

Introduction and up-scaling of microloans for the distribution of biochar stoves Cape Coast, Ghana

1. DEVELOPMENT RELEVANCE

Country context: Ghana has been facing a deepening energy crisis since the end of 2012. Electricity rationing has been undermining the stability of Ghana's political environment. In addition to the energy crisis, high inflation (close to 17%) and the rapid depreciation of the Ghanaian cedi has had a major impact on the living conditions of the most vulnerable people. In this context Ghana's economy has slowed down, and the climate of growing instability is also severely affecting local economic activity.

In terms of the Human Development Index, Ghana in 2014 ranks 140 out of 188 countries⁹. This places it in the 'medium development' group and the country shows a positive trend (from 0.456 in 1990 to 0.579 in 2014). According to Microfinance Transparency¹⁰ data, 45% of the Ghanaian population lives on less than one US dollar per day.

Population and economic indicators (2015)		
Population (2015) ¹	24.3 m (2010 census), 27 estimated in 2015 26.4 (Doing Business data)	
GDP growth (2014-2015) ²	4%	
Inflation (2015) ³	15.5	
Economic Freedom Index (rank among 185 countries in 2015) ⁴	63	
Governance indicators (2014) (Score -2.5 to +2.5) ⁵	Voice and accountability	0.49
	Political stability/absence of violence	-0.13
	Government effectiveness	-0.27
	Regulatory quality	-0.04
	Rule of law	0.02
	Control of corruption	-0.21
Poverty indicators		
GDP per capita (current USD) (2014) ⁶	1,441.6	
Gini index (0= equality 100= inequality) (2013) ⁷	42.8	
International (at 1.25 USD/day), national and rural poverty headcount ratio ⁸	n/a	

Financial sector context: The Ghanaian microfinance sector serves approximately 690,000 borrowers with a lending portfolio of approximately 715 million USD¹¹. According to MIX Market data in 2010, in sub-Saharan Africa Ghana ranks seventh in terms of total number of borrowers and tenth in terms of gross loan portfolio. Despite several credit providers, the microfinance industry is concentrated on specific regions and a small number of microfinance institutions. In the region there is general concern about clients' over-indebtedness, and while three credit bureaus voluntarily supply figures, the true scale of lending is difficult to estimate because not all MFIs actively share data.

Ghana's financial sector is characterised by three main types of institution: formal, semi-formal and informal. The government has demonstrated a clear commitment to enhancing the functioning of the microfinance industry in the country, and thus to promoting financial inclusion. Consumer protection is still poor, however, and the informal sector has the advantage of being closer to clients – and thus also more vulnerable people. As indicated above, more than 40% of the Ghanaian population lives on less than a dollar a day. Financial literacy campaigns have been launched to educate existing and potential clients on their rights and responsibilities. In Ghana, 40% of adults (age +15) have a bank account, compared with 34% for sub-Saharan Africa as a whole. Some 19% of adults have formal savings (16% for sub-Saharan Africa)¹² and 8%

¹ World Bank

² <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>

³ <http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>

⁴ <http://www.heritage.org/index/explore?view=by-region-country-year>

⁵ <http://info.worldbank.org/governance/wgi/index.aspx-reports>

⁶ <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

⁷ <http://hdr.undp.org/en/content/income-gini-coefficient>

⁸ <http://data.worldbank.org/indicator/SI.POV.DDAY/countries/all?display=graph>, <http://data.worldbank.org/indicator/SI.POV.NAHC/countries/all?display=graph>, <http://data.worldbank.org/indicator/SI.POV.RUHC/countries/all?display=graph>

⁹ hdr.undp.org/en/countries/profiles/GHA

¹⁰ www.mfttransparency.org/wp-content/uploads/2012/05/MFT-RPT-102-EN-Country-Survey-Ghana.pdf

¹¹ www.mixmarket.org/mfi/Ghana

¹² Ghana's banking system and economy are growing rapidly. Accordingly, a stronger regulatory framework is needed. The legal framework established by Act 612 (2002) authorised the Bank of Ghana to act as regulator and supervisor of the financial sector. It was subsequently given additional powers to regulate the broader financial sector, including microfinance institutions and money-lenders. To this end, in 2011 the Bank of Ghana issued operating rules and guidelines, which classify financial intermediaries into four tiers. The Ghanaian microfinance industry offers a wide range of loan products, most of which are short term, while savings products are arranged mainly through the traditional Susu collectors system. Despite widespread efforts and the development of the microfinance industry, Doing Business data indicates that obtaining a loan in the country is becoming increasingly difficult (-6 according to the scoring provided).

