

**Early Warning System for Tsunami**

385. SHRI RAJIV SHUKLA:

SHRI NAND KISHORE YADAV:

SHRI PRAMOD MAHAJAN:

Will the Minister of OCEAN DEVELOPMENT be pleased to state:

(a) whether Government are planning to establish a Tsunami early warning system in the Indian Ocean;

(b) if so, whether the system would be set up with other countries touched by the oceans;

(c) its financial implications and in what way it is going to be obtained; and

(d) by when the system is likely to be started and the time by which it would be completed?

THE MINISTER OF STATE OF THE DEPARTMENT OF OCEAN DEVELOPMENT (SHRI KAPIL SIBAL): (a) Yes, Sir. It is proposed to set up a "tsunami and storm surges warning system" in the country with the following components:

- \* Strengthening of the existing seismological network to identify in near real time occurrence of a tsunamigenic earthquake.
- \* Installation of Tsunami warning sensors close to the ocean bottom at appropriate locales in the Indian Ocean, with real time connectivity.
- \* Tide gauge and data buoys networking.
- \* Modeling of the inundation scenarios for the entire coast.
- \* The establishment of a centre for collection of the information, analysis and generating Tsunami and Storm Surge advisories

(b) No, Sir. After such a system is in place and warning systems are made near real time then networking with countries in the Indian Ocean who might require prior information in case of a Tsunami would be done for exchange of information for their benefit and mutual benefit.

(c) and (d) The system would cost about Rs. 125 crores. India will bear this cost. The work has been initiated. Different components would be achieved with passage of time and the system will be fully operational by September, 2007.

### **Tsunami warning sensors in Indian Ocean**

386. SHRI MANOJ BHATACHARYA: Will the Minister of OCEAN DEVELOPMENT be pleased to state:

(a) whether the Government have decided to install warning sensors deep in the Indian Ocean and join the network of twenty six countries that monitors Tsunami waves;

(b) if so, the details thereof including their costs and time required for the installation; and

(c) the reasons for India not joining the network earlier?

THE MINISTER OF STATE OF THE DEPARTMENT OF OCEAN DEVELOPMENT (SHRI KAPIL SIBAL): (a) Yes, Sir, it is proposed to set up a 'Tsunami and storm surges warning system' in the Indian Ocean. For forecasting of Tsunami waves a network of Deep Ocean Earthquake Assessment and Reporting Sensors (DART) are proposed to be installed at appropriate locations. Pacific Warning System shared by twenty six countries exists for forecasting Tsunamigenic waves generated primarily in the Pacific Ocean. The Pacific Ocean is prone to Tsunami wave frequently. India is not a part of the Pacific Warning System.

(b) The estimated cost of setting up a Tsunami warning system, along with software, in about two and half years in Rs. 125 crores.

(c) Merely joining Pacific Warning System will not help India because for forecasting of tsunami waves in the Indian Ocean, we need to put in place sensors and related systems in the Indian Ocean.

### **Japanese Help for Tsunami Warning system**

†387. SHRI MOTILAL VORA: Will the Minister of OCEAN DEVELOPMENT be pleased to state:

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†Original notice of the question was received in Hindi.