



DIGITAL AGRICULTURE PLATFORMS

BLUEPRINTS DEEP-DIVE REPORT: JANUARY 2021



AGRIFIN



Agenda

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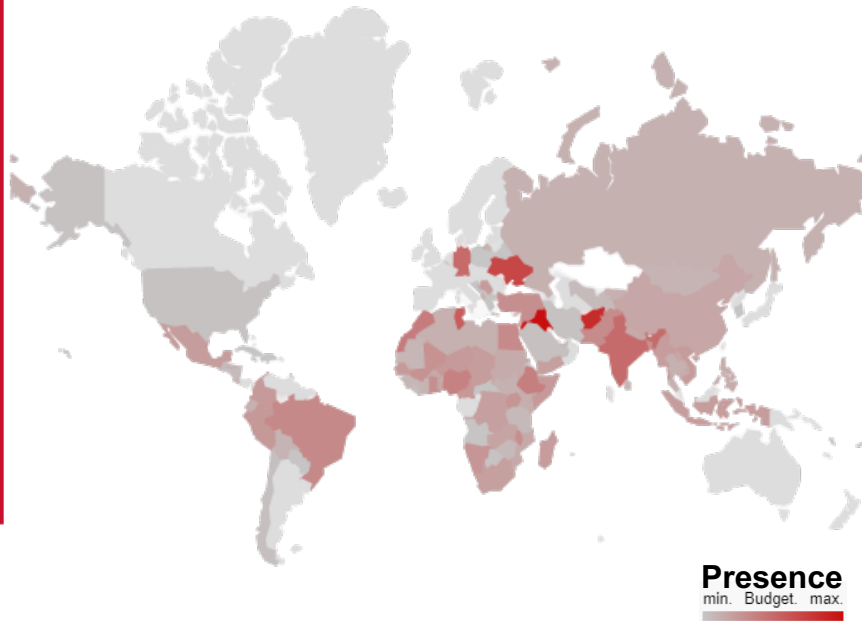
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ABOUT GIZ



- As a **service provider** in the field of international cooperation for sustainable development and international education work, we are **dedicated to shaping a future worth living around the world**
- We have **over 50 years of experience** in a wide variety of areas, including economic development and employment promotion, energy and the environment, and peace and security
- **MakeIT in Africa** is a pilot project forming part of the Digital Africa and MakeIT initiatives launched by the German Federal Ministry for Economic Cooperation and Development (BMZ). Working with the private sector, associations and social enterprises, **MakeIT aims to utilise tech entrepreneurs' growth and employment potential in partner countries** engaged in development cooperation with Germany
- We are promoting the D4Ag Programme as part of the MakeIT in Africa project, to build a bridge between **Tech Startup Promotion** and **Agricultural Transformation** in Africa
- D4Ag Objectives include:
 1. **Expand market opportunities**
 2. **Build capacities**
 3. **Facilitate cooperations**

ABOUT AGRIFIN



Mercy Corps' AgriFin programming (MCAF) represents USD 35 million in innovation funding from the Mastercard Foundation, Bill and Melinda Gates Foundation and the Swiss Development Corporation to support development, testing and scale of digitally-enabled services for smallholder farmers.

- Our objective is to develop sustainable services that increase farmer income and productivity by 50%, with 50% outreach to women
- MCAF works as an innovation partner with private sector scale partners and such as banks, mobile network operators, agribusinesses, as well as technology innovators and governments committed to serving smallholders at scale
- We help our partners develop, test and scale bundles of digitally-enabled financial and non-financial services supporting partnership development between market actors that leverage their strengths
- We combine MCAF team expertise with strategic subsidy to jointly implement iterative, fail-fast engagements with partners on a cost-share basis, sharing public learnings to drive market ecosystem growth
- Since 2015, we have completed more than 200 engagements with over 120 partners across Africa
- With the onset of the Desert Locust in East Africa, the Skoll Foundation funded AgriFin's first emergency response work leveraging digital tools
- **With this support, AgriFin now reaches more than 14 million smallholders**

ABOUT DALBERG

OUR MISSION

Our mission is to bring the best of private sector strategy to address global development challenges



WHO WE ARE

We are entrepreneurs and innovators, designers and creative problem solvers, thinkers and doers, idealists and pragmatists from everywhere, at home anywhere

WHAT WE DO

- Offer an innovative mix of advisory, investment, research and design services
- Offer an approach that combines rigorous analytical capabilities with deep knowledge and networks across emerging and frontier markets

WHY WE DO IT

Our shared mission is a positive and optimistic one; we work to uncover, build fuel and sustain the potential in people everywhere

About this report | This blueprint was created by Mercy Corps AgriFin and Dalberg and in consultation with GIZ



Context

The **agriculture sector in Africa has been facing systemic challenges** over the past decades including issues around markets, infrastructure and exclusion. These challenges affect most smallholder farmers (SHFs) who account for 80% of food producers in the continent.

