



# **BENCHMARKING E-COMMERCE MODELS FOR AFRICA'S SMALLHOLDERS**

**Mercy Corps Agrifin Accelerate Program**

*Summary of Benchmark Findings*

**Nairobi, Kenya 2018**



**AGRIFIN  
ACCELERATE**



# AgriFin Accelerate Program Introduction



## THE GOAL

AgriFin Accelerate is a 6-year, \$25 million program working in Kenya, Tanzania and Zambia

AgriFin Accelerate will **support the expansion of digital financial services to one million farmers in Sub-Saharan Africa over six years, delivered by growing ecosystems of diverse service providers.**

## TARGET GROUP

AgriFin Accelerate's underserved **smallholder farmers** living on less than **\$2.50/day**



AGRIFIN  
ACCELERATE

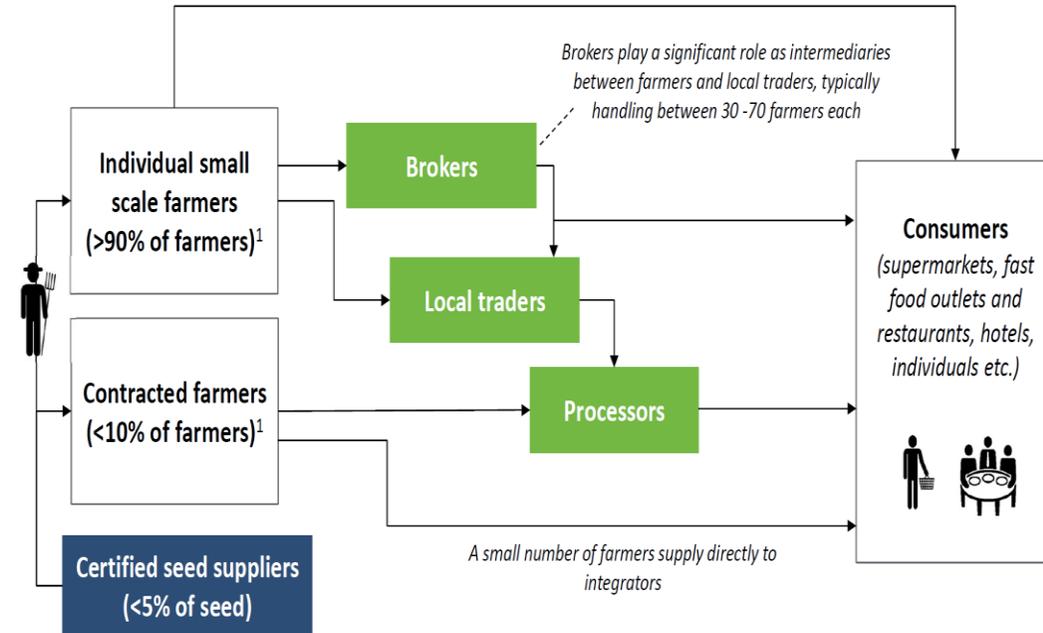


# AgriFin Accelerate Program Approach

- Mercy Corps' AgriFin Accelerate Program (AFA) is a **USD 25 million, six-year** initiative funded by the MasterCard Foundation to support delivery of digitally-enabled services to more than 1 million smallholder farmers across Kenya, Tanzania and Zambia
- Our objective is to support service development and scale that **helps smallholders increase income and productivity by 50%**, working to ensure **50% outreach to women**
- AFA works as an innovation partner with **private sectors scale partners** such as banks, mobile network operators, agribusinesses and technology companies committed to serving smallholders at scale
- We help our partners develop, prototype and scale bundles of **digitally-enabled financial and non-financial services**
- We support **partnership development** between groups of market actors that can leverage each other's strengths
- The program focuses on the following **key areas of innovation**:
  - Product and Service Development for Smallholders
  - Last Mile Distribution Networks
  - Farmer Capability Tool Development and Testing
  - Technology Startup Acceleration
  - Alternative Data & Credit Scoring
- We combine AFA team expertise with strategic resources to jointly implement series of **iterative, fail-fast engagements** with partners on a cost-share basis
- We work to **share key learnings** from our engagements to expand services to farmers through growing ecosystems of providers
- Since 2015, we have completed more than **100 engagements with over 50 private sector partners**
- This case study **highlights learning from AFA research conducted by the Dalberg Group** and partner engagements targeted at building digital marketplaces to support both smallholder farmers, but also the markets for agriculture, financial services and digital services that drive them.
- The objective of this research was to understand the key drivers behind successful digital marketplaces around the world that encompass agriculture, which drives 30% of GDP and supports 70% of the workforce in Kenya

# Executive Summary

- **Background:** Mercy Corps' AgriFin Accelerate Program (AFA) is a \$25 million, six-year initiative funded by the MasterCard Foundation to support private sector actors to develop, prototype and scale digitally-enabled services for smallholder farmers across Kenya, Tanzania and Zambia. AFA is intended to help partner banks, mobile network operators, agribusinesses and technology companies scale high impact services for at least one million farmers, driving 50% increases in smallholder income and productivity, while working to support all market actors to expand services to farmers through shared learning.
- **Current Case Learning:** Over the past three years in Kenya, AFA has engaged with a number of private sector actors working toward the development of digitally-enabled marketplaces for agriculture, with the vision to reach millions of farmers, connecting them both with markets and also the services that they need to grow and thrive. Currently, agricultural markets are highly fragmented, with much of the value that farmers create is extracted along the value chain.



- In January 2018, AFA contracted the Dalberg Group to conduct a benchmarking and learning exercise of successful digital marketplaces with scaled services to agricultural markets and effective inclusion of smallholder farmers. The goal of this exercise was to support the development of AFA partners and to inform wider ecosystem growth through public learning.

