



2013 AWARD Fellow
Phyllis Muturi

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Boosting the climate-readiness and high yield aspects of sorghum in Kenya

Her dream is to become an authority on sorghum breeding in sub-Saharan Africa, because sorghum can provide enhanced food and income security in our region. Raised on a small farm in a family of seven, Muturi witnessed pests and diseases destroy their crops and those of other farmers living in drylands, which led to hunger and malnutrition. "I want to change this! Before participating in the AWARD Fellowship I would have considered my ambition unattainable. Not so now. The AWARD Fellowship has exposed me to a world of infinite possibilities, access to world class science, and state-of-the-art facilities," she explains.

Her dream made her pursue crop sciences at university and end up winning an AWARD Fellowship. Muturi is currently in her second year of the AWARD Fellowship, participating in the Advanced Science Training program. Through AWARD, and with the generous support of the Bill & Melinda Gates Foundation, she is being trained at the College of Agricultural and Life Sciences at Iowa State University in Ames, Iowa, in the US. "It is an honor for me to be working with and learning from two leading women scientists in this field - Dr. Maria Salas-Fernandez (assistant professor in the Department of Agronomy, at Iowa State University) and Dr. Laura Higgins from DuPont-Pioneer, here in the US. I greatly look forward to improving my skills, experience and knowledge in the use of biotechnology for crop improvement," she enthusiastically says.

For her doctoral research, she focuses on sorghum since it is one of the most prized crops in Kenya's drylands; valued for its potential to contribute to food security and income generation for the farming communities. The new crop varieties will be less vulnerable to climate change impacts – erratic rainfall, high temperatures and declining soil fertility – which greatly increase the yield. "Besides increased food security, this additional produce will offer them the opportunity to seize a share of emerging sorghum market through the use of sorghum as a raw material in commercial beer brewing," Muturi describes.

Her plans are well aligned with those of the Kenya Government, which recognizes agriculture's important role in driving economic development. Agriculture contributes 35% to the national gross domestic product (GDP). Nearly three million smallholder households account for 75% of total agricultural production. The government is prioritizing indigenous, drought-tolerant cereals, legumes and root and tuber crops; with its development blueprint (the Vision 2030) recognizing science, technology and innovation as key to reducing hunger, poverty and human suffering through agricultural development.

Muturi was inspired to apply for an AWARD Fellowship because she knew it would help her achieve her life goals. As a young woman scientist, she knew that an AWARD Fellowship would open doors for her to interact and network with renowned crop breeders, who would possibly mentor her and link her with other career opportunities in my career. "I have had an opportunity to learn from other AWARD Fellows

and share my research experiences with them. I have seen AWARD support me in improving my technical skills in the application of modern biotechnology tools for crop improvement. I have had the chance to work in a modern laboratory, with state-of-the-art facilities. I can confirm that I have greatly improved my non-technical skills such as communication, leadership, planning and management; these are skills I would not have acquired in any other set-up. I can say that I am living a dream," she beams.

Winning an AWARD Fellowship has also strengthened her institution, Embu University College, in a number of ways: Muturi will be able to transfer the biotechnology skills gained from the Advanced Science Training program; she is more empowered to effectively carry out her advisory and mentorship role, especially in advising young students on academic and career opportunities in the sector; and she will use her grant writing skills to win funds for collaborative research with fellows, mentors and other professionals she has met during her AWARD journey. "I personally benefitted from such a proposal written by women scientists from University of Nairobi and this really motivates. Lastly, I am applying the principles of leadership gleaned from the Women Leadership Workshop in my position at the university," Muturi emphasizes.

What's next for her?

Muturi plans to build on her past research on enhancement of sorghum resistance to the African and spotted stem borers.

This initial research was co-funded by the Bill & Melinda Gates Foundation and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). This was under the Gates Foundation's project "Harnessing Opportunities for Productivity Enhancement (HOPE)" implemented by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). This research led to the development and deployment of resistant sorghum varieties for cultivation by farmers in areas prone to stem borer infestations. Findings from this research were shared with farmers, extension officers and other stakeholders, to inform future research with regards to farmer and consumer preferences. The genotypes developed can be utilized in the development of superior sorghum hybrids.

As she looks to the future, Muturi is filled with great optimism. "I see significant genetic improvement and conservation of sorghum in Kenya, with research yielding new sorghum varieties that perform far better than their predecessors in terms of grain yield and stem borer attack resistance," she passionately concludes. Thanks to the AWARD Fellowship and support from the Bill & Melinda Gates Foundation, Muturi can see herself making concrete contributions to that end!



Phyllis Muturi (extreme left in white coat) explaining a point to smallholder farmers during an agricultural trade fair in Embu County, eastern Kenya.

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 and the Alliance for a Green Revolution in Africa. For more information, visit www.awardfellowships.org