



## Drought and heat tolerant crops show resilience

A research team from the Faculty of Health and Applied Sciences (FHAS) has reached a major milestone in a study under the auspices of the “Evolution of Stress Tolerant Orphan Legumes for use in Dry Land Farming Systems Across Sub-Sahara Africa and India” (STOL). The research falls within the Promoting India-Africa Framework for Strategic Cooperation programme, funded by the Kirkhouse Trust SCIO.

The team conducted research and tests on horsegram, moth bean, dolichos, marama bean, mung bean and cowpea for their heat and drought tolerance qualities and nutritional value which showed great results. During a recent visit to the Bagani Research Station in the Kavango East Region, Prof Percy Chimwamurombe from FHAS, said that the field conditions were promising with a germination rate of 80-90% for all crops at the station, with the exception of the moth bean.

“The moth bean may have strict soil and other environmental requirements for it to germinate, of which only a few accessions underwent this process. This is the second year we observed this trend. Going forward we will not use the accessions which failed to germinate during the trial,” he explained. The project officially took flight in 2019 with the aim to multiply approximately 50 accessions of each of the crops before providing them to trail sites throughout hot and dry regions within Africa and India. The

trials will then determine which crops have the potential to combat the effects of climate change since they are drought tolerant.

“The reality of climate leading to drought and extreme heat conditions are no longer a debatable matter, but an issue that needs to be addressed with strategic coping mechanisms, such as developing resilient crops,” Prof Chimwamurombe elaborated.

In addition, research will be able to conclude which crops are fit for human consumption, animal feed and have the ability to stabilise land against degradation.

“The crops hold the capacity to enhance soil fertility, meaning farmers will be advised to abstain from using chemical fertilisers that are environmentally unfriendly, and other chemical agents that might aid in soil degradation in the long term,” he added.

All the STOL crops have a long history of safe use for both human consumption and animal feed. Some of them, such as the mung bean, are already being imported and sold in local supermarkets.



Dolichos plot at the Bagani Research Station, Kavango East Region.



NUST is proud to host the three refugee students until they have completed their studies.

### Giving refugees access to education

NUST is currently housing three refugee students from the Democratic Republic of Congo and Burundi through the Albert Einstein German Academic Refugee Initiative (DAFI) scholarship programme. It is implemented via the Society for Family Health (SFH) organisation and the United Nations High Commissioner for Refugees. The SFH is a registered trust operating in Namibia since 1997 as a non-governmental organisation.

The initiative affords refugee students the opportunity to pursue an undergraduate degree in their country of asylum. “The students are currently studying Bachelor of Computer Science in Cyber Security, Bachelor of Engineering in Chemical Engineering and a Bachelor of Technology in Power Engineering programmes,” Sondaha Sakeus, the Education officer at SFH said.

To date, the programme has supported nine students in total, of which the other six are currently studying at the University of Namibia. The DAFI scholarships are provided largely in developing countries with a significant refugee population such as in Africa and Asia. The programme aims to support deserving refugee students to achieve self-reliance by providing them

with a qualification to enhance their employability. Students who successfully qualify for the scholarships receive tuition fees, study material, food, transportation, accommodation and other allowances. DAFI students also receive additional support through close monitoring, academic preparatory and language classes based on their needs, as well as mentoring and networking opportunities. “The DAFI scholarships are only awarded for a maximum of four years of studying at Bachelors or equivalent degree levels,” Sakeus explained. In addition, she encouraged current scholarship holders to network in order to identify potential future scholarship providers if they wish to further their studies.

### Community led upgrading for the disadvantaged

Through the Faculty of Natural Resources and Spatial Sciences’ department of Architecture and Spatial Planning, NUST implemented the “Community-Led Upgrading of Informal Settlements” project in April 2018, in collaboration with the University of Zambia.

The research team explored the process of community-led improvements through the communities’ perspective, needs, views and stakeholders such as local and regional authorities. The two main research sites were Dordabis and Groot Aub.

“The research team, together with the communities, used methods and tools developed for them to supply the communities with a meaningful voice to instigate sustainable upgrading projects,” Dr Madelein Stoffberg, Senior Lecturer in the department of Architecture and Spatial Planning said.

At an exhibition held on 30 March 2021, at NUST’s Architectural Building, various artwork from community members, adults and children alike, were displayed. Their artwork depicted a community in need of proper sewerage systems, hospitals, schools and other basic human necessities.

“The only way they would have received a working sewerage system, was if they began digging the trenches for the pipes themselves,” Dr Stoffberg explained.

After much deliberation with community members, they finally decided to begin the



A spectator viewing artwork at the exhibition at the Architectural Building, NUST.

process. “It did not take long for the local municipality to step in and finish the process,” Dr Stoffberg elaborated.

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Science Council in partnership with the Network of Science in Africa, with support from the Swedish International Development Cooperation Agency.