Analysis of Forest Cover Changes in Vietnam Using Hierarchical Object-Based Classification: Challenges and Opportunities

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Abstract: Over the last three decades, land use/cover changes has been especially dynamics in South East Asia. Most countries continue to report the loss of forest but a few countries gain more forest area lately, including Vietnam. Different definition of forest, despite of the political nuance, has different consequences to environmental services. Quantifying those change and trajectories of forest and land uses, while being aware of the forest definition and its implications, is a critical step in managing landscapes sustainably. We define hierarchical object based classification scheme to map land use/cover of Vietnam, wall-to-wall, based on Landsat imageries for three time steps: 1990, 2000, 2010. Spectral and spatial-based rulesets are combined as the classification algorithm. Post-classification analysis is conducted to study the land cover changes. Comparisons are made to the existing official maps. Challenges and opportunities of the applied methods are discussed.

Keyword : Landcover changes, deforestation, reforestation, object based image analysis, Vietnam