



STRATEGIC INCLUSION: GREAN WORLD'S FINANCIAL RETURNS OF TARGETING WOMEN IN THE LAST MILE

- A women-centered sales, marketing, and distribution strategy delivered large financial returns for Grean World—a small-to-medium size enterprise (SME) in Ethiopia operating in the energy sector—while benefiting previously underserved female consumers in rural areas.
- Granular data on fixed and variable costs, number of cookstoves sold, and revenues allowed for a comparison between two different business models, using a return on investment (ROI) calculation that divided the difference in profitability of the two models by the investment required for the new strategy.
- Calculating a women-inclusive return on investment (WI-ROI) should be based on an in-depth understanding of the business investments and scrutiny around which elements qualify as women-inclusive.

The private sector increasingly recognizes opportunities to include and empower women in the workplace, as entrepreneurs or consumers. This series of case studies seeks to close evidence and guidance gaps to measure the ROI of women-inclusive business strategies for small-to medium-sized enterprises (SMEs) in low- and middle-income countries (LMICs). Each case study follows the [Women-Inclusive Return on Investment \(WI-ROI\) Framework](#) and documents a company's inclusive investment, the business model of the investment, the data and process used to calculate the WI-ROI, and key lessons learned. These cases aim to support development practitioners' alignment with the incentives of SMEs and other private-sector actors in LMICs. By understanding and calculating a WI-ROI, practitioners can help accelerate inclusive growth that benefit women and firms.

This particular case study focuses on [Grean World](#), an SME in Ethiopia. It examines how applying a women-centered approach to marketing and sales addresses the energy needs of female consumers in rural and remote areas in Ethiopia, while delivering financial returns for Grean World. Comparing the original model to this women-centric approach shows how the latter reduces costs while increasing sales for Grean World.

What is a WI-ROI?

ROI is a quick financial ratio calculation to estimate and monitor the success of business decisions.

When a business considers making expenditure changes, such as launching a new product or making workplace improvements, it is standard practice to consider the profitability of the new investments.

The term “WI-ROI”—women-inclusive return on investment—refers to a ROI that measures the financial success of investments that specifically aim to include and empower women. To yield a WI-ROI, the ratio must compare the net gain or loss of a women-inclusive investment to the cost of the same investment. For more detail on women-inclusive investments, see the [WI-ROI Framework](#).

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Methodology

The selection of case studies followed criteria to ensure robustness and relevance to the WI-ROI Framework. All companies selected are based in LMICs, qualify as SMEs, have already made a women-inclusive investment, and are willing to share relevant financial and cost data. Case studies were selected to provide insights into one of the four business strategies defined by the WI-ROI framework (see figure 1)— in Grean World’s case benefiting women as consumers.

Case studies used available quantitative data, qualitative data from key informant interviews (KIIs), and secondary research to determine the contribution of the women-inclusive investment. The studies applied good practices in conducting contribution analysis ([Mayne, 2008](#); [DCED, 2021](#); [Hopkins, 2021](#)) using Theories of Change and contribution stories.

Figure 1: WI-ROI Framework



Background

Less than one percent of Ethiopians have access to clean fuels and technologies for cooking in rural areas ([WHO Global Health Observatory, 2023](#)). At the same time, the use of inefficient, polluting fuels and technologies is a health risk and a major contributor to diseases and deaths. Cooking with polluting fuels is one of the largest environmental contributors to ill health ([WHO, 2022](#)). Specifically, Ethiopia recorded over 60,000 deaths attributable to household air pollution in 2019 ([WHO Global Health Observatory, 2023](#)), with a loss in economic output in 2019 due to air pollution-related morbidity and mortality estimated at \$3.02 billion ([Fisher et al., 2021](#)).

To address this reality, [Grean World](#), an SME established in 2016 and headquartered in Addis Ababa, set out to lead the energy transition of rural and remote communities by selling solar products and improved cooking technologies. Grean



Photo Credit: Sileshi Alemayahu/Grean World

World specializes in ‘mirt stoves’—locally made concrete stoves that can bake local bread called injera—a main staple consumed across Ethiopia. Mirt stoves use less fuel, shorten cooking times, and deliver health benefits ([Toman & Bluffstone, 2016](#)).

