



United Nations  
Educational, Scientific and  
Cultural Organization



Intergovernmental  
Oceanographic  
Commission

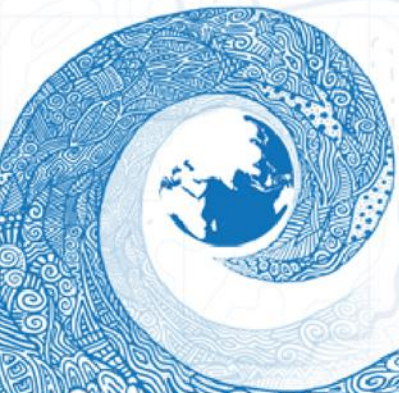
# India Status Report

**Sunanda Manneela**

INCOIS, India

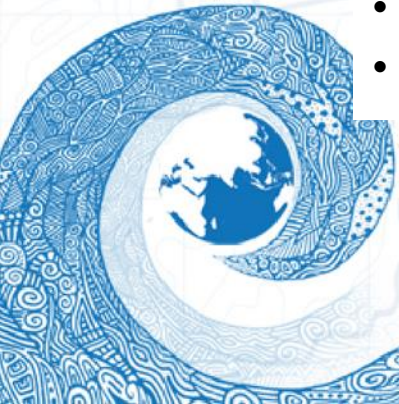
**Regional Working Group for the North-West Indian Ocean**

May 30, 2023

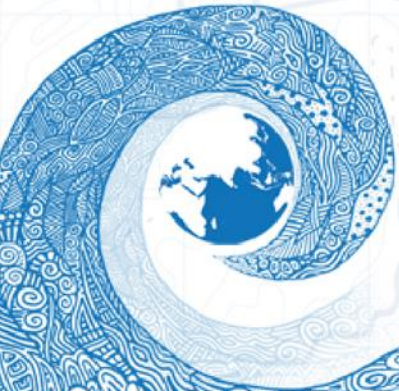
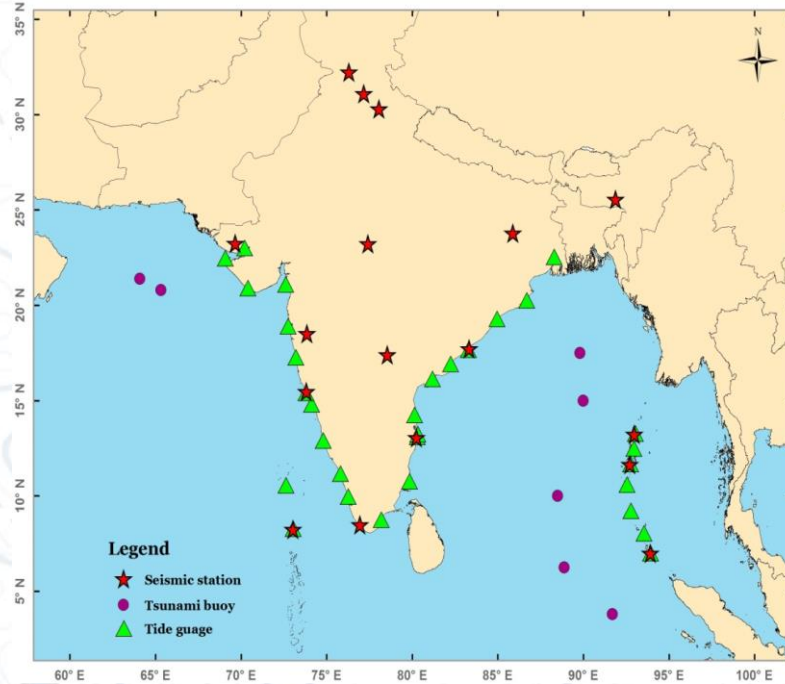


# India Activities during Intersessional Period

- Observation Network
- Update on CFZs of India
- Probabilistic Tsunami Hazard Assessment (PTHA) for Makran Subduction Zone
- Monitored 28 Tsunamigenic earthquakes and issued bulletins
- Progress on Warning Chain
- Media SOP
- Participated in IOTWMS Communications Test
- Conducted Tsunami mock drills

