

Sustainable pellet production saving lives

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The world needs more efficient energy systems based on renewable raw material, an equation not easily solved. At Karlstad University, research and education are in progress to find sustainable energy systems, for instance, through a project in which pellets replace charcoal in cooking solutions in Zambia, because cooking with charcoal as fuel leads to extensive deforestation as well as health hazards. Globally, more deaths are caused by air pollution at home than malaria, HIV and tuberculosis put together.

"In this study we looked at 12 available residual products for pellet production in Zambia and how these products interact in different combinations," says Stefan Frodeson, lecturer in environmental and [energy](#) systems. "The study has led to the discovery of several different residual products from forestry and agriculture. Other important findings are also how the materials could be used to manufacture a product that meets the demands of production in Africa."

Residual products become raw materials for sustainable pellet production

Zambia is at the top of the list of countries in which

large-scale deforestation of primeval forest is taking place. The main reason for deforestation is to manufacture charcoal for heating stoves.

"We cooperate in the project with the company Emerging Cooking Solutions AB, which produces pellets, and develops and sells pellet heated cooking stoves," says Jonas Berghel, professor of environmental and [energy systems](#) at Karlstad University.

The [partnership](#), which has been in operation for a couple of years and started as a student degree project, has now resulted in some 20 different bio materials from Zambia stored at the university.

"The partnership with Emerging Cooking has been successful with two former students co-authoring this research paper, and two current students presently working on their degree project," says Jonas Berghel, who is also programme coordinator of Master of Science in Energy and Environmental Engineering.

More information: Bioresources for Sustainable Pellet Production in Zambia: Twelve Biomasses Pelletized at Different Moisture Contents. [bioresources.cnr.ncsu.edu/reso ... t-moisture-contents/](https://bioresources.cnr.ncsu.edu/reso...t-moisture-contents/)

Provided by Karlstad University

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