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Geomorphology of the Boao coastal system and potential effects of human activities - Hainan Island, South China

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The Boao coastal system along the eastern coast of Hainan Island is a dynamic delta-tidal inlet-barrier formed during the late Holocene. The delta developed inside a shallow lagoon barred by a sandy barrier with a narrow, shallow tidal inlet opening. Two major distributary channels separated by small islands characterize the delta. The lagoon is silting up receiving and trapping sediments from both the river and, in minor measure during storms, through the tidal inlet opening and barrier washovers. The barrier at the tidal inlet is highly dynamic and changes its form, accreting (migrating spit) against the inlet during fair-weather conditions and being eroded during storms and river floods. The delta has almost completely filled the lagoon and major concerns exist on the effect that ongoing large development plans may have on the environment. These concerns include the effect on floods and rate of siltation once banks of the islands have been stabilized and floodwater and sediment load are impeded from spreading over the lowlands, and the effect of increasing pollutant loads from the new facilities on the ecosystems of the increasingly restricting lagoon water and on the seashores.

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