



Assessing Climate Change Adaptation Strategies among Tanzanian Smallholder Cotton Farmers: A Three-Year Field Experiment Analysis

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Abstract

Smallholder cotton farmers in Tanzania face significant climate variability, impacting their yields and livelihoods. Understanding effective adaptation strategies is crucial for sustainable agriculture. A mixed-methods approach was adopted, including semi-structured interviews, focus group discussions, and participatory observation to gather data from 120 farmers across four regions of Tanzania. Farmers reported using mulching as the most effective strategy for mitigating water stress, with a majority (75%) implementing this technique annually. Soil moisture monitoring was also widely adopted (60%), significantly improving irrigation efficiency and reducing wastage. This study provides valuable insights into climate adaptation practices among Tanzanian farmers, highlighting the importance of mulching and soil moisture monitoring in enhancing agricultural resilience. Government support for training programmes focused on these proven strategies can help smallholder farmers adapt more effectively to future climatic changes.

Keywords: *Tanzania, Geographic Adaptation, Rural Development, Climate Resilience, Anthropological Methods, Ethnography, Community-Based Approaches*

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