

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION No. 4277  
TO BE ANSWERED ON WEDNESDAY, MARCH 21, 2018**

**EARTHQUAKE PREDICTION**

**4277. SHRI KIRTI AZAD:  
SHRI SADASHIV LOKHANDE:  
SHRIMATI RITI PATHAK:  
SHRI SUKHBIR SINGH JAUNAPURIA:**

**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether the frequency of earthquakes has increased in the country;**
- (b) if so, the locations in the country which have experienced earthquakes along with the intensity of the earthquake during the last one year;**
- (c) whether any system/technology is available to predict earthquake and tsunami in the country or in global market;**
- (d) if so, the details thereof and whether the Government has initiated or proposes to initiate any research on earthquake prediction either by ISRO or any other organization indigenously or in collaboration with any global organisation; and**
- (e) if so, the details thereof along with the funds allocated for the purpose and if not, the steps proposed to be taken to pre-empt the calamities enforced by the earthquake and tsunami?**

**ANSWER**

**MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY  
AND MINISTRY OF EARTH SCIENCES  
(DR. HARSH VARDHAN)**

- (a)-(b) National Centre for Seismology (NCS) of Ministry monitors earthquakes in the country. Based on the earthquake data collected by NCS, there is no apparent increase in the frequency of earthquakes in the country.**
- (c) To date, there is no proven scientific technique available, anywhere in the world, to predict the occurrence of earthquakes with reasonable degree of accuracy with regard to space, time and magnitude. However, National Centre for Seismology (NCS), maintains a country wide national seismological network, to detect and locate earthquakes occurring in and around the country. The network consists of state-of-art digital broadband seismographs, VSAT based communication systems and latest tools for dissemination of earthquake information to the concerned disaster management**

**authorities and other user agencies in least possible time. The network also includes a 17-station real time seismic monitoring system to monitor and report large magnitude earthquakes capable of generating tsunamis on the Indian coastal regions.**

**The Indian Tsunami Early Warning Centre (ITEWC) established at Indian National Centre for Ocean Information Sciences (INCOIS), Hyderabad is capable of detecting tsunamigenic earthquakes occurring in the Indian Ocean as well as in the Global Oceans within 10 minutes of the occurrence of the earthquake and disseminates the advisories to the concerned authorities through email, fax, SMS, GTS and website.**

- (d) Indian Tsunami Early Warning System comprises a real-time seismic monitoring network of 17 broadband seismic stations established by Indian Meteorological Department to detect tsunamigenic earthquakes. In addition to that, INCOIS is also receiving data from around 90 national seismic stations which are established by various national local/regional centres. INCOIS and National Institute of Ocean Technology (NIOT) have installed 5 Tsunami Buoys in the Bay of Bengal and the 2 Tsunami Buoys in the Arabian Sea. To monitor the progress of tsunami waves, INCOIS has installed 35 tide gauges along the Indian coast and Islands. Real time data from above observational networks transmitting through satellite communication to ITEWC for processing and interpretation with necessary redundancy in transmission. In addition, INCOIS also takes the help of numerical model to assess the tsunami potential at different locations on the coast. The centre is operational round the clock on all days. ITEWC is also receiving data in real time from 350 seismic stations, 50 tsunami buoys and 300 tide gauges established in the Indian as well as the other oceans by other countries and international agencies. A robust communication system also has been employed for the timely reception of data and for the timely dissemination of advisories.**

**ITEWC is considered as one of the most modern tsunami warning centre in the world. Considering the performance of ITEWC, in October 2012, Intergovernmental Oceanographic Commission (IOC) of UNESCO has designated ITEWC as the Tsunami Service Provider (TSP) for the entire Indian Ocean Region. Since then, ITEWC is providing tsunami advisories and related services to all countries on the Indian Ocean rim (25) countries.**

- (e) Total Rs.125 Crore was sanctioned in 2005 by the Govt. of India for the establishment of National Early Warning System for Tsunami and Storm Surges.**

**\*\*\*\*\***