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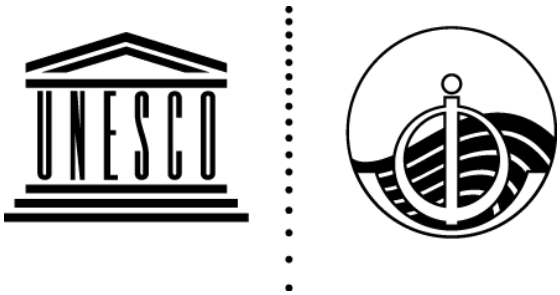

EXERCISE INDIAN OCEAN WAVE 25

An Indian Ocean-wide Tsunami Warning and Communications Exercise

25 September – 05 November 2025

Volume 1 Exercise Manual

UNESCO

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This volume has four supplements:

— Supplement 1: TSP Bulletins for Scenario 1 Sunda Trench
— Supplement 2: TSP Bulletins for Scenario 2 Makran Trench
— Supplement 3: TSP Bulletins for Scenario 3 Fani Maore Volcano
— Supplement 4: TSP Bulletins for Scenario 4 Sumatra Trench

IOWave25

Scenario 1 - Sunda Trench 25 September 2025 (Thursday)	Scenario 2 - Makran Trench 15 October 2025 (Wednesday)
Scenario 3 - Fani Maore Volcano 25 October 2025 (Saturday)	Scenario 4 - Sumatra Trench 5 November 2025 (Wednesday)

The IOWave25 online evaluation should be completed by 30 November 2025.

Further information on Exercise IOWave25 is available at the exercise website: https://oceanexpert.org/event/4786.

This document was prepared by the Exercise IOWave25 Task Team for the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System.

(IOC/2025/TS/216Vol.1)

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1. INTRODUCTION

The Exercise Indian Ocean Tsunami Wave 2025 (IOWave25) manual provides an overview and guidance for countries participating in the exercise. The supplements comprise a full set of IOTWMS Tsunami Service Provider (TSP) exercise bulletins and products corresponding to the four scenarios of Sunda Trench (Supplement 1), Makran Trench (Supplement 2), Fani Maore Volcano (Supplement 3), and Sumatra Trench (Supplement 4).

2. BACKGROUND

The devastating impact of the 26 December 2004 Indonesia earthquake and Indian Ocean Tsunami (IOT) tragically demonstrated what could happen without an effective tsunami warning system. Tsunamis may not occur often, but when they do, they can affect entire coasts, sometimes across an entire ocean. The 2004 IOT caused damage and casualties across most of the Indian Ocean basin, even as far away as South Africa. Following this event, UNESCO's Intergovernmental Oceanographic Commission (IOC) was requested to establish an Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS), to promote the exchange of seismic and sea level data for rapid tsunami detection and analysis, to provide warnings for such events, and to coordinate mitigation efforts among its Member States. An efficient and effective end-to-end warning system was needed, ready to react 24 hours a day to any potential tsunami threat, alert the at-risk coastal communities, and motivate them to take immediate and appropriate steps to save their lives.

In 2005 with the support the Government of Japan and the Government of the United States of America (USA), an Interim Advisory Service (IAS) was implemented based on the UNESCO-IOC Pacific Tsunami Warning System (PTWS). The Japan Meteorological Agency (Japan) and the Pacific Tsunami Warning Centre (USA) provided tsunami threat information to National Tsunami Warning Centres (NTWCs) established across the Indian Ocean under the guidance of the UNESCO-IOC ICG/IOTWMS. Under the further guidance of the ICG/IOTWMS, Member States collaborated in the development of an independent service supporting the IOTWMS. The IOTWMS is now a system of systems with the National Tsunami Warning Center (NTWC) of the twenty-five (25) active Member States issuing tsunami warnings to their communities. Often national warnings are based on the tsunami threat information provided by the three Tsunami Service Providers (TSPs) operated by Australia, India, and Indonesia (UNESCO/IOC 2019a; UNESCO/IOC in preparation). The independent end-to-end tsunami warning system was initially tested in the Indian Ocean-wide tsunami warning exercise IOWave09 (October 2009; UNESCO/IOC 2009b) and came into operation immediately following IOWave11 (October 2011; UNESCO/IOC 2011). The ICG/IOTWMS subsequently conducted ocean-wide exercises IOWave14 (September 2014; UNESCO/IOC 2014), IOWave16 (September 2016; UNESCO/IOC 2017b), IOWave18 (September 2018; UNESCO/IOC 2019b), IOWave20 (October 2020; UNESCO/IOC 2022b), and IOWave23 (October 2023; UNESCO/IOC 2025).

The IOWave exercises have been designed to test the receipt and dissemination of tsunami notifications along national tsunami warning chains, as well as test appropriate responses aligned with pre-established Standard Operating Procedures (SOPs) (UNESCO/IOC 2017a). Throughout the IOWave Exercises, the engagement of coastal communities in tsunami education campaigns, preparedness measures, and evacuation drills has grown.

Key milestones in exercise participation were achieved during IOWave16, where over 60,000 people participated in evacuation drills, and subsequently during IOWave18 where the number of participants exceeded 119,000. Most community evacuations were conducted in India. Australia, Comoros, Indonesia, Iran, Kenya, Mauritius, Oman, Pakistan, Seychelles, Sri Lanka, Tanzania, Thailand, and Timor Leste also conducted evacuations in at-risk coastal communities.

Exercise IOWave20 was held during the Covid-19 pandemic. Member States were encouraged to mainly focus on testing communications protocols and conduct virtual tabletop exercises (as a minimum) to assess organisational Standard Operating Procedures (SOPs), plans, and policies for tsunami warning and emergency response. Guidelines for tsunami response during the Covid-19 pandemic were published by UNESCO-IOC and the ICG/IOTWMS IOWave20 Task Team encouraged Member States to update and test their SOPs for a pandemic situation.

Exercise IOWave23 included participation of twenty (20) Member States. While all involved National Tsunami Warning Centres (NTWCs) and Disaster Management Organisations (DMOs), it was encouraging also to see exercising down to community level in eight (8) Member States, including specific testing of the UNESCO-IOC Tsunami Ready indicators in seven (7) Member States. Around a total of 45,000 people participated in evacuation drills, including all genders, children, the elderly and people with disabilities.

Indian Ocean-wide tsunami exercises are effective tools for evaluating the readiness of the IOTWMS and for identifying changes that can improve its effectiveness at the regional and national level. The 14th Session of the ICG/IOTWMS (ICG/IOTWMS-XIV), held from 17 to 19 November 2024 in Banten, Indonesia, established a Task Team to organise the next Indian Ocean-wide tsunami exercise (IOWave25) in the second half of 2025 and encouraged maximum participation from all Member States, where possible down to community level.

Exercise IOWave25 as outlined in UNESCO-IOC Circular Letter 3041 will simulate Indian Ocean countries being put in a tsunami warning situation and require National Tsunami Warning Centres (NTWCs) and the National and/or Provincial and/or Local Disaster Management Offices (NDMO/PDMO/LDMO) and other relevant authorities in each country to activate their SOPs.

2.1 NON-SEISMIC AND COMPLEX SOURCE TSUNAMIS

After the destructive tsunamis in Greenland in 2017, Indonesia (Palu and Anak Krakatau separate events) in 2018, and Tonga in 2022 that were generated by landslides, volcanic eruptions and earthquakes outside subduction zones, the UNESCO-IOC Working Group on Tsunamis and Other hazards related to sea level Warning and mitigation Systems (TOWS-WG) identified the need to expand the capability of tsunami warning systems (initially designed to detect tsunamis generated by subduction zone earthquakes) to cover tsunami events generated by non-seismic and complex sources. Such tsunamis have made up 13% of the world's confirmed tsunamis. Non-seismic and complex sources of tsunamis include underwater volcanic explosions, volcanic pyroclastic flows and large-scale flank collapses, subaerial and underwater landslides, and tsunamis triggered by atmospheric perturbations (meteotsunamis). The TOWS-WG has established *ad hoc* task teams to develop best practices in dealing with such events. This resulted in the publication of the UNESCO-IOC Technical Series on Monitoring and Warning for Tsunamis Generated by Volcanos and Meteotsunamis: Definition, Detection and Alerting Services Investigation.

Some Member States, such as Indonesia, have begun implementing dedicated national sea level monitoring and tsunami warning systems with SOPs for warning against such events, particularly in the near field. TSP-Australia developed tsunami threat information services for tsunamis generated by distant non-seismic and complex sources, which were tested for the first time during Exercise IOWave23. More recently, TSP-Australia and TSP-India have extended the tsunami threat information services for tsunamis generated by near field non-seismic and complex sources, which will be tested for the first time during Exercise IOWave25.

During IOWave25, Member States of the ICG/IOTWMS will be able to utilise the TSP services for non-seismic events, with scenario 3 dedicated to a tsunami generated by the Fani Maore

volcano in the Mozambique Channel between Madagascar and the eastern coast of Africa. Fani Maore is an underwater volcano rising 800 meters above the seafloor and located at a depth 3,500 meters below sea level. Additionally, the Fani Maore volcano scenario will be held on a Saturday night enabling participants to exercise outside of normal working hours.

2.2 UNESCO-IOC TSUNAMI READY RECOGNITION PROGRAMME

The UNESCO-IOC Tsunami Ready Recognition Programme (TRRP) is a community performance-based programme that facilitates tsunami preparedness as an active collaboration of the public (community), community leaders, and national and local emergency management agencies. The main objectives of this programme are to improve coastal community preparedness for tsunami emergencies, to minimise the loss of life and property, and to ensure a structural and systematic approach in building community preparedness. This can be achieved and enhanced by bringing the ownership of preparedness to the community. This programme is implemented on a voluntary basis and entails a bottom-up process where the community takes the initiative to build their own capacity. Through this approach, it is expected that the programme will ensure ownership that leads to sustainability in the community. This programme provides a structured and systematic approach to community tsunami preparedness through fulfilling the set of best-practice indicators. The twelve (12) TRRP Indicators are described in Table 1.

Awareness and adoption of the UNESCO-IOC Tsunami Ready Recognition Programme (TRRP) guidelines (UNESCO/IOC 2022a) has been witnessing a steady increase globally. To date, forty-eight (48) Indian Ocean communities have been recognised by UNESCO-IOC as Tsunami Ready with IOWave23 exercise providing an opportunity for testing the readiness of TRRP indicators in coastal communities. Exercise IOWave25 will also provide yet another opportunity for Member States to test levels of preparedness against the indicators of the UNESCO-IOC TRRP in communities.

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 including signage is publicly displayed.
6	**PREP-3**. Outreach and public awareness and education resources are available and distributed.
7	**PREP-4**. Outreach or educational activities are held at least 3 times a year.
8	**PREP-5**. A community tsunami exercise is conducted at least every 2 years.
III	**RESPONSE (RESP)**
9	**RESP-1**. A community tsunami emergency response plan 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.

Table 1. UNESCO Tsunami Ready Recognition Programme (TRRP) Indicators.

2.3 TSUNAMI WARNING CHAINS

Exercise IOWave25 will provide an opportunity for Member States to test their tsunami warning chains. Effective tsunami warning systems rely on fast and dependable processes for detection, monitoring, decision-making, warning generation by national authorities, and timely dissemination through a functioning warning chain to reach at-risk communities. The flow of information and processes is captured in national tsunami warning chains. They should reflect the coordination and information flow among organisations operating at multiple levels from international and national bodies to regional and local authorities. Public media can also play an important role in the tsunami warning chain, by ensuring that warnings reach the public quickly and clearly. Developing and refining national tsunami warning chains should be done prior to exercising.

To compliment tsunami warning chains, integrated, time-sensitive Standard Operating Procedures (SOPs) are essential at every level for all involved stakeholders. Each institution involved has distinct roles and mandates, which influence the content and authority of their tsunami warning messages and/or information. The procedures should be captured within organizational SOPs. Exercises provided an opportunity to test the SOPs. During the exercise (or real event), participants should follow their SOPs. After the exercise, organisations can revise and refine their SOPs based on lessons learned.

Time is a critical factor, especially for near-field tsunami threats, where warnings must be issued and received within minutes. To ensure reliability, warning systems must include redundant communication channels so that messages can still be delivered even if one part of the system fails. Additionally, all warning messages must be consistent across different

sources. It is crucial that the public understands the meaning of alerts, such as whether a siren signals a general warning or an immediate call to evacuate.

Over the years, several regional SOP Workshops have been organised with participation of NTWCs, DMOs, Media and other relevant organisations within the IOTWMS Member States to develop and finetune national early warning chains and SOPs. Hybrid pre-IOWave25 SOP Workshops are also scheduled in August 2025 to provide an opportunity for the IOTWMS Member States to review their Early Warning Chains and SOPs prior to exercising them during IOWave25.

2.4 UN EARLY WARNINGS FOR ALL INITIATIVE, OCEAN DECADE TSUNAMI PROGRAMME and WORLD TSUNAMI AWARENESS DAY

On 8 November 2022, during the Twenty-seventh Session of the Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change (UNFCCC), the UN Secretary-General launched the Executive Action Plan on Early Warnings for All (EW4ALL) 2023–2027, which is aimed at ensuring that everyone on the planet is protected by early warning systems by 2027. Achieving this objective is critical in the Indian Ocean, one of the world's most populous and disaster-affected regions.

Similarly, in June 2021, UNESCO-IOC launched the Ocean Decade Tsunami Programme (ODTP) as part of the Decade of Ocean Science for Sustainable Development (2021–2030) – an effort to bolster the global tsunami warning system by reducing response times and enhancing community readiness. Its main objectives are to (i) Enhance systems' capacity to issue actionable and timely warnings for tsunamis from all identified sources to 100% of coasts at risk and (ii) Guarantee that 100% of communities at risk are prepared and resilient to tsunamis by 2030 through efforts like the UNESCO-IOC Tsunami Ready Recognition Programme (TRRP).

The theme of UNDRR World Tsunami Awareness Day (WTAD) in 2023 mirrored the theme of the International Day of Disaster Reduction (IDDR): fighting inequality for a resilient future. WTAD 2023 activities focused on raising awareness about the underlying disaster risk drivers – poverty, inequality, and vulnerability – that make tsunamis more deadly for those most at risk. Exercise IOWave23 provided opportunity for Member States to test procedures for inclusivity of national tsunami warnings to reach all in their at-risk communities, i.e., including those with disabilities, the aged and youth, and regardless of gender.

Exercise IOWave25 will provide an excellent opportunity to engage stakeholders including coastal communities working towards achieving the objectives of EW4All, ODTP, WTAD 2025 and IDRR 2025.

3. CONCEPT OF EXERCISE IOWAVE25

3.1 PURPOSE

The purpose of Exercise IOWave25 is to evaluate and improve the effectiveness of the IOTWMS, through its operational TSPs, NTWCs, National Disaster Management Organisations (NDMOs), Local Disaster Management Organisation (LDMOs) and other relevant authorities in responding to a potentially destructive tsunami. The exercise will provide an opportunity for Indian Ocean countries to test their operational lines of communications, to review their tsunami warning and emergency response SOPs, tsunami ready indicators, and to promote overall emergency and community preparedness.

Regular exercises are important for maintaining staff readiness for real events. This is especially true for tsunamis, which are infrequent but require rapid response when they occur. The pre-exercise planning and post-exercise evaluation process is as important as the actual exercise because they bring all stakeholders to closely coordinate their actions. Every Indian Ocean country is encouraged to participate, down to the community level wherever possible.

3.2 OBJECTIVES

The objectives for Exercise IOWave25 are to validate:

1. Procedures in place to ensure tsunami warnings get to all in the community, including those with disabilities, all genders, elderly, and youth.

