

# Review of: "Human and Environmental Factors Shape Tree Species Assemblages in West African Tropical Forests"

Laura Borma<sup>1</sup>

<sup>1</sup> National Institute for Space Research, Brazil

**Potential competing interests:** No potential competing interests to declare.

The paper "Human and Environmental Factors Shape Tree Species Assemblages in West African Tropical Forests" provides a comprehensive analysis of the impact of human activities on tree species composition in West African tropical forests. The authors conducted two studies using Generalized Dissimilarity Models (GDMs) and data from 66 forest plots in Nigeria and Cameroon to assess the influence of human presence on spatial beta-diversity.

The findings of the study shed light on the complex relationship between human activities and forest ecosystems. The authors categorized tree species into edible and inedible species based on their fruits, nuts, and seeds consumed by humans. They hypothesized that the impact of human activity would be more pronounced on edible tree species. The results confirmed this hypothesis, demonstrating that human activity significantly affects beta-diversity within the Nigeria-Cameroon forest region.

The study identified several key variables that shape total beta-diversity, including geographical distance between plots, plot elevation, stem density, proximity to human presence, and forest species composition. Interestingly, the impact of these variables differed between edible and inedible tree species. While forest species composition played a significant role in shaping dissimilarity in beta-diversity for edible tree species, elevation was found to be more relevant for inedible species. This suggests that different factors may drive the distribution and composition of edible and inedible tree species in response to human activities. According to the results, human activities may have a stronger impact on the composition of edible tree species compared to inedible species in West African tropical forests.

Overall, the paper is well-structured and provides a thorough analysis of the impact of human activities on tree species composition in West African tropical forests, which are biodiversity hotspots with significant cultural and ecological importance. The use of GDMs and the inclusion of multiple variables enhance the robustness of the findings. The research has important implications for conservation and management strategies, emphasizing the necessity of considering human factors alongside environmental factors in preserving the biodiversity and functionality of these valuable ecosystems.