

the natural regeneration index (TNR), species were classified as fire tolerant-species (e.g. *Astronium graveolens*, *Eugenia procera* and *Swartzia trianae*); fire-stimulated species (e.g. *Casearia corymbosa*, *Cordia alliodora* and *Machaerium capote*) and sensitive species (e.g. *Posoqueria* sp., *Guarea guidonia*, and *Piptadenia* sp.). Our results suggest that some inter-Andean TDF tree species can survive and regenerate after fire, and therefore they should be considered in restoration programs, in light of future and more frequent forest fires due to climate change.

Miombo woodland regeneration dynamics after slash and burn agriculture and human settlement in Mozambique

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Miombo woodland is the most extensive tropical dry forest formation in Africa, considered as a major biodiversity hotspot but is facing important threats including deforestation due to subsistence agriculture. To mitigate these impacts, passive or assisted forest regeneration is a key solution but little is known on the dynamics of this particular biome. The objective of this study was to analyze Miombo regeneration dynamics in the surroundings of the Gilé National Reserve in Mozambique. The landscape in the area is dominated by slash-and-burn agriculture with strong regeneration dynamics and some areas present long term forest regrowth due to past human migration in the 80's. We sampled 19 plots in mature Miombo forest and 63 regeneration plots from 1 to 40 years old, located over two distinct areas characterized by two dominant soil types. We observed that, changes in richness and species diversity are more linked to the age of the fallow and to anthropic pressure than to the edaphic conditions. Floristic differentiation begins after 10 years of growth, depending on the soil type. Miombo forest dominant trees species were observed as the dominant species of all the re-growing plots, whatever their age. Species richness, floristic composition and structure of the old fallows (30-40 year) are similar to those present in the mature forest, indicating a strong regeneration capacity in the absence of human pressure. This study provides new insights for the elaboration of passive forest restoration techniques adapted to Miombo woodland.

Primary tropical forests, reduced impact logging, and resilience: implications for REDD+ and forest certification

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In the past decade there has been much debate regarding whether primary tropical forests can be logged in a sustainable way, and whether such activities should qualify for support under REDD+ and certification programmes. While some advocate that reduced impact logging can lead to positive outcomes for the forest, others contest that primary forests should be excluded from these schemes. One of the main reasons cited for preventing further incursions into primary forests, in particular large intact forest areas, is that once access is introduced, it is difficult to prevent unregulated access, illegal logging, and conversion to other land uses. It has also been argued that logging in itself generates significant carbon emissions and creates vulnerability in terms of natural disturbances, most notably drought, fire, and pests. This paper examines the multiple stressors posed by logging in tropical forests and responses observed in different regions, and the ability of these ecosystems to maintain their biodiversity, structure and function. It examines what is known regarding the ability of these systems to maintain their resilience, thresholds and tipping points beyond which tropical forest is unlikely to return to its original condition, and the secondary consequences of introducing access, particularly in areas of poor governance. In light of these findings, recommendations are made as to what role REDD+ and forest certification could play in reversing the decline of tropical forests.

Rethinking tropical forest management in the Anthropocene

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Many of the guidelines regarding tropical forest management in sustainable-use or strictly-protected reserves focus on local issues within the area of interest itself, such as setting off-take limits for game or timber and defining the spatial configuration and extent of no-take zones. Yet tropical forests face a period of unprecedented environmental change. This talk will explore recent evidence highlighting the role of multiple interacting threats from climate change, climate shocks, and human land-uses outside of the forest itself - assessing their role in determining biodiversity loss, changing forest composition and limiting forest recovery. Finally, it will explore ways in which management strategies can be modified to more effectively integrate multiple stakeholders across the landscape, and outline ways in which the scientific and practitioner communities can work together to incorporate global environmental change into forest management.

Policy alternatives to address tropical forest degradation

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In a rapidly changing environment, forests are exposed to multiple and interacting stressors that can lead to forest degradation. Within policy circles, forest degradation is often assumed to be the initial stage of the deforestation process, and thereby an implicit aspect of deforestation policies. Indeed, forests are often gradually degraded before they reach the final clear-cut state, which is usually the case in the Brazilian Amazon. Yet, there is growing evidence that degraded forests have both impacts and dynamics of their own, regardless if it reaches final stages of deforestation. Degraded forests are a source of greenhouse gas emissions, they are not able to secure biodiversity conservation and the provision of ecosystem services, and they may hinder the livelihoods of forest-dependent peoples. Importantly, degraded forests are more vulnerable to further degradation events. However, despite all evidences, forest degradation is overall neglected by policies. In this presentation, we will use Brazil as a case study to discuss policy alternatives to address the issue of tropical forest degradation. First, we will examine if and how environmental policies implemented in the Brazilian Amazon over the past decades address forest degradation. Second, we will depart from the Brazilian experience to discuss the challenges and opportunities of different alternatives for adequately addressing forest degradation. By examining environmental policies implemented in the Brazilian Amazon and considering scientific findings on forest degradation, we expect to contribute for a sustainable future for tropical forests by diminishing the gap between science and policy.