

ABSTRACT

Climate is a key input of rain fed agriculture. Changes in temperature and precipitation are considered the most important climatic parameters that affect crop and livestock production in the semi-arid areas. This study aims to evaluate observed and projected climate change impacts on small scale agro pastoral communities in West Pokot County. Stratified, purposive and random sampling design will be used to collect quantitative and qualitative data. Rainfall and temperature data spanning 1981 – 2018 will be collected from the Kenya Meteorological Department (KMD) stations within West Pokot County. Microsoft excel will be used to summarise the daily data into monthly, seasonal and annual totals; analyse the onset and cessation of the rainy season and length of growing period (LGP); and analyse trends of the rainfall and temperature and for graphical representation. Future projections (2006–2100) will be based on data from 5 models from the Coupled Model Inter-comparison Project Phase 5 (CMIP5) under Representative Concentration Pathways (RCPs) 4.5 and 8.5. Trends of past, present, and future climate will be investigated through time series statistical analysis using Innovative Trend Analysis Method, Mann – Kendall (MK) test and Sen’s slope estimator test.

Quantitative data will be collected using a semi structured questionnaire administered to a target population size of 384 household heads. The questionnaire will collect information on various socio demographic and economic variables of households, crops grown, livestock kept, age, family sizes, education levels, gender, land tenure, climate change adaptation strategies, farming experiences and farmers’ perceptions and impacts on climate change adaptation strategies issues. The information generated through household questionnaire interviews will be further validated through Focused Group Discussions, informal interviews and general observations.

The collected data will be analysed using both qualitative and quantitative approaches using Statistical Package for Social Scientists (SPSS V22). Frequency counts, means and percentages will be computed for all quantitative data and results presented using frequency distributed tables. Data collected on perception to climate change will be coded and analysed using descriptive and qualitative content analysis. The perceptions will be compared with the meteorological analysis to assess the way farmers’ perceptions mirror climatic trends. Multiple regression will be used to determine relationships between climate variability/change, adaptation strategies and agro-pastoralist productivity. The results of this study will be crucial in planning appropriate adaptation mechanisms in support of enhancing resilience of small scale agro pastoralists communities to tackle climate change.