



Solar Sister's Energy Consignment Model

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AFFORDABILITY MECHANISMS AND ENERGY ACCESS

Women Micro-Retailers Drive Solar Product Adoption in East Africa

Founded in 2010 by Katherine Lucey, Solar Sister brings affordable solar lamps and small solar systems to communities in Sub-Saharan Africa. Using an Avon-style distribution system, Solar Sister creates vital access to clean energy technology by building and extending a supply chain through women's rural networks. Solar Sister provides the women with a "business in a bag": a start-up kit of

inventory, training and marketing support. The women become their own bosses, creating sustainable businesses. They use their natural networks of family, friends and neighbors to provide the most effective distribution channel to rural and hard-to-reach customers. The simple model has enabled scalability; in just two years, the company has initiated operations in Uganda, Rwanda and South Sudan.

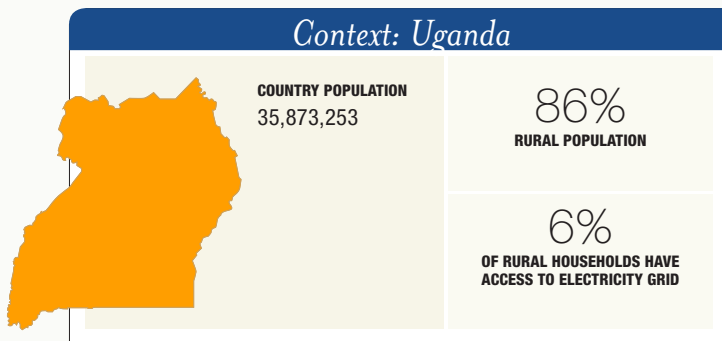
CHANGING LIVES THROUGH ACCESS TO FINANCE
FOR CLEAN ENERGY AND WATER



“We see our women move up the energy ladder — at first a client will buy a simple lamp, then she comes back for the cell phone charging lamp, and then she will pony up for that household system.”

– Katherine Lucey, CEO, Solar Sister

SOLAR SISTER'S CUSTOMERS



The Solar Sister model in rural Uganda supports local women entrepreneurs – Solar Sister partners – in selling affordable solar lighting to their immediate village networks. The majority of Solar Sister’s partners and end customers are subsistence farmers who trade informally with significant seasonality in their income. Most live on an income of USD \$1 per day. Typically, Solar Sister’s partners work locally in their communities, though some also travel short distances for sales. Most of the partners’ customers are neighbors, friends from church, or other community groups. These village-based networks range in size; some partners have networks measured in the hundreds of people.

Key to the Solar Sister model is engaging women from within local villages to market and distribute solar products to members of their own

BOX 1. TECHNOLOGY

Solar Sister's Products

As a product distributor, Solar Sister chooses multiple suitable products for its customers based on quality and affordability. Some of the brands sold by Solar Sister are presented here.

PISAT
SOLAR

Barefoot Power
Uganda Ltd.
building better lives

d.light
A Brighter Future

SunNight Solar
An affordable way to light the world

renewIT

KONARKA

UNITE TO LIGHT

UltraTEC
Energy Solutions For All

communities. Trusted in their networks, and with personal experience of the benefits of solar systems at home, these women entrepreneurs become effective marketers. With this approach to its sales force, Solar Sister has reached the very end of the distribution chain in just a few steps.

AFFORDABILITY MECHANISMS: MICRO-CONSIGNMENT AND SAVINGS CIRCLES

Solar Sister addresses affordability at two levels: the partner level and the end customer level. Because Solar Sister's partners do not have the capacity to invest in inventory when they start their businesses, Solar Sister employs what it calls a "micro-consignment" model to recruit entrepreneurs. After a Solar Sister Regional Coordinator conducts a thorough risk assessment of a potential partner, Solar Sister lends an initial set of inventory to the new partner. Once sales begin, the partner pays Solar Sister for the inventory. In the case where sales do not occur, the inventory is returned to SolarSister.

consignment as necessary, provided that payment records are well- maintained. When a partner reaches a level of USD \$300 in stock advances, Solar Sister introduces the partner to a local microfinance institution (MFI). By then, her business has made the transition to "micro-enterprise" and becomes a candidate for formal lending structures. Solar Sister also plans to work with the peer-to-peer lending platform Kiva (Kiva.org) to channel working capital loans directly to Solar Sister partners.

Solar Sister does not extend credit to its end customers. The reality is, however, that to purchase even a USD \$10 lamp for cash is very difficult for the target end customer. In order to make the purchase, a crop or asset must be sold or money must be saved over a long period of time. Partners are generally operating their businesses within tight personal networks, including family as their customers, and are vulnerable to societal pressures (e.g., offering a form of credit such as a lamp for a deposit and a promise to pay later, or receiving only some of the promised payment installments). Solar Sister prepares new partners for this and educates them about the risks of lending.

Recognizing the importance of access to financing, Solar Sister promotes an alternative approach to credit: a savings approach through informal savings groups. In these groups, members make weekly contributions toward the purchase of a single lamp. The process continues until everyone has received a lamp.

The company determined that while consigning a limited number of solar lamps on a sale or return basis is a risk, the benefits far outweigh the losses. Because the Solar Sister Regional Coordinator maintains close contact with the new partners she recruits, the potential financial loss of unsold and unreturned products is small. Once a partner's track record has been established, Solar Sister is prepared to increase the level of

Inevitably and unsurprisingly, private sales arrangements will be made where lamps are bartered for non-cash assets (there is a case of a partner receiving two chickens for a lamp, which she later sold at a profit). Solar Sister is focused on minimizing risks to its partners, tracking emerging issues as soon as they arise, and intervening early when necessary.

