Navigating the agri-tech landscape

How to identify and set-up appropriate, financially viable and impactful technology projects to scale
AGDEVCO: SPECIALIST INVESTOR WITH BOOTS ON THE GROUND

We are the only specialist impact investor that creates and builds African agribusinesses.

- Have experience of investing in the sector and in-house commercial agribusiness expertise.
- We have local presence in East, West and Southern Africa.
- We invest $2-10m debt or equity
- Strong partners / networks with private sector agribusinesses and investors with a portfolio of $127m in 49 investments
- We are a permanent capital vehicle investing from our own balance sheet – able to be patient.
AGDEVCO’S SMALLHOLDER DEVELOPMENT UNIT

Commercial Agriculture
► Provides advice on agricultural risks, agronomy, crop protection and other areas of technical farm management

Environmental, Social and Governance (ESG)
► Provides advice on proportionate good practice ESG systems, including in areas of food safety, biosecurity, health & safety, safeguarding, risk management and governance issues

Enterprise Development
► Provides advice and practical solutions to improve financial control environments of investees, including on tax compliance, controls strengthening and financial reporting

Smallholder Development Unit (SDU)
► Specialist smallholder farmer-focused TA facility providing cash and in-kind support to enable catalytic relationships between agribusinesses and smallholder farmers
► 5-year, US$14.7m facility, funded by the Mastercard Foundation and UK Aid
► Partnering with 24 agribusinesses (50% are AgDevCo investees) and currently reaching over 400,000 smallholder farmers
CASA TAF is supporting 35 agribusiness investments to deepen commercial and smallholder farmer impact through TA packages; funded by the UK Government (FCDO)

- Investor partners such as:

  - Objective to change the way in which investors view and invest in agribusinesses that work with smallholder supply chains

  - CASA TAF provides inclusive TA to 35 agribusinesses that source from smallholders, via its investor partners

  - In response to COVID-19, CASA TAF expanded its TA basket to support SHF sourcing businesses to manage and/or adapt to the crisis

  - Strong learning & evidence generation component designed to influence investors to increase provision of technical assistance in agriculture
About me

• Engineer / agricultural economist by training
• Worked on tech projects in dozens of countries
• Focused on aligning technology with business goals and impact

TECHNOLOGY DEVELOPMENT

Web and mobile application developer

TECHNOLOGY STRATEGY

Requirements, pilots, figuring out what works and what fails
How do we decrease risk and consistently innovate on tech projects regardless of the resources available?
Focus: Agribusiness operations, efficiency, and sourcing from smallholders
Goal: Implement technology that scales

**Financial:** The solution is financially viable regardless of reach

**Technical:** The solution can be expanded without additional overhead

(Full control over technology and its impact)
Let’s talk about Shares Uganda...

- **Location:** Uganda, West Nile region
- **Smallholders:** 28,000 organic certified and contracted outgrowers
- **Field Staff:** 3 supervisors, 15 field officers, 90 field-assistants, 3 VSLA coordinators, and 90 VSLA supervisors
- **Crops:** organic sesame, chia and chili
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Let’s talk about Shares Uganda…

4,000 Farmers 
2 months

Understand priorities
1. Digitalise field data collection for organic certification

Pilot to reduce risk
2. Collect data in a new area with a free survey tool

Scale when you are sure things work
3. 🎉
The Shares Uganda technology solution
What happened?
Alvaro Valverde
Private Sector Engagement Manager @ CABI
Relationship Manager for the CASA Programme
The research in a nutshell

1 Question
What are the success factors behind successful deployment of mobile technologies to improve agribusiness productivity and investment readiness?

5 Criteria
- Financial Sustainability
- Scale
- Replicability
- Agribusiness Investibility
- Smallholder Farmer

2 Steps

Secondary Research
- 104 VAS for Agribusiness
- SS Africa & Asia
- 6 Categories 26 Sub-Cat

Primary Research
- Agri-VAS Ranking
- 19 Interviews Top Ranked

Download: https://www.casaprogramme.com/evidence-details/?pan=20208400081
## Categorisation of agri-VAS by various organisations

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Mobile-based agri-VAS categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSMA</td>
<td>1. Information services</td>
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<tr>
<td></td>
<td>2. Digital profiles</td>
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<td></td>
<td>3. Internet-of-things applications for agriculture</td>
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<td>4. Mobile money</td>
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<td></td>
<td>5. Track-and-trace farm management systems</td>
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<td></td>
<td>6. Agribusiness analytics</td>
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<tr>
<td>ISF Advisors</td>
<td>1. Information services</td>
</tr>
<tr>
<td></td>
<td>2. Market access</td>
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<tr>
<td></td>
<td>3. Supply-chain efficiency and smart logistics</td>
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<td></td>
<td>4. Financial services</td>
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<tr>
<td>Grow Asia</td>
<td>1. Farmer extension and training</td>
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<tr>
<td></td>
<td>2. Supply-chain intelligence</td>
</tr>
<tr>
<td></td>
<td>3. Product traceability</td>
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<td></td>
<td>4. Digital financial services</td>
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<tr>
<td>CTA</td>
<td>1. Advisory &amp; information services</td>
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<td>2. Market linkages</td>
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<td>3. Financial access</td>
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<tr>
<td></td>
<td>4. Supply-chain management</td>
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<tr>
<td></td>
<td>5. Macro-agricultural intelligence</td>
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<td></td>
<td>6. Super platforms / Value Chain Integrated Services</td>
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</table>

