

# Detecting and Monitoring Deforestation and Forest Degradation: Issues and Obstacles for Southeast Asia

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## Abstract

Forest degradation can be defined as the loss of forest volume, biomass and/or forest productivity caused by natural or human influences. Achieving Reduced Emissions from Deforestation and Forest Degradation (REDD+) requires that deforestation and degradation can be efficiently, reliably, and cost-effectively detected and quantified, often where ground and aerial surveying is problematic. Therefore, remote sensing approaches, coupled with field and/or aerial data, offer possible solutions and efficiencies. While synoptic coverage using high-resolution data such as Landsat can provide estimates of deforestation and degradation, very high-resolution satellite data can be used to calibrate and validate these estimates in a multi-stage sampling approach. This research coupled Landsat and very high-resolution satellite optical data to determine whether Landsat could quantify deforestation and degradation in montane and lowland forests of Cambodia. Initial results are that Landsat can detect deforestation, and also the “halo” effect of degradation from high-grading in areas adjacent to deforested areas. Issues include high-resolution data that have different spatial, temporal and radiometric characteristics, and were not necessarily acquired at the same time as the Landsat data. The ability to detect deforestation and degradation is also a function of when an event is imaged the level and type of disturbance/degradation, and the type and age of the forest.

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