Abstract No: 449 (Poster) *Climate, Environment and Earth Sciences*

ASSESSMENT OF GREEN SPACE IN THE COLOMBO CITY LIAISONS WITH GIS AND IN-SITU DATA

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Urban sprawl in Colombo City is increasing due to centralization of social and economic endeavors. Urban forests and green infrastructure make the city cleaner and healthier to raise the standard of environment quality and aesthetic beauty. This study examines the green urban space in Colombo City using geographic information system and green cover was compared with in-situ ground truthing data in selected locations. A supervised learning algorithm was adopted to classify ESRI base image to three major land-use/cover classes: green space, built-up and water using training samples within Colombo City. Landsat 8 satellite imagery that acquired on 14.04.2015 was used to calculate Normalized Difference Vegetation Index (NDVI). Then green space of the NDVI image was extracted using polygonal vector feature class of the classified image. The results showed that 29% of the area was green space, 67% was built-up and 4% was water. Coefficient of agreement (Khat) was calculated for the classified image resulting in 0.81 overall accuracy. The NDVI values showed the intensity of greenness of vegetation. The difference of NDVI values were compared using available base maps. Then NDVI results were utilized to assess the green space in the field systematically to gauge how species contributes for varying greenness. The results and the method adopted in this study eventually provide valuable insights for city planners and policy makers to establish new green urban space to uplift environmental quality of potential sites in Colombo City.

Financial assistance given by Open University of Sri Lanka is acknowledged.