FIELD BRIEF No. 9

Microfinance and Energy Clients Win with Partnership Model in Uganda

A Case Study of FINCA' s Microfinance and Renewable Energy Pilot Activity

This "FIELD Brief" is the ninth in a series produced by the Financial Integration, Economic Leveraging and Broad-Based Dissemination (FIELD)-Support Program, and provides an overview of FINCA's microfinance and energy pilot activities in Uganda, including results of their market and impact assessment surveys and programmatic lessons learned.

Managed by AED, FIELD-Support represents a consortium of leading organizations committed to advancing the state-of-the-practice of microfinance and microenterprise development through innovation, learning and exploration. FIELD Briefs support this objective by sharing what we have learned and fostering dialogue on key issues. This Brief was written by Sonali Rohatgi and Leslie Enright of FINCA through the Microfinance and Energy pilot activity. For more, visit www.microlinks.org/field.

The Need

In Uganda, as in many African countries, access to electricity is a critical necessity that has been a longstanding topic of interest in the development sector. Lack of access to affordable energy affects the productivity of both households and small businesses, limiting activities to daylight hours and constraining the use of time-efficient and productivity-enhancing technology. Overcoming these challenges presents an opportunity for MFIs to significantly impact both the productivity and quality of life of their clients using a range of emerging technologies that show promise to be not only cost-effective, but environmentally sustainable.

In 2008, FINCA Uganda began work on the Micro-Energy Loan Program, a USAID-funded pilot activity to finance and create access to Solar Home Systems (SHS) for FINCA's existing client base and new, low-income customers. FINCA Uganda's program is one of the largest and successful interventions of its kind, with over 550 SHS units financed between June 2008 and June 2010. In addition to loans, FINCA Uganda has also brokered cash sale of over 70 systems among new and existing clients.

Demand Assessment

Prior to the pilot, for its activities in Uganda, FINCA collaborated with Micro Energy International (ME) and Launchpad—two international NGOs with expertise in energy and microfinance, to conduct a client and market assessment. Results of the market assessment for micro-energy products indicated significant demand for heating and cooking products as only 31-36% of FINCA Uganda clients in rural areas and 64-69% in urban areas have access to an electricity grid. The assessment also highlighted the high cost of traditional heating and cooking devices, and the potential cost savings of solar energy products.

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FINCA Uganda clients spent between 37-41% of their incomes on cooking fuel (wood or charcoal) and traditional lighting inputs (kerosene and dry cell batteries), representing $9-$20 in monthly expenses depending on the segment. Figure 1 below compares urban and rural costs of FINCA's clients versus energy expenditures

FIGURE 1 COST AND ENERGY EXPENDITURES FOR URBAN V. RURAL CLIENTS WITH SMALL OR LARGE LOANS

	Urban (55%)	Rural (45%)
Large Loans (47%)	**No. of clients:** 12,000 **Access to electric grid:**69% **Avg. loan size:** 954,000 USH ($578 USD) **Avg. Monthly expenses:** 32,200 USH ($20 USD) → 38% of total expenses *Cooking*: 24,000 USH ($15 USD) *Lighting**: 8,200 USH ($5 USD)	**No. of clients:** 10,000 **Access to electric grid:**31% **Avg. loan size:** 828,000 USH ($502 USD) **Avg. Monthly expenses:** 54,369 USH ($33 USD) → 41% of total expenses *Cooking*: 14,000 USH ($8 USD) *Lighting**: 8,200 USH ($5 USD)
Small Loans (52%)	**No. of clients:** 13,000 **Access to electric grid:**64% **Avg. loan size:** 291,000 USH ($176 USD) **Avg. Monthly expenses:** 72,131 USH ($44 USD) → 38% of total expenses *Cooking*: 20,000 USH ($12 USD) *Lighting**: 7,600 USH ($5 USD)	**No. of clients:** 11,000 **Access to electric grid:**36% **Avg. loan size:** 276,000 USH ($162 USD) **Avg. Monthly expenses:** 15,500 USH ($9 USD) → 37% of total expenses *Cooking*: 7,000 USH ($4 USD) *Lighting**: 8,500 USH ($5 USD)

