



Country: Burkina Faso
Sector: Integrated waste management
Project: Recovery of waste from the cashew nut sector as a renewable energy source for MSMEs in Burkina Faso
Grantee: Fondation 2iE
Partner: Stichting Woord en Daad

Acknowledgements

The SWITCH Africa Green programme was developed by the European Commission (EU) to support African countries in their transition to an inclusive green economy. The main objective of the programme is to promote sustainable development by engaging in transition towards an inclusive green economy. This is based on sustainable consumption and production patterns, while generating growth, creating decent jobs and reducing poverty.

This impact sheet on Recovery of waste from the cashew nut sector as a renewable energy source for MSMEs in Burkina Faso provides a snapshot of results and achievements of the project under the Green Business Development Component of Phase I (2014-2019) of the SWITCH Africa Green programme. This component supported micro, small and medium-sized enterprises (MSMEs) to apply and adopt sustainable consumption and production practices in their business operations.

The project was implemented by Fondation 2iE in partnership with Stichting Woord en Daad, with the support of the SWITCH Africa Green National Focal Point Polycarpe Bationo, Ministry of the Environment, Green Economy and Climate Change (MEEVCC) and National Coordinator Albert Compaoré, MEEVCC Burkina Faso. The grants were managed by the United Nations Office for Project Services (UNOPS) and coordinated by Celia Marquez with support from Mercy Gatobu.

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Background

In Burkina Faso there is minimal access to energy and according to a report on Sustainable Energy for All (SE4ALL), more than 90 per cent of the population has no access to modern cooking fuels. More than 80 per cent of the energy comes from wood and charcoal (SE4ALL, 2014). The thermal energy required for MSMEs is also generated from conventional biomass, particularly firewood. The intensive use of firewood is accountable for a high rate of deforestation, where more than 250,000 hectares of forest are cleared annually to meet the energy demand.

The SWITCH Africa Green supported project for the recovery of waste from cashew nuts was implemented in Bobo-Dioulasso and Ouagadougou in Burkina Faso to encourage the use of alternative sources of energy, such as fuel briquettes from agricultural waste and cashew nut shell cake. The recovery of waste from the cashew nut industry is a sustainable alternative to the use of wood for domestic and industrial needs.

Beneficiaries

The project engaged MSMEs in Burkina Faso and developed their capacity in the conversion of waste to energy by producing briquettes from cashew nut shells.

Objectives

- Contribute to a reduction by MSMEs in Burkina Faso in the use of conventional fuels such as wood and charcoal through substituting renewable sources of energy
- Promote the use of cashew nut waste as a source of energy, replacing the use of non-renewable sources
- Conduct training of MSMEs to raise their awareness on briquette production and waste energy recovery

Outputs

Improved capacities of workers in greening their businesses

Awareness was raised among MSMEs in the use of briquettes – over 500 MSMEs were trained on the benefits of briquette use

as a source of energy. Briquettes provide a more efficient, slow burning and smoke-free alternative source of energy. They can also be easily made from locally available material.

Over 21 MSMEs benefitted from training on energy recovery of their waste, production of fuel briquettes and modules on sustainable consumption and production practices. Of all the participants trained, 29 per cent were women.

A reactor was constructed at a cost of USD327, using locally available materials to produce briquettes from cashew nut shells. It uses pyrolysis technology, is efficient and suited to local conditions.

Published research result in the journal of Cleaner Production at ScienceDirect.com <https://doi.org/10.1016/j.jclepro.2018.05.261>

Increased networking among green businesses

Through the project, two enterprises, Habibou oil mill and STAB oil mill, started to use cashew nut shells as a source of energy for their boilers.



Outcomes

Uptake of SCP practices by MSMEs

More than 80 MSMEs demonstrated commitment to using briquettes as their source of energy. They were equipped with skills on eco-innovation and sustainable production and consumption practices, techniques for recovering energy from waste, biomass densification techniques and briquette production. The project assisted about 50 per cent of the MSMEs to access and use briquettes as a substitute for wood as a source of energy in their respective operations.

Impacts

Environmental impacts

Reduction in waste generated was reported by beneficiary MSMEs. They were using the cashew nut shells to generate energy and not disposing of them in the landfills

The use of cashew nut shell liquid as a biofuel reduces

greenhouse gas emissions into the atmosphere

Production of carbonized cashew nut shell briquettes as a substitute for traditionally used wood and charcoal reduces the need to cut down trees and consequently contributes to conserving biodiversity by avoiding deforestation.