Classifying Agri-VAS based on their applications in the value chain, which facilitates the identification of both agribusinesses and smallholders as clients, users and beneficiaries.
Success potential and quality of the evidence

Current scale | Potential Financial Sustainability | Impact Potential (agribusiness & farmer) | Quality of the evidence

Input market aggregator | Off-take market integrators | End-to-end integrated market linkages | e-marketplace | Smallholder farmer payment solutions | Traceability & certification | Enterprise resource planning | Quality assurance & anti-counterfeiting | Logistics management | Macro agricultural intelligence | Value chain integrated Services

CASA
Commercial Agriculture for Smallholders and Agribusiness
Agri-VAS with over 250,000 users

Revenue streams

- B2C: 4%
- B2B: 11%
- B2C & B2B: 18%
- Subsidized: 7%
- All: 61%

Evidence quality

- High quality: 32%
- Medium quality: 4%
- Low quality: 11%
- Low quality (self-reported): 7%
- All: 46%
- Those relying on B2B: 65%

Those relying on B2B:

- High quality: 29%
- Medium quality: 6%
- Low quality (self-reported): 65%
- All: 65%
Leaving “Pilotitis” behind

Financial sustainability
- Avoid subsidies wherever possible
- B2B (free for smallholders) or B2B with B2C
- Adaptive pricing
- Sub-service offering:
  a) Start from the demand
  b) Bundle several services
  c) Include financial services

Scalability & Replicability
- Flexibility and adaptability (value chains, languages & client requirements)
- Available technology and user-friendliness
- Investments to keep improving the service offering
- Build on strategic partnerships
How to get started

**Agribusiness**

- **Which activities** can benefit from using ICTs? *Sub-service offering*
- **Which technology** do you have available? And your suppliers?
- **Value-chain integrated services** and **Enterprise resource planning** have greater impact potential
- Do a **cost-benefit analysis**

**Agri-VAS provider**

- Start from the **demand** – it is a service/product, not a project
- Define the **sub-services** you need to offer
- If it already exists partner with them to **add value**
- Identify **client, user, beneficiary** and **willingness to pay** for each subservice
- Build on **existing technology**
Charles Adu Frimpong
Agric Director, B-BOVID
Background on B-BOVID

- **Type**: Agro-processing company established in 2014
- **Location**: Takoradi in west Ghana
- **Smallholders**: 1,200 direct / 2,000 additional through buying agents
- **Crops**: Production of Crude palm oil (CPO) and Palm kernel oil (PKO)
- **Model**: Social entrepreneurship and agroforestry best practices
Background on B-BOVID

• B-BOVID has begun organic and RSPO certification programs starting in 2020 with its smallholders.

• When the two certifications are achieved, B-BOVID will become the first company in Africa to produce organic and RSPO certified palm oil from independent smallholders only.
Vision for technology at B-BOVID

Key Challenges:

• Huge amount of complicated data that is collected on paper, impossible to analyse, and requires time to enter

• No data integrations between systems used in the office, field, and weigh bridge

• Lack of traceability is preventing ability to achieve organic and RSPO certifications

Future Vision:

• Integrated systems that ensure data quality and streamline reporting

• Monitor field officer activities

• Integrate new future technologies, such as a deforestation monitoring satellite platform

• Manage organic and RSPO certification requirements
We knew customisations were coming…

Plantation Management

B-BOVID’s Solution

Smallholder Management

Traceability
Our approach

Creating detailed requirements

Getting to know firms

Creating RPFs and objectively evaluating proposals
Defining requirements

System functionalities:

• Farmer profiles
• Farm profiles
• Procurement
• Weighing bridge
• Training
• Certifications
• Production
• Reports
Top 3 takeaways – B-BOVID

1. There is always going to be a technology solution out there for everything. Keep it simple and implement solutions that are easy to use. More than anything, this requires you to first know what you really want and why.

2. You need to be fully prepared to own your customisations

3. The cost of a digital solution is mostly dependent on the number of end users as well as the number of your farmers
<table>
<thead>
<tr>
<th>Shares Uganda</th>
<th>B-BOVID</th>
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<tr>
<td>• Trying to digitalise the organic certification process</td>
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<tr>
<td>• Technology firms focused on smallholder management and traceability</td>
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<td>• 100+ end users in the field</td>
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<tr>
<td>• Pilot to reduce risks</td>
<td>• Sister project at Goldtree</td>
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At Shares Uganda, technology was a “nice to have”.

- “Increase insights”
- “Reduce data entry errors”
- “Help track training and field officers”
- “I’m interested”

At B-BOVID, technology was a critical must-have.

