

Bangladesh: Cookstoves Program

Clean cooking with energy efficient stoves



Certification:
United Nations Framework Convention on Climate Change



Key Facts

Background

In Bangladesh, more than one in three of the country's 164 million inhabitants live below the poverty line. Particularly in rural areas, poverty is a major problem. According to the IEA, some 135 million Bangladeshis do not have access to clean cooking, which accounts for around 84% of the country's total population. 90% of Bangladeshi households rely on simple clay ovens or open fires for cooking and are heavily dependent on fuelwood. The traditional 'three stone fire' method used by the locals comes with a range of problems: predominantly, the firewood and dung used as fuel is inefficiently burnt. A large share of the heat produced is effectively lost and is never transferred to the cooking stove. Ineffective combustion requires large amounts of firewood, which is often sourced from local forests that are under threat of uncontrolled deforestation.

Furthermore, lack of effective combustion results in the production of toxic smoke, which can cause serious health problems. This is especially the case for women and children as they spend most time at home. Respiratory illnesses are the second highest cause of death in Bangladesh. In addition to this, inefficient traditional cooking methods are a significant source of carbon dioxide emissions and thus contribute to accelerating climate change.



The Project

This project is part of a so-called Programme of Activities (PoA), i.e. an overarching project approach that combines numerous sub-projects and initiatives in various locations in Bangladesh. The aim of the PoA is the dissemination of optimized energy efficient biomass-based improved cooking stoves to households and small as well as medium-sized enterprises in Bangladesh. Using these new stoves will significantly reduce smoke production and reduce fuel consumption by 50%. The stoves achieve a higher combustion efficiency through reduced heat loss and increased heat transfer to the cooking pot. The PoA will significantly improve the living standards of the local people, as it will decrease air pollution and the risks of connected health issues and will have benefits for the environment.

Location:
Bangladesh, various locations

Project type:
Energy efficiency

Total emission reductions:
» 100,000t CO₂e p.a. «

Project standard:
CDM

Project start date:
February 2008

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

As the new stoves require less firewood, the locals make financial savings. Thus, the project will improve the living standards of the people in Bangladesh and help to tackle poverty in rural areas.



Good health and well-being

The new cookstoves will improve the health of many Bangladeshis who often suffer from the consequences of inhaling toxic smoke resulting from traditional cooking methods and open fires. This way, diseases like pneumonia and cardiovascular diseases can be avoided.



Gender equality

The project brings many benefits for women in Bangladesh. They spend less time collecting fuelwood, which gives them more time for more productive activities. In addition, the stoves shorten the cooking time and women's health improves as the smoke caused by traditional cooking at home is reduced.



Decent work and economic growth

The project will generate many job opportunities for the local inhabitants.



Climate action

As the stoves emit less carbon dioxide and are thus more environmentally friendly, the project contributes to climate change mitigation. The PoA in total will reduce nearly 100,000t CO₂ equivalent each year.



Life on land

Since the need of consuming wood as fuel decreases, the project reduces pressure on forest reserves in Bangladesh and thus protects local natural resources and biodiversity.



Partnerships for the goals

The project involves a wide network consisting of several partners such as local NGOs and authorities, companies and families. These partnerships help to jointly reach the climate goals of the project.



Technology brief – how it works

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 the effect and improves general heat retention to minimize loss of unutilized heat. Lastly, heat loss is reduced further by optimizing heat transfer between the stove and the pot. The new improved stoves improve efficiency by more than 35% compared to other cooking methods.



Project Standard



The CDM is one of the three Flexible Mechanisms defined in the Kyoto Protocol and allows emission-reduction projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one tonne of CO₂. These CERs can be traded and sold, and used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol.

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