



2011 AWARD Fellow
Lillian Wambua

Position	Tutorial fellow
Institution	University of Nairobi
Country	Kenya
PhD	Ecology and management of biological resources <i>Universita degli Studi della Tuscia (Italy), 2011</i>
Mentor	Lucy Irungu, Deputy vice chancellor Research, production and extension, University of Nairobi

Research area: Studying the disease burden at the livestock-wildlife interface in East Africa and developing robust diagnostic tools to facilitate continuous surveillance, early detection, and interventions against devastating epidemics in dryland pastoral areas.

Lillian Wambua grew up in the arid Makueni district of eastern Kenya, where a few goats, chickens, and cattle were her family's most important assets. "The sandy and stony land, although vast, was largely unproductive," she says. "Unable to count on growing food crops, our livestock were the key to our livelihood." Often, the family would have to sell a goat or a cow to pay the children's school fees. In high school, she loved history and English but knew her career would be in the sciences. "During my undergraduate studies, I realized that DNA technology holds promise to tackle many problems, including livestock diseases."

During her PhD research at *Universita degli Studi della Tuscia in Italy*, jointly with the International Livestock Research Institute in Kenya, Wambua explored the genetic mechanisms that underlie tolerance to bovine trypanosomiasis. She is excited that the results hold promise for the development of potent compounds that can be administered to susceptible animals in the early phase of infection. "I hope to work with genetic breeders to develop a breeding strategy to address these issues," Wambua says.

She is currently focusing her research on the livestock-wildlife interface, with the objective of finding lasting solutions to secure healthy herds for rural populations. "We have many emerging diseases, most of which have a wildlife connection," she explains. "Some diseases affect only livestock, but others, such as Rift Valley fever and foot and mouth disease, also affect humans." The first step, Wambua says, is to understand the dynamics of transmission of these diseases—and how they move from wildlife to livestock. "Only then can we put interventions at the interfaces."

Wambua has recently secured a grant from the Kenya National Council for Science and Technology to study malignant catarrhal fever, a viral disease that is causing great concern in Kenya. "During the dry season, cattle move into wildlife zones, where they encounter the wildebeests that are chronically infected with this virus—they are carriers," Wambua explains. The cattle feed on the grass and get sick, and the fatality rate is very high—over 90 percent.

Wambua is applying for grants to examine the whole interface, and not just one disease. She wants to build a vibrant research team, form strategic partnerships, and conduct research on a range of livestock diseases. “It is rewarding to know that, through the knowledge I have acquired, I can build the capacity of the next crop of researchers,” she says. “I want my research and academics to go together—what I do in research should impact food security.”

Eventually, she aspires to a teaching career and is considering a lecturer position at the university. Wambua wants women to know that they are capable, and yearns to be a good role model for young women.

Work-life balance has been a major challenge for Wambua, whose children were 18 months old and 3 while she was doing her doctorate in Italy. “This was a very demanding time of my life, especially concerning lab work and the need to wear protective clothing when working with radiation—which I had to be forthright in requesting.”

As a postdoctoral fellow in the early stages of her research career, Wambua is enthusiastic about the opportunities presented by AWARD. “I am looking forward to the visibility the fellowship might enable me to have, and I am excited about the potential to form strategic and lasting partnerships in my work.”

This ambitious young woman also sees AWARD as equipping her with vital skills. “At the top of my wish list are fund-raising skills, leadership skills, and writing skills,” she says. “I also recognize that a fruitful research and teaching career in agriculture will be greatly boosted by being mentored by an experienced researcher, which in turn will equip me to be a mentor to upcoming researchers. I want to learn from my AWARD Mentor and the other strong, intelligent, and dedicated women scientists I’ll connect with through AWARD. In this world you cannot accomplish great things alone—we need to collaborate, we need partnerships.”

Wambua 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
