THE ADVERSE IMPACT OF RAPID URBANIZATION ON THE VEGETATION COVER IN THE COLOMBO METROPOLITAN REGION

Saseeka Wijesekera and L. Manawadu

Department of Geography, University of Colombo

After 1977, with the introduction of liberalized economic policies, concepts of urbanization and urbanized areas have also rapidly changed. This changed the lifestyle, attitudes, economic patterns, even the natural environment in urban areas. south-western part of Sri Lanka shows the highest urbanization, though the country has not experienced the levels of urbanization comparable to other Asian countries. However, delineation of urban areas is not properly done in Sri Lanka.

The vegetation coverage within the urban areas plays a major role in providing an environment for recreation for the inhabitants. These vegetation areas are highly threatened by the transformed urban land use due to increasing pressure on land in most of the cities. There is an amazing negative relationship between the area under vegetation distribution and the level of urbanization.

This study attempts to identify the relationship between the vegetation cover and the degree of urbanization in the Colombo Metropolitan Region (CMR). Space-borne technique is one of the latest techniques which can be used to recognise the significant changes in the urban areas. Urban Index (UI) was calculated to identify the urbanized areas using band 6 and 7 in Landsat as demonstrated by Kawamura Makoto, Jayamanna Sanath and Tsujiko Juji in 1996. To justify the results received in UI, urban surface temperature and Normalize Difference Vegetation Index (NDVI) were extracted using Landsat 7 ETM+ (Enhance Thematic Mapper) image received on 2001/03/10 and 1992/03/13 Landsat 5 TM (Thematic Mapper) received on 1992/03/13.

The results indicated that there is a significant positive relationship between urban surface temperature and urbanization in the Colombo Metropolitan Region whilst showing a significant negative relationship between vegetation cover and urbanization.