Digital solutions have a huge potential to revolutionise the sector's modus operandi opening new markets that can be scaled quickly and offering “end to end” services at a cost-effective way, leading to improvement in the welfare of smallholder farmers.



Objectives & Approach

GIZ engaged Mercy Corps to understand **how young technology (“tech”) innovators can be supported in scale** and operational viability by engaging with emerging models of digital platforms.

To achieve this, GIZ initiated a **Digital Platforms for Agriculture (DAP) programme**, a six-month initiative to work with jointly identified platform partners in Kenya and Nigeria to explore and gain insights into the key operational dynamics of emerging digital platforms for agriculture and present related learning to public audiences to drive ecosystem change.

Documents ensuing from this work include:

- An Executive Summary
- **The Blueprints Deep-dive (this file)**
- The White Paper Report



Research Overview

Over two months, GIZ, Mercy Corps AgriFin and Dalberg used a combination of research methods

- We conducted **desk-based research**
- We analyzed work from **30+ previous engagements** with DAPs and tech innovators
- We conducted **virtual interviews with 40+ companies**, including:



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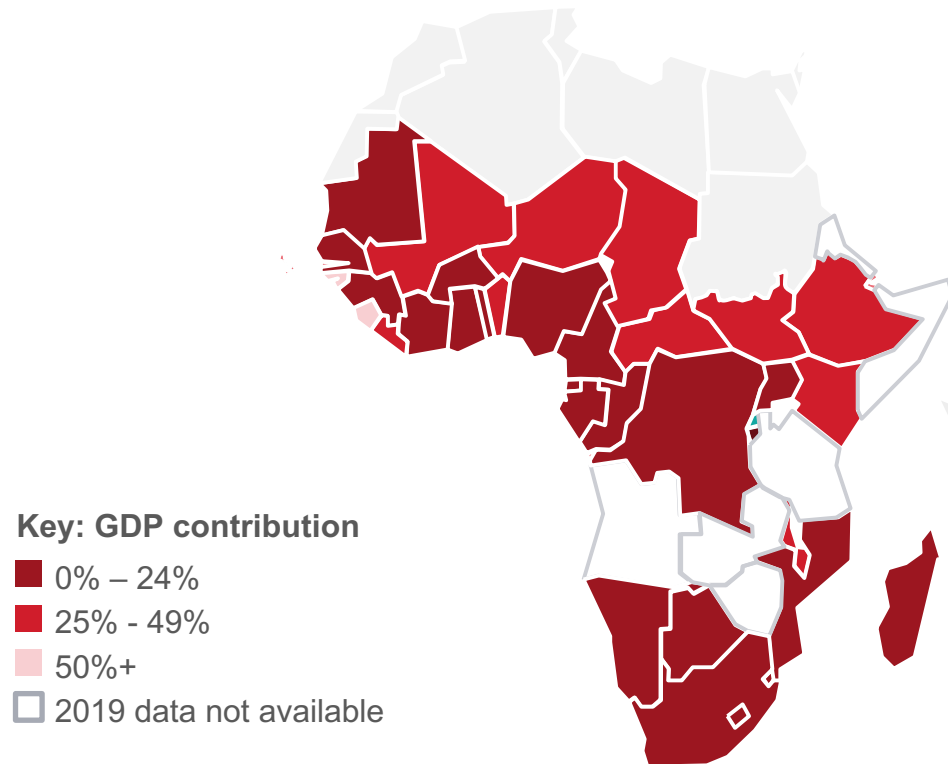
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Agriculture is key to sub-Saharan Africa's economy, contributing to 15% GDP and employing over 50% of the population

Agriculture's contribution to GDP in sub-Saharan Africa (2019)¹, %



AGRICULTURE IS CENTRAL TO SSA ECONOMY – SHFS ARE KEY

- Contributes 15% of GDP
- Employs >50% of the population
- c. 80% of the agriculture output is contributed by c. 33m of Small Holder Farmers (SHF)
- 40-50% of SHF are women
- Forms the bedrock of food security and nutrition
- Production of diverse and nutrient dense foods increases resilience against malnutrition and improves health outcomes

Systemic issues impact SHF livelihoods across market, land, skills and capital, with cross-cutting gender equity and climate challenges

Systemic challenges impact SHF livelihoods and holds the sector back from achieving long-term sustainability goals and social inclusion

Market



- Lack of access to quality and affordable inputs (e.g. fertilisers, seeds, herbicides)
- Limited linkages to off-takers and end-consumers
- Price volatility driven by seasonality and middlemen

Land



- Reduced arable land due to urbanisation
- Reduced yields due to overgrazing, over-farming, extreme weather events
- Inhibitive property rights and land customs

