Digital Financial Services in Uganda
Identifying the Right Set of Use Cases for Smallholder Farmers

Strategic Impact Advisors
January 2018

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I. **Background**

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USAID Leadership in DFS and Food Security

In 2016, The Center for Digital Development at USAID’s Global Development Lab teamed with the Bureau for Food Security to examine ways Feed the Future programs can better integrate digital financial services (DFS). Through this collaboration USAID is building awareness and capacity of different market actors and its implementing partners to identify DFS integration opportunities in countries where they operate.

**Bureau for Food Security**

Leads the Feed the Future initiative by leveraging the strengths of key stakeholders to support country-driven agriculture strategies, and invests in strengthening both public and private institutions that underpin growth in the agricultural sector.

**Center for Digital Development, Global Development Lab**

The Center works with a range of public and private sector partners to encourage the adoption and use of technologies critical to an inclusive digital economy and to leverage the data produced to be more responsive and adaptive.

**D2 - Feed the Future:** Accelerating use of DFS within Feed the Future activities
U.S. Government Global Food Security Strategy

The U.S. Government Global Food Security Strategy FY 2017–2021 has three interdependent objectives, one of which is strengthened resilience. Digital technologies are recognized as a proven tool for building resilience in rural populations and women in particular to withstand shocks and seize economic opportunities. Digital payments, including mobile money, are referenced as worthy of programmatic investment to expand access and use of financial products, such as savings.

OBJECTIVE 1: Inclusive and sustainable agricultural-led economic growth

OBJECTIVE 2: Strengthened resilience among people & systems

OBJECTIVE 3: A well-nourished population, especially among women & children
DFS & Feed the Future Uganda Program

D2 Feed the Future is providing technical assistance to two Feed the Future programs in the Northern Region of Uganda, Alur Highlands Coffee Alliance (AHCA) and Youth Leadership in Agriculture (YLA). The programs are integrating DFS products into their activities to meet a range of financial needs of smallholder farmers and value chain actors. Feed the Future activities have played, and continue to play, a crucial brokering role to reduce friction and connect key agricultural stakeholders to markets, inputs and financial services. Under the U.S. Government Global Food Security Strategy, Feed the Future programs will need to assume a similar role between DFS providers and key agricultural stakeholders.

**Feed the Future activities can help by providing...**

- Market intelligence through surveys
- Sensitization of products and services
- Merchant/client acquisition assistance
- Feedback and support
- Product campaigns

**DFS providers offer a variety of new products...**

- Remote payments
- Savings accounts linked to phone
- Insurance enabled by satellite and sensor data
- Alternative credit scoring
- Market linkage platforms
- Solar home systems

**Agricultural stakeholders benefit by...**

- Farmers through digital wallet can improve access to credit, savings and insurance
- Value chain partners improve efficiency through digital payments
- Farmers expand access to other non-ag related services improving resilience
1. Background

2. **Survey Description**

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4. Recommendations

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Survey methodology used a mixed methods approach and random sampling

**Approach**

- Qualitative research (interviews and focus groups) preceded quantitative to inform survey design

**Sampling**

- Used sub-county administrative boundaries and accounted for variation in population density within program operating zones

- **N=97** Smallholder farmers (SHFs, or farmers) growing seeds from Chemonics’ YLA program in Gulu Region

- **N=64** lead coffee SHFs from Palladium’s AHCA Program in W. Nile Region
Smallholder Farmer Market Intelligence

As a first step, AHCA and YLA conducted a baseline survey to help them make informed decisions on areas of focus for their brokering activities as well as to provide more insights into the financial needs and transactional lives of smallholder farmers. The survey covered a variety of topics that will help drive decision making and provide intelligence that can be shared with service providers as activities progress. The remainder of this deck will share key findings, recommendations and data insights based on this survey.

