



Carbon Sequestration in Southern Mozambique's Commercial Forests: A Comparative Analysis of Sustainable Management Practices

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Abstract

Carbon sequestration in forests plays a critical role in mitigating climate change. Southern Mozambique's commercial plantations offer an opportunity to study sustainable forestry management practices and their impact on carbon sequestration. The research employs a mixed-method approach combining field surveys with satellite imagery analysis to evaluate the carbon storage capacity under various SMPs. Stakeholder interviews supplement data collection, ensuring comprehensive insights into current practices and challenges. Selective logging proved more effective in maintaining high levels of carbon sequestration compared to unmanaged forests, with a 25% greater capacity over a decade. The study underscores the importance of adopting selective logging as a key SMP for maximising carbon storage in Mozambique's commercial forests. Policy recommendations include promoting selective logging and integrating reforestation efforts to enhance carbon sequestration rates in Southern Mozambique's forested regions.

Keywords: *Mozambique, Carbon Sequestration, Sustainable Forestry, Forest Management, Silviculture, Climate Change Adaptation, Ecosystem Services*

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