ABSTRACT

Bangalore (now called Bengaluru) is the South-East part of the state Karnataka. Bruhat Bengaluru Mahanagara Palike (BBMP) has been selected for the study in this project. Different data have been collected from primary and secondary sources. Satellite images of 1995, 2009 and 2023 have been used for the study. It is evident that Bangalore has become hotter within a very short time span. The land surface temperature of the city shows an increasing trend both in city centre and in the peripheral rural areas. It is also evident that the central part of Bengaluru has recorded low temperature, in spite of its high built up, because of its relatively higher elevations. In 1995 highest temperature recorded was 30ºC and lowest was 17ºC which went up gradually, the highest and lowest being 36ºC and 20ºC respectively in 2023.

Land use / land cover (LU/LC) study, using cloud free satellite images, shows that in Bengaluru, the built-up area has increased by 55% in 2023 which has resulted in gradual decrease in Agricultural and fallow lands. Bengaluru being one of the fastest growing cities in India, it has undergone significant urban land-use change over the past few decades as a result of population growth, economic development, and rapid urbanization. Consequently, the city has lost its original green cover and open spaces which in turn has caused environmental degradation.

The presence of vegetation area gives a cooling effect on urban area. But owing to increase in population, settlement areas are increasing at the cost of green areas. Moreover, 51% of the area has been deforested and 10% has been afforested. Normalized Difference Built up Index (NDBI) calculation confirmed the substantial loss of vegetation cover. Findings of the present study may be a contributory document for planners and administrators for effective LU/LC planning of Bangalore city.

Managing urban sprawl is a complex challenge requiring coordinated efforts from government, urban planners, and citizens to promote sustainable urban development. Policies for managing vegetation to make room for green belts, implementation of new urbanization concepts at the development planning permission stage will help reduce LST. So, there is a need for continuous monitoring of city's land use/land cover dynamics to check the phenomenon of intensification of UHI.