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Climate change sure to affect farmers' profit margins

Climate change would affect the profit margins of farms throughout South Africa in varying degrees. All depends on how rainfall, temperature and the subsequent need for irrigation would change the yield and quality of produce being farmed in each region. This is the view of agricultural economist, Dr Hamman Oosthuizen, who used farms in Hoedspruit and Carolina in Mpumalanga, and Moorreesburg and Vredendal in the Western Cape as case studies for his doctoral research. He collaborated with climatologists and hydrologists from two South African universities to develop relevant data driven models.

Oosthuizen, who works for OABS Development in George, was recently awarded a doctor's degree in the Department of Agricultural Economics at Stellenbosch University (SU). His supervisors were Dr Jan Lombard and Dr Daan Louw.

His modelling study is part of the end results of a broader initiative involving data and models from the Climate Systems Analysis Group of the University of Cape Town (UCT) and the Centre for Water Resources Research at the University of KwaZulu-Natal. The project was funded by the Water Research Commission and the Department of Agriculture, Forestry and Fisheries. It investigated how climate change would impact agriculture, and assesses the vulnerability of crops, rangelands, farming households and enterprises. Appropriate ways by which farmers from selected areas could improve the management of their farms – with climate change in mind – are also suggested.


Dr Hamman Oosthuizen

Explained Oosthuizen: "It's a given that the agricultural sector is physically and economically vulnerable to climate change. We therefore set out to find out just how climate change would be influencing farming endeavours and profitability at farm level in certain areas of South Africa. The impact of such financial vulnerability goes beyond the farm gate, because many rural livelihoods are interlinked with the agricultural industry."

Oosthuizen's findings have been presented at international conferences in China, Mexico and Belgium in the recent past. A paper detailing the Hoedspruit case study was published in the International Water Association's Water, Energy and Climate (WEC) conference proceedings.

Oosthuizen's crop yield modelling was based on climatic data sets available from the Climate Systems Analysis Group (CSAG) at UCT. These were also used to project future dam levels and irrigation needs, and the availability of irrigation water.