Skills & Knowledge



- Reliance on outdated, low productivity agricultural practices
- Limited information sharing on good agricultural practices
- Limited entrepreneurial support

Capital & Infrastructure



- Limited access to finance
- Fragmented distribution and supply chain infrastructure and traceability
- Lack of access to new technologies to boost productivity

Gender



- Lower asset ownership due to cultural and legal reasons
- Unequal access to enabling technology and services
- Lower engagement of women innovators

Climate



- Deforestation, monocropping, poor soil management, over-extraction of water
- Pollution due to synthetic chemicals and poor waste management

Emerging digital innovations can help to tackle the SHF livelihood, gender equity and climate change challenges

Market access innovations



- **Software-as-a-Service market information** on prices, supply quantities, access routes – e.g., Viazzi Soko
- **Digital marketplaces** to connect SHF to potential buyers – e.g., Digisoko
- **Online markets** with real-time, digitised stock control systems – e.g. Twiga, Jumia

Land related innovations



- **Climate smart technologies** such as soil testing and solar water pumps help farmers to become more resilient to the impacts of climate change
- **Regenerative agriculture** and sustainable agriculture practices supported through digital networks
- **Satellite mapping** of weather and soil to inform planting decisions and land allocation

Skills development innovations



- **eLearning platforms** to deliver training on improved agronomic practices and increase farmers' efficiency through SMS, chatbots and/or online channels – e.g. Arifu
- **Advisory platforms** to support entrepreneurial and business management – e.g. book-keeping services
- **Women-targeted content** to engage women and close the gender gap

Capital and Infrastructure innovations

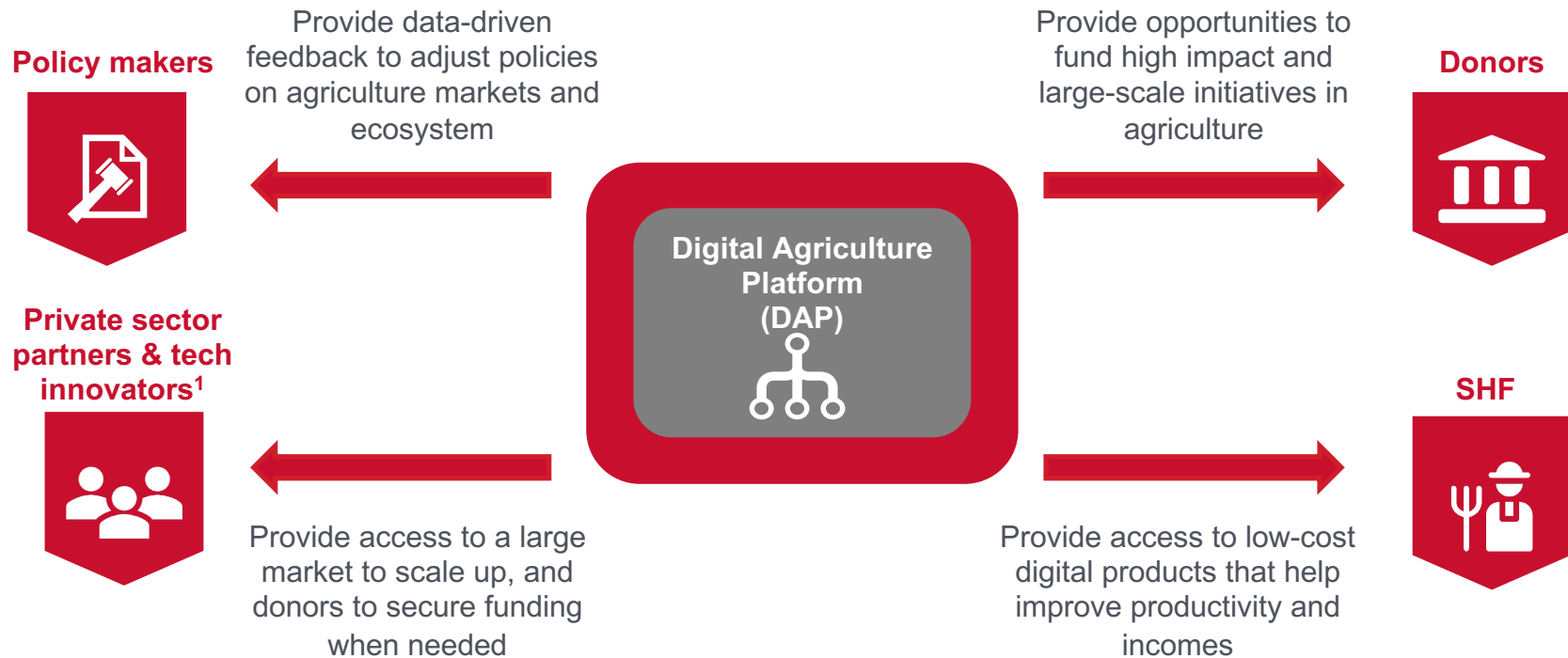


- **Financial services** such as input loans, crowd-sourced investments, mobile money payments, savings products, payment wallets to provide working and growth capital
- **Digital tracing** technology – e.g. GPS/geo-tagging, QR codes and contactless delivery signing
- **Digitised mechanisation** services such as fleet management or equipment rental to increase access to quality machinery
- **eLogistics platforms** to transport goods among value chain players and consumers

