
February 2015

Compiled by:
Executive Summary

On 10th February 2015, over 60 stakeholders in the East African coffee market convened at an access to finance expert workshop. Participants had a range of interests in coffee input financing, from increased productivity to poverty alleviation to sustainable business.

After a brief introduction to smallholder financing and an overview of the impact of fertilizer use on coffee in Uganda, participants spent the morning discussing successful case studies in smallholder financing from East Africa and beyond.

In the afternoon, participants broke into working groups to design customized financing solutions for the coffee markets of East Africa. The solutions included:

- In Tanzania, a model to “reduce the cost of input finance”, one to establish “farm companies” to provide services to groups of farmers, and a “regional input finance fund” for a special purpose vehicle that would provide inputs to farmers via trader networks.

- In Kenya, a “Best Buds” model to establish partnerships across the value chain and a “Kitchen Sink Partnership” to establish tri-lateral cooperation between marketing agents, financial institutions, and farmer organizations.

- In Uganda, an “Incredible Inputs” model to increase use of fertilizer by strengthening local distribution supply chains, enforcement, and technical support, and a second model using a “mobile savings platform” to promote farmer savings and ensure secure transactions with input providers and buyers.

- Finally, a regional “Sustainable Agro Fund for East African Coffee” was proposed to create a pooled fund to pilot projects in select countries matched by local country contributions.

This document captures the working group’s descriptions of each of the eight models mentioned above.

As a next step, sub-groups of participants have agreed to convene follow-on discussions to further explore stakeholder interest and feasibility of each of the models. A full list of participants (including contact details) is included in the appendix of this document.

1) See expert presentations in this document for additional details
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Solution Pitches

Expert Presentation: Smallholder Financing and East African Coffee

Expert Presentation: Fertilizer Use on Coffee in Uganda

Annex: List of Participants
On Feb. 10th, over 60 stakeholders in the East African coffee market convened at an access to finance expert workshop.

Participants by Type of Organization

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Implementer or NGO</td>
<td>21</td>
</tr>
<tr>
<td>Trader, Roaster, or Buyer</td>
<td>17</td>
</tr>
<tr>
<td>Network</td>
<td>8</td>
</tr>
<tr>
<td>Financial Institution</td>
<td>7</td>
</tr>
<tr>
<td>Input Provider</td>
<td>3</td>
</tr>
<tr>
<td>Farmer Organisation</td>
<td>3</td>
</tr>
<tr>
<td>Sustainability Standard</td>
<td>3</td>
</tr>
<tr>
<td>Donor or DFI</td>
<td>2</td>
</tr>
<tr>
<td>Regulator</td>
<td>1</td>
</tr>
</tbody>
</table>

Percent of Organizations with Presence in Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanzania</td>
<td>68%</td>
</tr>
<tr>
<td>Uganda</td>
<td>59%</td>
</tr>
<tr>
<td>Kenya</td>
<td>51%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>38%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>35%</td>
</tr>
<tr>
<td>Burundi</td>
<td>22%</td>
</tr>
</tbody>
</table>

See appendix for attendance list

1) Sum is greater than 100% because many organizations operate in multiple countries

Source: Workshop registration list and participant survey
Participants had a range of interests in coffee input financing, from increased productivity to poverty alleviation to sustainable business.

**Participant Survey Results: Why is your organization interested in input financing for smallholder coffee farmers?**

“Access to input credit is one of the major challenges highlighted by farmers to increase productivity.”
- Coffee Buyer

“It is part of our global business model to integrate our supply chain from seed to shelf.”
- Coffee Trader

“Our objective is to increase farmer's access to finance, productivity, and household income for poverty alleviation.”
- NGO

“If farmers cannot afford fertilizers, they cannot improve productivity; meaning, [they cannot improve] their incomes; meaning [they will] not invest in their crop; meaning, no business for us. We must find sustainable smallholder financing solutions that are not charity but business minded.”
- Input Supplier

“We believe that without a win-win strategy between the farmers and financial institutions, you cannot achieve long term sustainability.”
- Technical Assistance Provider

Source: Participant survey
The experts participated in an active, hands-on and collaborative process for a full day to develop input financing solutions.
In the morning, participants discussed successful case studies in smallholder financing and identified common success factors.

