African Applied Forest Ecology (Forestry/Environmental)

# Agroforestry Practices and Soil Fertility Enhancement in Kibera Slums: A Longitudinal Study on Yield Gains and Farmer Adoption

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## Abstract

{ "background": "Agroforestry practices have been proposed as a sustainable solution to enhance soil fertility in degraded environments such as urban slums.", "purposeandobjectives": "To evaluate the yield gains and adoption rates of agroforestry practices among farmers in Kibera Slums, Nairobi, Kenya.", "methodology": "A longitudinal study design was employed with quantitative data collection methods including surveys and soil analysis.", "findings": "The preliminary findings suggest that integrated tree-crop systems led to a statistically significant increase in maize yields by 12¿ (95% CI: [6%, 18%]) compared to conventional farming practices. Farmer adoption rates increased from 40¿ at baseline to 70¿ after a year of intervention.", "conclusion": "Agroforestry practices effectively improve soil fertility and can be scaled up for broader application in urban agriculture contexts.", "recommendations": "Government policies should incentivize farmers' participation in agroforestry programmes through subsidies and training initiatives.", "keywords": "agroforestry, yield gains, farmer adoption, Kibera slums, Nairobi, soil fertility", "contributionstatement": "This study introduces a specific statistical model for predicting yield improvements in agroforestry systems." } --- The integration of trees with crops resulted in a statistically significant increase in maize yields by 12¿ (95% CI: [6%, 18%]) compared to conventional farming practices, indicating the effectiveness of agroforestry in enhancing soil fertility and crop productivity.

**Keywords:** *Kenyan, agroforestry, soil conservation, sustainable agriculture, farmer engagement, yield analysis, community forestry*

# ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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