

Envirofit International: Fuel-efficient cookstoves for low-income consumers in emerging markets



BCtA Commitment

Envirofit International (Envirofit) joined the Business Call to Action in 2013; it pledged to sell 150,000 clean cookstoves to low-income consumers in Kenya by 2015, thereby reducing household CO₂ emissions by an estimated 1.9 million tons.

By 2020, Envirofit intends to:

- Sell 5 million cookstoves worldwide
- Improve the lives of 25 million people in 5 million households
- Help customers save US\$700 million of fuel costs
- Help generate 12,000 (indirect) jobs
- Save 200 million trees from destruction
- Prevent the emission of 85 million tons of CO₂ from burning wood

Key company facts

Country of headquarters:
USA

Founded:
2003

Number of employees:
480 (2015)

Annual turnover:
US\$20 million (2015)



In Short

About 3 billion people – 40 percent of the world's population – still cook over open fires or with fuel-inefficient cookstoves. This creates significant negative impacts. According to the World Health Organization, in 2012 household air pollution killed 4.3 million people – more than HIV, Tuberculosis and Malaria combined. Open fire cooking also harms the environment, accounting for 25 percent of the world's black carbon emissions. In Sub-Saharan Africa alone, 300 million tons of wood are burned for cooking every year. It also imposes economic costs on the poor, who spend up to a quarter of their income on cooking fuel.

Founded in 2003, Envirofit tackles these challenges by selling highly fuel-

The delivery of clean energy products for the base of the economic pyramid needs to shift from aid-based donations to the development of consumer-driven markets that deliver a range of social, economic and environmental impacts.

Ron Bills, CEO Envirofit

efficient, low-emission, affordable cookstoves, which positively impact health, environment and livelihoods. The company consults with customers before adapting its products to the local context. Using its global network of distributors, Envirofit has sold more than one million cookstoves, reaching five million people in over 50 countries.

What are the Results?



Link to the SDGs

- 1 No poverty
- 2 Zero hunger
- 3 Good health and well-being
- 5 Gender equality
- 7 Affordable and clean energy
- 13 Climate action
- 17 Partnerships for the goals

The role of key partners

Envirofit has several partnerships that have helped the company reach scale and increase its impact.

The **Shell Foundation** has been a crucial partner for Envirofit since 2007. It has provided the company with different types of funding – including grants, loan guarantees and equity – and business support. This has allowed Envirofit to finance its research and development and grow from a one-product business to a global cookstove supplier with a wide range of models.

Envirofit collaborates with its fellow members of the **Global Alliance for Clean Cookstoves (GACC)**, a public-private partnership hosted by the UN Foundation. The GACC's members raise awareness on household air pollution and the use of low-carbon cookstoves, promote capacity building and share learnings among each other and with the public.

Envirofit also works closely with government authorities; in Honduras it teamed up with the national government and a Honduran NGO to promote the establishment of a clean cookstove industry in the country.

Business model

Envirofit designs cookstoves that help customers save money and time while protecting their health and reducing their carbon footprint. The company targets different market segments and offers a range of cookstove models that vary in size, type of fuel and price (US\$20 to US\$150). It is active in over 50 countries on five continents.

Envirofit develops its products in consultation with customers. It conducts interviews with focus groups to determine local cooking customs, and the types of fuel and pots people use. This analysis also includes aesthetic aspects, such as preferences for certain colors or materials. Envirofit has found that a commercially successful cookstove must be durable, fuel-efficient, cost-effective and visually appealing. After launching the product, Envirofit follows up with customers to collect information that will improve future products.