# Theory of Change: By reducing transaction costs, wastage, and increasing farmer investments, market access platforms holds huge potential for improved SHFs livelihoods and income

By enabling farmers to connect to markets to sell their produce at better prices, digital market access could drive...



50-60%

increase in farmer income<sup>1</sup>



8-10x

return in farmer income per dollar invested<sup>1</sup>



## Transaction costs

Digital market access can improve aggregation, pricing, transport and logistics, and payments. Reducing these transaction costs to more efficiently link farmers to markets can improve their incomes substantially



Recent tests by a digital market access platform in Zambia showed average reductions in transaction costs of ~23%, based on different simulations

## Wastage

Ready access to markets, coupled with improved aggregation and more efficient transport, logistics, and storage could help reduce food wastage and thus reduce sunk costs for farmers



At the farm level, ~12% of potatoes produced in Kenya are either lost or damaged

## Farmer investments

Reliable access to markets and steady income allows farmers the stability to invest in productivity enhancements i.e. inputs, machinery, additional labour and other farm services



“When farmer see the money regularly, they start getting inputs and improving production” – Grant Brooke, Twiga CEO

# We conducted a global benchmarking study to derive lessons from a subset of these eCommerce/market linkage platforms for farmers

## Primary criteria

*Does the platform actively sell foodstuffs? Does this include not only processed and packaged foods but raw produce and/or livestock as well?*

## Secondary criteria

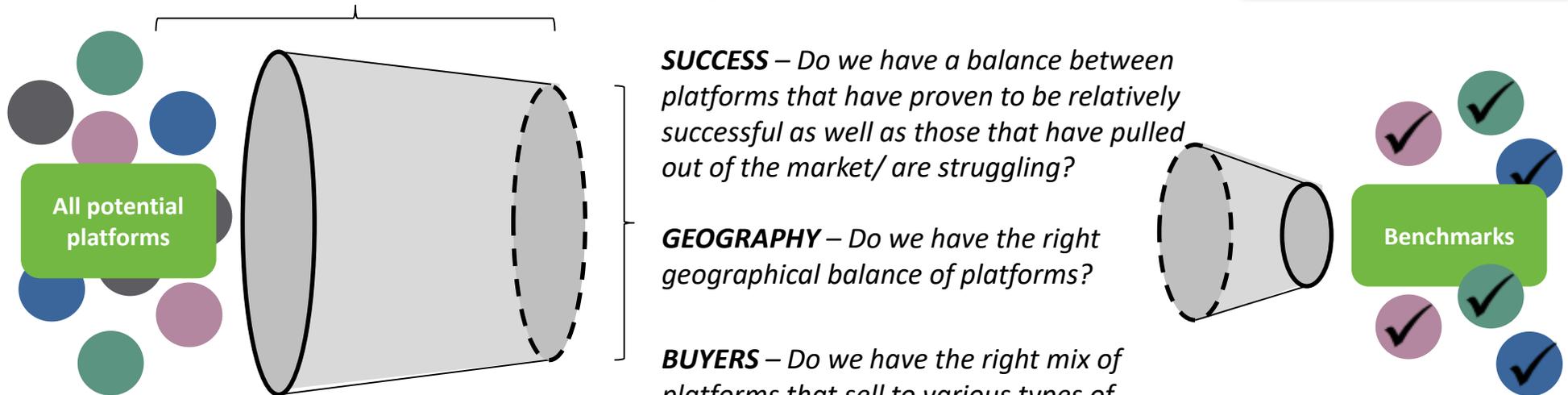
**SIZE** – *Do we have a balance between large-scale platforms selling high volumes as well as smaller-scale startups seeking to gain wider traction?*

**SUCCESS** – *Do we have a balance between platforms that have proven to be relatively successful as well as those that have pulled out of the market/ are struggling?*

**GEOGRAPHY** – *Do we have the right geographical balance of platforms?*

**BUYERS** – *Do we have the right mix of platforms that sell to various types of buyers? E.g. C2B models vs. C2C and other types*

**Benchmarks were selected based on loose criteria, designed to identify a diverse set of platforms from which we could learn**



## Constraints

*The major constraint to benchmark selection was our ability to directly speak to leadership at these organisations – for this reason, some benchmarks were deprioritised because of insufficient information online and/or lack of direct contacts to speak to us at the organisations themselves*

# Through this process, we ended up focusing on the following seven platforms

Platform	Location	Description	Rationale for selection
 BigHaat.com <small>ONE STOP AGRO STORE</small>	India	Mediated B2C e-commerce platform connecting farmers to input suppliers, including taking input orders and delivering input supplies to farmers	Large platform; has succeeded in onboarding large suppliers like Monsanto and providing inputs to more than 50K Indian farmers
 KUTIR <small>AGRICULTURE &amp; FINANCE</small>	India, Nepal, Singapore, USA	Mediated B2C/B agfintech platform that uses a digital platform and micro-entrepreneurs to provide soil-to-market and financial services to farmers	Large platform; has succeeded in digitizing its services to more than 70K Asian farmers across different Asian countries (mainly India)
 izyshop	Mozambique	C2B and B2C e-marketplace that takes online orders from consumers and aggregates supplies from farmer groups	Small e-marketplace; has succeeded in market linkage for farmers without using brokers, instead working directly with farmers and buyers
 OLX	Global	One of the largest classifieds online ads companies in the world using an open C2C model	Large platform; has succeeded in using an open model for consumer goods, but can provide lessons on their potato project that stalled in 2016 in Kenya
 淘宝网 Taobao.com	China, Hong Kong, Taiwan, Macau	Alibaba's mediated e-marketplace that facilitates C2C, and recently B2B, transactions between smallholder farmers in rural China and consumers in urban centers	Large platform; has succeeded in building rural infrastructure to connect Chinese farmers to urban consumers and foreign buyers, and recently started using blockchain for traceability
 TULAA	Kenya, Ghana	Mediated B2B platform that combines mobile technology and last mile agent networks to connect input suppliers, financial service providers and commodity buyers to farmers	Small platform; has succeeded in building offtaking and contract farming with farmers and selling to processors across two countries in Africa
 Twiga <small>AGRO</small>	Kenya	Mediated B2B platform that provides mobile-based supply services for crop vendors like retail outlets, kiosks, and market stalls	Medium-sized platform; has succeeded in directly buying produce from farmers and selling to small grocers in urban centers in Kenya

