

Uganda: Efficient cook stoves

Reducing deforestation with improved cook stoves



Certification:

Gold Standard
Climate Action & Community Development



Key Facts

Background

Uganda loses about 2% of its forest cover annually, the use of woodfuel is the second driver after land-clearing. Around 95% of the Ugandan households use wood fuel as a primary energy source for cooking. Wood fuels include both the direct use of firewood and the use of charcoal. Urban dwellers use predominantly metal charcoal stoves while in rural areas, households still burn firewood in traditional three-stone fireplaces. The demand for wood puts Uganda's forests under tremendous pressure.

In addition, smoke from indoor cooking also causes respiratory diseases, particularly among women and children. Globally, the World Health Organisation attributes approximately 4,3 million premature deaths per year to indoor air pollution.



The Project

The project focuses on the Ugandan capital Kampala. By May 2017, the project had promoted the commercialization of 500,000 cook stoves. It does so by offering technical and financial support to manufacturers. It assists in distributing the stoves and raising demand and awareness among consumers. The improved charcoal cook stoves achieve fuel savings of 35% to 50% compared to conventional metal stoves. Users also enjoy a much healthier cooking environment since the cleaner burning stoves cause significantly less smoke and fewer carbon monoxide emissions.

Location:

Kampala region, Uganda

Project type:

Energy efficiency

Total emission reductions:

»» 450,000t CO₂e p.a. ««

Project standard:

Gold Standard

Project start date:

January 2006

Sustainable Development

By supporting this project you'll contribute to the following Sustainable Development Goals:



SUSTAINABLE DEVELOPMENT GOALS

While focusing on reducing greenhouse gas emissions, all our projects also generate multiple co-benefits. These are supportive of the United Nations Sustainable Development Goals.



No poverty

The improved cook stoves cut charcoal use by 300 kilograms per year, saving each family an equivalent of about 110 USD. The saving is substantial considering that the per capita income in Uganda is about 600 USD (World Bank).



Good health and well-being

Improved cook stoves reduce the emission of harmful substances. Air pollution from cooking with solid fuel is a key risk factor for childhood acute lower respiratory infections, as well as for cardiovascular and ocular diseases. According to the WHO, every year almost 20,000 people in Uganda die from indoor pollution.



Gender equality

Cooking in Uganda is predominantly done by women. Installing cook stoves reduces the demand for woodfuel. This means women spend less time collecting wood. The time saved can be used for other, more productive tasks.



Clean water and sanitation

Especially in rural areas, many people in Uganda still lack access to safe water sources. In many places, water must be boiled to sanitize it, but traditional methods are expensive, slow and inefficient. With the new cook stoves, boiling water is cheaper, quicker and safer.



Decent work and economic growth

The project has also generated about 230 positions for local artisans constructing the stoves and more than 900 retail positions selling them, thereby increasing income for the local population.



Life on land

In Uganda, only about 8% of the harvested wood originates from renewable sources. Efficient cook stoves reduce demand for wood or charcoal, therefore easing pressure on forest resources in Uganda. This yields direct benefits like slowing soil erosion, the destruction of natural habitats and loss of biodiversity.



Scientific brief – how it works

Most cook stoves combine three main design features for improved fuel efficiency. Firstly, the improved cook stoves achieve a higher combustion efficiency. In conventional fireplaces, the combustion of fuel – and thereby conversion to heat – is incomplete. Part of the fuel is effectively lost because it is converted to carbon monoxide and ash. Advanced designs use the so-called smoke-stack effect. Rising hot air induces an updraft, sucking fresh air into the stove. The excess supply of oxygen raises the combustion temperature, which allows for a quicker and cleaner burning of fuel.

A higher combustion temperature in turn amplifies the updraft in the stove that again raises combustion temperature. This positive feedback cycle raises combustion temperature until a stable, significantly higher level has been achieved. Secondly, better stove insulation boosts this effect and improves general heat retention to minimize loss of unused heat. Lastly, heat loss is reduced further by optimizing heat transfer between the stove and the pot.



Project Standard



The Gold Standard is an award winning certification standard for results based project finance and is recognised internationally as the benchmark for quality and rigour in certifying environmental and socio-economic project outputs. Established in 2003 by the World Wide Fund For Nature (WWF), the Gold Standard today is trusted and endorsed by NGOs, governments and multinationals including United Nations agencies worldwide.

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