

Indian Tsunami Early Warning Centre (ITEWC)
ESSO - Indian National Centre for Ocean Information Services (INCOIS),
Ministry of Earth Sciences, Govt. of India, Hyderabad

IOWave20 Exercise

Post Exercise Brief

To reduce the vulnerability to hazard like tsunami, communities should know the risks they face and take necessary actions based on that knowledge. Being prepared, including regular testing, conducting risk assessments and evaluation of the system will enable people to become more resilient to hazards like tsunami which do not occur often. The purpose of Tsunami exercise is to evaluate the ability of warning centre and national/state/local disaster offices to respond to a tsunami. The exercises/drills not only emphasize the testing of communications from warning centre to its stakeholders, but also provide an opportunity for testing national/state/local chains of command and decision-making, including the alerting and evacuation of people from selected coastal communities. They also provide a prospect to promote emergency response plans and tsunami preparedness.

The UNESCO's International Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS), a regional body to plan and coordinate the design and implementation of an effective and durable tsunami warning and mitigation system for the Indian Ocean region, decided to hold an Indian Ocean-wide mock tsunami drill called IOWave20 exercise on October 6, 13 and 20, 2020, executing 3 scenarios to cover the entire Indian Ocean region time frames.

The Indian Tsunami Early Warning Centre (ITEWC) set up post December 26, 2004 Indian Ocean tsunami is based out of the Indian National Centre for Ocean Information Services (INCOIS), Hyderabad, an autonomous institution under the Ministry of Earth Sciences. This state-of-the-art warning centre, operational since 2007, has all necessary computational & computational infrastructure that enables reception of real-time data from a range of seismic and sea-level sensors, analysis of the data, tsunami modeling, as well as generation and dissemination of tsunami bulletins following a standard operating procedure.

ITEWC participated in IOWave20 exercise, both in its capacity as a National Tsunami Warning Centre (NTWC) for India as well as a Tsunami Service Provider (TSP) for the entire Indian Ocean region. During the exercise, ITEWC generated and issued 4 tsunami bulletins/notifications to both its National & Regional (IOTWMS) contacts through GTS, email, fax, SMS as well as website.

Exercise IOWave20 involved enacting three scenarios on (i) October 06 with earthquake magnitude 9.1 in Java Region, Indonesia, (ii) October 13 with earthquake magnitude 9.2 in Andaman Trench of India and (iii) October 20 with earthquake magnitude 9.0 at off-coast of Pakistan.

For the first scenario on October 06, 2020, ITEWC issued 4 test bulletins during 08:30-09:30 hrsthrough GTS, email, fax, SMS as well as on website; however, it was only for regional countries. 7 Countries viz., Australia, Bangladesh, Indonesia, Kenya, Pakistan, Timor-Leste, South Africa) participated in this tsunami exercise.

On October13, 2020 for the second scenario, ITEWC issued test bulletins during 0930 -10:30 hrs to both national and regional stakeholders of all 25 Indian Ocean rim countries. 10 Countries viz., India, Kenya, Malaysia, Myanmar, Pakistan, Seychelles, Singapore, South Africa, Sri Lanka and Thailand actively participated to test their warning chains and SOPs. In India, the exercise was focussed mainly on east coast Disaster Management Organizations (DMOs) to identify and fix any gaps in communication channels and their SOPs for an impending tsunami. The DMOs of Andaman & Nicobar Islands, West Bengal, Odisha, Andhra Pradesh, Tamil Nadu and Puducherry took active participation in the exercise. In addition, IndianNavy, Coast Guard, NDRF, Nuclear power plants and Port &Harbors also participated in the in the exercise.

IOC-UNESCO recognised two villages (Venkatraipur and Noliasahi) of Odisha as Tsunami Ready on August 7, 2020; India attained it first in the entire Indian Ocean rim countries. Using IOWave20 exercise as an opportunity, Odisha State Disaster Management Authority (OSDMA) evaluated their Tsunami ready indicators in all piloted Tsunami Ready villages on 13th October 2020.

The west coast of India experienced tsunami damage in 1945 after a major earthquake of 8.1 magnitude occurred at off coast of Pakistan (Makran subduction zone) which flooded the coasts of Maharashtra and Gujarat. To enact the similar scenario on October 20, 2020 (third scenario) ITEWC issued test bulletins during 1130 -12:30 hrs to both national and regional stakeholders. ITEWC issued bulletins to all 25 Indian Ocean rim countries; however, 10 courtiers viz., India, Iran, Kenya, Madagascar, Maldives, Mauritius, Oman, Pakistan, Seychelles and United Arab Emirates actively participated to test their warning chains and SOPs. Nationally, west coast States/UTs viz., Kerala, Lakshadweep Islands, Karnataka, Goa, Maharashtra, and Gujarat took active participation in the exercise. In addition, IndianNavy, Coast Guard, NDRF, Nuclear power plants and Port &Harbors also participated in the in the exercise.

Considering the present COVID-19 pandemic situation, the exercisewas limited to test communication channels (COMMs test) instead of full-scale exercise which involves public evacuation. Disaster Management Organizations have testedtheir communication protocols and conducted “virtual” tabletop exercises as a minimum to assess the organizational SOPs, plans and policies for tsunami warning and emergency response.

The results of the exercise will be sought through a questionnaire and analysed to rectify any issues identified in communications or standard operating procedures of all concerned agencies.



An IOWave20 Tsunami Exercise carried out in India