# Based on our research, we identified six core strategic decisions that determine the structure and focus of platforms

1

## **Model**

What type of model will the platform employ?  
Open, mediated, or contract?

The type of model is the major determinant of the overall structure and the role of the company in linking buyers and sellers

2

## **Crops**

What crops/value chains will the platform focus on, particularly at the onset?

Different value chains have their own nuances and requirements that platforms must consider carefully when trading in them

3

## **Buyers**

Who will be the platform's target buyers?

Buyers are the major customer base – since they typically have more/ better options than farmers when trading, must be carefully targeted

4

## **Transport & Logistics**

How will the platform manage its transportation and logistics?

Transport and logistics is the major cost driver for platforms. Mitigating these costs can provide a substantial competitive edge for a company

5

## **Farmer engagement**

How will the platform engage farmers and facilitate the movement of goods between them and buyers?

The way in which platforms engage farmers and support them to trade on the platform is essential

6

## **Financial services and payments**

What financial services and payment solutions can and should the platform provide?

Financial services assist improve the output and productivity of farmers, while reducing their risk. Effective payment systems are critical to reducing transaction costs

# We compared and contrasted each platform across these six strategic decision points, explored further in this presentation

Platform	1 Model	2 Crops	3 Buyers	4 T & L	5 Farmer engagement	6 Financial services and payments
 BigHaat.com ONE STOP AGRO STORE	B2C; Mediated to open	None; sell inputs including seeds and fertilizer	Farmers	Contracted	Aggregates inputs and delivers directly to farmers	The platform utilises online payments
 KUTIR	B2C/B; Mediated to open	Mostly vegetables (unclear which ones)	Individual consumers, potentially others	Disaggregated	Aggregates produce and conducts training using mobile agents (microentrepreneurs)	The platform utilises eWallets, online payments and provides credit scoring
 izyshop	C2B/ B2C; Contract to open	Potatoes, onions, garlic, apples, bananas, pears, grapes	Individual consumers	Contracted	Aggregates produce using farmer cooperatives/ groups	The platform utilises online payments, ATM service payments, mobile points of sale and cash
 OLX	C2C; Open to open	Potatoes, beans, maize, capsicum, tomatoes	Individual consumers	Currently none but used to contract with G4S for potatoes	Used to aggregate potatoes at collection/ storage centers	The platform utilises online payments
 淘宝网 Taobao.com	C2C/ B2B; Mediated to open	Dates, rice, corn, lotus roots, oranges, apples, ginger, sweet potatoes, multiple others	Individual buyers in urban centers (produce); farmers (inputs)	Largely owned; data insufficient to know to what extent they own T&L	Aggregates produce at collection centers using village service centers	The platform utilises online payments and provides insurance products, and small loans
 TULAA	B2B; Mediated to contract	Irish potato, tomato, soya beans	Small processors	Disaggregated	Provides agent-based offtaking services using informal traders and wholesalers	The platform utilises mostly Mpesa transactions and provides credit scoring
 Twiga	B2B; Mediated to open	Potatoes, onions, tomatoes, cabbages, capsicums, bananas, mangoes	Small grocers, supermarkets, market stalls	Contracted	Aggregates produce on their own at collection/ storage centers	The platform utilises Mpesa transactions

