



2013 AWARD Fellow
Margarida Graciete Simbine

Position	Project Manager
Institution	Care International, Mozambique
Country	Mozambique
MSc	Sustainable Soil Resource Management University of Nairobi, 2012
Mentor	Professor Luisa Santos Professor, Eduardo Mondlane University

Research area: Integrated soil fertility management

Margarida Simbine is the second of four children born to parents who were both involved in farming in Mozambique. Growing up in this environment sparked her interest in pursuing a career in agricultural science, especially since she saw farming methods in her country that she felt need to be changed. “In Mozambique, some farmers don’t even plant in rows, and the country is one of the lowest users of fertilizer on the continent,” she says. “The reality is that there has been very little investment in agriculture here.”

Simbine earned a BSc in Agriculture from the Catholic University of Mozambique in 2008, and immediately joined CARE International working with small-scale farmers to promote conservation agricultural practices. More recently, she won a fellowship from the Alliance for a Green Revolution in Africa (AGRA), which enabled her to complete an MSc in Sustainable Soil Resource Management at the University of Nairobi. “When I heard about this opportunity, I jumped at it,” she smiles. “Working on my master’s benefited me in many ways, including improving my English skills—in fact, I wrote my thesis in English.” As the first in her family to get a master’s degree, Simbine says her parents are very proud of her.

Simbine believes that solving the problem of low soil fertility will go a long way toward alleviating poverty. “In most sub-Saharan African countries, the majority of the workforce is engaged in agriculture,” she says. “Addressing the root causes of poverty necessarily means making agriculture more productive.” There are various reasons for low productivity, but low soil fertility is one of the key causes. “Improved soil fertility could be the foundation for doubling or tripling crop yields,” Simbine asserts. “Smallholder farmers generally have limited access to modern agricultural production technologies, instead relying on traditional knowledge that typically has very limited potential for yield increases. Given the constraints to agricultural development, research that addresses soil fertility problems should be a priority.”

Her master’s work concentrated on nitrogen fixation in western Kenya. Nitrogen is the most limiting factor regarding optimal soil fertility in most African soils. Fixing inert atmospheric nitrogen into an available form that can be used by crops through a process known as biological nitrogen fixation (BNF) makes planting legumes an excellent and relatively low-cost method of replacing nitrogen in the soil, enhancing

soil fertility, and boosting subsequent crop yields, explains Simbine.

“The legumes we are promoting include soybean, cowpea, and ground nuts—and they can fix high amounts of nitrogen,” she says. “They also provide proteins, minerals, fiber, and vitamins not only for humans, but also for livestock. They are relatively cheap compared to animal products and farmers can sell the grains.”

Farmers usually intercrop maize with legumes because they recognize their importance in replenishing and maintaining soil fertility, Simbine continues. “Mineral fertilizers are often recognized as the most effective way to improve soil fertility and productivity of the farms. However, they are not commonly used by small-scale farmers, and when they are, it is usual at sub-optimal levels because they are expensive and often unavailable.”

Simbine says integrated soil fertility management is one of the best approaches to improve soil fertility and sustain yields over the long term. “Research should be impact-oriented and involve the participation of farmers in all phases of development and implementation,” she says. “Through their involvement, farmers will be able to prioritize problems to be investigated and select the best technology to address the problems.” She acknowledges, however, that addressing problems with improved soil fertility alone is not the full solution to agricultural development. “These efforts must be combined with breeding of disease-resistant, high-yield crop varieties that are drought-tolerant to minimize the impacts of climate change,” she asserts. “Also, linking farmers to markets to sell their excess production will lead to improved incomes and livelihoods for smallholder farmers.”

As an AWARD Fellow, Simbine plans to invest time and effort in networking and increasing her visibility. “If you want to grow in science, you need to connect,” she declares. She looks forward to improving her science writing and communication skills, and competing for the opportunity to do AWARD-sponsored advanced science training at a state-of-the-art research organization. “I hope to learn more about conducting research that will have an impact on people’s lives,” she says. “Out of this research, I want to publish, and eventually begin a PhD program.”

Simbine admits that not speaking English as a first language has been a challenge. But she was encouraged during her master’s program by her fellow students. “I was even appointed as class representative, telling me they see a bright future for me,” she says.

Simbine very much enjoys working with small-scale farmers. “When their livelihoods improve as a result of adopting my research and work, it makes me very happy,” she concludes.

Simbine 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