



Technological Innovations in Coastal Tanzania: Adoption Among Smallholder Farmers

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Abstract

Technological innovations have become increasingly important in agricultural practices globally, particularly among smallholder farmers who often lack access to advanced resources and information. A mixed-methods approach was employed, including semi-structured interviews with 50 smallholder farmers, focus group discussions with community leaders, and analysis of secondary data from agricultural extension services. Data were collected over three years to capture the evolving landscape of technological adoption in the region. During the study period, there was a significant increase (from 15% to 40%) in farmers adopting at least one new technology aimed at improving crop yields and water management. The most popular innovations were drip irrigation systems and solar-powered water pumps. The findings suggest that while smallholder farmers in coastal Tanzania show considerable interest in technological innovations, barriers such as cost, lack of knowledge, and infrastructure limitations remain significant challenges to widespread adoption. To enhance technology adoption rates, agricultural extension services should focus on providing training programmes, financial support, and improving access to electricity and water. Community-led initiatives can also play a crucial role in fostering acceptance and sustainability of new technologies.

Keywords: *African Geography, Smallholder Farmers, Agricultural Practices, Qualitative Research, Case Study, Development Economics, Rural Sociology*

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