

Functional and Morphological Dynamics: Colombo city, Sri Lanka

SUBASINGHE, Shyamantha^{1*}

¹Graduate School of Life and Environmental Sciences, University of Tsukuba

The urban functions and urban morphology of Colombo city has been dramatically changing over last decades. Main objective of this study is to fundamentally analyze the spatiotemporal changes of urban morphology of Colombo city and explains the relationship between urban morphology changes and functional changes in Colombo city. Three methods are used to achieve its objective. First, the Landsat imageries 1992, 2005 and 2014 are classified to represent the urban and non-urban areas using Random Forest (RF) approach in Remote Sensing (RS). Second, the accuracy of the classification results is assessed. Third, the horizontal changes of urban morphology is analyzed in quantitatively using Geographical Information System (GIS). Moreover, the study analyzes how the socioeconomic functions of Colombo city has changed in different time period and its relationship with urban morphology changes, in order to understand the causes of spatial pattern of changes of Colombo city. The outcome of the study can be used to model the urban morphology changes in horizontal manner but vertical expansion should be detected in order to model it in a comprehensive manner in future.

Keywords: GIS, Random Forest, RS, Urban morphology