South Africa Eyes Homegrown Rice as ARC Expands Research Efforts

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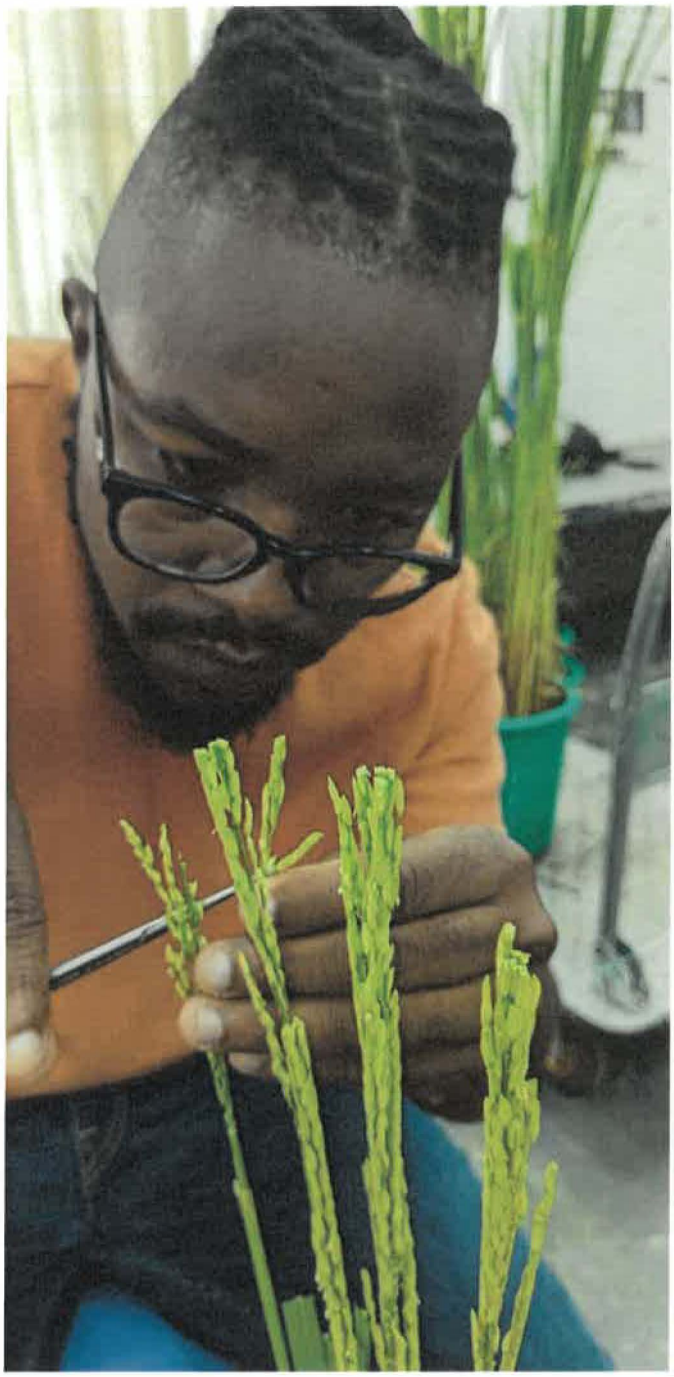
As South Africa continues to explore sustainable solutions for food security, the Agricultural Research Council (ARC) is turning its attention to an unexpected contender: rice.

The ARC-Small Grain has begun evaluating rice as part of its new crop research portfolio, with intensified efforts in recent years to establish and develop upland rice suited to local conditions.

Unlike traditional paddy rice, which requires large volumes of water, these cultivars are being tested for their ability to thrive in South Africa's diverse soils and increasingly water-scarce climate, potentially laying the foundation for a future domestic rice value chain.

At the heart of this initiative is ARC's Small Grain campus, where Professor Toi Tsilo and Timmy Baloyi, together with partners within the agricultural sector, academia and rice value chain who are hard at work in establishing the development and production of upland rice cultivars for adoption in South Africa.



strategically aimed at shaping the agricultural sector to provide more opportunities for economic growth within the rice value chain where farmers can participate.

The upland rice project in South Africa targets and participates with a wide range of stakeholders, including the Department of Science and Innovation (DSI), the Technology Innovation Agency (TIA), the Department of Agriculture, the National Agricultural Marketing Council (NAMC), Land Bank, Farmers, Farmer Associations, Universities, seed companies, mechanisation companies, , and current rice value chain industry stakeholders such as importers and regulators, as well as international rice organizations.

The positive impacts of this collaborative effort over the years are evident. The rice production has been proven feasible in South Africa, prospective adaptable rice accessions for production and development have been identified, and there are endless opportunities to address gaps within the rice value chain.

A wide range of rice accessions acquired from an international rice organisation were evaluated across multiple grain production

areas in South Africa for adaptation and a couple of accessions displayed great possibilities for adaptation and further improvement/development across South Africa's diverse soils and climate.

By focusing on the development of lowinput requirement, highyield crops, the ARC with its collaborators hope to establish profitable crop production alternatives to add to the annual crop production cycle and portfolio of South African farmers.

And as rice consumption continues to rise locally, producing more at home could significantly reduce the cost of imports.

Baloyi said this approach aligns with traditional crop production methods, ensuring farmers don't have to reinvent the wheel: "The South African grain production system is currently carried out under upland conditions where grain production relies on seasonal rainfall and irrigation in other areas; upland rice production will conform to the traditional grain production practices that farmers are currently deploying rather than reinventing the wheel."

He said the goal behind the multi-million project is making contributing to the needs driven research which outlines the importance of achieving self-subsistence in rice production as the country considering the growing demand of rice consumption within the country and to further mitigate any unforeseen political challenges the country may be faced with when having to import rice in the future.

"The response to South Africa's needs is in the development of climateresilient, lowinput requirement crops that are drought tolerant, high yielding and profitable to address the gap within the rice value chain and self-reliance on rice imports in a country that has a high demand for rice."

The rice adaptation and development strategy deployed is designed to work with limited rain and irrigation only during critical stages allowing rice to grow well even under varying weather conditions. "The project is structured in a way that it can identify and develop rice genotypes that can be produced with minimal rainfall and supplementary irrigation at critical growth stages...without the need for excessive irrigation," he said.

Upland rice also has significant commercial promise. "Rice production would be more profitable for the farmers compared to numerous crops. There would be established market opportunities for farmers,"

This fits neatly into existing farming cycles. "The planting window of rice would also assist multiple production of other crops within the farmer's production cycle per annum."

He underscores that the project was national importance. "Rice production would largely contribute to food security considering the growing demand for rice in South Africa."

Though interest is high, Baloyi stresses that government backing remains vital. "There is positive and substantial participation however, more attention and participation is still required from various spheres of government."

He said on its horizon is national rollout, which also depends on resources: "The project will be expanded nationally across all provinces; however, there are still more funds required, and support required from other government departments. There is an established rice task team which involves other industry stakeholders, universities, government departments, and other international partners involved."

Speaking to young scientists and agriculturists, Baloyi encouraged youngsters to be innovative. "They need to keep on looking for innovative ways to contribute to the agricultural global needs through applying plant breeding techniques. There are endless opportunities that could be created through plant breeding."

For the ARC, the upland rice project is beyond merely cropping science but it's about creating jobs, strengthening farmers against future challenges, and building real resilience in communities facing climate extremes. It's a practical, impactful step toward a food-secure South Africa.