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The Catumbela delta (SW Angola). Processes determining a history of changing asymmetry

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ABSTRACT

It is presented an investigation on the morpho-sedimentary evolution of one of the largest sub-aerial delta protrusion in west Africa: the Catumbela delta. The planform geometry of this delta is characteristic of an asymmetric wave-dominated accumulation, strongly influenced by north-directed longshore drift. Its post-glacial Holocene construction passed through morphological transformations linked with the relocation of the main fluvial channels and river mouths. Avulsion processes in the delta plain are responsible for an alternation between two major channel courses: one directed E-W and broadly coincident with today's path and the other placed to the north with a SSE-NNW direction. Delta growth started during a period of deceleration of sea-level rise and high rainfall (c.a. 7 ka BP) and was enhanced after the 4.5 ka. BP sea-level highstand. A deflected delta configuration was promoted by the c.a. 2-3 ka BP climatic crisis, when fluvial sediment supply was reduced and sediment bypassing limited to a minimum, forcing the channel to run parallel to the coastline. This configuration can be regarded as one of the finest worldwide examples of medium-size deflected deltas. The later updrift migration in the position of the river mouth was probably determined by an increase in fluvial supply

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