

**GREEN SPACE PLANING USING GIS AND REMOTE SENSING
FOR CITY OF COLOMBO, SRI LANKA**

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ABSTRACT

The rapid growth of human population, their demands, and constructed environment have replaced the natural environment in a significant way. Therefore, people reconsider building up natural environment with artificial constructions. This study is focused on sustainable development of Urban Green Spaces (UGS), Geographic Information Systems (GIS) and Remote Sensing (RS) technologies are very important for the study as they have powerful spatial scientific approaches.

The present study area was Colombo Municipal Council (CMC) administrative area with three objectives. Identification and analyzing of existing green areas and their patterns was one objective. This was done through supervised image classification method using high resolution satellite images. After extracting the vegetation cover, central place theory was used to understand the existing patterns.

The second objective was to analyze the green areas with the natural and human factors, such as, buildings, transportation networks, bare lands, urban heat hot spots, air pollution contaminations etc. These factors were weighted under existing urban regulations in Sri Lanka and developed a multi criteria model for analyzing the suitability of expanding green spaces. According to the results, the most suitable area is less than 1% of the total area. But 39% of the land is suitable for expanding green spaces while another 40% cannot be expanded. Moderate suitable area is around 20%. Using these results three dimensional models and accessibility models were developed to understand the applicability of green spaces in selected portions of land.

Cartographic and web based GIS outputs were created to disseminate the results as the third objective to engage responsible parties for the planning operations. Urban planners, designers and decision makers can use the results as a decision support system with the comments submitted by the community.

The applicability of GIS and Remote Sensing improves the decision making power for planning green spaces towards sustainable conservation processes in urban environment.

Key words: Urban green spaces (UGS), geographic information systems (GIS), remote sensing (RS), central place theory