

Dew Collector: Greenhouse for food growth, water

March 21 2015, by Nancy Owano



In Ethiopia, the University of Gondar's Faculty of Agriculture is actively involved in real-life problems that are familiar to many farmers on the continent. The university is pursuing research as well as development efforts and toward that end has entered links with an organization called Roots Up. The latter says it will build a workshop on the campus for farmers living nearby and facing tough issues and harsh living conditions. The organization said the center will be made out of "Earthbags."

They call the structure the "Ecodome," and the workshops will focus on such topics as water management and soil conservation. At the end of the day, Roots Up wants to accomplish a mission of helping to make the University of Gondar an "innovation hub for low-tech and low-cost solutions that can be developed on a larger scale in the rural areas of North Gondar." One project on the agenda is a "green" shelter for dew harvest. On Friday, *Discovery News* reported on a Roots Up-University of Gondar initiative called the Dew Collector greenhouse. This is a low-cost, low-tech greenhouse where [vegetables](#) can grow despite drought conditions.

It works at collecting dew by capturing evaporation in bio-plastic sheeting at the top of the dome.

Inhabitat said that in using this collector, [farmers](#) can raise protected plants and yield clean water both for both irrigation and drinking. Instead of just performing as a greenhouse, the structure also serves as rainwater collector, ensuring that raindrops are stored.

Inhabitat said the organization plans to launch the Dew Collector greenhouses in Northern Ethiopia, in conjunction with the university. "The Dew Collector is just one part of the company's mission to help create a self-reliant [farming](#) community in Northern Ethiopia."

Mathilde Richelet of Roots Up wrote about the building's design this month on the Roots Up website. She affirmed its multifunctional purpose for growing food and producing water. "Inside," she said, "the [hot](#) air is trapped so the temperature in the greenhouse keeps rising throughout the day. The heat causes water to evaporate, creating air humidity making the greenhouse atmosphere better for plants' growth as well as maximizing the dew harvest." At evening, the farmer pulls out the rope to open the top of the greenhouse allowing it to cool, eventually reaching the dew point; "atmospheric water vapor condenses to form

small droplets on the surface of the bioplastic sheet falling into the water tank container."



Richelet also reported on the group's field analysis exercise earlier on, when they had interviewed farmers about their practices. They learned that the greatest challenge mentioned by farmers was soil degradation, increasing over the years. "Several periods of drought have severely eroded the soils," she said. "Since they mainly grow cereal crops with very shallow root system, soil is more vulnerable to erosion."

More information: www.roots-up.org/

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