

(b) to what extent the above discovery helps in reducing the damage that is caused due to Tsunami?

THE MINISTER OF STATE OF THE MINISTRY OF EARTH SCIENCES (DR. JITENDRA SINGH): (a) Yes, Sir. We understand that the scientists of the Stanford University have conducted preliminary experiments to simulate propagation of sound waves in the ocean due to the rupture on the sea floor during the 2011 Earthquake occurred off the coast of Japan. The basic principle is that sound waves propagate through seawater about 7 - 9 times faster than the Tsunami waves, the difference in travel time of sound wave and Tsunami wave could be used for possible early warning by few minutes. In the present case, the earthquake occurred at a depth of a shallow depth of 10 km. resulting to rupture and vertical movement of oceanic plate, hence it was possible to simulate Tsunami wave propagation.

(b) The practical utility of this study for Tsunami early warning is yet to be established as there are several constraints associated with this hypothesis, viz., geological features, characteristics of sound waves, propagation, deciphering the sound signals from other sources. However, further studies are required to test the repeatability of the above results and to develop/customise ocean/land-based sensors that can be deployed to record acoustic waves. Further, techniques need to be developed for real-time data analysis of acoustic data so as to adopt this technique for operational Tsunami warning.

Policy for reclamation of land after mining activities

3089. SHRI AVINASH PANDE: Will the Minister of ENVIRONMENT, FORESTS AND CLIMATE CHANGE be pleased to state:

(a) whether Government has formulated or is planning to formulate any policy or guidelines for the reclamation of land after mining activities are concluded in a particular area; and

(b) if so, the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE (SHRI PRAKASH JAVADEKAR): (a) and (b) This Ministry has not formulated any policy or guidelines for the reclamation of land after mining activities are concluded in a particular area. The Ministry grants environmental clearance to the mining projects as listed in schedule to the Environment Impact Assessment (EIA) Notification, 2006, as amended, under "Mining of Minerals". A condition is stipulated in the environmental clearance letter to the effect that final mine closure plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forests and Climate Change five years in advance of final mine closure for approval.

In case a mining project involves forest land, prior approval of Central Government under the Forest (Conservation) Act, 1980 for grant or renewal lease is also required to be obtained. Central Government while according approval under the Forest (Conservation) Act, 1980 stipulates appropriate conditions to ensure phased reclamation of mined area.