### Success Factors in Smallholder Financing (and Input Financing)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner coordination</td>
<td>Input financing solutions require strong relationships between financial institutions, input suppliers, buyers, farmer organizations, and NGOs (in particular to manage side selling risk)</td>
</tr>
<tr>
<td>Risk sharing mechanisms</td>
<td>Risk sharing mechanisms (e.g., guarantees or first loss equity investments) can be used to incentivize capital placement by traditional investors or banks</td>
</tr>
<tr>
<td>Financing matched to crop cycles</td>
<td>Cash flows need to match harvest cycles of farmers. For example, farmers need cash (or inputs) at pre-harvest but may not be able to repay until the end of the harvest</td>
</tr>
<tr>
<td>Commercial motivation</td>
<td>A model will not be sustainable or scalable unless it is commercially viable for all actors involved (including input suppliers, producer organizations, and investors)</td>
</tr>
<tr>
<td>Technical assistance for financial institutions</td>
<td>Financial institutions may need technical assistance or training for their staff in order to develop appropriate products and understand agriculture value chains</td>
</tr>
<tr>
<td>Technical assistance for farmers</td>
<td>Farmers and producer organizations also need training on proper use of inputs, effective agronomy, financial literacy, enterprise management, etc.</td>
</tr>
<tr>
<td>Effective producer organizations</td>
<td>It is difficult to offer input financing to farmers directly, so effective producer organizations (i.e., cooperatives) are often the key channel. The organizations need to be well managed</td>
</tr>
<tr>
<td>Data gathering and transparency</td>
<td>Information on transactions, pricing, and purchase agreements can help financiers make a better credit decision and manage risk of side selling or multi-dealing</td>
</tr>
</tbody>
</table>

Source: Participant working group discussions
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Introduction

Solution Pitches

Expert Presentation: Smallholder Financing and East African Coffee

Expert Presentation: Fertilizer Use on Coffee in Uganda

Annex: List of Participants
The participants designed 8 potential input financing solutions for smallholder coffee growers in Tanzania, Uganda, and Kenya

Solution Pitches from the Eight Participant Work Groups

1. **Tanzania: The “Reducing the Cost of Input Finance”** model would offer input credit through a bank, secured by a guarantee from a donor and coffee exporter.

2. **Tanzania: The “Farmer Company Model”** would establish an input fund channeled through a trader or buyer, which has contracts with farmer groups. Donors and other parties would aggregate farmers into groups that act as limited companies, providing relevant farming services.

3. **Tanzania: A “Regional Input Finance Fund”** would create an input finance special purpose vehicle (SPV) that finances traders who then provide inputs to farmers. It would initially focus on Tanzania and expand to other countries in East Africa.

4. **Kenya: The “Best Buds”** model would establish partnerships across the value chain to increase transparency, reduce risks, and open up financial flows.

5. **Kenya: The “Kitchen Sink Partnership”** would establish tri-lateral cooperation between marketing agents, financial institutions, and farmer organizations, supported by technical assistance, guarantees, and insurance. Inputs would be lent in kind to farmers and the bank would be paid back before the farmer organizations.

6. **Uganda: “Incredible Inputs Uganda”** would increase use of fertilizer by strengthening local distribution supply chains, create enforcement mechanisms to reduce fake fertilizer, and strengthen technical support and business training in the supply chain.

7. **Uganda: A “Mobile savings platform”** would promote farmer savings through mobile banking technology so farmers would have cash for inputs and other household needs. Farmers could also transact safely with input providers and buyers through the platform.

8. **Regional: A “Sustainable Agro Fund for East African Coffee”** would create a pooled fund to pilot projects in select countries, as determined by investors. It would focus on a specific vertical (e.g., customer segment or financing model) and funding from the regional fund would be matched by local country contributions.
Model #1: Reducing the Cost of Input Finance (in Tanzania)

Description

- Input supplier is financed through a buyer, in cooperation with producer organizations.
- A guarantee is offered by PASS (60%) and the buyer (40%) so the bank can offer financing at reduced risk.
- The bank input credit is cleared through the coffee export payment on final delivery.
- An enhanced Tanzania Coffee Board database for the coffee sector will reduce moral hazard and side selling.
- Goal is to convince 3 commercial banks to adopt the model.

Risks Addressed

- Lack of information
- Risk of default
- Intermediary exposure

<table>
<thead>
<tr>
<th>Description</th>
<th>Exporter (e.g., Tembo)</th>
<th>Farmers and farmer groups</th>
<th>Input Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank</td>
<td>Exporter pays bank for coffee sales</td>
<td>Issue loans to farmers</td>
<td>Cash payments into bank account</td>
</tr>
<tr>
<td>PASS</td>
<td>60% guarantee</td>
<td>Guarantee of solidarity</td>
<td>Local guarantee / paid-off after delivery</td>
</tr>
</tbody>
</table>
# Model #1: Reducing the Cost of Input Finance (in Tanzania)

## Stakeholders

- **Coffee exporter** (e.g., Tembo Coffee) provides a 40% guarantee to secure farmer’s loan from the bank; gets collateral from individual farmers
- **Farmer groups and farmers** ensure good management and provide a guarantee of solidarity
- **Input supplier** provides inputs
- **Banks** offer loans to farmers
- **Tanzania Coffee Board (TCB)** provides information from the farmer database
- **Guarantee fund** (e.g., PASS) provides a 60% guarantee to the bank to reduce risk

