

Sustainable Green Fuel Enterprise- Testing a hub and spoke fuel distribution model

Organization Profile

- Year Established: 2008
- Country: Cambodia
- Value chain area of focus: Fuel Manufacturer
- Product: Carbonized briquettes <http://catalog.cleancookstoves.org/fuels/3>
- Grant: Pilot Innovation Fund (PIF) Grantee- Round II

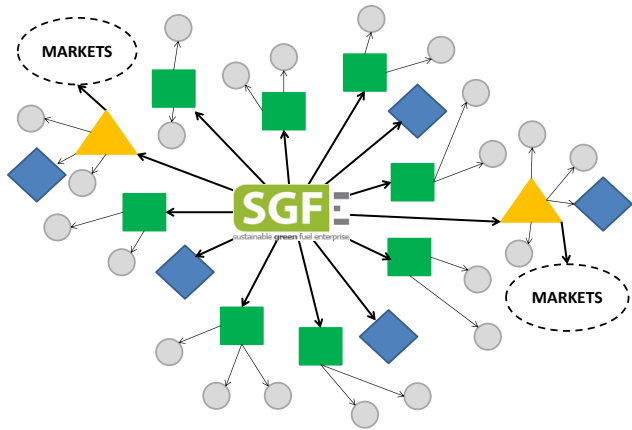
Organizational Overview

Sustainable Green Fuel Enterprise (SGFE) is a private limited company that manufactures char-briquettes made of organic biomass waste as an alternative to wood charcoal and offers a clean energy solution to Cambodia's cooking fuel consumption and utilization. Char-briquettes are produced with 100% recycled biomass waste and through reduced deforestation, improved job creation and home cooking conditions, it offers environmental, economic and health benefits. GERES (Group for Environment, Renewable Energy and Solidarity) established SGFE as a grant funded program in Cambodia in 2008 and opened its first factory in 2009. SGFE faced the risk of closure when NGO funding ran out in 2011 and it was then that Carlo Figa Talamanca who is the current owner and CEO of the company stepped in to take over operations. Prior to receiving assistance from the Pilot Innovation Fund (PIF) in February 2013, SGFE operated as a true start-up company, with production of 20 tons of char-briquettes a month with a customer base 200 households and small businesses.

