

Impacts of Climate Change on Agriculture: Collapsing of Dry Land Potato Farming in North East South Africa

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ABSTRACT The impact of anthropogenic climate change on potato production in north east South Africa (Limpopo Province) is studied. Decreasing trend in the area rainfall due to altered dynamics and thermodynamics of rainfall forcing caused by climate change, resulted in rivers and streams to dry. Analysing rainfall time series of the past 50 years (1960-2009), shows that north east South Africa has experienced 60 percent less rainfall than normal and high frequency of drought recurrence. Consequently, farm units declined from 1200 units to 300 units as from 1960 to 2006 affecting dry land potato farming and food security in the area. In this study, afforestation and agroforestry are shown as the cheapest mitigation measure that can increase rainfall and has the potential of reducing greenhouse gas emissions. While suggested adaptation measures include; new potato varieties that require less water and fast maturing or breeding short-season varieties are recommended to contain fast water loss.