



# Eco-Friendly Materials in Kenyan Informal Settlements: Energy Use and Cost Savings

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## Abstract

Kenyan informal settlements face significant challenges in energy efficiency and cost management due to the use of traditional building materials. A comprehensive search strategy was employed using databases such as Web of Science and Scopus to identify relevant studies. Studies were screened based on predefined inclusion criteria and assessed using a pre-established quality assessment tool. The analysis revealed that the adoption of eco-friendly materials in informal settlements led to an average reduction in energy consumption by approximately 25% compared to traditional methods, with cost savings ranging from 10 – 30 per month for households. Eco-friendly building materials offer a viable solution for enhancing energy efficiency and reducing costs in Kenyan informal settlements, although further research is needed to assess long-term sustainability impacts. Investment in eco-friendly material supply chains should be prioritised, along with public awareness campaigns on the benefits of sustainable housing practices.

**Keywords:** Kenya, Geographic Focus (Africa), Sustainable Materials, Energy Efficiency, Cost Analysis, Building Codes, Retrofitting Techniques

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