



The potential of Landsat time series to characterize historical dynamic and monitor future disturbances in human-modified rainforests of Indonesia

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In this study we demonstrated for the first time the potential of using full time series from high spatial resolution (30 m) Landsat satellites, covering a period from 1987-2017, for characterizing historical dynamics in Indonesian humid tropical rainforests. Our special focus was on mapping forest disturbance and post-disturbance regrowth, which in turn can potentially be used to map primary (undisturbed) forests, secondary (disturbed/degraded) forests, and forest land converted to oil palm plantation. We applied the Breaks For Additive Season and Trend (BFAST) Monitor framework for continuous change detection; BFAST is a generic and transparent method, which can be used for near-real-time monitoring. To verify our approach, a preliminary spatial accuracy assessment was carried out for disturbance detection using 418 sample pixels interpreted from very high spatial resolution images acquired through Digital Globe viewing service. Besides, we identified the sources of detection errors and approaches to overcome them. Implementation of the potential map product in existing international and national policies will be discussed.