Abstract

Frequent droughts occurrence is a concern in the cattle corridor of Uganda. Droughts are characterized by rain deficit and associated with many socioeconomic impacts to household livelihoods. This concern provided motivation for this study in Ndibulungi and Lukiizi villages in Butuntumula sub country, one of the worst affected in Luwero district. The Purpose of the study thus was to assess drought hazard, its associated impacts on livelihood and adaptation measures in place.

The study adopted a mixed research approach (both quantitative and qualitative). Quantitative data used included monthly rainfall totals and monthly minimum and maximum temperature averages for Kawanda agrometeorological station (1992-2018) obtained from Uganda National Meteorological Authority. Both data sets had gaps which were filled using a regression technique (rainfall) using TAMSAT rainfall estimate data and long term average technique, for temperatures. Climate Data Tools (CDT) program installed in R was used to compute SPI and the SPEI at time scales of 3, 6 and 12 months in order to determine drought years and severity. The SPI and SPEI results were also compared at corresponding time scales. Data on drought impacts and actions to avert the situation was collected from a field survey conducted in the two purposively selected study villages where 170 households were randomly selected. The researcher used questionnaires, key informant interviews, Focus Group Discussion and Observations to collect this form of data which was later analyzed using STATA.

Drought indices revealed a high rainfall variability in the district with occasional floods and droughts experienced. Two multiyear moderate droughts were experienced in 2001-2003 and in 2007-2008. Short moderate to severe droughts were experienced in 2009, 2010, 2012 and 2013. Both indices reflected this at all the three time scales studied. The indices were closely related with a significant positive high correlation at each of the three time scales studied. However, the SPEI showed an early detection of severe droughts at 4 months compared to SPI at 5 months.

The socioeconomic impacts identified were drying of water sources, famine, crop failure and food price increases in that order. In addition to these, increase in temperature, water scarcity, forest degradation and pasture degradation were reported. In response, households preferred increasing water sources, storing food harvests and income diversification.

This project definitively studied drought hazard, assessed livelihood impacts and existing adaptation measures. Both coping and adaptation measures are recommended for effective drought impact management in addition to further research to identify factors that contribute to household vulnerabilities.