Bringing fuel-efficient stoves to the world

Photo: Lynn Johnson, Ripple Effect Images
Mission Statement:
StoveTeam International promotes the local production of safe, affordable, fuel-efficient cookstoves in the developing world.

Why stoves?
Worldwide, cooking is an essential part of one’s day. However, in many parts of the world, cooking kills.

More than three billion people in the world cook over dangerous open fires or inefficient stoves. Many women spend most of their day indoors near smoldering fires or walking to collect heavy loads of firewood. Inhalation of harmful particles emitted from these open fires is the cause of an estimated four million deaths per year and is a leading cause of death in children under five.

**MEDICAL PROBLEMS OF OPEN-FIRE COOKING**
- Pneumonia, chronic obstructive pulmonary disease, respiratory infections, emphysema, cardiovascular disease, lung cancer and chronic bronchial illnesses.
- Burns from open cooking fires.
- Cataracts and chronic eye and skin irritation from constant exposure to smoke.
- Hernias from carrying large amounts of wood.
- Low birth weights.

**ENVIRONMENTAL PROBLEMS OF OPEN-FIRE COOKING**
- Rapid deforestation.
- Erosion, mudslides and water pollution.
- Climate change due to emissions of black carbon (BC).
- Pollution from the emissions of particulate matter (PM).
THE BENEFITS OF IMPROVED COOKSTOVES

ENVIRONMENT
Fuel-efficient stoves burn less wood and reduce smoke in the home, cutting down on deforestation and the emission of greenhouse gases.

EMPOWERMENT
Access to improved cooking technology means women and girls spend less time collecting firewood, and spend more time at school or pursuing other personal advancements.

HEALTH
The Ecocina is cool to the touch, reducing the incidence of burns. It also decreases indoor air pollution, resulting in healthier homes.

ECONOMIC
For those who buy wood, the savings in wood pay for the stove in a few months making the Ecocina stove an affordable alternative to open fires.

DEVELOPMENT
Stove factories provide local jobs and use locally-sourced materials, promoting sustainable economic growth in low-income areas.
StoveTeam methodology

StoveTeam helps raise seed capital from grants and donations to start stove factories in emerging countries, providing advice and assistance in all phases of factory startup and operation. These factories use local labor and materials to produce safe, fuel-efficient cookstoves and are self-sustaining after the initial investment. The cookstoves are affordable, use 50% less fuel-wood, and emit 86% less particulate matter, thereby reducing deforestation and harmful pollution. What’s more, each fuel-efficient cookstove prevents the emission of approximately 3 tons of carbon per year.

Lives are changed by our work

Toxic emissions cause a variety of serious health problems, making smoke exposure one of the top four health risks in developing nations and the largest environmental killer.

The installation of efficient, clean-burning stoves improves the quality of air in homes where women and children spend much of their day. The Ecocina stove produced by StoveTeam-sponsored factories is portable and can be moved outdoors. With the reduction in time collecting fuel-wood, men and women have more time for income-generating activities; and children can spend more time in school. Some families have earned additional income by taking the stove to a central plaza or roadside to sell food.
The Ecocina

**POT SKIRT**
Adjustable metal skirt fits a variety of pots and pans & forces hot air around the pot for maximum cooking efficiency.

**REMOVABLE “PLANCHA”**
For cooking meat or tortillas.

**POT SUPPORTS**
Elevate the cooking surface above the stove top and allows cooking with any sized pot or griddle (“plancha”).

**INSULATED CEMENT BODY**
Internal chimney of low-fired tile and insulating pumice keeps the stove exterior cool to the touch.

**WOOD SUPPORT (PORTALEÑA)**
Raises the wood off the bottom of the stove and allows sufficient air to enter, increasing burning efficiency.

