

# New climate modelling shows what can happen

CLIMATE change will affect the profit margins of farms throughout South Africa differently, according to an agricultural economist from George, Dr Hamman Oosthuizen.

"It all depends on how rainfall, temperature and the subsequent need for irrigation will change the yield and quality of produce being farmed with in each region," said Oosthuizen.

He used farms in Hoedspruit, Carolina, Moorreesburg and Vredendal as case studies for his doctoral research at Stellenbosch University.

He teamed up with climatologists and hydrologists from two South African universities to develop relevant data-driven models.

His modelling study is among the end results of a broader initiative involving data and models from the Climate Systems Analysis Group of the University of Cape Town 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 investigates how climate change will impact agriculture, and assesses the vulnerability of crops, rangelands, farming households and enterprises. Appropriate ways for farms to manage their farms better through climate change are also suggested.

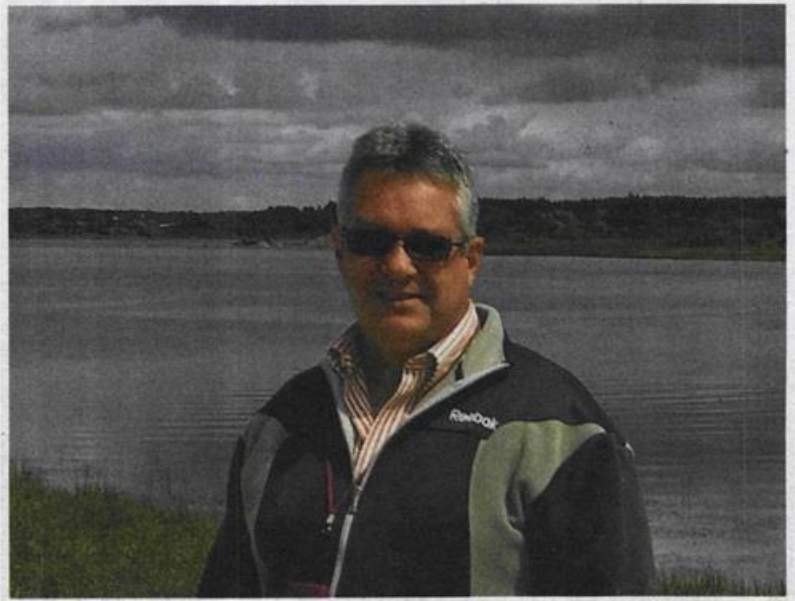
Oosthuizen's findings have already been presented at international conferences in China, Mexico and Belgium.

A paper detailing the Hoedspruit case study was published in the International Water Association's Water, Energy and Climate (WEC) conference proceedings.

Oosthuizen, among others, developed the new integrated Crop Critical Climate Threshold (CCCT) modelling technique to model crop yield and quality under different climate sets.

It integrates climatic, hydrological and economic models to determine how financially vulnerable farms are at ground level because of climate change.

The four selected case study areas used dryland and irrigation farming in both summer and winter rainfall regions in South



Agriculture economist Dr Hamman Oosthuizen has completed a study on how climate change will affect agriculture.

**PHOTO: SUPPLIED**

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Africa.

Projections show, for example, that mango and citrus farmers in the Hoedspruit ar-

ea should expect profits to shrink along with seasonal shifts in rainfall and an increase in average temperature. — BE.