2. Level of community awareness, preparedness, and response.

3. SOPs associated with tsunami warning chains within countries for generating and disseminating tsunami warnings to their relevant emergency response agencies, media, and the public.

4. SOPs associated with tsunami warning chains within countries for the issuing of public safety messages, ordering evacuations and where possible issuing all-clear messages.

5. Dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via Tsunami Warning Focal Points (TWFPs) of Indian Ocean countries and the reception by NTWCs of the TSP messages.

6. Dissemination by TSPs of Tsunami Bulletin Notification messages for NAVAREA stakeholders to ensure navigational safety and security.

7. Access by NTWCs to the tsunami bulletins and other products on the TSP websites, and the use of that information to produce national warnings.

8. Reporting by NTWCs to the TSPs of their National Tsunami Warning Status.

9. Receipt and understanding by NTWCs of new TSP service for tsunamis generated by non-seismic and complex sources.

Within the above framework, each country should develop its own specific objectives for the exercise.

3.3 EXERCISE DATES AND SCENARIOS

Exercise IOWave25 includes four tsunami scenarios held over a six-week period during 25 September to 5 November 2025 with all scenarios run in real-time. The scenario details and locations are provided in Table 2 and Figure 1, respectively.

Scenario	1. Sunda Trench	2. Makran Trench	3. Fani Maore Volcano	4. Sumatra Trench
Date	25 September 2025 (Thursday)	15 October 2025 (Wednesday)	25 October 2025 (Saturday)	05 November 2025 (Wednesday)
Time	01:00 UTC	06:00 UTC	15:00 UTC (eruption at 14:00 UTC)	03:00 UTC
Source	Earthquake	Earthquake	Volcano	Earthquake
Magnitude	~M9.0	~M9.0	n/a	~M9.2
Depth	10 km	10 km	n/a	10 km
Latitude	6.94S	24.80N	12.92S	3.30N
Longitude	104.70E	62.20E	45.72E	95.96E
Location	Sunda Strait, Indonesia	Off Coast of Pakistan	Mozambique Channel	Northern Sumatra, Indonesia

Table 2. Scenario Details

Figure 1. Scenario Locations

3.4 EXERCISE INVOLVEMENT

The following organisations should ideally be involved in the exercise:

- Tsunami Service Providers (TSPs),
- National Tsunami Warning Centres (NTWCs),
- National Disaster Management Organisations (NDMOs),
- Local Disaster Management Organisations (LDMOs),
- Media Organisations, and
- Local communities, to the extent decided by each Member State.

3.5 MILESTONES FOR MEMBER STATES

Key milestones for Member State participation in Exercise IOWave25 are provided in the checklist in Table 3. The checklist is intended to serve only as a broad reference and is not all-inclusive.

No	Activity	Timeline
1	Announcement by IOC Circular Letter 3041	May 2025
2	Nominate a National Contact for IOWave25	June 2025
3	Set up IOWave25 Exercise National Coordination Committee involving NTWC, LDMOs, NDMOs, and all other important stakeholders including private industry participants	Ongoing
4	Assign agency roles including exercise controller, key participants, and observers	Ongoing
5	Decide on level of participation and identify communities for evacuation (where applicable)	Ongoing
6	Secure funding and support for community activities	Ongoing
7	Address indicators of UNESCO-IOC Tsunami Ready Recognition Programme or similar national initiative (where appropriate)	Ongoing
8	Issue of IOWave25 Exercise Manual by the Secretariat	June 2025
9	Develop a National IOWave25 Exercise Manual to plan/guide activities, including those at community level	June–July 2025
10	UNESCO-IOC Standard Operating Procedure (SOP) Training Workshops (online)	July–August 2025
11	Organise and hold pre-exercise national workshop(s) and meeting(s) with key stakeholders including media	August–September 2025
12	Ensure Standard Operating Procedures are in place and up to date	August–September 2025
13	Share IOWave25 Exercise in-country participation plans with the ICG/IOTWMS Secretariat	September 2025
14	Prepare a media press release	One week before the exercise
15	Participate in IOWave25 Exercise	25 September 15 October 25 October 05 November
16	Hold post-exercise hot and cold debriefs	After the Exercise
17	Complete the IOWave25 online post-exercise evaluation	After the Exercise
18	Revise and improve SOPs in accordance with lessons learnt during the Exercise	After the Exercise
19	IOC-UNESCO Post-IOWave25 Exercise Lessons Learnt Workshop (online)	December 2025

Table 3. Checklist of activities to enable Member States' preparation and participation in Exercise IOWave25.

3.6 EXERCISE SUCCESS CRITERIA

The exercise will be a success when the core objectives above have been exercised, performance evaluated, and an exercise report produced. The broad success criteria, depending on the level of involvement of each country, are:

- The communication protocols between the TSPs, NTWCs, TWFPs and information dissemination points within countries are tested and understood.
- Areas of improvement in the tsunami warning and response chain are identified.
- Local communities and organisations participate in the exercise (to the extent possible) and increase their knowledge of tsunami preparedness and response.

3.7 TYPES OF EXERCISE

Exercises stimulate the development, training, testing and evaluation of Disaster Plans and SOPs. Exercise participants may use their own past multi-hazard drills (e.g., flood, typhoon, earthquake, etc.) as a framework to conduct Exercise IOWave25.

At a minimum, Exercise IOWave25 should be conducted to a level of readiness that involves communication and decision making at government level, without disrupting or alarming the public. Individual countries are particularly encouraged to maximise the extent of their participation, and where possible, to include public notification and community evacuation.

Exercises can be conducted at various scales of magnitude and sophistication. The types of exercises that can be conducted are:

1. Orientation Exercise
2. Drill
3. Tabletop Exercise
4. Functional Exercise, and
5. Full-scale Exercise.

See Annex I for a more detailed description of each type of exercise.

For Exercise IOWave25, individual Member States should decide what type of exercise they are going to undertake, and whether they will participate in one or multiple scenarios. Participation in multiple scenarios, at least at the NTWC and DMO level, has the advantage of allowing SOP issues identified on the first day to be corrected and exercised again on the subsequent exercise day, and testing different elements of the SOPs because the tsunami arrival times will vary for each scenario.

Member States are encouraged to conduct a functional or full-scale exercise down to community level. Functional or full-scale exercises require an increasing level of planning and preparation, particularly when involving community evacuation. Due care should be taken not to inadvertently alarm the public. If a functional or full-scale exercise is not possible, it is recommended that a tabletop exercise should be conducted as a minimum involving key national stakeholders with an objective to assess organisational SOPs, plans and policies for tsunami warning and emergency response in the backdrop of a pandemic.

3.8 FURTHER INFORMATION

Further detailed information on Exercise IOWave25 is available at the exercise website https://oceanexpert.net/event/4786.

4. SPECIFICS OF CONDUCTING EXERCISE IOWAVE25

4.1 OVERVIEW

The exercise will comprise four scenarios over a six-week period (25 September – 05 November 2025) that will generate simulated tsunami waves travelling across different parts of the Indian Ocean, and a combination of all scenarios covering the entire the Indian Ocean basin. Large magnitude earthquakes have been chosen to maximise ocean coverage and the number of Member States impacted for each scenario. While TSPs will issue real-time bulletins for the four scenarios on pre-decided exercise dates, Member States can run their national exercise on any day during the above period using the TSP bulletins provided as supplements to this manual that will be made available for download from the exercise website: https://oceanexpert.net/event/4786.

The four exercise scenarios are:

- **Scenario 1, Sunda Trench,** starting at 01:00 UTC on Thursday 25 September 2025: Magnitude 9.0 earthquake in Sunda Strait, Indonesia. The simulated tsunami will take approximately 0 hours to travel from its source to Indonesia; 2.5 hours to travel to Australia; 3.0 hours to travel to Timor-Leste; and 4.0 hours to travel to Sri Lanka. (Refer to Supplement 1)

- **Scenario 2, Makran Trench,** starting at 06:00 UTC on Wednesday 15 October 2025: Magnitude 9.0 earthquake in the Makran trench off the coast of Pakistan. The simulated tsunami will take approximately 0 hours to travel from its source to Iran & Pakistan; 0.5 hours to travel to Oman; 1.0-hour travel to United Arab Emirates; and 2.0 hours to travel to India. (Refer to Supplement 2)

- **Scenario 3, Fani Maore Volcano,** starting at 15:00 UTC (eruption at 14:00 UTC) on Saturday 25 October 2025: Tsunami generated by volcanic eruption at Fani Maore in the Mozambique Channel between Madagascar and the eastern coast of Africa. The simulated tsunami will take approximately 0 hour to travel to Comoros, Mayotte (France), and Madagascar; 0.5 hours to travel to Seychelles; 1.0 hour to travel to Mozambique & Tanzania; and 2.0 hours to travel to Kenya, Mauritius, and Somalia. (Refer to Supplement 3)

- **Scenario 4, Sumatra Trench,** starting at 03:00 UTC on Wednesday 5 November 2025: Magnitude 9.2 earthquake in Northern Sumatra, Indonesia. The simulated tsunami will take approximately 0 hour to travel from its source to Indonesia; 0.5 hours to travel to India; 1.0 hour to travel to Thailand & Myanmar, and 2.0 hours to travel to Sri Lanka. (Refer to Supplement 4)

* Note that the expected arrival times have been approximated to the nearest 0.5 hour (30 minutes). Therefore, a time of 0 hours can be interpreted as less than 15 minutes.

Member States are invited to participate in any or all events, which will be run in real-time. The scenario starting times have been chosen to be more convenient for the "near field" (i.e., local) countries for each scenario.

During all scenarios, TSPs Australia, India and Indonesia will make exercise bulletins and detailed tsunami threat advice available on their password-protected websites and send Notification Messages to NTWCs as the data is updated during the events.

The approximate timelines for issuance of TSP bulletins for events are given in Tables 4, 6, 8 and 10 below. Note that the actual bulletin issue times on the exercise days may be slightly

different because the TSPs will be operating in a real-time simulation mode. Participant countries should use the timelines only as a guide for planning their involvement in the exercise.

Coverage: All Member States are encouraged to participate. Estimated tsunami arrival times and maximum wave amplitudes to all threatened IOTWMS countries are included in the TSP bulletins and products (refer to Tables 5, 7, 9, and 11; Figures 2–12 for summary information; and Supplements 1, 2, 3, and 4 for detailed information).

Messages: The TSPs will issue an initial Exercise Announcement Message to start the exercise on each day. Thereafter, NTWCs will receive Notification Messages from the TSPs according to the timelines shown in Table 3 (Sunda Trench earthquake), Table 5 (Makran Trench earthquake), Table 7 (Fani Maore Volcano), and Table 9 (Sumatra Trench earthquake), which will direct NTWCs to the TSP password-protected websites to view the detailed exercise bulletins and detailed threat information. Examples of the TSP Notification Messages are given in Supplements 1, 2, 3, and 4.

Threat Details: The following section 4.2 provides the essential scenario details to facilitate the exercise plan. They include the estimated tsunami arrival times of the first significant wave above threat level and the maximum wave amplitudes for each affected country (Table 5 - Sunda Trench, Table 7 - Makran Trench, Table 9 - Fani Maore Volcano (arrival times only), and Table 11 (Sumatra Trench). Also provided are examples of threat maps, maximum wave amplitude maps, and tsunami travel time maps of the first detectable wave in the Indian Ocean (Figures 2-4 for Sunda Trench, Figures 5-7 for Makran Trench, Figures 8-9 for Fani Maore Volcano, and Figures 10-12 for Sumatra Trench).

Countries are encouraged to conduct the exercise in real-time and use the TSP websites to access the bulletins and other threat information available there. To facilitate the conduct of exercising in compressed timeline, for conduct of tabletop exercises, and for planning evacuation exercises, the full set of TSP exercise bulletins and products are separately provided in Supplement 1 (Scenario 1 – Sunda Trench), Supplement 2 (Scenario 2 – Makran Trench), Supplement 3 (Scenario 3 – Fani Maore Volcano), and Supplement 4 (Scenario 4 – Sumatra Trench) .

4.2 EXERCISE SPECIFICS

4.2.1 Scenario 1, Sunda Trench

This is the scenario of a magnitude ~9.0 earthquake in the Sunda Strait, Indonesia (epicentre 6.94N, 104.70E), starting at 01:00 UTC on Thursday 25 September 2025. The simulated tsunami will take approximately 0 hours to travel from its source to Indonesia; 2.5 hours to travel to Australia; 3.0 hours to travel to Timor-Leste; and 4.0 hours to travel to Sri Lanka.

Table 4 contains the bulletin timelines for Scenario 1, Sunda Trench. The full set of TSP exercise bulletins and products for are provided in Supplement 1.

TSP AUSTRALIA			**TSP INDIA**			**TSP INDONESIA**		
Time (UTC)	**Bulletin**		**Time (UTC)**	**Bulletin**		**Time (UTC)**	**Bulletin**	
	#	**Details**		**#**	**Details**		**#**	**Details**
01:00		*Announcement Message*	*01:00*		*Announcement Message*	*01:00*		*Announcement Message*
01:10	*1*	*Earthquake Bulletin (M8.5)*	*01:08*	*1*	*Earthquake Bulletin (M8.6)*	*01:05*	*1*	*Earthquake Bulletin (M8.7)*

TSP AUSTRALIA			TSP INDIA			TSP INDONESIA		
Time (UTC)	Bulletin		Time (UTC)	Bulletin		Time (UTC)	Bulletin	
	#	Details		#	Details		#	Details
01:15	*2*	*Potential Threat (M8.5)*	*01:15*	*2*	*Potential Threat (M8.8)*	*01:09*	*2*	*Potential Threat (M8.9)*
01:25	*3*	*Potential Threat (M9.0)*	*01:30*	*3*	*Confirmed Threat (M9.0)*	*01:30*	*3*	*Confirmed Threat (M9.0)*
01:35	*4*	*Confirmed Threat (M9.0)*	*02:00*	*4*	*Confirmed Threat (M9.0)*	*02:00*	*4*	*Confirmed Threat (M9.0)*
01:45	*5*	*Confirmed Threat (M9.1)*	*03:00*	*5*	*Confirmed Threat (M9.0)*	*03:00*	*5*	*Confirmed Threat (M9.0)*
02:45	*6*	*Confirmed Threat (M9.1)*	*04:00*	*6*	*Confirmed Threat (M9.0)*	*04:00*	*6*	*Confirmed Threat (M9.0)*
03:45	*7*	*Confirmed Threat (M9.1)*	*05:00*	*7*	*Confirmed Threat (M9.0)*	*05:00*	*7*	*Confirmed Threat (M9.0)*
04:45	*8*	*Confirmed Threat (M9.1)*	*06:00*	*8*	*Confirmed Threat (M9.0)*	*06:00*	*8*	*Confirmed Threat (M9.0)*
05:45	*9*	*Confirmed Threat (M9.1)*	*07:00*	*9*	*Confirmed Threat (M9.0)*	*07:00*	*9*	*Confirmed Threat (M9.0)*
06:45	*10*	*Confirmed Threat (M9.1)*	*08:00*	*10*	*Confirmed Threat (M9.0)*	*08:00*	*10*	*Confirmed Threat (M9.0)*
07:45	*11*	*Confirmed Threat (M9.1)*	*09:00*	*11*	*Confirmed Threat (M9.0)*	*09:00*	*11*	*Confirmed Threat (M9.0)*
08:45	*12*	*Confirmed Threat (M9.1)*	*10:00*	*12*	*Confirmed Threat (M9.0)*	*10:00*	*12*	*Confirmed Threat (M9.0)*
09:45	*13*	*Confirmed Threat (M9.1)*	*11:00*	*13*	*Confirmed Threat (M9.0)*	*11:00*	*13*	*Final Bulletin*
10:45	*14*	*Confirmed Threat (M9.1)*	*12:00*	*14*	*Confirmed Threat (M9.0)*			
11:45	*15*	*Confirmed Threat (M9.1)*	*13:00*	*15*	*Final Bulletin*			
12:45	*16*	*Final Bulletin*						

Table 4. Bulletin Timelines for Scenario 1, Sunda Trench.

