



2013 AWARD Fellow
Maggie Golie Munthali

Position	Forestry Officer
Institution	Ministry of Environment and Climate Change Management
Country	Malawi
MSc	Sustainable Soil Resource Management University of Nairobi, 2013
Mentor	Dr. Sileshi Gudeta Regional Coordinator, World Agroforestry Centre

Research area: Use of integrated soil-fertility management to assess the interactions between *Tephrosia fallow* biomass and inorganic fertilizers on soil properties and maize yield.

Maggie Munthali hopes the results of her research on fertilizer trees in Malawi will help to reduce soil fertility depletion and the impact of climate change, thereby ultimately improving the production of maize—the staple food in her country.

The only university graduate in her extended family, Munthali’s current research involves promoting the use of *Tephrosia vogelii* and *Tephrosia candida* trees that are effective in rehabilitating degraded soils. “I am focusing on disseminating integrated soil fertility management technologies to local farmers—most of whom are women—so they can improve their maize production while reducing the problem of soil degradation,” she says. Known as “fertilizer trees” because they fix nitrogen and supply phosphorous and potassium into the soil, *Tephrosia* trees are also used for poles, firewood, vegetable garden hedges, and as an insecticide.

Munthali is also encouraging farmers to use residues from tree and shrub clippings—or “green manure” as it is known—as a source of nitrogen in addition to inorganic fertilizers. “Although using fertilizer is one way to address the problem of soil fertility, the detrimental long-term effects, coupled with the high cost of commercial products, means it is not the best choice for Malawian smallholders,” Munthali says. “My research involves assessing the interactions between *Tephrosia fallow* biomass and inorganic fertilizers on soil chemical properties and the maize yield in Malawi,” she explains. “*Tephrosia*, like any other tree species, will contribute to carbon sequestration through photosynthesis, which reduces atmospheric carbon emissions.”

Munthali is also researching the overexploitation of forests in Malawi and the resulting environmental degradation. Wood-based energy consumption is estimated to account for about 90 percent of total energy consumed in rural and urban areas. “Traditionally, women are responsible for collecting firewood for their homes,” she continues. “As forests around communities are exploited, women and girls are forced to walk very long distances to get firewood, leaving them with less time for more productive activities.”

Munthali advocates planting *Tephrosia* species as a hedge or boundary around fields and homesteads, and undersowing it with maize to save women farmers time and conserve the environment.

Munthali recently 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. She hopes to pursue a PhD in the near future, with a view to becoming a soil scientist and research expert in the Ministry of Agriculture.

Munthali expects her time as an AWARD Fellow to be a rich experience. “Look at all that we are offered,” she enthuses, referring to the courses that AWARD provides in leadership, science and proposal writing, and communications skills. “This will help me improve my science skills and allow me to interact with fellow agricultural scientists from different countries and backgrounds. These networking opportunities will increase my visibility, and the knowledge and skills I gain will benefit my country.”

Munthali 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