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Intergovernmental
Oceanographic
Commission

Country (*India*) Report

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Observing networks and data sharing

➤ Seismic Network

- 17 national broadband stations & 25 stations from other NCS network
- Around 400 International Stations
- Sharing 3 Seismic stations in real time

➤ GNSS & SMA Network at Andaman & Nicobar Islands

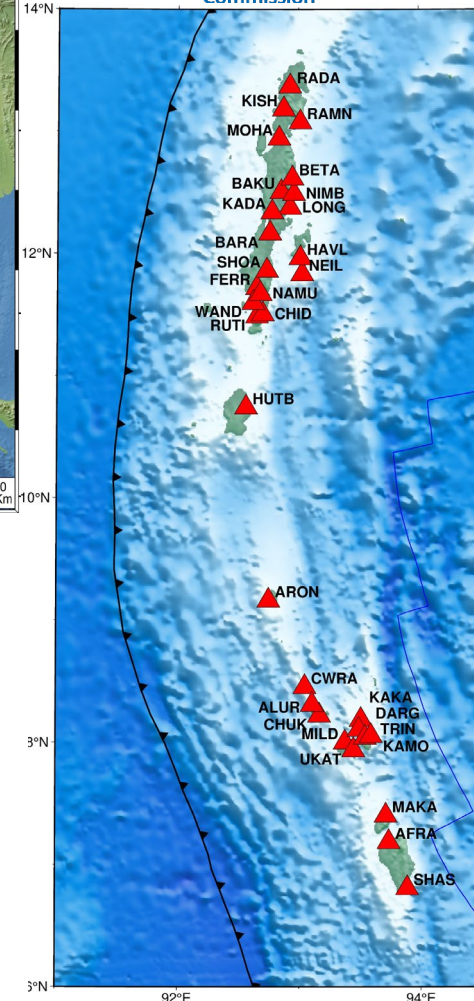
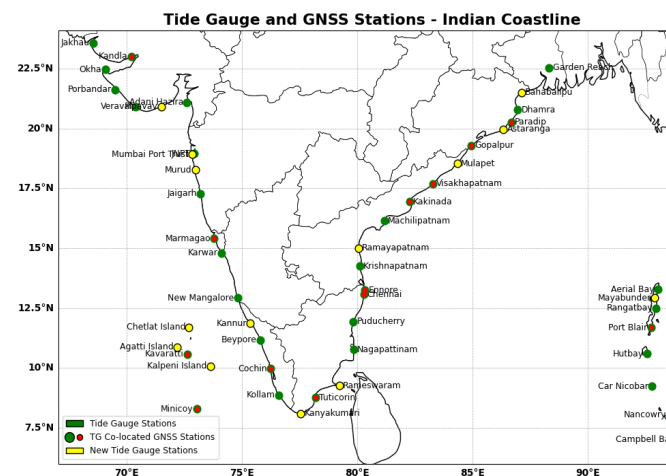
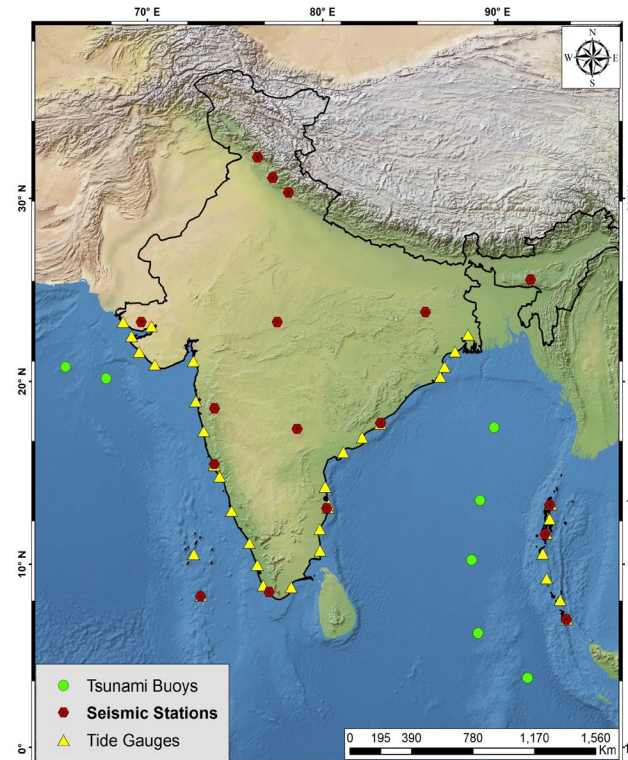
- INCOIS established GNSS & Strong Motion Network at 35 Locations in Andaman & Nicobar Islands