Energy Expenditures

Source: *FINCA Client Assessment Survey | $1 USD = 1,650 USH*
**Lighting figures are only for non-grid electrified clients. Figures include kerosene and dry cell batteries with may be used for flashlights or radios.*

Based on the results of the market assessment, FINCA considered several renewable energy solutions that could help meet the energy access needs of its client base. For each option, FINCA considered: the price to the end user, the market segment it would reach based on qualitative focus groups, and FINCA's ability to provide the service and the capabilities of key partners or suppliers. Based on this analysis, four products were initially identified for commercialization: SHS (Solar Home Systems), Pull Lanterns, and LPG kits, which were to be introduced in the initial phase, and improved cookstoves which were recommended for introduction at a later phase of the program, given operational challenges with ensuring delivery of a high quality product and needed improvements to the materials used to produce them. Due to supply chain challenges and product quality issues, FINCA decided to focus solely on SHS in the pilot phase.

Learning from Past Challenges

In 2004, FINCA had developed and launched a microenergy loan product specifically tailored to client demand for home energy systems. While the program showed initial promise, it ultimately did not reach the scale or success for which FINCA Uganda had hoped. Based on this initial experience, FINCA identified three main barriers to scaling up the program, and used this input to inform the design and implementation of this pilot, which began in 2008:

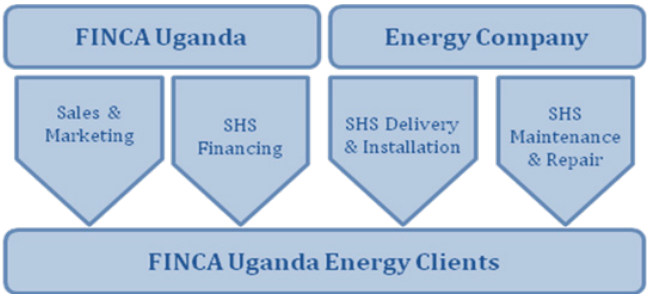
1) **Supply chain delays:** late installations and lack of appropriate customer care and maintenance led to defective solar home systems;

2) **Ineffective marketing:** despite high potential demand, clients were unwilling to invest in a SHS because they were unaware of how the products functioned and their potential benefits;

3) **Lack of training:** internal organizational structure and capacity issues were a constraint as the effective marketing and sales of SHS required technical training and knowledge.

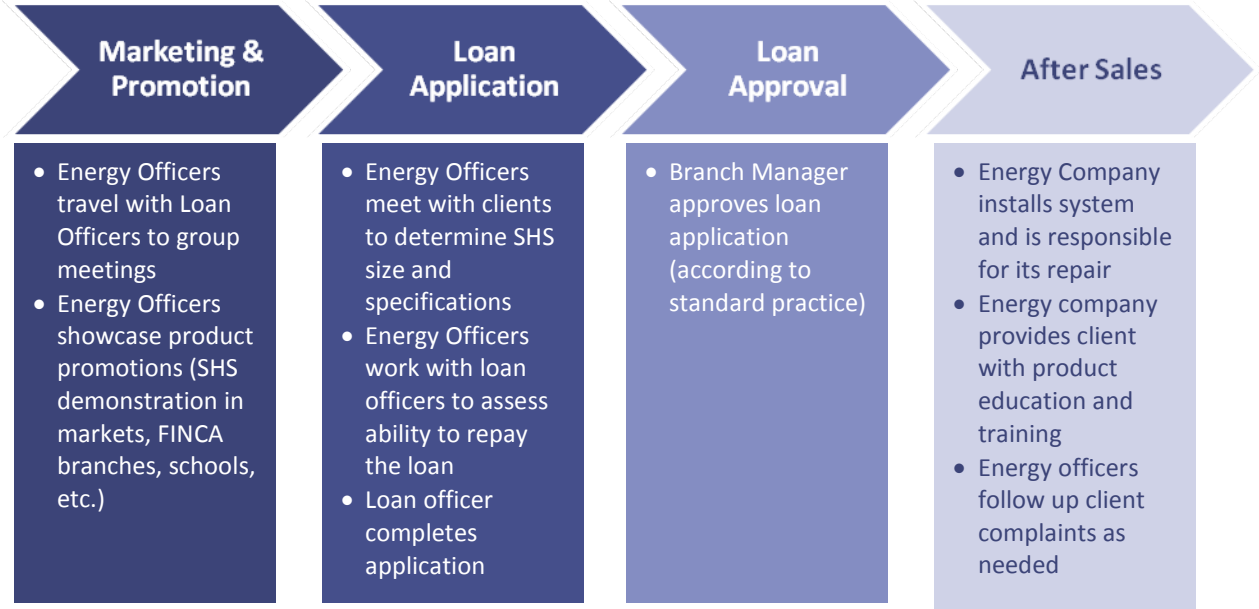
To overcome the first two barriers, FINCA Uganda implemented an innovative value chain intervention that bridged the technical gap between suppliers and end-users. The "two-hand"[i] partnership model adopted by FINCA employed an "Energy Unit" to support its core field staff of loan officers. The Energy Unit consists of a product manager and several Energy Officers dedicated to the energy loan program that provide specialized sales and marketing, as well as after-sales customer care support for the SHS. The Energy Officers accompany loan officers to group meetings in weeks prior to loan renewal, where they market and promote SHS and later work closely with loan officers to understand a clients' total indebtedness and ability to repay a SHS loan.