However, digital innovators face several constraints to scale their solutions and reach SHFs



Digital Agriculture Platforms help to solve the issue of access to digital innovations by bringing together SHF, partners, donors and policy makers



Note: ¹Technology innovators develop digital solutions that surpass traditional approaches to the production, sale and distribution of agricultural products and services. These include 'fintech' and ag-tech companies whose breakthrough technologies drive transformation in agricultural markets and impact for smallholder farmers.

Source: Dalberg Analysis 2020

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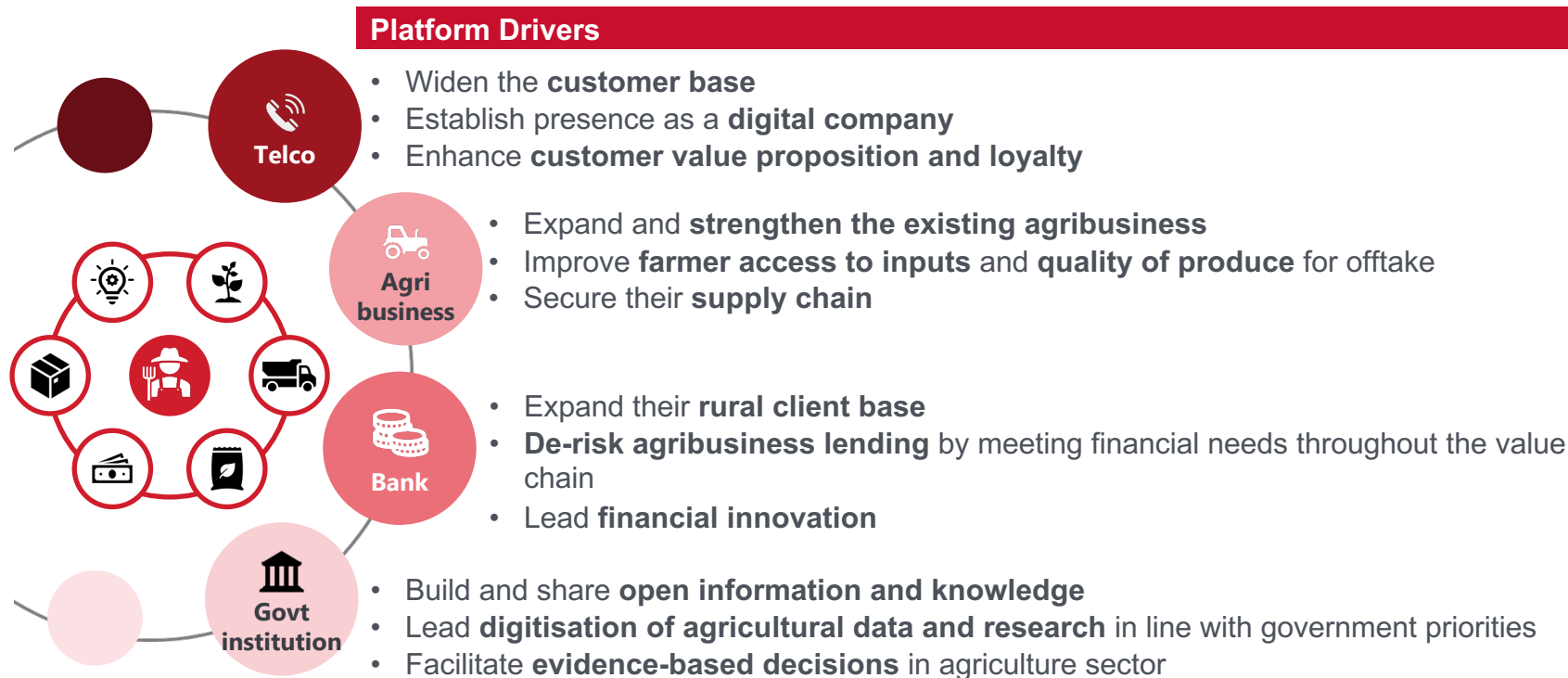
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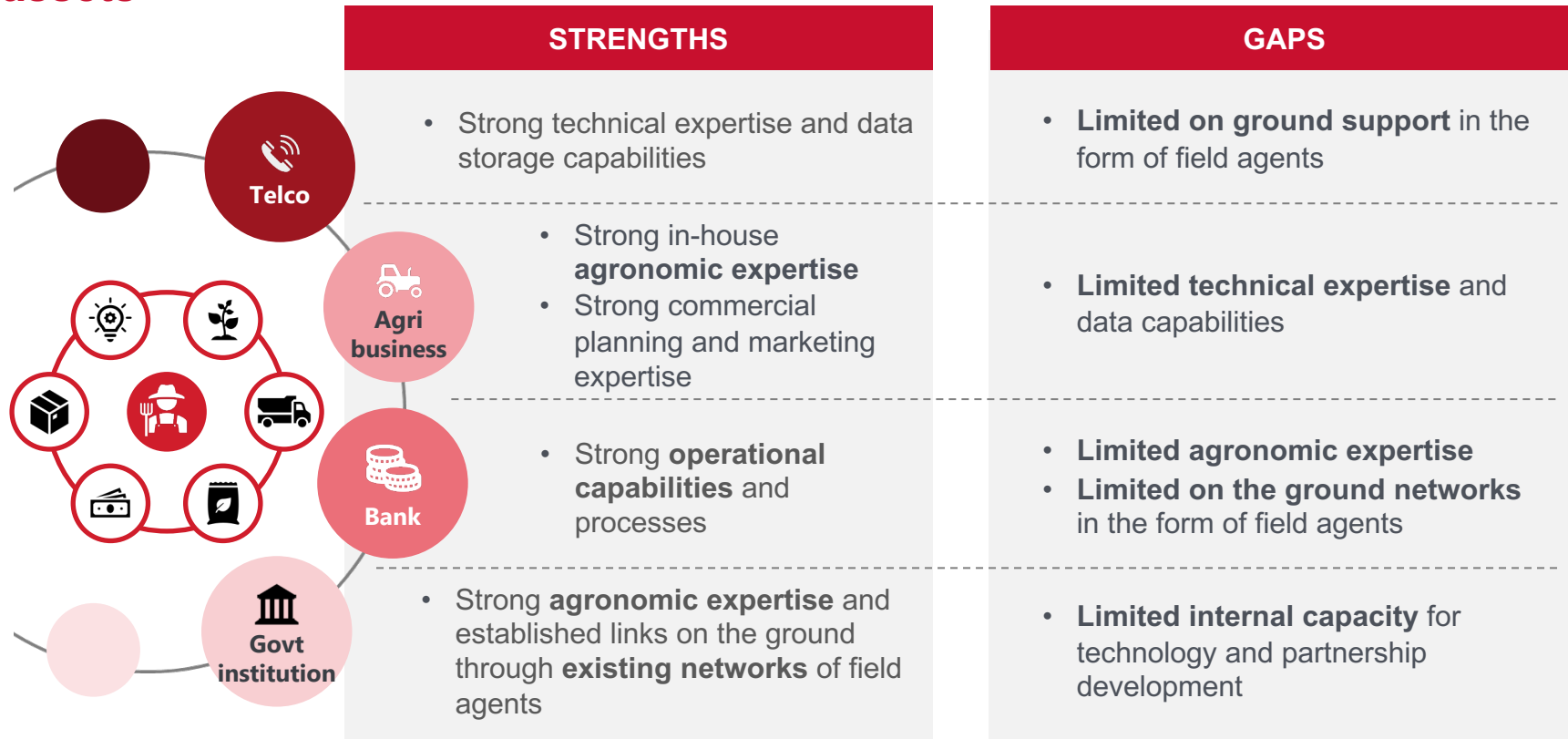
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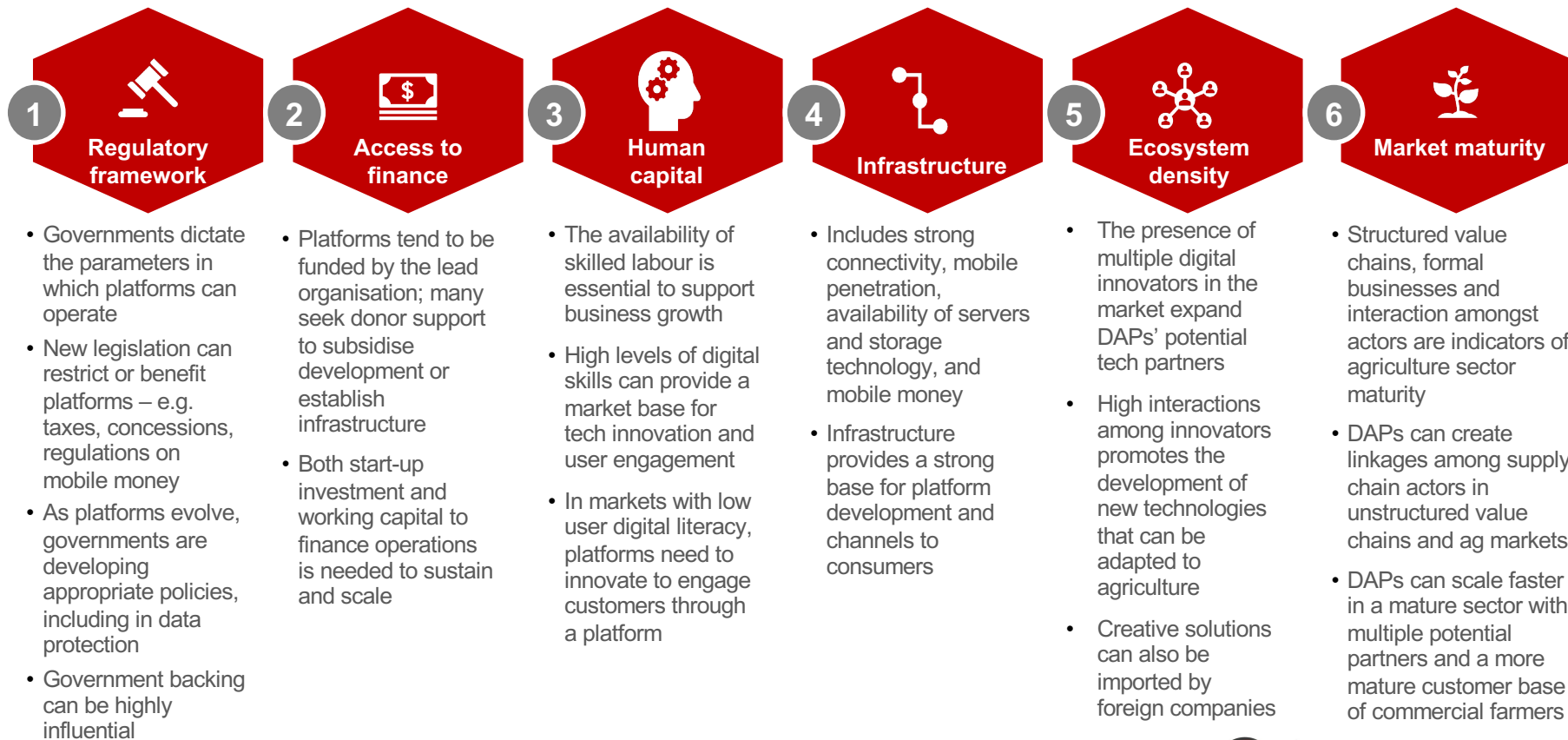
DAPs led by telcos, government institutions, agribusinesses, and banks are some of the most developed in the market, each with unique drivers