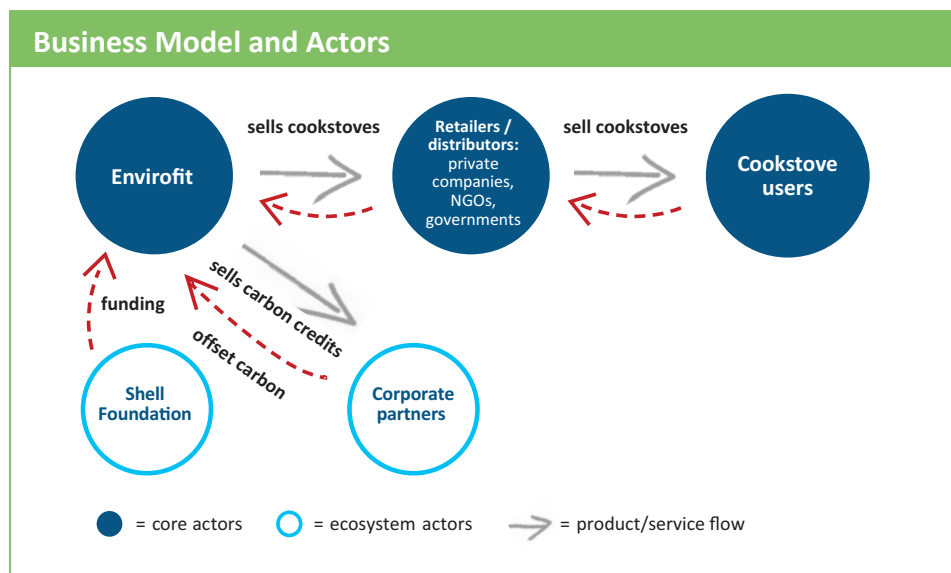
Envirofit combines centralized manufacturing with local assembly. When the company enters a new market, it first delivers the cookstoves from one of its existing regional hubs. Once demand is sufficient, Envirofit sets up a local production facility. This flexible approach allows the company to reduce costs, while ensuring that its quality standards are met. Envirofit operates factories in China, India, Nigeria, Kenya, Honduras and Mexico,

with a total production capacity of 100,000 cookstoves per month.

The company applies a Business-to-Business sales model. It sells cookstoves to various distributors, including local private companies, non-profit organizations and government institutions. These retailers then use their respective distribution and sales networks to reach the customers. Envirofit trains its retail partners how to sell its products and how to use the cookstoves properly.

The company uses a SMAAART™ 360 business model that delivers adoptable, affordable and assessable products. This model has three main revenue streams. The majority of revenues come from selling cookstoves. Secondary revenues come from stove design and development consulting services and tertiary revenues come from selling carbon credits to help companies offset their emissions. Since its cookstoves reduce carbon emissions, Envirofit's products generate Certified Emission Reduction units, which the company can sell on the carbon credit market. Through cross-subsidization, these carbon credit revenues help Envirofit lower the product prices for end-users.

People from low-income households are included in the model both as customers and as last-mile retailers of Envirofit's products. Furthermore, jobs are created in production facilities.



What are the Results?

Business results

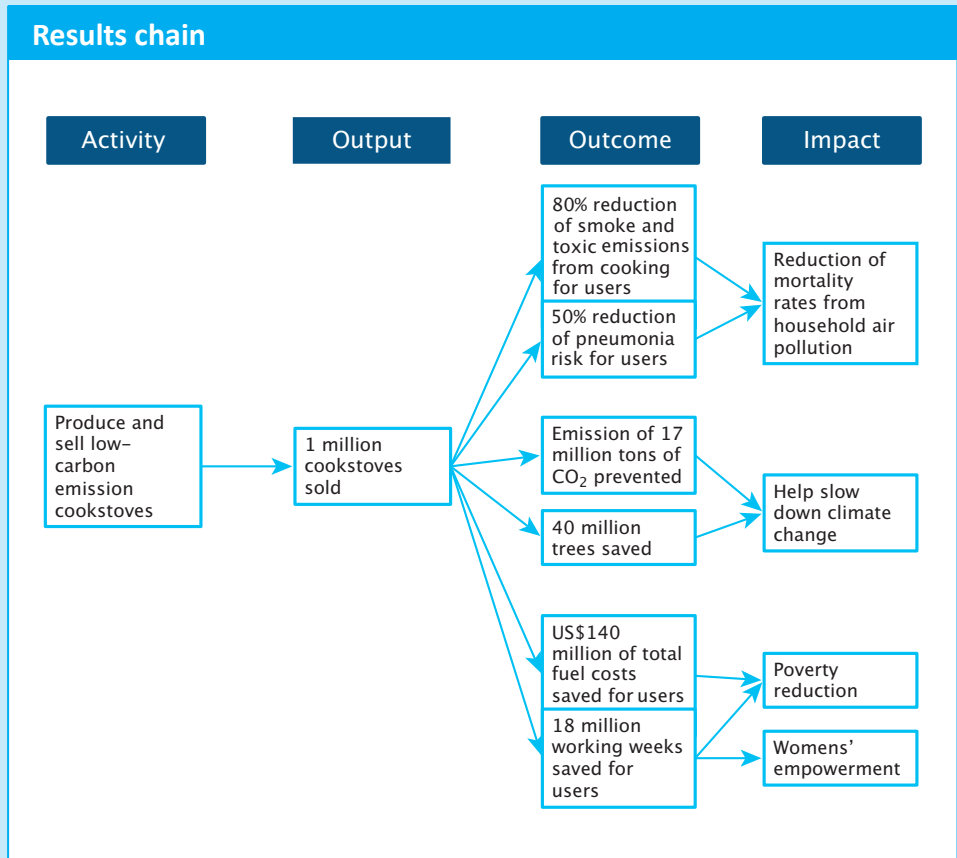
Envirofit is the largest producer of high quality, low cost, clean cookstoves in the world. In 2015, the company's total sales reached one million. Envirofit's sales growth is accelerating. The business took five years to sell its first half a million cookstoves but just three years to sell the second half a million. Envirofit has sold its products in more than 50 countries, the main markets being India, Kenya and Honduras. The company finances its expansion with its revenues, debt and equity financing.

