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Setting up of the Indian Tsunami Early Warning System (ITEWS): National and International Interactions for the Success of ITEWS

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The 26 December 2004 Sumatra earthquake of Mw 9.2 and the resultant tsunami that claimed over 2,50,000 human lives is probably the most destructive natural disaster of the 21st Century so far. Although the science of tsunami warning had advanced sufficiently by that time, with several tsunami warning centers operating in various oceans, no such system existed for the Indian Ocean. Here we present the discussions and interactions held in India and globally to convince setting up of ITEWS. False tsunami alarms subsequent to 26 December 2004 earthquake had developed a sense of scientific disbelief in the public and to a certain extent in Government of India. We demonstrated to the national and international community that there are only two stretches of faults that could host tsunamigenic earthquakes as far as the India Ocean is concerned. These are: 1) a stretch of some 4000 km of a fault segment extending from Sumatra to Andaman Islands and 2) an area of about 500 km radius off the Makaran Coast in the Arabian Sea. And if we cover these two areas with ocean bottom pressure recorders, the problem of false alarms would be reduced to a large- extant. This plan was finally agreed to and necessary financial, logistic and technical support was made available. The setting up of the ITEWS started in middle 2005 and was completed in August 2007. It has performed very efficiently since then. Over the past ~ 8 years, it monitored ~ 500 $M \geq 6.5$ and provided advisories. As against the requirement placed by IOC of issuing an advisory in 10 to 15 minutes time, ITEWS has been doing it in ~ 8 minutes. Since its inception in 2007, no false alarm has been issued and it is rated among the best in the world.

IOC has designated ITEWS as the Regional Tsunami advisory Provider (TSP) Indian Ocean Regional Tsunami Center.