

PROJECT BRIEF

Promotion of Sustainable Biomass and Efficient Stoves in Senegal

Country	Senegal
Sector/Sub-Sector	Sustainable Biomass / Efficient cook stoves
Saved Emissions	120.000 t CO ₂ per year

Project description

The programme promotes the use of renewable biomass in efficient cook-stoves in mainly urban and peri-urban areas in Senegal. 30,000 cook-stoves will be distributed in the first phase of the project, which use a gasification technology to burn wood chips. The wood chips will be sourced from existing sustainable forest plantations and new sustainable plantations will be created by the project. The wood chips replace the predominant use of charcoal in the project area.



Fuel switch: Households in Senegal mainly use fire wood, or charcoal from non-renewable biomass sources for cooking. This has led to extensive deforestation, so that forest areas can now only be found in 400 km distance from the capital Dakar. Besides the environmental effects, this also reflects in rising charcoal prices for the households. The project not only reduces the use of biomass via highly efficient cook-stoves, but also switches to renewable biomass from sustainable forest plantations. The promotion of a new fuel source (sustainable wood chips) to compete with the established charcoal is a challenge, but can lead to truly transformative change in the project area. Sustainable forest management is the only option to reduce deforestation rates in areas where the majority of the population relies on fire wood or charcoal to fulfil their basic energy needs.

Partner

The SEM Fund is a non-profit organisation registered in Senegal dedicated to combating poverty and environmental degradation. Since 2004 SEM is creating access to finance and sustainable technologies via a microfinance programme that has provided training and affordable loans to rural villagers. Since 2009, SEM has been developing targeted projects and innovative financing solutions to address climate change, focusing on the provision of locally appropriate, renewable energy technologies at

the household level. SEM works with numerous local and international partners and Government agencies.

Ecological and socioeconomic potentials

Rapid deforestation is one of the gravest environmental problems in Senegal and many other African countries due to its severe socio-economic impacts. Most households rely on increasingly scarce and thus expensive biomass for cooking. Also, land degradation, erosion and reduced watersheds lead to deterioration of farm lands and makes the country more vulnerable to natural disasters and the effects of climate change. Biomass collection and charcoal production is mainly an informal and often illegal business activity which does not lead to a sustainable development and impedes better forest management practices.

In addition to contributing to reduced deforestation rates, the project directly improves the livelihood of the population. The production of particulate matter and carbon monoxide in closed rooms from conventional cook-stoves leads to serious health defects, especially for women and children. Smoke is almost eliminated with combustion from the gasification technology promoted by SEM in Senegal.

Implementation and financing

For the participating households the stove investment can be recovered within approximately 3 to 6 months through reduced fuel expenses. Still, the up-front investment can be a prohibitive hurdle which SEM tries to reduce via micro credits and deferred payment models. Also, the cookers are sold almost at wholesale prices. The financial viability of the project and recovery of costs for management, marketing, distribution and client management shall be achieved via the establishment of biomass distribution channels and the sales of sustainable wood chips. This business model leads to high up front investments which can be recovered only over a longer project life time. Here the proceeds from carbon credits and in particular the support by the Foundation Future of the Carbon Market plays a major role in providing early liquidity.

Integration into national politics

The programme has been endorsed by the Senegalese 'Direction de l'Environment et des Etablissements Classés', serving as Designated National Authority for the CDM and it is considered to be a key programme for addressing the cooking fuel crises that have been a common occurrences in Dakar over the past years. The programme is fully aligned with the national climate policy strategy of Senegal and will serve as an example for sustainable development implemented and led by a Senegalese organisation.

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