Each platform has different strengths and gaps, driven by platform leaders' assets



The enabling environment in different markets can enable or restrict platform growth by influencing farmer buying habits and stakeholder behaviour



We captured key learnings from four 'Blueprint' case studies based on Digifarm, KALRO, FMN and four different banks

Why are we focusing on them?

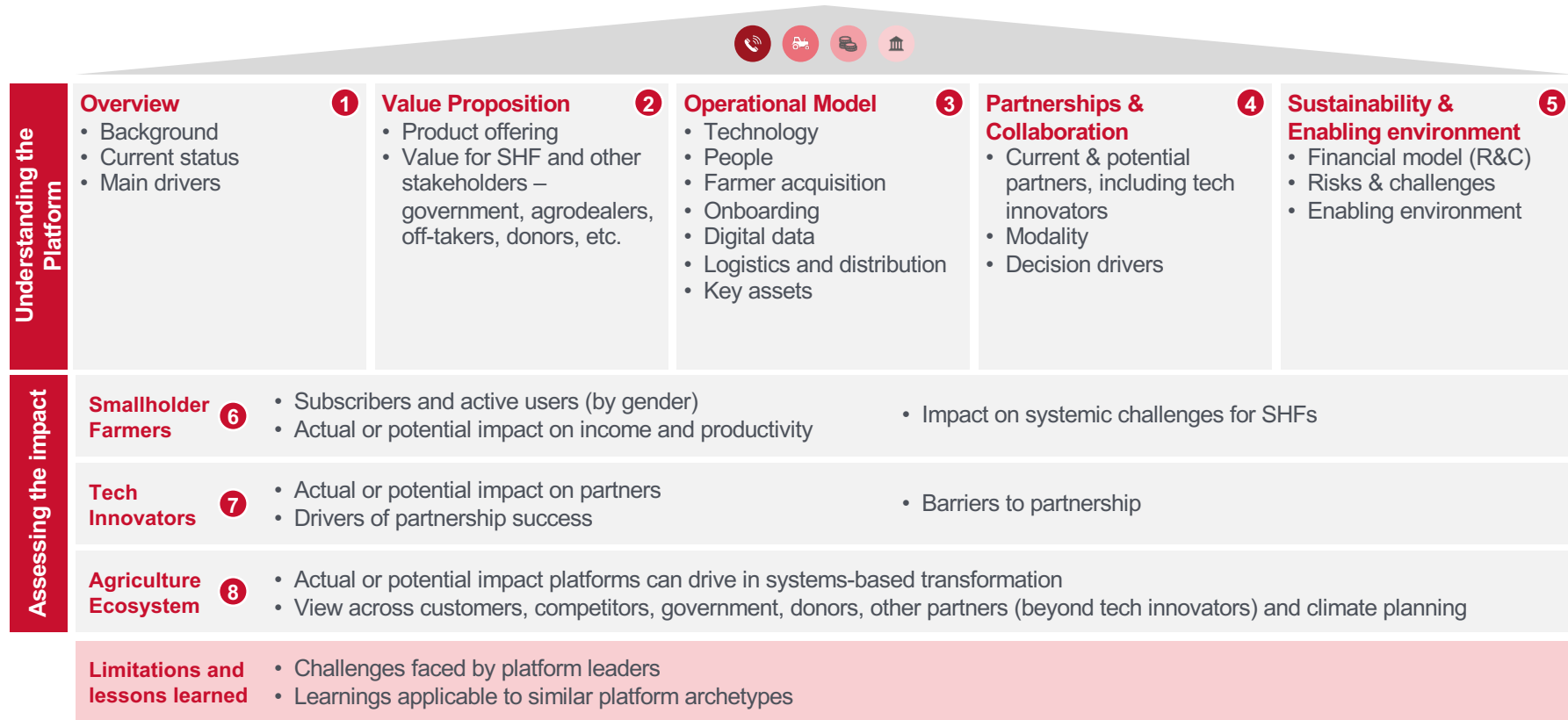
New models and platform leaders continue to emerge in the market. These **four blueprints** have been chosen due to:

1. **Higher levels of development** and deployment
2. **Varied interactions** with digital innovators
3. **Historical relationship** with GIZ, AgriFin and Dalberg

Type of Platform	Lead Platform(s)	Company description
Telco led 		<ul style="list-style-type: none"> • Safaricom is the leading provider of converged communication solutions in Kenya, and leads the DigiFarm platform
Agribusiness led 	 	<ul style="list-style-type: none"> • Flour Mills Nigeria (FMN) is one of Nigeria's leading food and agricultural businesses • Twiga is a Kenyan agribusiness that sources produce from farmers in rural areas
Bank led 	  	<p>4 commercial banks based in different countries</p> <ul style="list-style-type: none"> • Sterling Bank - Nigeria • Stanbic Bank - Uganda • BK TechHouse (Bank of Kigali) - Rwanda
Govt Institution led 	  	<ul style="list-style-type: none"> • Kenya Agricultural and Livestock Research Organisation (KALRO) is a parastatal created in 2013 to oversee agricultural research in Kenya • ATA² is a govt. agency in Ethiopia; NPCK³ is Kenyan PPP with focus on potato value chain

The following slides present a snapshot of information across 8 key elements, followed by a deep-dive section on each lead platform

We evaluated 4 leading types of DAP on 8 key elements to provide a detailed understanding of how the platform works and the impact it has delivered



Telco-led platforms' can leverage their large customer base and low-cost data access to rapidly scale



Understanding the Platform	Overview ①	Value Proposition ②	Operational Model ③	Partnerships & Collaboration ④	Sustainability & Enabling Environment ⑤