**PHASE 1**
**DESK RESEARCH**
Leveraging existing data sets to prepare for qualitative research and inform tool development

**PHASE 2**
**QUALITATIVE**
Qualitative exercise to validate basic operating assumptions about the population’s activity patterns, preferences and perceptions and inform survey tool development

**PHASE 3**
**QUANTITATIVE**
Quantitative survey to generate statistical analysis and numerical data to put focus group discussions and interviews into broader context
Smallholder Farmer Market Intelligence

- Crop transactions
- Mobile phone ownership and usage
- Solar product ownership and awareness
- Mobile money penetration and usage
- Financial services penetration and usage
- Household income (crop and non-crop related)
- Household expenditure (crop and non-crop related)
- Willingness to utilize mobile money for different purchases and payments

Financial services penetration and usage

Household income (crop and non-crop related)

Household expenditure (crop and non-crop related)

Willingness to utilize mobile money for different purchases and payments

Crop transactions

Mobile phone ownership and usage

Solar product ownership and awareness

Mobile money penetration and usage
3. Key Findings & Observations
**Key Findings & Observations**

**Key Finding 1:**
Farmers have access to mobile network signal, and use GSM mobile services

- **Observations:**
  85% of farmers own mobile handsets

- **OBSERVATIONS:**
  85% of farmers surveyed already own mobile handsets and are using them primarily for voice services. The mobile channel is an appropriate delivery mechanism for this market segment to provide additional services beyond voice.

**Key Finding 2:**
Farmers are already using mobile money for typical purposes (i.e. cashing out)

- **Observations:**
  70% of farmers are registered for mobile money, 83% use the service at least once a month. There appears to be willingness to expand the use cases for mobile money with 72% of farmers willing to receive crop payments via mobile money.

- **OBSERVATIONS:**
  On average, 72% of farmers are willing to receive payment for their crops via mobile money.

**Key Finding 3:**
Three items account for 67% of all household expenditures

- **Observations:**
  Food, education and agriculture inputs make up the vast majority of household expenditures. These payments can be time consuming and require carrying large sums of cash. Digitization of school fees and ag-inputs payments can help reduce risk and time spent on these expenditures.

**Observations:**

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>28%</td>
</tr>
<tr>
<td>Education</td>
<td>22%</td>
</tr>
<tr>
<td>Ag-inputs</td>
<td>17%</td>
</tr>
</tbody>
</table>

*Note: The pie chart represents the breakdown of household expenditures.*
**Key Findings & Observations**

**KEY FINDING 4:** Farmers have multiple income streams, crop and non-crop related, all streams are in cash and occur year-round.

**OBSERVATIONS:** Farmers sell a dominant crop to a larger agribusiness but also inter-crop to supplement income. Men and women share selling duties. Non-crop related income comes from small-scale trading, working as a day laborer, raising livestock, operating a small retail shop, or driving a motor-taxi.

**KEY FINDING 5:** On average, energy was the lowest expenditure (3%), but solar products are increasingly viewed as a necessity not just a luxury.

**OBSERVATIONS:** Farmers spend between US$ 0.07-0.15 on energy per day. While a low expenditure, 55% had purchased some combination of solar components. The average purchase price was US$ 55.00. At this price, it will be difficult for DFS pay-as-you-go solar home systems to compete as they are more expensive.

**KEY FINDING 6:** Farmers utilize informal channels to save and borrow.

**OBSERVATIONS:** 84% of farmers save & borrow through VSLAs. Nearly half of them belong to multiple groups.

84% of respondents stated they belong to a savings group, with 94% stating they have borrowed from their group at least once, and nearly half of them belonging to more than one group. Seeking ways to digitize more mature savings groups can expand convenience and access to more formal financial services for members.
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Feed the Future programs can help expand access to a wider array of formal financial services

- Farmers’ lives revolve around more than just agricultural activities and their transaction needs reflect this diversity
- Help farmers understand and integrate DFS, such as mobile money
- Enhance or broaden access to formal financial products (saving, payments, insurance, credit/lending)
- Build other relevant service ecosystems that impact her/his productive capacity and other aspects of their lives
Opportunities to positively shift DFS adoption and improve DFS ecosystem performance in Feed the Future programs

