



Impact of Drought-Resistant Maize Varieties on Smallholder Farmers in Eastern Kenya: A Three-Year Policy Analysis

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Abstract

Drought conditions in Eastern Kenya have significantly impacted maize yields among smallholder farmers, leading to food insecurity and economic hardship. A mixed-method approach combining quantitative surveys with qualitative interviews was employed to assess changes in yield, input use, household income, and overall resilience among adopters compared to non-adopters. Adopting drought-resistant maize varieties led to a 25% increase in average yields per hectare, which translated into an estimated \$108 per farmer annually, contributing significantly to poverty reduction. The study underscores the critical role of technological innovation and policy support in enhancing agricultural resilience against climate shocks. Policy makers should invest in research and development for drought-resistant crop varieties, alongside extension services targeting smallholder farmers. Additionally, subsidies or insurance schemes could be introduced to mitigate financial risks associated with farming.

Keywords: *Sub-Saharan, African, Sprinkler, Flood, Tillage, Agroforestry, Interdisciplinary*

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