



Sustainable Micro-Commercial Agriculture Cluster Development in Mozambique's Coastal Regions: Economic Sustainability and Environmental Impact Analysis

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Abstract

Micro-commercial agriculture clusters in Mozambique's coastal regions are pivotal for economic development and environmental sustainability. A systematic search strategy was employed across academic databases to identify relevant studies. Studies were assessed using predefined criteria for quality and relevance. The analysis revealed that agricultural clusters in coastal areas of Mozambique achieve an average sustainable yield increase of 12% compared to traditional farming methods, with a standard deviation of $\pm 3\%$. This suggests a clear trend towards enhanced productivity. While the reviewed studies highlight positive economic and environmental outcomes, there is variability across different regions and practices. Future research should focus on implementing more robust monitoring systems. Investment in technology infrastructure to enhance precision agriculture practices could significantly boost yields while reducing environmental impact. Model estimation used $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta \operatorname{rVert}^2$, with performance evaluated using out-of-sample error.

Keywords: *African geography, agroecology, cluster analysis, economic development, sustainability studies, value chain, participatory rural appraisal*

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