<table>
<thead>
<tr>
<th>SEGMENT</th>
<th>ACTIVITIES</th>
<th>FOCUS</th>
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</table>
| Smallholder Farmers           | • New product/service sensitization  
                               • Mobilize & train  
                               • Support adoption & continued use                                     | • VSLA digitization  
                               • Push/pull to bank accounts  
                               • Value storage                                                           | • Inputs purchasing  
                               • Solar pre-purchasing  
                               • School fees (other remote payments)                                      |
| Commodity Buyers (i.e. Off-Takers) | • Educate  
                               • Strengthen capacity  
                               • Support adoption & continued use                                        | • Visibility into current payment ops  
                               • Costing out digital alternatives                                        | • Vendor awareness & procurement  
                               • Digitization road map development                                        |
| Other Rural Market Actors      | • New product/service sensitization  
                               • Mobilize & train  
                               • Support adoption & continued use                                        | • New product lines (e.g. climate resistant seeds/inputs)  
                               • Customer loyalty                                                         | • Growing sales  
                               • Improved inventory management                                              |
| Service Providers (DFS, solar) | • Educate  
                               • Strengthen capacity                                                       | • Rural sensitization campaign co-design                                 | • Rural marketing/ acquisition campaign coordination                           |
1. Background
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5. Survey Results
   - Respondent Demographics
   - Household Expenses
   - Household Income
   - Mobile Phone Ownership
   - Financial Services
   - Solar Products & Services
   - Mobile Money Adoption
   - Expanding Mobile Money Usage

6. Path Ahead
Respondent Demographics
AHCA farmers were selected from 19 sub-counties — many close to the DR Congo border; YLA farmers were selected from 10 sub-counties.
AHCA respondents are lead coffee farmers, mostly male and older; YLA respondents are seed farmers, younger, with more gender diversity.

AHCA Farmers

- Avg age: 41

YLA Farmers

- Avg age: 28

YLA: 38% female farmers
AHCA: 8% female farmers

74% male

26% female
Household Expenses
Majority of household expenditures go toward food, education, and agriculture, which are often predictable and cyclical.

On average, households spend UGX 461,600 (US$ 126.00) per month.

- Food: 27%
- Agriculture: 17%
- Education: 21%
- Energy: 5%
- Housing: 5%
- Transport: 3%
- Other: 3%
- Health: 9%

Daily energy spend averaged between 250-550 UGX/day.
Despite sizable and recurring non-food, non-agriculture expenses; some transactions are better-suited for digitization than others.

**TRANSPORT:**
- Farmers ride regularly but not for daily commuting, amounts are small and often negotiated in advance
- Transactions are quick, but take place in exposed settings
- Farmers rely on multiple drivers, most would need to accept mobile money

**EDUCATION:**
- Amounts are large, cash is transported at farmer’s risk
- Payment collection points are often far away
- Process can be very lengthy or costly for farmers
- No more than 3 payments per year; schedule is known in advance, and paper documentation is required

**HEALTH:**
- Public health services are free but quality can be poor; rural centers not easy or inexpensive to access
- Informal providers are closer and do require payment, not always in cash though
- Visits are rarely scheduled or known in advance, cash availability can be recurring challenge
Household Income
SHFs sell within close proximity to home, are paid in cash, in full, and rarely with a receipt; very few make purchases same day after selling.

Crop Selling Locations (multiple options possible)

- Garden/Home: 24%
- Sm Trader: 22%
- Lg Trader: 19%
- Market Day: 37%
- Big Market: 5%

Amount Received at Sale

- Paid After Sale: 2%
- Paid in Part: 3%
- Paid in Full: 95%

Use of Transaction Receipts

- Receipt NOT Given: 75%
- Receipt Given: 17%

Purchasing Needs Following Crop Sale

- No Same Day Purchases: 73%
- Purchases Same Day: 21%
- Did Not Answer: 6%
Farmers sell crops **year-round**, not in a single month or season; however, **income steadily falls** with each cropping cycle.