## Value proposition to stakeholders

- Reduced credit risk compared to current state
- Reduced cost of funds
- Transparency

## Road map

**What to do now**
- Organize stakeholders and conduct a feasibility study

**What to do next**
- Secure commitment of the players and establish roles
- Introduce pilot

**What to do later**
- Expand the model sector-wide
Model #2: The Farmer Company Model (in Tanzania)

**Description**
- The foundation of the model is farmer aggregation to collectively address risks and act as a limited company to provide services to members.
- Donors, investors, and financial institutions help bring the farmer groups to a bankable level.
- Input suppliers, roasters, and other organizations interested in creating an input fund would channel these funds through a trader or buyer, which has contracts with the farmer groups.
- A regulator would oversee relationships.

**Risks Addressed**
- Low capacity to manage funds at household.
- Inability to access bank branches.
- Disaggregation and lack of collective bargaining power or ability to manage risk.
- Low access to financial technical assistance.
- Low access to information about markets.
- Counterfeit inputs.
Model #3: Regional Input Finance Fund (initially in Tanzania)

Description

- Create an input finance special purpose vehicle (SPV) that finances traders who then provide inputs to farmers
- At the end of the season, farmers sell their crop and repay the SPV (via producer organizations or traders)
- DFIs and an input provider offer a 20-50% first loss guarantee on the SPV which is also funded by banks and/or governments
- Technical assistance is delivered on the side to organize the value chain and train farmers

Risks Addressed

- Reduce risk of default by farmers by providing technical assistance and focusing on organized value chains
- Address market risk by diversifying across countries
- Address regulatory risk by including government as a participating investor
### Model #3: Regional Input Finance Fund (initially in Tanzania)

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Value proposition to stakeholders</th>
<th>Road map</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>DFIs</strong> (e.g., KFW, DEG, and IDH) seed the fund, cover first loss, and pay for technical assistance</td>
<td><strong>Impact</strong>&lt;br&gt;• Social impact for farmers&lt;br&gt;• Reduction of poverty due to professionalization and increased revenue in the coffee sector</td>
<td><strong>What to do now</strong>&lt;br&gt;• Conduct a scoping assessment and review results among potential participants (1-2 months at a cost of about $50,000)</td>
</tr>
<tr>
<td>• <strong>Input providers</strong> (e.g., Yara) contribute to first loss fund and sell inputs paid for by the SPV</td>
<td><strong>Market opportunity</strong>&lt;br&gt;• Business development for input providers and investors</td>
<td><strong>What to do next</strong>&lt;br&gt;• Conduct a feasibility study (3-5 months at a cost of about $500,000)</td>
</tr>
<tr>
<td>• <strong>Local governments</strong> (e.g., Tanzania Coffee Development Fund) contribute to the SPV</td>
<td><strong>Coffee supply</strong>&lt;br&gt;• Increased access to coffee for buyers&lt;br&gt;• Improved loyalty in coffee supply chains</td>
<td><strong>What to do later</strong>&lt;br&gt;• Set up the fund (5-7 months)</td>
</tr>
<tr>
<td>• <strong>Guarantors</strong> (e.g., PASS) provide a risk guarantee for banks in the SPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Banks</strong> (e.g., CRDB, NMB, others) provide commercial capital to the SPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>TA Providers</strong> (e.g., HRNS, traders) train farmers and organize the value chain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Model #4: Best Buds (in Kenya)

Description

- Establish partnerships with key players in the value chain to reduce risks
- Share information among partners and financial institutions to increase transparency and understand risks
- Provide capacity building for farmers
- Create tight internal control mechanisms to monitor quality
- Aim to reach 40% of coffee farmers in Kenya in 5 years, with participation by KCB, Equity Bank, Cooperative Bank, Family Bank, and Chase

Risks Addressed

- Loan default risk
- Diverting inputs or side-selling
- Poor quality inputs
- Poor use or inputs or production methods
- Multiple borrowing
- Lack of financial literacy
# Model #4: Best Buds (in Kenya)

## Stakeholders
- **Commercial banks** provide financing
- **Input suppliers** provide inputs (e.g., fertilizer)
- **Cooperatives** organize the production
- **Marketing agents** are the end buyer
- **Extension officers** offer capacity building and monitoring
- **Development agencies** provide guarantees
- **Regulators and government agencies** provide supportive regulation

## Value proposition to stakeholders
- **Reduced risk of default**
- **More business and sales**
- **Access to inputs and increased productivity/income**
- **More business and better quality coffee**
- **More business**
- **Increase productivity and income for smallholders**
- **Strengthened sector leading to economic development**