• Tsunami Buoys Network

- Network of 7 Tsunami Buoys, 5 in Bay of Bengal & 2 in Arabian Sea
- All stations data being shared with NOAA-NDBC

➤ Tsunami Buoys Network

- Network of 36 Tide gauges
- Eight Tide gauges data (Chennai, Kochi, Nancowry, Port Blair, Visakhapatnam, Minicoy, Marmagao and Veraval) to IOC Sea level stations monitoring facility.
- Recently, 15 GNSS established along Tide gauge.
- Establishing 14 new tide gauge stations.



The scenario details are:

	Scenario 2 – Makran Trench	Scenario 4 – Sumatra Trench
Date:	Wednesday, 15 October 2025	Wednesday, 05 November 2025
Time:	1130 IST	0830 IST
Magnitude:	9.0 M	9.2 M
Depth:	10 km	10 km
Latitude:	24.80 N	3.30 N
Longitude:	62.20 E	95.96 E
Location:	Off Coast of Pakistan	Northern Sumatra, Indonesia

The administrators of west coast of India and Lakshadweep Islands are recommended to participate in the tsunami exercise on 15 October 2025

The administrators of east coast of India and Andaman & Nicobar Islands are recommended to participate in the tsunami exercise on 05 November 2025

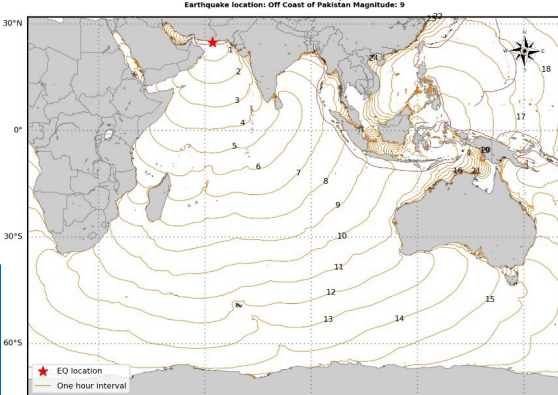
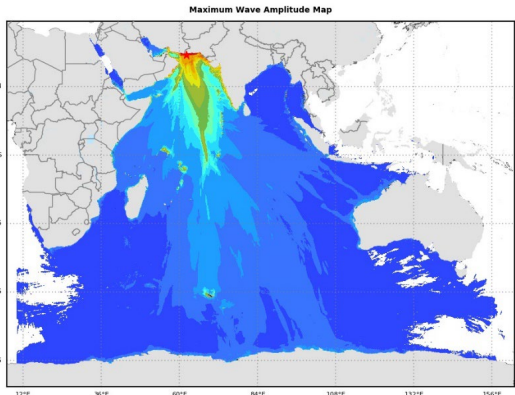
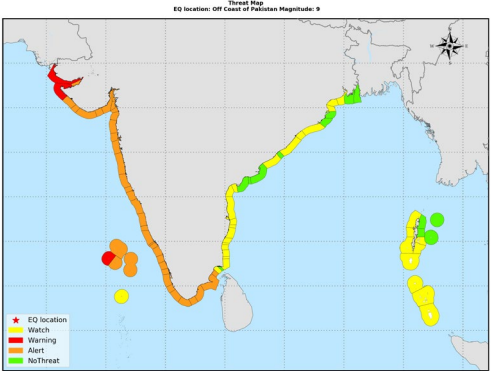
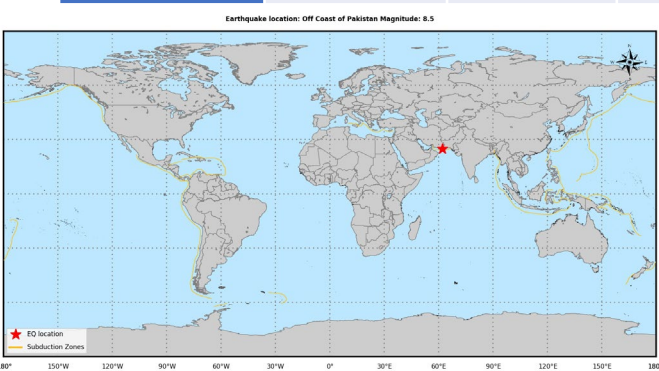
- Each scenario run in real time for a period of 12 hours
- INCOIS will issue 15 bulletins for each scenario

