GREEN SPACE PLANING USING GIS AND REMOTESENSING FOR THE CITY OF COLOMBO – SRI LANKA

M. S. P. M. SIRIWARDANE

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka.

Urbanization is a rapidly increasing phenomenon in modern world. With the growth of human population and their demands, constructed environment has replaced the natural environment in a significant way. As a result, urban heat islands, air pollution, sound pollution have become some critical issues for the citizens. Therefore people reconsider to build up natural environment with artificial constructions. But most of the time the priority has given to construction and natural environment is ignored. The study area is Colombo Municipal Council Area.

This study is focused on the sustainable development of the green spaces. Therefore, three objectives were defined. Identification and analyzing of existing urban green areas and their patterns is the starting approach. This process was done through supervised image classification method by using high resolution satellite images. After extracting the vegetation cover, the central place theory and other Spatial Analytical techniques were combined to understand the existing patterns of the green spaces.

As the second objective the green areas were analyzed with the other critical 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 and standards in Sri Lanka and developed a multi criteria model for analyzing the suitability and probability of expansion of existing urban green spaces. According to the results 40% of the land is suitable for expanding green spaces while another 40% cannot be expanded. The moderate suitability conditions can be improved too.

The results were presented in cartographical maps as well as web based maps which encourage the modern trends in GIS and citizen engagement activities for nature conservation. Planners, Designers and decision makers can use the results as decision support system with the comments submitted by the community. As the conclusion the main fact to be understood that the GIS and Remote Sensing technologies have a great power of planning green spaces. Modelling the reality by applying the relevant conditions in an urban environment is very important for well planned cities.