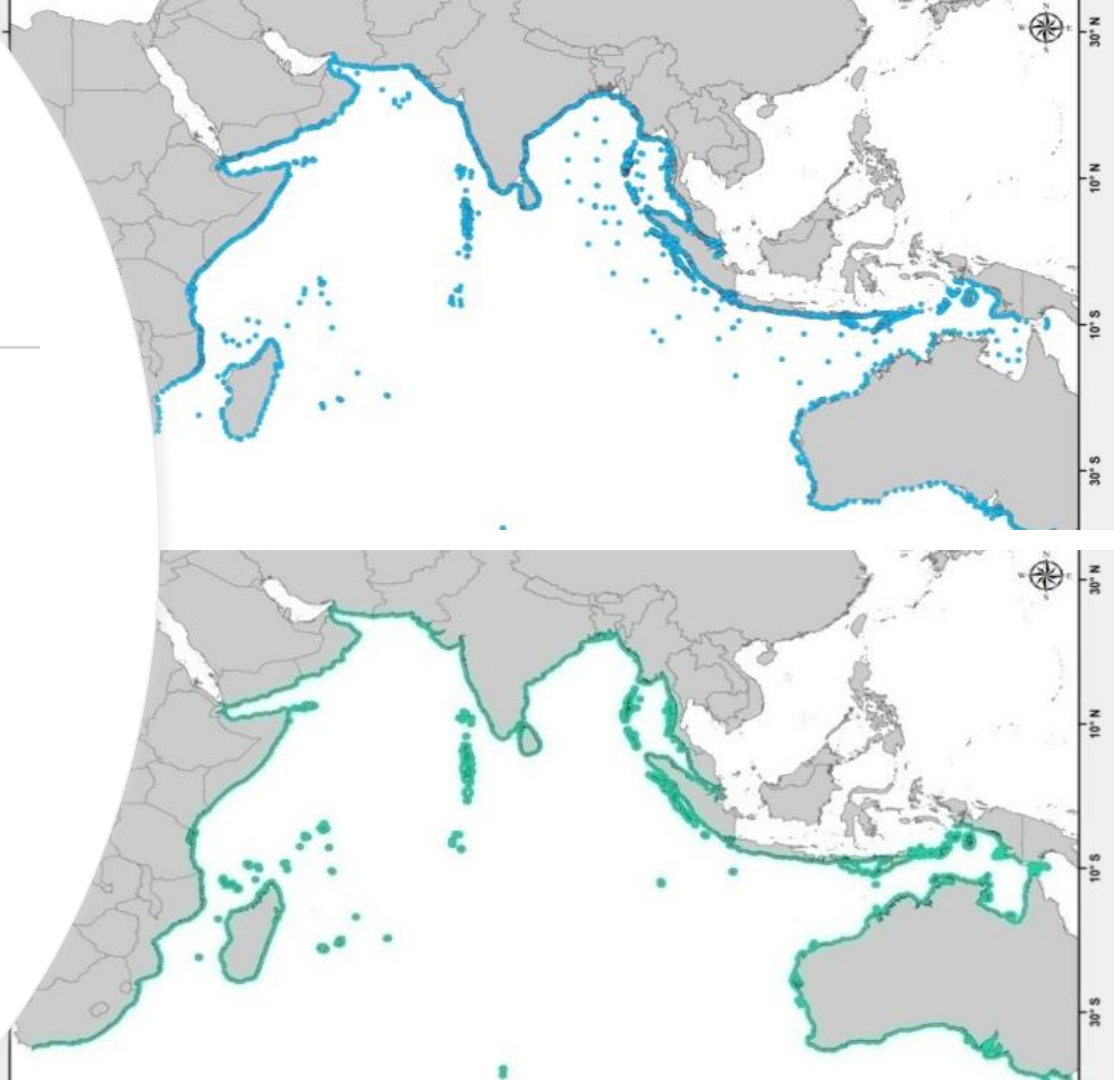


# India National Observation Network



# UPDATES In CFP and CFZ Version 2018 Mar 14

- CFZs : 581 and CFPs : 2251
- As part of NTWC SL III operational requirements, added 9 CFZs and modified 1 CFZ of India.
- Total **79** CFZ are identified for India and generated official list of Tsunami hazard districts approved by NDMA, India
- Linking CFZs With new GADM (Version 3.6).
- Verification of Place names, District, State/Province and Country names, naming standards against the ISO standard documents is under progress.
- CFZ files will be circulated to TSP Australia and Indonesia for comments and suggestions and will be released as a new version with approved date.



