

Agenda 3.2.1.2



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**Global Coordination  
of Warning and  
Mitigation Systems  
for Ocean Hazards**

**Dr Srinivasa Kumar Tummala**

Chair, TOWS-WG and Vice-Chair, IOC

**Acknowledgements: Bernardo Aliaga, IOC**

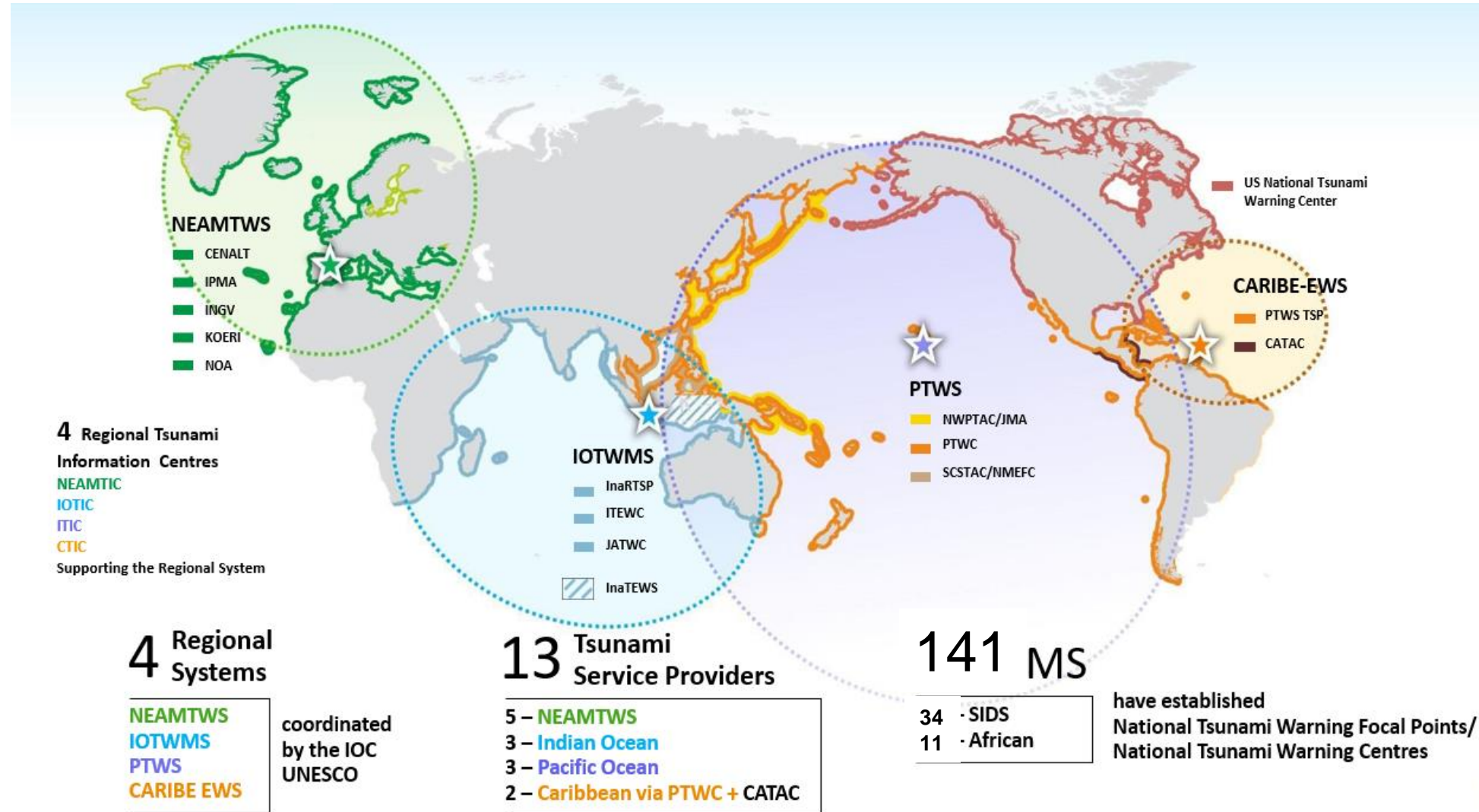
# Global Tsunami Warning and Mitigation System