The estimated tsunami arrival times and maximum wave amplitudes for Scenario 1, Sunda Trench are given in Table 5. T2 in UTC is the Estimated Tsunami Arrival Times (ETAs) for the first wave above the Threat Level of 0.5 m. The earliest T2 out of the three TSPs is used for each listed country. MAX BEACH in metres is the estimated Maximum Wave Amplitude at the beach. The largest MAX BEACH out of the three TSPs is used for each listed country. No values are given for those countries assessed by all three TSPs as not under threat.

Country	T2 (UTC)	MAX BEACH (m)
Australia	01:10	23.9
Bangladesh	08:12	1.6
Comoros	10:00	0.7
Djibouti	11:40	1.4
France	06:46	9.9
India	03:00	3.7
Indonesia	01:00	31.1
Iran	10:58	0.9
Kenya	10:36	1.5
Madagascar	08:44	5.4
Malaysia	08:04	0.6

Country	T2 (UTC)	MAX BEACH (m)
Maldives	04:50	2.7
Mauritius	06:44	4.6
Mozambique	10:24	2.5
Myanmar	04:56	2.0
Oman	08:46	2.2
Pakistan	11:04	0.9
Seychelles	07:44	3.5
Singapore	-	-
Somalia	08:46	1.5
South Africa	11:24	7.5
Sri Lanka	04:00	2.3
Tanzania	10:26	1.4
Thailand	04:50	0.9
Timor-Leste	04:31	0.7
United Arab Emirates	14:48	0.8
Yemen	08:44	2.7

Table 5. Estimated Tsunami Arrival Times (T2) and Maximum Wave Amplitudes (MAX BEACH) for Scenario 1, Sunda Trench.

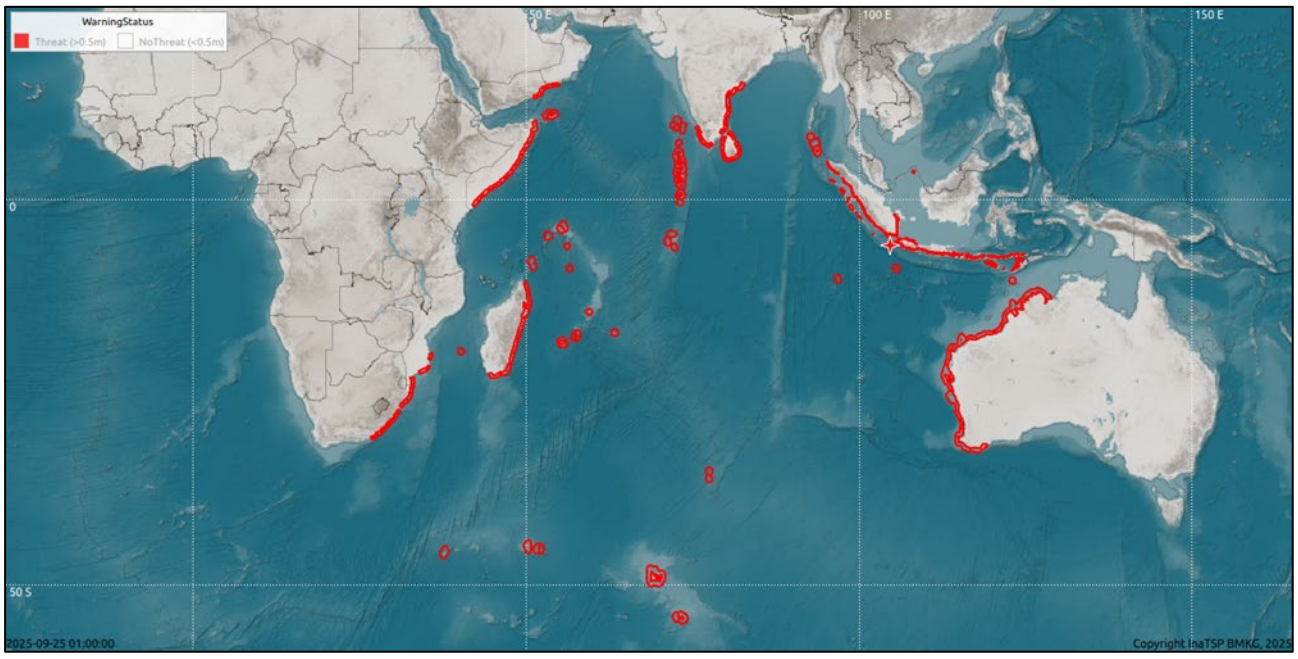

Figure 2. Threat Map example for Scenario 1, Sunda Trench, for a magnitude 9.0 earthquake.

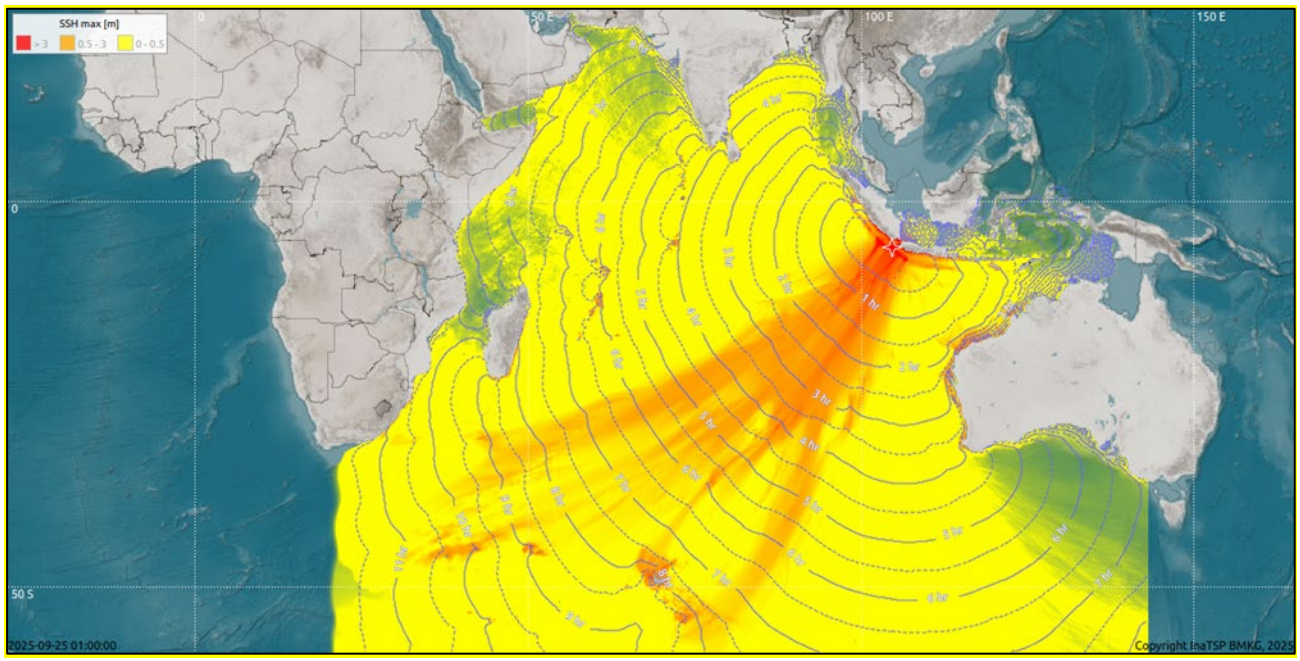

Figure 3. Maximum Wave Amplitude Map example for Scenario 1, Sunda Trench, for a magnitude 9.0.

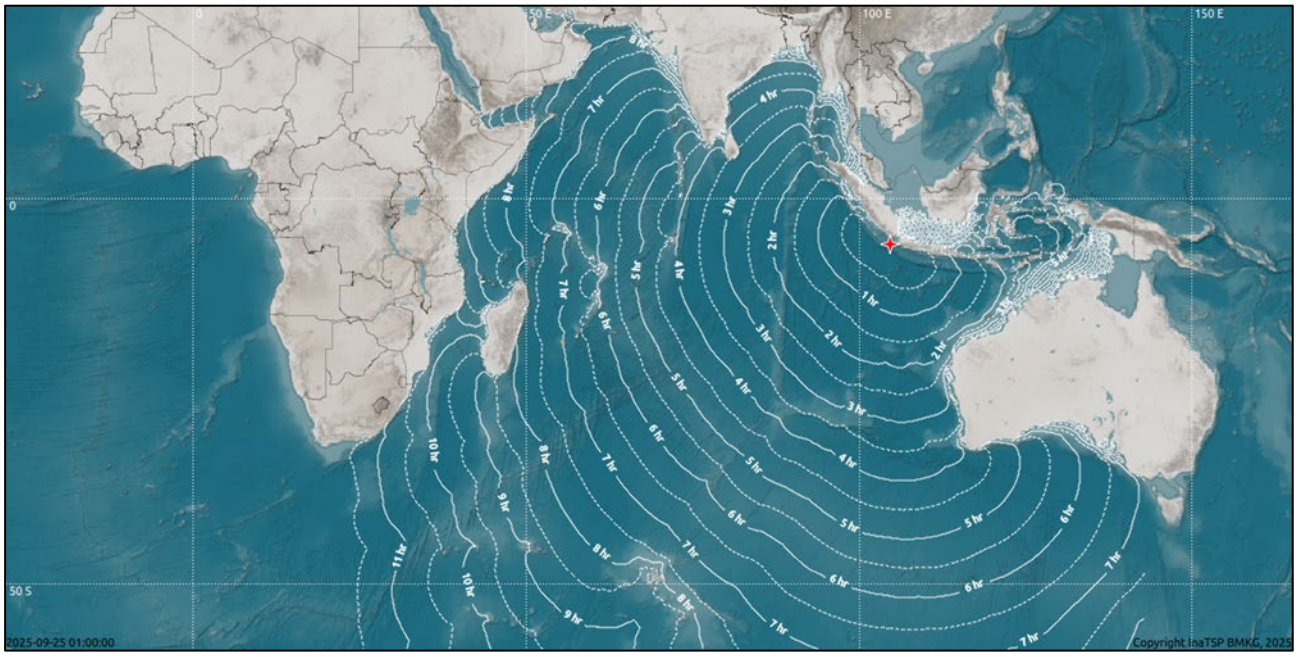

Figure 4. First detectable wave Tsunami Travel Time contour map example for Scenario 1, Sunda Trench.

4.2.2 Scenario 2, Makran Trench

This is the scenario of a magnitude ~9.0 earthquake in the Makran Trench of the coast of Pakistan (epicentre 24.80N, 20.20E), starting at 06:00 UTC on Wednesday 15 October 2025. The simulated tsunami will take approximately 0 hours to travel from its source to Iran & Pakistan; 0.5 hours to travel to Oman; 1.0-hour travel to United Arab Emirates; and 2.0 hours to travel to India.

Table 6 contains the bulletin timelines for Scenario 2, Makran Trench. The full set of TSP exercise bulletins and products for are provided in Supplement 2.

TSP AUSTRALIA			TSP INDIA			TSP INDONESIA		
Time (UTC)	Bulletin		Time (UTC)	Bulletin		Time (UTC)	Bulletin	
	#	Details		#	Details		#	Details
06:00		*Earthquake Occurs*	*06:00*		*Earthquake Occurs*	*06:00*		*Earthquake Occurs*
06:10	*1*	*Earthquake Bulletin (M.8.5)*	*06:05*	*1*	*Earthquake Bulletin (M.8.5)*	*06:08*	*1*	*Earthquake Bulletin (M8.3)*
06:15	*2*	*Potential Threat (M.8.5)*	*06:15*	*2*	*Potential Threat (M8.7)*	*06:13*	*2*	*Potential Threat (M8.7)*
06:35	*3*	*Confirmed Threat (M.8.9)*	*06:30*	*3*	*Confirmed Threat (M9.0)*	*06:30*	*3*	*Confirmed Threat (M9.0)*
07:35	*4*	*Confirmed Threat (M.8.9)*	*07:00*	*4*	*Confirmed Threat (M9.0)*	*07:00*	*4*	*Confirmed Threat (M9.0)*
08:35	*5*	*Confirmed Threat (M.8.9)*	*08:00*	*5*	*Confirmed Threat (M9.0)*	*08:00*	*5*	*Confirmed Threat (M9.0)*
09:35	*6*	*Confirmed Threat (M.8.9)*	*09:00*	*6*	*Confirmed Threat (M9.0)*	*09:00*	*6*	*Confirmed Threat (M9.0)*
10:35	*7*	*Confirmed Threat (M.8.9)*	*10:00*	*7*	*Confirmed Threat (M9.0)*	*10:00*	*7*	*Confirmed Threat (M9.0)*
11:35	*8*	*Confirmed Threat (M.8.9)*	*11:00*	*8*	*Confirmed Threat (M9.0)*	*11:00*	*8*	*Confirmed Threat (M9.0)*
12:35	*9*	*Confirmed Threat (M.8.9)*	*12:00*	*9*	*Confirmed Threat (M9.0)*	*12:00*	*9*	*Confirmed Threat (M9.0)*
13:35	*10*	*Confirmed Threat (M.8.9)*	*13:00*	*10*	*Confirmed Threat (M9.0)*	*13:00*	*10*	*Confirmed Threat (M9.0)*
14:35	*11*	*Confirmed Threat (M.8.9)*	*14:00*	*11*	*Confirmed Threat (M9.0)*	*14:00*	*11*	*Confirmed Threat (M9.0)*
15:35	*12*	*Confirmed Threat (M.8.9)*	*15:00*	*12*	*Confirmed Threat (M9.0)*	*15:00*	*12*	*Confirmed Threat (M9.0)*
16:35	*13*	*Confirmed Threat (M.8.9)*	*16:00*	*13*	*Confirmed Threat (M9.0)*	*16:00*	*13*	*Final Bulletin*
17:35	*14*	*Final Bulletin*	*17:00*	*14*	*Confirmed Threat (M9.0)*			
			18:00	*15*	*Final Bulletin*			

Table 6. Bulletin Timelines for Scenario 2, Makran Trench

The estimated tsunami arrival times and maximum wave amplitudes for Scenario 2, Makran Trench are given in Table 7. T2 in UTC is the Estimated Tsunami Arrival Times (ETAs) for the first wave above the Threat Level of 0.5 m. The earliest T2 out of the three TSPs is used for each listed country. MAX BEACH in metres is the estimated Maximum Wave Amplitude at the beach. The largest MAX BEACH out of the three TSPs is used for each listed country. No values are given for those countries assessed by all three TSPs as not under threat.

Country	T2 (UTC)	MAX BEACH (m)
Australia	19:40	1.1
Bangladesh	-	-
Comoros	12:17	1.0
Djibouti	11:12	2.0
France	13:30	1.4
India	07:46	2.9
Indonesia	13:35	0.7
Iran	06:00	9.3
Kenya	12:05	1.5
Madagascar	12:08	1.3

Country	T2 (UTC)	MAX BEACH (m)
Malaysia	-	-
Maldives	09:19	2.6
Mauritius	11:44	1.4
Mozambique	12:32	1.1
Myanmar	-	-
Oman	06:12	13.3
Pakistan	06:00	18.5
Seychelles	10:33	1.6
Singapore	-	-
Somalia	09:12	1.9
South Africa	-	-
Sri Lanka	10:41	1.0
Tanzania	12:35	0.9
Thailand	-	-
Timor-Leste	-	-
United Arab Emirates	06:28	3.6
Yemen	08:19	1.9

Table 7. Estimated Tsunami Arrival Times (T2) and the Maximum Wave Amplitudes (MAX BEACH) for Scenario 2, Makran Trench.

