

## Assessment of Land Use Land Cover Changes Using Remote Sensing and GIS in Sargur Taluk of Mysuru District, Karnataka, India

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### Abstract

Spatiotemporal evaluation of land use and land cover (LULC) constitutes an important method to assessing landscape transformations and informing resource management. This study analyses LULC changes for 2018, 2021 and 2024 in Sargur Taluk, Mysuru District, Karnataka, India, using Sentinel-2 multispectral satellite data and the Support Vector Machine (SVM) classification algorithm. Land cover was classified into five classes: forest, cropland, water, settlement and barren land. Forest cover steadily increased from 34% in 2018 to 45% in 2024, with cropland increasing from 36 to 43%, and barren land decreasing from 25 to 6%. Overall classification accuracies ranged from 83.14% (Kappa = 0.745) in 2018 to 84.12% (Kappa = 0.763) in 2024. The results demonstrate that remote sensing and GIS are effective tools for monitoring land resource dynamics, offering reliable, evidence-based support for land use planning and biodiversity conservation in the ecologically sensitive Western Ghats corridor.

**Keywords:** LULC, Sentinel-2, Support Vector Machine (SVM), Remote sensing and GIS