IOWave25 Exercise - Off Coast of Makran Event



Date	Time (IST)	Bulletin #	Detail
15-Oct-25	1130		Earthquake occurs
15-Oct-25	1138	1	Earthquake Bulletin (M8.5)
15-Oct-25	1145	2	Potential Threat (M8.7)
15-Oct-25	1200	3	Confirmed Threat (M9.0)
15-Oct-25	1230	4	Confirmed Threat (M9.0)
15-Oct-25	1330	5	Confirmed Threat (M9.0)
15-Oct-25	1430	6	Confirmed Threat (M9.0)
15-Oct-25	1530	7	Confirmed Threat (M9.0)
15-Oct-25	1630	8	Confirmed Threat (M9.0)
15-Oct-25	1730	9	Confirmed Threat (M9.0)
15-Oct-25	1830	10	Confirmed Threat (M9.0)
15-Oct-25	1930	11	Confirmed Threat (M9.0)
15-Oct-25	2030	12	Confirmed Threat (M9.0)
15-Oct-25	2130	13	Confirmed Threat (M9.0)
15-Oct-25	2230	14	Confirmed Threat (M9.0)
15-Oct-25	2330	15	Final Bulletin

Country	State/Territory	Zone	T1(IST)	T2(IST)	T3(IST)	T4(IST)	Amplitude(m)	Threat Status
INDIA	GUJARAT	MANDVI	2025-Oct-15 13:25:00	2025-Oct-15 13:34:00	2025-Oct-15 21:09:00	2025-Oct-16 12:30:00	2.7	Warning
INDIA	GUJARAT	DWARKA	2025-Oct-15 13:27:00	2025-Oct-15 13:38:00	2025-Oct-15 13:54:00	2025-Oct-16 12:30:00	2.0	Warning
INDIA	GUJARAT	PORBANDAR	2025-Oct-15 13:30:00	2025-Oct-15 13:39:00	2025-Oct-16 02:36:00	2025-Oct-16 12:15:00	1.8	Alert
INDIA	GUJARAT	JAMNAGAR	2025-Oct-15 13:31:00	2025-Oct-15 13:41:00	2025-Oct-15 19:35:00	2025-Oct-16 12:16:00	1.7	Alert
INDIA	GUJARAT	MANGROL	2025-Oct-15 13:42:00	2025-Oct-15 13:52:00	2025-Oct-16 11:17:00	2025-Oct-16 12:30:00	1.2	Alert
INDIA	GUJARAT	HAZIRA, DIU	2025-Oct-15 13:52:00	2025-Oct-15 14:04:00	2025-Oct-16 00:47:00	2025-Oct-16 12:30:00	1.9	Alert
INDIA	LAKSHADWEEP	AGATTI	2025-Oct-15 14:21:00	2025-Oct-15 14:26:00	2025-Oct-15 14:34:00	2025-Oct-16 11:37:00	2.0	Warning
INDIA	LAKSHADWEEP	AMINI	2025-Oct-15 14:27:00	2025-Oct-15 14:33:00	2025-Oct-15 14:36:00	2025-Oct-16 02:21:00	1.2	Alert
INDIA	LAKSHADWEEP	KAVARATTI	2025-Oct-15 14:35:00	2025-Oct-15 14:41:00	2025-Oct-15 14:53:00	2025-Oct-16 04:06:00	1.0	Alert
INDIA	MAHARASHTRA	MALVAN BAY	2025-Oct-15 14:33:00	2025-Oct-15 14:44:00	2025-Oct-15 20:55:00	2025-Oct-16 12:30:00	1.7	Alert
INDIA	LAKSHADWEEP	MINICOY	2025-Oct-15 14:44:00	2025-Oct-15 14:44:00	2025-Oct-15 14:52:00	-	0.5	Watch
INDIA	GOA	PANAJI	2025-Oct-15 14:41:00	2025-Oct-15 14:52:00	2025-Oct-16 12:03:00	2025-Oct-16 12:30:00	1.6	Alert
INDIA	GOA	VASCO	2025-Oct-15 14:43:00	2025-Oct-15 14:54:00	2025-Oct-15 18:10:00	2025-Oct-16 12:30:00	1.2	Alert
INDIA	MAHARASHTRA	JAIGARH	2025-Oct-15 14:42:00	2025-Oct-15 14:54:00	2025-Oct-16 04:34:00	2025-Oct-16 12:30:00	1.7	Alert
INDIA	KARNATAKA	KARWAR	2025-Oct-15 14:52:00	2025-Oct-15 15:03:00	2025-Oct-15 19:09:00	2025-Oct-16 12:24:00	1.8	Alert
INDIA	LAKSHADWEEP	ANDROTH	2025-Oct-15 15:11:00	2025-Oct-15 15:18:00	2025-Oct-15 15:21:00	2025-Oct-15 15:59:00	0.8	Alert
INDIA	KARNATAKA	MANGALORE	2025-Oct-15 15:12:00	2025-Oct-15 15:25:00	2025-Oct-15 23:41:00	2025-Oct-16 12:27:00	1.5	Alert
INDIA	KERALA	KASARAGOD	2025-Oct-15 15:14:00	2025-Oct-15 15:26:00	2025-Oct-15 20:32:00	2025-Oct-16 12:24:00	1.4	Alert



