



Delft University of Technology

The value of science diplomacy

African PhD students benefit from academic collaboration between Africa and the Netherlands

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The value of science diplomacy:

African PhD students benefit from academic collaboration between Africa and the Netherlands



*The HSRC, in collaboration with several African academic institutions, social partners and Dutch universities, is fostering scientific collaboration between Africa and the Netherlands. This partnership is enhancing research opportunities for African PhD students, including three from South Africa, who have been selected to conduct research in the Netherlands. They are part of the Graduate Research on Worldwide Challenges (GROW) Programme, which focuses on finding solutions to pressing United Nations sustainable development goals (SDGs). By **Thokozani Simelane, Emmanuel Ojo, Thulisile Mphambukeli, Roel Kamerling and Lia van Wesenbeeck***

Scientific collaborations between the Netherlands and African nations have evolved. Initially, these collaborations were largely driven by development aid from the Netherlands to support scientific capacity in Africa. Today, they are increasingly based on shared goals, aiming for balanced collaborations and mutual benefits.

Several factors have influenced this shift, such as the growing recognition of scientific expertise in African countries and the need for global cooperation in addressing shared challenges. The Netherlands, in turn, is committed to advancing science diplomacy in international collaboration in science and technology

The GROW Programme

Six Dutch universities have partnered with 22 African academic institutions and 17 social partners to enhance scientific collaboration.

In South Africa, the HSRC and the Universities of the Witwatersrand, Johannesburg and the Western Cape participate in this doctoral research initiative.

The Graduate Research on Worldwide Challenges (GROW) Programme, co-funded by the Marie Skłodowska-Curie project from the European Union, promotes interdisciplinary, international and intersectoral research. It engages academia, industries, governments and civil society to address global developmental challenges. In 2024, 51 African PhD students were selected to conduct research in the Netherlands, developing and testing solutions to accelerate Africa's progress towards achieving the UN sustainable development goals (SDGs). Three students are from South Africa: Tshimangadzo Greenberg, Nycholas Oliveira and Mukhethwa Netshiombo.



"Doing a PhD has always been one of my 'Big Hairy Audacious Goals', and being selected for the prestigious GROW fellowship at a world-leading university is a significant milestone," says Greenberg, who is at the Delft University of Technology's Centre for Entrepreneurship exploring the use of gamification to stimulate entrepreneurship.

"I am excited to undertake impact-driven, multidisciplinary work that goes beyond research by developing solutions for South Africa's youth. With soaring youth unemployment rates and a stagnating economy, entrepreneurship could be a powerful tool to counteract these challenges. However, while business-related subjects at high school aim to develop entrepreneurial skills, they remain largely theoretical, failing to equip students with practical knowledge. My research seeks to address this gap by exploring how AI-powered serious games can make entrepreneurship education more interactive, personalised and accessible to learners at all knowledge levels."



Oliveira's work at Vrije Universiteit Amsterdam focuses on the topic, "On Earth as in Heaven? Christian Prefigurative Politics and a Preferred African Future". "I felt incredibly privileged to be given this opportunity; the selection process was very competitive. My research will be at the intersection of religiosity and sustainable development, the mutual influence of each on the other, and with reference to prefigurative politics as a heuristic for imagining how Christianity in Africa should navigate the relationship between religion and development."

Oliveira is eager to expand his knowledge, develop a thoughtful perspective in his field and build a strong collaborative network across a variety of disciplines and sectors around the world.



Netshiombo, the third student from South Africa, is based at Amsterdam University Medical Center and is focusing on work related to environmental sustainability in the South African healthcare sector. Beyond South Africa, other African students are addressing critical challenges. Sally Odunga from Kenya is investigating how climate change-induced environmental shifts have disrupted the distribution of fish stocks, household food consumption, nutrition, income levels and the overall health of household members. Also see testimonies from other African students below.

