ICG/IOTWMS Steering Group
14-15 July 2022

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

RECOMMENDATIONS

IOC TS-143: Capacity Assessment of Tsunami Preparedness in the Indian Ocean: Status Report, 2018

Nora Gale, ICG/IOTWMS Secretariat

Acknowledgements:

ICG/IOTWMS Task Team on Capacity Assessment of Tsunami Preparedness

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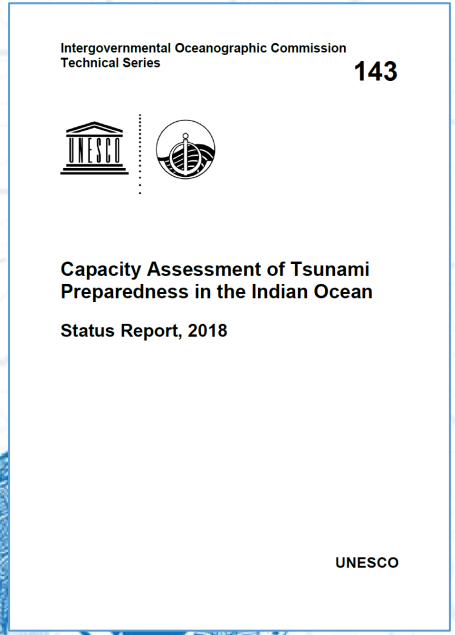
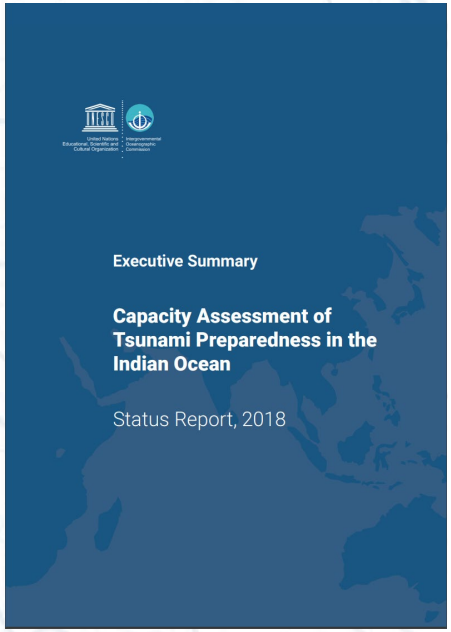




COMPARATIVE LISTS OF COUNTRIES SURVEYED IN THE 2005 AND 2018 ASSESSMENTS
(by alphabetical order)

2005 Assessment of Capacity Building Requirements for an Effective and Durable Tsunami Warning and Mitigation System in the Indian Ocean (IOC/INF-1219) – Consolidated Report for Countries Affected by the 26 December 2004 Tsunami	**2018** Capacity Assessment of Tsunami Preparedness in the Indian Ocean –Status Report (IOC Technical Series, 143)
	Australia
Bangladesh	Bangladesh
Comoros	Comoros
	Overseas France (Indian Ocean)
	India
Indonesia	Indonesia
	Iran (Islamic Republic of)
Kenya	Kenya
Madagascar	Madagascar
Malaysia	Malaysia
Mauritius	Mauritius
Mozambique	Mozambique
Myanmar	Myanmar
Oman	Oman
Pakistan	Pakistan
Seychelles	
	Singapore
Somalia	
	South Africa[16]
Sri Lanka	Sri Lanka
Tanzania	Tanzania
Thailand	Thailand
	Timor-Leste

2018 CAPACITY ASSESSMENT REPORT

- The 2018 assessment provides a new baseline of the status of tsunami preparedness capacity in the region.

- The online survey include five sections: 1) Policies, plans and guidelines; 2) risk assessment and reduction; 3) detection, warning and dissemination; 4) public awareness, preparedness and response; **5) Recommendations to address policy gaps and support requirements**

- The results indicate that there has been considerable improvement across all components of the IOTWMS since 2005

- It also identifies specific gaps and prioritises capacity development requirements at both regional and national levels