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- CARIBE-EWS
- IOTWMS
- NEAMTWS
- PTWS



# Major Activities in the Inter-sessional Period



## Tsunami Risk Knowledge, Detection, Warning and Dissemination

- Operations of the Global Tsunami Warning and Mitigation System – Detected significant events
- Report on Monitoring and Warning for Tsunami generated by Volcanoes (IOC/2024/TS/183)
- TT TWO work in developing TSP bulletins for the maritime community
- Development of NTWC Competency Framework by ITIC and ICG/PTWS



## Preparedness and Response Capabilities

- Conduct of Tsunami Wave Exercises in 3 ICGs
- Implementation of TRRP in all ICGs (tens of new communities)
- Important role of TICs in TOWS-WG Task Teams, TRRP, and developing community awareness & preparedness
- ICG/PTWS work on Tsunami Ready Equivalency – National Programmes Vs UNESCO-IOC Tsunami Ready
- Progress by Indonesia on Tsunami Ready Critical Infrastructure and ISO 22328-3 (Community-based Early Warning Systems in Tsunamis) targeting large-scale private sector



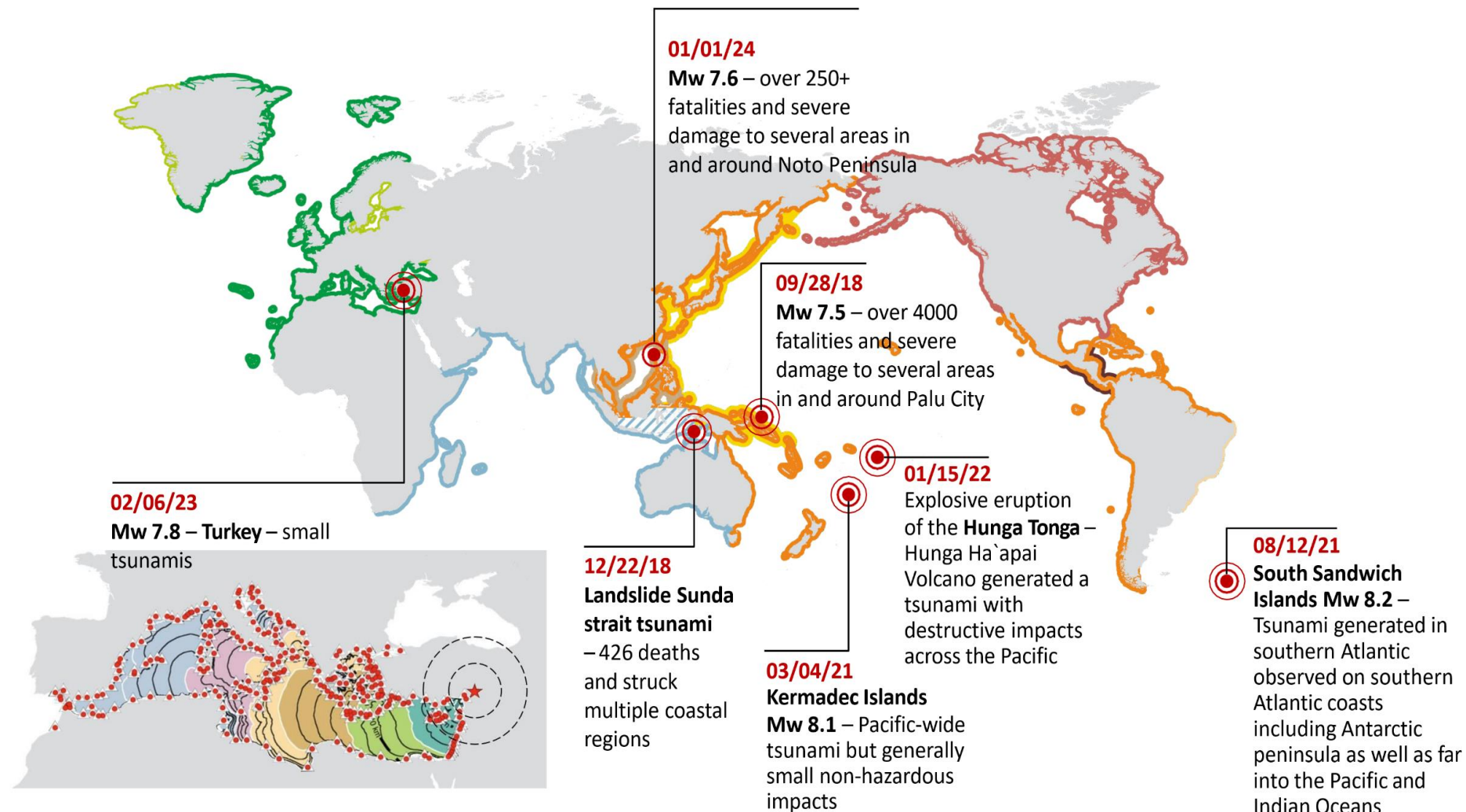
## Collaborations and Partnerships

- TOWS-WG XVII Meeting – Sendia, Japan, 22-23 February 2024
- UN Ocean Decade - ODTP RDIP (IOC/2023/TS/180), SC 4 meeting Jan 2024, Ocean Vision 2030 WG 6
- IUGG – ODTP SC 4 meeting Jan 2024, 8<sup>th</sup> IOC/ICG/PTWS-IUGG JTC Technical Workshop Sep 2023, Global Tsunami Symposium Nov 2024, IUGG JTC ITS Sep 2025
- UNDRR - WTAD 2023 #GetToHighGround campaign
- JICA – Work on DRR and Tsunami Early Warning Systems
- Commitments of Barbados, Indonesia, USA for hosting TICs and Australia for hosting IOTWMS Secretariat
- Preparatory work for the UNESCO-IOC 2nd Global Tsunami Symposium, Indonesia

# Significant Tsunami Events in the Last Five Years

## 2024 Japan event

- January 1, 2024
- Mw 7.6, Noto Peninsula, West Coast of Honshu, Japan
- Tsunami wave height 6.6 m
- Over 250+ fatalities

