Research chairs focus on the impact of climate change

By André Damons

The UFS, together with the Agricultural Research Council (ARC) and the Department of Agriculture, Land Reform and Rural Development (DALRRD), established six new research chairs, with a seventh chair to be introduced next year. The purpose of these research chairs is to improve research and food security in sub-Saharan Africa as well as to research the impact of climate change on agriculture.

Photos: Supplied


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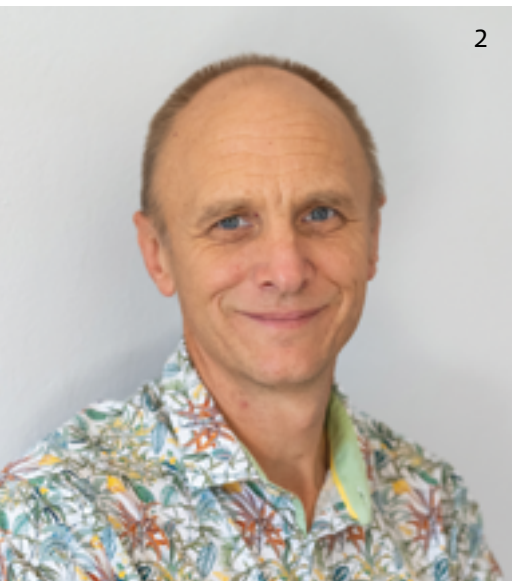
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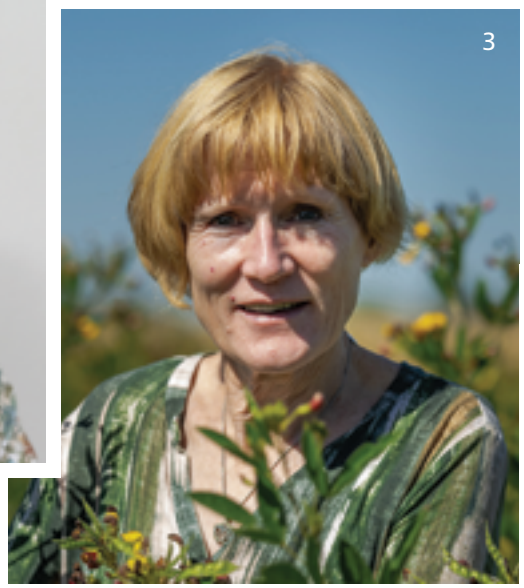
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1. Dr Alba du Toit.
2. Prof Linus Franke.
3. Prof Maryke Labuschagne.
4. Prof Arno Hugo.

The ARC-DALLRD-UFS research chairs, called Climate Change and Agriculture, Innovative Agro-processing for Climate-smart Food System, Agriculture Risk Financing, Sustainable Livestock Production, and Breeding Climate-Resilient Vegetables and Grains, falls under the umbrella of climate change. To bridge gaps between stakeholders, promoting collaboration, social learning, and engagement, a sixth

research chair focusing on communication for innovation has also been established. Agrifood systems need transformation to become sustainable and resilient, but adoption of agrifood technologies in low- and middle-income countries remains low.

Prof Johan van Niekerk, Vice-Dean: Agriculture in the Faculty of Natural and Agricultural Sciences (NAS), says another research chair in impact assessment of climate-smart interventions will also be introduced in 2025. This chair will address the impact of climate change on food systems and vulnerable populations, as well as enhance resilience, promote sustainability, and support food security in the face of climate change.

Prof Van Niekerk and Prof Sonja Venter from the ARC are the coordinators for the ARC-UFS-consortium. Joel Mamabolo from the DALRRD is the department's representative and DALRRD manager in the consortium.

The purpose of the research chairs, he explains, is to conduct high-level research with an aspect of community impact as envisaged in the university's *Vision 130*. "The UFS has a long-standing relationship with the ARC, which saw the university's expertise in agriculture and also contributed to the ARC establishing the chairs. Our expertise is of such a nature that it not only influences the sector, but also makes a lasting difference," says Prof Van Niekerk.

Food and nutrition security

Prof Linus Franke, Head of the UFS Department of Soil, Crop and Climate Sciences, is heading the Climate Change and Agriculture chair, while the Innovative Agro-processing for Climate-smart Food System chair falls under Dr Alba du Toit, Senior Lecturer in the Department of Sustainable Food Systems and Development. These chairs officially started on 1 July 2024.

According to Prof Franke, the main research themes of his chair include studies on the impact of climate change on crop production and rangelands, studies on carbon dynamics of agricultural soils, as well as the integration of weather and vegetation indices derived from remote sensing for decision support to farmers.

"The Innovative Agro-processing for Climate-smart Food System research chair will focus on innovative agro-processing technologies that could affect food and nutrition security. The chair's work will also focus on improving food systems that can impact socioeconomic development," says Dr Du Toit.

The Agriculture Risk Financing research chair will be shared between the Department of Agricultural Economics within NAS, and the UFS Business School. The Sustainable Livestock Production chair will fall within Prof Frikkie Neser's Department of Animal Science. Both research chairs officially start in December 2024.

Disease-resistance crop

Another chair – Breeding Climate-Resilient Vegetables and Grains – will be headed by Prof Maryke Labuschagne, who is also leading the NRF SARChI Chair in Disease Resistance and Quality in Field Crops. The aim of this research chair is to breed climate-resilient crops with high levels of nutrients such as iron, zinc, provitamin A, and essential amino acids, as well as disease resistance.

"Together with the ARC, we will be working on breeding climate-resilient, nutrient-rich, and disease-resistant pigeon pea and cowpea cultivars; maize rich in provitamin A, iron, and zinc; highly nutritious sweet and bitter sorghum; rust-resistant and good quality wheat; high-yielding and nutritious indigenous vegetables such as amaranth and amadumbe; and research on potato, sweet potato, and cassava for human and industrial use," says Prof Labuschagne.

Agrifood systems need transformation to become sustainable and resilient, but adoption of agrifood technologies in low- and middle-income countries remains low. A Research Chair in Communication for Innovation would bridge gaps between stakeholders, promoting collaboration, social learning, and engagement. Ultimately, it will support sustainable development goals and successfully implement innovative solutions across various sectors.

The research chair in impact assessment of climate-smart interventions will be introduced in 2025, according to Prof Van Niekerk. The proposed chair will address climate change impacts on food systems and vulnerable populations. By evaluating climate- smart agriculture practices, the chair will assess the effectiveness of certain interventions, develop methodologies, and provide evidence-based policy recommendations. At the core, the chair will strengthen resilience.