STUDY ON THE DISTRIBUTION OF CHLOROPHYLL-A USING AQUA MODIS AND LANDSAT 8 IMAGERY IN SURABAYA – SIDOARJO COAST AFFECTED BY LAPINDO MUD

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Abstract

Archipelago country is the country that all of its region contains one or more islands and can cover another islands. As Indonesia that two third of its wide is domineered by sea or water. Sea is becoming one of living source to Indonesian, especially for fishermen. Fishermen search their livelihood from totally fish catched every day. Ecosystem of fish is coming from food producer in the sea, that is chlorophyll-a in phytoplankton.

Data that is used to know the chlorophyll-a distribution is ground truth data, results of Aqua MODIS processing and Landsat 8. Ground truth data is the result of sea water sample which are tested in laboratory. Satellite image processing uses remote sensing principle where each satellite use different algorithm, such as ATBD 19 and chlorophyll-a algorithm in Landsat 8.

Result in this research is chlorophyll-a distribution map in Surabaya – Sidoarjo coast and analysis some data that is between image and ground truth, inter image analysis, and temporal analysis of chlorophyll-a distribution. Based on analysis processing can be concluded that Aqua MODIS has a high correlation with ground truth data in 78.88% coefficient correlation. Whereas Landsat 8 processing result has a weak correlation about 16.24%. Temporarily, chlorophyll-a concentration of Surabaya – Sidoarjo Coast is in medium
concentration about 1,001 – 2 mg/m³. It is caused by some factor such as physical condition of water, season, and currents.

**Keywords : Chlorophyll-a, Aqua MODIS, Landsat 8**