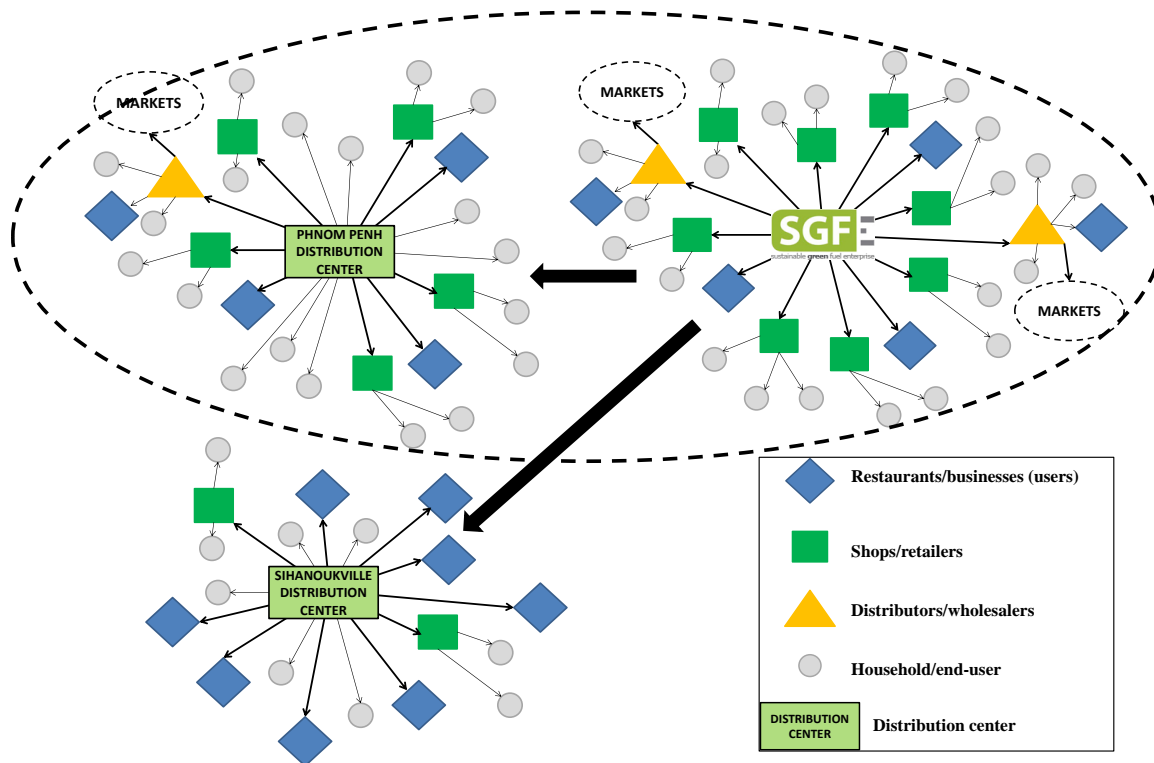


Grant Objective:

By the time SGFE applied for the Pilot Innovation Fund, they were nearing a breakeven point financially due to an increase in sales and decrease in expenses and overhead. However, SGFE's reach was limited and they were not able to keep up with demand for their fuel. SGFE's grant objectives were to test and improved hub and spoke distribution model, increasing the total number of distributors. In order to effectively test this model and achieve the goal of expanded distribution, SGFE used PIF funding to expand production capacity. While production took up a lot of the PIF budget, distribution was recognized as critical given that char-briquettes are used on a daily basis and need frequent replacement. SGFE was producing, stocking and distributing inventory from their factory to retail locations and restaurants across Phnom Penh:



SGFE had planned to create two distribution centers that would allow for expanded distribution to even more retailers:



Their project plan involved two major work streams that would first create the increased production capacity

Production

1. Increase of production capacity and new storage space
 - Purchase and installation of machinery for a second production line
 - Construction of a new storage space at the factory for raw materials and finished products

Distribution

2. Opening 2 new distribution centers in Phnom Penh
 - A new distribution center to be established in addition to the factory that will continue to serve as a distribution center as well. The innovation here is that the distribution centers will sell to both small distributors/wholesalers as well as directly to end-users at a retail level.
 - Provide transport and delivery services to customers on demand
3. Opening a new distribution center in Sihanoukville
 - This distribution center would be managed separately from SGFE and run by a local entrepreneur who mainly services restaurants
4. Marketing and Communication Campaign to increase sales, including radio advertising and the provision of marketing and communication material such as t shirts, flyers, billboards and umbrellas for the distribution centers

Achievements of the Grant

The PIF grant period was intended to offer proof of concept while targeting both distribution and production objectives. Having identified distribution as a bottleneck to scaling up, PIF funds were set aside to test a hub and spoke, decentralized distribution model- testing two models: an independently owned and operated hub that would play a major role in marketing and transporting the product to customers and bringing on two additional distribution partners that would sell to smaller retailers and restaurants. The arrangement with the independently owned and operated distribution partner did not work and SGFE took the fund allocations in a different direction and instead focused on increasing production. During the PIF grant period SGFE proceeded to double its production from 20 to 40 tons of char-briquettes a month while increasing its customer base to 500 households, serving as strong evidence of the success of the Pilot Innovation Fund. SGFE's strong growth trajectory made it a recipient of the Spark Grant in 2014 which helped to continue its expansion through investments in improved sales, supply chain and distribution management systems. The company has a current production capacity of 145 tons, selling approximately 60 tons per month to over 500 direct customers or distribution points in a span of 3 years.

During the grant period, several successes on the production and distribution front were achieved.

Production: Given the short grant period, in the first two months SGFE focused on the purchase and installation of its production equipment and the construction of a new storage space. In line with the production goals, SGFE purchased and installed an extruding machine for an additional production line and locally constructed a drying machine. To smoothen the production flow, they bought technical tools for the operation and maintenance of the new machines, new trolleys for raw materials and finished products. In addition to the original proposal, SGFE bought a new mixing machine as a precautionary measure to reduce production halts in case of failure or maintenance delays of its only mixer.

