



WINROCK
INTERNATIONAL



Environment: Forestry, Energy & Ecosystem Services

Household Energy

Household Energy for Improved Health & Livelihoods

Over 2.5 billion people, primarily the poor in developing countries, depend on biomass for basic cooking and heating, often resulting in extreme concentrations of indoor smoke and associated health problems. Winrock uses innovative and integrated health and energy strategies to reduce health risks, conserve resources, and improve livelihoods. Improved cooking technologies and practices generate less smoke, benefiting those at greatest risk—the more than 1.5 million people, primarily women and children, who are estimated to die every year from indoor smoke exposure. Winrock designs solutions that are locally appropriate, comprehensive and scalable.

Advancing Technology Design – Improved stoves can use up to 70 percent less wood, and reduce emissions by a similar degree, as well as conserve natural resources. Winrock works with stove experts to develop new designs and adapt local models for traditional needs.

Changing Practices – Increasing awareness of smoke-related health risks is critical to modifying key cooking-related behaviors and improving family wellness. Product-based social marketing generates demand for appropriate local solutions and fosters adoption of improved cooking technologies and practices.

Developing Enterprises – Building capacity among entrepreneurs to produce and sell locally appropriate

improved cooking technologies generates jobs and local income, increases access to these products, and develops a sustained market for them.

Measuring Indoor Air Pollution – Measuring levels of carbon monoxide and respirable particulate matter (PM_{2.5}) in kitchens confirms the effectiveness of project interventions, informs program design, and serves as a proxy for health symptom impacts.

Winrock's partners in implementing household energy and health programs around the world include the U.S. Agency for International Development, the U.S. Environmental Protection Agency, the Shell Foundation and the World Bank. Winrock serves as the Secretariat for the global Partnership for Clean Indoor Air (www.pciaonline.org), which works to improve health, livelihoods and quality of life by reducing exposure to indoor air pollution from household energy use.

In Bangladesh, Winrock and two local health and energy partners joined forces to help households in urban slums suffering from high levels of indoor smoke and assist local entrepreneurs in launching efficient and locally appropriate improved cookstove businesses.

In Nepal, Winrock implemented a school program to raise awareness on air pollution risks and ways to reduce exposure, and used micro- and carbon-financing to support widespread dissemination of household energy technologies, including improved cookstoves, biogas, and solar photovoltaic (PV) systems.





In Chad, the Chad Household Energy Project increased household and small business income through the commercial production and sale of the Mamoun, a fuel-efficient charcoal stove that saves users an average of \$100 each year on charcoal.

In Kenya, Winrock worked with local women's groups to alleviate health problems and fuel shortages faced by women living in the urban slums of Ngong and Rongai, who learned to manufacture and sell improved cooking products.



In Rwanda, Winrock helped the Kigali Institute for Science and Technology develop a commercial program design to promote energy efficient charcoal-burning stoves, with elements including market assessments, technology testing and selection, and strategies for stove production and distribution, marketing and promotion.

In Peru, the Healthy Kitchens Project promoted the use of improved cookstoves by increasing awareness of smoke-induced health risks and the availability of new stoves supplied by local entrepreneurs, including through a revolving micro-credit program.

In Brazil, Winrock and local partners promoted ethanol cookstoves and developed a market strategy for dissemination of information and improved technologies incorporating local cooking habits and local stove and ethanol manufacturing capabilities.

In Nicaragua, Winrock and local partners used carbon credits to help women micro-entrepreneurs modernize their commercial wood stoves, incorporating a cutting-edge, integrated system that uses waste heat from the stove to generate electricity for lighting.

Winrock International is a nonprofit organization that works with people in the United States and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources.



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