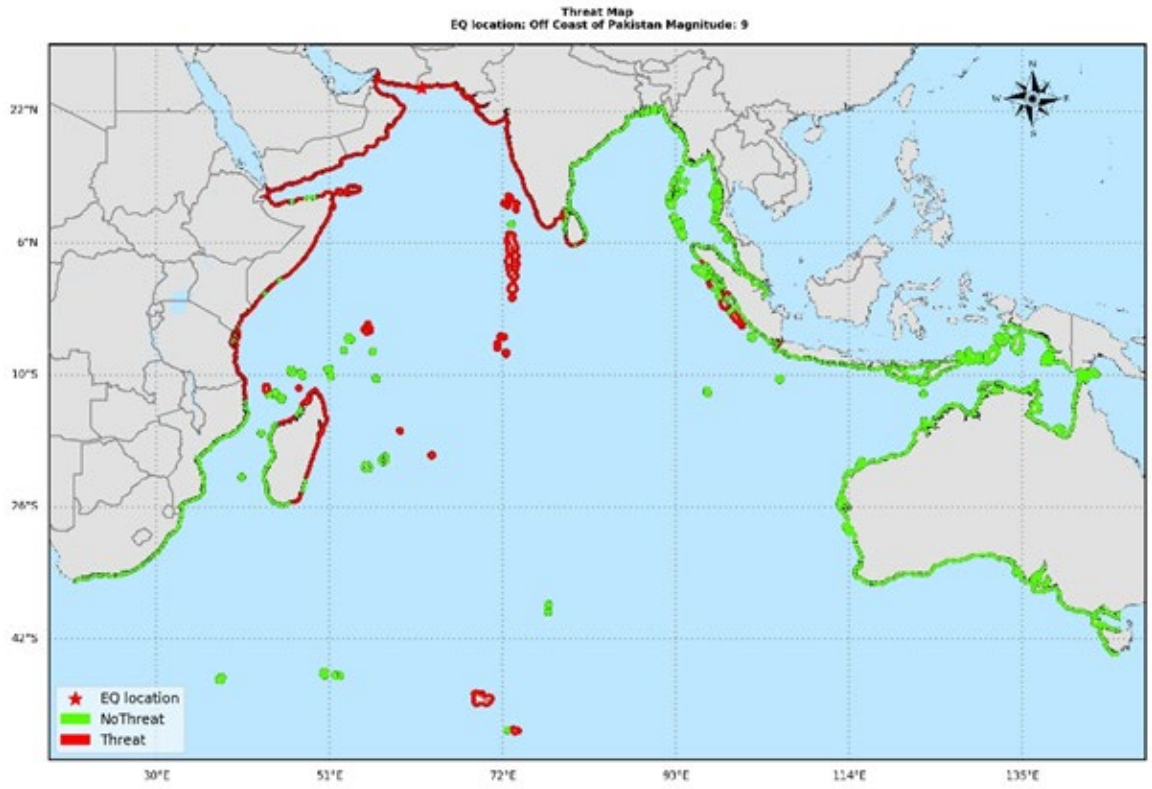

Figure 5. Threat Map example for Scenario 2, Makran Trench, for a magnitude 9.0 earthquake

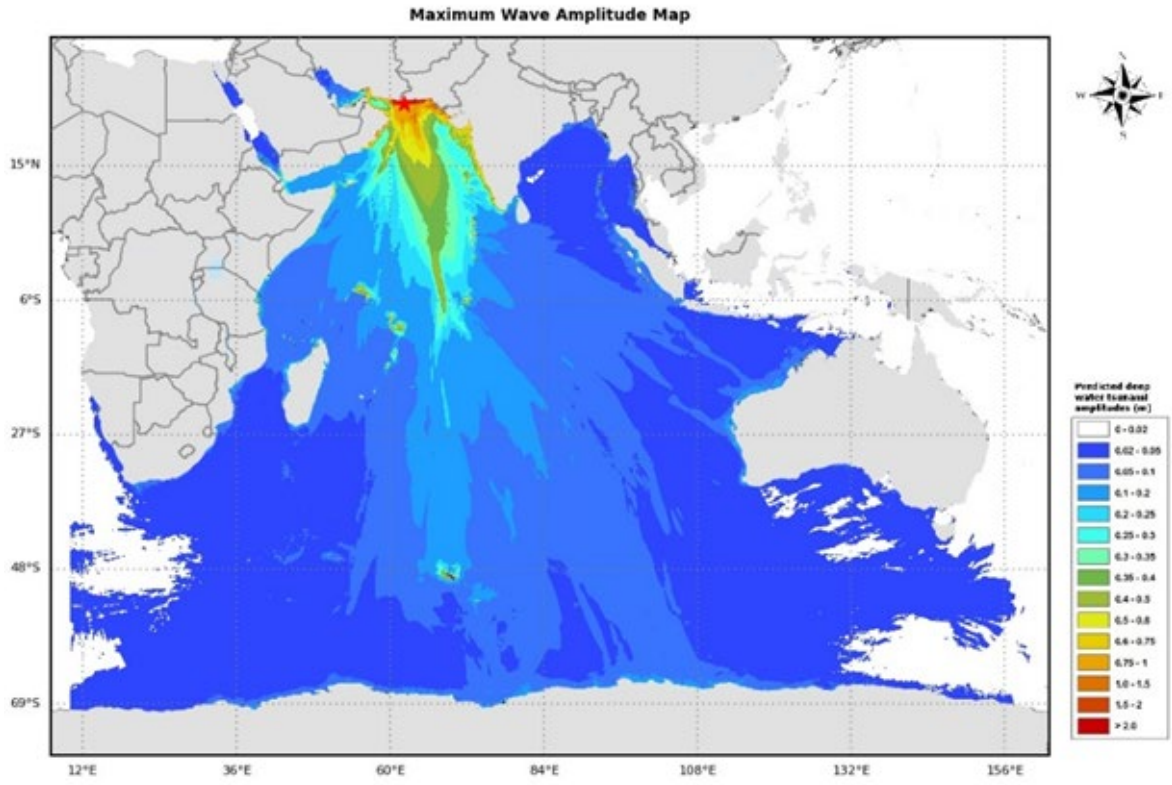

Figure 6. Maximum Wave Amplitude Map example for Scenario 2, Makran Trench, for a magnitude 9.0 earthquake.

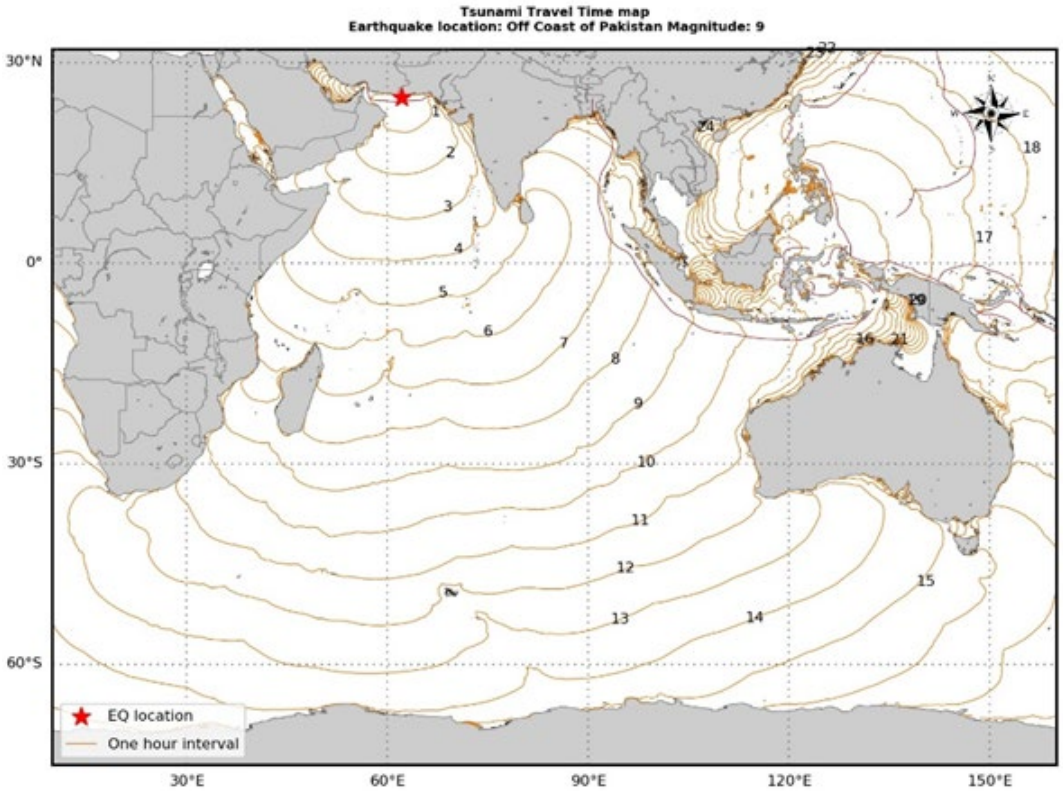

Figure 7. First detectable wave Tsunami Travel Time contour map example for Scenario 2, Makran Trench.

4.2.3 Scenario 3, Fani Maore Volcano

This is the scenario of a volcanic eruption at Fani Maore Volcano in the Mozambique Channel between Madagascar and the eastern coast of Africa (epicentre 12.92S, 45.72E), starting at 15:00 UTC (eruption at 14:00 UTC) on Saturday 25 October 2025. The simulated tsunami will take approximately 0 hour to travel to Comoros, Mayotte (France), and Madagascar; 0.5 hours to travel to Seychelles; 1.0 hour to travel to Mozambique & Tanzania; and 2.0 hours to travel to Kenya, Mauritius, and Somalia.

Table 8 contains the bulletin timelines for Scenario 3, Fani Maore Volcano. The full set of TSP exercise bulletins and products for are provided in Supplement 3.

TSP AUSTRALIA			TSP INDIA			TSP INDONESIA		
Time (UTC)	Bulletin		Time (UTC)	Bulletin		Time (UTC)	Bulletin	
	#	Details		#	Details		#	Details
14:00		*Eruption*	*14:00*		*Eruption*	*14:00*		*Eruption*
15:00		*Announcement Message*	*15:00*		*Announcement Message*	*15:00*		*Announcement Message*
15:10	*1*	*Confirmed Threat (3 hours)*	*15:05*	*1*	*Confirmed Threat (3 hours)*	*15:05*	*1*	*Confirmed Threat (3 hour)*
16:00	*2*	*Confirmed Threat (6 hours)*	*15:30*	*2*	*Confirmed Threat (4 hours)*	*16:00*	*2*	*Confirmed Threat (4 hours)*
17:00	*3*	*Confirmed Threat (7 hours)*	*16:00*	*3*	*Confirmed Threat (5 hours)*	*17:00*	*3*	*Confirmed Threat (5 hours)*
18:00	*4*	*Confirmed Threat (8 hours)*	*17:00*	*4*	*Confirmed Threat (6 hours)*	*18:00*	*4*	*Confirmed Threat (6 hours)*
19:00	*5*	*Confirmed Threat (9 hours)*	*18:00*	*5*	*Confirmed Threat (7 hours)*	*19:00*	*5*	*Confirmed Threat (7 hours)*
20:00	*6*	*Confirmed Threat (10 hours)*	*19:00*	*6*	*Confirmed Threat (8 hours)*	*20:00*	*6*	*Confirmed Threat (8 hours)*
21:00	*7*	*Confirmed Threat (11 hours)*	*20:00*	*7*	*Confirmed Threat (9 hours)*	*21:00*	*7*	*Confirmed Threat (9 hours)*
22:00	*8*	*Confirmed Threat (12 hours)*	*21:00*	*8*	*Confirmed Threat (10 hours)*	*22:00*	*8*	*Confirmed Threat (10 hours)*
23:00	*9*	*Confirmed Threat (12 hours)*	*22:00*	*9*	*Confirmed Threat (11 hours)*	*23:00*	*9*	*Confirmed Threat (11 hours)*
00:00 26-Oct	*10*	*Confirmed Threat (12 hours)*	*23:00*	*10*	*Confirmed Threat (12 hours)*	*00:00 26-Oct*	*10*	*Confirmed Threat (12 hours)*
01:00 26-Oct	*11*	*Confirmed Threat (12 hours)*	*00:00 26-Oct*	*11*	*Confirmed Threat (13 hours)*	*01:00 26-Oct*	*11*	*Confirmed Threat (13 hours)*
02:00 26-Oct	*12*	*Confirmed Threat (12 hours)*	*01:00 26-Oct*	*12*	*Confirmed Threat (14 hours)*	*02:00 26-Oct*	*12*	*Confirmed Threat (14 hours)*
03:00 26-Oct	*13*	*Final Bulletin*	*02:00 26-Oct*	*13*	*Confirmed Threat (15 hours)*	*03:00 26-Oct*	*13*	*Final Bulletin*
			03:00 26-Oct	*14*	*Final Bulletin*			

Table 8. Bulletin Timelines for Scenario 3, Fani Maore Volcano.

The estimated tsunami arrival times (T) for Scenario 3, Fani Maore Volcano, are given in Table 9. Please note, due to present limitations on our understanding of the generation and propagation of such tsunami events, these are based on an estimated propagation of an assumed sea level anomaly. We presently have no absolute forecasts for the amplitudes of such anomalies. No values are given for those countries assessed as not under threat. Note that no values for Maximum Wave Amplitude at the beach are provided for non-seismic events. Countries under threat may experience dangerous currents and some inundation of the immediate foreshore, but generally not major land inundation unless local threat.

Country	T (UTC)
Australia	-
Bangladesh	-
Comoros	14:15
Djibouti	-
France	14:05
India	19:26
Indonesia	-
Iran	-
Kenya	15:56
Madagascar	14:16
Malaysia	-
Maldives	18:57
Mauritius	15:49
Mozambique	14:51
Myanmar	-
Oman	18:48
Pakistan	-
Seychelles	14:38
Singapore	-
Somalia	16:00
South Africa	17:46
Sri Lanka	-
Tanzania	15:13
Thailand	-
Timor-Leste	-
United Arab Emirates	-
Yemen	17:55

Table 9. Estimated Tsunami Arrival Times for Scenario 3, Fani Maore Volcano.

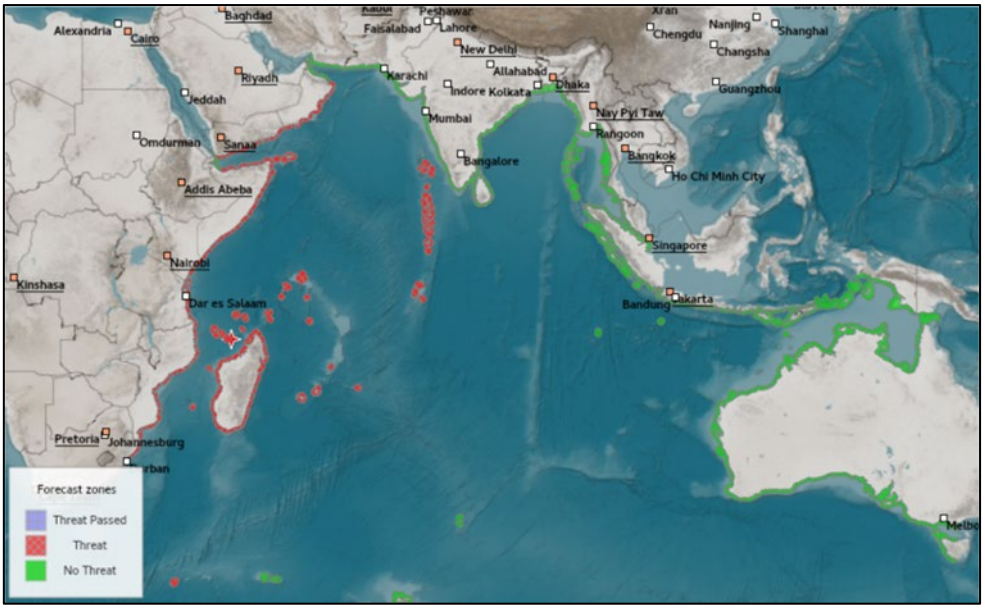

Figure 8. Threat Map example for Scenario 3, Fani Maore Volcano.