Distribution: Four new distribution centers were opened in Phnom Penh, Shanoukeville, Takeo and Svay Reang exceeding the proposed objective of two centers. The advertising and communication efforts accompanying the new distribution model were altered and radio advertising was dropped in addition to scaling down of expenditure on promotional marketing material.

Lessons Learned

Production

Stabilizing Stock: During the PIF period, SGFE prioritized efforts to stabilize stocks and focus on push rather than pull factors to assess production levels. With the help of two intern engineers, SGFE streamlined its production flow and stock management processes to ensure that stocks are maintained at between 50 to 100 percent of the monthly sales demand. Inventory and stock management is applied to both the final product and raw materials. This is a major breakthrough since SGFE did not previously collect stock information nor use it to inform production decisions.

Leverage Negotiating Power: Since SGFE has doubled its production; it has leveraged its position to negotiate better prices with its raw material suppliers. SGFE is able to be selective about the suppliers it chooses based on best prices. SGFE conducts random raw material sample inspections to ensure that quality standards are maintained. With the rising production levels, SGFE has been successful in reducing the cost price of inputs.

Trial and Error: Carlo Figa is ebullient when he describes SGFE's success in locally building a dryer that has reduced drying time from 29 to 24 hours. The locally adapted dryer is a result of a trial and error method and SGFE has learned valuable lessons from its compounded experience over the years. Building on the PIF experience, SGFE went on to significantly reduce drying time to 10 hours with the Spark Fund. Another example of this is the enhanced extruder that SGFE currently uses. Over the years, SGFE has learned that fortifying the extruder coil with extra metal and daily cleaning of the equipment adds momentously to its life.

Production Targets and Incentives: SGFE introduced an incentive system of employee bonuses to motivate the SGFE team to achieve the big production targets outlined during the PIF grant period. Employees get a bonus when a production target is achieved; this incentive system continues to motivate and uphold employee morale and satisfaction.

Distribution:

One of the distribution objectives outlined in the PIF proposal was to expand the number of distribution centers across Cambodia to increase the sales of SGFE char-briquettes. While the PIF grant period saw a rise in the number of distributors, this expansion proved unsustainable as SGFE discontinued its relationship with a number of these distributors. However, this proved to be a strong learning experience that has since strengthened SGFE's distribution strategy.

Entrepreneurial Distributors: As some distribution partnerships fell through, SGFE learned that the best distributors are those with strong entrepreneurial traits. Carlo Figa describes XX, a smart, young Cambodian woman as one of SGFE's best distributors because she displays drive and is pioneering. Entrepreneurs with access to storage space and a means of transportation have been the most successful distributors.

Transportation: The initial proposal had envisioned the purchase of a truck and tuk tuk but SGFE has found that transferring transportation costs to buyers is more beneficial. Individuals or centers that own a means of transportation serve as good distributors. Further, due to the reduced costs of transportation in urban areas, city based distributors have proven to be better distribution agents.

Price Differentiation: During the PIF period, SGFE introduced three price levels based on the tonnage size of the purchase. The lowest prices are offered to those who buy directly from the SGFE factory. Individuals who buy less than ten 30-kilogram bags pay the highest price. This price differentiation has been successful in driving sales of char-briquettes.

Growing Market: The SGFE proposal expressed fears that a saturated market near its factory would reduce sales in those areas. A majority of the *points of sales* (POS) for SGFE's char-briquettes fall within a radius of 5-6 kilometers of the factory. Sales and distribution during the PIF period has revealed that those high POS density areas in fact display growing demand and far from being saturated.

Effective Marketing Strategy: SGFE had initially outlined expenditure on promotional material such as T-shirts, flyers, billboards, umbrellas and radio advertising. However, in the course of the grant period they found that providing samples of char-briquettes was in fact one of the most effective ways to drive sales. The sample size, which started off as a 5 to 10 kilogram bag, is now a 30-kilogram bag and would last a night or several nights depending on the amount of usage. In order to set off any expectation of continued giveaways, SGFE is emphatic about the samples being a one-time exchange.