevention Web: Knowledge Base – Tsunami (Compilation of documents)

Online searchable compilation of tsunami literature by content type, theme, organization type, country and region, and year.

Click [here](#) to search the database for tsunami related documents.

UNDRR Terminology on Disaster Risk Reduction

Online glossary of terminology on DRR. The UNDRR Terminology is the international standard terminology related to DRR, at least in all official United Nations languages, for use in programme and institutional development, operations, research, training curricula and public information programmes. This is an update of the *2009 UNISDR Terminology on Disaster Risk Reduction*.

Click [here](#) to see this UNDRR resource.

United States National Tsunami Hazard Mitigation Program (NTHMP) – Partner Resources

The US NTHMP is a coordinated national effort to mitigate the impact of tsunamis through public education, community response planning, hazard assessment, and warning coordination. The NTHMP includes NOAA, the Federal Emergency Management Agency, the US Geological Survey, and 28 US States and Territories. This strong and active partnership connects States with the federal agencies, and enables all levels of government to work together toward the common goals of protecting lives and reducing economic losses from tsunamis at the community level, including for TsunamiReady®.

Click [here](#) to explore this valuable resource on education and outreach and other mitigation activities.

World Tsunami Awareness Day (Campaign)

In December 2015, the United Nations General Assembly (UNGA) designated 5 November as World Tsunami Awareness Day. The initiative was introduced and led by Japan, which due to its repeated, bitter experience has over the years built up major expertise in areas such as tsunami early warning, public action and building back better after a disaster to reduce future impacts. The date for the annual celebration was chosen in honour of the Japanese story of “Inamura-no-hi”, meaning the “burning of the rice sheaves”. During a 1854 earthquake, a farmer saw the ocean receding, a sign of a looming tsunami. He set fire to his entire harvest to warn villagers, who fled to high ground. Afterwards, he built an embankment and planted trees as a buffer against future waves. The UNGA has called on all countries, international bodies and civil society to observe the day, in order to raise tsunami awareness and share innovative approaches to risk reduction.

Click [here](#) to see the information related to the campaign.

7.2.2 Videos

How Tsunamis work? (Video)

A 3-minute animated video about tsunamis. Alex Gendler -Ted-Ed. 2014.

Click [here](#) to see the video.

Tsunami Just-In-Time Training (Video)

This is a Tsunami Preparedness Just in Time Training with Dr Eddie Bernard, former Director of the NOAA Pacific Marine Environmental Laboratory.

Click [here](#) to see the video.

Tsunamis: Be Prepared and Stay Safe (Video)

People are often unaware of the threat that tsunamis pose along the coast, as well as inland. If you live, work or play on the coast, be prepared and stay safe! This short fast-draw animated video by US NOAA provides compelling messages in an easy-to-understand format.

Click to view the videos in [English](#), [Spanish](#) and [Samoan](#).

Strengthening Preparedness to Tsunami (Video)

Simple Dos & Don'ts to keep your family and loved ones safe if disaster strikes by the United Nations Development Programme (UNDP) India office.

Click [here](#) to see the video.

10 Menit Kehidupan (Video in Indonesian)

A four-part video by IOTIC on tsunami hazards, tsunami EWS, preparation to face tsunami and SOP training conducted by relevant agencies.

Click [here](#) to see the videos.

Ayo Siaga Tsunami Video series (In Indonesian with English Subtitles)

Four animated videos by IOTIC on tsunami preparedness, tsunami EWS, tsunami evacuation, tsunami survival strategy.

Click [here](#) to see the videos.