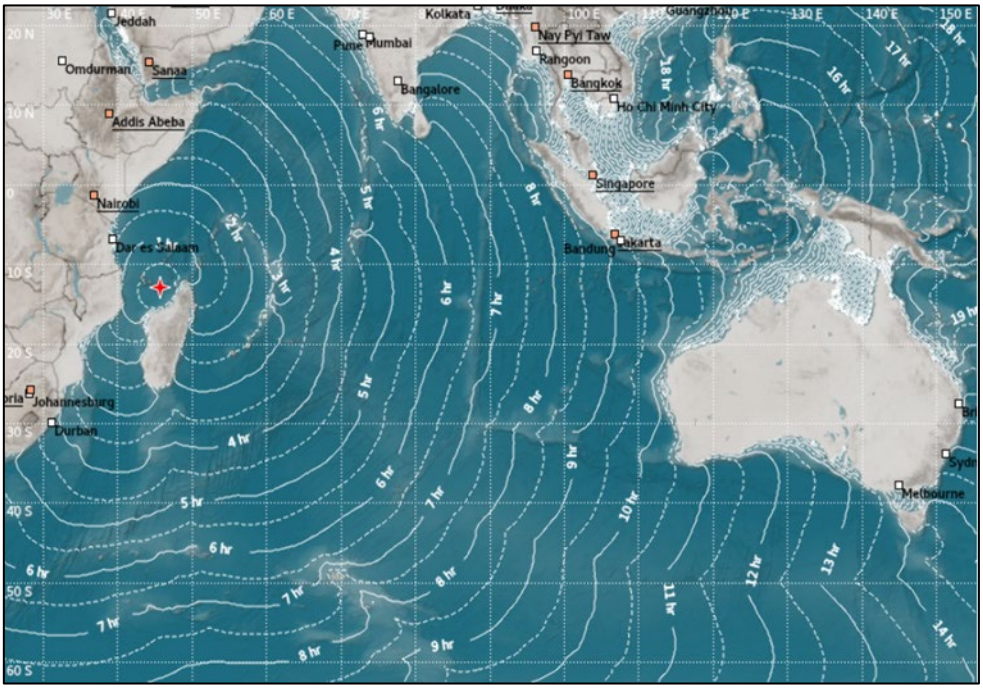

Figure 9. First detectable wave Tsunami Travel Time contour map example for Scenario 3, Fani Maore Volcano.

4.2.4 Scenario 4, Sumatra Trench

This is the scenario of a magnitude ~9.2 earthquake off the west coast of Northern Sumatra, Indonesia (epicentre at 3.30S 95.96E), starting at 03:00 UTC on Wednesday 05 November 2025. The simulated tsunami will take approximately 0 hour to travel from its source to Indonesia; 0.5 hours to travel to India; 1.0 hour to travel to Thailand & Myanmar, and 2.0 hours to travel to Sri Lanka.

Table 10 contains the bulletin timelines for Scenario 4, Sumatra Trench. The full set of TSP exercise bulletins and products for are provided in Supplement 4.

TSP AUSTRALIA			**TSP INDIA**			**TSP INDONESIA**		
Time (UTC)	**Bulletin**		**Time (UTC)**	**Bulletin**		**Time (UTC)**	**Bulletin**	
	#	**Details**		**#**	**Details**		**#**	**Details**
03:00		*Announcement Message*	*03:00*		*Announcement Message*	*03:00*		*Announcement Message*
03:10	*1*	*Earthquake Bulletin*	*03:08*	*1*	*Earthquake Bulletin (M8.6)*	*03:07*	*1*	*Earthquake Bulletin (M8.7)*
03:15	*2*	*Potential Threat (M8.8)*	*03:15*	*2*	*Potential Threat (M8.9)*	*03:12*	*2*	*Potential Threat (M9.1)*
03:35	*3*	*Confirmed Threat (9.2)*	*03:30*	*3*	*Confirmed Threat (M9.2)*	*03:30*	*3*	*Confirmed Threat (M9.2)*
04:35	*4*	*Confirmed Threat (M9.2)*	*04:00*	*4*	*Confirmed Threat (M9.2)*	*04:00*	*4*	*Confirmed Threat (M9.2)*
05:35	*5*	*Confirmed Threat (M9.2)*	*05:00*	*5*	*Confirmed Threat (M9.2)*	*05:00*	*5*	*Confirmed Threat (M9.2)*
06:35	*6*	*Confirmed Threat (M9.2)*	*06:00*	*6*	*Confirmed Threat (M9.2)*	*06:00*	*6*	*Confirmed Threat (M9.2)*
07:35	*7*	*Confirmed Threat (M9.2)*	*07:00*	*7*	*Confirmed Threat (M9.2)*	*07:00*	*7*	*Confirmed Threat (M9.2)*

TSP AUSTRALIA			TSP INDIA			TSP INDONESIA		
Time (UTC)	Bulletin		Time (UTC)	Bulletin		Time (UTC)	Bulletin	
	#	Details		#	Details		#	Details
08:35	*8*	*Confirmed Threat (M9.2)*	*08:00*	*8*	*Confirmed Threat (M9.2)*	*08:00*	*8*	*Confirmed Threat (M9.2)*
09:35	*9*	*Confirmed Threat (M9.2)*	*09:00*	*9*	*Confirmed Threat (M9.2)*	*09:00*	*9*	*Confirmed Threat (M9.2)*
10:35	*10*	*Confirmed Threat (M9.2)*	*10:00*	*10*	*Confirmed Threat (M9.2)*	*10:00*	*10*	*Confirmed Threat (M9.2)*
11:35	*11*	*Confirmed Threat (M9.2)*	*11:00*	*11*	*Confirmed Threat (M9.2)*	*11:00*	*11*	*Confirmed Threat (M9.2)*
12:35	*12*	*Confirmed Threat (M9.2)*	*12:00*	*12*	*Confirmed Threat (M9.2)*	*12:00*	*12*	*Confirmed Threat (M9.2)*
13:35	*13*	*Confirmed Threat (M9.2)*	*13:00*	*13*	*Confirmed Threat (M9.2)*	*13:00*	*13*	*Final Bulletin*
14:35	*14*	*Final Bulletin*	*14:00*	*14*	*Confirmed Threat (M9.2)*			
			15:00	*15*	*Final Bulletin*			

Table 10. Bulletin Timelines for Scenario 4, Sumatra Trench

The estimated tsunami arrival times and maximum wave amplitudes for Scenario 4, Sumatra Trench are given in Table 11. T2 in UTC is the Estimated Tsunami Arrival Times (ETAs) for the first wave above the Threat Level of 0.5 m. The earliest T2 out of the three TSPs is used for each listed country. MAX BEACH in metres is the estimated Maximum Wave Amplitude at the beach. The largest MAX BEACH out of the three TSPs is used for each listed country. No values are given for those countries assessed by all three TSPs as not under threat.

Country	T2 (UTC)	MAX BEACH (m)
Australia	04:06	7.7
Bangladesh	05:56	3.7
Comoros	11:16	2.6
Djibouti	12:34	2.7
France	09:00	7.2
India	03:02	29.9
Indonesia	03:00	43.3
Iran	10:42	2.0
Kenya	11:08	4.6
Madagascar	10:24	8.8
Malaysia	05:58	4.0
Maldives	06:02	17.1
Mauritius	08:40	10.7
Mozambique	11:42	3.2
Myanmar	04:14	6.1
Oman	09:32	3.9
Pakistan	10:06	2.5
Seychelles	09:06	5.4
Singapore	-	-
Somalia	10:00	6.8
South Africa	13:32	6.8

Country	T2 (UTC)	MAX BEACH (m)
Sri Lanka	04:36	15.6
Tanzania	11:28	2.8
Thailand	04:11	11.9
Timor-Leste	07:50	0.7
United Arab Emirates	11:36	1.2
Yemen	09:40	6.1

Table 11. Estimated Tsunami Arrival Times (T2) and the Maximum Wave Amplitudes (MAX BEACH) for Scenario 4, Sumatra Trench.

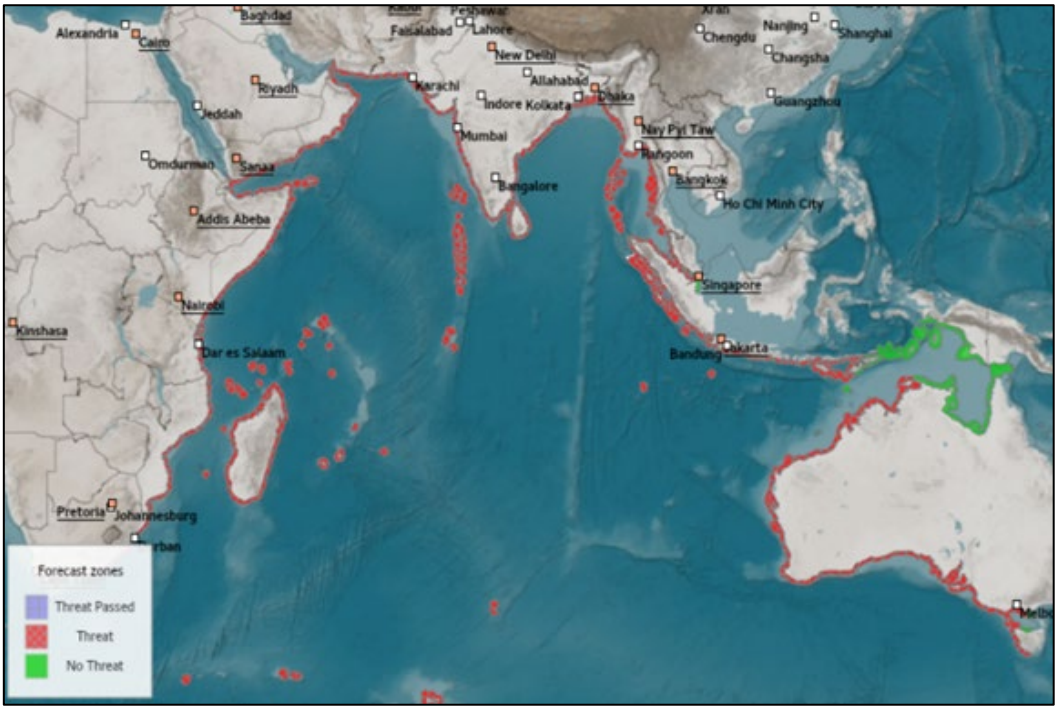

Figure 10. Threat Map example for Scenario 4, Sumatra Trench, for a magnitude ~9.2 earthquake.

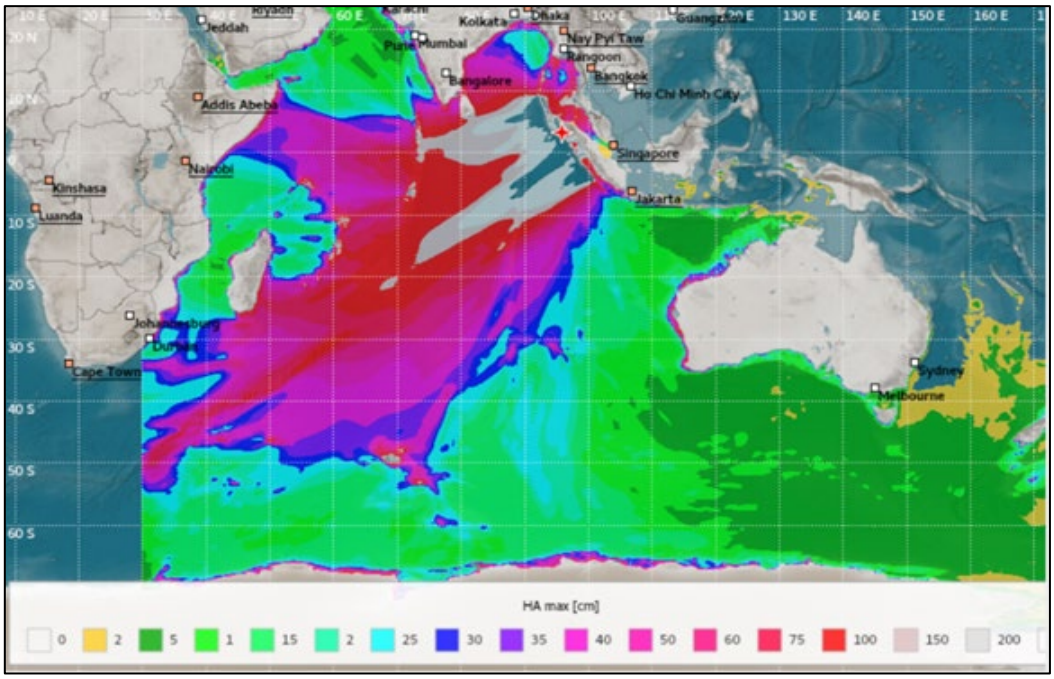

Figure 11. Maximum Wave Amplitude Map example for Scenario 4, Sumatra Trench, for a magnitude ~9.2 earthquake.

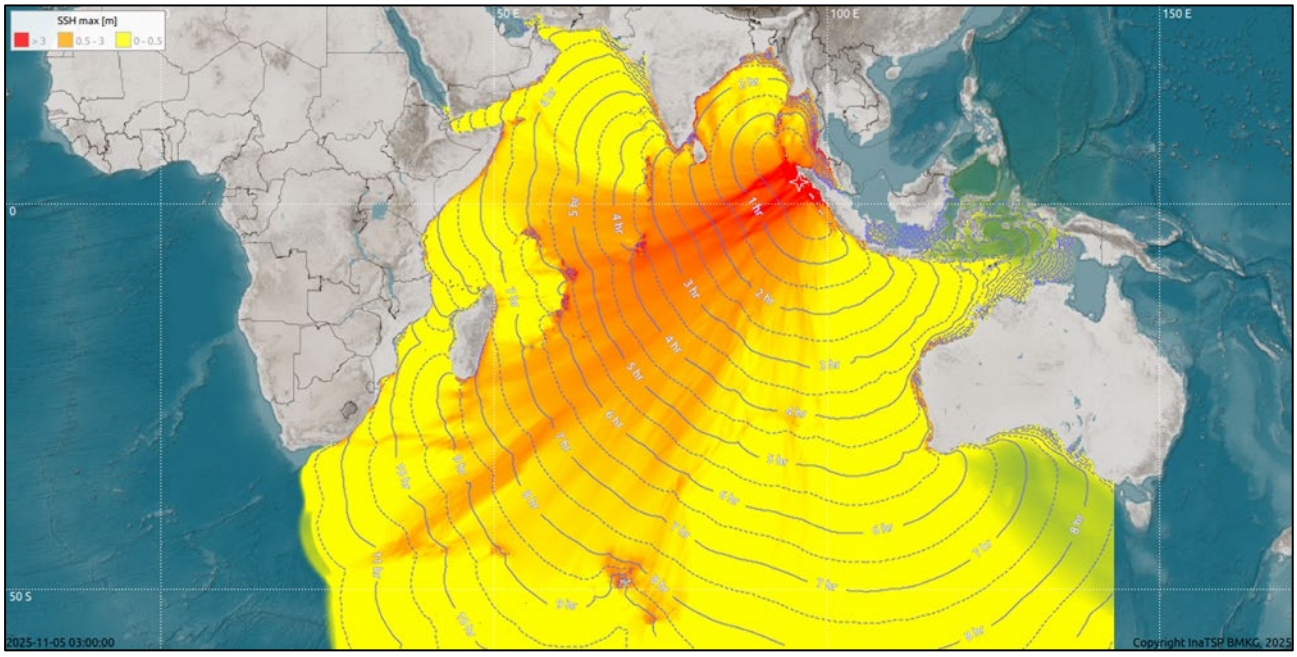

Figure 12. First detectable wave Tsunami Travel Time contour map example for Scenario 4, Sumatra Trench.