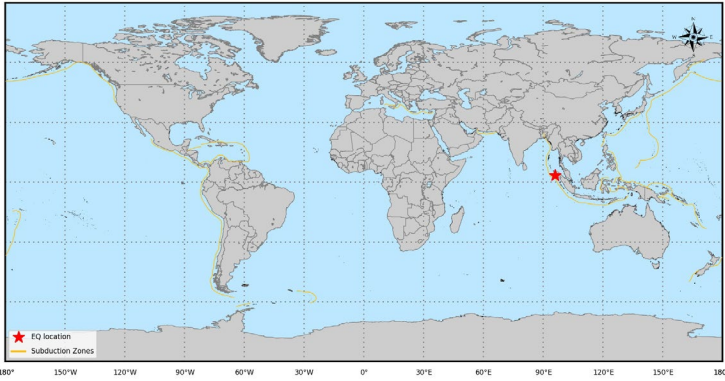
IOWave25 Tsunami Exercise - Nicobar Event Timelines



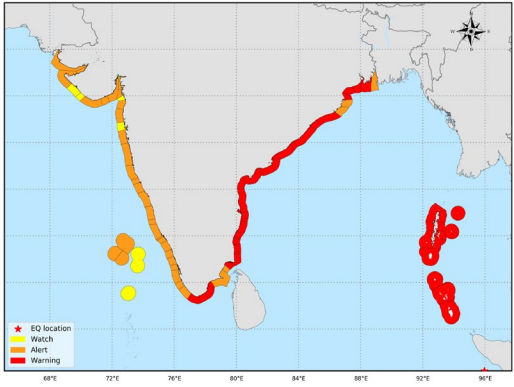
Date	Time (IST)	Bulletin #	Detail
05-Nov-25	0830		Earthquake occurs
05-Nov-25	0838	1	Earthquake Bulletin (M8.6)
05-Nov-25	0845	2	Potential Threat (M8.9)
05-Nov-25	0900	3	Confirmed Threat (M9.2)
05-Nov-25	0930	4	Confirmed Threat (M9.2)
05-Nov-25	1030	5	Confirmed Threat (M9.2)
05-Nov-25	1130	6	Confirmed Threat (M9.2)
05-Nov-25	1230	7	Confirmed Threat (M9.2)
05-Nov-25	1330	8	Confirmed Threat (M9.2)
05-Nov-25	1430	9	Confirmed Threat (M9.2)
05-Nov-25	1530	10	Confirmed Threat (M9.2)
05-Nov-25	1630	11	Confirmed Threat (M9.2)
05-Nov-25	1730	12	Confirmed Threat (M9.2)
05-Nov-25	1830	13	Confirmed Threat (M9.2)
05-Nov-25	1930	14	Confirmed Threat (M9.2)
05-Nov-25	2030	15	Final Bulletin

