

ABSTRACT

Climate change and variability poses the greatest challenges to agricultural production in the developing countries and especially drylands. Across Africa, yields of staple crops such as maize, wheat, sorghum and a variety of fruit crops have significantly decreased in the recent years, thus, widening food insecurity gaps. In the dryland areas of Kenya, the situation is further aggravated by low adaptive capacities and highly fragile productive systems. The understanding of the links between climate change and agricultural production is critical to scientists, policy makers and farmers in an attempt to mainstream agricultural adaptation and mitigation measures. Climate change information provides the opportunity for efficient resource utilization, increase in agricultural production and enhancement of farmer resilience. The Lower Tana Basin in Kenya is one of the highly vulnerable regions with increasing shocks of climate change and variability that threatens the lifeblood of community livelihoods and biodiversity integrity, human survivals. This research focused on rainfall characteristics of the Lower Tana Basin in relation to maize production and food security of the region. Observed rainfall and temperature records from weather stations located in the Lower Tana Basin were collected and analyzed. The findings of this study showed evidence of increased return period of extreme drought events from a frequency of 4-5 years to 2 or less years in the last two decades. Impacts of the changing climate on maize production is evidently significant and farmers need to emphasize agricultural diversification with the adoption of other alternative crops such as mangoes and cassava that yield well, are climate resilient and likely to minimize future food security risks.