

PREFACE

Urban population are increasing at a booming rate in developing countries like India. The study focuses on spatio-temporal satellite and other statistical data to monitor and map the LULC changes and urban sprawl analysis of an area. Further, a prediction model develops to create the future trend of urban areas in Mumbai city of Maharashtra. The study also tried to draw the effect of urban sprawl on the natural environment. LULC maps from 1990 to 2020 were created with the downloaded LANDSAT satellite imageries. The analysis over the 30 years shows an increase in developed/built areas from 1990 to 2020—the spatial growth pattern of urban areas analysis is done by Shannon entropy index. The stated technique measures the randomness and spatial growth pattern of urban areas. Further, logistic Regression methods like CA- Markov Chain was used to develop a predictive analysis of land use and land cover pattern for Mumbai city. The predictive research shows that the city is projected to increase its urban area from 358.81 sq. km in 2020 to 426.54 sq. km in 2030. Outcomes of the model show that it successfully depicted the infill development but could not entirely forecast the development phenomenon. The results specify that integrating GIS, remote sensing tools, and growth models provide vital statistics related to urban growth is helpful for planners preparing dream model documents for cities.