

Forest Degradation Sub-National Assessments: Monitoring Options for Cambodia, Lao PDR, and Vietnam

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Abstract

Techniques for monitoring deforestation and associated changes to forest carbon stocks are widespread and well published. In contrast, techniques for monitoring forest degradation are relatively untested in developing countries despite their inclusion in UNFCCC REDD+ negotiations. The Lowering Emissions in Asia's Forests (LEAF) program of the United States Agency for International Development/Regional Development Mission for Asia (USAID/RDMA) is working to address issues and challenges regarding forest degradation monitoring. The United States Forest Service was asked by LEAF and its partner organizations to assess options for monitoring forest degradation at sub-national levels in three Mekong countries: Cambodia, Lao PDR, and Vietnam. The study areas included the Central Cardamom Protection Forest in southwestern Cambodia (401,000 Ha), the Xamtai and Viengxay Districts in the Houaphanh province of northern Lao PDR (541,000 Ha), and the district of Con Cuong, in Nghe An Province of north-central Vietnam (175,000 Ha).

To assess monitoring options in the study areas, a conceptual framework was developed that includes three basic steps: 1) define biomass references for monitoring in each forest strata of interest, 2) identify and assess the scale and intensity of forest degradation drivers, and 3) identify and assess monitoring approaches based on defined biomass change thresholds. We evaluated three main approaches, including ground-based field measurements, remotely sensed imagery, and predictive modeling. Potential variants of each approach were assessed for each study area using a qualitative ranking system. The results were then used to develop an integrated monitoring system for each study area combining elements of all three approaches. Each monitoring system includes specific recommendations for integrating the three monitoring approaches that will likely meet the stated objectives. Each monitoring system must consider the important drivers of degradation in the study area, the operational circumstances for monitoring, and the expected capacity for implementation. A critical next step is implementing and testing the monitoring systems in the three study areas as proof-of-concept for potential application to other geographic areas in the region.

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