Country	State/Territory	Zone	T1(IST)	T2(IST)	T3(IST)	T4(IST)	Amplitude(m)	Threat Status
INDIA	ANDAMAN AND NICOBAR	KOMATRA & KATCHAL ISLAND	2025-Nov-05 08:32:00	2025-Nov-05 08:32:00	2025-Nov-05 08:32:00	2025-Nov-06 09:30:00	13.4	Warning
INDIA	ANDAMAN AND NICOBAR	LITTLE ANDAMAN	2025-Nov-05 08:32:00	2025-Nov-05 08:32:00	2025-Nov-05 08:48:00	2025-Nov-06 09:30:00	12.1	Warning
INDIA	ANDAMAN AND NICOBAR	PORT BLAIR	2025-Nov-05 08:32:00	2025-Nov-05 08:32:00	2025-Nov-05 08:54:00	2025-Nov-06 09:30:00	10.0	Warning
INDIA	ANDAMAN AND NICOBAR	INDIRA POINT	2025-Nov-05 08:32:00	2025-Nov-05 08:32:00	2025-Nov-05 08:34:00	2025-Nov-06 09:30:00	17.7	Warning
INDIA	ANDAMAN AND NICOBAR	NORTH SENTINEL ISLAND	2025-Nov-05 08:34:00	2025-Nov-05 08:34:00	2025-Nov-05 11:57:00	2025-Nov-06 09:30:00	5.6	Warning
INDIA	ANDAMAN AND NICOBAR	CAR NICOBAR	2025-Nov-05 08:34:00	2025-Nov-05 08:34:00	2025-Nov-05 08:45:00	2025-Nov-06 09:30:00	7.6	Warning
INDIA	ANDAMAN AND NICOBAR	HAVELOCK	2025-Nov-05 08:42:00	2025-Nov-05 08:46:00	2025-Nov-05 09:01:00	2025-Nov-06 09:30:00	8.5	Warning
INDIA	ANDAMAN AND NICOBAR	BARREN ISLAND	2025-Nov-05 08:46:00	2025-Nov-05 08:48:00	2025-Nov-05 16:10:00	2025-Nov-06 09:30:00	2.7	Warning
INDIA	ANDAMAN AND NICOBAR	RANGATH BAY	2025-Nov-05 08:56:00	2025-Nov-05 09:01:00	2025-Nov-05 09:13:00	2025-Nov-06 09:30:00	7.6	Warning
INDIA	ANDAMAN AND NICOBAR	NARCONDRAM ISLAND	2025-Nov-05 09:01:00	2025-Nov-05 09:05:00	2025-Nov-05 09:40:00	2025-Nov-06 09:29:00	2.3	Warning
INDIA	ANDAMAN AND NICOBAR	DIGLIPUR	2025-Nov-05 09:05:00	2025-Nov-05 09:09:00	2025-Nov-05 09:16:00	2025-Nov-06 09:30:00	3.9	Warning
INDIA	ANDAMAN AND NICOBAR	WEST & LANDFALL ISLAND	2025-Nov-05 09:02:00	2025-Nov-05 09:30:00	2025-Nov-06 00:07:00	2025-Nov-06 09:30:00	2.5	Warning
INDIA	ANDAMAN AND NICOBAR	FLAT ISLAND	2025-Nov-05 09:03:00	2025-Nov-05 09:32:00	2025-Nov-05 12:59:00	2025-Nov-06 09:30:00	2.7	Warning
INDIA	ANDHRA PRADESH	KAKINADA	2025-Nov-05 10:35:00	2025-Nov-05 10:40:00	2025-Nov-05 14:28:00	2025-Nov-06 09:30:00	3.5	Warning
INDIA	TAMIL NADU	MARAKKANAM	2025-Nov-05 10:37:00	2025-Nov-05 10:43:00	2025-Nov-05 22:41:00	2025-Nov-06 09:29:00	3.8	Warning
INDIA	TAMIL NADU	CUDDALORE	2025-Nov-05 10:41:00	2025-Nov-05 10:45:00	2025-Nov-05 11:08:00	2025-Nov-06 09:12:00	3.6	Warning
INDIA	ANDHRA PRADESH	MACHILIPATNAM	2025-Nov-05 10:41:00	2025-Nov-05 10:45:00	2025-Nov-05 13:32:00	2025-Nov-06 09:30:00	3.7	Warning
INDIA	TAMIL NADU	ENNORE	2025-Nov-05 10:40:00	2025-Nov-05 10:45:00	2025-Nov-05 19:41:00	2025-Nov-06 09:30:00	4.6	Warning
INDIA	TAMIL NADU	PUDUCHERRY	2025-Nov-05 10:40:00	2025-Nov-05 10:45:00	2025-Nov-05 13:38:00	2025-Nov-06 09:21:00	4.8	Warning
INDIA	ANDHRA PRADESH	PERUPALEM	2025-Nov-05 10:40:00	2025-Nov-05 10:46:00	2025-Nov-05 13:28:00	2025-Nov-06 09:22:00	2.4	Warning

