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Efficient stove solution

International visitors attend a workshop in Cottage Grove to see how stoves can help impoverished areas

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COTTAGE GROVE — Here's one way to look at it: The folks at Aprovecho Research Center want to save the world, one small stove at a time.

And, from the looks of things on Sunday, they may be slowly succeeding — with help from the United Nations.

"In Africa and in Asia, in rural areas, the issue of energy is one of the biggest problems," said Valentine Ndibalema, one of about 20 people who assembled at a former hog-processing plant on the edge of Cottage Grove this weekend for Aprovecho's 2011 Winter Stove Workshop.

"We need to find a way to reduce consumption. We are quite interested in seeing how things are done here."

Ndibalema, a Tanzanian, is a senior environmental coordinator for the U.N. High Commissioner for Refugees in Geneva, Switzerland.

He came to Cottage Grove last week, as did people from Sudan, Sri Lanka, Uganda and Kenya, to spend five days exploring how to build a better stove. The workshop is being put on for staff from the U.N. World Food Programme.

The word "stove," by the way, means something quite different here from your typical kitchen range. We are talking about the kind of small wood-burning stoves that are in common use by very poor people throughout the world, whether they live in a remote Latin American village or in a crowded refugee camp in Sudan.

Ndibalema works with displaced persons camps, where people cook using whatever fuels they can scrounge and where having a better stove can make a huge difference.

"There is a growing understanding that there is a suite of issues that need to be addressed that have to do with how people cook their food in the developing world," explained Tom Skeele, the center's corporate operations officer.

“This relates to air pollution, indoors and out. To safety — people getting burned, especially kids. To lung disease. To deforestation. In refugee and displaced persons camps, women are going outside the camps to find fuel and they are being raped. If we can increase the effectiveness of stoves, then more time can be put into getting a woman or her children an education. Or getting a job.”

The research center focuses on stove design and construction, creating stoves for single-family use (these are about the size of a five-gallon bucket) or for institutional cooking (think 55-gallon oil drum). Aprovecho has even designed a wood-fired autoclave for sterilizing hospital instruments. A small family stove costs about $14.

Outside next to a small garden, Fred Colgan, who is co-director of Aprovecho’s Institutional Stove Project, put his ungloved hand on the bare metal chimney of a big green stove that was boiling a kettle of water in the open air. (It was Colgan’s meeting with Ndibalema in Rome last year, while on his way back from Nigeria, that brought the U.N. staffers here to Oregon.)

“This doesn’t burn you,” he said. “It’s safe to touch anywhere even while the stove is burning.” That’s because the stove, which is literally built from a 55-gallon drum, is so efficient that the heat goes into boiling water, not making the outside of the stove hot.

“This stove will boil 30 liters of water in 22 minutes using just 1,200 grams of fuel,” Colgan said proudly. (For the metrically challenged, that means it will bring about 8 gallons of water to a boil using just about 2.5 pounds of firewood.)

The heat is conserved by, for example, designing the stove to wrap around not only the bottom but also the sides of a 60-liter cooking kettle, so that the stove’s intense heat blasts nearly the entire surface of the kettle. As a result, the institutional stoves are up to 90 percent more efficient than stoves generally in use, Colgan said.

While that big stove burned away in the open air, a smaller, family-style Aprovecho stove was boiling its own smaller pot of water atop a concrete pad inside a closed room.

Amit Singh, an officer with the U.N. World Food Programme in Darfur, was standing right next to the stove, just as a cook might. But he was monitoring the air quality in the room with a variety of sensors. Despite the unvented stove, the air was tangy, but not choking by any means.

Singh is working with Aprovecho to bring 200 of its institutional stoves to Darfur, paid for by the world food program. “We will give them to the schools there,” he said. “We are feeding kids there when they go to school.”

Another participant in the conference is Habib Iddrisu. He grew up in a small village in Ghana, but came to the United States and married a Eugene woman. Iddrisu wanted to see about bringing Aprovecho stoves back to Ghana.

“People use open fires to cook on,” he said. “I didn’t realize just how bad that was until I came here. I went back there with my wife and family this summer. We realized how much this stove technology could benefit life in Ghana.”