Testimonies from African students

Temitope Agbana from Nigeria: "I came to Delft University of Technology (TU) to study microwave systems and radar signals. I started part-time work at Delft Centre for Systems and Controls where I combined artificial intelligence and optimised optical systems to detect malaria and other neglected tropical diseases as my PhD research. I collaborated with partners in industrial design and the nearby Leiden University Medical Centre to develop several diagnostic instruments. Now I run my own company, AID-x Medical, with people employed in the Netherlands and Nigeria to bring these to the market."

Victoria Many from Nigeria: "As a PhD researcher, I joined the African Studies Centre, Leiden (ASCL) to acquire skills that integrate research and development into startup ecosystems in Africa. I am building a community of practice to incorporate my findings into decision-making tools that help actors comprehend Africa's ecosystem contexts. With this PhD, I aim to prepare myself to run a university-based incubator with direct linkages to the innovation ecosystem in Africa."

Anteneh Tesfaye Tola from Ethiopia: "As an academic and architect at Addis Ababa University (AAU), I already collaborated with TU Delft before I decided to do a PhD project there. Together with AAU, we are now developing new housing concepts in collaboration with private and public actors from Addis Ababa. After my PhD, I aim to share my new insights as a teacher, practitioner and researcher in Addis Ababa again."

The power of science diplomacy

Science diplomacy promises to strengthen both diplomatic and scientific relations while enhancing skills, fostering knowledge exchange and promoting sustainable solutions. This approach recognises the interconnectedness of various sectors in addressing global challenges. Within the framework of the UN SDGs, GROW has identified the following core areas for research collaboration, demonstrating the potential of science diplomacy in driving international scientific partnerships:

Agricultural research and food security: Africa and the Netherlands rely significantly on their agricultural sectors. Cooperative research projects in GROW aim to improve food security, sustainability and agricultural productivity in both regions.

Health and biomedical research: Collaborative health-related research focuses on non-communicable diseases, maternal and child health, and infectious diseases.

Environmental and climate research: With Africa's high susceptibility to the effects of climate change, GROW emphasises water management, renewable energy and climate adaptation as the main topics of collaborative research. With its knowledge of water management, partner universities in the Netherlands seek to co-create creative answers to water-related problems.

Education and capacity building: The first GROW PhD recruitment call selected 51 junior African researchers, equipping them with advanced training and a platform for knowledge exchange and enabling them to contribute to research and development in their home countries.

Science diplomacy: advantages and overcoming challenges

One of the main advantages of science diplomacy is the sharing of information and technology. The African scholars bring a unique understanding of the context into the collaborative projects and can play a pivotal leadership role by translating new understandings or solutions to the same context throughout Africa and beyond. GROW emphasises skills development in, for example, entrepreneurship and policy adoption. Advanced technologies and procedures are brought to African research initiatives of universities in the Netherlands, which promotes innovation and enhances research outcomes. Working together helps Africa and the Netherlands to address global issues more successfully. Through long-term partnerships, Africa and the Netherlands can create more solutions to shared wicked problems that plague the world irrespective of being in the global north or global south.

Despite its successes, scientific cooperation between Africa and the Netherlands faces obstacles such as the need for inclusive, equal and sustained partnerships, logistical challenges and sustainable funding constraints. Investing more in research and developing actionable solutions is crucial. Long-term funding is essential for the success and continuation of collaborations. To ensure active involvement and equal benefits for African institutions, partnerships must be built on mutual respect and understanding of cultural and contextual differences. Recognising and leveraging Africa's robust indigenous knowledge systems is vital for co-creating solutions to global

challenges. Enhancing training programmes, equipment and laboratories will enable African researchers to conduct state-of-the-art research. Sustainable cooperation requires long-term alliances based on trust and common goals, making it essential to build strong networks and promote continuous engagement with African partners.

The success of the GROW initiative would not have been possible without the support of the Dutch Embassies, which have facilitated academic mobility and active participation in the GROW programme through favourable visa arrangements. The experiences and testimonies shared by previous beneficiaries of Dutch–Africa collaboration underscore the importance of this academic exchange for the success of international partnerships between Africa and the Netherlands.

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Delegates at the GROW event, 2024.
Photo: Robert Kroonen and GROW