**REDUCED SMOKE**
Efficient airflow allows wood to burn completely, resulting in a virtually smoke-free environment.

**“ROCKET ELBOW” DESIGN**
With an air-intake opening the same size as the exit, oxygen entering through the bottom moves efficiently through the internal chimney, driving heat directly to the cooking pot.
Factories

SAN MIGUEL DE ALLENDE, MEXICO
The Ecocina Stoves factory in San Miguel de Allende began producing stoves in August of 2011. It has produced and sold more than 1,950 stoves to date and worked with several local communities and governmental organizations.

COPÁN RUINAS, HONDURAS
The E’Copan factory in Copán Ruinas, Honduras began producing stoves in June 2010. It has now produced and sold 6,635 stoves. Throughout 2015, E’Copan has worked with the assistance of StoveTeam and Carlos Santana’s “Milagro Foundation” to implement a comprehensive education and outreach campaign to increase awareness of the dangers of open cooking fires, and the benefits of switching to fuel-efficient cookstoves. Project outcomes include development of a 5-year outreach strategy; creation of educational brochures and posters; an educational and promotional television campaign; demonstrations at various regional events and fairs; and establishment of a permanent exhibition of fuel-efficient stoves in a large and popular commercial center in Comayagua.

MORELIA, MEXICO
The factory in Morelia, Mexico has closed after the owner of the factory passed away.
NAHULINGO, EL SALVADOR

Inversiones Falcón, the factory in Nahulingo, El Salvador was the first factory established by StoveTeam. Since 2007, it has produced 22,369 stoves. The current economic and security environment in El Salvador present many challenges to business operations, but Factory owner Gustavo Peña continues to work hard to expand distribution to those in need. He continues to experiment with additional adaptations of the Ecocina and is designing new stoves with external chimneys and larger planchas.

SAN ANTONIO AGUAS CALIENTES, GUATEMALA

The EcoComal stove factory in Guatemala continued to expand and provide stoves throughout Guatemala in 2015. EcoComal’s success has made it one of the top providers of stoves in Guatemala with a total distribution of more than 3,400 stoves in 2015. The factory has now produced and sold 21,609 stoves.

In November 2015, StoveTeam was awarded a grant from Winrock International and the U.S. EPA to launch a four-month study on the use and adoption of both Ecocina and EcoComal’s latest model, the Ecoplancha III. The study is designed to help StoveTeam and others in the sector judge and improve acceptance rates, encourage adoption, and advocate for strong support of cookstove implementation projects among policy makers and nongovernmental organizations.
2015 Results

• The Ecocina was officially recognized by the Gold Standard in the Voluntary Carbon Market.

• The Ecocina was named one of only six highly adopted stoves in Guatemala in a study by the Stockholm Environmental Institute.

• StoveTeam was selected by Ripple Effect Images to receive more than $60,000 of in-kind video and photography support to advance our mission of protecting women and children.

• With the support of Ripple Effect Images, StoveTeam developed a 5-minute Spanish and English video featuring Guatemala factory partner EcoComal. It can be found on the www.stoveteam.org home page, and many of the photographs by Lynn Johnson are included in this report.

• StoveTeam was one of only three organizations selected from more than 70 applicants to host a formal training and field study at the EcoComal factory in Guatemala to measure and understand household use of the Ecocina through field surveys and stove use monitors. The field study is taking place in rural Guatemala and will benefit 80 families.

• StoveTeam provided a permanent loan of a plasma cutter to Honduran partner, E’Copan – helping to facilitate improvements in production efficiency and output of fuel-efficient cookstoves.

• Nancy was the featured speaker at the Southern California and Nevada Rotary Presidents Elect Training Seminar (PETS) before more than 500 Rotarians.

• Thirty-eight volunteers traveled to Antigua, Guatemala to build stoves.

• Fifteen University of Oregon students attended a service-learning trip to Guatemala where they developed leadership skills and global awareness while helping the EcoComal stove factory and learning about the dangers of open cooking fires.

• EcoComal’s factory manager started his own business manufacturing stove chimneys.

