

1. Modelling urban growth in the Colombo urban fringe, Sri Lanka (Session 2A)

KGPK Weerakoon
University of Sri Jayewardenepura, Sri Lanka

The nature of urban growth is such that it moves to fringe areas changing non-urban uses to urban uses. It is a spatio-temporal process and a result of changes of different driving factors in the socio-economic, physical, and environmental sub systems that are directly linked with the main urban system. Deriving those driving factors is complex, but essential for urban planners and urban policy makers. Previously, urban scholars had considered those sub systems individually. However, these three sub systems directly influence the main urban system and consideration of all the driving factors in the three different sub systems together is necessary for modelling urban growth. There is a lack of studies, which have considered the effects of the urban sub systems on the fringe urban system, and this research aims to address this gap. Colombo urban fringe was chosen for the case study. In order to model the Colombo fringe growth and explore the relationship between urban growth and its driving factors, GIS based logistic regression modelling was used. The findings of the study highlighted the positive and negative influencing factors in terms of "where the growth should go?" and "how much of it should go?". Driving factors in the socio-economic, physical, and environmental sub-systems can exert their influence positively or negatively. Proximity to green areas, land value and population density were the most influential in stimulating urban growth in the Colombo urban fringe. The cumulative results of the various influences caused a unique pattern of growth in the Colombo urban fringe that is quite distinct from the pattern witnessed in other Asian countries.

Keywords: urban fringe, urban growth, urban sub system, main urban system, logistic regression modelling