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“Resilience of agricultural systems against crises”

Climate Change and the Vulnerability of Water Resources in Northern Cameroon

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Abstract

Water resources in northern Cameroon have continuously been reducing over the past years. Many studies have suggested two principal causes and these include:

1. Human activities such as poor farming practices, unsustainable use of water resources, increased demand of water, deforestation, land use change etc.;
2. Human induced climate change.

Northern Cameroon in this study includes: the Adamawa, North and Far North Regions located closer to the Sahel regions of Africa. These regions are already water stressed because of their location and any further change in climate with rising temperature would impact water resource either positively or negatively. Time series analysis and a 12 month Standardized Precipitation Index (SPI) with digital data between 1957 and 2006 were used to investigate the variation of water resources in this Sudano-Sahelian region of Cameroon. The results obtained varies between the different regions with an increased annual trend in temperature and precipitation for Ngaoundere (Adamawa Region) and Garoua (North Region), whereas Maroua (Far North Region) had a decreased annual trend in both precipitation and temperature. Further variability results obtained from the 12 months Standardized Precipitation Index (SPI12) showed that wetter periods outnumber drought periods in all 3 regions. The study then concluded that water resources vary with changing climatic conditions and the severity of the impact varies from region to region. Furthermore, water deficiency in northern Cameroon might not be due to climate change. The reasons might be a combination of poor water management and other factors such as population growth, environmental conditions etc.

Keywords: Climate change, northern Cameroon, rainfall, vulnerability, water resources