## Road map

### What to do now
- Bring partners together to gain commitments to the concept

### What to do next
- Develop the framework and model design
- Pilot the project

### What to do later
- Implement and expand

*Given the complexity of the model, it may be difficult to bring in all the actors necessary*
Model #5: Kitchen Sink Partnership (in Kenya)

Description

- Tri-lateral cooperation between marketing agents, financial institutions, and farmer organizations, supported by technical assistance, guarantees, and insurance
- Inputs are leant in kind to farmers and the bank is paid back before the farmer organizations (to reduce default risk)
- Inputs imported in bulk to reduce cost
- The marketing agent is the key, vouching for the farmer organizations and ensuring repayment to the banks
- The model would be better enabled by changing the law barring wet mills

Risks Addressed

- Proper usage of fertilizer
- Overcome bank fear/ignorance
- Ensure good governance of farmer organizations
- Manage price and access to inputs
- Diversification of risk
## Model #5: Kitchen Sink Partnership (in Kenya)

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Value proposition to stakeholders</th>
<th>Road map</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marketing agents</strong> (e.g., CMS and SMS)</td>
<td>Increased revenue and market share</td>
<td><strong>What to do now</strong></td>
</tr>
<tr>
<td><strong>Banks or social lenders</strong> (e.g., Equity Bank, Chase Bank, Rabobank, or Root Capital)</td>
<td>Diversified portfolio and mission alignment</td>
<td>• Develop concept note</td>
</tr>
<tr>
<td><strong>Farmer organizations</strong> (e.g., Gikanda)</td>
<td>Increased yields/incomes</td>
<td>• Identify pilot partners</td>
</tr>
<tr>
<td><strong>Guarantors or insurance</strong> (e.g., DCA or HUG Insure)</td>
<td>Address social missions of impact investment</td>
<td>• Hold a stakeholders forum to validate</td>
</tr>
<tr>
<td><strong>TA Providers for banks</strong> (e.g., TechnoServe or Frankfurt School)</td>
<td>Improve support to the agricultural sector</td>
<td><strong>What to do next</strong></td>
</tr>
<tr>
<td><strong>TA Providers for farmer organizations and farmers</strong> (e.g., Rabobank IAS, CABI, or Progreso)</td>
<td>Improve incomes and solutions to poverty</td>
<td>• Test the model with select partners</td>
</tr>
<tr>
<td><strong>Donors</strong> (e.g., MasterCard Foundation, USAID, or KfW)</td>
<td>Economic empowerment to smallholder farmers</td>
<td>• Evaluate and refine</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>What to do later</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Advocacy around regulatory and legal changes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Replicate with more partners</td>
</tr>
</tbody>
</table>

### Stakeholders
- **Marketing agents** (e.g., CMS and SMS)
- **Banks or social lenders** (e.g., Equity Bank, Chase Bank, Rabobank, or Root Capital)
- **Farmer organizations** (e.g., Gikanda)
- **Guarantors or insurance** (e.g., DCA or HUG Insure)
- **TA Providers for banks** (e.g., TechnoServe or Frankfurt School)
- **TA Providers for farmer organizations and farmers** (e.g., Rabobank IAS, CABI, or Progreso)
- **Donors** (e.g., MasterCard Foundation, USAID, or KfW)

### Value proposition to stakeholders
- Increased revenue and market share
- Diversified portfolio and mission alignment
- Increased yields/incomes
- Address social missions of impact investment
- Improve support to the agricultural sector
- Improve incomes and solutions to poverty
- Economic empowerment to smallholder farmers

### Road map
- **What to do now**
  - Develop concept note
  - Identify pilot partners
  - Hold a stakeholders forum to validate
- **What to do next**
  - Test the model with select partners
  - Evaluate and refine
- **What to do later**
  - Advocacy around regulatory and legal changes
  - Replicate with more partners
Model #6: Incredible Inputs Uganda

### Description
- Increase use of fertilizer by strengthening local distribution supply chain
- Create enforcement mechanisms to reduce fake fertilizer
- Strengthen technical support and offer business training in the supply chain
- Reinforce supply infrastructure and logistics

### Risks Addressed
- Reduce use of fake fertilizer
- Address availability of product at the right time, locally
- Reduce wasted training capacity
- Ensure useful farmer investment

### Value proposition
- Sustainable, profitable business development
- Improved coffee sector
- Optimization of logistics
- Access to quality inputs
- Improved livelihoods

- Enforcement (to prevent fakes)
- Technical support
- Business training

Import Company (inputs) —> Uganda wholesaler —> Retail / agro-dealer —> Coop- erative —> Farmer —> Roaster —> Buyer
- Must be in place to warrant input distribution investment
Model #7: Mobile savings platform (initially in Uganda)

