



Monitoring the Impacts of Urbanization on Land use Land cover in Ethiopia Using Remote Sensing and GIS Technique

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With the economic growth of developing countries, the rapid urbanization of rural land and its conversion to urban land directly lead to an increase in the area of impervious surfaces. It is important to build accurate and fast methods to extract impervious surface distribution which is helpful for detecting regional environmental changes in urban areas and achieving sustainable urban development. Bahir Dar city in Ethiopia is not an exception to this, as rapid growth of urbanization and high population growth causes land use and land cover change. Therefore, monitoring LULC change is important for sustainable future urban development. The objective of this study is to define how the land cover and land use changes through time and how much intrusion of urban area to the LULC by using remote sensing and GIS techniques. To achieve this Landsat 4-5 TM and Landsat 8 OLI images were used from 1987 to 2020. TM 1987, TM 1999 TM 2010 and OLI 2020 images were analyzed by using Quantum GIS. Results shows that urban area is expanded rapidly since 1987. In 1987 most of Bahir Dar city area was covered by open spaces (crop lands) while the urban and industrial areas were concentrated in the center of the city. Wetland vegetations cover the area along the river. In 1999 the built-up areas increased horizontally with a coverage of 788.58 ha. In this year the three classes were increased except open field. In the year 2010 the built-up area shows a dynamic increase from 788.58 ha to 1938.24 ha area coverage. In the same year water bodies and open fields decreased while forests become higher. In 2020 the built-up areas and the forests become higher in area coverage compared to 2010.