PhD opportunity: Climate change impact assessment on soybean production in South Africa

Project Description: Climate change is expected to have far-reaching impacts on crop production at global, regional, and local levels. This can significantly impact the availability, accessibility, and quality of food. The sensitivity of specific crops to a changing climate is a key factor that needs to be better understood. Soybean production in South Africa reached 1.9 million tonnes in 2021. The area planted for soybean production in South Africa increased by 76% from the early 1990s to 2018/19, with a record increase of 787,200 ha in 2017/18. Future yield projections under climate change are needed to ensure sustainable productivity and inform policies. Despite the major significance of soybeans in alleviating hunger and malnutrition, no comprehensive studies have been conducted in South Africa to quantify the potential impact of climate change on this crop.

This project aims to determine the impacts of climate change on soybeans in the major production areas and to identify adaptive measures to mitigate any negative effects. The project will utilise various methods, including field research, statistical analyses, and crop modelling. We aim to involve farmers in understanding the scientific principles behind the work and the widespread sharing of the results. Additionally, we plan to engage with policymakers because of the substantial impact this project could have on soybean production in South Africa under a changing climate. This will help us to shape the future direction of soybean farming.

The position will be based at the University of Pretoria under the Forestry and Biotechnology Institute in the Department of Plant and Soil Sciences. We are also collaborating with the University of Kentucky, USA, and INRAE, France on this work.

Responsibilities: The PhD student will take charge of leading specific tasks in the project working together with the supervisory team. Successful candidates will be expected to work collaboratively with the team.

Requirements of the award:
- Must have completed their MSc degree in a relevant discipline/area of work (e.g., Agronomy, Crop Science, Soil Science, Agrometeorology).
- Excellent English language skills (written and spoken).
- Experience with computer programming will be an advantage (e.g., R, Python, Fortran).
- Ability to work independently as well as part of a team.
- High attention to detail and self-motivated.
- **The candidate must be a South African citizen.**

All applications should include:
- A letter of motivation;
- A full CV including any publications;
- Academic transcripts (please do not include certificates);
- The names and contact details of at least two academic referees who have taught/supervised the applicant.

Details of the award:
Duration: 3 years
Stipend: R150 000 per year
Location: University of Pretoria
Start Date: As soon as possible

Complete applications must reach **Dr Robert Mangani** at robert.mangani@fabi.up.ac.za by no later than **22 March 2024**.

For further information please contact **Dr Mangani** or **Dr Michael van der Laan** (vanderLaanM@arc.agric.za)

*The department reserves the right to disqualify ineligible and incomplete applications, to change the conditions of the award, or to make no awards at all.