

Degradation Activities, Drivers, and Emissions: US Forest Service LEAF Country Assessments

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Abstract

Degradation is emerging as a common outcome of forest activities, and associated greenhouse gas (GHG) emissions have the potential to be significant. Understanding the activities and drivers of degradation is central to the ability to effectively measure, monitor, and mitigate associated emissions. Current inventories of GHG emissions do not effectively account for degradation because emissions are difficult to detect. We conducted an assessment of degradation activities and monitoring options at the sub-national scale within three countries in Southeast Asia: Viet Nam, Cambodia and Lao PDR. Visual surveys were conducted in the first half of 2012 across districts (Con Cuong, Aural, and Viengxay and Xamtai, respectively), which were ~200,000 ha in size. We found six primary degradation activities that were present in all districts, and common in one or more of them: planned selective tree harvest, unplanned selective tree harvest, commercial fuelwood collection, customary fuelwood collection, shifting cultivation, and wildfire. Timber harvest was widespread in all three assessments, whereas the other activities varied in their extent among the districts. Shifting cultivation was quite commonly occurring in Lao PDR, wildfire was a concern in all districts, but was prevalent in Cambodia. Fuelwood collection occurred in all districts, but was widespread and intensive in some locations in Viet Nam. The character of degradation activities affects their ability to be adequately measured and monitored with available methods. Characteristics affecting the ability of measurement methods to detect and adequately describe (i.e., accuracy and precision) include: occurrence (rare or common), spatial extent (limited or extensive), intensity (low or high impact), and temporal persistence (shifting, recurring, or chronic). A composite description of the spatial and temporal characteristics of individual degradation activities for a given landscape provides a blueprint for designing measurement approaches that are effective and efficient. Similarly, proposed survey and monitoring designs can be evaluated relative to which degradation activities are expected to be detected and how well their impact will be captured. The characteristics of degradation activities across a given landscape (at any scale) can and will change in response to a variety of influences, including land use, resource use policies, and market forces. Characterizations and subsequent measurement and monitoring approaches need to be robust to changes in degradation activities over time.

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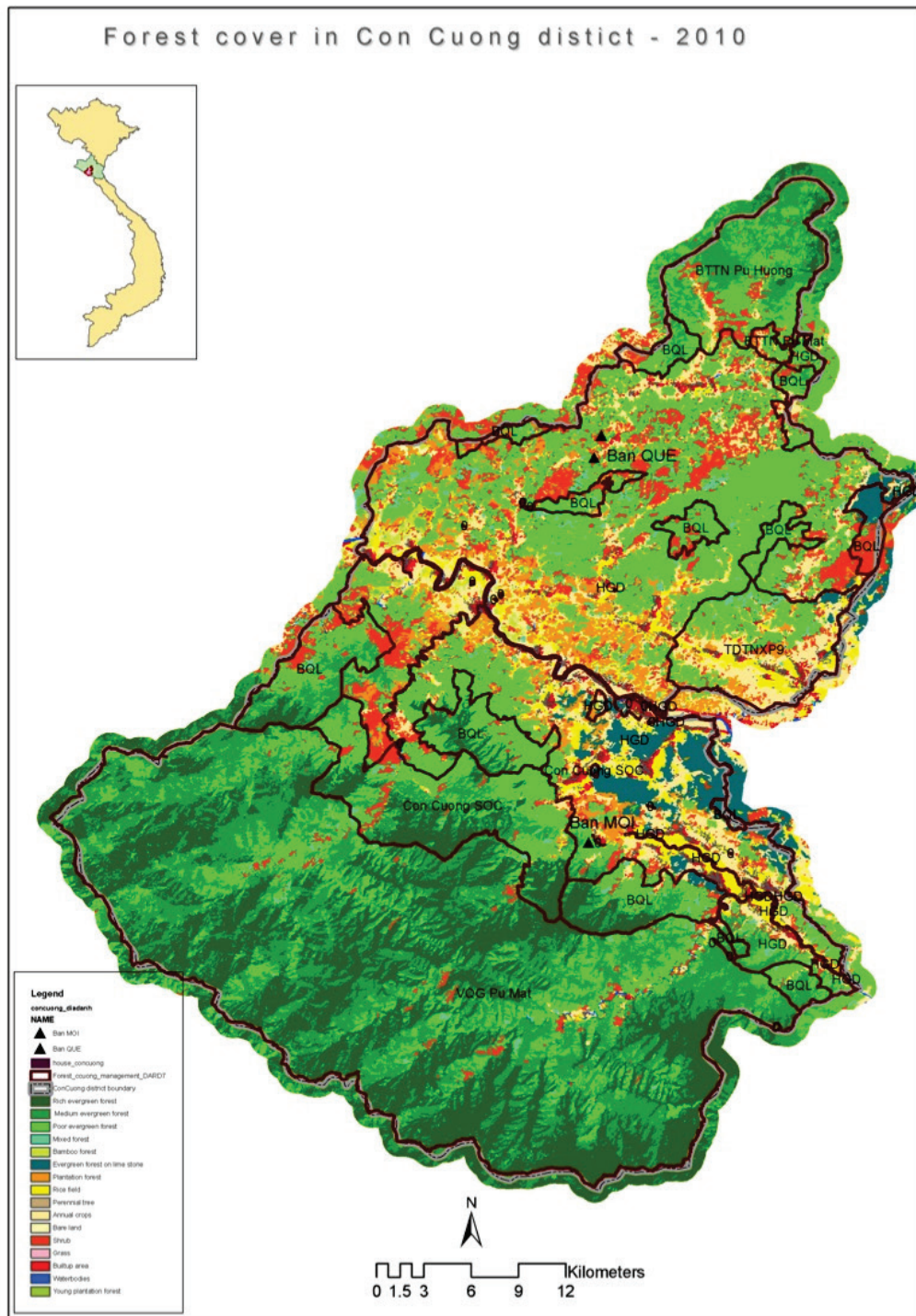
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Remote Sensing



2010 Land cover map of Con Cuong District, Nghe An Province, north-central Viet Nam.

(Map produced by LEAF/SNV-Viet Nam, 2012)