The Shea Value Chain Reinforcement Initiative in Ghana

By SAP, PlaNet Finance, Grameen Ghana and Maata-N-Tudu

CASE STUDY

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1 Executive Summary

For the last four years, the Dow Jones Sustainability Index has named Germany-based business software giant SAP as the leader in the software sector for upholding ethical, environmental, social, and governance values in products and services. In 2008, SAP’s Executive Board defined the company’s social sustainability priority as connecting global value chains to the base of the economic pyramid. The board decision represented a long-term strategic commitment to alleviate poverty by accelerating economic development in previously excluded markets. To support this priority, SAP is investing technology, expertise, and cash to connect underserved markets to the global value chain.

This case study explores a collaboration in Ghana between SAP and Paris-based microfinance development organization PlaNet Finance. Announced in June 2009, the Shea Value Chain Reinforcement Initiative uses microfinance, education, and technology to improve the incomes and living conditions of women who pick shea nuts and women who process nuts into shea butter. Women are enrolled in the initiative through two local microfinance organizations, Maata-N-Tudu (MTA) and Grameen Ghana (GG).

The shea nut is the seed of the tropical African shea tree, which grows wild and has fatty nuts that yield shea butter. Some call this the poverty-coping tree, since anyone can go to the bush and harvest fruits. Shea butter is mostly used in food and cosmetics. Although producing shea nuts and butter is one of the most accessible income-generating activities for rural women in Ghana, their incomes are unstable due to a lack of market information, inadequate business knowledge, and low negotiating power.

The goal of this case study is to monitor the initiative’s achievements during the last 18 months, discuss key challenges, and consider how to position the initiative for future success. Research for the study involved reviewing industry reports, conducting phone interviews with key program partners, and field interviews in Ghana with stakeholders such as program partners, shea women and buyers.

Key achievements:

- Women have been organized into an association called the Star Shea Network (SSN), which gives women more negotiating power, and gives buyers access to larger quantities of products.
- Women have been trained on how to process better quality nuts and butter. As a result, in November 2010, SSN women sold over 93 metric tons of nuts to a major buyer, Olam International. Women benefitted by earning premium prices. They have earned .40 Ghana cedi per kilogram for premium nuts, and .35 cedi per kilogram for standard nuts. This represents a significant increase over the price they would have obtained had the nuts been sold in the summer. Women typically sell nuts in the summer due to lack of cash flow. Olam benefits because it secures high quality nuts (which command a higher price from their ultimate buyers) at economic quantities. See Appendix A for more information.
- SAP has contributed its core expertise to support the shea program: Rural Market Connection (RMC), an order management and fulfillment software package, provides the buyer with transparency on historical product quality data and product traceability. Women get access to information through price updates via SMS text messages to mobile phones. The Star Shea
Network website [www.starshea.com](http://www.starshea.com) markets SSN products to the global market. Finally, Microloan Management (MLM) is a tool for microfinance organization credit officers at MTA and GG to track their loan portfolios more efficiently.

**Key Challenges:** There are several risks that can affect the success of this initiative.

1. Stakeholders report that the market demand for butter is currently weak.
2. There is a risk that the shea prices could become regulated in the future, potentially limiting women’s opportunity to achieve higher prices for producing better quality products.
3. The initiative targets the most remote women for the very reason that they have a lack of access to market opportunities. In doing this, however, buyers incur a higher cost to pick up products.
4. The MTA and GG have had difficulty raising additional credit portfolio funding.
5. Women often sell nuts early in the season when prices are low, due to lack of cash flow and a lack of pre-financing opportunities. As a result, they miss the opportunity to sell at a higher price later in the season when the nuts have fully dried and the quality is better.

**Positioning the Initiative for Greater Success:**

Using a value chain development framework, we find that the shea program addresses many weaknesses in the structure and dynamics of the shea value chain. Preliminary outcomes indicate that women are poised to earn more income from the sale of quality nuts through this initiative. The market values high quality nuts because they deliver higher yields when processing butter. If some of the key challenges described above can be managed, the initiative will improve the potential to change women’s lives. We describe options to manage these challenges later in this report.