In response to its customers' feedback, Envirofit has significantly diversified its product line. It now offers cookstoves suitable for different fuel types (charcoal, wood, liquefied petroleum gas) and pot sizes, catering for customers from India to Kenya, from single households to schools. With an eye on increasing its impact as well as sales, Envirofit has also developed lower-price cookstoves and partnerships with microfinance organizations to reach customers who previously were unable to afford clean cooking technology.

Development results

By selling one million cookstoves Envirofit has created health, economic and environmental benefits impacting five million people.

Household air pollution from open fire and inefficient cookstoves has been identified as a significant health risk by the World Health Organization. By cutting smoke and toxic emissions, such as carbon monoxide and particulate matter, by up to 80%, Envirofit's cookstoves reduce the risk of pneumonia by 50% and reduce the painful coughing and watery eyes people suffer when using open fires.



Envirofit has measured that its products lower the average household fuel use by 60% compared to conventional cookstoves. This prevents the emission of about 3.4 tons of CO₂ and 23kg of carbon monoxide per household per year. In total, according to Envirofit's calculations, this has prevented the emission of 17 million tons of CO₂ and the destruction of 40 million trees.

Reduced fuel consumption limits customers' fuel costs. Families using an Envirofit cookstove can save up to US\$300 per year. The company has calculated that to date, the total savings have amounted to US\$140 million.

Envirofit's cookstove also cooks food faster than conventional methods. Consequently, households spend up to 50% less time collecting fuel and cooking, leaving them more time for income generating activities. According to Envirofit, its products have so far saved 18 million working weeks of labor.

The company has also created job opportunities. Worldwide, Envirofit employs 480 people. In addition, its business has generated an additional 2,400 indirect jobs, for example at last-mile distribution companies. Envirofit projects that another 12,000 indirect jobs will be created over the next five years.

Finally, Envirofit has empowered women. More fuel-efficient and more time-efficient cooking benefits female family members in particular, allowing them to pursue income generating activities or education opportunities. Selling cookstoves is one promising way for women to make money. An Envirofit pilot training programme in Kenya, specifically designed for women, showed that, after completing the training, the women sold three times as many cookstoves as men.

What are the Lessons Learned?

Key challenges and solutions

Envirofit has faced several challenges affecting its product design and its business, distribution and financing models. It has succeeded by continuously revising its product line and its business model to address these issues.

Envirofit set out to significantly increase the efficiency of cookstoves. But they found that this was not enough. Customers valued the performance and durability of the cookstoves, but design, aesthetic preferences and consumers' aspirations mattered as well. Consequently, the company changed its technology-driven approach to one that included users' feedback. Envirofit now applies a user-centered design process based on customers' preferences. This has significantly influenced the company's product line, from the materials used to colors, sizes and prices of cookstoves. The new approach has also boosted Envirofit's sales.

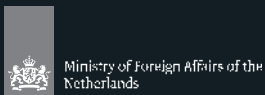
Envirofit started in its first market, India, with a Business-to-Customer (B2C) model setting up its own sales network. The resulting proximity to customers helped it gain insights into customers' needs which drove product improvements. However, building and operating its own sales network was costly and inefficient. Envirofit therefore shifted to a Business-to-Business (B2B) model whereby it sells cookstoves to various retailers including private companies, microfinance

institutions and NGOs. In India, this reduced Envirofit's operational costs by 75%, lowered marketing expenses by 85%, and doubled sales. This success prompted the company to replicate this B2B model worldwide.

Envirofit initially found that many of its prospective customers in India could not afford a US\$20-30 for cookstove. To address this challenge it partnered with SKS, one of the country's biggest microfinance institutions. Special loan products helped over 50,000 customers buy cookstoves they would not otherwise have been able to afford.

Future plans

Already the industry leader in the field, Envirofit aims to sell a total of five million low-emission cookstoves by 2020, thereby impacting the lives of 25 million people worldwide. Its experience in challenging market environments puts Envirofit into a good position to reach this ambitious goal. Crucial components of this plan will be keeping a close relationship with its customers while growing its retailer network.



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