OnePlanet FELLOWSHIP

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

Candidate Profile

Binangwa Papias Hongera

2020 One Planet Laureate Candidate

Position

Researcher

Institution

Tanzania Agricultural Research Institute (TARI)

Country

Tanzania

Education

PhD, Integrative Biosciences, Tuskegee University, Alabama, USA

Mentor

Dr. Frank Eli Mbando, Prinicipal Agricultural Research Officer, Tanzania Agricultural Research Institute (TARI), Tanzania

Research Area

Development of legume crop varieties that are well adapted to drought and heat stresses as one of the solutions to mitigating climate change in Tanzania.

Binagwa Papias Hongera grew up in western Tanzania and studied in local schools for his primary and secondary school levels. He had a dream of becoming a recognizable person in his community like some he admired growing up. Today, he is well on his way to achieving that recognition. In 2017, he pioneered the release of seven common bean varieties.

It was a tough life growing up in his home village. He started school at the age of 10 because he was required to help look after livestock and fetch water. On joining secondary school, he had to do small-scale retailing to support himself. Still, he eventually had to stop that to focus on studying after realizing the importance of education.

Growing up, Binagwa saw his family and neighbors often go to bed without food. Low crop yields were typical for his parents and communities, selling whole harvests without consuming much between cropping seasons.

The mixing of crops resulted in their low yield, especially for beans, where planting different varieties affected their pricing after harvest. This experience from his childhood days informed some of his current work.

While studying for his first degree at the Sokoine University of Agriculture, he spent a lot of time studying newspapers and job advertisements to understand what employers were looking for in academic achievement. That fueled his desire to graduate with an almost perfect GPA. His excellent performance earned him a master's degree scholarship from the United States Agency for International Development (USAID) to study legume crops at Tuskegee University in Alabama. He works as an Agricultural Research Officer at the Tanzania Agricultural Institute while still pursuing his Ph.D. at Tuskegee University.

Science was not Binagwa's preferred initial career choice. He studied agriculture at the Sokoine University of Agriculture because that guaranteed a government scholarship, which was part of the country's efforts to prioritize agriculture.

But once he enrolled, he realized he could make a change that would solve many of the problems facing. It was also an opportunity for entrepreneurship which he took up to found the agriculture-based Ngara Multibusiness Company Limited as the managing director.

In his research, Binagwa explores various aspects of common beans, such as diseases, nutritional value, and cooking time. The crop is commonly grown in Tanzania and has a significant impact on the country's economy as Tanzania is ranked as the sixth-largest producer globally.

Moreover, he is working with the African Union-funded project on mung beans to develop crop varieties adapted to drought, and heat stresses to mitigate climate change in Tanzania. Since legume crop varieties are used as cover crops, Binagwa is also looking at their root architecture for water use efficiency. This is a suitable attribute in developing varieties that can withstand drought.

To validate his research's utility, Binagwa is working with farmers to select legume varieties for research and identify the characteristics to breed. Farmers are involved in the on-farm trials and are the ultimate beneficiaries upon release of the bean types. It excites Hongera to know that the common bean and mung bean have high iron and zinc concentrations and can be used in infant and youth nutrition to address anemia and can be grown and consumed by smallholders as an alternate protein source.

Binagwa sees his future in social entrepreneurship by commercializing his research skills and the products from his work. He wants to partner with farmers, supply them with advice on cropping, and find fair market prices for their crops. Binagwa is already working with 16 farmers in his home village to produce a short-duration common bean variety named Selian 13.

He is keen to have the commercial value of beans validated in the future. "People are making money from what we are developing! Our varieties are in the hands of communities. That is an indication that we are changing lives".

Binagwa is confident that the One Planet Fellowship's professional and personal skills, including scientific and grant writing, are needed to advance research in academia, share ideas, and seek research funding.

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He believes that mentoring will help students and younger colleagues create a talent pipeline to continue their work. The networking opportunities through the Fellowship will connect him with experts and researchers in his field and expose him to the latest developments in his area of work.

Resource problems, especially funding and lack of modern equipment such as molecular laboratories, encumber Binangwa's work. Collaboration with other researchers to seek funding and approach the government to fill the gaps are his strategies to tackle this shortfall. Infrastructural challenges like the lack of irrigation systems expose his research to the vagrancies of weather, prolonging the development of some varieties.

Binangwa Papias Hongera 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.