



Eco-Friendly Irrigation Systems and Their Influence on Water Usage and Crop Yields in Eastern Tanzanian Villages,

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Abstract

Eastern Tanzanian villages have been experiencing water scarcity due to climate change and population growth, affecting agricultural productivity. A mixed-method approach including surveys and interviews was employed to gather data from 100 randomly selected households over two years. The use of drip irrigation led to a significant reduction in water usage by 35% compared to traditional flood irrigation methods, with crop yields increasing by an average of 20% for maize and beans. Eco-friendly irrigation systems have the potential to enhance agricultural sustainability and productivity in Eastern Tanzania's rural villages. Government funding should be directed towards providing subsidies for eco-friendly irrigation system adoption among smallholder farmers. eco-friendly irrigation, water usage, crop yields, rural agriculture, Tanzania The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African rural landscapes, drip irrigation systems, sustainable agriculture practices, water-harvesting technologies, soil conservation techniques, participatory research methodologies, agro-ecological zoning*

ABSTRACT-ONLY PUBLICATION

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