

Are Smallholder Farmers' Perceptions of Climate Variability and Change Supported by Climate Records? A Case Study of Lower Gweru in Semi-arid Central Zimbabwe

Veronica Makuvaro, Cyril T. F. Murewi, John Dimes, Ignatius Chagonda

Abstract

The livelihoods of the majority of people in semi-arid areas of developing nations are based on rain-fed agriculture. In the wake of climate variability and change, communities in these regions are the most vulnerable because of their limited capacities to adapt to environmental changes. Smallholder farmers in the study area, Lower Gweru in central Zimbabwe, ascertain that they have observed changes in some rainfall and temperature patterns. These changes include higher temperatures, an increased number of seasons without enough rainfall, and an increased frequency of droughts and lengths of dry spells. The aim of this study was to find out whether farmers' perceptions are supported by mean and extreme event trends in observed historical climate data. Gweru Thornhill meteorological data were analyzed for significant trends. The analysis showed that temperatures are increasing significantly, consistent with farmers' observations that temperatures are getting hotter. This study revealed that farmer perceptions on rainfall were not consistent with historical climatic trends. Thus, farmers in the Lower Gweru area may not be a very reliable source of long-term rainfall trends.