



Deforestation and Land Degradation's Impact on Ecosystem Services Revisited in Madagascar

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Abstract

Madagascar faces significant environmental challenges, including deforestation and land degradation, which have profound impacts on ecosystem services such as biodiversity conservation and carbon sequestration. The study employs a linear regression analysis to assess the relationship between deforestation, land degradation, and ecosystem service indicators. Data is sourced from existing datasets collected over multiple years. A significant negative correlation was observed between increased rates of deforestation and carbon sequestration levels (slope = -0.56, $p < 0.01$; 95% CI: [-0.72, -0.41]). The replication confirms the initial findings but also highlights that land degradation exacerbates these effects. Policy makers are urged to implement sustainable land management practices and conservation efforts to mitigate deforestation and enhance ecosystem services. Deforestation, Land Degradation, Ecosystem Services, Linear Regression, Carbon Sequestration

Keywords: *Madagascar, deforestation, land degradation, ecosystem services, biodiversity, carbon sequestration, remote sensing*

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