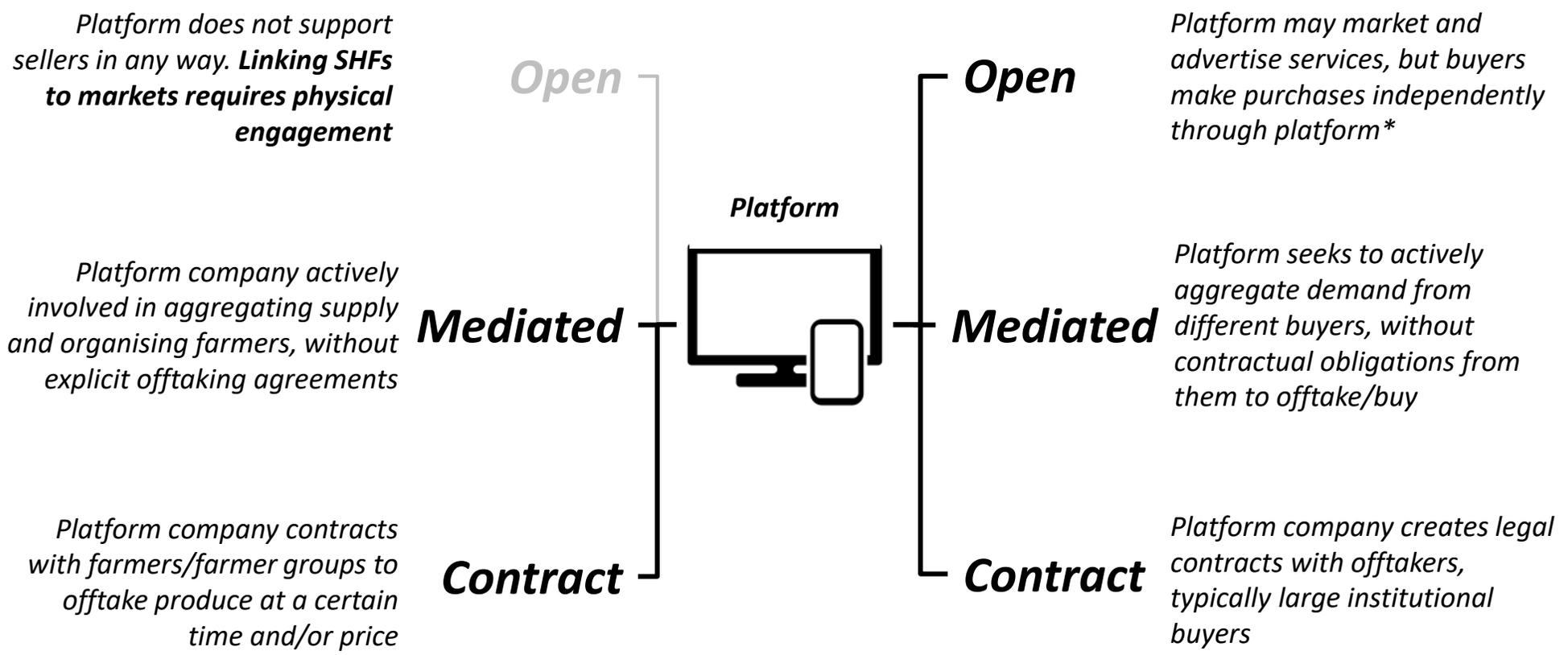
Source: Dalberg analysis



AGRIFIN ACCELERATE



# eCommerce platforms take open, mediated, or contract models on seller and buyer sides. Engaging farmers requires a mediated or contract model (1/2)



Source: Dalberg analysis. Note: \*The platform can be legally obliged to fulfil purchases made through its platform based on terms and conditions, but this is distinct from creating a legal purchase orders.

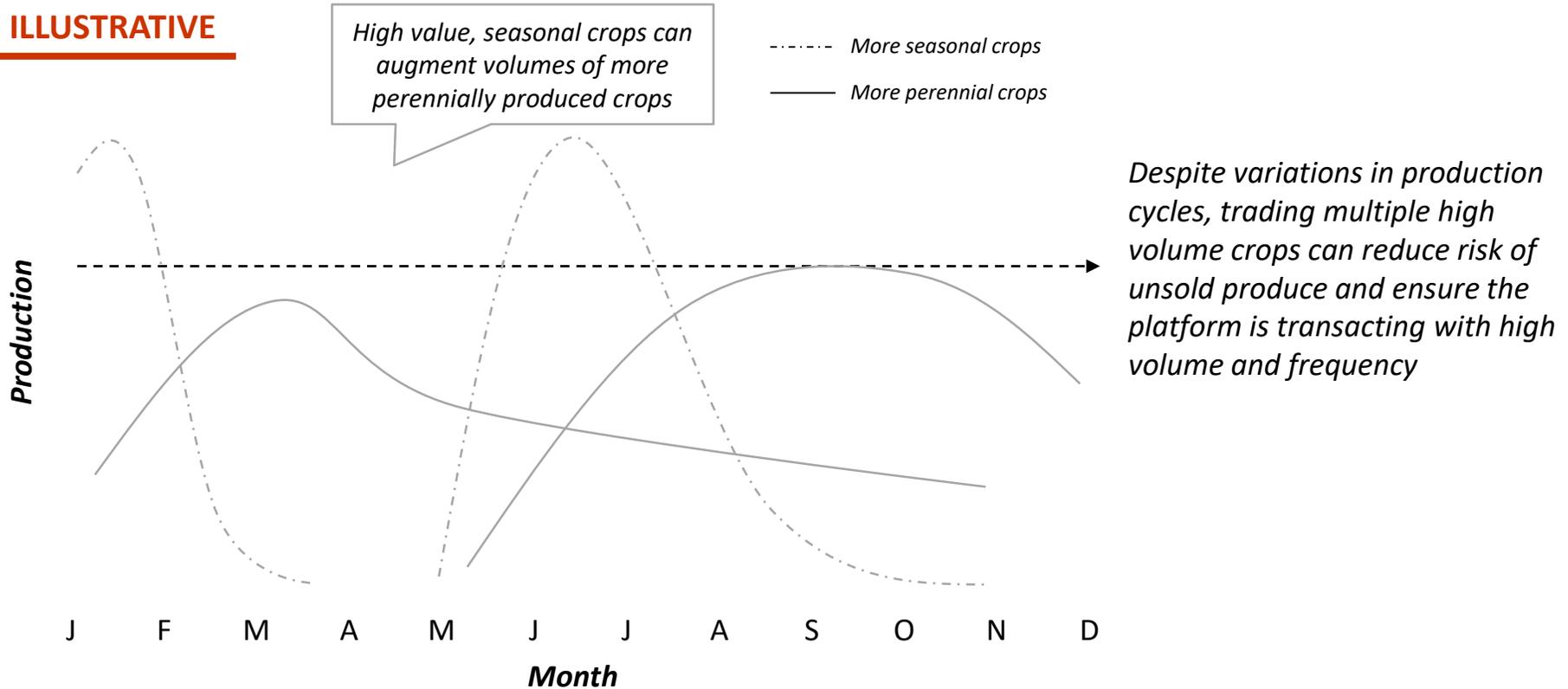
# eCommerce platforms take open, mediated, or contract models on seller and buyer sides. Engaging farmers requires a mediated or contract model (2/2)

