

Implications of climate variability on coffee and banana farming in highlands of Moshi rural district, Tanzania

Pontian Lazaro Temba

Master of Science (Natural Resources Assessment and Management)

University of Dar es Salaam, Institute of Resources Assessment, 2017

The aim of this study was to explore perceived impacts of climate variability on Coffee and Banana farming and community responses in highlands of Moshi rural district. The study used socio-economic survey design by employing qualitative and quantitative research approaches. Data were collected using close-ended and open-ended questionnaires, key informant interviews, focus group discussions as well as field observation. A total of 96 farmers were involved in the study. The Statistical Package for Social Sciences (SPSS) and Microsoft Excel were used for data processing as well as analysis. Findings showed that community members are knowledgeable about climate variability. Their knowledge is based on perceptions of the impacts already being felt and attributed to climate variability, including unpredictable patterns of rainy seasons. Climate variability in the study area is associated with decrease in household food supply, unpredictable farming calendar including drying of water sources used for irrigation and domestic uses. Coffee yields show a decreasing trend (at the rate of $R^2 = -0.494$) during the year 1990 to 2016. It is contrary to banana, which indicates an increasing trend ($R^2 = 0.036$) of production during the same period. In general, the study concluded that the Communities in the study area are experiencing climate variability, mainly, increased temperature, increased rainfall variability and increased pest invasions in highland areas. Data showed that rainfall amount has been decreasing over time while temperatures have increased over time which has impact on crop cultivation (coffee and banana farming). Also this study concludes that there are observable and reported impacts of climate variability in the study area. Therefore, further research on viable options would help farmers adapt to current and future climatic stresses. Options may include irrigation of crops and conservation farming that have a potential to increasing banana and coffee production.