FIGURE 2 FINCA UGANDA'S "TWO-HANDED" PARTNERSHIP MODEL TO SUPPORT ENERGY CLIENTS



Finally, to address FINCA's internal organizational and capacity challenges, Energy Officers were trained to assess energy client's needs and determine the most appropriate SHS configuration or product. Additionally, FINCA Uganda offered incentives to its existing loan officers for SHS loans in order to encourage them to collaborate with energy officers on SHS loan applications and allow energy officers to market the SHS at village bank meetings. To minimize the incremental administrative burden associated with energy loans, FINCA did not create a new loan product specifically for micro-energy loans; rather the energy loan is bundled with the client's business loan. Figure 3 below illustrates FINCA Uganda's micro-energy loan process, highlighting targeting clients by appropriate loan product, application approval, and after sales communication.

FIGURE 3 MICRO-ENERGY LOAN PROCESS FOR ENERGY OFFICERS



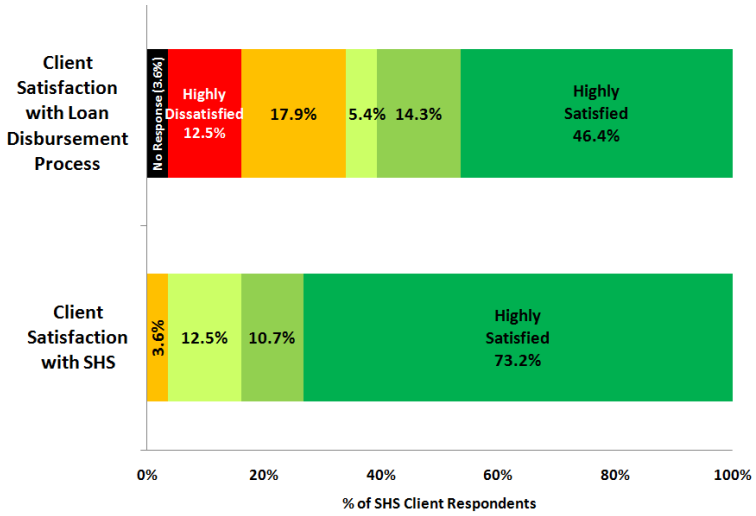
FINCA took steps to make the systems more accessible to clients, encouraging wider client use and mitigating associated risks with energy loans. As the SHS served as 50% of the collateral required to secure a loan, clients were able to access larger loans than they would have otherwise. SHS can also used by clients as collateral for future business loans with FINCA, thereby increasing the financial productivity of the energy product. Additionally, FINCA was able to tap into a consumer subsidy program on solar energy managed by the Ugandan Rural Electrification Agency and supported by the World Bank who compounded savings by reducing system sales prices by an average of 27%.

