

Fuelling Economic Opportunity and Rebuilding Hope in Haiti with Clean Cookstoves

Haiti



Sebastian Africano

Organization type:

nonprofit/ngo/citizen sector

Budget:

\$1 million - \$5 million

Website:

<http://www.treeswaterpeople.org>



- [Employment](#)
- [Economic development](#)
- [Energy conservation](#)
- [Green business](#)
- [Income generation](#)
- [Poverty alleviation](#)
- [Sustainable development](#)

Project Summary

Elevator Pitch

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

Trees, Water & People (TWP) is changing the lives of vulnerable populations in Haiti by harnessing the entrepreneurial spirit of its skilled working class to deliver a locally manufactured cookstove that saves families money and protects their environment. Poor urban Haitian families spend up to 40% (USD\$1/day) of their meager income on cooking fuel. In response, TWP has designed a fuel-efficient charcoal cookstove that balances fuel savings, durability, scalability and value, at 30-50% of the cost of expensive imported cookstoves. This sustainable technology will promote economic development and alleviate poverty by providing desperately needed employment and a fresh source of stable income for local workers, while reducing living costs for Haitian families by up to USD\$150/year.

About Project

Problem: What problem is this project trying to address?

Haiti is the poorest and least developed country in the Western Hemisphere. Its nine million people suffer from widespread disease, inadequate health care, and a history of political instability. Environmental degradation is also a major concern; decreasing the country's resistance to natural disasters. Deforestation is a particular problem, with less than 2% of native forests remaining. According to the Haitian Bureau of Mines and Energy, 75% of the energy consumed in Haiti comes from wood and charcoal, of which 80% is used for cooking household meals. Halting rampant deforestation is a critical task, as current reforestation is only 26% the rate of forest removal. The economic result of such severe deforestation is reduced carrying capacity in rural areas, causing steady migration of destitute families to the impoverished urban areas of Haiti, where population has more than tripled over the past 25 years. TWP began working in Haiti in 2007, launching a community-based development program to combat deforestation and improve the economic situation through the introduction of our fuel-efficient clay Rocket cookstoves. Highly efficient and inexpensive, the simple technology was easily adapted to locally available materials. We trained teams of local Haitians to build 5,500 Rocket cookstoves, providing marketable skills, employment, and desperately needed income. After the January 2010 earthquake, we provided emergency relief through the distribution of 1,850 imported metal Rocket cookstoves to Internally Displaced Persons (IDP) camps, to safely purify water and cook food.

Solution: What is the proposed solution? Please be specific!

TWP's unique community-based development model is built on the philosophy that the best way to help those in need is to involve them directly in the design and implementation of the project. This creates local ownership, stakeholder involvement, and a base for financial sustainability. Since the January 2010 earthquake, TWP has invested significant personnel time, funds and energy into improving cooking conditions in Haiti Internally Displaced Persons (IDP) camps. Extensive field testing, follow-up and qualitative analysis have provided a clear picture of what Haitian cooks like and dislike, and research and design around supply chain management has provided information on logical materials for local manufacture. As a result, with ILF we have created a locally produced quality clean cookstove that reduces fuel consumption by nearly half – results on par with industrially manufactured imported cookstove models, but at half the cost. Most Haitian cooks replace traditional cookstoves every four months. TWP's cookstove has an inexpensive (<USD\$2) replaceable fuel bowl, and the body is isolated from heat stresses. The Zanmi Pye Bwa body will come with a one year manufacturer's warranty, redeemable directly with sellers of the cookstove. To incentivize recycling of material and to attract repeat business, our production facility will buy back old cookstoves when they reach the end of their lifespan. These key elements are often overlooked when designing cookstove programs in the developing world, but TWP ensures their integrated into our project from the beginning.

Impact: How does it Work

Example: Walk us through a specific example(s) of how this solution makes a difference; include its primary activities.

Together with our NGO partner, International Lifeline Fund (ILF), we have designed a proven fuel-efficient charcoal cookstove, the Zanmi Pye Bwa ("Friend of the Trees") for the Haitian population. The new model is based on local needs, cooking preferences and long-term sustainability - using local skills and materials so that it can be repaired, refurbished or replaced locally at a low-cost, indefinitely. To date, we have trained 10 Haitian metal workers who have completed the first run of 1,000 cookstoves, which have already proven popular with local cooks. The next step is to create a production facility in Port-au-Prince in partnership with ILF for the scaled fabrication of (Zamni Pye Bwa) cookstoves both for households and small businesses. Mechanization of many steps of the production process will both increase the project's output as well as improve the quality of the final product, while still allowing for the creation of many manual jobs in final assembly of the cookstoves. This facility will also serve as a resource center for training, testing, monitoring, and coordination services for organizations implementing cookstove programs in Haiti. Cookstoves will be sold through the main production facility, retail channels, NGOs, and by roaming urban vendors. Replacement parts and repair will also be made available at production facility and throughout Port-au-Prince via the training and certification of skilled independent artisans.