Model variation	Description	Example platform
	Platform supports aggregation/ facilitation without legal/ offtaking arrangements with farmers, and lets buyers purchase independently from platform	<p>...aggregates produce from any SHF and sells to any buyer</p>
	Platform supports aggregation/ facilitation without legal/ offtaking arrangements with farmers, and actively identifies potential buyers of produce	<p>...aggregated potatoes from SHFs and located buyers including hotels/ restaurants</p>
	Platform supports aggregation/ facilitation without legal/ offtaking arrangements with farmers, but has legal offtaking arrangements with buyers	<p>...aggregates produce from any SHF and sells to contracted buyers</p>
	Platform contracts to offtake produce with farmers, but buyers buy independently from platform	<p>...collects produce from contracted SHFs and sell to any buyer</p>
	Platform contracts to offtake produce with farmers, and has legal offtaking arrangements with buyers	<p>...collects produce from contracted SHFs and sell some to contracted export market</p>

Source: Dalberg analysis. Note: \*The platform can be legally obliged to fulfil purchases made through its platform based on terms and conditions, but this is distinct from creating a legal purchase orders.

# Crop focus is less about value chain specifics and more about trading enough volume with enough frequency to smooth volatility

## ILLUSTRATIVE



**Twiga** ...uses a “law of large numbers” approach to de-risk and smooth volatility. It trades ~9 crops, some more seasonal than others, but constantly high volume crops like bananas ensures a degree of stability in their trading volumes

**FARM TO MARKET ALLIANCE** ... takes a different approach. It contracts with anchor buyers to whom they supply large quantities of a small number of crops. In Kenya it is contracted to supply sorghum to East African Breweries and soybeans to Bidco – both companies require a steady supply of these inputs over the year

# A host of other considerations can determined whether or not a platform focuses on a certain crop



Platforms tend to take into account existing regulations and government involvement in value chains. In general, platforms avoid value chains that are statutorily protected or have substantial government involvement

**KUTIR** ...avoids staple crops that are subject to the Indian government's minimum support price (MSP), since prices are tightly controlled by the government



Supply chain complexity

**Proximity:** Platforms are more likely to trade crops that are easily accessible i.e. close to aggregation points, transport, and major trade routes

**Cold storage.** Platforms may shy away from highly perishable crops if cold storage requirements add complexity and costs to the supply chain

**Twiga** ...has invested in cold storage facilities closer to its depots to reduce post-harvest losses



Demand pressure

Platforms also consider the levels of direct/ indirect demand for particular farm produce from existing and/or new customers, and take steps to address the demand