Despite the potential of improved cookstoves to mitigate adverse health impacts for the whole family, reduce women’s time on domestic work, and address deforestation, consumer barriers to uptake in Ethiopia and elsewhere are substantial. Many poor households have limited financial resources and some customers (e.g., those using traditional three-stone wood fires) have never paid money to cook before ([Waldron and Bhandari, 2022](#)). Moreover, rural consumers in Ethiopia are dispersed in scattered villages with no retailers, distribution channels, and little infrastructure, leading to high transportation costs and presenting substantial challenges to profitable and sustainable business models.

Green World's Women-Inclusive Investment

When Green World started selling cookstoves to rural areas in 2016, it used a centralized sales model, operating from large urban centers. While this was the business model used by many other businesses at the time, it soon became clear that high transportation and maintenance costs and stove breakage would undermine a profitable and sustainable business venture.

Green World went back to the drawing board. Having been involved in primary research on rural energy needs, Green World founder Sileshi Abebe and co-director Cherinet Dinbu understood the gendered division of labor in rural families. According to Abebe, women, especially mothers, engage in cooking decisions and usually benefit the most from improved cookstoves (ICS) and reduced energy poverty.

A new business model was designed around Green World's primary customer base: rural women. Instead of a centralized sales team, Green World started recruiting local women as sales agents, who would explain and demonstrate the benefit of clean cookstoves to other women. As community members, these village-level entrepreneurs (VLEs) have far more credibility with their potential clients than any outsider. Abebe explains, "If I go there and ask them to buy a stove from me, nobody will believe me that it works." Moreover, VLEs understand the challenges of using traditional stoves and household decision-making processes, and tailor their communications and engagements accordingly. They know how to navigate the complex relationship between the women as the primary beneficiaries and the men ultimately making purchasing decisions.

New VLEs are identified through female village elders and/or government officials. Green World provides the first stove to the new VLE for free, and these potential women sales agents test the stove and provide feedback. Once they agree to become VLEs, they demonstrate the stove to other women in the village. Green World coordinators link the VLEs to local manufacturers who transport cookstoves to the village. The VLEs assemble and install the stoves, demonstrating their use to consumers. They are paid on a per stove commission and given a small token salary during the rainy months when sales are low to ensure retention.

Piloting the new business model in two districts in the Oromia Region, Green World now works in three regions (Amhara and Southern Nations, Nationalities and Peoples (SNNP), in addition to Oromia) and a total of 205 districts. Between May 2020 and August 2022, Green World sold approximately 175,000 cookstoves and now employs 270 VLEs.



Photo Credit: Sileshi Alemayahu/Green World

"The mother is expected to cook and bake and feed the family. And this needs energy, and the energy needs are covered by women. This means our customers are mothers."