It will take time to understand the impact of this initiative on shea women. However, the fact that women have sold nuts at a premium price and that certain key program risks can be managed bode well for program success. If the initiative can grow in scale, it should become more attractive to large buyers. SAP is working with the Grameen Creative Lab to determine whether the initiative can be converted into a social business that can earn its own revenues through transaction charges. If this can be realized, the program’s impact will extend far beyond the period of SAP and PlaNet Finance’s involvement. The initiative’s ultimate sustainability, whether through a social business or more grant funding or some combination, will be the key to ensuring long-lasting improvements in the lives of the shea women of Northern Ghana. As one shea woman interviewed said, “We are very hopeful that our life is about to transform.”
The Shea Value Chain Reinforcement Initiative

Demand for Shea Nuts and Butter

In Africa, it is estimated that at least 150,000 tons of shea kernels are consumed annually for cooking, as a skin pomade, for medicinal applications, in soap, for lanterns, and for cultural purposes at ceremonies. Internationally, 90% of shea nuts are used for the food and confectionary industry, for the production of cocoa butter equivalents or improvers, other confectionaries and margarines.1 Volumes are high and prices are lower relative to butter that is used for cosmetics, which is the second most common use of shea nuts internationally. Recently, demand and prices have been affected by the global economic crisis, with many buyers reluctant to buy large stocks of shea nuts and butter. Demand is also affected by world market prices of cocoa butter and cocoa butter alternatives.

Shea Women

Per capita gross domestic product (GDP) in Ghana is $1,500,ii placing the country 202nd out of 229 countries in terms of GDP. The domestic economy continues to revolve around agriculture, which accounts for more than a third of GDP and employs more than half of the work force (mainly small landholders). Many women pick up shea fruits from the ground because the trees grow wild and the fruits are free. Women are typically illiterate and are involved in other income-generating activities such as farming and petty trade. A typical shea woman must walk down a long dirt road for several kilometers with a heavy load of nuts or butter on her head to the village market. Due to the effort involved with taking nuts to market, she can become a “price taker,” settling for a low price rather than carry the products back home.

The Ghana Shea Value Chain

A value chain describes the full range of activities that are required to bring a product or service from conception through the intermediary phases of production, delivery to final consumers, and final disposal after use.iii As the product passes through several stages of the value chain, the value of the product increases. In the main Ghana shea supply channels, there can be several intermediaries that don’t necessarily add value to the product other than the provision of logistic services. Multiple traders and bulkers may be involved before nuts and butter make their way to local processors or international importers.

Key Program Elements

In the first phase of the initiative, conducted in 2009-2010, SAP, PlaNet Finance, MTA and GG built the program and worked with 1,500 women to produce goods for sale. The second phase has now begun and involves another 1,500 women.
Group Organization:
PlaNet Finance, MTA and GG are organizing women into groups, clusters, associations and ultimately, into the SSN. Some women are existing microfinance clients and are already organized into credit groups. Organizing women has several benefits for the shea program. Women have stronger negotiating power with buyers since they can aggregate their supply. They can also benefit from trainings and capacity building that cannot be offered on an individual basis.

Education:
Sekaf Ghana Ltd., an unrefined shea butter processor, has been contracted to train program staff and a selected number of women on how to train people to produce quality nuts and butter. Program staff then rolled out a scale-up training in communities using a video developed by Sekaf and PlaNet Finance. Finally, PlaNet Finance conducts business trainings to teach women how to manage income, expenses and other aspects of running a business, as well as trainings on group dynamics. They also conduct leadership training for association and network leaders.

Information Technology:
SAP has contributed with its core expertise to support the shea program. First, they developed a website (www.starshea.com) which markets SSN products to buyers around the world. Second, they developed a software tool called Rural Market Connection (RMC), a specialized order fulfillment and management package, which enables women’s groups to manage orders from buyers. Women are sent SMS text messages via RMC regarding logistics information. The women also receive SMS text messages regarding market prices from Esoko, a market information exchange that is managed on the internet and integrates information with mobile phones. Third, SAP developed Microloan Management, a software system that enables field credit officers to monitor their loan portfolios and calculate portfolio aging at a glance.