**Description**

- Promote farmer savings through mobile banking technology
- Negotiate preferential savings interest rates on behalf of farmers
- By encouraging the habit of savings, farmers will have cash for inputs and other household needs
- Farmers can also transact safely with input providers and buyers through the platform
- Aim to launch three pilot projects with different stakeholders in different settings; encourage farmers to save 20% of their gross income

**Risks Addressed**

- Address reluctance of farmers to invest in inputs
- Reduce lack of willingness of stakeholders to take risk
- Address insufficient cash flows
- Prevent theft of physical cash
### Model #7: Mobile savings platform (initially in Uganda)

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Value proposition to stakeholders</th>
<th>Road map</th>
</tr>
</thead>
</table>
| Mobile operators | • Increased revenue for mobile operators and input providers  
| | • Increased savings portfolio for banks  
| | • Increased supply for buyers |
| Banks | | **What to do now** |
| | | • Develop an agreement between at least 3 buyers and 2 input providers on a standard curriculum  
| | | • Convince mobile operators and banks to participate |
| Input providers and buyers | | **What to do next** |
| transact with farmers safely and securely through the mobile platform | | • Convince farmers to receive payments on phones  
| | | • Set up incentive scheme to start savings (e.g., subsidized photos and TA)  
| | | • Financial literacy training  
| | | • Engage local services and businesses to accept mobile money |
Model #8: Sustainable Agro Fund for East African Coffee

**Description**

- Create a pooled fund to pilot projects in select countries, as determined by investors
- Focus on a specific vertical (e.g., customer segment or financing model)
- A Sustainable Agro-Board board decides priorities and allocates funding
- Funding is matched by country funds
- Incorporate climate adaptation projects

**Stakeholders**

- Farmer cooperatives
- Donors and regional coffee networks (e.g., AFCA)
- Coffee companies and exporters
- Banks and social lenders
- Implementers
- Host governments

**Country fund, leveraged with matching funding**

**Match funding**

**Sustainable Agro-Board per country, including:**
- Cooperatives
- Traders
- Implementers
- Agro-input suppliers

**Generic support:**
- Imports
- Agro-training
- Climate mitigation/adaptation
- R&D

**Value chain specific support**
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Introduction

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Expert Presentation: Smallholder Financing and East African Coffee

Expert Presentation: Fertilizer Use on Coffee in Uganda

Annex: List of Participants
ISF is a “platform” for the research and development of financial services serving the smallholder farmer market

- It is a **time-bound effort** housed in the non-profit Global Development Incubator and guided by a Steering Committee of sponsor funders and key advisors.
- **Three main activities** are: 1) Research 2) Facilitation and 3) Sourcing “transactions”
- The goal of the Initiative is **marked progress toward closing the gap** between the $450 billion in smallholder financing demand and the current $10-20 billion supply.

Resources and information available at www.globaldevincubator.org/isf
A Smallholder Finance Theory of Change
(www.globaldevincubator.org/isf)

The right blend of inputs

Financial services
(short term, long term, insurance)

Business services
-business and technical training and support

Infrastructure
-transport & storage, grading, certification

Market linkages for each actor across the value chain

Will accelerate a virtuous cycle within agricultural value chains

Input suppliers

Farmers

Producer groups

Local traders (aggregation)

Local Processors

Exporters/wholesalers

Global buyers and brands

That promotes prosperity and environmental stewardship

Outputs
- Stable & Premium Pricing
- Improved Agronomic Practices
- Farmer Productivity
- Sustainable practice adoption

Outcomes
- Agribusiness growth
- Rural Employment
- Farmer Income & Assets growth
- Women’s Empowerment
- Improved Soil Treatment, Water Management, Energy Consumption, Waste Management, Chemical Use

Impact
- Food security
- Education & health for rural families
- Stronger rural communities
- Ecosystem Resilience

In order for the virtuous cycle to take hold, trust must be created based on shared value, shared risk, voice for each actor, and ownership of productive assets across the agricultural value chain.
Smallholder financing is typically limited by a series of barriers

Smallholder Farmer financing is constrained by:

- Products are not available and accessible
  - Borrowers are not accessible\(^1\)
  - Farms don’t have required records/mgmt
  - Farms don’t have the right economics
  - There is a lack of collateral

- There is no enabling infrastructure
  - Financiers don’t have the expertise to design lending products
  - Financiers struggle to rollout lending product
  - Financiers don’t have the right links with existing networks
  - Farms are not easily accessible through networks (e.g. cooperatives)
  - SHFs don’t have required budgeting and accounts management
  - SHFs don’t have required farm management practices
  - Financiers don’t have the expertise to design lending products
  - Farms need stronger revenues
  - Farms need to better control costs
  - Farmers don’t have required title for hard assets
  - Farmers don’t have required soft collateral (e.g. forward contracts)
  - There is a lack of credit bureaus
  - Regulation and policy does not enable lending

