

Climate patterns and extremes in Uganda's Arabica and Robusta coffee regions

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ABSTRACT

Future climate change and variability will unlikely offer better opportunities for increased agricultural production, especially for many African countries. For proper projections of climate into the future, there is a need to establish past climate patterns and variations in extremes. However, limited studies have ascertained spatial and temporal climate patterns due to a lack of high-resolution and continuous climate data at more local altitudinal scales. This study characterized rainfall and temperature trends and climate extremes (drought and extreme rainfall) in Arabica and Robusta coffee growing regions of Uganda; using a hybrid of daily and remotely sensed observational climate data, Rainfall-Anomaly Index, and farm-households' perceptions of climate extremes across various altitudes. Results showed that moderate drought and extreme rainfall generally had cyclic patterns and commonly occurred during March-to-May and September-to-November, respectively. Extreme rainfall was received in mid-to-high altitude Arabica and Robusta regions while drought occurred in Robusta and low-altitude Arabica regions. Farm households also reported drought, extreme rainfall, floods, landslides and hailstorms as major climate extremes. This study, therefore, recommends the implementation of operational adaptation policies and practices as well as early warning systems

for efficient climate risk management across different altitudes in Arabica and Robusta coffee growing regions of Uganda.