Microfinance:
PlaNet Finance conducted research to understand the credit needs of shea women and key service providers and is now developing microfinance products tailored for these women. If enough capital can be raised by MTA and Grameen Ghana, these loans will be granted to women in the 2011 shea season. Women should be able to obtain loans for purchasing processing equipment, for hiring extra labor, or to help cover general expenses during the cash-strapped summer months before nuts are sold.

3 Progress To Date
Although the shea initiative has only been operating for 18 months, several key accomplishments have been made.

- 1,500 women have been organized and trained on quality nut and butter processing. One woman reported, “The trainings have opened our eyes. We are empowered with knowledge. We can make informed decisions.”
- A major buyer, Olam International, has bought over 93 metric tons of nuts from the Star Shea Network. Women have earned .40 Ghana cedi per kilogram for premium nuts, and .35 cedi per
kilogram for standard nuts. This represents a significant increase (59% for standard nuts and 82% for premium nuts) over the price they would have obtained had the nuts been sold in the summer.

- Olam provided women with protective gear such as boots and gloves to safeguard against hazards such as snake bites when harvesting shea fruits. This should enable them to collect higher quantities over time.
- PlaNet Finance has identified key microfinance products that should help women and other value chain actors such as transporters and grinders improve their business.
- SAP has developed and deployed Rural Market Connection, Microloan Management, and the SSN website. Two butter buyers have contacted the SSN through the website, although orders have not yet been placed.

One main expectation was not met this year:

- Although specific loan products for women, transporters, and grinders were identified and are currently being refined, few women (350 of 1,500 women) received loans in 2010. There is currently a lack of portfolio funding. Program staff reported that women would not have been ready to receive loans so soon after being organized and trained anyway. Still, the fact that loans were not granted and new equipment was not secured was part of the reason that women were limited in the quantity of quality product they could produce this season.

4 Examining the Shea Initiative Using a Value Chain Development Framework

Using a value chain development framework, we will assess both the structural and dynamic components of the shea value chain. The structure of the value chain influences the dynamics of firm behavior. These dynamics then influence how well the value chain performs, or its outcomes. The shea initiative addresses many of the structural and dynamic weaknesses of the shea value chain. Challenges that still remain are highlighted in italics below.

The structure of the shea value chain can be characterized by five elements:

- **End markets:** In Ghana, there is an oligopoly of shea nut buyers. The current butter market appears to be weak. The Rural Market Connection software facilitates relationship building between women and end markets by promoting price transparency and product traceability and by developing online supplier and buyer reputations.

  *Challenge 1: Currently, demand for butter appears to be weak.*

- **Business and enabling environment:** Ghana generally offers a good environment to do business. With regards to physical infrastructure, the fact that shea trees grow in the wild remote rural areas makes it challenging to collect nuts.
**Challenge 2:** While Ghana’s business environment is generally good, there is no guarantee that it will remain so. For example, shea prices may become regulated as cocoa prices are now. This poses a risk that women will not be able to obtain premium prices for higher quality nuts in the future.

**Challenge 3:** The SSN targets the most remote women for this program for the very reason that they have less access to market opportunities. However, generally speaking, from a buyer’s perspective, picking up products from more remote locations is less cost-effective than doing closer pickups.

- **Vertical linkages:** In the current system, there are often several layers of intermediaries between women and ultimate buyers, and strong vertical linkages do not exist between the two. This initiative plans to offer loans to intermediaries such as transporters and grinders, thus strengthening vertical linkages in the chain.

- **Horizontal linkages:** This initiative also organizes women into groups, and goes one step further by branding the women’s association as the Star Shea Network. Working with an association, rather than with many small suppliers, helps to reduce transaction costs for buyers.

