

The 26 December off-Sumatra tsunami: evidence of run-up and sedimentation along the north-west coast of Sumatra Island, Indonesia

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The 26 December off-Sumatra earthquake caused the catastrophic tsunami disaster. The disaster was the worst in the Aceh province of northern Sumatra in Indonesia. An international tsunami survey team (ITST) of Japanese, US, French and Indonesian scientists performed a post tsunami survey around Banda Aceh and west coast of northern Sumatra from January 19 to 29, 2005 (Tsuji, et al., in this issue). We formed a sub-group of the ITST to conducted reconnaissance mapping of the 2004 tsunami heights, flow directions and geological evidences such as tsunami deposits. Tsunami flow heights at beach and inland were evaluated from the position of broken branches and stuck materials on trees: they were 15-35 m (asl). Tsunami run-up heights were traced at skirts of a mountain: they were 25-35 m (asl). We found 0-70 cm thick tsunami deposits in the tsunami inundation area. The tsunami deposits consist of beach sand, and mostly form multiple units. We document both flow depth of the tsunami and characteristics of the tsunami deposits. This study is useful for investigation of the tsunami sedimentation process.