

## ABSTRACT

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This paper examines factors influencing the choice of response strategies and the actual strategies smallholder farmers use to respond to the effects of climate variability in transitional climatic zones of Africa, specifically Laikipia West Sub-County in Kenya. Data for this study were collected from 392 randomly selected smallholder farmers, using a structured questionnaire. The study used principal component analysis to group together related strategies that farmers used to respond to the effects of climate variability, which resulted into seven groups of responses. Majority of farmers at 97.5%, 85% and 74.1%, respectively, used cultural practices, diversification practices and risk reduction practices. Intensification practices followed by 69.3% while terraces crop and herd management and new breeds were the least adopted at 27%, 13.2% and 9%, respectively. Multivariate probit model was then used to examine the factors influencing smallholder farmers' choice of response strategies to effects of climate change. The results indicated that access to weather information had a strong effect on use of risk management strategies at 74% and intensification strategies at 49%. Increase in level of education and exclusive dependence on agriculture increased the probability of introducing new breeds by 30% and 53%, respectively, while access to extension services increased use of terraces by 42%. Strong local institutions that facilitate access to information and credit are likely to initiate changes in key household characteristics, which positively affect response to effects of climate variability. Policies should aim to strengthen local institutions that enhance access to information and credit services. There is need for investment in the provision of affordable and quality education, relevant demand-driven extension services that provide localized response solutions.