



SOUTH AFRICA: WONDERBAG EFFICIENT COOKING



INCREASING THERMAL EFFICIENCY WHILE COOKING

WONDERBAG, REDUCES ELECTRICITY DEPENDENCY



KEY FACTS

Location:
The Republic of South Africa

Project type:
Energy efficiency – domestic

Project standard:
VCS

Total emission reductions:
»» 57.000 t CO₂ e p.a. ««

Project start date:
December 2010

Project partner:
Natural Balance (Pty) Ltd.

Validator:
Det Norske Veritas

Verifier:
Det Norske Veritas

The access rate to electricity in South Africa is the highest in the African continent. However, many impoverished households still have to resort to simple stoves that burn coal, gas or paraffin for cooking. Where electricity is available, roughly 90% is generated from coal. It is one of the worst polluting fossil fuels in regards to emitting greenhouse gases and air pollutants. In addition, constant power plant failures and blackouts affect the entire electricity grid. Also, electricity prices have skyrocketed over the last years, making it unaffordable for many poor households. This price increase has been the reason for many protests which recently took place in the streets of several South African cities.

This project promotes the dissemination of a heat-retention cooking device trademarked as “Wonderbag”. The Wonderbag increases thermal efficiency while cooking in order to reduce dependency on electricity and fossil fuels. This is how the device works: the pot is kept on the stove until the food starts to boil. Then the pot is placed in the thermally-insulated Wonderbag. Inside, the food continues to simmer without the need for any further energy input until it is fully cooked.

As of June 2012, almost 600.000 Wonderbags have been distributed in South Africa, achieving a positive effect on the lives of more than 2.5 million people. Retailing of the Wonderbag at such a large scale would not have been possible without carbon finance subsidizing its price. The subsidy has made the bag affordable even for poor households.

SUSTAINABILITY BENEFITS

This project contributes to the United Nations’ Millennium Development Goals



1 It reduces a family’s fuel usage by up to 30%, thereby increasing their disposable income. The Wonderbag is manufactured locally, employing local people for manufacturing and distributing it, generating income for the local population. No food gets burnt inside the Wonderbag, 100% of the food can be eaten, reducing food wastage.



2 While in the Wonderbag, the food runs no risks of getting burnt, reducing the time needed to focus on cooking. By freeing up time for the cook – mostly women – they can allocate more time for child care and education.



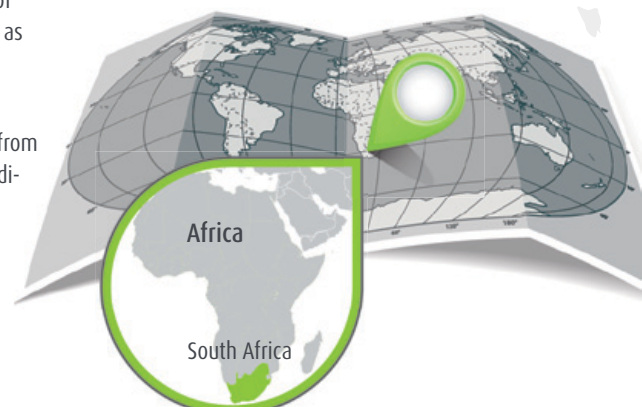
3 The project improves the quality of life for women, by reducing the amount of time needed for cooking. It frees up time for other productive activities such as the education of children, economic or agricultural tasks.



6 Cooking with the Wonderbag reduces hazardous fumes and indoor pollution from coal fires which cause respiratory diseases. It improves health and living conditions, and the families’ overall quality of life.



7 The project reduces water required for cooking. When the pot is in the Wonderbag, it is insulated at a fairly constant temperature, minimising evaporation, so less water is needed as an ingredient.





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TECHNOLOGY BRIEF - HOW IT WORKS

Heat transfer takes place when objects of different temperatures are in contact. Thermal insulation refers to the reduction of heat transfer using certain materials or mechanical methods.

The Wonderbag is a thermally insulated bag, used for heat retention. The first 600.000 bags are made out of recycled polystyrene, obtained from a recycling plant. The newer version is made out of recycled chipfoam, a waste by-product from local manufacturers.

By placing the pot inside the bag, the insulating materials reduce the heat loss from the boiling pot to the colder ambient air. Therefore they sustain a relatively constant temperature for hours, capable of continuing the cooking process while reducing the need for additional thermal input.



THE UN MILLENNIUM DEVELOPMENT GOALS



The eight Millennium Development Goals (MDGs) – which range from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 – form a blueprint agreed to by all the world’s countries and all the world’s leading development institutions. They have galvanized unprecedented efforts to meet the needs of the world’s poorest. Explore the efforts of the UN and its partners for building a better world here:

www.un.org/millenniumgoals/