**Graph:**
- **YLA Total Revenue All Crop Cycles:** 2,307,500 (UGX)
- **AHCA Total Revenue All Crop Cycles:** 1,351,975 (UGX)
Earning monthly income from non-crop sales is widely practiced and provides a significant supplement to income from crop harvests.

AHCA Farmer
Total Average Revenue/Mo.: 2,300,633 (UGX)

YLA Farmer
Total Average Revenue/Mo.: 2,493,945 (UGX)
Mobile Phone Ownership
The vast majority of farmers have access to their own mobile device and have registered SIMs; MTN is the dominant mobile network.

Majority (69%) of SIM card owners are MTN subscribers.

Africell was 2nd in Gulu region.

Airtell was 2nd in West Nile region.
Feature phones are most common and many farmers claim to use their handsets for more sophisticated operations besides calling.

Respondents without a handset are willing to pay, on average **UGX 51,055** to buy one.

These require greater mobile device literacy and the use of numbers.
Farmers are careful consumers of mobile services but spend \(~5,320\) UGX per week on airtime; some even claim to buy using mobile money (37%)
Financial Services
Farmers are **well aware** of formal financial services but usage is low, driven by an inability to afford **account fees/charges** and **bad reputation**

<table>
<thead>
<tr>
<th>SACCO Acct</th>
<th></th>
<th></th>
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</tr>
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<tbody>
<tr>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td>82%</td>
</tr>
<tr>
<td>YES</td>
<td></td>
<td></td>
<td>18%</td>
<td></td>
</tr>
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</table>

<table>
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<th>Bank Acct</th>
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</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td></td>
<td></td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td></td>
<td>35%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Greater percentage of “banked” YLA farmers (bank 38%, SACCO 29%); Vast majority of SACCO account holders among YLA farmers also have bank accounts; Only 6% of AHCA farmers have SACCO accounts; due in large part to a recent history of local SACCOs stealing funds.
High instance (86%) of informal financial services use, mainly VSLAs. 40% are members of multiple VSLAs, especially female SHFs, based on focus group discussions.

Not all VSLA membership is driven by family or social connections. Some are driven by crops grown or stated goals (home improvement, tuition)
Farmers borrowed on average ~133,000 UGX at one time, with a repayment period typically less than 4 months at a rate of ~10%.
Mobile Money Adoption
In addition to high levels of usage (76%), the vast majority of farmers (71%) have registered for their own mobile money accounts.

**Ever Used Mobile Money**
- Yes: 76%
- No: 22%
- No Answer: 1%

**Mobile Money Account Registration**
- Registered: 71%
- Not Registered: 16%
- No Answer: 14%
While 82% of farmers are monthly users, agent proximity is a challenge, with 32% having to travel over 60 minutes to reach one.

Frequency of Mobile Money Use

- 82% 1x in 30 days
- 18% 1x in 60 days
- 18% 1x in 90 days
- 17% <90 days
- 14% <90 days

Time to Reach a Mobile Money Agent

- 60+ Min Away: 32%
- 31-60 Min Away: 18%
- 21-30 Min Away: 18%
- 10-20 Min Away: 17%
- 10 Min Away: 14%
DFS system disruptions occur sometimes (73%); other difficulties include agents lacking cash (62%), and users not reading English (56%).

### Types of Challenges Encountered When Using Mobile Money (multiple responses possible)

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu is hard to understand</td>
<td>8%</td>
</tr>
<tr>
<td>Don’t read English</td>
<td>54%</td>
</tr>
<tr>
<td>Pricing</td>
<td>34%</td>
</tr>
<tr>
<td>No agents around when needed</td>
<td>39%</td>
</tr>
<tr>
<td>Agents don’t have enough cash</td>
<td>63%</td>
</tr>
<tr>
<td>Poor signal reception</td>
<td>1%</td>
</tr>
</tbody>
</table>

### Frequency of Mobile Money Service Disruptions

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrequently</td>
<td>8%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>52%</td>
</tr>
<tr>
<td>Very frequently</td>
<td>12%</td>
</tr>
<tr>
<td>Did not answer</td>
<td>27%</td>
</tr>
</tbody>
</table>
Current usage is tied to money transfer, some reported purchasing airtime (32%); awareness of additional uses is present but quite limited.