**FIGURE 1. FACTS AND FIGURES
SOLAR SISTER'S IMPACT**

<i>100% of Solar Sister entrepreneurs can double their household income with their solar business</i>	<i>USD \$46 of economic impact is generated for every dollar invested in a Solar Sister entrepreneur</i>
<i>3 hours more study time for children everyday when their families replace kerosene with solar light</i>	<i>30% reduction in household expenses when customers use solar lamps to replace kerosene</i>

KEY DRIVERS AND CONCEPTS

A Focus on Individual Relationships

To achieve its mission of empowering women through economic opportunity and eradicating energy poverty, Solar Sister maintains a sharp focus on the individuals in its distribution chain. The company takes a thoroughly personal approach to recruitment and management of partners through its Regional Coordinators. This relationship, one that is strengthened through regular contact and support, reduces risk and delivers detailed knowledge of each partner's situation. Armed with this knowledge, Solar Sister has learned over time to adapt its model to the different ambitions of its partners. There are some women who only want to make an additional USD \$3 per month to pay school fees, while there are others who are prepared to travel to make additional sales. With this knowledge, Regional Directors are able to customize consignment levels; they will not advance 100 lamps to a partner when they know only three will be sold. The close relationship between partners and their Regional Coordinator also provides Solar Sister insight on seasonality. In subsistence farming, the sale of the seasonal crop will create an upsurge in cash, which will likely result in larger sales for the partner, and simultaneously explains the drop in sales at other times. In either case, managing consignment levels through detailed knowledge of each situation is key to success.

Finally, while there is a focus on the individual, Regional Coordinators often meet with partners in a group setting. This is done deliberately, so that those partners selling a few lamps a month meet with those who are selling many more. The networking aspect encourages mentoring, growth and healthy competition, but also gives women a chance to simply meet with one another and talk. These types of meetings play a key role in helping Solar Sister meet

its women's empowerment objectives, and are an important, though less obvious, benefit of the Solar Sister model.

Reliance on Mobile Telephony

The Solar Sister model is dependent on – and greatly benefits from – mobile telephony. Mobile phones serve multiple purposes. They facilitate communication with staff and partners; provide a business for partners; can be used to make payments; and can serve as a data tracking mechanism. Given the large distances that need to be covered, all communication between Solar Sister and its partners is by mobile phone. Solar charging of mobile phones at USD \$0.20 per phone provides an additional source of income for partners and their customers. Currently, one third of payments from partners to Regional Coordinators are by mobile money, and in the near future, Solar Sister aims to reach close to 100% payments by phone. In addition, Solar Sister is considering developing an application to collect and use payment data to improve inventory tracking and speed up back office processes.

Affordability and Simplicity

Funded by seed capital and micro-investments, Solar Sister maintains lean operations, focusing capital on maximizing the number of women it empowers. The business operates with minimum capital investment in a brick-and-mortar presence. Operations are run from one shared head office in Kampala, with small regional offices across Uganda where inventories are held for distribution. Distribution costs are minimized as Regional Coordinators make regular trips to Kampala for training and administrative purposes and carry back stock to their offices. Partners work from their own homes.

FACTORS INFLUENCING SCALE

Sourcing Working Capital to Help Partners Grow

As the Solar Sister network grows, the level of working capital required to support it will also increase. Partners will need ongoing support with inventory, training and marketing; the number of

Regional Coordinators will increase, as will back office support and management staff. The organization has a number of advantages in addressing funding requirements, namely the Wall Street background of its CEO, the suitability of its model to peer-to-peer lending structures, and a growing prominence within the development funding community.

Leveraging a Distribution Advantage

Solar Sister is by structure a distribution company. As it scales, it will have to outsource the management of its increasing inventory or develop an in-house warehouse and logistics capability. The company currently works with a number of manufacturers who are already distributing in the same geographical areas, so opportunities exist for partnerships. Solar Sister is well-poised to represent a number of international energy product manufacturers that want access to end-mile customers, as well as larger local players that want to penetrate deeper into the local market.

Creating Growth Opportunities for Partners

Solar Sister focuses both on increasing income opportunities for partners to reduce poverty and increase company profits, and promoting its social mission of empowering poor rural women. Balancing both economic and social goals is at the heart of Solar Sister's value proposition to its customers. Solar Sister is already piloting increased service and repair capabilities and new products to sell through its established network. It is also assisting its more successful partners in obtaining loans from MFIs to increase the scale of their businesses. These efforts will not only help partners to become stronger business people, but will empower them as women.

Closing: Lessons Learned

A Women-Centered Approach Makes (Commercial) Sense

Women are at the center of everything for Solar Sister: a smart, able woman runs the company; women comprise its staff; women are its clients; and women in turn introduce other women as new customers. As big corporations like Avon have discovered, there is enormous economic benefit in tapping women as consumers. Women are incredibly effective sales people if they understand and believe in a specific product. They leverage their personal networks to increase sales. Attention to training, recognition and support only enhances this winning formula.

Creative Financing Solutions Are Needed to Jump-Start Distribution Networks

In building its distribution network, Solar Sister became acutely aware of the critical financing needs of its partners and their customers. Solar Sister offers a range of creative financing solutions to help ease this challenge, including micro-consignment arrangements (with the ability to return unsold product), partnering with MFIs to provide credit for successful partners, and encouraging informal savings groups where members make weekly contributions toward the purchase of a single lamp. Solar Sister tailors a financial solution to the needs and situation of each partner, from taking into account seasonal fluctuations in income levels to differences in sales aptitude and ambition.

Thank you to the Solar Sister team for their collaboration in writing this case study

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