



Solar-Powered Water Pumping in Kenyan Farming Communities: Economic Savings and Environmental Benefits

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Abstract

Solar-powered water pumping systems have been increasingly adopted in Kenyan farming communities to reduce reliance on diesel generators and improve sustainable agricultural practices. A qualitative study involving semi-structured interviews with farmers and focus group discussions to gather detailed insights into the adoption and impact of solar-powered systems. Farmers reported a significant reduction in electricity costs by up to 70% compared to diesel generators, with some households saving over \$50 per month. Environmental benefits included lower greenhouse gas emissions and reduced dependence on non-renewable energy sources. Solar-powered water pumps have proven effective in reducing operational expenses while promoting sustainable agricultural practices in Kenyan farming communities. Encourage government subsidies for solar equipment, promote community-led initiatives to support technology adoption, and conduct further research to validate long-term economic viability.

Keywords: *Kenyan, qualitative, sustainability, renewable-energy, irrigation, anthropological, development*

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