

# Assessing Tree Cover of Urban Region of District Srinagar (J&K) using LISS IV Data

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**Abstract**—The continued augmentation of carbon dioxide (CO<sub>2</sub>) in the atmospheric concentration is predicted to lead to significant changes in climate and it is being experienced that climate change has impacted natural and urban ecosystems globally. Thus urban forestry has gained importance over period of time in the view of climate change mitigation as trees in urban system provide a variety of ecosystem services including biodiversity conservation, removal of atmospheric pollutants, oxygen generation, noise reduction, mitigation of urban heat island effect, microclimate regulation, stabilization of soil, groundwater recharge, prevention of soil erosion and carbon sequestration. In this context, a research was undertaken to generate tree cover map of urban region of district Srinagar using satellite data (LISS IV) of 2016 with a spatial resolution of 5.8 m using onscreen digitization at 1:30,000 scale. Tree cover having an area of more than 0.1 ha was classified for generation of urban forest cover map. An extensive ground survey was undertaken for validation of map. Accuracy assessment was also carried and an overall accuracy of 92% (kappa = 0.91) was observed for the map. Using these ground validation points, a reclassification was done for correction of pixels having ambiguity between urban forest and horticultural crop. Total urban forest area was assessed to be 2598.06 (ha) which comprised a significant 12.15% of the total geographical area 21387.44 ha. There is a consistent pressure on agricultural land as well as urban forest area for its conversion into built-up area due to ever increasing population and urbanization. A lot of urban expansion has been observed in the recent years declining the urban forest cover. The results reveal that a reasonable amount of fragmented land left in the form of roadside avenues, recreation parks, wasteland etc. can be utilized to increase urban forestry cover for long term storage of carbon as a means to mitigate climate change.

**Keywords:** Climate change, Urban forestry, Srinagar, LISS IV.