OnePlanet FELLOWSHIP

Building a robust pipeline of scientists leading climate change research in Africa

Candidate Profile

Msigwa Anna Haji

2020 One Planet Laureate Candidate

Position

Assistant Lecturer

Institution

Nelson Mandela African Institution of Science and Technology, Tanzania

Country

Tanzania

Education

PhD, Sustainable water resource managment, Vrije Universiteit, Brussels, Belgium

Mentor

Dr. Kelvin Mark Mutei, Senior Lecturer, The Nelson Mandela African Institution of Science and Technology, Tanzania

Area of research

Improving livelihoods through integrated management of land, water, and sanitation in the upper Pangani catchment Tanzania.

Born in a small town in the Mbeya Region of Tanzania, Msigwa Anna Haji was passionate about attending school and almost always led in her class. Her memory is vivid about the disappointment when she performed poorly at a new school due to lacking proper English language skills. She took the failure as a source of motivation to study hard, recognizing that her background does not have to define her future.

Msigwa had hoped to study telecommunication engineering in college but did not qualify for it. While taking remedial courses to get into the program, she learned of the environmental engineering program offered at Ardhi University.

She instantaneously knew that was the field she wanted to venture into, specifically water engineering. After her undergraduate degree, she proceeded for a master's degree at the Nelson Mandela African Institution of Science and Technology in Tanzania, focusing on water resources and covering water management, wastewater, and hydrology. For her Ph.D., she is studying the management of water resources and hydrology.

Msigwa's research work assesses agricultural water use in the Kikuletwa catchment within the Pangani basin in Tanzania. Streams and rivers from Mount Kilimanjaro feed the basin, and about 80% of its population depends on this water for food production.

It is predicted that by 2050 there will be a 71% deficit in water for agriculture due to climate change. The implications of that on food production, especially for smallholder farmers, are dire. Anna's research will help farmers produce more food using less water.

She advises and trains farmers in the Kikuletwa catchment on the best irrigation methods to address water management. They are primarily using flood irrigation where a lot of water is lost. Some agricultural practices proposed to cope with climate change will be tested, and the knowledge will be transferred to smallholder farmers.

As part of her research innovation, Anna has developed the idea of incorporating seasonal land-use dynamics in water use models, and she is extremely excited about it, saying:

"I am studying how much water we use in agriculture. If its use is efficient and if its loss is beneficial. My approach is unique because it looks at land and water use seasonally, unlike other studies."

Among the joys of Msigwa's work are regular interactions with farmers in the villages. They entrust her with the responsibility of finding solutions to their problems. She needs farmers' involvement for her work to be valid.

She collects samples for analysis from their fields and interviews them on their water management practices, among other aspects. Some Ph.D. student colleagues are already using Msigwa's strategy at the Vrije University of Brussels in Belgium.

Msigwa envisions owning a farming enterprise producing fresh food and working with farmers and other scientists to tackle farm pests and diseases and climate change adaptation.

The One Planet Fellowship will help her draw a career road map. Being part of the Fellowship has built her confidence and validated the importance of her work. The skills development opportunities will help improve her research and grant writing. She will apply her new mentoring skills and advanced scientific knowledge in her teaching and student supervision.

Msigwa's research work assesses agricultural water use in the Kikuletwa catchment within the Pangani basin in Tanzania and advises and trains the farmers on the best irrigation methods to address water management.

Msigwa Anna Haji is one of the growing number of candidates selected to participate in the One Planet Fellowship. The One Planet Fellowship is a career development initiative that is building a robust pipeline of highly connected, inter-generational scientists equipped to use a gender lens to help Africa's smallholder farmers cope with climate change. The One Planet Fellowship is funded by the Bill &Melinda Gates Foundation, the BNP Paribas Foundation, the European Union and Canada's International Development Research Centre (IDRC). African Women in Agricultural Research and Development (AWARD) and Agropolis Fondation are jointly implementing the Fellowship.