	<ul style="list-style-type: none"> Telco-led platforms develop bundled agricultural products and services for SHFs They aim to expand into digital services, develop new revenue streams, and build brand awareness 	<ul style="list-style-type: none"> Farmers benefit from financial access, precision agriculture services, quality inputs and access to markets Agrodealers gain access to farmer networks; govt gains efficiency in subsidy allocation 	<ul style="list-style-type: none"> Access to telcos' internal tech specialists Services are usually USSD-enabled; field agents support SHFs on the ground Telco services enable the platform to push info out to farmers at low cost 	<ul style="list-style-type: none"> Implementing partners manage the field force Partner with tech innovators to expand product offering Prefer revenue sharing models, as apposed to paying for products upfront 	<ul style="list-style-type: none"> Income from revenue sharing¹; costs are farmer engagement related Telco-led platforms are well placed to succeed in mature digital ecosystems, which enhance telcos' digital assets
	Smallholder Farmers ⑥	<ul style="list-style-type: none"> Farmers can increase their income and productivity by 100% when they use the services provided by the platform such as market linkages, irrigation and precision agriculture 			
	Tech Innovators ⑦	<ul style="list-style-type: none"> Tech innovators onboarded to the platform can access to technical support and improve their farmer reach – e.g. iProcure has reached 1,200 agrodealers by partnering with DigiFarm and aims to reach 4x as many agrodealers by 2023 Barriers to building a partnership include a mismatch of business models, difference in price points and data sharing 			
	Agriculture Ecosystem ⑧	<ul style="list-style-type: none"> Increase transparency across the agriculture sector by offering price visibility Enhance food security by increasing productivity of SHFs and the total food production Support donors to increase digitalisation and accelerate agricultural transformation 			
Assessing the impact	Limitations and lessons learned	<ul style="list-style-type: none"> Lack of agricultural background and partnerships' business model alignment An upfront product roadmap helps to strategically position the platform for growth through partnerships 			

