

Guatemala: Water Filtration and Improved Cookstoves



Water-borne disease has been identified as a national priority in Guatemala given the high incidence of diarrhoeal disease and chronic malnutrition. This project, which is the first Gold Standard water treatment or cookstove project in the country, distributes water filters and stoves that enable access to clean water and improved cooking conditions by increasing fuel efficiency and reducing harmful indoor air pollution. The stove design reduces fuel requirement which also alleviates the pressure on national forests compared to traditional cooking methods.

Project type: Household devices; water

Region: Latin America



Standards:

Gold Standard
Climate Security & Sustainable Development

Refreshing approach: The project distributes water filters and stoves that enable access to clean water and improve cooking conditions.



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Improved cookstoves use simple design enhancements to burn biomass fuel cleanly and efficiently.

The project

Approximately 35% of the country's rural population drink water before it has received any treatment, while 39% boil their water. In 2009, The United Nations Development Programme (UNDP) and The World Health Organisation (WHO) estimated that every year in Guatemala 1,200 children under five die of pneumonia and 300 adults die prematurely of chronic obstructive pulmonary disorders resulting from traditional solid fuel fires.

The water filter treats two litres of non-potable water per hour and removes 99% of pathogens

By making affordable water filters and improved cookstoves available to households in Guatemala, the project aims to reduce the costs of fuelwood plus the incidences of respiratory and water-borne disease. The high-quality, affordable, improved plancha wood stoves which are distributed as part of the project replace inefficient traditional three-stone fires and significantly reduce the amount of indoor air pollution.

The Paradigm Project, an international social enterprise that specialises in the development of highly scalable, locally managed supply chains for communities in need, developed and owns the project and was responsible for selecting the local partners working in the supply chain. Carbon finance is used to develop a low cost supply chain which means low-income households can afford the devices and make immediate savings on the cost of fuelwood. So far the project has benefitted over 230,000 people.

Contribution to sustainable development

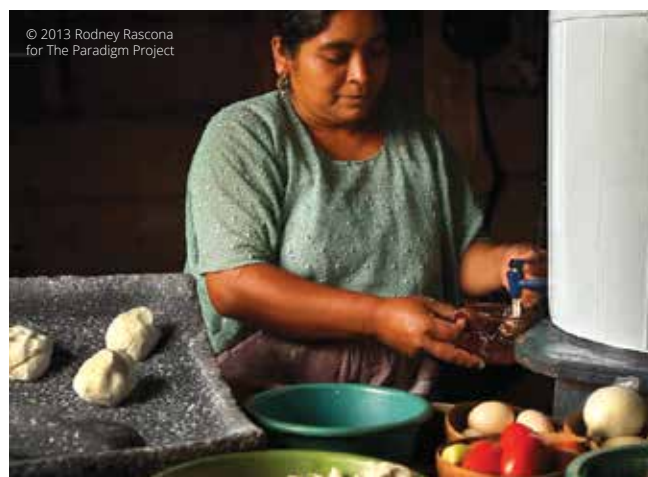
The project contributes to sustainable development in several key areas:

Health & well-being

The water filter treats two litres of non-potable water per hour and removes 99% of pathogens, making it safer for drinking and cooking. The water filters, as well as reducing water-borne disease, also treat the water without the need for fuelwood and consequently decrease indoor air pollution. The distributed improved cookstove uses simple design enhancements to burn biomass fuel cleanly and efficiently which contributes to a reduction of indoor air pollution that families, particularly women, are exposed to.

Energy access

The project distributes filtration devices to increase the number of households that treat their water and reduce the need for fuelwood to boil it. The devices improve the affordability of energy within the project areas as less money is spent on expensive fuels. Increasing distribution of the water filtration devices and fuel-efficient stoves ensure more of the population has access to these energy, time and cost-efficient technologies.



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Reducing deforestation can minimise the risk of landslides and the negative impact on agricultural yields from soil erosion

The project helps households save time from cooking and collecting wood; an estimated 30 minutes per day.

Financial security

The water filters and improved cookstoves are sold to households by Ecofiltro and a local NGO, Socorro Maya. Carbon finance enables them to be made more affordable to low-income households with an 18 month payment plan that allows households to access interest-free loans. There is no upfront cost and families can begin to save on fuelwood (and the associated costs) immediately. The average household that uses an improved cookstove will reduce its biomass use by an estimated 65% which equates to 1,700kg each year. Given that 49% of households that use biomass purchase the wood, it will save the average family an estimated US \$35 per year from fuel savings¹.

Using an improved cookstove will reduce biomass use by an estimated 65%

Water stewardship

Each household that purchases a water filter receives help with installation, training and after sale services from technicians. The technicians prepare and deliver public information and heighten awareness around the importance of water hygiene which helps expand community access to improved water supplies. Support is also provided by social workers; typically women employed to work part-time and maintain the project's presence in the community.

Biodiversity protection

Roughly 96% of wood harvested in Guatemala is non-renewable, demonstrating highly unsustainable forest use in the country. Decreasing fuelwood use through this type of project eases the burden of overuse on forests and subsequently improves deforestation rates and the corresponding threat to biodiversity. Limiting deforestation can also minimise the risk of landslides and the negative impact on agricultural yields from soil erosion.

Empowering women

The project helps households save time from cooking and collecting wood; an estimated 30 minutes per day from time typically spent cooking is saved, which women can allocate to other activities.





So far the project has benefitted over 230,000 people

Guatemala ranks 131 out of 187 countries on the UNDP's 2011 Human Development Index – a comparative measure of life expectancy, literacy, education and standard of living for countries worldwide. In 2006, 51% of Guatemalans lived below the national poverty line² (earning less than USD \$2.30 per day)³. Rural residents and indigenous groups have poverty rates significantly above the national average (75% and 76% respectively).

1 The CarbonNeutral Company calculations
 2 <http://data.worldbank.org/indicator/SI.POV.NAHC/countries/GT?display=graph>
 3 http://www.microfinance.com/English/Papers/Scoring_Poverty_Guatemala_EN_2006.pdf

The project is being implemented in rural and peri-urban communities throughout Alta Verapaz, Huehuetenango and San Marcos Departments.

Job creation

Jobs are created by Ecofiltro and Socorro Maya for manufacturing the products, installing them and training households on their use, and social work in the local communities. The project estimates having 800 staff employed throughout the supply chain in both temporary and permanent roles.

Economic growth

There is increasing demand for these technologies across the country and the material sourcing, manufacturing, distribution and maintenance has a positive impact on economic growth. This is one of only two cookstove projects running in Guatemala, and planned countrywide distribution of the concept creates opportunities for in-country and international export.

The region

The project improves the well-being of those most in need by targeting rural and peri-urban populations in a low-middle income country. The project is first being implemented throughout Alta Verapaz, Huehuetenango and San Marcos Departments. It will initially focus on developing within these three Departments and then aims to expand nationally once the project's two products have been widely implemented.

Improved cookstoves reduce biomass use by roughly 65%, saving the average family an estimated US \$35 a year.



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