**izyshop** ...began selling fresh produce direct from farmers as a response to strong customer demand for such produce

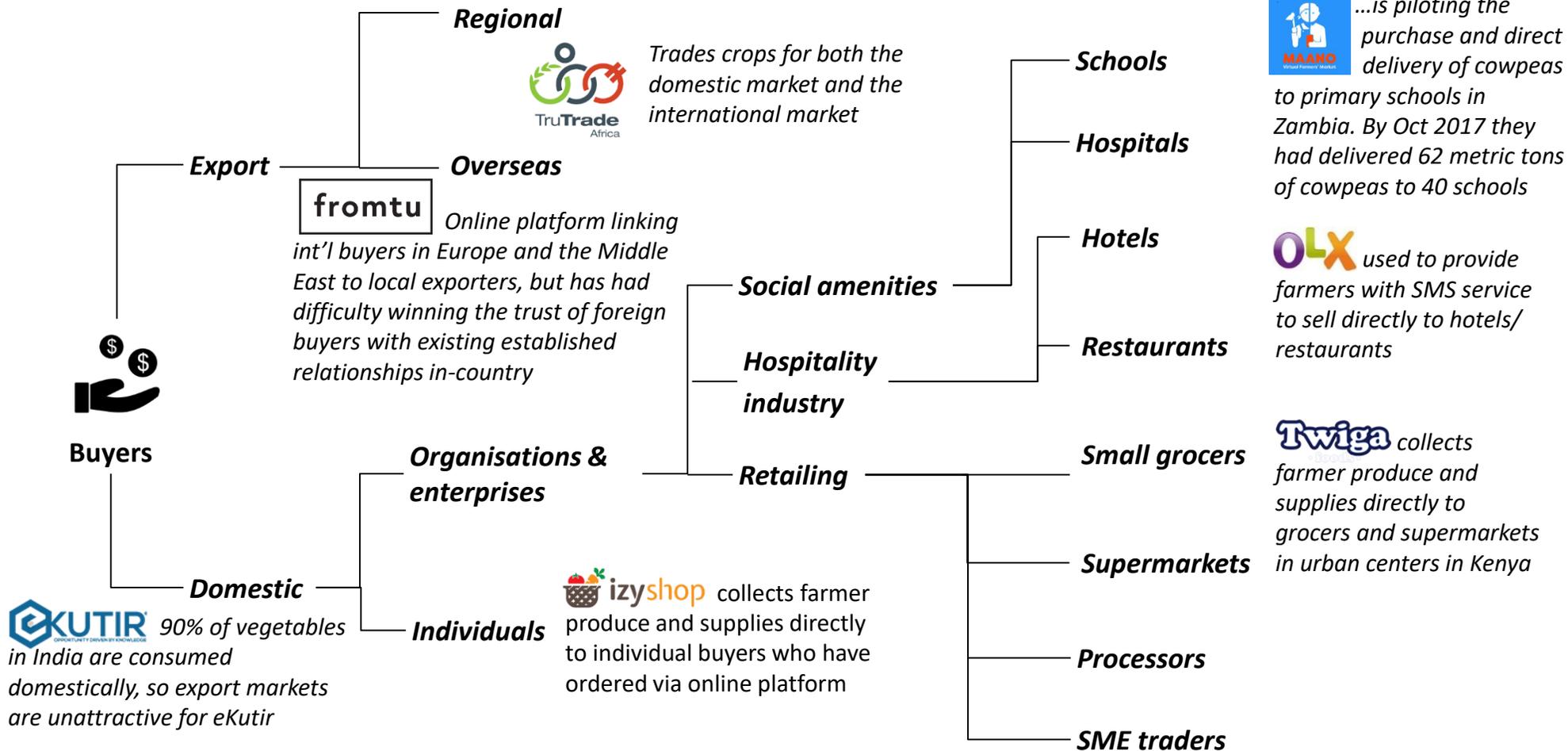


Impact

Some platforms prioritize value chains that have the biggest potential impact on farmers' lives, including value chains that reach large numbers of smallholder farmers and those that potentially increase farmers' income

**TruTrade Africa** ...has increased farmer premium by about 50% since engaging in the cassava value chain – their value chain selection weights impact on farmers as a major criteria

# Few platforms are exporting, and most are focused on individual consumers, retail buyers, or the hospitality sector



**Buyers are the main customers, and typically have more/better options than farmers. As such buyer targeting is crucial to the platform's value proposition. Details on the pros and con of each segment found in subsequent slides.**

# Platforms either own their transport and logistics, contract it out, or use data and partners to disaggregate it

Transport and logistics are typically the major cost driver for platforms. **Larger-scale platforms with more valuable goods tend to own their assets** – most contract either with larger providers or individual drivers, but some are beginning to **use data and partnerships to match more effectively**

## Owned

The platform company owns a large part of the transport and logistics infrastructure i.e. vehicles and storage



**eKutir's** transport and logistics accounted for ~26% of costs when running the Veggie Kart platform in Odisha state, India.

## Contracted

The platform company contracts transport and logistics out to either larger or smaller providers i.e. third-party logistics providers, individual truck owners etc.



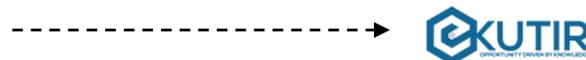
**TruTrade** contracts out its transport and logistics but is seeking to disaggregate. Transport and logistics currently accounts for ~50% of the cost structure

## Disaggregated

The platform company uses data analytics and partners such as individual drivers to disaggregate its transport and logistics, leveraging underutilized spare capacity



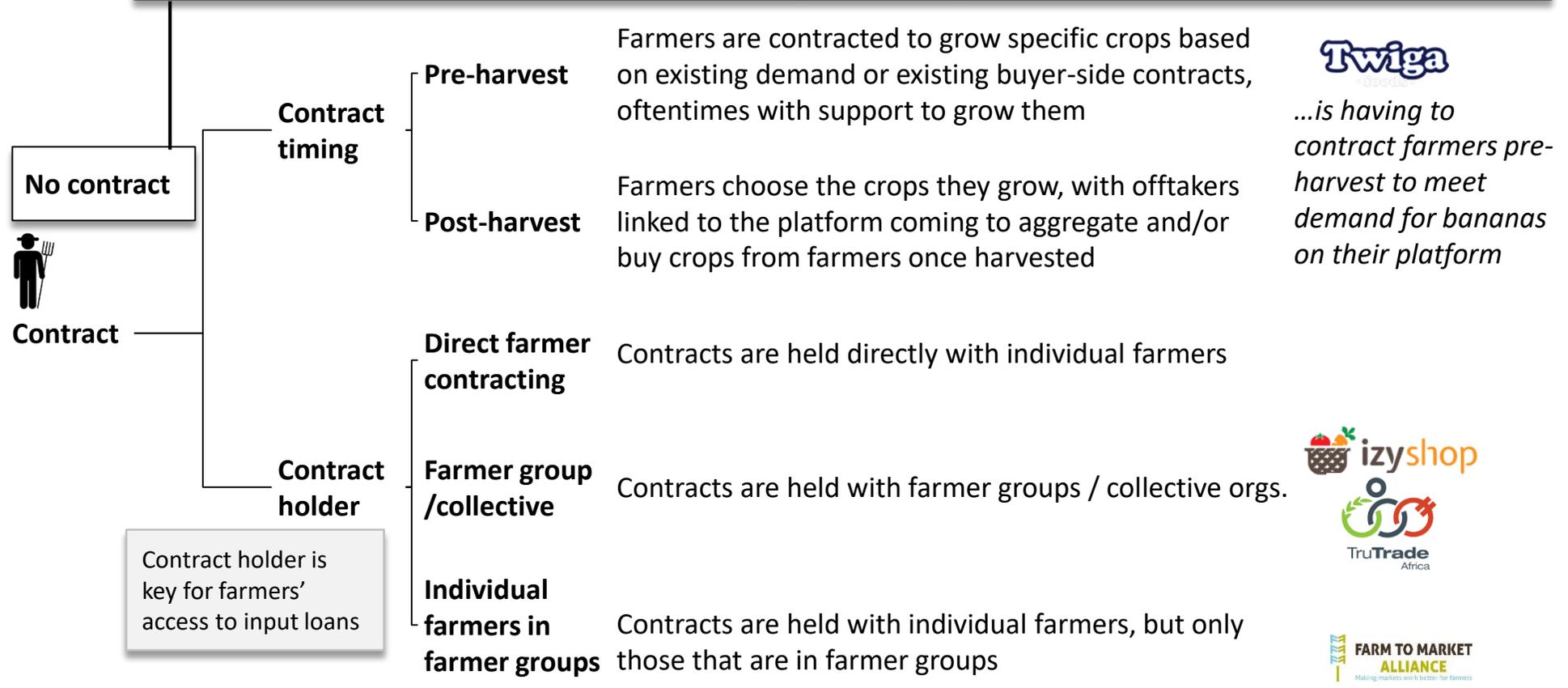
**Wafalme Logistics** originally started as a third party logistics provider, but is now developing an app and USSD-compatible service for last mile transport and logistics. They are launching at the end of March