• StoveTeam was awarded the National Energy Globe Award for Honduras.
A community-based solution: StoveTeam works with local entrepreneurs to develop sustainable stove businesses with long-lasting effects in the community.
TOTAL STOVES PRODUCED THROUGH 2015

<table>
<thead>
<tr>
<th>Location</th>
<th>Stoves Produced</th>
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<tbody>
<tr>
<td>Copán Ruinas, Honduras (est. 2010)</td>
<td>6,635</td>
</tr>
<tr>
<td>León, Nicaragua (est. 2010, now closed)</td>
<td>850</td>
</tr>
<tr>
<td>Nahulingo, El Salvador (est. 2007)</td>
<td>22,369</td>
</tr>
<tr>
<td>San Antonio Aguas Calientes, Guatemala (est. 2009)</td>
<td>21,609</td>
</tr>
<tr>
<td>Choluteca, Honduras (est. 2009, now closed)</td>
<td>2,000</td>
</tr>
<tr>
<td>San Miguel de Allende, Mexico (est. 2011)</td>
<td>1,950</td>
</tr>
<tr>
<td>Morelia, Mexico (est. 2014)</td>
<td>418</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55,831</strong></td>
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</tbody>
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NUMBER OF FAMILIES DIRECTLY IMPACTED BY STOVETEAM

Total stove production to date: 55,831.

Each stove is sold to a single family, and average family size shown by StoveTeam’s field testing data is 7.5. The cookstoves produced and sold by StoveTeam-sponsored factories have improved the lives of approximately 420,000 individuals.

EMPLOYMENT

StoveTeam-sponsored factories employ from 3-15 people depending on the factory. In 2015, more than 25 people were employed by the factories. They include skilled laborers and metal workers, salespeople and watchmen, and cleaning/cooking staff. Surrounding businesses, including hardware stores and materials providers, as well as accountants and attorneys are also impacted by factory presence and growth.
HOW FUNDING HAS INFLUENCED OPERATIONS

Having adequate funding has permitted StoveTeam International to:

- Hire a second full-time staff person to advance program objectives and oversee volunteer teams.
- Support factories through volunteer trips and stove subsidies for needy communities.
- Facilitate communication and cooperation among factory owners.
- Provide factory owners with better tools to evaluate costs of doing business.
- Aid in factory stainability by developing sources of subsidies.
- Develop a business plan and financing of one new factory in Nicaragua, an area of high need.
- Participate in international conferences and meetings leading to strategic partnerships with CEMEX, Global Alliance for Clean Cookstoves, Aprovecho Research Center, the Environmental Protection Agency, NOVA, Rotary International and Rotary Clubs throughout the United States and Latin America.
- Raise awareness in the United States and Latin America about the dangers of open cooking fires.

CURRENT GRANT AND FOUNDATION FUNDING

StoveTeam received grants from Dining for Women, Good Works Institute, The Milagro Foundation, Winrock International, U.S. EPA, Oregon Country Fair Board and The Sanford Foundation. StoveTeam received the majority of its support from private donors and Rotary Clubs.

Individual Rotary Districts and The Rotary Foundation provided matching funding for all of the Central American and Mexican factories.
StoveTeam volunteers help with construction, stove building, stove distribution and factory improvements.

Photo: Lynn Johnson, Ripple Effect Images
AWARDS AND RECOGNITION

Each year, Nancy and StoveTeam staff present programs to numerous Rotary Clubs, Engineers in Technical and Humanitarian Opportunities of Service (ETHOS), the University of Oregon, and others. StoveTeam continues to be a member of the Global Alliance for Clean Cookstoves and participates in the social impacts working group of the U.S. Technical Advisory Committee of the International Organization for Standardization for clean cookstoves and clean cooking solutions.

In March 2015, Nancy received the Bending Toward Justice Award from Oregon Senator Jeff Merkley.

