

Uganda: Efficient cook stoves

Reducing deforestation with improved cook stoves



Certification:
Gold Standard
Climate Action & Sustainable Development

Key Facts



The Project

Uganda currently loses about 2% of its forest cover annually, fuel wood use being the second driver after land-clearing. Around 95% of 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. In rural areas, households still mostly 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 focuses on the Ugandan capital Kampala. In total, by the end of 2013 the project had promoted the commercialization of up to 350,000 cook stoves. 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 SDGs:



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 respiratory, cardiovascular and ocular diseases. According to the WHO, every year almost 20,000 people in Uganda die from indoor pollution.



Decent work and economic growth: An average family can cut their charcoal use by some 300 kilograms per year. This saving - equivalent to about 110 USD - is substantial considering that the per capita income in Uganda is about 600 USD (World Bank). 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.



**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.



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.

The wood stoves use the well-proven rocket technology, which raises the cooking pot to the hottest point above the flame. The institutional rocket stoves further increase heat transfer by having the cooking pot rest within a skirt.



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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