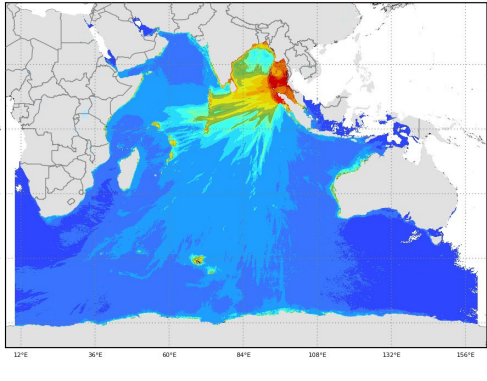
Earthquake location: Northern Sumatra, Indonesia Magnitude: 8.6



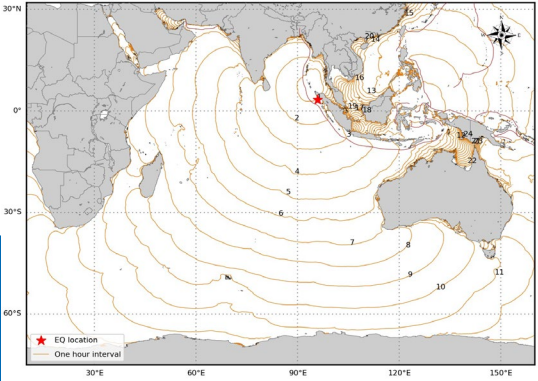
Threat Map
EQ location: Northern Sumatra, Indonesia Magnitude: 9.2



Maximum Wave Amplitude Map



Tsunami Travel Time map
Earthquake location: Northern Sumatra, Indonesia Magnitude: 9.2



Tsunami Ready implementation



- The UNESCO-IOC Tsunami Ready Recognition Programme is a community performance-based programme.
- The main objective of Tsunami Ready programme is to improve coastal community preparedness for tsunami emergencies and to minimise the loss of life and property.
- OSDMA implemented the programme. India is the first recognized country in Indian Ocean region.
- **In 2024, recognised 26 new villages (renewal of 2 villages) of Odisha as UNESCO-IOC Tsunami Ready Communities and certificates presented.**



Tsunami Ready Programme Implementation Status

- | | | | |
|-----------------------|-------------|-------------------|------------|
| • Andaman & Nicobar – | 4 villages | • Kerala – | 9 villages |
| • West Bengal – | 2 villages | • Goa – | 2 villages |
| • Odisha – | 60 villages | • Daman and Diu – | 2 villages |
| • Andhra Pradesh - | 6 villages | • Gujarat - | 2 villages |
| • Tamil Nadu - | 2 villages | • Puducherry - | 2 villages |



Future Plans

- Sustaining and enhancing the observational networks for Seismic, GNSS, Tsunami Buoys, and Tide Gauges.
- Establishment of 14 new Tide Gauge stations to strengthen coastal tsunami monitoring.
- Initiation of establishment of a submarine cable-based multi-parameter observatory (OBS, BPR, etc.) near the subduction zone off the Andaman & Nicobar Islands.
- Development of Standard Operating Procedures (SOPs) for non-seismic and complex tsunami sources, including completion of the draft SOP for Volcanogenic Tsunami (VGT); work is currently in progress.
- Mount efforts towards tsunami hazard assessment and numerical modeling for non-seismic and complex tsunami sources such as volcano- and landslide-generated tsunamis.
- Implementation of the Tsunami Ready Recognition Programme (TRRP) in vulnerable coastal areas across all Coastal States and Union Territories, with the initiative being extended to additional coastal regions.



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THANK YOU