



Seismicity in the Bengal Basin: A Potential Hazard Zone

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The 26 December 2004 earthquake off Sumatra coast focused world attention on the Sunda arc subduction zone. Bangladesh is along the strike of and within a rupture –distance from that enormous M-9.3 earthquake. This country is situated where the India- Sunda subduction zone rises from oceanic depths to subaerial exposure as a result of incipient continent collision where the trench meets the huge sediment accumulation of the Ganges-Brahmaputra Delta (GBD).The Archaean segment between Andaman-Nicobar Island and Bangladesh had been ruptured in the past that have also ruptured the Bangladesh segment. This segment is still active but whether it breaks in great earthquakes in unknown and is a question with complicated hypotheses. Because of huge thickness of sediment comes to Bengal Basin and enters into the subduction zone, this is one of the rare “oceanic” subduction zones where even the deformation front, which is usually along the deep trench, is exposed on land. There have been several active folds, warped reference surfaces and seismicity along the foldbelt for current shortening as high as 1-2 cm/year along Myanmar segment. The range of proposed scenarios for the tectonics of the Myanmar Arc will remain very wide unless new data become available. Among the critical missing data sets are geodetic velocities, crustal structure, active fault kinematics, detailed stratigraphy and precise dating of strata and structures. The GBD traversed by an active plate boundary, yet analyzing how active and whether the motion is aseismic or is taken up by rare earthquakes. From the seismic data, precise modeling of the structural and geodetic foundations for understanding this subaerial subduction zone and accretionary prism have been on the process of better understanding. The modeling will add insight into the mechanical properties of the low-slope overpressured accretionary prism, and possible distributions of locked and creeping active fault segments.