

URBAN LAND USE CHANGE DETECTION IN SRI JAYEWARDENEPURA KOTTE MUNICIPAL COUNCIL, SRI LANKA

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Abstract

The growth of built-up areas has a significant impact on land use by replacing areas of natural vegetation with residential and commercial areas and their related infrastructure development. Rapid land use changes have taken place in many urban and high populated areas of Sri Lanka over the past few decades. Because of this the urban cities face different challenges in achieving their future sustainable urban development goals. This study was mainly focused on detecting the land use and land cover changes in the Sri Jayewardenepura Kotte MC area with special focus on the built-up area growth in this area. Landsat 8 data were downloaded from USGS Earth Explorer for the year 1992 and 2014 were used in this study. After that identify the three-land use categories; built-up, non-built-up and water in the study area using the Supervised Classification Method. The Land Use Change Matrix and descriptive analyses methods were used to identify the land use changes, and it was carried out using Arc GIS 10.8 and MS Excel 2019 software. The study found that 382.86 hectares of non-built-up area and 82.26 hectares of water areas have converted to the built-up areas during 1992 to 2014 time period. In 1992 there were 703.26 hectares (42%) of built-up areas but in 2014, the built-up area had increased to 1208.88 hectares (72%) The annual change of the built-up area in Sri Jayewardenepura Kotte MC is 3.3% (22.98 hectares) during the study period. Identify the urban growth patterns, infrastructure development and their impacts on to the environment is essential when archiving the sustainable urbanization. Therefore, findings of this research will provide a new knowledge for the urban planning and development in this area.

Keywords: *Sri Jayewardenepura Kotte MC, Built-up Areas, Land Use Change Matrix, Urban Growth, Sustainable Urbanization*