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India unveils tsunami-warning system

Agencies

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Hyderabad, October 15: : India has unveiled its own tsunami early warning system put together by its scientists, three years after being caught off guard by the giant killer waves that wreaked havoc along the country's southern coastline.

The National Early Warning System for Tsunami and Storm Surges in the Indian Ocean was dedicated to the nation by Minister of Earth Sciences Kapil Sibal at an impressive ceremony attended by Andhra Pradesh Chief Minister Y S Rajasekhar Reddy, top scientists and senior government officials.

The tsunami-warning centre, which has taken shape at the Indian National Centre for Ocean Information Services (INCOIS) in Hyderabad, will issue alerts for the killer waves within 30 minutes of an earthquake.

"We had promised to put in place a tsunami warning system soon after the December 2004 tsunami devastated many coastal parts of the country. We deliver the system today," Sibal said after the inauguration.

The Centre has been established by Ministry of Earth Sciences at a cost of Rs.125 crore in collaboration with Department of Science and Technology, Department of Space and the Council of Scientific and Industrial Research.

The Centre will generate and give timely advisories to the Ministry of Home Affairs for dissemination to the public for which a satellite-based virtual private network for disaster management support has been established.

This network enables early warning centre to disseminate warnings to the MHA, as well as to the state emergency operations centres.

Scientists installed two bottom pressure recorders (BPR), key sensors that indicate the generation of tsunami, off the Gujarat coast in the Arabian Sea late last month.

A set of four BPRs have already been installed in the Bay of Bengal region and were put to test on 12 September when a massive undersea earthquake hit southern Sumatra.

The 8.2 magnitude earthquake in the southern Sumatra region triggered tsunami alerts in various adjoining countries, including India.

"We could validate the September 12 earthquake off southern Sumatra within 12 minutes," INCOIS Director Shailesh Nayak said. The tsunami warning centre swung into action and issued an red alert in the next 13 minutes, which was downgraded to orange in less than two hours.

A red alert requires the citizens and the administration to be prepared for evacuation and in the event of an orange alert the administration has to remain vigilant.

"There are two tsunamigenic zones in our vicinity -- the Andaman-Sumatra trench in the Bay of Bengal and the Makran coast in the Arabian Sea," Nayak said explaining the need to install BPRs in the two regions.

INCOIS, in association with Tata Consultancy Services, has generated simulations of possible 550 scenarios of triggering of tsunami after massive earthquakes.

"The information about magnitude, location and depth at which an earthquake has occurred is fed into computers which picks up an appropriate scenario and simulate formation of tsunamis," he said.

According to the plan, installation of 12 BPRs, including 10 in the Bay of Bengal, have been planned as part of the network.

Asked how the system would function with only six BPRS, Nayak said, "all the critical locations from the point of view of validating tsunami by monitoring sea level changes have been covered."

Twelve BPRs were planned keeping in view the redundancy factor. "In case of a malfunction, we cannot repair the BPRs immediately as they are installed on the sea bed at a depth of few kilometres," he said.

Besides the BPRs, tide gauges installed along the coastline including the Andaman and Nicobar Islands will give further confirmation on generation of tsunami, Nayak said.

INCOIS has been receiving earthquake information from India Meteorological Department, Japan Meteorological Agency and the Pacific Tsunami Warning Centre and also is digitally connected to seismic stations across the world.

Tsunami warning systems across the world tend to issue warnings after massive undersea earthquake, particularly greater that 6.5 magnitude.

"After the September 12 earthquake, we did not issue a tsunami warning like the Pacific System, which would have required evacuation of people from coastal areas," Nayak said.

The next step would be to integrate the tsunami warning systems in the region to have a system for the entire Indian Ocean region, Nayak said.