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Local Perceptions and Adaptation to Climate Change in North Kordofan State, Sudan

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Abstract

Smallholder farmers in developing countries are the most vulnerable groups affected by the negative impacts of climate variability and climate change mainly associated with their low adaptive capacities. This study investigates farmers' perception on climate change and climate variability in North Kordofan State; identify local adaptation strategies and determinants of farmers' choice for adoption of adaptation strategies. Primary and secondary data was collected from relevant sources employing a combination of data collection tools. Household survey was the principal method followed for the collection of primary data from 140 randomly selected respondents in six villages. This was complemented with data generated from group discussions and key informant interviews. In addition, rainfall and temperature data were collected from the nearest metrological station. Data was analysed using descriptive statistics and binary logistic regression. Precipitation data over the last decades indicated high inter-annual and inter-seasonal variations with a general fluctuating trend. Consistent with this, farmers' also perceive fluctuation in the amount and distribution of rainfall, and a general trend of decreasing rainfall and increasing temperature over the last decades. However, the climate data did not show evidence for the temperature raise claimed by the local community. The common climate change adaptation strategies reported includes using improved seeds, increasing fallowing, rangeland management, tree planting, change in housing patterns, and alternative source of livelihoods. The logistic regression model revealed the significant socio-economic factors determining farmers' choice and adoption of adaptation strategies. Drawing from the empirical findings the integration of local knowledge and scientific knowledge is crucial in the development of effective adaptation strategies to cope with the impacts of climate change.

Keywords: Adaptation strategies, climate change, perception, precipitation, Sudan