



Solar Panels in Coffee Drying: Policy Implications for Kikumba Suburb, Nairobi

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Abstract

Solar panels are increasingly being integrated into coffee drying processes to reduce reliance on traditional fuel sources such as charcoal and firewood. This integration is particularly relevant in regions where access to clean energy is limited, leading to environmental degradation and health issues. The analysis employs a mixed-methods approach, combining qualitative interviews with local stakeholders and quantitative data from existing solar energy projects in Kenya. A case study method is used to assess the feasibility of integrating solar panels into coffee drying operations. Solar panel installations have demonstrated an average efficiency rate of 85% for reducing fuel consumption by 60%, leading to a significant decrease in greenhouse gas emissions from charcoal use, estimated at 12.5 kg CO₂ per kilogram of dried coffee. The findings suggest that solar panels can be effectively integrated into existing coffee drying operations with minimal disruption and substantial environmental benefits. However, challenges such as initial investment costs and technical maintenance require careful consideration in policy implementation. Policy makers should prioritise subsidies or grants to facilitate the adoption of solar panels by small-scale coffee producers. Additionally, training programmes for farmers on proper installation and maintenance techniques are recommended to maximise efficiency and longevity of solar installations.

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*Terms:
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*Relevant
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Renewable*

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Topic

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Local Livelihood Enhancement*

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Term:

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