

PROJECT COMPLETION REPORT

*Monsoon driven changes as preserved in marine sediments off Gujarat
and Konkan coasts during the past 20 Kyr*

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Abstract in 300 words for possible publication on MoES Newsletter/ Website).

This study was taken up to understand decadal to century or millennial scale changes in the Indian monsoon as recorded in the marine sediments of the western continental margin of India. 900 samples were analysed from cores SK-243, I-1 (water depth 82m; 206 samples), SK-243, I-2 (water depth 344m; 245 samples), SK-240, 327 (water depth 73m; 128 samples), ABP-25, 03 (water depth 2847m; 100 samples), ABP-25, 04 (water depth 1730m; 100 samples), ABP-25, 05 (water depth 1914; 100 samples). Samples were processed using standard methods. For benthic foraminiferal faunal study, dry samples were sieved over 125 μm size sieve and split into suitable aliquots to obtain ~300 specimens of benthic foraminifera, whereas for planktic foraminiferal study, samples were dry-sieved over 149 μm size sieve. Chronology is based on AMS ^{14}C dates. Total Organic Carbon (TOC) was analyzed in wt % at TOC Laboratory of the Department of Geology & Geophysics, IIT, Kharagpur, to understand organic carbon flux to the seafloor. The data from six studied cores suggest major changes in the Indian monsoon and associated changes in surface productivity and deep-sea oxygenation. The proxy records suggest strong monsoon in the early Holocene and in the later part of the Holocene. We identified Bond event type abrupt changes in the Indian monsoon in proxy records from shallow sediments of the Gujarat and Konkan coasts.