Economic impacts

The project stimulated growth along the cashew value chain through value addition of one of its waste streams. The return on investment, indicated in the graph below, from the production and sale of cashew nut shell briquettes was projected to be two years and 11 months.

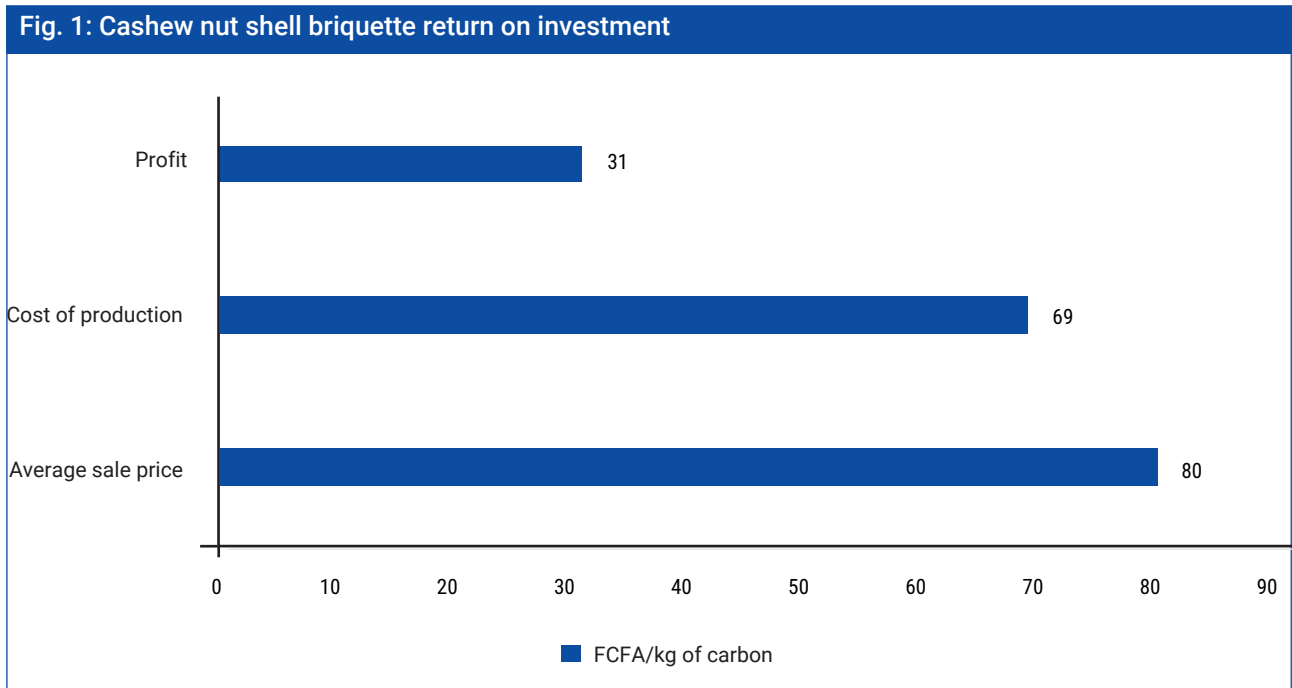
Social impacts

Income-generating opportunities for MSMEs opened up – one of the beneficiaries, Anatrans, reported that they were giving away their cashew nut shells to local MSMEs in Bobo-Dioulasso for free. This generated a source of income for the MSMEs who would then treat the shells and use them as a source of fuel or sell the briquettes.

Lessons learnt

- The uptake of production of briquettes using cashew nut shells is hindered by lack of knowledge about the reactor used to produce them, and lack of finance to access the same
- Larger capacity reactors are needed to optimize usage, and systems established to ensure access to all MSMEs sharing reactors through renting

The project assisted about 50 per cent of the MSMEs to access and use briquettes as a substitute for wood as a source of energy in their respective operations.



“These briquettes showed to work quite well,” says Huisman. “The challenge was that it might not be dense enough, so you need a lot to replace it a small volume of charcoal or wood. Before the SWITCH Africa Green project, we did not do anything with this by-product, the shells, the waste. We paid the municipality to deposit it somewhere safely. With the huge value we could find in the cashew shell, we can create a factory that is 100100 per cent green.”



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