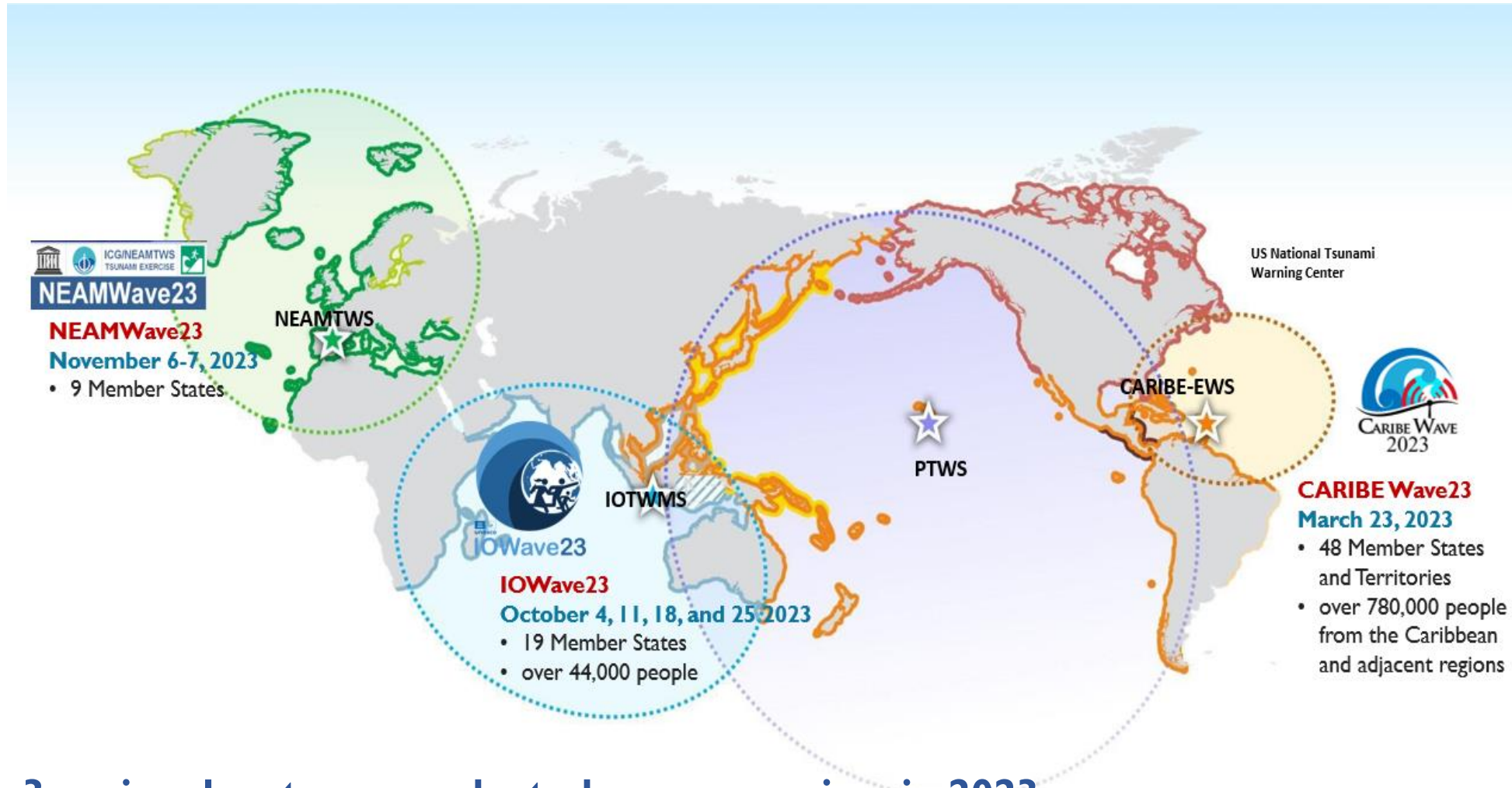


# Tsunami Wave Exercises (Mock drills) in Inter-session Period



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3 regional systems conducted wave exercises in 2023