borrow on a formal basis (6% for sub-Saharan Africa). The credit registry system is actually improving, and the Bank of Ghana has issued credit bureau licences to a number of service providers. Both positive and negative data is collected on firms and individuals, but is not distributed. According to the current system (0-8), Ghana has a credit information score of 6 from the World Bank. Credit registry coverage (% of adults) is 0 (5.8 for sub-Saharan Africa) while credit bureau coverage is 16.3%. The credit bureau system covers almost 2.3 million individuals and 186,154 companies.

Partner financial institution: The ASA (Alternative Set of Assistance) Initiative is a financial non-governmental organisation (FNGO) headquartered in Cape Coast, Ghana, and operating five branches in the country's central region. It was founded in 2006. ASA is a member of the Ghanaian Association of Financial NGOs (ASSFIN) and the Ghana Microfinance Institutions Network (GHAMFIN). ASA offers the following financial services: personal loans of one-to-three or six months, six-month group loans, personal and group green energy loans, student loans for tertiary education, and Kiva Agricultural Group value chain loans.

It also offers training and financial and business counselling. ASA's vision is to contribute to the development of Ghanaian society, helping the poor to reach middle-income status. Its mission is to provide market-oriented, innovative and affordable microfinance services to the productive poor in Ghana, boosting their efforts towards improving their living standards. ASA's primary target market is rural people (95% of total clients), with a majority of women (60%), engaged in farming and agro-processing activities. Its broader target market also includes manufacturing (e.g. wood crafting) and services (e.g. hairdressing, food trading) in rural and semi-urban communities.



ASA's head office is located in Cape Coast and serves three service points in the central region. A service point is a simple office and loan officers travel there daily from Cape Coast. The maximum distance, from Cape Coast to Assin Fosu, is 80 km. Several villages are located along the road to Twifo Praso, Assin Fosu and Mankessim.

ASA's strategic objectives for the coming years (2014-2017) are to: a) significantly increase client outreach, opening seven new branches and reaching 17,000 clients; b) attract external funds to finance loan demand up to CHF 3 million; c) reduce its operating expense ratio to 19% and increase its profit margin (net income/operating revenue) to 18%; and d) provide basic but appropriate logistics and working tools for staff, and establish a more responsive MIS.

According to ASA reports and objectives, 3,112 outreach loans were granted in 2011, 6,536 in 2014, and the projected figure for 2017 is 17,187. The majority (60%) of clients are women and 97% are located in rural areas. PAR 30 is stable at 2.5%. The project has been jointly promoted by Microfinanza Srl and Senbumo (Social Enterprises Business Models), a Swiss consulting company. Swiss expertise was deployed mainly in the design of the Elsa stove, scaling up the business model, on-the-job training for local staff using the REEP-DEMO (Reduction Expense Energy Product Delivery Model) methodology, the development of a sound business plan and financial projections for ASA, and support to attract other social investors in order to scale up Elsa stove production, with sales on credit.

2. INTERVENTION APPROACH

According to the feasibility study and the **intervention approach** designed in 2014, ASA was intended to:

- i) Have the potential to provide improved biochar stoves to thousands of low-income households;
- ii) Actively contribute to fighting energy poverty and improving the livelihoods of the people at the base of the pyramid, by tapping into new market segments with its energy loan product;
- iii) Build relationships with new clients and cross-sell its other existing products, strengthening its financial inclusion role in targeted areas of operation, and better respond to clients' needs in its working environment.

In our experience, the **three key constraints on up-scaling** are the following:

- i) A small NGO focusing only on providing small loans is less sustainable than a financial

- ii) institution, and needs to find its own client niche;
- ii) Own equity is limited to past donations, and management lacks a diversity of complementary skills;
- iii) Difficulties in understanding improvements to the working strategy suggested by international partners, in order to scale up the Elsa stove business model.

The **project goal** is to develop, pilot-test and fine-tune an innovative and sustainable distribution model for the provision of Elsa biochar cooking stoves to at least 4,000 low-income customers. The Elsa stove is a low-cost, energy-saving and smoke-free improved cooking stove which works with any kind of biomass (wood, pellets and agricultural waste such as palm kernel shells). It allows households to save money and time spent on obtaining fuel for their daily cooking, and reduces health risks from cooking stove smoke.