4.3 LOGGING AND STATUS REPORTING PROCEDURE

During the exercise, NTWCs are requested to log the times of reception of TSP Bulletin Notification Messages and of accessing TSP websites, and of reporting their National Warning Status via the TSP websites. The logging can be done either directly via the online evaluation form or via log forms.

Detailed logging and reporting procedure:

1. Following the reception of each TSP Bulletin Notification Message, NTWCs should:
   - Log the time of reception of the TSP Notification Message, and how it was received (GTS, email, SMS).
   - Use a web browser to access the password-protected website for the TSP given in the Notification Message and log the success or otherwise of this access.

2. Following the times at which the first simulated National Warning would be issued by the NTWC or NDMO in each country, and then every time the simulated National Warning status would change, the issuing agency should:
   - Report the National Tsunami Warning Status for their country via the web based "NTWC Warning Status" form available on each TSP website.
   - Log the time of the status report and which TSP's website was used for the report. NOTE: **Only one status report is required on each occasion**, using the form on **any** of the TSP websites.

4.4 WEBSITE PASSWORDS

The usernames and passwords for accessing each of the TSP password-protected websites are not included here. Please be reminded that the login credentials used by NTWCs for operational events and communications tests can be used to access IOWave25 bulletins. If any NTWC is unsure of their login credentials, please contact the IOTWMS Secretariat at iotwms@unesco.org. Please note that the websites are for operational exchanges between the TSPs and NTWCs and not intended to be viewed by the public.

4.5 ACTIONS IN CASE OF A REAL EVENT

All documentation and correspondence relating to this exercise is to be clearly identified as ***Exercise IOWave25*** and ***For Exercise Purposes Only***. In the case of a real event occurring during the exercise, TSPs and NTWCs will alert the national authorities and the public that the exercise is over and then issue their normal message products for the event. Such messages will be given full priority and all TSPs should stop the exercise immediately and send an Announcement Message to that effect.

4.6 RESOURCING

Although participating countries will have advance notice of the exercise and may elect to stand up a special dedicated shift to allow normal core business to continue uninterrupted, it is suggested that realistic resource levels be deployed to reflect some of the issues that are likely to be faced in a real event.

4.7 MEDIA INVOLVEMENT

The media have an important role in the national tsunami warning chains and raising tsunami awareness to the public. Member States are therefore encouraged to involve the media in the exercise. Each country is responsible for the coordination of national in-country media operations and communications for the exercise. Media may be invited to participate or be simulated by exercise control staff.

The degree of media involvement in the exercise will vary from country to country, such as exercise of Media SOPs for communicating national Tsunami Warnings to the public in the national tsunami warning chain, a paragraph in a newspaper, television coverage of an evacuation drill or information transmitted to the public via media networks. In all cases, it is

important to ensure that the media and public know about the exercise beforehand so that they do not mistake it for a real tsunami warning.

Participating agencies should seek guidance from their National Contact for Exercise IOWave25 regarding responses to individual approaches by in-country media concerning the exercise.

4.8 PRESS RELEASE

The UNESCO External Relations and Information department (ERI) will issue an international Media Advisory to alert the press of Exercise IOWave25 about one week before the exercise.

ICG/IOTWMS Member States should consider issuing one or two exercise press releases to their respective country's media in conjunction with the UNESCO release. Member States' press releases will give adequate alert to their country's population and give their local media time to conduct interviews and documentaries with participating exercise organisations in advance of the exercise. Annex II contains a sample press release that can be customised by Member States.

A second Member State press release, one week before the exercise, could provide a more detailed description of exercise activities to take place in-country.

5. POST-EXERCISE EVALUATION

5.1 EVALUATION AND DEBRIEFING

Following the exercise, participating countries are requested to complete the online Exercise Evaluation Survey. The set of questions that will be asked are contained in Annex III.

The evaluation aims to inform and facilitate individual participant country evaluations as well as the integrated IOWave25 Report. Please note that all participant countries are requested to complete the questionnaire online by 30 November 2025. The link to the questionnaire will be provided to the IOWave25 National Exercise Contacts before the exercise. The online survey will be set up in such a way that Member States can select which sections to answer based on the exercise scenario and the scope (full/limited) of their participation. This feedback will assist in the evaluation of Exercise IOWave25 and in the development of subsequent exercises.

The goal of exercise evaluation is to validate SOPs and to identify opportunities for improvement within the participating organisations. This is to be accomplished by collating supporting data, analysing the data to compare effectiveness against requirements, and determining what changes need to be made by participating organisations as well as the IOTWMS as a collective to support effective tsunami warning and decision-making.

Evaluation of this exercise will focus on the adequacy of plans, policies, procedures, assessment capabilities, communication, resources, and inter-agency/inter-jurisdictional relationships that support effective tsunami warning and decision-making at all levels of government and the community response.

Member States are encouraged to appoint Exercise Evaluators within each of their in-country agencies participating in the exercise, who would collect information during the exercise for the purposes of the Post-Exercise Evaluation. Member States are also encouraged to conduct formal exercise debriefs inclusive of all participants in their respective agencies, to facilitate a collective and official national evaluation. For details of how to conduct a national evaluation refer to Annex IV.

5.2 EXERCISE OBSERVERS

It is recommended that independent and objective Exercise Observers be appointed at all exercise points to support the collection of such data. Observers are to be guided by the exercise objectives and the information required in the Post-Exercise Evaluation questionnaire. They should have expertise in the warning process for natural hazards and its implementation with respect to national warning chains and Standard Operating Procedures (SOPs), preferably with regards to tsunami warning.

International observers can be made available to Member States upon request and on the understanding that the Member States will fund the observers' travel costs and per diems. Benefits of international observers include providing an independent assessment of the in-country response and level of preparedness, recommendations on improvements to SOPs and communication linkages consistent with international best practice and help in evaluating the overall success of the exercise in an Indian Ocean-wide context.

The Terms of Reference for Exercise Observers are:

1. Provide a chronology of the events and actions that you observed.
2. Where appropriate, provide a statement of your observations in relation to each of the core exercise objectives 1–8 (as provided in section 3.2 above).
3. Comment on the testing and understanding of communication protocols between the TSPs, NTWCs, TWFPs and information dissemination points within countries.
4. Identify strengths in the tsunami warning and response chain.
5. Identify areas of potential improvement in the tsunami warning and response chain.
6. Comment on the extent that local communities participated in the exercise.
7. Provide examples of how community knowledge of tsunami preparedness and response has been demonstrated and may have increased as a result of the exercise.
8. Where communities have been recognised as Tsunami Ready under the UNESCO-IOC TRRP, communities demonstrate successful performance against the Tsunami Ready Indicators addressing milestones in tsunami assessment, preparedness, and response.

The guidelines for Exercise Observers are:

- Remain within the designated observation area,
- Do not interfere with exercise play,
- Follow the instructions of the organiser of the observer program in any of your interaction with the exercise participants, and
- Direct any questions to the organiser of the observer program or other designated individual.

Exercise Observers are requested to submit their reports to the ICG/IOTWMS Secretariat at iotwms@unesco.org by **30 November 2025**.

5.3 EXERCISE REPORT

In completing the online Post-Exercise Evaluation questionnaire, participating organisations are encouraged to note areas for improvement and actions that they plan to take. All official

Post-Exercise Evaluation questionnaire responses are designated as “For Official Use Only” and will be restricted for use by the IOWave25 Task Team for the purpose of compilation of the Exercise Report.

The Exercise Report will be submitted to the ICG/IOTWMS for endorsement. Member States will have the opportunity to review and provide comments. The report will be published as Volume 2 of this IOC Technical Series no. 261, and will be in the public domain (i.e., available on the IOC website and UNESCO document e-repository). Member States may also choose to share their national evaluation reports with their public. The Exercise Report will help the ICG/IOTWMS to evaluate the status of implementation of the IOTWMS and areas requiring enhancement and capacity development.

6. REFERENCES

Documents are available from UNESCO’s digital library: unesdoc.unesco.org.

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UNESCO/IOC. IOTWMS TSP Service Definition Document: Version 5.0. Paris, UNESCO, IOC Technical Series 146 rev. (In preparation).

ANNEX I

EXERCISE FORMAT

TYPES OF EXERCISE

1. An Orientation Exercise lays the groundwork for a comprehensive exercise programme. It is a planned event, developed to bring together individuals and officials with a role or interest in multi-hazard response planning, problem solving, development of standard operational procedures (SOPs), and resource integration and coordination. An Orientation Exercise will have a specific goal and written objectives and result in an agreed upon Plan of Action.

2. A Drill is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies, organisations, or facilities, but may be a subset of full-scale exercises. Drills can involve internal notifications and/or field activities. Limited evacuation may or may not be conducted, such as within a school, pilot hotel, or village.

3. A Tabletop Exercise is a planned activity in which local officials, key staff, and organisations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants to assess plans, policies, and procedures. Individuals are encouraged to discuss decisions based on their organization's Standard Operating Procedures (SOPs) with emphasis on slow-paced problem solving, rather than rapid, real-time decision-making. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative.

4. A Functional Exercise is a planned activity designed to test and evaluate individual functions, multiple activities within a function, or interdependent groups of functions among various agencies. It is based on a simulation of a realistic emergency situation. The Functional Exercise gives the decision-makers a fully simulated experience of being in a major disaster event. It should take place at the appropriate coordination locations (e.g., warning centres and emergency operations centres) and activate all the appropriate members designated by the plan. Organisations should test their SOPs using real-time simulation tsunami bulletins. Public evacuations may or may not be included. A Functional Exercise should have specific goals, objectives, and a scenario narrative.

5. A Full-scale Exercise is the culmination of a progressive exercise programme that has grown with the capacity of the community to conduct exercises. A Full-Scale exercise is a planned activity in a "challenging" environment that encompasses most of the tsunami warning and emergency management functions, and involves multiple layers of government (national, provincial, local). This type of exercise involves the actual mobilization and deployment of the appropriate personnel and resources needed to demonstrate operational capabilities. DMOs (Disaster Management Office) and other local command centres are required to be activated. It tests all aspects of emergency response and should demonstrate inter-agency cooperation. A full-scale exercise is the largest, costliest, and most complex exercise type. It may or may not include public evacuations.

ANNEX II

SAMPLE PRESS RELEASE

TEMPLATE FOR NEWS RELEASE - USE AGENCY LETTERHEAD

Contact: *(insert name)* **FOR IMMEDIATE RELEASE** *(insert phone number) (insert date) (insert email address)*

INDIAN OCEAN-WIDE TSUNAMI EXERCISE SET FOR OCTOBER 2025

(Insert country name) will join countries from around the Indian Ocean Rim as a participant in mock tsunami scenarios on 25th September, 15th October, 25th October and 5th November 2025. *(Insert country name)* will exercise the Sunda Trench earthquake scenario on 25th September, Makran Trench earthquake scenario on 15th October, Fani Maore volcano scenario on 25th October, and/or Sumatra Trench earthquake scenario on 5th November *(select appropriate scenario(s))*.

The purpose of this Indian Ocean-wide exercise is to increase tsunami preparedness, evaluate response capabilities in each country, and improve coordination throughout the region. The aim is to exercise the tsunami warning chain and responses to test preparedness.

“The 2004 Indian Ocean Tsunami and subsequent events in the Indian and Pacific Oceans have brought to the attention of the world the urgent need to be more prepared for such events,” said *(insert name of appropriate official)*. “This important exercise will test the current procedures of the UNESCO-IOC Indian Ocean Tsunami Warning and Mitigation System and help identify operational strengths and weaknesses in each country.”

The exercise, titled Exercise Indian Ocean Wave 2025 (IOWave25), will simulate Indian Ocean countries being put into a Tsunami Warning situation requiring decision-making by the authorities. It builds on previous IOWave exercises conducted in the Indian Ocean during 2009, 2011, 2014, 2016, 2018, 2020 and 2023, *and on prior national tsunami warning drills carried out on (insert dates) (delete if not applicable)*.

During the exercise the three UNESCO-IOC Indian Ocean Tsunami Service Providers (TSPs) of Australia, India and Indonesia will provide simulated tsunami threat information to all National Tsunami Warning Centres (NTWCs) in the Indian Ocean region. Each NTWC will then evaluate the information and formulate test national tsunami warnings, which will be disseminated to the disaster response agencies and other authorities participating in the exercise. *Due care will be taken to ensure the public is not inadvertently alarmed.*

Insert paragraph tailored for specific country. *Could identify participating agencies and specific plans. Could describe current early warning programme, past evacuation drills (if any), ongoing mitigation and public education programmes, etc. Could describe tsunami threat, history of tsunami hazards, if any.*

Should any actual tsunami threat occur during the time of the exercise, the exercise will be terminated, and normal tsunami warning operations activated.

Following the exercise, a review and evaluation will be conducted by all participating countries and agencies.

“We see this exercise as an essential element in the routine maintenance of the UNESCO-IOC Indian Ocean Tsunami Warning and Mitigation System,” said *(insert name of appropriate official)*.

“Our goal is to ensure the timely and effective notification of impending tsunamis, to educate communities at risk about safety preparedness, and to improve our overall coordination. We will evaluate what works well, where improvements are needed, make necessary changes, and continue to implement best-practices.”

The exercise is in the Work Plan of the UNESCO-IOC Intergovernmental Coordination Group of the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS). ICG/IOTWMS is a body of UNESCO.

For more information on Exercise IOWave25 visit https://oceanexpert.net/event/4786.

ANNEX III

POST-EXERCISE EVALUATION

General Instructions

The evaluation will take approximately 2-3 hours to complete once all required inputs have been received from your national stakeholders (i.e., National

Tsunami Warning Centres, NAVAREA coordinators, Disaster Management Organisations, communities) who were involved in the exercise.

It is possible to exit a partially completed survey for completion later. Simply exit the survey and use the link provided to you by email to access it again

when you are ready to answer more questions. In this way you can complete the survey at your own pace and go back to amend responses if necessary.

Please complete and submit the online survey by 30 November 2025.

Any questions can be directed to the ICG/IOTWMS Secretariat (email: iotwms@unesco.org).

Exercise IOWave25 Evaluation

Exercise IOWave25 Post-Exercise Evaluation

Exercise IOWave25 is comprised of four scenarios with simulated tsunami waves travelling across the Indian Ocean basin. Member States are invited to participate in one or more scenarios, which will be run in real-time:

- Scenario 1, **Sunda Trench**: Starting at 01:00 UTC on 25 September 2025 (Thursday): Magnitude 9.0 earthquake in Sunda Strait, Indonesia.
- Scenario 2, **Makran Trench**: Starting at 06:00 UTC on 15 October 2025 (Wednesday): Magnitude 9.0 earthquake in the Makran trench off the coast of Pakistan.
- Scenario 3, **Fani Maore Volcano**: Starting at 15:00 UTC (eruption at 14:00 UTC) on 25 October 2025 (Saturday): Tsunami generated by volcanic eruption at Fani Maore in the Mozambique Channel between Madagascar and the eastern coast of Africa.
- Scenario 4, **Sumatra Trench**: Starting at 03:00 UTC on 05 November 2025 (Wednesday): Magnitude 9.2 earthquake in Northern Sumatra, Indonesia.