**eKutir** eventually reduced costs by 2/3rds partially by moving to a disaggregated platform through data analytics and driver-partners

# Platforms differ on whether they contract with farmers, but typically begin contracting as demand becomes more predictable

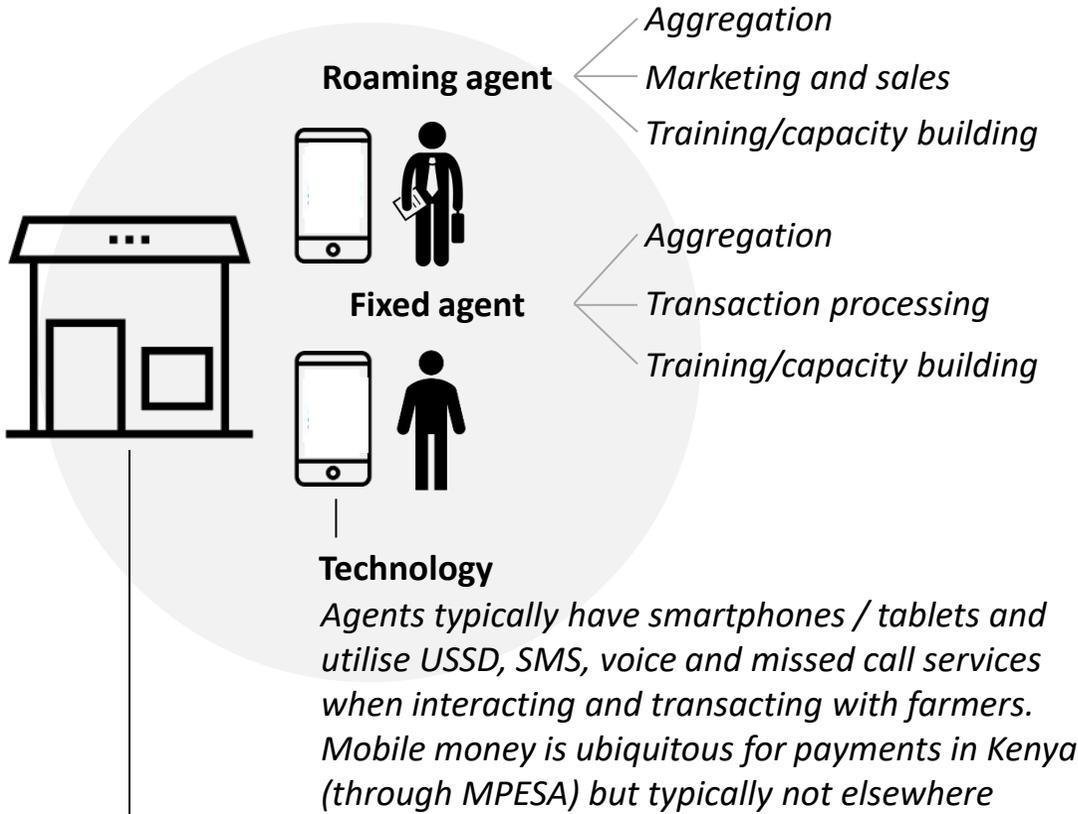
Farmers are not obliged to provide specific quantities at specific prices to aggregators / offtakers linked to the platform. Platform serves to organise existing supply



Over time, as volumes transacted on the platform increase, **farmer contracting is likely to be necessary to avoid supply shortages and meet growing demand on the platform**

# Farmer touchpoints differ in terms of whether they have a physical location, the number and roles of agents, and the technology used

## Potential functions include...



### Aggregation hub

Physical location where produce can be dropped off, picked up, and where functions like quality control and grading can occur are sometimes provided by platforms but oftentimes the responsibility of the agent

## Existing models



Young savvy entrepreneurs called Rural Partners manage village service centres and support farmers in listing their produce online. Taobao rural centres provide internet access and training to farmers and buyers. **30K Rural Taobao centres across 700 counties in 29 provinces served more than 1 million farmers in 2015**



eKutir sends micro-entrepreneurs/agents to meet with farmers and offer demos and training of how the app works and its benefits to farmers. Micro-entrepreneurs register farmers onto the platform or support tech-savvy ones to obtain and use the FarmChalo app. eKutir started off with a physical hub, which helped build trust at the onset, but has since opted only for roaming agents. **eKutir collects ~60kg per checkpoint per day, with 160 farmers per collection point**



Twiga has 25 collection points where farmers take their produce. Delivery agents have android based POS apps that they use to record stock delivered by farmers at collection points. **Twiga collects ~120kg per checkpoint per day, with 100 farmers per collection point**

# Most platforms offer some financial services, but the depth of offerings is typically limited to credit

- Successful platforms **provide financial services ranging from simple to sophisticated, depending on the level of involvement** (and sometimes size) of the provider within the value chain.
- **All platforms recognize the value of providing credit facilities** for farmers or for working capital within the value chain. Some are doing this themselves, keeping the debt on their own books, while others are awaiting enough market traction and scale to bring on board a financial service provider.
- **Few platforms are providing insurance**, except the most advanced/established (e.g., eKutir and TaoBao).