Pacific Wave 2024  
scheduled for  
September-  
November 2024

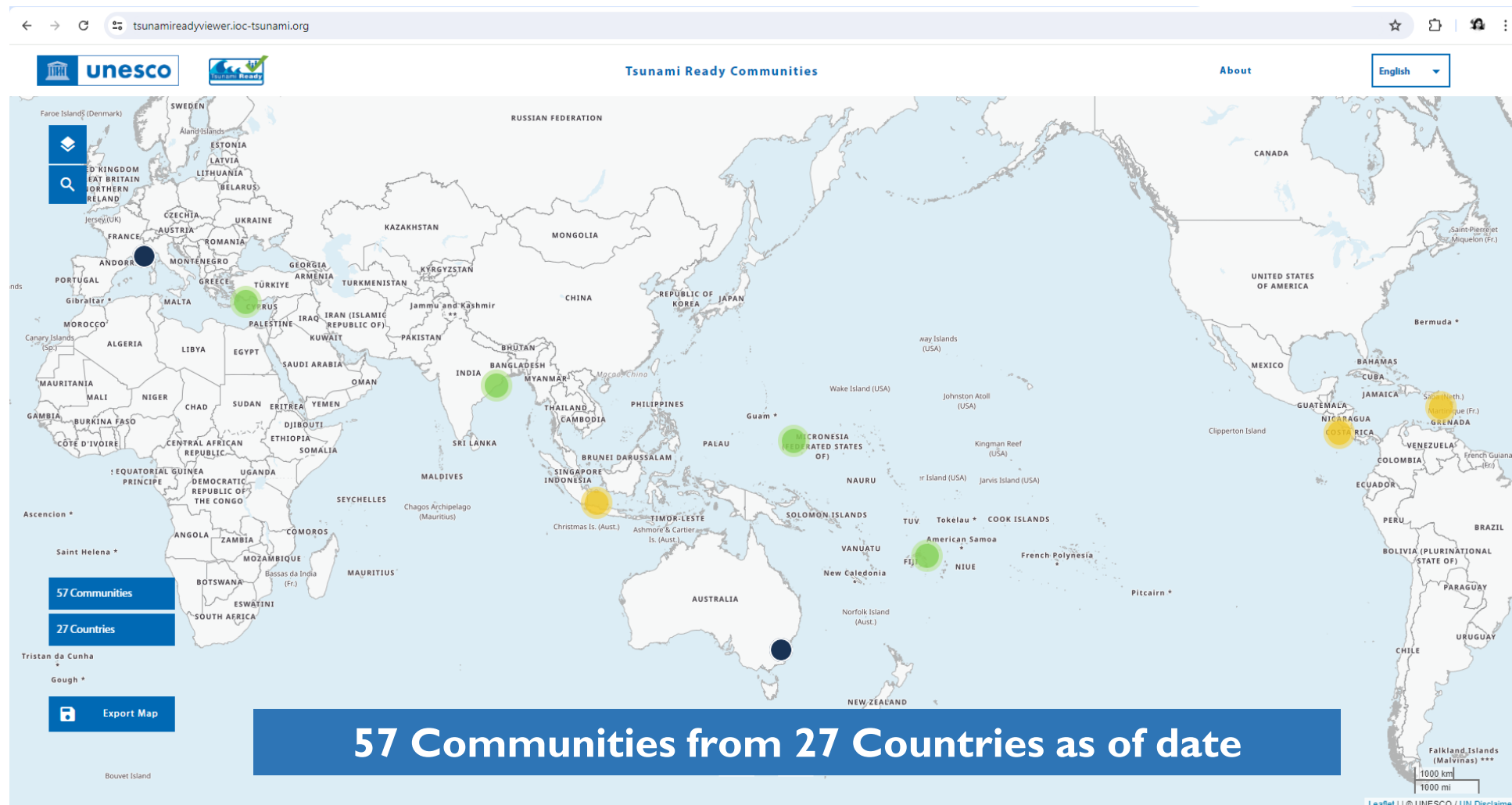


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# UNESCO-IOC Tsunami Ready Recognition Programme

<https://tsunamireadyviewer.ioc-tsunami.org/>

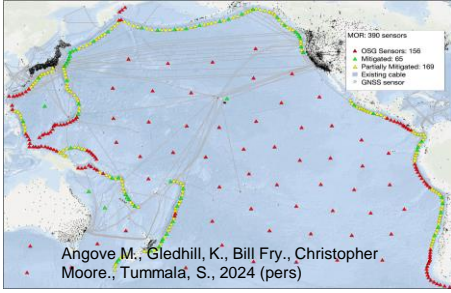


57 Communities from 27 Countries as of date

## In 2023

- Cannes Municipality (Alpes Maritimes), France, as the first Tsunami Ready community in the **Mediterranean sea**
  - Indonesia (Nagari Tapakih) in the **Indian Ocean**,
  - Barbados (Christ Church West), Guadeloupe (Deshaies), and St. Vincent and the Grenadines (Saint George) in the **Caribbean**, and
  - Costa Rica (Dominical, Dominicalito and Barú; Playa Hermosa; Puerto Jiménez and Tivives), Fiji (Navuevu and Sila) in the **Pacific Ocean**
- Total 12 communities**

# UN Ocean Decade Tsunami Programme



To develop the warning systems' capability to issue actionable and timely tsunami warnings for tsunamis from all identified sources to 100% of coasts at risk



100% of communities at risk be prepared and resilient to tsunamis by 2030 through programmes like the IOC-Tsunami Ready Recognition Programme (TRRP)



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## Key Elements

- Tsunami Risk Knowledge
- Tsunami Detection, Analysis and Forecasting
- Warning, Dissemination and Communication
- Preparedness and Response Capabilities
- Capacity Development, SIDS and LDCs, Multi-hazard Framework
- Governance and Pathways to Implementation

