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## Analysis of adaption strategies for minimising the effects of climate change by smallholder farmers in Laikipia county, Kenya

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### Abstract

Climate change has been identified as the greatest threat to agricultural production. In Kenya, farming activities heavily depend on rainfall. In the recent past, planning for farming activities has been a challenge due to either too much rain or inadequate. Huge losses on crop production and livestock have been recorded by farmers especially during prolonged dry season. To address the grave and adverse effects of climate change, the Laikipia County Government developed a strategic plan through which farming households were encouraged to diversify crop production and livestock keeping. They were also advised to adopt fast maturing and drought tolerant crop varieties and practice on-farm adaptation practices such as harvesting of rain water and practicing climate smart agriculture. Despite these noble efforts, food security is still a challenge in the County. It is not clear the extent to which farmers have adopted and implemented the proposed strategies. Therefore this study sought to analyse the adaptation measures by farming households in Laikipia County. The objectives of the study included: to determine the extent of adaption strategies for changing temperatures and variability in rainfall. The population of the study consisted of farmers' in Laikipia County, Kenya. A sample size of 384 was obtained using four multi-stage random sampling design. The total number of respondents was 346 which represented 90 percent of the targeted total sample. Descriptive statistics was used in the analysis. For changing temperature, the respondents adopted crop diversification (14.5 %), fast maturing crops (7.8 %), and undertaking irrigation farming (5.78 %). For variability in rainfall, the respondents adopted early planting (21 %), crop diversification (43 %) and planting fast maturing plants (8 %). The study recommends that more extension officers should be deployed to assist farmers in undertaking crop diversification, especially fruits and high value crops, and embrace water harvesting initiatives during heavy rains and use the water to irrigate their crops during the dry season.

**Keywords:** Adaptation practices, climate variability, crop diversification, fast maturing crops