

Land Cover Changes and Impacts of Massive Siltation on the Mangrove Segara Anakan Lagoon System, Cilacap Indonesia

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Abstract	<p>Changing coastal zones in Indonesia, such as coral reefs, seagrass, and mangroves, have an impact on tropical ecosystems. Excessive exploitation and sedimentation, in particular, have threatened the mangrove at Segara Anakan Cilacap. In order to evaluate temporal land cover changes and the impact of high siltation on the Segara Anakan lagoon system in Cilacap, Indonesia, a research was conducted. The land cover data from SPOT 4 was available in 2008, and the Sentinel-2A data was available in 2019. The Normalized Difference Vegetation Index (NDVI) was used to enhance the Macro Class with supervised classification utilizing Maximum Likelihood techniques. Mangroves and water bodies declined between 2009 and 2019, whereas settlements and farmland areas increased, according to this study. In the western part of Segara Anakan, extensive siltation altered the biomass, structure, and composition of mangrove vegetation. At high sedimented habitats, <i>Acanthus</i> and <i>Derris</i> dominate, followed by <i>Nypa</i>. The changes in land cover and land use had an impact on socioeconomic factors. Decreases in water bodies and mangrove areas, as well as an increase in farmland, were significantly linked to a shift in society's livelihoods from fishermen to farmers. The destruction of mangrove habitats in the Segara Anakan has been accelerated by anthropogenic activity and population pressure. Because this sensitive environment is constantly threatened by anthropogenic activity and climate change, effective management of the Segara Anakan Lagoon mangrove eco-system is important for its long-term viability.</p>
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