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Seeds Of Bengal Tsunami

GS.MUDUR

New Delhi, Sept. 5: A 900-km-long fracture in Earth's crust beneath the Bay of Bengal has the potential to cause a giant undersea earthquake and send tsunami waves towards Bengal and Bangladesh, research has indicated.

A study by senior seismologist Phil Cummins from Australia suggests that the crustal fracture stretching from the northern Andaman trench to the northern tip of the Bay of Bengal is capable of triggering tsunamigenic earthquakes.

"The northern Bay of Bengal should be on our radar for tsunami risk," said Cummins, whose findings will appear in tomorrow's issue of the journal *Nature*. "Very large populations may be potentially at risk from earthquake and tsunami," he said.

Cummins combined geophysical data relating to a northern extension of the same fracture linked to the Sumatra-Andaman earthquake and tsunami of 2004 with 18th century British archives to argue that a seismogenic zone lies underneath the bay.

An archive from 1763 which Cummins studied suggests



The air traffic control tower at Car Nicobar's Indian Air Force base after the 2004 tsunami. File picture

that a large offshore earthquake may have occurred in the region in 1762. It mentions that in Dhaka, the river rose and hundreds of large country boats were driven ashore or lost.

But Cummins has cautioned that it is still not clear whether this was due to a wave from the sea or a change in land level.

Earthquakes are unpredictable with present-day science. However, the data suggests that it may be over 200 years before a large earthquake occurs in the region, Cummins said.

"One the one hand, it may not make sense to panic by ru-

shing to implement costly mitigation measures before the threat is confirmed through further studies," Cummins told **The Telegraph**. "On the other, it would be dangerous to assume that another earthquake won't happen for 200 years."

But not all geophysicists are prepared to accept the threat yet.

"The impression until now has been that this segment of the Indo-Burmese plate is not active. There is not enough data yet to establish that the plate boundary is active there," said Malay Mukul, a

geophysicist with the Centre for Mathematical Modelling and Computer Simulation, Bangalore. "We know a plate boundary exists there — the key issue is where is the strain building up," Mukul said.

Researchers from CM-MACS and the National Geophysical Research Institute, Hyderabad, are currently engaged in studies in India's Northeast to find out where strain is building up along the Indo-Burmese plate boundary.

Cummins also conducted a computer simulation for what he concedes is a worst-case scenario — a magnitude eight offshore earthquake. His findings suggest offshore tsunami wave heights of one to three metres — indicative of a large tsunami onshore.

However, researchers also say reliable prediction of tsunami impacts require a detailed information about the undersea topography which Cummins simulation lacked.

But the extra thick sediments on the floor of Bay of Bengal — 20km in some regions — may mean a larger earthquake. "Where you have thick sediments, the maximum size of the earthquake tends to be very large," Cummins said.