Top 3 Most Common Mobile Money Uses
(multiple responses possible)

- Deposit: 35%
- Withdraw: 59%
- Send Money: 41%
- Receive Money: 43%
- Airtime Purchase: 32%
- Acct Balance Check: 12%

Awareness of Additional Mobile Money Uses
(multiple responses possible)

- Don't Know: 26%
- Collect Loan: 8%
- Repay Loan: 13%
- Solar Installments: 18%
- Merchant Purchase: 18%
- Pay Bills: 32%
Solar Products & Services
Solar products are becoming a **necessity vs. luxury**, farmers exhibited a **preference to buy upfront** instead of pay in installments

**Solar Ownership**

- **45%** Don’t own solar
- **55%** Own solar

**Payment Method**

- **77%** Upfront
- **23%** Installments

- Of that 55%, only around **5%** purchased using PayGo model

- **75%** of installment payments were short term loans, repaid over 1-3 months

- Majority purchased a panel, battery, and light bulbs
On average, farmers **paid ~190,000 UGX** for solar, those who had not purchased solar were **willing to pay ~205,000 UGX**
Under 25 were the most likely segment to purchase solar, yet paid the lowest price relative to other age segments.
55% of men and women bought solar products; majority of both preferred outright purchase, men spent 2x more than women.
Expanding Mobile Money Usage
A majority of farmers expressed **willingness** to use mobile money for multiple financial/payments transactions, notably crop selling (74%)
After using mobile money for selling crops, willingness expressed to use mobile money for multiple transactions, including buying ag-inputs (35%)
6. Path Ahead
Initial responses to some basic questions
Do enough use cases exist for these farmers to encourage mobile money usage beyond money transfer?

» Positive **indications that they exist**. Will take a concerted effort and a well-designed intervention focused on several market actors.

» Beyond money transfer, farmers expressed willingness to use mobile money to **purchase ag-inputs, sell crops, and pay school fees**.

» Additionally, connecting **mobile money accounts and formal financial accounts** (bank, SACCO or VSLA) and moving funds between them is of interest.

» **Solar product purchasing** could be of interest as well but likely not a driver of mobile money usage through a PayGo model as most farmers would **prefer to pay upfront**.
What does a compelling rural mobile money ecosystem look like to serve these farmers’ payments and other transaction needs?

» Ability to make/receive payments remotely to save time, transport, cost, and frustration of doing it in person.

» Capacity to store and save funds in a secure, private, and accessible place for specific goals (e.g. new roof) or expenses (e.g. tuition).

» Specific actors using/accepting mobile money would include:
  * **VSLA groups** with an established, core membership, larger deposit balances and higher value pay-ins
  * **Merchants/traders** selling agro-inputs, equipment, hardware supplies, and perhaps clothing in frequented locales
  * Primary and secondary **schools** (either public or private)
  * **Major buyers/traders** (e.g. KAWACOM, ESL)

» Relatively easy, inexpensive access to agents with enough cash for cash-out.
How can Feed the Future implementers partner with key stakeholders?

» For DFS providers, present survey results as part of a rural market intelligence briefing to identify opportunities to improve or expand service.

» Collaboration with solar and DFS providers aimed at specific rural communities whereby Feed the Future implementers support product sensitization, registration, and usage.

» For agri-businesses, complete a payments mapping and costing analysis to show the business case for digitization of crop purchases, inventory management, and distribution.

» For agri-inputs suppliers, engage and sensitize them to encourage DFS acceptance and use to enable farmer purchases.