# India Monitoring Services

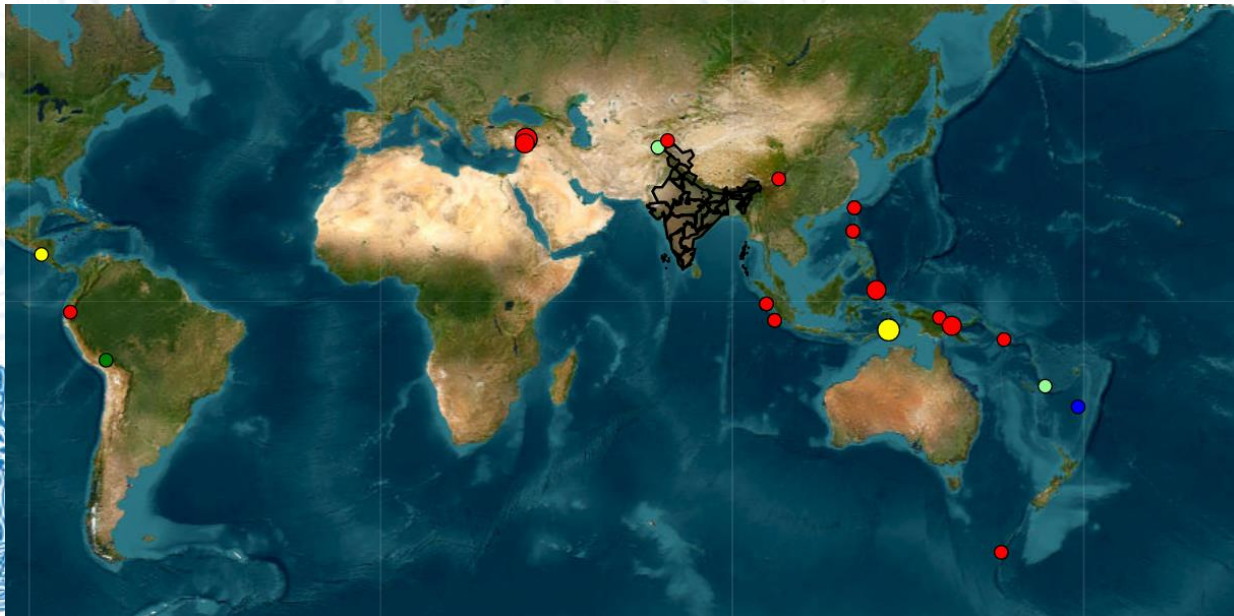
**Reporting Period April 01, 2022 to May 15, 2023**