- **Supporting markets:** Support services enable firms to upgrade (achieve higher levels of efficiency, increase product differentiation, or reach new markets). The shea initiative will involve providing microfinance loans to women to purchase new equipment that can improve product quantity and quality. This is an example of a key support service that will enable women to upgrade their product quality, creating differentiation.

**Challenge 4:** There is currently a lack of available credit for microfinance institutions to grant such loans.

**Challenge 5:** Also, women lack pre-financing of nuts. This drives them to sell nuts too early in the season (when nuts are still wet and prices are low) due to cash flow needs in the lean summer months.

The firms in an industry create the following dynamic elements through the choices they make in response to the value chain structure:

- **Upgrading:** The two key elements of the shea initiative which will enable upgrading are microfinance and business and quality training.

- **Value chain governance:** The term describes who in a value chain has the ability to define the terms and conditions of transactions. The formation of the SSN has enabled contracts to be formed between women and buyers. Since women are part of a larger group and can engage directly with buyers instead of selling to middlemen, they have more control over the terms and conditions of their sales.

- **Power exercised by firms in their relationships with each other:** Currently, intermediaries hold power over women because women will sell their goods at the local market without having transparent pricing information, making women “price takers.” Intermediaries also manipulate how
nuts are measured at the market (they sometimes measure by hand in a subjective manner that makes it easy to short the women). RMC software will help shift the balance of power to women.

- **Inter-firm cooperation and competition**: If the scale of the SSN can continue to grow beyond the targeted size of 3,000 women, it can ultimately influence the competitiveness of the shea industry. At its current size, the program will not significantly alter the industry’s competitive environment.

- **Transfer of information and learning between firms**: This is the key to competitiveness since upgrading is dependent on knowledge of what the market requires and the potential returns on investments in upgrading.

  Challenge: *As mentioned earlier, demand for butter is relatively weak at present, and buyer needs could be understood better.*

Value chain performance can be measured in this case by value chain competitiveness and small and medium enterprise benefits. These two outcomes are interdependent: If the chain is not competitive, small and medium enterprise benefits will erode over time; and without sufficient benefits, they will lack incentives to change behavior patterns.

Competitiveness is the ability of a firm or industry to develop and maintain an edge over market rivals. This can be achieved through a combination of three strategies: producing and delivering goods and services more efficiently, differentiating products or services through quality standards and branding, and/or exploiting new market demand. The shea initiative is creating a competitive organization (the SSN) that aims to produce and deliver goods more efficiently to buyers. Goods will be produced more efficiently once microfinance enables women to purchase equipment that can increase the quality and quantity of goods. Microfinance will also help key service providers boost supply chain efficiency. For example, if transportation providers receive microfinance, they can increase the quantity of goods delivered to the market. And microfinance can help grinding mills expand, improving product quality. The initiative is differentiating its products by branding the association as the Star Shea Network, which has its own website. Benefits to women and Olam, the buyer, have been positive to date: women have received higher prices for their premium nuts, and Olam obtains higher quality nuts, which will obtain higher prices from their buyers.

5 **Increasing Impact by Addressing Key Challenges**

In this section, we discuss the challenges introduced in Part 4, and options to address them.

**Challenge 1:** *Currently, demand for butter appears to be weak.*

**Options:** Since the ultimate vision is to connect women to multiple buyers so they can achieve the best prices, more market research should be conducted to target additional buyers. In today’s relatively weak market, it may make sense to target more local buyers. For example, local nut buyers that process nuts into butter may realize more business value in purchasing quality nuts (for making pure, unrefined butter).
than buyers that sell nuts abroad. Several value chain development tools exist that can help identify what buyers are looking for, and how an organization compares with competitors when it comes to meeting buyer demands. Building upon end market research conducted by program partners can help shed light on how the Star Shea Network compares to other providers of quality nuts and butter. This can lead to potential program adjustments.

**Challenge 2:** There is a risk that lobbying efforts by the shea nut trade association and others may lead to price regulation of shea similar to that of cocoa. This would limit the opportunity for women to obtain a higher price for their nuts and butter.

