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# Analysis of Land Use and Land Cover of Nashik City

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**Abstract:** *This study employs Geographic Information System (GIS) techniques to comprehensively analyze the dynamic landscape of Nashik city focusing on land use and land cover changes and alterations. Utilizing a combination of satellite images, topographical maps, land use data and GIS data with tools, we conduct a multi-temporal assessment spanning several years. The methodology involves images and data pre-processing, classification schemes, supervised classification of the LULC maps. The research delves into the identification and qualification of land cover classes, emphasizing the detection of changes over time. Additionally, the study employs spatial analysis to discern relationships between land use pattern and various environmental factors. Zonal statics and overlay analysis offer insights into the distribution of land use type, while temporal analysis provides a nuanced understanding of evolving trends. Furthermore, the research extends to land suitability analysis, integrating diverse spatial datasets to assess the appropriateness of different areas for specific purpose such as agriculture, urban development and conversation. The results of this geospatial investigation contribute to informed decision-making in land management and policy planning. The study conclude with comprehensive visualization, including thematic maps and graphs, enhancing the communication of findings. By documenting the methodology, data sources, and key outcomes, this research aims to serve as a valuable reference for policymakers, researchers and stakeholders involved in sustainable land use planning and management in Nashik city.*

**Keywords:** LULC Maps, GIS, GPS, Classification Using QGIS



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