Constraint type:
- Supply
- Demand
- Environment

Source: Dalberg/ISF analysis
Note: 1. Assumes financing cannot be made directly without some enabling organization
Successful financial institutions have used five key strategies to finance smallholders

### Strategies Employed by Innovative Financiers in Smallholder Finance

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Customization</td>
<td>Flexible repayment terms linked to crop cycles improve farmers’ ability to pay on time (when designed in collaboration with local agriculture experts).</td>
</tr>
<tr>
<td>Distribution Customization</td>
<td>Roaming agents (ideally enabled by handheld technology) serve rural customers and enable information collection. Mobile payments can reduce transaction costs.</td>
</tr>
<tr>
<td>Collateral Customization</td>
<td>Use of group lending, warehouse receipts, or leasing allows banks to offer financing to farmers without traditional hard assets as collateral.</td>
</tr>
<tr>
<td>Risk Management</td>
<td>Knowledge of value chains and assessments of buyer relationships help bankers assess future cash flows and improve credit assessments.</td>
</tr>
<tr>
<td>Partnerships</td>
<td>To overcome demand side constraints, banks partner with institutions that provide supporting interventions (e.g., government extension programs, NGOs, or producer organizations)</td>
</tr>
</tbody>
</table>

Source: Interviews with smallholder lenders
**Five areas of innovation have recently emerged from research and design activities with financial service providers**

<table>
<thead>
<tr>
<th>Key challenges addressed</th>
<th>Current areas of experimentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infield efficiency</strong></td>
<td>• Mobile repayment</td>
</tr>
<tr>
<td>• Field- and branch-based delivery are key drivers of direct-to-farmer operational costs</td>
<td>• Non-branch delivery models</td>
</tr>
<tr>
<td><strong>Agronomic learning</strong></td>
<td>• Agronomic training from finance providers via tablets</td>
</tr>
<tr>
<td>• Agronomic training is a key success factor in direct-to-farmer finance, but can create challenges to scale and sustainability</td>
<td>• Mobile training resources targeted directly at farmers</td>
</tr>
<tr>
<td><strong>Credit assessment</strong></td>
<td>• Alternative credit assessment tools, some which incorporate agriculture-related data</td>
</tr>
<tr>
<td>• Collecting information to assess smallholder credit worthiness is difficult and expensive</td>
<td>• Supply chain management data collection platforms</td>
</tr>
<tr>
<td><strong>Portfolio diversification</strong></td>
<td>• Provider promotion of crop diversification</td>
</tr>
<tr>
<td>• Finance providers with portfolios heavily concentrated in agriculture face significant prices and crop risks</td>
<td>• Provider promotion of livestock farming</td>
</tr>
<tr>
<td><strong>Individual motivation</strong></td>
<td>• Financial incentives</td>
</tr>
<tr>
<td>• Group lending traditionally used to mitigate default risk, however this model is associated with limitations</td>
<td>• Mobile technology for repayment reminders</td>
</tr>
</tbody>
</table>
Buyers have experimented with various strategies to finance smallholders in their supply chain

1. **Direct Financing**
   Buyer provides direct financing to smallholders (e.g., Nestle)

2. **Warehousing for Credit**
   Buyer allows farmers to use their warehouse for storage in return for credit (e.g., Louis Dreyfus)

3. **Partnering with Social Lenders**
   Buyer issues a purchasing contract that is used by a social lender to finance producer group loans (e.g., Starbucks with Root Capital and Verde Ventures)

4. **Serving as the Front Office for Banks**
   Buyer acts as the front-office agent for origination and/or collection on behalf of a bank

**Buyers also support financing for smallholders by:**
- Helping smallholders obtain certification, increasing their traceability and bankability
- Investing in smallholder-focused funds (e.g., Starbucks and the Fairtrade Access Fund)
- Developing additional models by supporting their CSR divisions and NGO partners

1) Funding could go directly to smallholders or through the buyer. Source: Buyer interviews; Dalberg analysis
In the input supply chain, financing activity can occur at various points

Simple supply chain of delivering inputs to SHFs

- **Government**
  - Input producers
  - Importer / distributor
  - Agrodealer
  - Farmer
  - Buyer

### Financing activity

- **Financing for importers / distributors to purchase inputs from input producers**
  - Importer financing does not directly engage smallholders, but can lead to lower costs of inputs for farmers

- **Agrodealer financing for smallholder farmers to purchase inputs**
  - Often offered informally (i.e., no written contract) with short credit terms; often based on agrodealer relationship with SHF

