BOOK OF
ABSTRACTS

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Land- use histories of planted tree cover caution international agenda promoting reforestation

T4.4 Closing the forest transition theory – forest restoration policy and practice gap

Sean Sloan[1]
Bruno Locatelli[2], Matthew Fagan[3], Adia Bey[4], Patrick Meyfroidt[4]
[1] Vancouver Island University, Department of Geography, Canada
[2] CIRAD, Forests and Societies, France
[3] University of Maryland - Baltimore County, Department of Geography and Environmental Systems, USA
[4] University Catholique de Louvain, Earth and Life Institute, Belgium

Abstract: Multiple national and multi-national schemes promote extensive tropical reforestation under the auspices of climate-change mitigation and environmental remediation. The necessity of economic incentive and public participation in such schemes has meant that such reforestation has generally taken the form of commercial tree plantations as well as agroforestry. The history of such tropical planted tree cover does not bode well for the desired environmental outcomes of such schemes in the absence of strict oversight. Here, the land-use histories of 5000 1-ha plots of planted tree cover were reviewed via visual interpretations of satellite imagery over 1990-2015. Plots were sampled pantropically within the extent of current (2015) planted tree cover and represent all major tropical plantation regions. Visual interpretations allowed for unprecedented scrutiny of the frequency by which planted tree cover – including sparely-treed lands or temporarily-cleared lands otherwise dedicated to planted tree cover – replaced natural forest cover versus managed scrublands or similar, as well as the timing and nature of land-use transitions culminating in planted tree cover. A very small proportion of plots had planted tree cover continually since 1990. Most plots were initially natural forest. Land-use transitions from natural forest to planted tree cover rarely featured intermediate stages of managed lands (e.g., agriculture) and, where they did, managed land uses were typically fleeting. Overwhelmingly, therefore, planted tree cover has replaced forests of greater environmental value, and done so relatively directly. Landsat vegetation indices of the plots, observed at roughly monthly intervals over 1985-2020, affirm consequently how vegetation coverage declines, and soil exposure increases, for years or decades following transitions to planted tree cover. The logical policy response to prevent such historical trends from repeating is to strictly limit incentivized reforestation to verifiably long-cleared lands, invariably being grazing lands on the spatial and economic peripheries. The recent and arguably successfully implementation of such a scheme in Panama will be outlined. The practicality of such an administrative approach to incentivized 'forest' production, given ambitious reforestation targets, remains uncertain and ultimately recalls debates over the relative merit and simplicity of ‘doing nothing’ to allow natural reforestation instead.