### Research, Development and Implementation Plan for the Ocean Decade Tsunami Programme

EXECUTIVE SUMMARY

The Scientific Committee developed the draft 10-Year Research, Development and Implementation Plan for the Ocean Decade Tsunami Programme which was presented and endorsed at the IOC Assembly in June 2023

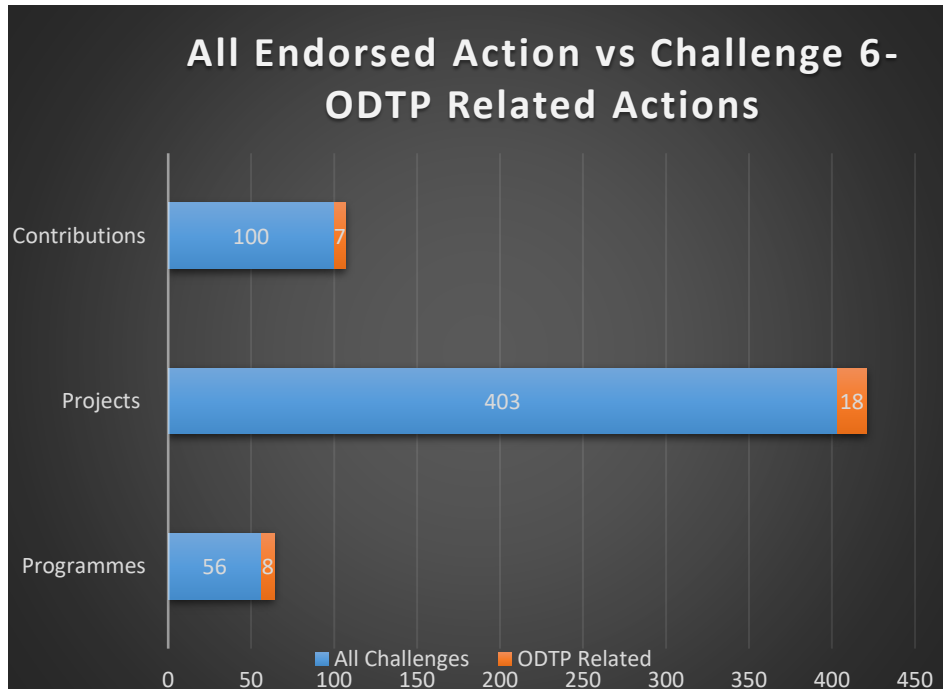
# UN Ocean Decade Tsunami Programme



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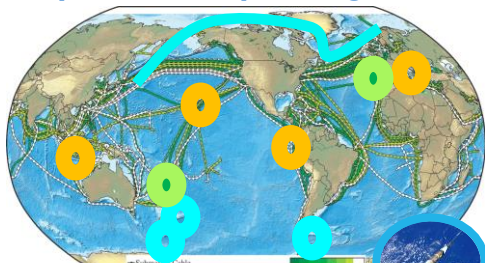
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## Ocean Decade Actions



**8/56 Programmes; 18/403 Projects;  
7/100 contributions**

Source: <https://oceanexpert.org/document/29188>



## Barcelona Conference



**Coastal cities and communities joining  
Tsunami Ready**



**Coastal Futures: Charting priorities for  
Coastal Resilience**

**Tsunami Night: 3 Films related to tsunami**

**2630 onsite & 3000+ online participants from  
124 countries, 165 satellite events**

**Ocean Decade  
Vision 2030  
White Papers**

**Challenge 6:**  
Increase community resilience  
to ocean hazards

The United Nations  
Decade of Ocean Science  
for Sustainable Development  
(2021-2030)

**Goal: A safe ocean where life and livelihoods  
are protected from ocean-related hazards**

- Design people-centred multi-hazard early warning systems
- Design adaptation strategies to increase coastal resilience



