

TREND ANALYSIS AND ADAPTATION STRATEGIES OF CLIMATE CHANGE IN NORTH CENTRAL ETHIOPIA

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ABSTRACT

Climate change is one of the most important global environmental challenges, with implications for food production, water supply, health, energy, etc. Addressing climate change requires a good scientific understanding as well as coordinated action both at national and global level. Climate change is a key emerging threat to the lives and livelihoods of the rural poor in Ethiopia. Adaptation to climate change is a two-step process, which initially requires the perception that climate is changing and then responding to changes through adaptation. This study was conducted in selected rural kebeles of Bahir Dar Zuria district. The study employed both qualitative and quantitative methodologies and triangulation of data. It tried to show the significance of climate change by using forty-nine years of temperature and rainfall data, which were processed using XLSTAT software, in addition to the socio-economic data collected to assess the perception of farmers. Analysis of the historical climate data and its models in North Central Ethiopia revealed that there has been an increasing trend of maximum and minimum temperature and a general tendency of decreasing rainfall. The mean average change of annual temperature indicates significant variations of temperature observations approximately by 1.5°C. On the other hand, the average amount of annual rainfall change indicated by Mann-Kendall trend test and Homogeneity test results of p-value less than $\alpha=0.05$, were significant. The households' interview data analysis also shows that regarding the direction of the change in temperature and rainfall, 78% of the sample households perceived an increase in annual temperature and 66.7% a decrease in annual rainfall. The adaptation methods used include - use of moisture stress resistant crops, changing the management and planting date, irrigation, crop diversification: mixed crop-livestock farming systems, and increased use of water and soil conservation techniques. Therefore, it is concluded that most of the farmers perceived the climate change by their field experience and started adaptation strategies. In this regard, much remains to be done by governmental and non governmental actors to harness the value of indigenous knowledge, to empower and genuinely allow full participation of farmers and to implement environmental sustainability, technological adaptability, adaptation programs and plans.

KEYWORDS: Adaptation and Perception, Climate Change, Trend Analysis