Exercise Objectives

There are nine (9) objectives of Exercise IOWave25. Each objective is designed to validate a part of the end-to-end tsunami warning and mitigation system.

Objectives 1 and 2 survey questions relate to the at-risk coastal communities.

- Objective 1: Validate procedures are in place to ensure tsunami warnings get to all in the community, including those with disabilities, all genders, elderly, and youth.
- Objective 2: Validate the level of community awareness, preparedness, and response.

Objective 3 and 4 survey questions relate to standard operating procedures at all levels in the national tsunami warning chain.

- Objective 3: Validate the Standard Operating Procedures associated with tsunami warning chains within countries for generating and disseminating tsunami warnings to their relevant emergency response agencies, other authorities, media, and the public.
- Objective 4: Validate the Standard Operating Procedures associated with tsunami warning chains within countries for the issuing of public safety messages, ordering evacuations and where possible issuing all-clear messages.

Objectives 5 to 8 survey questions relate to the National Tsunami Warning Center and NAVAREA stakeholders.

- Objective 5: Validate dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via Tsunami Warning Focal Points (TWFPs) of Indian Ocean countries and the reception by NTWCs of the TSP messages. Validate the access by NTWCs to the tsunami bulletins and other products on the TSP websites, and the use of that information for the production of national warnings.
- Objective 6: Validate dissemination by TSPs of Tsunami Bulletin Notification nmessages for NAVAREA stakeholders to ensure navigational safety and security.
- Objective 7: Validate access by NTWCs to the tsunami bulletins and other products on the TSP websites, and the use of that information to produce national warnings. Validate the reporting by NTWCs to the TSPs of their National Tsunami Warning Status.
- Objective 8: Validate the reporting by NTWCs to the TSPs of their National Tsunami Warning Status.
- Objective 9: Validate receipt and understanding by NTWCs of new TSP service for tsunamis generated by non-seismic and complex sources.

Instructions

The evaluation will take approximately 2-3 hours to complete once all required inputs have been received from your national stakeholders (i.e., National Tsunami Warning Centres, NAVAREA coordinators, Disaster Management Organisations, communities) who were involved in the exercise.

It is possible to exit a partially completed survey for completion later. Simply exit the survey and use the link provided to you by email to access it again when you are ready to answer more questions. In this way you can complete the survey at your own pace and go back to amend responses if necessary.

Please complete and submit the online survey by **30 November 2025**.

Any questions can be directed to the ICG/IOTWMS Secretariat (email: iotwms@unesco.org).

Member State Details

1. **Country**

[contact("country")]

2. **Details of National IOWave Exercise Contact**

Name

[contact("first name")]

3. Position

[contact("role")]

4. Agency

[contact("organization")]

5. Email

[contact("email")]

6. Phone

[contact("work phone")]

Participation

7. Please select all exercise scenarios that your country partiicpated in.
(More than 1 option can be selected.) *

- ☐ Sunda Trench (25 September 2025)
- ☐ Makran Trench (15 October 2025)
- ☐ Fani Maore Volcano (25 October 2025)
- ☐ Sumatra Trench (05 November 2025)

8. Please indicate if the following statements reflect your level of in-country participation.

	Yes	No
National Disaster Management Organisation was involved.	○	○
Provincial Disaster Management Organisation(s) participated.	○	○
Local Disaster Management Organisation(s) participated.	○	○
Media representatives participated.	○	○
The community was involved (not necessarily evacuation).	○	○
Public evacuation drills were conducted.	○	○

Comments

9. Please indicate the type of exercise(s) conducted.
(More than 1 option can be selected.)

- ☐ Orientation Exercise
- ☐ Drill
- ☐ Tabletop Exercise
- ☐ Functional Exercise
- ☐ Full Scale Exercise

Comments

10. I would like more information about the types of exercise.

- ○ Yes, please.
- ○ No, thank you.

TYPES OF EXERCISES

1. **An Orientation Exercise** lays the groundwork for a comprehensive exercise programme. It is a planned event, developed to bring together individuals and officials with a role or interest in multi-hazard response planning, problem solving, development of standard operational procedures (SOPs), and resource integration and coordination. An Orientation Exercise will have a specific goal and written objectives and result in an agreed upon Plan of Action.
2. **A Drill** is a planned activity that tests, develops, and/or maintains skills in a single or limited emergency response procedure. Drills generally involve operational response of single departments or agencies, organizations, or facilities, but may be a subset of full-scale exercises. Drills can involve internal notifications and/or field activities. Limited evacuation may or may not be conducted, such as within a school, pilot hotel, or village.
3. **A Tabletop Exercise** is a planned activity in which local officials, key staff, and organizations with disaster management responsibilities are presented with simulated emergency situations. It is usually informal, in a conference room environment, and is designed to elicit constructive discussion from the participants to assess plans, policies, and procedures. Individuals are encouraged to discuss decisions based on their organization's Standard Operating Procedures (SOPs) with emphasis on slow-paced problem solving, rather than rapid, real-time decision-making. A Tabletop Exercise should have specific goals, objectives, and a scenario narrative.
4. **A Functional Exercise** is a planned activity designed to test and evaluate individual functions, multiple activities within a function, or interdependent groups of functions among various agencies. It is based on a simulation of a realistic emergency situation. The Functional Exercise gives the decision-makers a fully simulated experience of being in a major disaster event. It should take place at the appropriate coordination locations (e.g. warning centres and emergency operations centres) and activate all the appropriate members designated by the plan. Organisations should test their SOPs using real-time simulation tsunami bulletins. Public evacuations may or may not be included. A Functional Exercise should have specific goals, objectives, and a scenario narrative.
5. **A Full-scale Exercise** is the culmination of a progressive exercise programme that has grown with the capacity of the community to conduct exercises. A Full-Scale exercise is a planned activity in a "challenging" environment that encompasses a majority of the tsunami warning and emergency management functions, and involves multiple layers of government (national, provincial, local). This type of exercise involves the actual mobilization and deployment of the appropriate personnel and resources needed to demonstrate operational capabilities. DMOs (Disaster Management Office) and other local command centres are required to be activated. It tests all aspects of emergency response, and should demonstrate inter-agency cooperation. A Full-scale exercise is the largest, costliest, and most complex exercise type. It may or may not include public evacuations.

End of the Participation survey section.

Objective 1: Validate procedures are in place to ensure tsunami warnings get to all in the community, including those with disabilities, all genders, elderly, and youth.

11. Were public tsunami warning messages accessed and understood by those with disabilities, all genders, elderly, and youth?

- Yes
- No

12. If yes, please describe measures implemented.

13. If no, please describe measures to be implemented.

Objective 2: Validate the level of community awareness, preparedness and response.

14. Have there been any pre-exercise community tsunami awareness activities?

- Yes
- No

15. Please specify the awareness activities undertaken (for example, public displays, community briefings, educational materials):

16. Did these activities cater for people with disabilities, all genders, elderly, and youth?

- Yes
- No

Comments

17. Have there been any pre-exercise community preparedness activities?

- Yes
- No

18. What were the community preparedness activities between the last exercise and the current exercise? (Select all that apply.)

- [ ] Tsunami exercise
- [ ] Tsunami education in schools
- [ ] Participatory evacuation planning
- [ ] Community education seminars
- [ ] Evacuation maps
- [ ] Evacuation signage
- [ ] Shelter facilities
- [ ] Other - Write In

- [ ] Other - Write In

19. Has there been any support for the following activities prior to the exercise and from whom?

	Supported activity		If supported, from whom:
	Yes	No	
Hazard mapping	○	○	
Tsunami inundation mapping	○	○	
Evacuation route mapping	○	○	
Tsunami signage	○	○	
Vertical evacuation shelters	○	○	

20. **I**f evacuation maps exist, do they consider evacuation of disabled persons, all genders, elderly, and youth?

- ○ Evacuation maps exist and do account for evacuation of disabled persons, all genders, eldery, and youth.
- ○ Evacuation maps exist, but do not account for evacuation of disabled persons, all genders, eldery, and youth.
- ○ Evacuation maps do not exist.

Comments

21. Were community evacuations conducted in any areas?

- ○ Yes
- ○ No

22. How many communities participated in evacuations?

Objective 2: Validate the level of community awareness, preparedness and response.

Please answer the following questions for **Community** .

23. Name of community:

24. Is the community recognised as UNESCO-IOC Tsunami Ready or any other similar recognition programme at national level?

- Yes
- No

25. Comments:

26. What excercise scenario did the community evacuate during?

- Sunda Trench (25 September)
- Makran Trench (15 October)
- Fani Maore Volcano (25 October)
- Sumatra Trench (05 November)

27. What is the estimated number of people that evacuated?

28. Approximately what percent of the people that evacuated were women?

29. Who evacuated? (Select all that apply.)

- [ ] Beachgoers
- [ ] Boat Users
- [ ] Home Residents
- [ ] Businesses
- [ ] Schools
- [ ] Hospitals
- [ ] Hotels
- [ ] People with disabilities
- [ ] Elderly
- [ ] Elderly (in supported care)
- [ ] Youth
- [ ] Other - Write In
- [ ] Other - Write In

30. Have community members received prior evacuation training?

- Yes
- No

Comments

31. Are Standard Operating Procedures for community evacuation in place?

- Yes
- No

32. Please provide the details:

33. How were community members notified that an evacuation order was issued? (Select all that apply.)

- [ ] Siren
- [ ] Door-to-door
- [ ] Public announcement
- [ ] Radio / TV
- [ ] Mobile Phone / Social Media
- [ ] Evacuation time set prior to the exercise
- [ ] Other - Write In
- [ ] Other - Write In

34. What time was the evacuation order issued? (Specify UTC or local time.)

35. What time did the community receive the evacuation notification? (Specify UTC or local time.)

36. At what time was the evacuation? (Specify UTC or local time.)

37. Did the community receive an all-clear message?

- ○ Yes
- ○ No

38. At what time did the community receive the all-clear message? (Specify UTC or local time.)

39. How was the all-clear message issued to the public? (Specify the mode of communication.)

40. At what time did the people return to their residences? (Specify UTC or local time.)

41. Please provide the details of any problems encountered during evacuation:

42. How could future evacuation exercises be improved?

Objective 2: Validate the level of community awareness, preparedness and response.

End of the Objective 1 and 2 survey questions related to at-risk coastal communities.

Objective 3: Validate the Standard Operating Procedures associated with tsunami warning chains within countries for generating and disseminating tsunami warnings to their relevant disaster response agencies, other authorities, media, and the public.

The following section is designed to assess who is responsible for generating and disseminating tsunami warnings and information to five types of recipients:

1. National Disaster Management Organisation (NDMO)
2. Provincial Disaster Management Organisation (PDMO)
3. Local Disaster Management Organisation (LDMO)
4. Other Authorities (e.g. port and airport authorities, marine rescue, beach life-saving organisations)
5. Media
6. Public

43. In the following table, please indicate who is responsible for the generation and dissemination of tsunami warnings and information to each recipient listed in the left-hand column, and if exercised, the details of the warning delivery.

	Who sends tsunami messages to the recipient? (e.g. NTWC, NDMO, PDMO, LDMO and/or media)	Number of messages sent	Time 1st message sent (UTC)	Time last message sent (UTC)	Methods of delivery (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were the messages received in a timely manner?
NDMO						Yes No n/a
PDMO						Yes No n/a
LDMO						Yes No n/a
Media						Yes No n/a
Public						Yes No n/a

Comments

44. Do the following authorities and organisations have Standard Operating Procedures in place to ensure tsunami warnings are efficiently transmitted along the national tsunami warning chain in a timely manner?

	Standard Operating Procedures		
	Yes	No	Partially
NTWC	○	○	○
NDMO	○	○	○
PDMO	○	○	○
LDMO	○	○	○
Other Authorities	○	○	○
Media	○	○	○
Public	○	○	○

45. How well did your Standard Operating Procedures perform for generating and disseminating tsunami warnings within your country?

- ○ Extremely Well
- ○ Very Well
- ○ Well
- ○ Poor
- ○ Very Poor

Comments

Objective 3: Validate the Standard Operating Procedures associated with tsunami warning chains within countries for generating and disseminating tsunami warnings to their relevant disaster response agencies, other authorities, media, and the public.

To be completed with input from Disaster Management Organisations (DMOs) and/or National Tsunami Warning Centre (NTWC) as appropriate.

46. What Media participated in the Exercise?
(Select all that apply.)

- ☐ Press (newspapers, magazines, journals)
- ☐ Radio
- ☐ Television
- ☐ Social - Facebook
- ☐ Social - WhatsApp
- ☐ Social - Twitter
- ☐ Other - Write In
- ☐ Other - Write In

Comments

47. What information did the Media broadcast?

- [ ] Pre-exercise tsunami awareness
- [ ] Information on the upcoming scheduled exercise
- [ ] Tsunami threat information
- [ ] Tsunami evacuation information
- [ ] All-clear information
- [ ] Mock interviews
- [ ] Coverage of the event
- [ ] Other - Write In

- [ ] Other - Write In

Comments

48. Was the information broadcast by the Media useful?

- ○ Yes
- ○ No
- ○ Partially useful

Comments

49. How could Media involvement be improved in future exercises and real events?

Objective 4: Validate the Standard Operating Procedures associated with tsunami warning chains within countries for the issuing of public safety messages, ordering evacuations and where possible issuing all-clear messages.

Agency abbreviations used are:

1. National Tsunami Warning Centre (NTWC)
2. National Disaster Management Organisation (NDMO)
3. Provincial Disaster Management Organisation (PDMO)
4. Local Disaster Management Organisation (LDMO)

50. Were **public safety messages** issued during the exercise? Public safety messages provide information about the tsunami threat and appropriate actions to take for each level of threat, but do not include evacuation orders or all-clear messages.

- Yes
- No

51. Please complete the following table for **public safety messages** issued during the exercise.
(Complete one row for each agency/authority that issued public safety messages as required.)

	Name of agency/authority that issues public safety messages	Agency type	Time message issued (UTC)	Communication method (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were there any communication problems?	Content of message	Reason message issued	Comments
1.		NTWC NDMO PDMO LDMO Other			Yes No			
2.		NTWC NDMO PDMO LDMO Other			Yes No			
3.		NTWC NDMO PDMO LDMO Other			Yes No			
4.		NTWC NDMO PDMO LDMO Other			Yes No			
5.		NTWC NDMO PDMO LDMO Other			Yes No			

52. Were **evacuation orders** issued during the exercise?

- Yes
- No

53. Please complete to following table for **evacuation orders** issued during the exercise.
(Complete one row for each agency/authority that issued public safety messages as required.)

	Name of agency/authority that issues evacuation orders	Agency type	Time message issued (UTC)	Communication method (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were there any communication problems?	Content of message	Reason message issued	Comments
1.		NTWC NDMO PDMO LDMO Other			Yes No			
2.		NTWC NDMO PDMO LDMO Other			Yes No			
3.		NTWC NDMO PDMO LDMO Other			Yes No			
4.		NTWC NDMO PDMO LDMO Other			Yes No			
5.		NTWC NDMO PDMO LDMO Other			Yes No			

54. Were **all-clear messages** issued during the exercise?

- Yes
- No

55. Please complete to following table for **all-clear messages** issued during the exercise.
(Complete one row for each agency/authority that issued public safety messages as required.)

	Name of agency/authority that issues all-clear messages	Agency type	Time message issued (UTC)	Communication method (e.g. email, webpage, sms, fax, phone, tv, radio, social media)	Were there any communication problems?	Content of message	Reason message issued	Comment
1.		NTWC NDMO PDMO LDMO-C Other			Yes No			
2.		NTWC NDMO PDMO LDMO-C Other			Yes No			
3.		NTWC NDMO PDMO LDMO-C Other			Yes No			
4.		NTWC NDMO PDMO LDMO-C Other			Yes No			
5.		NTWC NDMO PDMO LDMO-C Other			Yes No			

End of the Objectives 3-4 survey questions related to standard operating procedures at all levels in the national tsunami warning chain.