- A summary of each responding country is provided in Annex IV

Comparison of the status of the IOTWMS in 2005 and 2018

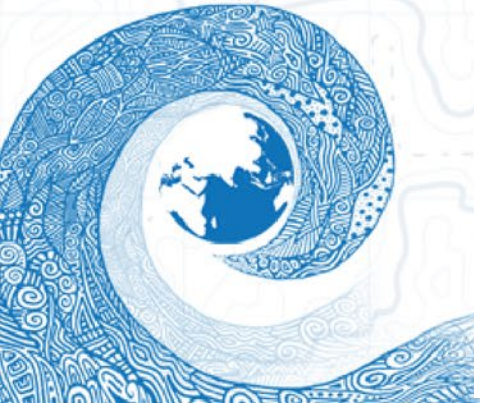
	IOTWMS Status 2005		IOTWMS Status 2018	
Policies, Plans and Guidelines	• Legal framework in place for disaster warning formulation, dissemination and response	59%	• National tsunami policy in place	90%
	• National platform or other mechanism in place for guiding disaster risk reduction in general	94%	• Local tsunami policy in place	60%
	• National Tsunami Warning and Mitigation and Coordination Committee or some other coordination mechanism in place	59%	• National tsunami disaster risk reduction plan in place	75%
	• Disaster coordination mechanisms at community level established	75%	• Local tsunami disaster risk reduction plan in place	55%
	• Tsunami emergency plans, tsunami evacuation plans and/or signage exist indicating routes to safety or higher ground	19%	• Community tsunami disaster risk reduction in place	40%
			• National tsunami guidelines established	70%
			• Local tsunami guidelines established	60%
Risk Assessment and Reduction	• Tsunami hazard evaluation conducted prior to 26 December 2004	44%	• Tsunami hazard assessment conducted	100%
	• Historical record of past earthquakes and tsunamis documented	37%	• Tsunami risk assessment conducted	75%
	• Tsunami vulnerability assessment conducted	22%	• Numerical modelling conducted for hazard assessment (PTHA and/or DTHA	35%
	• Numerical modelling studies conducted to calculate inundation from tsunamis	22%	• Bathymetry used for tsunami hazard assessment	85%
	• Accurate bathymetry and topography data exist for the coastlines	25%	• Topography used for hazard assessment	80%
Detection, Warning and Dissemination	• International tsunami warnings received for teletsunamis from PTWC and/or JMA	94%	• National capability to assess and/or receive potential tsunami threat information and advise and/or warn coastal communities	100%
	• Agency receiving warnings staffed 24x7	94%		
	• National or regional tsunami warning centre to monitor and warn of regionally or locally generated tsunami in operation	28%		
	• Warning centre staffed 24x7	31%	• Warning centre staffed 24x7	90%
	• Real-time seismic data received	41%	• Access to national or international seismic networks	90%
	• Sea level data available real-time to the central monitoring site, or available in near real-time	41%	• Access to national or international sea level networks	85%
Standard Operating Procedures	• Local government disaster preparedness and emergency response assessed	59%	• Warning dissemination SOPs in place	90%
	• Community and ordinary citizen disaster preparedness and emergency response assessed	25%	• Evacuation call SOPs in place	80%
	• Response procedures for regional or locally generated tsunami in place	19%	• Community evacuation SOPs in place	60%
Tsunami Exercises	• Response procedures have been tested or exercised	19%	• Tsunami exercises conducted at national level	70%
	• Public is aware of what a tsunami is and how to respond to both locally generated and distant tsunamis	37%	• Tsunami exercises conducted at regional level	55%
			• Tsunami exercises conducted at city level	35%
			• Tsunami exercises conducted at village level	50%
			• Tsunami exercises conducted at community level	50%
			• Tsunami exercises conducted at school level	30%
Awareness, Preparedness and Response	• Community level education and preparedness programmes for national hazards or tsunami exist	47%	• Tsunami related education and awareness material	
	• Tsunami education and public outreach programme in place	6%	◦ Leaflets or flyers	65%
	• Earthquake and tsunami hazards and preparedness is incorporated into educational curricula for school children	12%	◦ Posters	70%
			◦ Booklets	60%
			◦ Information Boards	30%
			◦ Tsunami signage	25%
			◦ Video or other visual/oral media	65%
			◦ Indigenous knowledge	35%
			◦ Teaching kits	50%
			◦ School curricula	45%
	• Training programmes for the media on tsunami hazards, mitigation, warning and preparedness exist	22%	◦ Public evacuation maps	25%
			• Media arrangement SOPs in place	80%

Recommendations (Policies, Plan and Guidelines)

- Provide support to increase availability of tsunami policies, plans and guidelines at the prevention and mitigation, preparedness, and recovery and reconstruction phases of disaster management
- Provide support to increase availability of tsunami policies, plans and guidelines at the local level, either as standalone or as part of a multi-hazard approach

Recommendations (Risk Assessment and Reduction)

- Increase engagement of other national, regional or international actors in the carrying out of tsunami hazard and risk assessments
- Increase the availability of publicly accessible data for tsunami hazard and risk assessments
- Increase the capacity for tsunami hazard assessment, especially in the areas of evacuation mapping, hazard mapping and inundation mapping
- Capitalise on the existing capacity in Member States for delivering training on hazard mapping and inundation mapping
- Increase the capacity for city, village and community level tsunami risk assessments
- Increase the capacity for developing products from tsunami risk assessments, such as risk maps, evacuation maps, guidelines and action plans



Recommendations
(Detection, Warning and Dissemination)

- Provide support to increase the capacity for analysing real-time seismic and sea-level data for tsunami threat
- Provide support to increase the capacity for tsunami modelling to support generation of threat forecasts
- Undertake a further study to examine whether there is a need for so many different software tools to be used to analyse data for tsunami threat or tsunami modelling
- Increase the frequency of tabletop or similar tsunami warning exercises to review and test SOPs, and reduce the potential for complacency among countries that have not experienced a recent tsunami event

Recommendations
(Awareness, Preparedness and Response)

- Provide support for countries to improve their SOPs at the interface between upstream and downstream, including the operation of a 24/7 emergency operation centre, receiving information from the NTWC, and response criteria and decision-making, as well as the associated human resources and infrastructure.
- Provide support for countries to improve their SOPs to address warning dissemination, communication with the NTWC, communication with other stakeholders, evacuation call procedures, communication with local government and media arrangements, as well as the associated human resources and infrastructure.
- Provide support for the development of community level evacuation SOPs.
- Capitalise on the willingness of countries to share their SOPs to share good practices across Member States.
- Provide training and share Member States' experience of different types of evacuation infrastructure.
- Provide support to incorporate tsunami exercises into cities, villages, communities and schools.
- Provide training and share Member States' experience of different public engagement materials.
- Develop educational materials such as teaching kits, and encourage the incorporation of tsunami awareness into the school curricula.
- Raise awareness of the Global Disaster Risk Reduction Day (13 October) and World Tsunami Awareness Day (5 November).

Thank you.

Nora Gale, ICG/IOTWMS Secretariat

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