Land Use and Land Cover Change Monitoring of Agaratala Municipal Corporation Area Using Geospatial Technology

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ABSTRACT

Land use and land cover change is a critical compoenent for bio-physical assessment. It has an encompassing impact on all environmental aspects. So many scholars have performed land use change analysis at myraid scales on different parts of the globe. The present study also focuses the change analysis of different land use and land cover types of Agartala Municipal Corporation, Tripura, India. For the analysis geospational methods are used. Remote sensing data products are classified to figure out the different land use types namely waterbody, vegetation, cultivable land, builtup and vacant land. Accuracy assessment is performed which yeild more 80 per cent reflecting performace of the classification algarithms. The study shows that in the study area build up area is rapidly increasing at the cost of other land use types. This type of study is very important for urban planning as hapazard growth of cities may lead to serious negative externalities for the people living in the urban areas. The study is also important from the prespective of achiving sustainable Development Goal, 2030 where healthy urban living is emphasised.

I. Introduction

Land use and land cover (LULC) are often used interchangeably, but each term has a unique meaning. Land cover refers to the surface cover on the ground like vegetation, urban infrastructure, waterbody, bare land etc.

Land use refers to the purpose of the land services, for example, wildlife habitat, agriculture, etc. Land cover is the physical material at the surface of the earth. Land use is the description of how people utilize the land for the socio-economic activities. Land use and land cover change (LULCC) is the conversion of different land use types resulting from complex interactions between humans and the physical environment.

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LULC maps play a significant and prime role in planning, management, and monitoring programs at local, regional, and national levels. On the one hand, this

type of information provides a better understanding of land utilization aspects. On the other hand, it plays a vital role in the formation of policies and programs required for development planning. LULC is very important for Sustainable Development goal for batter unban wellbeing.

The present study primarily focuses on monitoring land use land cover change of AMC area of the years 1991, 2001, 2011, and 2021. The paper also emphasizes built-up growth and its dynamics over the last two decades.
To achieve sustainable urban development and check the haphazard growth of towns and cities, authorities associated with the urban development must generate planning models so that every bit of available land can be used most rationally and optimally.