

# **Influence of seasonal variation of the ocean circulation to primary productivity over the East African coast**

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## **Abstract**

The East African coast is influenced by climatic factors such as monsoon that lead to variability of ocean circulation which ultimately influence marine productivity of the region. The study tends to understand the seasonal variability of ocean circulation in the East African waters and its link to biological productivity. It uses surface current, wind stress and sea surface temperature to understand the seasonal variability of the upper ocean circulation over East African waters and MODIS chlorophyll-a concentration for analysis of productivity. The results show that the variability of sea surface temperature, wind stress, and surface currents were strongly related to a seasonal pattern of Monsoon winds. In most cases, the Kenyan waters had higher variability in ocean circulation that resulted to the high variability of chlorophyll-a concentration than the Tanzania waters. The most significant variability occurred in the northern Kenyan coastal waters, where high concentration are noted during the Northeast Monsoon and vice versa. On the other hand, Tanzania waters had minimal variability throughout the year because of the northward-flowing East African Coast Current throughout the year

Keywords: Ocean circulation, chlorophyll-a, monsoon, upwelling