AWARD
African Women in Agricultural Research and Development

Profile

2013 AWARD Fellow
Sibusisiwe Caroline Kamanga

Position	Program Manager
Institution	Civil Society Agriculture Network (CISANET), Malawi
Country	Malawi
MSc	Sustainable Soil Resource Management University of Nairobi, 2013
Mentor	Austin Ngwira, Director of Agriculture Clinton Hunter Development Initiative

Research area: Effects of fertilizer application on soil properties, striga density, and maize yield.

Sibusisiwe Caroline Kamanga graduated as one of the top students in her undergraduate forestry class at Mzuzu University in Malawi, where she cultivated her enthusiasm for environmental science and its potential to improve people's lives. "I became really interested when we did social forestry, working with communities that are situated at the edge of the forest," she says. During her studies, Kamanga was chosen to attend a six-month class on European forestry at Kymenlaakson Ammattikorkeakoulu, University of Applied Sciences in Finland. Her visit to the Arctic inspired her to further pursue agroforestry, particularly the use of trees as fertilizer for farmers who cannot afford commercial products.

After graduation, Kamanga worked with the NGO Environment Africa, teaching smallholder farmers to grow drought-resistant crops and herbs, such as coriander, mint, and rosemary, to be used for condiments and home remedies. "I particularly liked our 'pass on' project, where we provided farmers with plants, such as sweet potato vines," she explains. "After the harvest, each farmer would pass on vines to two other farmers." The pass on project also distributed improved varieties of cassava and sorghum, as well as goats and chickens.

In 2011, Kamanga won a soil health fellowship from the Alliance for a Green Revolution in Africa, which enabled her to complete an MSc in Sustainable Soil Resource Management at the University of Nairobi. "My boss said an MSc in soil science would be valuable for the organization and encouraged me to apply. After all, the basis of everything is soil," she notes.

Kamanga was awarded a one-year fellowship in 2012 under the Norman E. Borlaug Leadership Enhancement in Agriculture Program, which included a two-month attachment at the University of California, Davis. This opened her eyes and encouraged her to focus her attention on analyzing the effect of fertilizer on soil properties—and its importance on yield quickly became apparent to her. As a student researcher with the International Center for Tropical Agriculture (CIAT), she has been conducting research with its tropical soil biology and fertility program in a broader project that aims to assess the occurrence of soil

fertility gradients (SFGs). Establishing how steep these SFGs are, which factors and processes affect their steepness, and ascertaining how they affect *Striga hermonthica* (a devastating weed) density in farmers' fields will allow Kamanga to develop possible adaptation mechanisms for smallholders for both the SFG and the striga weed.

"In particular, I am investigating why blanket fertilizer recommendations have failed to improve the livelihoods of smallholder farmers as crop yields continue to dwindle," says Kamanga. "Most of them, especially women, are resource poor and cannot afford the expensive mineral fertilizers. We need to make specific fertilizer recommendations according to site requirements." The study also addresses an integrated approach to soil fertility management, considering the combined use of both chemical and organic fertilizers. Soil fertility depletion results in a high striga occurrence, which greatly affects maize yields.

Kamanga plans to gain more experience in hands-on work with farmers before embarking on her doctoral research. She derives great satisfaction from learning from smallholders who might not know all the science behind soil fertility, but have substantial practical knowledge and experience. "I prefer to go out and find out what the problem is rather than telling farmers 'This is what you need to know,'" she says. "You expect to see what is in the book, but on the ground it really looks different. You may discover that the cows have trampled the crop!"

Kamanga appreciates the expanded professional networks that she has gained through AWARD, having met other fellowship laureates from across the continent who are also working on soil fertility issues. "This networking will boost my career, and being an AWARD Fellow will help build my credibility. It will be easier for me to connect and influence policies," she says.

Kamanga is one of a growing number of African women agricultural scientists who have won an AWARD Fellowship. AWARD is a career-development program that equips top women agricultural scientists across sub-Saharan Africa to accelerate agricultural gains by strengthening their research and leadership skills through tailored fellowships. AWARD is a catalyst for innovations with high potential to contribute to the prosperity and well-being of African smallholder farmers, most of whom are women.

AWARD is generously supported by the Bill & Melinda Gates Foundation, the United States Agency for International Development, the Alliance for a Green Revolution in Africa, and Agropolis Fondation. For more information, visit www.awardfellowships.org