Objective 5: Validate the dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via TWFPs of Indian Ocean countries and the reception by NTWCs of the TSP Messages.

56. Name of National Tsunami Warning Centre (organisational name):

57. For each of the four notification message delivery mediums was the information received in a timely manner for you to carry out your warning response SOPs?

	GTS	Email	SMS
TSP Australia	Received in time Received late Not received	Received in time Received late Not received	Received in time Received late Not received
TSP India	Received in time Received late Not received	Received in time Received late Not received	Received in time Received late Not received
TSP Indonesia	Received in time Received late Not received	Received in time Received late Not received	Received in time Received late Not received

Comments

Objective 5: Validate the dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via TWFPs of Indian Ocean countries and the reception by NTWCs of the TSP Messages.

58. Scenario 1: **Sunda Trench**, 25 September 2025

Please provide the receipt times of **TSP-Australia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
01:00 Sunda Trench Announcement Message			
01:10 Notification Message 1			
01:15 Notification Message 2			
01:25 Notification Message 3			
01:35 Notification Message 4			
01:45 Notification Message 5			
02:45 Notification Message 6			
03:45 Notification Message 7			
04:45 Notification Message 8			
05:45 Notification Message 9			
06:45 Notification Message 10			
07:45 Notification Message 11			
08:45 Notification Message 12			
09:45 Notification Message 13			
10:45 Notification Message 14			
11:45 Notification Message 15			
12:45 Notification Message 16			

59. Scenario 1: **Sunda Trench**, 25 September 2025

Please provide the receipt times of **TSP-India** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
01:00 Sunda Trench Announcement Message			
01:08 Notification Message 1			
01:15 Notification Message 2			
01:30 Notification Message 3			
02:00 Notification Message 4			
03:00 Notification Message 5			
04:00 Notification Message 6			
05:00 Notification Message 7			
06:00 Notification Message 8			
07:00 Notification Message 9			
08:00 Notification Message 10			
09:00 Notification Message 11			
10:00 Notification Message 12			
11:00 Notification Message 13			
12:00 Notification Message 14			
13:00 Notification Message 15			

60. Scenario 1: **Sunda Trench**, 25 September 2025

Please provide the receipt times of **TSP-Indonesia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
01:00 Sunda Trench Announcement Message			
01:05 Notification Message 1			
01:09 Notification Message 2			
01:30 Notification Message 3			
02:00 Notification Message 4			
03:00 Notification Message 5			
04:00 Notification Message 6			
05:00 Notification Message 7			
06:00 Notification Message 8			
07:00 Notification Message 9			
08:00 Notification Message 10			
09:00 Notification Message 11			
10:00 Notification Message 12			
11:00 Notification Message 13			

Objective 5: Validate the dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via TWFPs of Indian Ocean countries and the reception by NTWCs of the TSP Messages.

61. Scenario 2: **Makran Trench**, 15 October 2025

Please provide the receipt times of **TSP-Australia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
06:00 Makran Trench Announcement Message			
06:10 Notification Message 1			
06:15 Notification Message 2			
06:35 Notification Message 3			
07:35 Notification Message 4			
08:35 Notification Message 5			
09:35 Notification Message 6			
10:35 Notification Message 7			
11:35 Notification Message 8			
12:35 Notification Message 9			
13:35 Notification Message 10			
14:35 Notification Message 11			
15:35 Notification Message 12			
16:35 Notification Message 13			
17:35 Notification Message 14			

62. Scenario 2: **Makran Trench**, 15 October 2025

Please provide the receipt times of **TSP-India** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
06:00 Makran Trench Announcement Message			
06:05 Notification Message 1			
06:15 Notification Message 2			
06:30 Notification Message 3			
07:00 Notification Message 4			
08:00 Notification Message 5			
09:00 Notification Message 6			
10:00 Notification Message 7			
11:00 Notification Message 8			
12:00 Notification Message 9			
13:00 Notification Message 10			
14:00 Notification Message 11			
15:00 Notification Message 12			
16:00 Notification Message 13			
17:00 Notification Message 14			
18:00 Notification Message 15			

63. Scenario 2: **Makran Trench**, 15 October 2025

Please provide the receipt times of **TSP-Indonesia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
06:00 Makran Trench Announcement Message			
06:08 Notification Message 1			
06:13 Notification Message 2			
06:30 Notification Message 3			
07:00 Notification Message 4			
08:00 Notification Message 5			
09:00 Notification Message 6			
10:00 Notification Message 7			
11:00 Notification Message 8			
12:00 Notification Message 9			
13:00 Notification Message 10			
14:00 Notification Message 11			
15:00 Notification Message 12			
16:00 Notification Message 13			

Objective 5: Validate the dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via TWFPs of Indian Ocean countries and the reception by NTWCs of the TSP Messages.

64. Scenario 3: **Fani Maore Volcano**, 25 October 2025

Please provide the receipt times of **TSP-Australia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
15:00 Fani Maore Volcano Announcement Message			
15:10 Notification Message 1			
16:00 Notification Message 2			
17:00 Notification Message 3			
18:00 Notification Message 4			
19:00 Notification Message 5			
20:00 Notification Message 6			
21:00 Notification Message 7			
22:00 Notification Message 8			
23:00 Notification Message 9			
00:00 (26-Oct) Notification Message 10			
01:00 (26-Oct) Notification Message 11			
02:00 (26-Oct) Notification Message 12			
03:00 (26-Oct) Notification Message 13			

65. Scenario 3: **Fani Maore Volcano**, 25 October 2025

Please provide the receipt times of **TSP-India** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
15:00 Fani Maore Volcano Announcement Message			
15:05 Notification Message 1			
15:30 Notification Message 2			
16:00 Notification Message 3			
17:00 Notification Message 4			
18:00 Notification Message 5			
19:00 Notification Message 6			
20:00 Notification Message 7			
21:00 Notification Message 8			
22:00 Notification Message 9			
23:00 Notification Message 10			
00:00 (26-Oct) Notification Message 11			
01:00 (26-Oct) Notification Message 12			
02:00 (26-Oct) Notification Message 13			
03:00 (26-Oct) Notification Message 14			

66. Scenario 3: **Fani Maore Volcano**, 25 October 2025

Please provide the receipt times of **TSP-Indonesia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
15:00 Fani Maore Volcano Announcement Message			
15:05 Notification Message 1			
16:00 Notification Message 2			
17:00 Notification Message 3			
18:00 Notification Message 4			
19:00 Notification Message 5			
20:00 Notification Message 6			
21:00 Notification Message 7			
22:00 Notification Message 8			
23:00 Notification Message 9			
00:00 (26-Oct) Notification Message 10			
01:00 (26-Oct) Notification Message 11			
02:00 (26-Oct) Notification Message 12			
03:00 (26-Oct) Notification Message 13			

Objective 5: Validate the dissemination by TSPs of Tsunami Bulletin Notification Messages to NTWCs via TWFPs of Indian Ocean countries and the reception by NTWCs of the TSP Messages.

67. Scenario 4: **Sumatra Trench**, 05 November 2025

Please provide the receipt times of **TSP-Australia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
03:00 Sumatra Trench Announcement Message			
03:10 Notification Message 1			
03:15 Notification Message 2			
03:35 Notification Message 3			
04:35 Notification Message 4			
05:35 Notification Message 5			
06:35 Notification Message 6			
07:35 Notification Message 7			
08:35 Notification Message 8			
09:35 Notification Message 9			
10:35 Notification Message 10			
11:35 Notification Message 11			
12:35 Notification Message 12			
13:35 Notification Message 13			
14:35 Notification Message 14			

68. Scenario 4: **Sumatra Trench**, 05 November 2025

Please provide the receipt times of **TSP-India** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
03:00 Sumatra Trench Announcement Message			
03:08 Notification Message 1			
03:15 Notification Message 2			
02:34 Notification Message 3			
04:00 Notification Message 4			
05:00 Notification Message 5			
06:00 Notification Message 6			
076:00 Notification Message 7			
08:00 Notification Message 8			
09:00 Notification Message 9			
10:00 Notification Message 10			
11:00 Notification Message 11			
12:00 Notification Message 12			
13:00 Notification Message 13			
14:00 Notification Message 14			
15:00 Notification Message 15			

69. Scenario 4: **Sumatra Trench**, 05 November 2025

Please provide the receipt times of **TSP-Indonesia** notification messages by the NTWC.

	GTS Time Received (UTC)	**Email** Time Received (UTC)	**SMS** Time Received (UTC)
03:00 Sumatra Trench Announcement Message			
03:07 Notification Message 1			
03:12 Notification Message 2			
03:30 Notification Message 3			
04:00 Notification Message 4			
05:00 Notification Message 5			
06:00 Notification Message 6			
07:00 Notification Message 7			
08:00 Notification Message 8			
09:00 Notification Message 9			
10:00 Notification Message 10			
11:00 Notification Message 11			
12:00 Notification Message 12			
13:00 Notification Message 13			

Objective 6: Validate the dissemination by TSPs of Tsunami Bulletin Notification messages for NAVAREA stakeholders to ensure navigational safety and security.

70. Did NAVAREA stakeholders participate in the Exercise?

- Yes
- No

71. Did the stakeholders receive the new TSP Tsunami NAVAREA messages?

- Yes
- No

Comments

72. Were the new TSP products for NAVAREAs easily accessible and understood?

- Yes
- No

Comments

Objective 7: Validate the access by NTWCs to the tsunami bulletins and other products on the TSP websites, and the use of that information to produce national warnings.

73. Please indicate which TSP exchange products you accessed on the password-protected websites.

	Bulletins	Coastal Zone Threat Map	Threat Table	Maximum Amplitude Map	Tsunami Travel Time (TTT) Map
TSP Australia	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access
TSP India	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access
TSP Indonesia	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access	Yes / No / Unable to access

74. Were any other TSP exchange products (e.g. Spatial Files) accessed on the password-protected websites?

75. Was tsunami threat information from TSP websites (bulletins and other products) **used** in the production of your national warnings?

- Yes
- No

76. Please indicate which information was used:

	Tsunami Wave Observations	Predicted Wave Arrival Times				Predicted Maximum Wave Amplitudes	Coastal Forecast Zone Threat Levels	Other
		T1	T2	T3	T4			
TSP Australia	☐	☐	☐	☐	☐	☐	☐	☐
TSP India	☐	☐	☐	☐	☐	☐	☐	☐
TSP Indonesia	☐	☐	☐	☐	☐	☐	☐	☐

Comments

77. Please comment why the tsunami threat information from the TSP websites was not used.

Objective 8: Validate the reporting by NTWCs to the TSPs of their National Tsunami Warning status.

78. Did your NTWC send reports of its warning status to the TSPs?

- ○ Yes
- ○ No

79. What TSP website did you access the status reporting form from?

- ○ TSP Australia
- ○ TSP India
- ○ TSP Indonesia

80. Why did your NTWC not report its warning status on a TSP website?

Objective 9: Validate the receipt and understanding by NTWCs of new TSP service for tsunamis generated by non-seismic and complex sources.

81. Did the NTWC access the new TSP products for tsunami generated by non-seismic and complex sources (i.e., volcano)?

- Yes
- No

82. Were the TSP products for volcanos easily accessible and understood by the NTWC?

- Yes
- No

83. Were the TSP products for volcanos used by the NTWC to generate national tsunami warnings?

- Yes
- No

84. Please provide any further and more detailed feedback on the new TSP products for tsunamis generated by non-seismic and complex sources.

End of the Objectives 5-9 survey questions related to the National Tsunami Warning Centre.

General Questions

85. Please rank the following from 4 (extremely good), 3 (very good), 2 (good), 1 (poor) to 0 (very poor).

	4	3	2	1	0
Exercise planning and communication with Member States: Timeliness and usefulness of information provided by the ICG/IOTWMS Secretariat.	○	○	○	○	○
Exercise documentation: Manual, websites, bulletins	○	○	○	○	○
Exercise format and style: Real-time operation, exercise messages similar to real event	○	○	○	○	○
Pre-IOWave SOP Workshop	○	○	○	○	○
Post-exercise evaluation: Web-based survey	○	○	○	○	○

Comments

86. Our country benefited from the exercise by:

1)

87.

2)

88.

3)

89. Future exercises could be improved by:

1)

90.

2)

91.

3)

92. Our country used exercise observers?

- Yes
- No

93. Please rank the following from 4 (extremely good), 3 (very good), 2 (good), 1 (poor) to 0 (very poor).

	4	3	2	1	0
Feedback provided by the exercise observers	○	○	○	○	○
Information for the post-exercise evaluation provided by the exercise observers	○	○	○	○	○

Comments

94. Did your country undertake any activities in commemoration of the World Tsunami Awareness Day (WTAD) 2025 on 05 November?

- ○ Yes
- ○ No

95.
Comments:

End of the General Questions survey section.

End of Survey

When the survey is completed and no further information needs to be entered or amended, the **National IOWave Exercise Contact** should submit the completed survey.

96. Are you the National IOWave Exercise Contact?

- ○ Yes
- ○ No

End of Survey

LAST PAGE

When the survey is completed and no further information needs to be entered or amended, [question('value'), id='935'] should submit the survey by pressing the *Submit* button.

Thank You!

ANNEX IV

NATIONAL EXERCISE EVALUATION

It is recommended that both a hot and a cold debrief be held following the exercise. Held immediately after an exercise, a hot debrief is an opportunity for all participants to provide feedback while the exercise is still fresh in their minds. A suggested format for this is:

- Have a short break for about 10 to 20 minutes after the end of the exercise.
- The in-country/agency Exercise Director gives his or her initial feedback.
- Obtain participant round-table feedback.
- Evaluators provide their feedback.
- Provide appropriate acknowledgements.

A cold debrief is a more formal debrief held within four weeks following the exercise. The debrief process should include:

- What happened during the exercise?
- What went well?
- What needs improvement?
- What plans, procedures or training programmes need amendments?
- What follow up is required, including identifying any capability gaps for future capacity building?
- Was the exercise realistic?
- How could the exercise have been improved?

ANNEX V

LIST OF ACRONYMS

COP27	Twenty-seventh Session of the Conference of the Parties, UNFCC
ETA	Estimated Tsunami Arrival Times
EW4ALL	UN Early Warnings for All Initiative
ICG/IOTWMS	Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System
IOC	Intergovernmental Oceanographic Commission
IDDR	International Day of Disaster Risk Reduction
IOTIC	UNESCO-IOC Indian Ocean Tsunami Information Centre
IOTWMS	Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System
IOWave25	Indian Ocean Wave Exercise 2025
LDMO	Local Disaster Management Offices
PDMO	Provincial Disaster Management Office
NAVAREA	Navigational Area
NDMO	National Disaster Management Offices
NTWC	National Tsunami Warning Centre
ODTP	Ocean Decade Tsunami Programme
PTHA	Probabilistic Tsunami Hazard Assessment
SOP	Standard Operating Procedures
T2	Estimated Tsunami Arrival Times (ETAs) for the first wave above the Threat Level of 0.5 m
TOWS-WG	UNESCO-IOC Tsunamis and Other hazards related to sea level Warning and mitigation Systems
TSP	Tsunami Service Providers
TRRP	Tsunami Ready Recognition Programme
TWFP	Tsunami Warning Focal Points
UNESCO	United Nations Educational, Scientific and Cultural Organization

UNFCC	United Nations Framework Convention on Climate Change
UTC	Coordinated Universal Time
WTAD	World Tsunami Awareness Day