In April 2014, Devin Thorpe of Forbes Magazine published an interview with Nancy Hughes who was recognized for her work with StoveTeam International.
Board of Directors

**NANCY HUGHES – PRESIDENT & FOUNDER**
Nancy directs the work of StoveTeam and is the founder and the face of the organization.

She began StoveTeam after working with a medical team and observing the results of burns and respiratory diseases caused by cooking over open fires inside unventilated homes.

Nancy is a graduate of Whitman College, an active member of Rotary and has been a tireless volunteer with many organizations. She is an inspiring speaker and travels extensively for StoveTeam International.

**GERALD REICHER – VICE PRESIDENT**
Gerry assists factory owners by providing appropriate business tools. On the first team he assisted with developing the concept of creating sustainable businesses rather than simply distributing stoves. Prior to his volunteer work with StoveTeam International he owned and operated a software business and was on the faculty of The University of Oregon where he taught and did research in Cognitive Psychology. He has traveled many times to Latin America.

**DON STEELY**
Don assists with stove design and the physical development of new factories. He advises factory owners about the purchase of appropriate tools and efficient factory set-up. He has built his own homes and is the “hands-on” arm of StoveTeam. Outside of StoveTeam Don is a Rotarian and works as an educational curriculum designer and program evaluator.

**SCOTT WILBER**
Scott is an active Eugene Southtowne Rotarian and works as a professional C.P.A. Scott takes an active role assisting with StoveTeam financial accounting.
The Ecocina uses significantly less wood than open fires.
MARGA LARSON
Marga is an active member of the Eugene Downtown Rotary Club and works as a professional C.P.A. She has visited the factory in El Salvador and assists StoveTeam with the development of accounting models for stove factories, as well as budgeting and financial oversight.

JAY LAMB
Jay is a Senior Vice President at MODA Health and serves on their Board of Directors. A former dentist, he is a Fellow in the International College of Dentists, as well as the American College of Dentists. He joined the board of StoveTeam International in 2012 and assists with strategic planning and financial oversight.

SUSIE HANNER
Susie is an author of reading programs and an active Rotarian. She has successfully written and edited many of the Rotary Matching Grants received by StoveTeam.

BOB WAY
Bob assists with technical advice for stove factory owners and stove making training for new StoveTeam volunteers. Bob is retired from Lane Community College, where he implemented and ran the Cooperative Education/Internship program which located and supervised on-the-job training for 2000 students annually with world wide placements.

SAM ROBERTS
Sam is a practicing attorney assisting StoveTeam with legal advice and contracts. He has been a volunteer on StoveTeam trips to Guatemala and Honduras. Sam is a graduate of the University of Oregon School of Law.
We work alongside women in local communities to solve the problems of open cooking fires.
WALT MEYER
Walt is the Director of the StoveTeam Technical Committee and was instrumental in designing and implementing the Ecocina field tests as well as assisting with the certification tests for obtaining carbon credits. He is fluent in Spanish and spent two years in Queretaro, Mexico as a volunteer with the Peace Corps where he worked at the Centro de Investigación y Desarrollo Tecnológico en Electroquimica, using his 46 years experience as an environmental engineer. He also actively works with Oregon communities on their potable water and their wastewater treatment systems. Walt is an active Rotarian and serves on the board of the Central Mexican Youth Fund.

Staff

KATIE LAUGHLIN
As Program Director, Katie is responsible for overseeing the daily operations of StoveTeam’s U.S. office, program strategy and implementation including factory development, factory relationships, fundraising, grant writing, promotion, and organizational management. She is a graduate of the University of Oregon with degrees in Political Science, Latin American Politics and Spanish.

KIM FORREST
As Volunteer and Programs Coordinator, Kim is responsible for interfacing with volunteers and factory owners, assisting with grant writing, program implementation, and developing trips for volunteers. She is a graduate of Whitman College with a degree in History.

VOLUNTEER STAFF
Over 200 volunteers contribute time and effort to StoveTeam projects.