Number of TSP INDIA events those crossed the USGS final  $M \geq 6.5$

**28**

Average Elapsed Time to issue first Bulletin

**11 min**

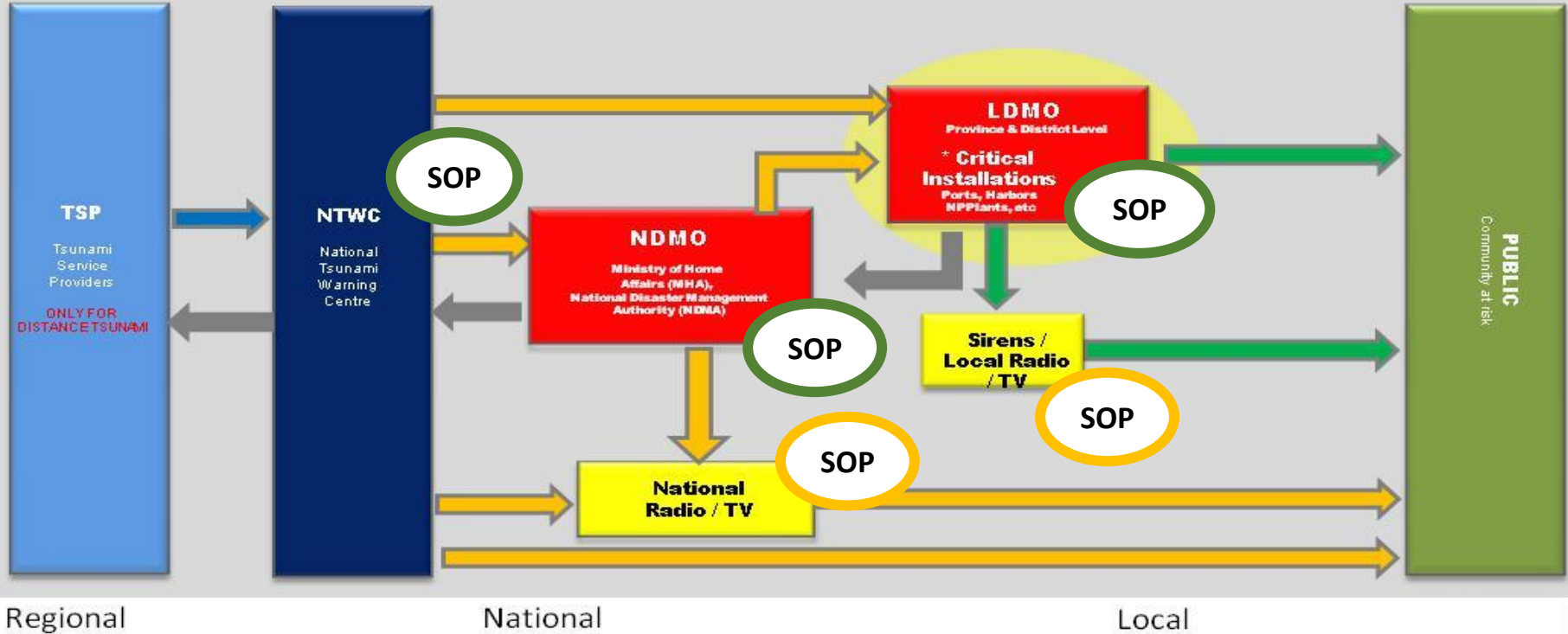


# Tsunami Warning Chain

10Min

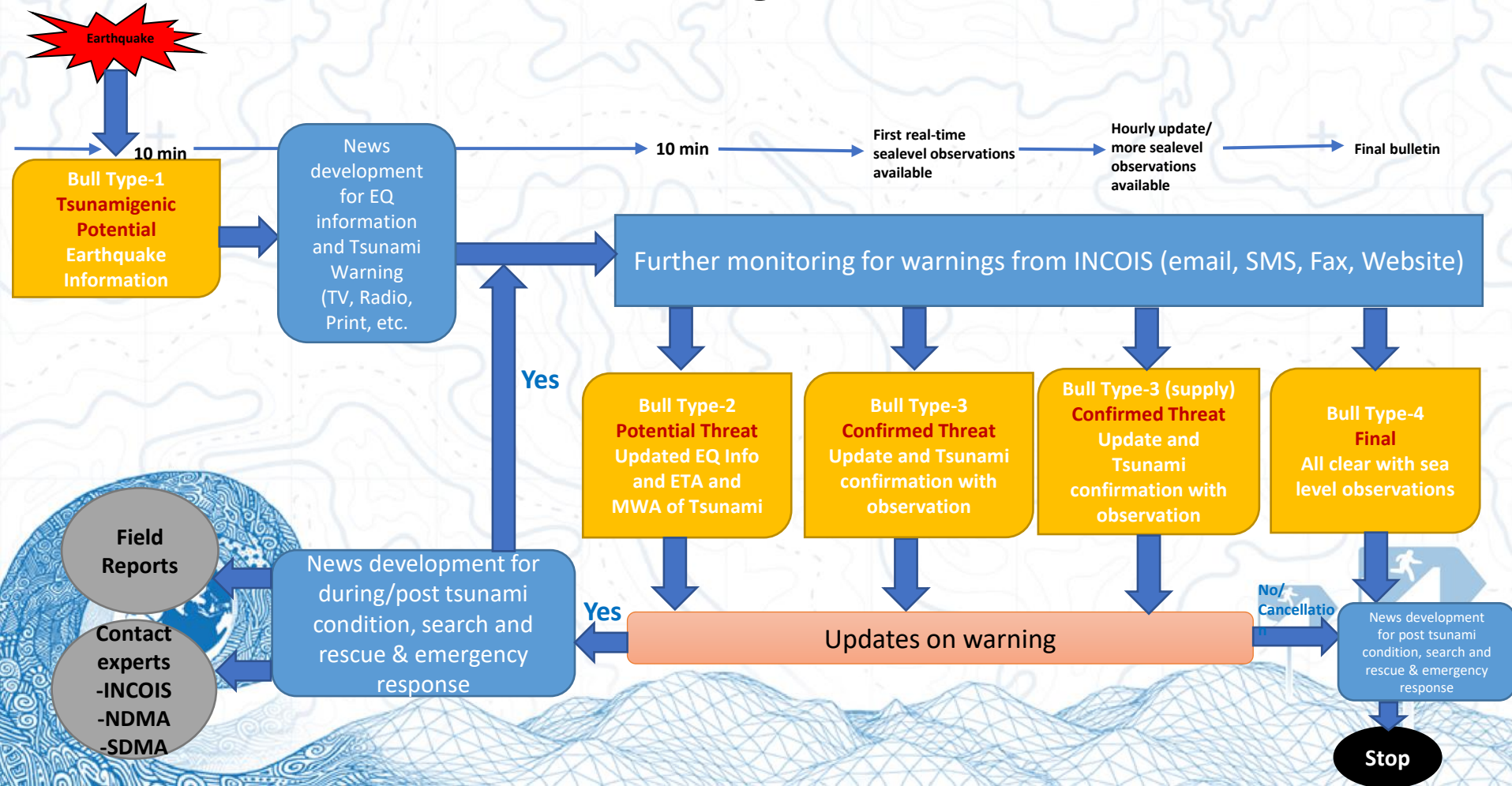
20 Min

Timeline (Minutes after EQ)



\* Critical Installations evacuation call only at Institution level

# Broadcasting Media SOP



# The outcome of recent meetings

## Progress made from previous meetings (during Phase 1 of the project).

- Dissemination of 'No threat' messages to public
- NDMA has initiated the process for no threat information (through IRS & CAP implementation)
- SOP for National broadcasting media drafted based on input from media and NDMA representatives
- Message templates were simplified

## Issues identified

- SDMO & LDMO's SOPs are part of multi-hazard SOPs and need to be revised in line with time requirements from near-field tsunamis
- Media needs to play a 'strategic' role in linking NTWC directly with communities at risk
- NTWC bulletins need to be converted as much simple and actionable messages for media purposes
- Heads-up messages/calls from NTWC to media personnel need to be formulated to trigger media SOP
- Frequent mock drills to be scheduled at regular intervals to test Integrated SOPs of NTWC/DMO/Media