Client Satisfaction and Impact

During November and December 2009, FINCA partnered with Micro Energy International (ME) to conduct a qualitative study to measure the impact of renewable energy products on household income and productivity, determine benefits for customers who owned a SHS, and assess client satisfaction. The study sampled clients from FINCA Uganda's Masaka branch (with largely rural clients) and Ben Kiwanuka branche (with urban/ peri-urban clients), and included 12 qualitative in-depth client interviews, a quantitative survey of 56 SHS clients and 32 non-SHS clients, and a technical checkup of 12 SHS installed clients. Of the SHS users who responded to the survey, most had a loan range of 200,000–399,000 UGX, or $106–$212 USD, as compared to loans for non-SHS users 400,000–599,000 UGX ($212 - $318 USD).

Based on the 56 SHS loan clients surveyed, client satisfaction with FINCA's services and the solar systems was high, with 96.4% of clients reporting that they were satisfied with the system, and 98.2% noting they would recommend it to a neighbor. Results further showed that satisfaction with FINCA Uganda's loan disbursement process was high, with 66.1% of clients rating it a 5 on a scale of 1 to 7, due in large part to customer service provided by FINCA's specialized energy officers. Results of the survey showed cost as the primary reason FINCA clients declined using the solar home systems (as reported by 90.6% of clients), with 6.3% of respondents saying that they were already grid connected, and 50% also noting the inability to use the SHS with radio/TV as a reason for not purchasing an SHS.

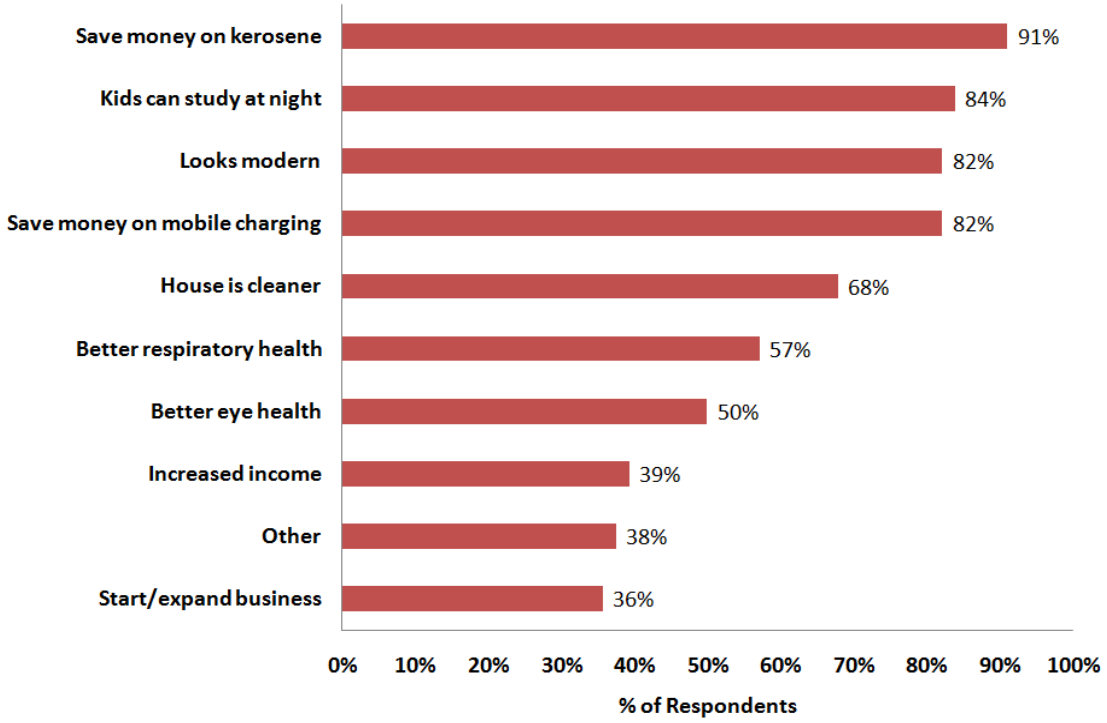
FIGURE 4 SUMMARY OF CLIENT SATISFACTION



Client Household Impact

Based on the survey of 56 micro-energy loan clients, the assessment found that clients felt the SHS had improved their lives through health and education benefits, and increased savings and income-generation opportunities. A summary of benefits as perceived by clients is summarized in the Figure 5 below, with 84% reporting that the SHS lighting allowed their children to study at night, while 57% felt they had better respiratory health, and 50% felt they had improved eye health.

