

## ANALYSIS OF CHANGES IN COASTAL VEGETATION COVER IN GAMPAHA DISTRICT, SRI LANKA USING REMOTE SENSING AND GIS TECHNOLOGY

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### Abstract

This study highlights the coastal vegetation changes of Gampaha District, Sri Lanka, using Geographic Information system (GIS) and remote sensing technologies to generate NDVI (Normalized Difference Vegetation Index) maps from Sentinel-2 satellite images of different acquisitions dates in different years from 2017 to 2021 and calculate the vegetation area. NDVI, a measure of greenness and proxy for vegetation degradation is a reflectance recorded in the red and near-infrared band of the remote sensing imagery. The study was carried out about 28 km starting from Colombo Fishery Harbour to Negombo lagoon (7°12'29.82"N, 79°49'33.67"E and 6°57'51.90"N, 79°51'47.84"E) covering a 300 m buffer zone in the coastal area. The objective of the study is to identify the changes in coastal vegetation pattern cover from 2017 to 2021. According to the results, total vegetation cover in 2017 was 6.205 km<sup>2</sup> and in 2021 it was 6.747 km<sup>2</sup>. Compared to the results, the total vegetation cover in the study area has increased by 0.5421 km<sup>2</sup> by 2021. Researches on coastal vegetation cover change need more comprehensive study in the coastal area. The information on vegetation cover can lead to a good recommendation for better management and planning in the coastal area.

**Keywords:** *coastal vegetation, sentinel-2, remote sensing, GIS, NDVI*