**Options:** If regulation goes through, then a market analysis would need to be done to determine which niche buyers might still value high-quality nuts and butter. Striving for organic certification (as PlaNet Finance plans to do with funds from a new grant from the European Commission) will help to differentiate SSN products to combat the threats of regulation. It may become even more important to target niche high-quality markets if regulation passes.

**Challenge 3:** The SSN targets the most remote women for this program for the very reason that they have less access to market opportunities. However, generally speaking, from a buyer’s perspective, picking up products from more remote locations is less cost-effective than doing closer pickups.

**Options:** If the market can consistently deliver premium prices for quality product, village remoteness is less of an issue. The quality premium will cover the additional transportation costs. However, if the market is soft and pricing is weak, there may be a need to target closer communities (still remote, but perhaps less remote) with lower transportation costs in order to deliver goods to the buyer at the cost the buyer desires.

**Challenge 4:** Many stakeholders interviewed for this report cited the lack of credit as limiting the quality and quantity of nuts and butter women are able to produce.

**Options:** Some lending needs for the program will be met by a new European Commission grant recently awarded to PF and new funding Grameen Ghana obtained to finance new groups. Some lending needs can potentially be met by MFIs, who can make some additional loans for the program using their reserves. PF, MTA and Grameen Ghana should continue to seek additional funds for building the MFI credit portfolios. When granting loans to women, a balancing act must be played when weighing borrowing needs with the ability to pay back loans. Having a better picture of demand for nuts and butter will help increase the confidence that loans granted will be paid back.

**Challenge 5:** Shea women lack cash during the spring months. If they sell nuts at this time to get cash, they miss the opportunity to earn higher prices. This is because quality and prices typically increase with time as the nuts dry.

**Options:** PlaNet Finance has identified the need for a loan product that can bridge cash flow during the lean season, which will be a good option. Another option is buyer pre-financing, which some buyers do
informally already, but often at high interest rates. There are situations in other industries where buyers pre-finance. For example, a fair trade coffee buyer in Haiti finances coffee growers in lean cash times before the harvest. However, this is a committed and flexible buyer that wants a long-term relationship with its sellers. The Star Shea Network may be able to get buyer pre-financing only after it develops more scale and reputation for quality over time. At this point, a buyer might find more of a business reason to pre-finance.

6 Positioning the Initiative for Even Greater Success

The overall value created by this program will be determined by the impact the program has on the incomes of women and other value chain actors. SAP has two key opportunities to maximize its investment. First, it can try to develop a sustainable program funding model. Second, it can consider replicating all or parts of the initiative throughout the shea sector or beyond.

Creating a Sustainable Funding Model

Ultimately, the program’s impact will be determined by the longevity and scale of the program. Since SAP’s partnership with PlaNet Finance was set up for three years, ending 2011, the company has been considering various options for continuing the program. To this end, as mentioned above, PlaNet Finance has already secured a new grant from the European Commission to enhance the program and increase program size to 4,500 women. PlaNet Finance and SAP continue to seek outside program funding.

At the same time, SAP is working with the Grameen Creative Lab (GCL), an organization affiliated with microfinance pioneer Muhammad Yunus, to explore the possibility of applying a business-driven approach to the project. The vision is to create what is called a social business. Professor Yunus and the GCL define a social business as a “no-loss, no-dividend company with the purpose of solving a social problem”. The social business would empower women with education and would facilitate trade with international buyers. This would be supported by the use of information technology. From women’s increased income, they would pay a fee to the social business for its services. Initial assessment of the concept by the GCL has been favorable. The GCL believes that, since higher quality nuts provide higher yield and therefore higher price, the market potential exists for SSN to transform into a social business.

The biggest risk to the social business concept is correctly aligning supply and demand. It takes time to build women’s groups and produce high quality product, and this must be timed well with market demand. The SSN will need certain volume to cover the cost of doing business. If volumes are achieved and buyers do pay enough premiums for quality SSN products to cover the costs to operate the social business, this could be a transformative structural change to current practice.

