GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 1021
TO BE ANSWERED ON WEDNESDAY, MARCH 2, 2016

TSUNAMI WARNING

1021. SHRI FEROZE VARUN GANDHI:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) the extent to which the Tsunami Warning Centre at the Indian National Centre for Ocean Information Services (INCOIS) is effective in controlling casualties;
(b) the manner in which the warning system is being coordinated with the National Disaster Response force for evacuations at vulnerable areas; and
(c) the probability of the automatic system to be correct in predicting certainty and intensity of tsunami?

ANSWER
MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(SHRI Y. S. CHOWDARY)

(a) The Indian Tsunami Early Warning System (ITEWS), established at Indian National Centre for Ocean Information Sciences (INCOIS), Hyderabad, has been operational since October, 2007. The ITEWS is equipped to provide timely tsunami warnings for India and the countries in the Indian Ocean region on 24 x7 basis. The ITEWS comprises various real time monitoring networks, seismic monitoring network; bottom pressure recorders; tide gauges etc., to monitor tsunami waves. Since its inception the Warning Centre has monitored 82 earthquakes of magnitude greater than 6.5 that occurred in the Indian Ocean region. Out of these 82 earthquakes for 6 earthquakes (Annexure) ITEWS had issued Tsunami Alert/Warnings for selected near-source areas in Andaman & Nicobar Islands. Till date no casualties/damages have been reported due to these Warnings/Alerts issued by ITEWS. Neither has any Warning/Alert been considered as "False".

(b) ITEWS provides tsunami advisories to the Disaster Management Officers (DMO) at various administrative levels and other stake holders through various modes of communication like Email, Fax, SMS and website. ITEWS also conducts periodical workshops for the DMOs to help them in the preparation of their Standard Operating Procedures (SOPs) for response and action.

(c) ITEWS maintains a large database of pre-run scenarios for tsunamis due to possible earthquakes in the two subduction zones for timely generation and dissemination of quantitative tsunami advisories. The scenarios consist of estimated travel time and tsunami wave amplitude at different coastal forecast points. These are further compared and confirmed with the water level observations obtained from a network of sea level gauges and tsunami buoys. Till date the estimated values have well matched the observed values for the events listed in the Annexure.

Annexure

S. No.	Date & Time (UTC)	Magnitude	Region Name	ITEWC Evaluation	Tsunami Observation
1	12-Sep-2007 11:10:26	8.5	Southern Sumatra, Indonesia	Tsunami Watch for A&N Islands, Orissa, Andhra Pradesh, Tamilnadu, Kerala. (Action: Evacuation is not required)	1m at Padang, Indonesia and 15 cm at Cocos Islands
2	30-Mar-2010 16:54:50	6.9	A&N Islands , India	No Tsunami for Indian Main land. Tsunami Watch for West & land fall islands, Flat islands, North Sentinel Islands, Port Blair (Action: Evacuation is not required)	No tsunami
3	12-Jun-2010 19:26:47	7.5	Nicobar Island, India	No Tsunami for Indian Main land. Tsunami Watch for Nicobar, Komatra & Katchal Island (Action: Evacuation is not required)	3 cm at Trincomalee, Sri Lanka
4	10-Jan-2012 18:37:00	7.1	Off West Coast of Northern Sumatra	Tsunami WATCH for Nicobar Islands. (Action: Evacuation is not required)	No tsunami
5	11-Apr-2012 08:38:36	8.5	Off West Coast of Northern Sumatra	Tsunami WARNING for Indira Point, Car Nicobar, Komatra & Katchal Islands of A&N Islands. Tsunami ALERT for rest of A&N Islands, Tamil Nadu, Andhra Pradesh. Tsunami WATCH for few areas in mainland	1 m at Meulaboh and 0.35 m at Sabang, Indonesia and 0.30 m at Campbellbay
6	11-Apr-2012 10:43:10	8.2	Off West Coast of Northern Sumatra	Tsunami ALERT for Nicobar Islands and WATCH for Andaman Islands and east coast of India.	20 cm at Meulaboh, Indonesia.

***ALERT - Public has to avoid low lying regions like beaches. Evacuation is not required.**

WARNING - Evacuation is required.