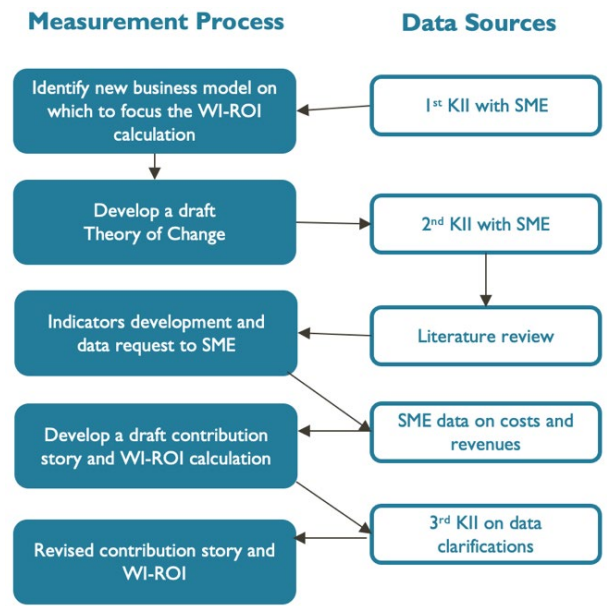
– Sileshi Abebe, Green World Founder

The benefits of improved stoves for female consumers in Ethiopia are well-researched. They use less fuel, with estimates of reduced wood used ranging between 20-50 percent ([Toman & Bluffstone, 2016](#); [LaFave et al., 2021](#)). Time-saving is linked to slightly shorter cooking times (compared to the traditional three-stone "stove") and reduced time spent gathering fuelwood due to lower fuelwood use ([Toman & Bluffstone, 2016](#)). Some research finds reduced carbon monoxide emissions and positive health impacts, particularly for children ([GIZ, 2011](#); [LaFave et al., 2021](#)), while others expect only minimal health benefits from low-cost artisanal ICS products ([World Bank, 2014](#)). According to Green World, the women using the improved stoves report health impacts mainly related to "less eye scratching and coughing."

The WI-ROI Measurement Process

The complex realities in which SMEs operate in LMICs present challenges to attribute financial returns to specific business strategies. Questions arose about whether increased cookstove sales were driven by female VLEs or by factors outside the control of Grean World, such as a change in consumers' economic welfare. To address this, the case study applied aspects of contribution analysis. An iterative process of developing an initial Theory of Change, analysis, data collection, indicator development, and ROI calculation was undertaken to establish a WI-ROI underpinned by a contribution story.