“We need technology to achieve the RSPO and organic certification, which is the company’s top priority over the next 2 years.”
Choose key priorities and a focus; simplify requirements

Verify things will work

Establish a compelling business case and impact

Identify affordable technology that meets core requirements

Shares Uganda
Choose key priorities and a focus; simplify requirements

Establish a compelling business case and impact

Verify things will work

Identify affordable technology that meets core requirements
Why is tech so expensive?

(How do we make it more affordable?)
Our approach (?)

- Reduce complexity and simplify
- Reduce customisations
- Reduce costs and risks

...And then scale
...we think (?)
Typical vision for technology at CASA / AAF agribusinesses

**Key Challenges:**

- Operations are taking place almost entirely on paper, preventing integrations and automation
- Lack of transparency and understanding of supply chain / suppliers
- Inability to communicate and efficiently reach smallholders

**Future Vision:**

- Real-time insights into field officer activities and smallholder needs
- Full traceability to prevent loss and improve quality
- Support effective procurement management and timely payments
- Launch new business models and new technologies
A typical implementation plan

**PHASE 1**

- **Select an off-the-shelf agribusiness platform**
  - Select by December 2020

- **Start with digitising co-op, VA, and trader profiles**
  - Complete between seasons, starting February 2021

- **Next, digitise training and field officer activities**
  - Complete during the next season, starting March 2021

- **Next, digitise procurement, transport, and traceability**
  - Choose a few co-ops and collection centers to pilot with during the first season (Season B, March - June 2021), scale to all co-ops and locations in the following season

- **Next, digitise warehouse operations and sales**

**PHASE 2**

- **Integrate accounting and finance**
  - Sometime in 2021

**PHASE 3**

- **Pilot new business ideas and technologies once core systems are in place**

- **SMS marketing to smallholders**

- **Technology for village agents**
  
  This phase would likely start in year 2022+
A typical implementation plan

- Multiple trips for initial requirements
- 3-6 months to finalize requirements
- 2-3 months to release an RFP and select a technology partner
- 1 month to mobilise and kick off the project
- 1-2 months on the ground
- 3-12 months to implement

This doesn’t scale.
Reducing customisations

<table>
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<th>Procurement, Delivery, Traceability, Weigh Bridge &amp; Ware</th>
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<td>6.1</td>
<td>Standard traceability and warehouse modules, including:</td>
<td>Needs Customisation</td>
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<td></td>
<td>• Procurement modules tracking volumes from co-ops, traders, and village agents</td>
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<td>• Modules for quality, grading, and digital scales</td>
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<td>• Sales modules tracking off-take purchases and order fulfilment</td>
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<td>• Finance modules for tracking payments to co-ops, traders, and village agents (i.e., prices paid and commissions)</td>
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<td>• Ability to add new locations (i.e., collection points)</td>
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| 7.2 | Ability to import procurement records from Co-ops, traders and village agents linking supply procured from co-ops, traders, and village agents back to smallholders | New Development |

This doesn't scale.

STARTING PRICE $40,000

REVISED PRICE $15,000

No customisations
Remote implementation
Fast, simple phases

That worked
Comparing solutions

Solution #1

$15,000
No customisations
Remote implementation
Fast, simple phases

Deploying a solution specifically for the company

Solution #2

$15,000
No customisations
Remote implementation
Fast, simple phases

The company can access a solution that is already deployed
What usually happens

**Agribusiness Platform**

- “Cloud hosted”
- “Out-of-the-box”
- “Configurable”

**Agribusiness**

- Logic and Calculations
- Data
What usually happens

This doesn’t scale.
True Software as a Service

Agribusiness Platform

Agribusiness

Logic and Calculations

Data

Agribusiness
A typical implementation plan

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Much better
## Reducing Customisations

This doesn't scale. Much better.

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[AgDevCo](https://www.agdevco.com) [mastercard foundation](https://www.mastercard.org) [UK aid](https://www.gov.uk/government/organisations/uk-aid)
James Thorogood
CEO, Boresha Technologies
Let’s try a different approach to technology...

1. Find the BIG pains.

2. Ignore everything else.

3. Share the costs with everyone.

4. Embrace change. It’s the only constant.
Find the BIG pains
Ignore everything else
Share the costs with everyone
Embrace change. It’s the only constant.
Let’s try a different approach to technology...

1. Find the BIG pains.

2. Ignore everything else.

3. Share the costs with everyone.

4. Embrace change. It’s the only constant.
Choose key priorities and a focus; simplify requirements

Establish a compelling business case and impact

Identify affordable & modern technology that meets core requirements

Verify things will work

- Solving a real business challenge with organisational support for new technologies
- A business model that will be financially viable and with an acceptable level of risk
- A technology solution that will actually work in practice (and that you control)
- A solution that scales
Melanie Machingawuta
Team Lead, CASA TAF
Next Steps

• Tech wins and fails
• Talking through requirements
• Testing new tools
• Cordial debates on strategies

Matt Capelli

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THANK YOU FOR YOUR TIME!