Assessing Organic Carbon on Coastal and Continental Shelf of Indonesia Waters Facing Indian Ocean

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Indonesia as part of the maritime continent affected by ocean dynamics and global climate. Following to the physical features, the marine ecosystem in Indonesia shows significant responses to the changes in ocean diurnal cycles, climatic variability, global warming, climate change, and ocean acidification. A proxy that reliable enough to detect responses or changes is the carbon biogeochemical cycles.
Spatio-temporal variability on carbon biogeochemical cycles can be observed and studied within coastal and continental shelf locus. Several approaches can be used, i.e. carbon profiling of particulate matters (suspended particulate matter/SPM or particulate organic matter/POM) and observation of carbon stock and sequestration variability by marine vegetation. Long term monitoring data with mesoscale spatial data will be useful to obtain comprehensive information on the spatio-temporal variability of carbon transport and flux that affected by maritime continent climatic variability. Here we present the result of the recent studies within Indonesia's territorial ocean as well as within the Exclusive Economic Zone (EEZ) facing the Indian Ocean. The studies including POM or SPM profiling, carbon stock of seagrass ecosystem, and potential research themes related to carbon flux in the Sumatra-Java upwelling system.

Keywords: carbon flux, coastal upwelling, continental shelf, coastal ecosystem, biogeochemistry, carbon cycle