



Dynamic of the coastline of the southern coast of the Gambia to the north of Basse-Casamance from 1968 to 2017

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Abstract:

Northern Lower Casamance and southern Gambia's beaches, just like those of West Africa, are subject to significant morpho-sedimentary dynamics characterized by coastline mobility. Such mobility, combined with significant variations in different places, is characterized by some globally erosive trend (-1.2 to 6m/year, in sandy areas extending from Senegal to Sierra Leone and -1 to -15m/year from Ivory Coast to Nigeria). The purpose of this article is to analyze the coastline evolution in Lower Casamance and southern Gambia based on a diachronic survey (1968-2017). The reference line used to demonstrate the variation of the coastline is the vegetation boundary.

The results obtained are based on the digital processing of geospatial data (aerial photographs, Landsat and Google Earth images).

The different variations of the coastline are obtained through the calculation of two indexes considered as the most relevant ones. The first one, the End Point Rate (EPR) index, helped measure the difference between two successive coastlines and the second one, the Linear Regression Rate (LRR) index, allows assessing the ability to estimate the evolution of each segment over the entire period considered. These mobility indexes (EPR and LRR) show some variable dynamics of the coastline, featured by two trends: the first one, under accretion in the 1968-1986 periods and the other one, globally erosive during 1986 - 2017 period.

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