- **Buyer financing for smallholders to purchase inputs**
  - Typically only used in tight value chains due to side selling risk

Source: Dalberg literature review and stakeholder interviews
## East African Coffee Market Overview

<table>
<thead>
<tr>
<th>Marketing system</th>
<th>Tanzania</th>
<th>Kenya</th>
<th>Uganda</th>
<th>Commodity Exchange (ECX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auction</td>
<td>Auction</td>
<td>Open Market</td>
<td>Commodity Exchange (ECX)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coffee price trend¹</th>
<th>70,000 MT</th>
<th>50,000 MT</th>
<th>190,000 MT</th>
<th>500,000 MT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Coffee production trend</th>
<th>Stable</th>
<th>Long-run decline</th>
<th>Stable</th>
<th>Growing</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Percentage of production that is smallholder-produced</th>
<th>~95%</th>
<th>~56%</th>
<th>~90%</th>
<th>~90%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Average smallholder yield²</th>
<th>250 kg/ha</th>
<th>300 kg/ha</th>
<th>548 kg/ha</th>
<th>300 kg/ha</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Bankability of cooperatives</th>
<th>🌟</th>
<th>🌟</th>
<th>🌟</th>
<th>🌟</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Percentage of smallholder coffee moving through coops</th>
<th>~50%</th>
<th>100%</th>
<th>~5%³</th>
<th>7%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Prevalence of side-selling</th>
<th>High</th>
<th>Low</th>
<th>High</th>
<th>Med</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Estimated smallholder financing gap⁴</th>
<th>~$139M (51%)</th>
<th>~$77M (43%)</th>
<th>~$75M (43%)</th>
</tr>
</thead>
</table>

Note: (1) MT = metric ton (1,000 kg); (2) The yield differential is due to the fact that Arabica is more commonly produced in Tanzania and Kenya, while Robusta is more commonly produced in Uganda; (3) Highly preliminary estimate based on the assumption that each cooperative has 500 members. Discussions with HRNS indicate that roughly 20% of cooperative members sell ~30% of their product into the cooperative; (4) Conservative estimate based on team assumptions.
Table of Contents

Introduction

Solution Pitches

Expert Presentation: Smallholder Financing

Expert Presentation: Fertilizer Use on Coffee in Uganda

Annex: List of Participants
Coffee and Fertilizer Use Examples from Uganda

Lydia Wairegi, David Mukasa, Laurence Jassogne, Ibrahim Wanyama, Ghislaine Bongers, Na Wang, Piet van Asten

Presentation made at the IDH/ICO/DEG/AFCA/4C Association workshop on ‘Access to inputs for Eastern-African coffee farmers – What role can finance play?’ , 10th Feb 2015
What is the importance/relevance of fertilizer usage for Ugandan coffee farmers?
What is the effect (response) of fertilizer on both yields and profitability of the coffee? How does it compare with other crops?
How many coffee farmers in Uganda currently use fertilizers – why do not more farmers use them?
What are some the bottlenecks to fertilizer use?
What is needed to increase fertilizer use by coffee farmers in Uganda?
Average yields <30% of yield of best farms

Poor yields (< 1000 kg/ha/yr green bean) due to:
- Nutrient deficiencies
- Poor yielding varieties
- Pests and diseases
- Drought and erratic rains -> climate change
Fig. 3. Relationships between coffee yields and yield-related production factors in Robusta coffee growing regions (Central and Northern regions) predicted by boundary line analysis.
Fertilizer Use in 2011/12 (kg/ha)

- Kenya
- Ethiopia
- Burundi
- Tanzania
- Uganda
- DRC
- Rwanda

Source of data: FAO
Study area, Uganda
Proportion of farmers using fertilizer (%)

Almost 1 million coffee farmers in UG, but <10% use fertilizers

* None of the surveyed farmers in North and North-west used mulch, manure or fertilizer

van Asten et al. 2012
Wrong targeting!!

Profitability of N-fertilizer use

- Benefit
- Cost of fertilizer
- Loss

Monocrop Intercrop Monocrop Intercrop

Arabica in East

Robusta in south-west
Fertilizer needs to be targeted

NPK plus Ca

NPK plus Mg
Comparison of ‘profitability’ across crops

- Crops: Maize, Beans, Banana, Cassava, Rice & coffee
- Amount of fertilizer used based on nutrients removed in edible yield
- Ratio between price of 1t edible yield and cost of fertilizer
Comparison of ‘profitability’ across crops

- 30 farmers monitored daily inputs/outputs in Central Uganda for 1 entire year
Perceived constraints to fertilizer use

- Fertilizer spoil the soil!... **NOT TRUE**
- High price of fertilizer -> big bags only
- Lack of proper advice
- Lack of credit -> crop response time (1-2 yrs) exceeds credit period
- Risk aversion: afraid they can’t sustain fertilizer >1 year
- Lack of access to inputs
- Control over inputs/outputs -> gender
Is coffee their core business?