## Credit

Numerous platforms offer loans to farmers, especially for inputs



...provides mobile money credit to farmers for purchasing farm inputs on layaway plan

## Insurance

Few well-established platforms provide crop and weather insurance to ensure production is not interrupted



...through a partnership with Shanghai-based Anxin Agricultural Insurance Co. Ltd., provides weather-based index insurance against crop failure

## Trade financing

Some platforms deeply involved in the value chain provide buyers with trade financing to ensure timely purchases of produce from farmers



...provides traders with financing that covers packaging, handling, storage, transport, taxes and any value addition services up to delivery to final buyer

## Payments

Platforms oftentimes provide options for buyers to pay for produce right away while using the platform, including using mobile payments and e-banking



...provides e-wallet and gateway for cashless transactions using partners like PayYou. eKutir is also looking to extend mobile wallet with Airtel and Vodafone to allow farmers to purchase inputs

# Data, additional products/services, and trust are important considerations, but do not determine the model itself



## DATA



*What role does data play in the business, and how should it be used to improve the effectiveness and impact of the service(s) provided?*



## ADDITIONAL PRODUCTS AND SERVICES



*What additional products and services can and should the platform be providing to enhance value to its users?*



## TRUST



*What mechanisms can be used to build trust between users of the platform so they increase frequency and volume of transactions?*



# Data: Data can be a major cost driver but is often used in making business decisions and enhancing users' experience

Use	Details	Examples
<b>Cost driver</b>	Data significantly contributes to the cost of running platforms, especially with larger, digital platforms that require data storage and analytics, as well as data protection measures	   <p>Large platforms like eKutir, OLX and Taobao spend significant amounts of money to develop data warehousing and analytics capabilities to improve data usage for their businesses</p>
<b>Demand-supply matching</b>	Most platforms use data from buyers/ sellers to develop matching algorithms and appropriate farm-to-market logistics	  <p>Tulaa and eKutir have developed smart-matching algorithms to match farmer production to market demand, and other value chain actors, using mobile applications</p>
<b>Financial services</b>	Some providers analyze user data to assess the eligibility of farmers for different financial services (typically credit)	 <p>Taobao through Alibaba's Ant Financials, carries out credit scoring on rural farmers to determine who is eligible for loans</p>
<b>Traceability</b>	Some platforms are experimenting with data to track performance and movement of produce from the farm to the market	  <p>eKutir is actively involved with Blockchain@Berkeley, on a research basis for now, to understand how blockchain and Ethereum can support provenance, traceability, and smart contracts in agriculture. Tulaa is similarly exploring this option</p>



# Additional products & services: Successful platforms are providing customer service support and training to users

There are **large gaps existing in support services provision**, but some players, especially those significantly involved in the value chain, are providing a range of enabling services including **training and demonstrations**, and **customer service support**



## Customer service support

Established providers tend to have integrated, round-the-clock customer support services on their platforms, including automated/ interactive voice response, missed-call service, customer service lines, chatbots and web feedback forms



...provides chatbot functionality on their e-platform to allow users to easily navigate the giant marketplace, as well as seek quick support for basic queries.



...has a missed-call service that lets buyers make input orders at any time by calling a hotline. BigHaat accumulates these orders and returns calls to buyers to arrange for orders and deliveries



## Training

Successful providers also seem to be keenly involved in providing training to farmers, largely using agents or guidelines embedded on their platforms. Guidelines can include web-notes and demos, to improve productivity, marketing, and digital literacy



...uses its village service centre agents to teach farmers how to use the internet, connect to buyers, sell produce, and enhance farm productivity



...works with extension officers to train farmers on the role of technology in farming at government- organized meetings



...through voice call response and the FarmChalo app, provides digital training on soil care to crop production and marketing



# Trust: Rating functions, quality control, and escrow accounts are common methods of building trust between buyers and sellers

Trust is a key driver for the success for any eCommerce platform. While some platforms provide **explicit guidelines to help users benefit from using the platforms**, several are trying to increase the level of users' trust on the platforms by enhancing **quality inspection of commodities**, especially food crops and meats, and providing **safe methods of payments**.

Mechanism	Details	Examples
<b>Quality inspection</b> 	Providers partner with local authorities to conduct quality checks on produce as well as monitor produce being sold on platform	 <b>Twiga</b> uses agronomists at collection centres to check the quality of produce before produce is taken to the market
<b>Rating</b> 	Some platforms provide a rating and review system among buyers and sellers in order to increase reliability, especially from sellers	 <b>Taobao</b> uses customer feedback ratings that are processed in real-time to rank Taobao sellers, known as seller's credit. The ranking helps buyers decide which seller to transact with
<b>Escrow accounts</b> 	Several platforms are increasing safety in transactions by using escrow accounts and releasing money only when both buyers and sellers are satisfied with trade	 <b>Taobao</b> and  <b>OLX</b> are using escrow accounts (Alipay and OLXPay respectively) as a safety mechanism that build trust in transactions between buyers and sellers.
<b>Openness</b> 	Some providers are encouraging users to be more transparent in their identity by linking their social media profile to their eCommerce accounts	 <b>OLX</b> and  <b>Tulaa</b> are exploring linking social media profile of users to their accounts to increase accountability/ credibility of users

Source: Dalberg analysis; Organization websites; Interview with organization management



**Leesa Shrader**

Program Director | AGRIFIN ACCELERATE

[www.mercycorpsafa.org](http://www.mercycorpsafa.org)