



Feed the Future Country Fact Sheet

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With an Eye on the Weather, Researcher Helps Farmers Prepare for the Future



iAGRI

Devotha Mwazembe, right, joined by her supervisor Dr. Ramble O. Ankumah of Tuskegee University and Senior Lecturer Lucy Mlipano Chove of Tanzania's Sokoine University of Agriculture.

In 2016, American farmers from California to South Dakota to New England suffered the consequences of drought and reduced agricultural production. But it's not just in the United States that farmers are facing increasing weather volatility - in Tanzania and many other parts of Sub-Saharan Africa, increasing temperatures, erratic rainfall, and reduced soil fertility are just a few of the forces threatening food production and livelihoods.

Devotha Joseph Mwazembe of Tanzania understands the interconnectedness of our weather and food systems firsthand. Raised in Tanzania's Mbeya region, where maize and beans are the principal crops grown for both home consumption and income generation, she witnessed early on how unpredictable weather conditions could have an impact on smallholder farmers.

That's why she was eager to take advantage of an opportunity through Feed the Future to pursue a master's degree in agronomy at Tuskegee University's prestigious Department of Agriculture and Environmental Sciences. Feed the Future's [Innovative Agricultural Research Initiative](#) is a USAID-funded partnership between Tanzania's Sokoine University of Agriculture, the Government of Tanzania, Ohio State University, and other American universities and international research institutions to train the next generation of agricultural scientists and leaders.

Mwazembe's research focused on using forecasting to model the long-term impact of weather patterns on maize production in Tanzania's Kiteto maize belt. Her findings provide projections of maize production up to the end of the 21st century, providing data that could help farmers and food producers manage risks in the decades ahead and build their resilience to drought and other weather shocks. She is hopeful this data will encourage policymakers and other leaders in the agriculture sector to be proactive in helping farmers overcome the effects of crop losses.

Mwazembe developed her research topic with support from Filbert Rwehumbiza of Sokoine University and Ramble Ankumah, a professor of environmental science and assistant dean of Tuskegee's College of Agriculture, Environment, and Nutrition Sciences. She knows weather management strategies will be key to meeting the world's growing food needs and wanted to contribute to the evidence base that can empower governments and institutions to respond effectively.

"I have gained skills in crop modeling, which is not so common in Tanzania. I have also obtained Geographical Information System and computer programming skills, which can be applied to address challenges in crop and environmental management," Mwazembe said.

This kind of crop modeling is critical to support farmers around the world. In Alabama, home to Mwazembe's alma mater of Tuskegee University, 32 of the state's 67 counties were designated primary natural disaster areas by the U.S. Department of Agriculture in 2016 due to one of the worst droughts in decades; corn, soybean, and cattle farmers there have suffered major crop failures and grazing losses. Good forecasting is essential across many countries to help farmers become more resilient. Mwazembe is confident that the skills she acquired and the research she completed with Feed the Future's support will help her be part of the solution.

The Innovative Agricultural Research Initiative, or iAGRI, is sponsoring more than 130 research projects related to food security. As of 2017, iAGRI will have sponsored 20 doctoral and 115 master's students from Tanzania to pursue higher education related to agriculture and nutrition.