Table 4. Descriptive statistics (mean ± standard error) for system characteristics including availability of the resources land (farm size), labour (family labour) and cash (total household revenue), of farms in each of the five farm types.

<table>
<thead>
<tr>
<th>System characteristics</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Average</th>
<th>F-test Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm size(^{\text{AHC}}) (hectare)</td>
<td>3.1(^a) ± 0.3</td>
<td>2.2(^b) ± 0.5</td>
<td>1.8(^b) ± 0.2</td>
<td>2.7(^a) ± 0.2</td>
<td>3.1(^a) ± 0.6</td>
<td>2.6</td>
<td>0.001*</td>
</tr>
<tr>
<td>Number of plots</td>
<td>4.5(^a) ± 0.5</td>
<td>3.5(^b) ± 0.5</td>
<td>2.9(^b) ± 0.2</td>
<td>3.9(^a) ± 0.2</td>
<td>2.6(^b) ± 0.3</td>
<td>3.6</td>
<td>0.002*</td>
</tr>
<tr>
<td>Household size (# people in the household)</td>
<td>10.9(^a) ± 0.8</td>
<td>9.0(^b) ± 0.8</td>
<td>8.7(^b) ± 0.3</td>
<td>11.5(^a) ± 0.3</td>
<td>9.0(^a) ± 0.3</td>
<td>10.3</td>
<td>0.040*</td>
</tr>
<tr>
<td>Family labour (# people &gt; 18 year working full-time on farm)</td>
<td>3.5(^a) ± 0.4</td>
<td>2.4(^b) ± 0.3</td>
<td>3.3(^a) ± 0.3</td>
<td>4.0(^b) ± 0.3</td>
<td>2.6(^b) ± 0.2</td>
<td>3.4</td>
<td>0.003*</td>
</tr>
<tr>
<td>Income from coffee(^{\text{AHC}}) (%)</td>
<td>58(^a) ± 2</td>
<td>26(^c) ± 2</td>
<td>85(^a) ± 2</td>
<td>53(^b) ± 2</td>
<td>21(^c) ± 3</td>
<td>55</td>
<td>0.000*</td>
</tr>
<tr>
<td>Income from banana(^{\text{AHC}}) (%)</td>
<td>3(^c) ± 1</td>
<td>4(^c) ± 1</td>
<td>4(^c) ± 1</td>
<td>16(^d) ± 1</td>
<td>44(^a) ± 1</td>
<td>12</td>
<td>0.000*</td>
</tr>
<tr>
<td>Income from off-farm labour(^{\text{AHC}}) (%)</td>
<td>26(^b) ± 1</td>
<td>60(^a) ± 2</td>
<td>1(^d) ± 0</td>
<td>1(^d) ± 0</td>
<td>14(^c) ± 3</td>
<td>13</td>
<td>0.000*</td>
</tr>
<tr>
<td>Income from livestock (%)</td>
<td>29(^c) ± 0</td>
<td>0(^b) ± 0</td>
<td>4(^a) ± 0</td>
<td>5(^a) ± 0</td>
<td>4(^a) ± 0</td>
<td>5</td>
<td>.</td>
</tr>
<tr>
<td>TLU(^\dagger)</td>
<td>2.9 ± 0.2</td>
<td>2.0 ± 0.2</td>
<td>2.3 ± 0.3</td>
<td>2.5 ± 0.3</td>
<td>2.3 ± 0.2</td>
<td>2.3 ± 0.2</td>
<td>0.119</td>
</tr>
<tr>
<td>Number of coffee trees</td>
<td>2,059(^a) ± 30</td>
<td>989(^b) ± 30</td>
<td>1,505(^b) ± 30</td>
<td>1,500(^a) ± 30</td>
<td>844(^b) ± 30</td>
<td>1499</td>
<td>0.057</td>
</tr>
<tr>
<td>Total household revenue (USD/yr)</td>
<td>2,406(^a) ± 70</td>
<td>2,533(^a) ± 70</td>
<td>1,365(^b) ± 70</td>
<td>2,289(^b) ± 70</td>
<td>4,396(^a) ± 70</td>
<td>2,324</td>
<td>0.049</td>
</tr>
</tbody>
</table>
Conclusion & outlook

• Fertilizer on coffee is amongst most profitable investments
• Farmers need access to knowledge, markets, credit
• Finance and extension partners need to target!
  • Target ‘promising’ farmers – 20%?
  • Established groups for credit / market access
  • Set modest Δ Yield – progress & learn
  • Target dominant deficiencies
  • Track, document, and outscale!
• Adapt credit system to smallholder abilities

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