# UN Ocean Decade Initiatives related to ODTP

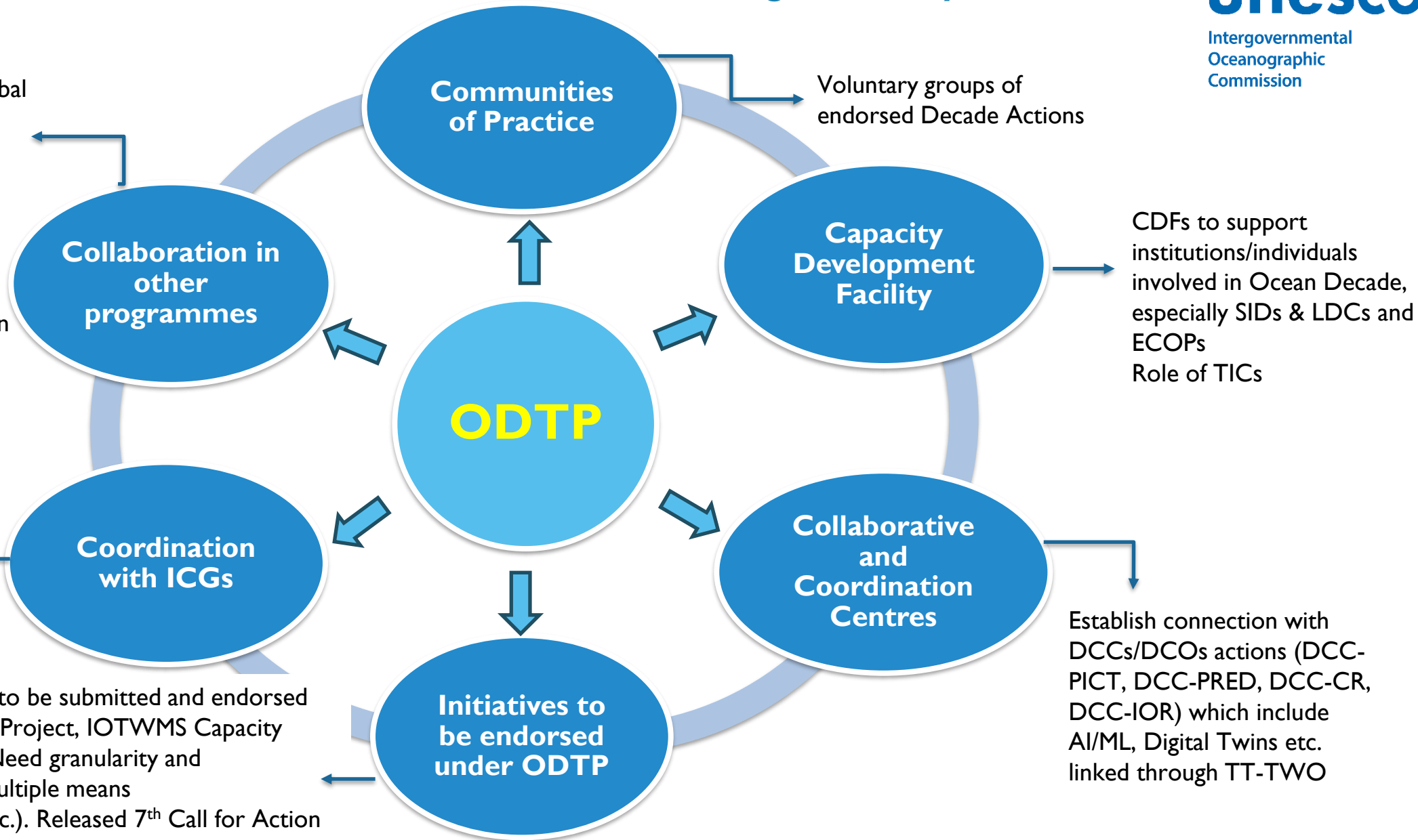
## 4<sup>th</sup> Science Committee for the UN-ODTP Meeting Summary



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- 2<sup>nd</sup> UNESCO-IOC Global Tsunami Symposium
- 2<sup>nd</sup> UN Ocean Decade Conference
- EW4ALL