According to the initial work plan, **a set of five activities was planned:**

- i) Understand the situation
- ii) Design activities (methodology, operational procedures and training for staff)
- iii) Implement activities (marketing, energy loans disbursement)
- iv) Monitor sales, and data analysis
- v) Approach social investors and support ASA in completing investment applications and preparing for due diligence visits.

In the light of our field experience and the work we have done with ASA as a local partner, we strongly believe that small MFIs, especially not-for-profit ones, must develop their own niche market or they will sooner or later disappear. A small NGO focusing only on providing small loans (without any kind of specific loan product) is less sustainable than a financial institution able to serve its own clients particular market. The same is true of ASA's microfinance activities. In addition, it has a number of weaknesses, such as its not-for-profit status, the fact that its own equity is limited to past donations, and the lack of a diversity of complementary skills among its management.

Despite these weaknesses, thanks to the support provided and its commitment, ASA had distributed over 1,100 Elsa stoves by the first quarter 2015. Unfortunately, we have not had regular data, neither have we been able to follow the partner's fieldwork or offer remote support. The initial work plan set out a marketing campaign, but given the difficulties faced this was never launched, although certain initiatives were promoted, as evidenced by stove sales figures for the first quarter of 2015. Similarly, sales and portfolios could not be monitored regularly as planned. Instead, the Microfinanza and Senbumo team focused on approaching new social investors and international partners and donors, and completing investment applications to attract new funds and projects. This work was targeted at an Elsa Stove Processing Plant (ESPP) project to establish a production line. This involved setting up a legally authorised ESPP structure, developing a business model and business plan that are validated by shareholders, training staff, starting production and improving loan disbursement with energy products. Given the communication difficulties encountered with the local partner, we mainly worked remotely, focusing on finding new social investors, in accordance with the work plan. Despite the team's efforts, the new projects (Firmenich Foundation and REPIC) will not be implemented as activities linked to this SCBF initiative. In order to provide additional liquidity for the ASA portfolio, Microfinanza Srl granted ASA a CHF 10,000 zero-interest loan, as per the loan agreement signed in August 2015 by both parties. Despite several attempts, Microfinanza has since been unable to obtain any reports on the portfolio or on Elsa stove sales. Microfinanza thus declined to disburse the second CHF 10,000 tranche of the planned loan.

3. INTERVENTION APPROACH RESULTS ACHIEVED AND NOT ACHIEVED



An Elsa stove demonstration in the outskirts of Cape Coast. The Elsa stove is very easy to light and the demonstration is convincing. The customer can immediately see the benefits of the stove.

3.1. Client level

The main innovation of the REEP-DEMO (Reduction Expense Energy Product Delivery Model) approach is to include a sustainable incentive for the repayment of the stove loans to allow ASA to cover its distribution expenses and, over time, create its own revolving fund. Based on a purchasing price from producers of CHF 23 per stove, topped up with a CHF 10 incentive for the MFI, the stove will be sold at CHF 33 and repaid in five instalments of CHF 6.60 per month. The ASA target client group is mainly in rural areas and the majority of clients are women. ASA divides its social mission into four main social objectives, with the corresponding indicators. Despite the fact that ASA has no formal social performance strategy or impact



monitoring methodology, it is worth emphasising certain performance indicators such as 70% women clients, 97% rural clients, and 99% low-income clients. Given the communication difficulties with the local partner, we do not have updated data on non-financial services such as training and business management support, on client satisfaction, the default rate, PAR 30, the improvement to clients' living conditions, or corporate social responsibility.

Master John is the main craftsman building the stoves. During this meeting, every single piece of the stove was measured to calculate the raw production cost precisely. The data was then included in an Excel table in which the fluctuating prices of raw materials (owing to exchange rate variation) could be adjusted. This tool also helped to calculate Master John's profit margin.

3.2. Partner financial institution level

Having received the SCBF approval, the ASA Initiative was the first institution to launch a green microfinance programme in Ghana at Cape Coast, by linking the Elsa stove with the offer of a dedicated microfinance product. According to the feasibility study, a viable, sustainable and effective energy lending model will most likely generate interest among competitors, especially more mature MFIs, which have so far been hesitant to enter such a market. The financial projections prepared during the first project phase highlighted the high financial potential for ASA. By December 2014, the ASA Initiative had 5,849 active loans as part of an outstanding loan portfolio of GHS 1,161,077 (CHF 360,000).

