



Side Event 3

Dynamics of the coastal arrow of the Langue de Barbarie from 1954 to 2016

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Abstract

Dynamics of the coastal arrow of the Barbary Language from 1954 to 2016
Situating on the West African Atlantic coast, at the mouth of the Senegal river delta, the sandy coastal arrow of Langue de Barbarie plays a fundamental role in the stabilization of the north coast of Senegal, and constitutes a natural rampart for the historic island city of Saint-Louis that it defends against the swells and storms of the Atlantic. However, the dynamics of the Langue de Barbarie are still complex and little known, as regards in particular the impact of the swell on the shore and the dynamic response of the latter, the contributions of sand and their redistribution by the swell through coastal drift, longshore sediment transport and its interaction with anthropogenic actions (defense works, breach ...), sedimentary bypass and sedimentary exchanges between the delta of the stream and the delta of the adjacent mouth ... which does not facilitate the forecast of scenarios of geomorphological evolution of this coastal arrow whose socio-economic and environmental stakes are unquestionably strong. The lagoon water level behind the Langue de Barbarie tended to rise considerably during a period of high flooding of the Senegal River, particularly during the rainy season, causing repeated flooding in the town of Saint-Louis and its surroundings. It was during one of these flood cycles that, on the decision of the local authorities, a breach 4 meters wide was opened on the coastal spit in October 2003, with the aim of sparing the historic island of a risk of flooding. The opening of this breach certainly made it possible to lower the water level in Saint-Louis, but reveals in consequence serious problems of management and coastal management. The dramatic enlargement of the breach resulted in the dismantling of the coastal arrow, causing the destruction of houses, infrastructure and settlements that it supports, justifying a dynamic analysis of the Langue de Barbarie.

Keywords: dynamics, coastal arrow, breccia.



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