Figure 2: WI-ROI Measurement Process

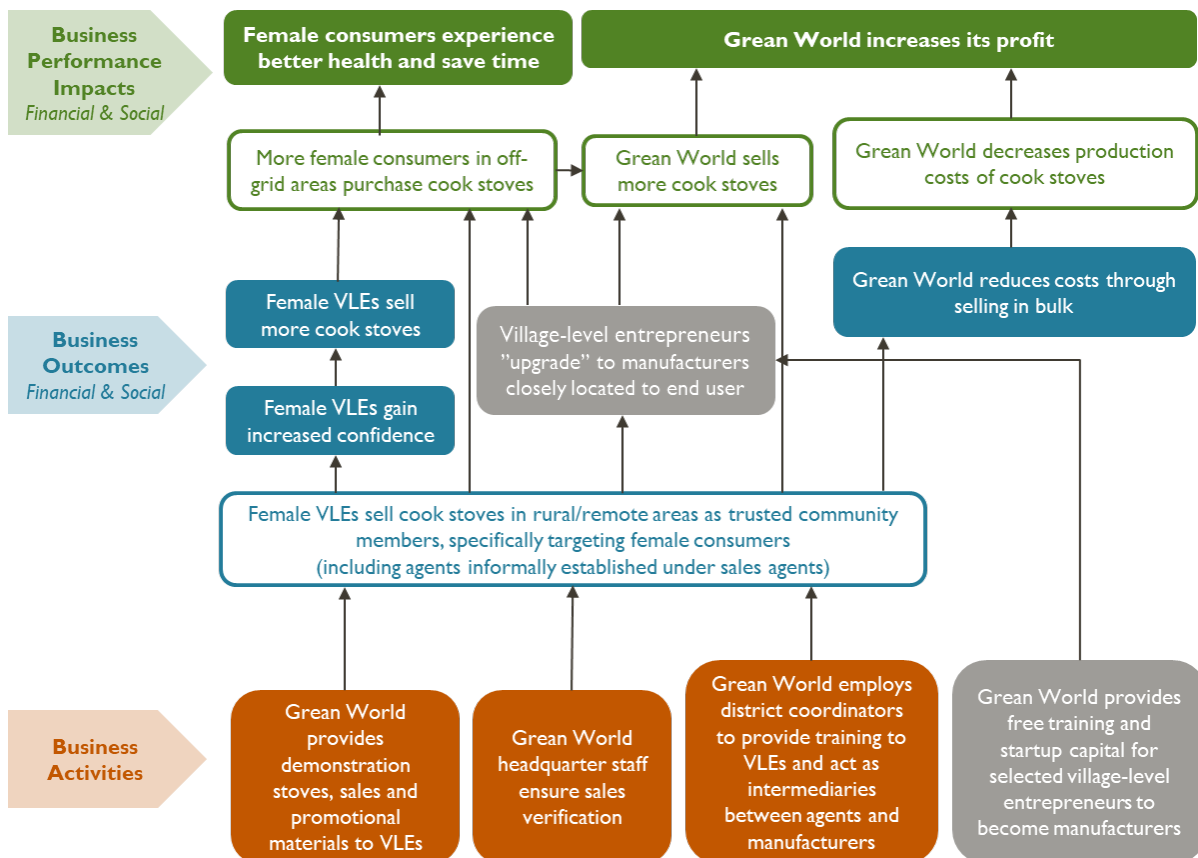


Theory of Change for the Investment

The evolving contribution story was visually summarized into a Theory of Change diagram (see Figure 3) to show how the new inclusive business strategy led to intermediary business outcomes and ultimately impact—including the social and financial results for the company and female consumers.

As per the diagram below, Grean World's Theory of Change outlines the investments under the new business activities (inputs), including the demonstration stoves for potential sales agents, marketing costs (such as promotional materials), and salary costs of the district coordinators in charge of training the VLEs and conducting sales verification. It details the intermediary business outcomes (financial and social) related to sales agents' performance (i.e., successfully selling cookstoves to consumers in rural areas), which ultimately leads to Grean World increasing sales while reducing transportation and production costs, thus increasing their profits.

Figure 3: Grean World Theory of Change



Some aspects of the Theory of Change were not measured directly in the calculation. This includes how increased sales enhanced the confidence of VLEs, boosting their sales even further, and how Grean World recently began supporting VLEs to "upgrade" to manufacturers, delivering additional cost savings as the value chain moves even closer to the consumer. Additionally, primary data was not collected on the social impact; instead, secondary data (literature review and key informant interviews with Grean World) was used to address questions about consumer benefits and social impact.

Financial Performance Metrics for Grean World

Financial performance metrics are critical to measure ROI and identify the business case for women-inclusive business strategies. Based on the WI-ROI Framework, Table 1 outlines the metrics used to calculate the WI-ROI of marketing the cookstoves to an underserved female consumer base.

Table 1: Financial Performance Metrics of Consumers for Grean World

Key Performance Indicator (KPI)	Definition	Women-Inclusive Relevance	Relationship to ROI
Total sales of cookstoves	The value of sales from cookstoves sold by VLEs	By employing a sales force of female VLEs, marketing and sales are targeted to female consumers, allowing Grean World to expand its total sales volume.	Profit: Additional sales of cookstoves to (female) consumers New investment: Cost of recruiting and training female VLEs
Operating profit per cookstove	Revenue by cookstove sold, adjusted by variable and fixed costs	By employing female VLEs and decentralizing operations simultaneously, costs decrease while sales to (female) consumers increase.	Profit: Additional sales of cookstoves to (female) consumers and reduced costs New investment: Cost of recruiting and training female VLEs

WI-ROI Calculation of the Investment

To calculate the WI-ROI of the investment, the research team conducted a profitability analysis of the two business models:

1. The centralized sales model comprising three salaried male staff working out of Grean World's headquarters (the baseline model) and
2. The new decentralized sales model comprising of local female sales agents, so-called VLEs (the women-inclusive business model).

Grean World provided the number of stoves sold, costs, and revenues per month under both business models for the period of October 2019-April 2020 and June 2020-April 2021¹, respectively. The costs associated with the models were categorized into fixed and variable costs (per stove sold or the unit of sales). These costs were then compared between the two models to identify gains and losses (see Tables 2 and 3). For each business model, we developed a pro forma income statement and calculated the cost of goods sold (COGS), the gross profit (revenues minus COGS), gross profit margin (gross profit divided by revenues), operating profitability (gross profits minus fixed costs), and operating profit margin (operating profit divided by revenues). Additionally, we calculated the initial cost of investment to recruit, hire, and train one VLE.

¹ Grean World made the sales, marketing, and distribution change in May 2020. We took data for the VLE model over a longer period to account for the transition period, the rainy season during the summer, and the initial learning curve for the company.

Importantly, to examine the VLE model's change in profitability more accurately, the team then accounted for additional changes in profit unrelated to the new women-inclusive investment. There was an increase in variable costs unrelated to the new model over the period examined. Specifically, transportation (83 percent), printing (29 percent), and inventory (10 percent) costs per stove all rose over the measurement period, but these cost increases were independent of the decision to change to the VLE model.

