AWARD
African Women in Agricultural Research and Development

Profile

2011 AWARD Fellow

Olive Tuyishime

Position	Tutorial assistant
Institution	Higher Learning Institute of Agriculture and Animal Husbandry
Country	Rwanda
BSc	Crop production and horticulture National University of Rwanda (NUR), 2010
Mentor	Professor Peter Sallah, Vice-dean, Undergraduate studies Faculty of Agriculture, NUR

Research area: Evaluating the fertilizer value of bio-slurry as an organic fertilizer and its effect on soil properties and crop productivity in general.

Olive Tuyishime grew up watching her parents work hard on their small farm in Butare, southern Rwanda, without seeing the full fruit of their labor. "We planted potatoes, cassava, bananas, and coffee, but we didn't get the best results, probably because we didn't use high-yield varieties or enough fertilizer—either inorganic or organic material—and we didn't have enough knowledge about good agricultural practices," she reflects. Because she was fascinated by agriculture, and particularly soil fertility, she decided to pursue a bachelor's degree in crop production and horticulture.

In university, Tuyishime learned about improved cropping systems, new variety development, storage management, and how to integrate all of these aspects. In 2010, she won a scholarship from the Alliance for a Green Revolution in Africa to do a master's in integrated soil fertility management at Kenyatta University in Nairobi, Kenya. Having completed her course work, she is now collecting her research at home in Rwanda.

Farmers in densely populated Rwanda are faced with decreasing soil fertility caused by the exploitation of small plots that are not given time to lay fallow. "Through my research, I want to contribute to the replenishment of soil fertility in collaboration with farmers, helping them to improve their produce by incorporating what is available to them rather than depending on expensive, harmful commercial fertilizer," says Tuyishime.

Tuyishime says the Rwandan government is very engaged in the promotion of biogas. "Domestic biogas plants convert animal dung and human excreta at the household level into small but precious amounts of combustible gas, known as biogas," she explains. "The residue of the process, known as bio-slurry, can be easily collected and used as a potent organic fertilizer to enhance agricultural productivity, or as food for fish in ponds. Bio-slurry organic fertilizer is environmentally friendly, has no toxic or harmful effects, and can easily reduce the use of chemical fertilizers. I am analyzing the bio-slurry in the laboratory to evaluate its nutrient content, then apply it on maize crops, and compare it with inorganic fertilizers."

Tuyishime aspires to see small-scale farmers improve their lives by shifting from subsistence agriculture to market-oriented agriculture. "In Asia, bio-slurry produced from cow dung has been very effective in providing

nutrients that crops can use," she notes. "However, we need more scientific research and on-farm trials to know how much bio-slurry to apply to what crops. We need a progressive approach that combines both inorganic and organic fertilizers."

Tuyishime wants to further develop her scientific skills and looks forward to learning from her AWARD Mentor, a senior scientist. "I also want to grow as a leader and build my network by joining a professional association," she concludes. Eventually, she hopes to obtain her PhD and become a junior researcher and/or an independent scientific researcher in soil fertility management.

Tuyishime is one of a growing number of African women agricultural scientists who have won an AWARD Fellowship. AWARD is a professional development program that strengthens the research and leadership skills of African women in agricultural science, empowering them to contribute more effectively to poverty alleviation and food security in sub-Saharan Africa. AWARD is generously supported by the Bill & Melinda Gates Foundation and the United States Agency for International Development. For more information, visit www.awardfellowships.org