About You

Organization:

Trees, Water & People

About You

First Name

Sebastian

Last Name

Africano

Twitter

<http://twitter.com/#!/treeswater>

Facebook Profile

<http://www.facebook.com/pages/Trees-Water-People/11071758786?ref=ts>

About Your Organization

Organization Name

Trees, Water & People

Organization Country

, CO, Larimer County

Country where this project is creating social impact

, OU

How long has your organization been operating?

More than 5 years

Is the project that you are entering related to this organization?

Yes

The information you provide here will be used to fill in any parts of your profile that have been left blank, such as interests, organization information, and website. No contact information will be made public. Please uncheck here if you do not want this to happen..

Innovation

What stage is your project in?

Operating for 1 5 years

Share the story of the founder and what inspired the founder to start this project

Sebastian Africano, Deputy International Director for Trees, Water & People, was trained as a Rocket stove consultant by the Aprovecho Research Center in 2004, and began working with TWP in early 2005 as a marketing and commercialization intern for their cookstove program in Tegucigalpa, Honduras. He went on to develop his own consulting practice in the region, supporting fuel-efficient cookstove projects in five Central American countries. Later, Sebastian worked as a Senior Environmental Adviser to International Lifeline Fund's projects in Sudan, Eastern Kenya, Northern Uganda and Tanzania before joining TWP as Deputy International Director in 2009.

By late 2009, TWP was interested in producing a more durable, portable, longer lasting cookstove that was specific to charcoal, rather than fuelwood. Our team was en route to implement this second phase when the January 2010 earthquake hit and altered all courses of activity in the country. In response to the emergency, TWP imported 1,744 pre-manufactured Rocket cookstoves into Internally Displaced Persons (IDP) camps to ease immediate cooking needs. However, we knew that once the dust settled and the rebuilding began, we wanted to return to our proven community-based development model of locally designing, producing and disseminating clean cookstoves. Thus, the unpredictable power of Mother Nature and the resulting extended dire post-earthquake situation in Haiti further inspired this project. Improving quality of life and helping the country rebuild through economic opportunity has become one of TWP's top priorities.

Social Impact

Please describe how your project has been successful and how that success is measured

Since TWP began working in Haiti four years ago, we have provided 5,500 clay Rocket stoves and 1,850 metal Rocket stoves, and 1,000 Zamni Pye Bwa cookstoves to poor rural and urban households. With an average family size of six individuals, more than 50,000 women, children and men have benefitted directly from our efforts. We have trained several teams of local workers to produce specific models, providing valuable economic opportunity via the transfer of marketable skills and employment.

How many people have been impacted by your project?

More than 10,000

How many people could be impacted by your project in the next three years?

More than 10,000

How will your project evolve over the next three years?

Years of fieldwork in the country have led TWP to a cookstove design conducive to rapid scale-up (50,000 units/year) which can be produced through existing manufacturing channels and skilled labor resources. The evolution of our project includes the establishment of a vendor program, which would catalyze the dissemination of this sustainable technology to individuals and institutions throughout Haiti. We estimate that our project could reach hundreds of thousands of Haitian families over the next decade with funding to launch the effort, development of a micro-entrepreneurial component for dissemination, and carbon finance to provide long-term stability.

Sustainability

What barriers might hinder the success of your project and how do you plan to overcome them?

- Ability to communicate the importance of planning, visioning and forecasting to our partners and developing practical succession plans that mitigate risk over the long term.
- Political stability and safety in the countries and communities in which we work – currently some of the most violent and unstable countries in the world.
- Being able to offer the competitive compensation necessary to continually attract savvy and skilled staff with the cultural values, dedication and first-hand experience that make our organization so unique.

This project earned TWP Deputy International Director, Sebastian Africano, a full scholarship to the Global Social Benefit Incubator (GSBI™) at the Center for Science, Technology, and Society at Santa Clara University this August, where he will work with like-minded social entrepreneurs and a team of mentors from the silicon valley business community to overcome the above barriers to scale and impact.

Tell us about your partnerships

All of TWP's projects are planned and executed in partnership with NGOs, community organizations, businesses, government entities, local leaders, and individual residents in project locations. Long-term collaborations with our international NGO partners permit them to diversify their skills, grow their management capacity, pursue their aspirations, and actively test assumptions around regionally appropriate sustainable technologies. Together, we implement projects that aim for community self-sufficiency and triple bottom line returns for all involved.

