African Nonprofit Management (Business/Social crossover)

Solar-Powered Irrigation Systems and Rice Production in Coastal Mozambique: A Three-Year Comparative Study

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Published: 01 October 2007 | **Received:** 23 June 2007 | **Accepted:** 07 September 2007

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DOI: 10.5281/zenodo.18858959

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Abstract

Solar-powered irrigation systems have been introduced to coastal regions of Mozambique as a sustainable solution for enhancing rice production in arid environments. The research employed a mixed-methods approach, including field surveys, interviews with farmers, and analysis of yield data from rice fields equipped with solar-powered irrigation systems versus conventional methods. Data was collected in five coastal districts across Mozambique. Solar-powered irrigation significantly increased rice yields by an average of 15% compared to traditional methods, demonstrating a clear positive impact on agricultural productivity. The study concludes that solar-powered irrigation is a promising technology for enhancing rice production and improving the livelihoods of coastal farmers in Mozambique. Future research should explore broader scalability and long-term sustainability. Government agencies and international development organizations are encouraged to invest in piloting and scaling up solar-powered irrigation systems in other arid regions of Mozambique and beyond. Solar-Powered Irrigation, Rice Production, Coastal Mozambique, Agricultural Sustainability

Keywords: *Coastal, Sub-Saharan, Sustainable Development, Participatory Rural Appraisal, Agroecology, Case Study, Sustainability Metrics*