Table 2: Comparisons of Variable Cost (Per Stove)

Comparisons of Variable Costs (Per Stove)	
Cost	Percentage difference between the VLE and centralized sales models
Inventory	0%
Commission	N/A (t0=0)
Breakage	-100%
Marketing	-100%
Loading/Unloading	-50%
Printing & Docs	0%
Transportation	0%
Maintenance	-82%
Total Cost Per Stove	-5%

Consequently, the analysis of the centralized sales and the VLE model use transportation, printing, and inventory costs as of April 2021. This measurement approach isolates the profitability impact of switching to the VLE model from other external cost increases.

The VLE model reduces costs per stove sold by 5 percent over the centralized sales model through a reduction in loading and unloading costs, maintenance, and breakage. Note that the marketing cost per stove is replaced by the commission paid to the VLEs.

Table 3: Fixed Cost Savings Per Month Comparison

Fixed Costs (per month, assuming 65 VLE as the operational steady state)	
Cost	Percentage difference between the VLE and centralized sales models
Sales Salaries	-15%
Managerial Salary	-33%
Travel	-100%
Warehouse	-100%
Training	-100%
Marketing	N/A (t0=0)
Total Fixed Costs	-39%

Fixed cost savings under the VLE model total \$852 (35,492 birr)² (not featured in the table) per month—a 39 percent efficiency rate over the centralized sales model—or \$10,222 (425,897 birr) per annum.

The research team then identified the costs to recruit and train the VLEs and understand the point at which the market saturates. For Grean World, it costs \$108 (4,500 birr) to recruit and train a single VLE, and 60-65 VLEs represent an operational steady state. A VLE can make high sales for one year, after which

her local village market for cookstoves becomes saturated. Thus, the calculations assume the VLEs completely turn over in one year. Therefore, the calculation of the annual recruiting and staff training cost of VLEs is \$7,020 (292,500 birr), i.e., \$108 (4,500 birr) per VLE x 65 VLEs in the steady state x 12 months.

The average VLE sells 92 stoves per month based on the data from June 2020 through April 2021. With 65 VLEs, this amounts to 5,980 stoves sold by Grean World per month, or 71,760 per year.³ The number of cookstoves sold under the VLE model considerably exceeds that under the centralized model. To avoid “over-attributing” increases in profitability to the VLE model, the calculations assume that the same number of cookstoves are sold under the centralized sales model.

² The average exchange rate from April 2021 is used to convert birr into USD (1 birr = 0.024 USD).

³ In general, the number of stoves sold appears to scale with the number of VEs; with 65 VEs, the company sold 7,497 cookstoves in April of 2021.

Hence, the calculations below (Table 4) compare the operating profit under these assumptions to the operating profit under the centralized model, had it also sold the same number of cookstoves.

Table 4: VLE Model WI-ROI Profitability Analysis

VLE Model WI-ROI Results			
	Difference in birr between the VLE and centralized sales models	Difference in USD between the VLE and centralized sales models	Percentage difference
Revenue	-1,435,200.00	-34,444.80	-2%
Variable Costs	-3,049,800.00	-73,195.20	-5%
Gross Profit	1,614,600.00	38,750.40	23%
Fixed Costs	-425,897.40	-10,221.60	-39%
Operating Profit	2,040,497.40	48,972.00	35%
Operating Margin	3%	3%	-

The table above shows that under the cost and revenue assumptions, the VLE model generates approximately an additional \$49,000 (2 million birr) in operating profit per annum. The cost of recruiting a staff of 65 women is \$7,020 (292,500 birr), resulting in a return of 6.98 birr per each birr invested.

Figure 4: Grean World Return on Investment



Lessons Learned in Calculating a WI-ROI

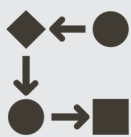
This section details the main lessons learned in accurately calculating a WI-ROI.

Identifying clear before-and-after scenarios



A clear before-and-after model like the Grean World case, with a discontinued centralized business model closing before the start-up of the women-inclusive model (aka hiring of the female VLEs), creates more straight-forward WI-ROI calculations. Isolating the impact of the women-inclusive activities, to the extent possible (without a comparison group), can help in better understanding the contribution of these activities to the WI-ROI.

