

Can Biochar Improve Rwandan Agriculture? Aid for Africa Endowed Scholar Wants to Know



Aid for Africa Endowed Scholar Jamie Fanous with Rwandan colleague.

In a village about an hour outside of Kigali, the capital of Rwanda, Jamie Fanous wanted to know if there was a simple way to improve Rwanda's agriculture for subsistence farmers. She had learned about biochar, which converts agricultural waste into a loose charcoal substance that, when added to soil, is thought to provide soil nutrients, hold water, and boost food security.

Fanous, the fifth Aid for Africa Endowed Scholar, and, a graduate student at Tufts University's Friedman School of Nutrition Science and Policy, undertook her work in Rwanda with support from the [Aid for Africa Endowment for Food and Sustainable Agriculture](#), a partnership between Tufts' Nutrition School and Aid for Africa.

Fanous said that Rwanda has high rates of child malnutrition and agricultural environmental degradation as well as a declining rate of agricultural productivity. Many small-scale farmers, who are primarily women, struggle to produce higher food yields and healthy foods. Fanous worked on a demonstration farm in collaboration with the U.S.-based Gardens for Health International ([GHI](#)) to undertake her research project.



Fanous is researching the effects of biochar on agricultural production.

“I was working with biochar—a charcoal-type material made from plant waste through a process called pyrolysis, in which the waste is burned in a process that restricts oxygen. This high-carbon material is believed to improve soil quality and the yields and quality of foods.”

Through GHI, local women farmers receive seeds and attend workshops focused on farming techniques, health and nutrition. According to Fanous, amaranth, corn, and peppers, as well as fruit trees are distributed for planting in the women’s home gardens.

But Fanous added that this will not be the end of the story. Producing biochar in sustainable quantities within low-income communities may be a challenge. “I want to look into biochar stoves and other solutions for producing it,” she said. “While it will not be *the* answer to poor soils and low productivity,” she said, “it can be part of the solution.”

Fanous noted that while undertaking research with limited resources was challenging, it provided real insights into what Rwandans face daily.

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