Other key performance indicators are the following:

ASA Initiative: financial statements

Profit & loss (GHC)	Dec2009	Dec2010	Dec2011	Dec2012	Dec2013
Total financial revenues	247'873	288'318	302'617	519'626	526'832
Financial expenses	96'903	151'307	120'818	241'272	241'050
FX loss/gain					
Total financial expenses	96'903	151'307	120'818	241'272	241'050
Gross financial margin	150'970	137'011	181'799	278'354	285'782
Loan loss provision expenses	6'411	7'142	10'548	4'569	6'706
Net financial margin	144'559	129'869	171'251	273'785	279'076
Personnel expenses	61'941	65'468	87'544	173'328	177'004
Administrative expenses	47'235	52'192	59'368	78'846	80'104
Depreciation and amortization	5'597	5'700	7'487	17'862	18'115
Taxes					
Net income	29'786	6'509	16'852	3'749	3'853

Balance sheet (GHC)	Dec2009	Dec2010	Dec2011	Dec2012	Dec2013
Cash & banks	4'518	11'531	1'930	52'816	35'356
Gross short term outstanding portfolio	728'818	690'050	772'728	1'057'996	1'092'772
ST Loan loss reserve	-30'691	-37'833	-37'087	-50'557	-57'263
Net short term outstanding portfolio	698'127	652'217	735'641	1'007'439	1'035'509
Accounts receivable	38'600	40'257	38'315	63'985	114'397
Total current assets	741'245	704'005	775'886	1'124'240	1'185'262
Net fixed assets	100'889	96'569	107'822	175'057	174'585
Total long term assets	100'889	96'569	107'822	175'057	174'585
Total assets	842'134	800'574	883'708	1'299'297	1'359'847
Short term debts	603'711	558'587	589'209	966'799	979'208
Other current liabilities	5'742	2'797	2'715	5'549	21'525
Total current liabilities	609'453	561'384	591'924	972'348	1'000'733
Total long term liabilities	0	0	0	0	0
Total liabilities	609'453	561'384	591'924	972'348	1'000'733
Net income of the period	29'786	6'509	16'852	3'749	3'853
Retained earnings	82'681	89'190	106'042	109'791	113'644
Donated equity	150'000	150'000	185'742	217'158	245'470
Total equity	232'681	239'190	291'784	326'949	359'114
Total liabilities and equity	842'134	800'574	883'708	1'299'297	1'359'847



Green energy loans complement MFIs' core financial offering by adding a new product in a high-growth and lucrative market segment. Microfinanza and Sembumo thus tried to support the ASA Initiative to enable it to position itself better in the rural microfinance market.

In line with the feasibility study, the team produced Elsa stove sales projections, forecasting monthly sales of 2,000 units by May 2017, with more than 20,000 women clients from rural areas. However, communication problems with ASA mean that there were difficulties obtaining monthly data on sales, clients, and the loan portfolio. This was one of the main reasons for deciding to close the project.

3.3. Financial sector level

As the relationship with the partner turned sour, it is difficult to provide any hard evidence about results produced beyond the level of the partner financial institution.

4. RECOMMENDATIONS FOR OTHER SIMILAR INTERVENTIONS

The intervention was appropriate to the needs of the client, as well as market opportunities. Working with small institutions can be beneficial only if rules and procedures are clear. Partners must also have a common understanding of short, medium and long-term objectives right from the beginning. Given the difficulties faced in partnering with ASA, the main lesson learned – and recommendation – is that project objectives, procedures and rules must be clearly presented to all the members of the BoD, and relations must be maintained with all staff (both BoD and operational) to ensure a shared vision of the process. Often, projects at local level are implemented and monitored by a single person, and when difficulties arise the lack of communication is a considerable obstacle to any possible solution.

We are persuaded of the innovative approach we introduced with this SCBF project for the REEP-DEMO methodology and Elsa stoves, and strongly recommend promoting similar intervention in sub-Saharan African countries where green microfinance supports clean energy for the poor. There is a need for programmes that are able to boost access to clean energy, energy-efficient technology and microfinance products. This is a real challenge for local microfinance institutions in both rural and urban areas. Within this framework, new skills, jobs, and income opportunities are increasing rapidly.