TWP provides the administrative, technical and economic support needed to produce measurable impacts, while also enabling a degree of monitoring, evaluation and continuous innovation that would not be possible otherwise. Our unique approach has led to the development of pioneering methodologies that promote community leadership, locally driven natural resource management, and a communicative culture that encourages our partners to share best-practices and skills with each other, fostering true regional collaboration and sustainable development.

In Haiti, TWP began working with the Ananda Marga Universal Relief Team (AMURT) in 2007 to introduce our clay Rocket stove. After the earthquake in 2010, we established a partnership with International Lifeline Fund (ILF) to design a fuel-efficient charcoal cookstove specific to the needs of Haitian cooks, skills of local metal workers, and the availability of materials. TWP hired consultant Brian Martin to help develop the final design of our Zanmi Pye Bwa cookstove.

Explain your selections

Over the past 13 years, TWP has built a diverse and resilient funding stream including individuals, foundations, NGOs, businesses, government, and awards/prizes which has been instrumental in validating and furthering our approach to international development. Support for this project in particular has come from TWP's increased investments in social marketing that have broadened our donor base, from foundations interested in sustainable solutions rather than donation-based approaches, and from businesses dedicated to corporate social responsibility.

Additionally, this project will generate revenues via the sale of our cookstoves, helping to recover immediate material costs and expediting the transfer of ownership of the project to local hands. TWP has also been an active participant in the development of Haiti's National Cookstove Strategy in conjunction with the Haitian Ministry of Mines and Energy, which provides our project with a unique foundation of local support.

How do you plan to strengthen your project in the next three years?

TWP plans to contract additional Haitian field staff to 1) support the launch and expansion of the vendor program, 2) strengthen TWP's existing relationship with the Haitian government and other institutional actors, 3) develop a communications strategy to promote the environmental, health and economic benefits of the clean cookstove program, and 4) to improve the sophistication of the manufacturing process.

Additionally, TWP has plans to consolidate the efforts and data of the different groups implementing cookstove projects in order to reach a scale necessary for the development of a viable and enduring carbon asset. Carbon finance offers the prospect of long-term financial stability and incentivizes quality products and continuing engagement. We will seek to strategically subsidize our clean cookstove dissemination by registering the project to produce Verified Emissions Reductions (VERs) with high social value. Returns from the sales of these VERs would permit us to internalize transport costs, social marketing campaigns, and monitoring and evaluation activities of our clean cookstove project.

Challenges

**Which barriers to employment does your innovation address?
Please select up to three in order of relevancy to your project.**

PRIMARY

Underemployment

SECONDARY

Lack of efficiency

TERTIARY

Lack of skills/training

Please describe how your innovation specifically tackles the barriers listed above.

The skilled Haitian workforce we employ for this project are local metal workers who labor in challenging, insecure and unsanitary conditions, with no proper outlets for their products. With small and unreliable margins, they are required to both produce and market their wares, limiting their potential to generate consistent income for their families. By providing these workers with regular employment and inclusion in the innovation process, we empower them with new skills in the design and fabrication of durable consumer goods – green technologies – which they can add to their product lines. We have centralized the production process to ensure consistency and quality, and are steadily increasing the degree of mechanization to improve efficiency.

Are you trying to scale your organization or initiative?

If yes, please check up to three potential pathways in order of relevancy to you.

PRIMARY**SECONDARY**

Influenced other organizations and institutions through the spread of best practices

TERTIARY

Repurposed your model for other sectors/development needs

Please describe which of your growth activities are current or planned for the immediate future.

Fuel costs are rising steadily in Haiti due to scarcity, and the Haitian government has set a goal of reducing charcoal consumption by 40% over the next 10 years. Our current geographic focus is households in Port au Prince and surrounding areas, with an addressable market of at least 350,000 families. Most of these families use two cookstoves concurrently, so a full solution would require replacing both. Most vulnerable families are currently served by a cohort of dedicated NGOs operating throughout the country. By harnessing their reach, we will be able to transfer our expertise in the implementation of this important initiative. Once success is consolidated in the household sector, we will repurpose our model to street food vendors – an additional addressable market for 35,000 units.

Do you collaborate with any of the following: (Check all that apply)

If yes, how have these collaborations helped your innovation to succeed?

TWP Deputy International Director, Sebastian Africano, currently sits on a cookstoves and biomass working group in Port-au-Prince that is co-chaired by the Haitian Ministry of Mines and Energy and the UNEP, guiding the overall strategy for reducing Haiti's dependence on biomass through innovative clean cookstoves. TWP is also a member of the Global Alliance for Clean Cookstoves (GACC) Technology & Fuels and Monitor & Evaluations Working Groups, an initiative involving the United Nations Foundation, Clinton Global Initiative, US State Department, US Department of Energy, and US Environmental Protection Agency, with a goal to disseminate 100 million clean cookstoves over the next decade. Additionally, TWP has on-going collaborations with academia, universities, and for profit companies.

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