Diffusion of Technology Beyond the Shea Sector

The SAP shea program is one of a select number of value chain development programs using software technology to connect buyers and sellers through a more transparent system. The Rural Market Connection software tool has the potential of being used in other cash crop value chains. Since development costs have mostly been covered through the SSN program, use of the software could be
expanded with high impact for relatively little cost. Ideal conditions for replicating RMC software would be in the following situations:

- There is an end market constraint. Farmers lack price information due to physical barriers such as poor roads or long distances to the market.
- Vertical linkages can be strengthened. There are non value-added layers in the value chain that could be circumvented through IT, or there is an opportunity to link farmers with value-adding intermediaries through RMC
- Horizontal linkages exist. It would be easier to implement RMC when farmers are already organized.
- Ideally, cell phone coverage should be strong to take advantage of RMC’s link with mobile phones. However, even in situations where cell phone coverage is poor, program coordinators can use RMC to enter quantity and price information and develop supplier and buyer reputations, which will help strengthen relationships.
- There are many buyers in the industry, thereby enabling farmers/growers to seek the most preferable pricing.

Microloan Management software also has the potential to be replicated. It can be used by other microfinance credit officers to track loan performance in the field. MLM has an existing interface with Loan Performer, a common, more aggregated management information system software for microfinance. MLM is a flexible tool that has real value for credit officers in many industries, particularly if the microfinance institution is using Loan Performer already.

7 Conclusion
The positive progress the shea initiative has made to date and the logical overall program design bode well for program success. If the program can manage key risks, it is poised to make a difference in shea women’s lives. The program should become more attractive to large buyers as it builds scale over time. And if the vision of developing a social business can be realized, the program’s impact will extend far beyond 2011, when the initial partnership agreement between SAP and PlaNet Finance ends. The ultimate sustainability of the program, whether through a social business or another grant-funded program or some combination, will be the key to ensuring long-lasting improvements in the lives of the shea women of Northern Ghana.
# APPENDIX

*Exhibit A – Preliminary Results from the Ghana Shea Initiative*

## Shea Nuts

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<th><strong>June 2010 Market Price</strong></th>
<th><strong>Star Shea Network Nuts</strong></th>
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| **Price**            | .22 Ghana cedi/kg           | Premium Nuts: .40 Ghana cedi/kg  

⇒ 82% higher than avg. June local market price

|                      | Standard Nuts: .35 Ghana cedi/kg  

⇒ 59% higher than avg. June local market price

If women had not been a part of the Star Shea Initiative, they would likely have sold nuts in June or earlier to meet cash flow needs. Instead, they sold nuts to Olam International in November 2010, after the nuts had dried further and improved in quality. June market price information is based upon informal local market research conducted by The Grameen Creative Lab and SAP. Average price was 18 cedi/bag. Assuming an average of 85kg in a bag, this is .22 cedi/kg.

## Parameters of Buyer - Olam Int’l

### Quality

- **Free Fatty Acid:**
  - <3-6% considered very good
  - <3% excellent
- **Moisture Content:**
  - <7%

### Star Shea Network Nuts

- **Free Fatty Acid (average):**
  - Premium nuts: 2.6%
  - Standard nuts: 2.64%
- **Moisture Content (average):**
  - Premium nuts: 6.92%
  - Standard nuts: 6.62%

*Quality tested in July 2010, and was being tested again at the time this study was in publication*

## Shea Butter Quality Testing Results

### Standard Criteria

- **Free Fatty Acid:**
  - Not more than 3%

*These are the recommended limits for butter consumable in food or cosmetics*

### Quality of Star Shea Network Butter

- **Free Fatty Acid:**
  - .75%

*The Star Shea Network has not yet sold butter.*

*Butter was tested in October 2010 by the Department of Pharmaceutical Chemistry, Kwame Nkrumah University of Science and Technology Kumasi (KNUST), Ghana.*
Exhibit B - References


iv United States Agency for International Development (USAID) - Value Chain Framework. http://apps.develebridge.net/amap/index.php/Chain_Analysis


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