

## **ABSTRACT**

Land use and land cover changes have been among the most important noticeable changes taking place around us. Although the changes are noticeable but the magnitude, variety and the spatial variability of the changes that are taking place around us and the world has made the quantification and assessment of land use and land cover changes a challenging task for the scientists. Moreover, since most of the land use and land cover changes are directly affected by human activities, they less frequently follow the standard ecological theories. The Remote Sensing and Geographic Information System has proved to be very important in assessing and analyzing the land use and land cover changes. Satellite-based Remote Sensing, by virtue of its ability to provide synoptic information of land use and land cover at a particular time and location, has revolutionized the study of land use and land cover change. The changes in land use and land cover which occurred between 1991 and 2015 in the Chandigarh Metropolitan area located in India, were monitored using such advanced spatial technologies. The study area covered is 228.40 km<sup>2</sup>, and had previously undergone substantial land use and land cover changes, mainly due to high population pressure. The land cover and land use changes occurred between 1998 and 2013 in the Ahmedabad city located in India too were also monitored using the same technologies and the study area covered is 472.64 km<sup>2</sup>.

The main objective of the study was to assess and evaluate the extent and direction of changes in LULC in the mentioned cities, to explain the changes and identify its relation with the increasing population. LANDSAT images taken by L4-5, L-7 and L-8 in the period from 1991 to 2015 were used along with the geographic information system (GIS) techniques used monitor the changes and to generate maps of the LULC of the area in these periods for both the cities. The population data was collected from the census of India and respective Municipal Corporation of the mentioned cities. A remarkable 27.52% growth in the built up area has been observed along with the depletion of the agricultural and bare land in case of Ahmedabad city and 153.93% in case of Chandigarh Metropolitan area. The changing scenario of the water bodies has shown a mixed trend but in the later year, the water body has increased significantly. The built up has increased accordingly with the increase in the population.