Examining the women-inclusive aspects of the investment with a Theory of Change



Calculating a WI-ROI should be based on an in-depth understanding of the business investments and scrutiny around which elements qualify as women-inclusive. In the case of Grean World, developing the Theory of Change and integrating social impact, as well as financial performance outcomes, allowed the team to identify the women-inclusive relevant investments.

Filling evidence gaps on the impact of women-inclusive investments



To qualify as a women-inclusive investment, benefits need to accrue for the firm and for women—in Grean World's case women were impacted in two main ways per literature review: 1) rural women consumers purchasing a product that enhances health and time savings; and 2) enhancing the income of rural women through the sales agent model. Grean World, like many companies, does not collect granular data on social impact. Therefore, the research team filled these evidence gaps through secondary data through a literature review to check the assumptions in the Theory of Change.

Utilizing granular data to check assumptions



Green World had granular data on variable and fixed costs, including training, marketing, transport, breakage, maintenance, and even minor costs like printing. This data can be estimated but keeping careful records is useful to check assumptions to ensure accuracy. Accurate sales and revenue data is critical for success. For example, the monthly sales data highlighted variations (due to farming seasons or conflict) which led to examining the data over a longer timeframe, and a more accurate ROI.

Increasing costs external to the women-inclusive investment



Green World's data showed an increase in costs under the VLE model, including the cost of the stove (10 percent increase) and transportation (~80 percent increase), which were not passed on to consumers. Many SMEs face increasing costs over time unrelated to the women-inclusive investment. In these cases, it is important to use the higher cost values in the ROI calculation and be more conservative with cost estimates to not "overstate or over-attribute" ROI to the women-inclusive investment.

Conclusion

Calculating a WI-ROI informs companies of the return on their women-inclusive investments. It can also help development practitioners understand and align with private sector goals. Integrating financial performance and social impact goals ensures that women-inclusive investments focus on what matters most to a company, supporting sustainability over time and boosting inclusive growth.

Looking forward, it is important for development practitioners to:

- **Support SMEs in LMICs to collect robust data to confirm business intuition on women-inclusive investments:** Green World's decision to change its business model was driven by an in-depth understanding of rural female consumer needs and behaviors, including the limitations of the centralized sales models and male salespersons. The SME was convinced of a substantial increase in profitability, an intuition now confirmed by the WI-ROI calculations. Developing a hypothesis and collecting data to test this can benefit SMEs during pilot operations.
- **Scale financial performance and social impact evidence from businesses:** The Green World WI-ROI calculations demonstrate the financial benefits of this women-inclusive investment for the firm. Businesses typically have financial data to calculate a traditional ROI but may lack the granular, sex-disaggregated cost data necessary for a WI-ROI calculation. Hence, the focus is to educate businesses on calculating the WI-ROI and managing it themselves over time. Businesses are also interested in the social performance data and results of their women-inclusive investments. Given the new data requirements and cost implications, social impact data is more difficult to collect and manage for businesses. Hence, supporting businesses' ability to examine the social impact of their women-inclusive investments is a useful value addition from the development space.
- **Strengthen the data literacy and learning capabilities of SMEs in LMICs through systems-based approaches:** Data literacy, sex-disaggregated data, and learning processes are key challenges during the data collection process. Developing these technical skills requires time and support. As an interviewee said, "It's an eye opener for us, understanding what data is needed [for this calculation]." Reducing extractive research and spending more time on building SME systems, data, and learning capacity can greatly benefit firms and strengthen local business systems.



Photo Credit: Sileshi Alemayahu/Green World

- **Develop additional tools and guidance on attributing contribution to women-inclusive investments:** Attributing the WI-ROI to an investment comes with methodological challenges. An increased WI-ROI could, in theory, also be due to a change in the economic welfare of consumers or the reduced price of a product. This case study sets out important lessons in the contribution analysis of women-inclusive investments, yet more research is needed across sectors, companies, and types of women-inclusive investments to develop a cross-context contribution tool for WI-ROI investments.

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