FIGURE 5 SUMMARY OF REPORTED BENEFITS OF SHS TO HOUSEHOLDS



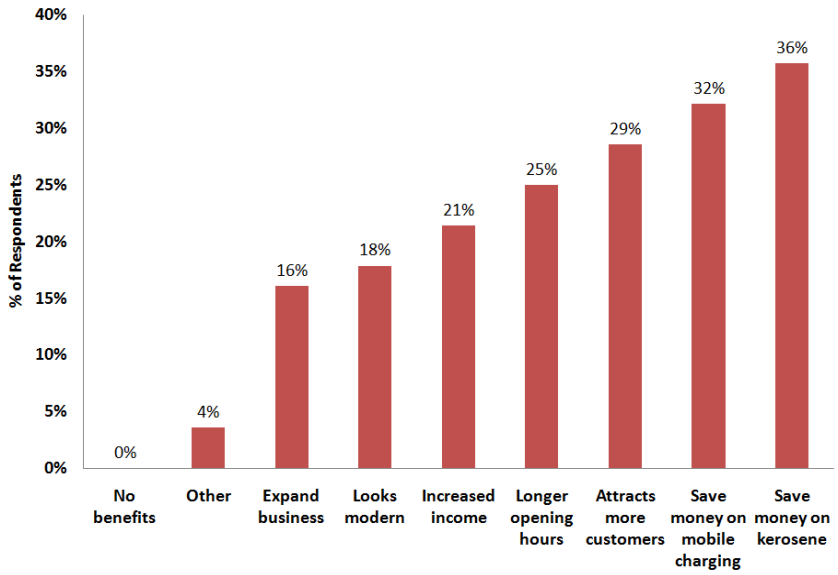
As illustrated above, 91% of clients identified savings from kerosene costs as a primary benefit of SHS, while the average weekly cost on kerosene dropped from an estimated 2,653 UGX ($1.16 USD) before purchasing the SHS to 509 UGX[ii] ($0.22) afterwards. Clients generally reported a decline in weekly kerosene costs, and 46% reported no weekly kerosene costs after the use of the SHS. In most cases, however, the SHS system did not completely eliminate the need for purchasing kerosene as most clients still needed to purchase kerosene for additional lighting or to fuel lamps with which they could move about the house. 82% of clients also saw cost savings on mobile phone charging as a benefit of owning an SHS, and 94.6% of respondents reported spending nothing on mobile phone charging after acquiring an SHS.

Positive Implications for Client Businesses

While SHS products were marketed for household use, the impact survey revealed a significant number of clients (42%) were using the energy systems in their businesses, and more than 20% had created new businesses specifically to use the SHS. Predominantly, the new businesses offered mobile phone charging services, particularly in rural areas where many previously relied on diesel generators or car batteries to charge their phones or traveled to a place where electricity is available and spent time waiting for recharging. Other clients were using the SHS to support poultry/pig farming businesses, clinics, retail shops, schools and salons. Some of the other benefits reported by clients using their SHS for business purposes are summarized in Figure 6 below.

When comparing total loan repayment for the SHS per home or business use, the cost benefit for a client using SHS for a business venture was more favorable than household applications. On average, using a 20-watt energy system, total loan repayment was approximately 667,000 UGX[iii] ($355). Clients who used SHS for mobile phone charging services could earn an estimated 80,000 UGX ($43 USD) in addition to personal lighting and phone charging costs savings of 14,800 UGX ($8 USD)/month, and anticipate breaking even on their loan investment in approximately 7 months.

