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Studies on mesoscale features such as eddies in Mozambique Channel have received a worldwide attention due to their importance for the regional ecosystem and global Thermohaline circulation. Most of the studies associating these mesoscale features with chlorophyll-a have focused on the southern and central parts of the Mozambique Channel. The present study is therefore focused on the northern parts of the Mozambique Channel where limited research work have been conducted. The main objective of the study was to investigate the relationship between the variability of the eddies kinetic energy (EKE) and the net primary production (NPP) in the Mozambique Channel. Satellite derived measurements of NPP and absolute geostrophic currents have been analysed. The satellite derived measurements were later validated using CTD data. The results revealed a good correlation between the EKE and the NPP for both anti-cyclonic and cyclonic eddies (with linear correlation coefficient r2 = 0.88). For anti-cyclonic eddies the correlation between the EKE and the NPP was negative and for the cyclonic eddies the correlation between EKE and the NPP was positive. The analyses of the CTD data revealed that there are upwelling processes at the centre and edge of cyclonic and anti-cyclonic eddies, respectively. The surface geostrophic currents (100 cm s2) seem to play important role in dispersion of phytoplankton along the eddy. The results of the present study information which will be useful for the future management are providing some key information which will be useful for future management of living marine resources in the Mozambique Channel.

Key words; eddy, variability, influence primary production, Mozambique Channel.