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**Assessment and Monitoring of Deforestation and Forest fragmentation in South Asia since the 1930s**

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**Abstract**

The present study, first of its kind, has analyzed the land cover and investigated the spatial patterns of deforestation and forest fragmentation in South Asian region since the 1930`s. The region comprises of eight countries: India, Bangladesh, Bhutan, Nepal, Pakistan, Afghanistan, Sri Lanka and Maldives. In South Asia, agricultural land is predominant constituting 43% of the total geographical area followed by barren land (19.9%) and forests (14.72%). The long-term change analysis using the classified maps of 1930 and 2014 indicated a loss of 29.62% of the forest cover. Higher annual net deforestation rates were observed in the period from 1930-1975 (0.68%) followed by 1975-1985 (0.23%), 1985-1995 (0.12%), 1995-2005 (0.06%) and 2005-2014 (0.04%) for the region. Forest fragmentation had significant spatio-temporal variation across the South Asian countries. In 1930, 88.9% of the South Asian forest was classified as large core forest, 8.18% as edge forest and 1.18% as perforated forest. The large core forest category has decreased significantly in area over last eight decades. The results of the present study are expected to serve as a reference for the evaluation of globally agreed Aichi biodiversity target 5 for South Asian countries. This study will be a valuable basis for developing management strategies and restoration programs as it tracks the spatial changes in deforestation and forest fragmentation.

Key words: Land cover, biodiversity, conservation, earth observation, South Asia

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