Optimal Sensor Grid Design  
Mechanism to report progress made at each ICG w.r.t to ODTP goals. Align with global Tsunami Performance Monitoring Framework

Relevant national projects to be submitted and endorsed (SMART cable, NZ DART Project, IOTWMS Capacity Assessment Project etc). Need granularity and communication through multiple means (DCU/TSR/ICGS/NDCs etc.). Released 7<sup>th</sup> Call for Action

# TOWS-WG XVII Key Recommendations



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## Risk Knowledge, Detection, Warning and Dissemination

## Preparedness and Response

### ICGs

- TSPs may need to provide services for TGVs that may impact several MS
- Multi-purpose sea level monitoring stations to support MHEWS
- Use Exercises and Communication tests for monitoring data availability and quality
- Sharing of info on deployment of new technologies to monitor sea level variations
- TSPs to trial and operationalise dissemination of maritime bulletins to respective NAVAREA operators

### Secretariat

- Initiate consideration of whether TSPs may need to provide new services for TGVs
- Distribute report on Monitoring and warning for TGVs including the list of tsunamigenic volcanoes to Member States and Volcano Observatories
- Circular letter to all Member States on Closure of Fax services by TSPs unless advised otherwise
- Develop reporting mechanism on Ocean Decade projects and against ODTP-RDIP KPIs aligning with Global KPI Framework

### ICGs

- ICG/PTWS TT-Tsunami Ready to share guidance on Tsunami Ready Equivalency for further consideration by TT-DMP
- Exercises outside of working hours (night)
- ICG/IOTWMS WG1 & WG3 to develop and share guidelines for TR Critical Infrastructure

### Secretariat

- Webinars for each ICG on Maritime Services and on TGVs by involving Volcano Observatories and VAACs
- Development of Tsunami Ready Toolkit with TICs' lead

- Closer collaboration between IOC/UNESCO and WMO – MHEWS, UN EW4ALL, CIFI
- Review the roles and responsibilities for Meteotsunamis – JCB
- Extends the tenure of TOWS-WG and its Task Teams



# 2nd UNESCO-IOC Global Tsunami Symposium, Banda Aceh, Indonesia



**PRE-EVENT**  
International Workshop (8-10 Nov 2024)  
Venue: USK Banda Aceh

**2nd UNESCO-IOC Global Tsunami Symposium**  
Venue: Banda Aceh Convention Hall  
(11 – 14 November 2024)

**POST-EVENT**  
ICG IOTWMS XIV Session  
Venue: Near Jakarta

Hosted by IABI in collaboration with TDRMC	<b>Day 1 (11 Nov 2024)</b>	<b>Day ( 12 Nov 2024)</b>	<b>Day 3 (13 Nov 2024)</b>	<b>Day 4 (14 Nov 2024)</b>	Hosted by BMKG	
	<b>Opening Ceremony</b>	<b>S3: Tsunami Hazard and Risk Assessment</b>	<i>All Day Excursion</i>	<b>S7: Contributions of Tsunami Early Warning Systems (TEWS) to global initiatives</b>		
		<b>S4: Tsunami Detection, Warning, Dissemination, and Response</b>		<b>S8: Wrap up/Synthesis/Way Forward</b>		
	<b>Lunch Break (12:00 – 14:00)</b>					
	<b>S1: Review of the Tsunami Warning and Mitigation Systems over the past 2 decades</b>	<b>S5: Achieving 100% Communities at Risk to be Prepared for and Resilient to tsunami by 2030</b>		<b>Closing Ceremony</b>		
	<b>S2: Tsunami generated by non-seismic and complex sources</b>	<b>S6: Other critical issues for building community resilience</b>				

**Side Events:**  
Exhibitions (10-12 Nov), Posters (11-12 Nov), Ignite Stages (11-12 Nov) in “Rumah Resilience Indonesia” concept, located at Banda Aceh Convention Hall (BMA)

*Tsunami United: Indian Ocean Youth Tsunami Conversation and Campaign Initiatives (IOYTCCI) organised by UNESCO-IOC IOTIC*



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**THANK YOU**