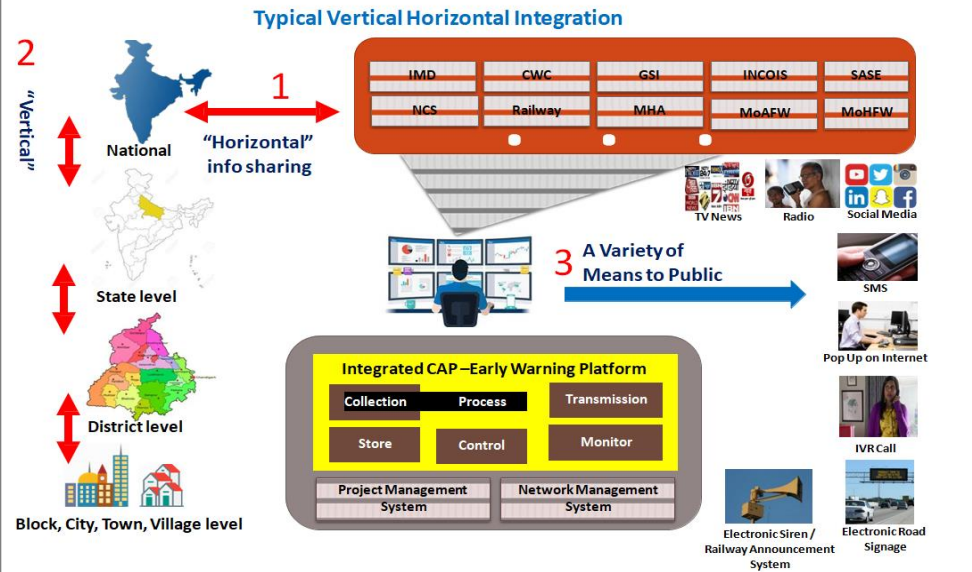




# CAP for National Services

- Common Alerting Protocol(CAP) सचेत is an Integrated Alerting System for Disaster Management to warn the public regarding disasters and emergencies in targeted manner.
- Implementation of Common Alerting Protocol (CAP) for crisis information interchange between organizations.
- Forecasting agencies can address public or the First Responders of a specific area simultaneously cover all media coverage (SMS, IVR call, TV, Radio, Siren, Road Signage, social media etc.) in vernacular languages

## Common Alerting System Working Model



- ❑ As a NTWC, ITEWC is also generating the CAP files for NTWC service on real-time basis and made available to consume by the stakeholders.
- ❑ National Disaster Management Agency (NDMA) is planning to implement the CAP enabled integrated alerting system for pan India covering all hazards.
- ❑ INCOIS has integrated the tsunami advisories for national services

## COMMs Tests

- 24<sup>th</sup> & 25<sup>th</sup> COMMs tests of the ICG/IOTWMS were conducted on 08 June 2022 & 07 December 2022 to validate the dissemination process to NTWCs. Messages disseminated to 25 countries in the Indian Ocean region



## Tsunami mock Exercises

- Conducted **TWO tsunami mock exercises** for Odisha and Andaman & Nicobar Islands on 05 November 2022 and 09 February 2023 respectively.





## Tsunami Ready Programme & Workshops

- Total 6 villages were selected for Tsunami Ready program in Kerala (Province in West Coast of India) 1. Valiyaparamba - Kasaragod district, 2. Nagaram - Kozhikode district, 3. Eriyad - Thrissur district, 4. Edavanakkad - Ernakulam district 5. Purakkad - Alappuzha district, 6. Alappad - Kollam district
- UNESCO-IOC Tsunami Ready start-up program conducted for Alappad community at Amritapuri, Kollam Dist., Kerala on 09 June 2022 in coordination with Amrita Vishwa Vidyapeetham
- Also, inductions programs were conducted in all these villages in December 2022
- Tsunami Evacuation Planning (TEP) workshop conducted at INCOIS on 13 September 2022 as part of UNESCO –IOC and UNESCAP project for North West India Ocean
- National Tsunami Standard Operating Procedure (SOP) workshop conducted from 31 October – 03 November 2022 at INCOIS, Hyderabad. The workshop is part of the UNESCO-IOC and UNESCAP Project and focused on DMOs and Broadcast Media of Coastal States/UTs.

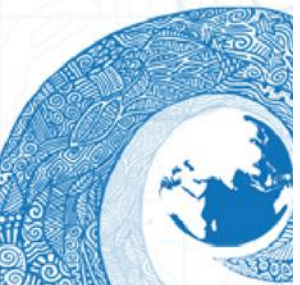


## Recognition to Services

- ITEWC, INCOIS received the “**World Congress on Disaster Management- Disaster Risk Reduction (WCDM-DRR) Excellence Award-2021**” and conferred on 22 June 2022 at New Delhi.

# Future Plans

- Work on **Operational procedures (SOP)** for **atypical tsunami** sources such as Submarine landslides, Volcanic eruption and meteoric sources.
- Utilization of **real-time GNSS & SMA data** for rupture characterization of the tsunamigenic earthquakes.
- Mounting efforts on **Integrated inversions** for tsunami source characterisation
- Implementation of **Service Level 3 inundation modeling for National** Indian coastal zones.
- Mounting efforts **on tsunami hazard assessment** and modelling studies
- Implementation of **Tsunami Ready Program** in most vulnerable coastal regions
- Participate in 6-monthly IOTWMS **Communication Tests** and biennial **IOWave** exercises
- Conduct National Mock drills in coordination with MHA, NDMA and SDMOs
- Regular SOP Training Workshops for National stockholders
- Finalization of DMOs, Media SOPs in consultation with NDMA, SDMO and Media



**THANK YOU**

