

## ABSTRACT

Weather extremes negatively affect socioeconomic developments in arid and semi-arid areas (ASALs) and increase vulnerability of residents to food and water insecurity. Thus, communities adapt to such extremes of weather using Traditional Ecological Knowledge (TEK) and/or Modern Technologies. Modern farming technologies and land resource developments in ASALs have in past ignored TEK, and in most cases led to undesired outcomes. It's against this backdrop that this study was conceived to assess TEK among the Turkana people, its application and contribution to food and water security. The research adopted a cross-sectional social survey in collecting data from Central Turkana Sub-County residents. The study revealed that the Turkana people possess vast knowledge related to their environment; that this TEK plays a significant role in food production, preservation and in natural resource management. For instance, in 82% of the respondents use TEK in enhancing livestock production through the selection of livestock species that are suitable and drought tolerant; over 70% of them use TEK in reducing risk associated with livestock losses due to prolonged droughts. Further, TEK influenced the development and conservation of the water resources ( $r = 0.631$ ;  $p < 0.01$ ) including siting boreholes and wells. There was a strong correlation ( $r = 0.755$ ;  $p < 0.01$ ) between TEK and food security. TEK should be incorporated into the decision-making processes involving development projects within the ASALs.

### **Keywords**

Arid and Semi-Arid Lands, Climate Variability, Droughts, Food Security, Traditional Ecological Knowledge, Water Security