



Solar Power and Agricultural Yield in Moroccan Villages: A Qualitative Exploration of Adoption Dynamics

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Abstract

Solar-powered irrigation systems are increasingly being adopted by farmers in Morocco to enhance agricultural productivity. Despite growing interest and investments in these technologies, there is a need for deeper understanding of how they impact yield performance. Qualitative research methods were employed through semi-structured interviews with farmers and focus group discussions in selected villages. Data collection involved collecting socio-economic data, farmer perceptions, and technological usage details over a period of six months. Farmers reported significant improvements in crop yields after implementing solar-powered irrigation systems, particularly noticeable in regions with arid climates where water scarcity is a major constraint. A notable trend observed was a 20% increase in yield for maize crops compared to traditional irrigation methods. The adoption of solar-powered irrigation systems has been associated with substantial improvements in agricultural productivity among Moroccan farmers. Understanding the specific factors influencing this technology's uptake can inform future policy and investment strategies. Local governments should prioritise supporting smallholder farmers' access to solar energy solutions, alongside implementing extension services that educate on best practices for system maintenance and utilization. Morocco, Solar Irrigation, Agricultural Yield, Adoption Dynamics

Keywords: *Morocco, Geographical Indicators, Case Studies, Participatory Action Research, Sustainable Development Goals, Rural Economics, Anthropology, Sustainability Models*

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