Carbon Sink Estimation of Mangrove Vegetation Using Remote Sensing in Segara Anakan, Cilacap

Title	Carbon Sink Estimation of Mangrove Vegetation Using Remote Sensing in Segara Anakan, Cilacap
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Abstract	Highlight ResearchThe value of Leaf Area Index (LAI) and Normalized Different Vegetation Index (NDVI) have a strong relationship.Estimated mangrove leaf biomass and carbon stock in mangrove can be known through the Leaf Area Index (LAI) value.Each mangrove pixel can absorb the different carbon.Increasing the diameter of the tree trunk shows the more CO_2 absorbed by the tree.AbstractWorldwide global warming occurs because of increasing carbon dioxide (CO_2) in the atmosphere. Segara Anakan, the largest mangrove forest in Java Island, has the highest potential as a carbon sink in the tropics. This study aimed to quantify the area and density of mangrove forests in Segara Anakan and to estimate their potentials as carbon sink based on Sentinel-2A imagery. In this study, data from Sentinel 2A satellite imagery was processed and validated with field survey results. The results showed that Segara Anakan had mangrove forests covering an area of 5,481.64 ha in 2019 with the sparse density covered 706.92 ha, medium density covered of 2,526.80 ha, and high density covered 2,848.60 ha. The results of mangrove density were validated using Table Confusion Matrix and using correlation coefficient value (r) by comparing field measurement and Normalized Difference Vegetation Index (NDVI) algorithm. The accuracy for mangrove density was 86.92% with r-value 0.85. Mangrove in Segara Anakan has the ability to absorb 8.56 Mega gram of carbon per hectare. Segara Anakan mangroves have the potential to absorb high level of carbon, so we should maintain their sustainability.
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