FIGURE 6 SUMMARY OF REPORTED BENEFITS OF SHS TO BUSINESSES



As shown in Figure 6 above, savings on kerosene and mobile charging were the most significant benefits for clients using the SHS for business purposes. In addition, 25% of respondents noted that the SHS allowed them to work longer hours, especially at night and during seasons with heavier activity like the holidays, which benefitted their businesses.

Challenges and Lessons Learned

Based on pilot test results, there is significant demand for solar home systems in Uganda. Since June 2008, FINCA has brokered cash sales of 70 systems or financed 550 systems and developed a successful model to mobilize demand and facilitate installation, delivery and system servicing. Though successful overall, there are challenges that remain as FINCA Uganda looks to scale up activities.

Staff Incentives

One key lesson learned is that staff incentives are critical for mobilizing energy loan products. Initially, there was resistance from loan officers and supervisors to cooperate with energy officers on micro-energy sales and loan administration activities as it was easier for loan officers to sell business loans versus micro-energy loans. Due to additional time and attention required to administer micro-loans, loan officers have no incentive to work with energy officers to market loans for renewable energy products. By providing core field staff with monetary incentives per SHS loan, FINCA was able to overcome initial operational challenges and become more institutionalized in offering energy loan products.

Financial Viability

The cost to administer micro-energy loan products is primarily attributable to hiring and training, marketing, and purchasing of demonstration solar home systems. FINCA estimates 44% of expenditures went to personnel salaries, driven mainly by the reliance on energy officers to market the energy loan product and provide after-sales servicing as needed, with an additional 46% spent on marketing and staff training. FINCA needs to increase its sales to cover fixed costs by reaching

additional consumer segments, such as clients using the SHS for income-generating activities. Given results of the impact assessment, targeting SHS business clients should be feasible in the next phases of the micro-energy program.

Client Usage and Customer Servicing

A final key lesson learned is that constant customer feedback is necessary in order to quickly identify SHS servicing issues. As part of its impact assessment, FINCA conducted 11 in-depth client interviews to gauge customer service needs and client training. Despite initial customer maintenance training, FINCA found five clients were unaware of the length of their SHS warranty and therefore did not contact the SHS suppliers with maintenance issues. To address these issues, FINCA Uganda worked with supplier to improve customer training during the installation and address gaps identified in client interviews. Additionally, FINCA Uganda developed a simple user manual for SHS suppliers to leave with clients after home installation, which included a warranty card and basic information about how to operate, clean and avoid overusing the SHS..

Conclusion

Using the lessons learned during the pilot phase, FINCA Uganda plans to increase the scale of the micro-energy loan program to make it a financially sustainable and profitable business. Efforts to mobilize funds for operational expansion and to address challenges identified in the pilot phase are already underway. Specific activities to scale up the program include:

- **Target new customer segments and increase geographic outreach:** FINCA will expand its current sales and marketing activities to additional rural branches in order to cover a wider geographic area. FINCA also plans to expand focus from clients using renewable energy products for household use to clients utilizing renewable energy products for business purposes and potentially distributors of renewable energy products.
- **Build Capacity and Train:** FINCA will continue to invest in technical training as well as sales and marketing training to its staff to further improve their effectiveness and efficiency in conducting a technical customer needs assessment and mobilizing micro-energy loans.
- **Increase product offerings:** Moving forward, FINCA plans to re-visit the feasibility of piloting with additional products such as biogas and improved cook stoves.

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[i] Micro Energy International presentation, 2009, http://siteresources.worldbank.org/EXTAFRREGTOPENERGY/Resources/717305-1264695610003/6743444-1268073630927/13.1.IssuesandOptions.pdf

[ii] In order to obtain the weekly average kerosene costs, ME used the mid-point of the expenditure range selected by clients to calculate a weighted average of kerosene costs.

[iii] These calculations assume an average loan size for a 20 W system as 569,320 UGX (303.15 USD) with a maturity period of 4.9 months. Exchange rate used is as of December 2009- approximately 1,880 UGS/ 1 USD.