Agribusiness-led platforms can leverage established relationships with farmers and agriculture stakeholders but lack tech and data capabilities



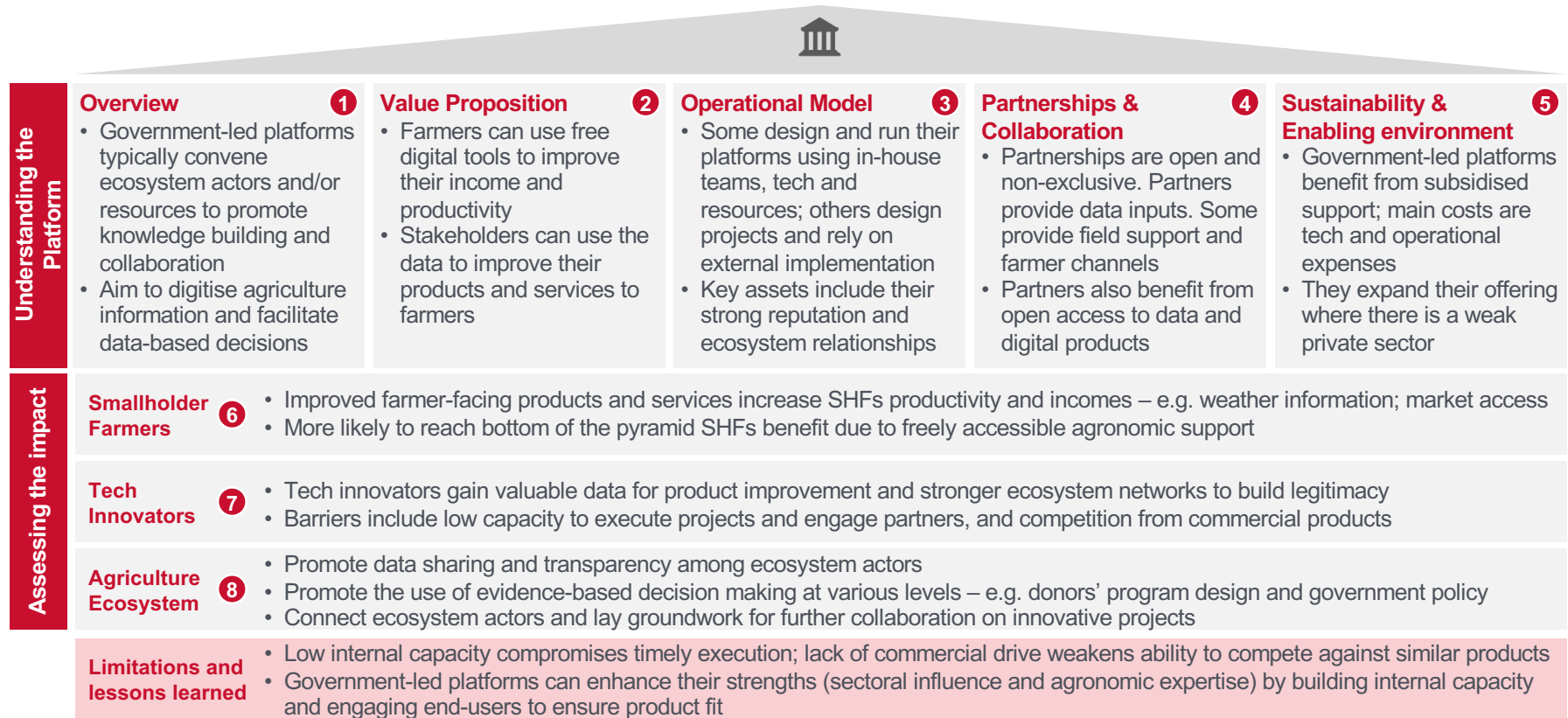
Understanding the Platform	Overview ①	Value Proposition ②	Operational Model ③	Partnerships & Collaboration ④	Sustainability & Enabling Environment ⑤
	<ul style="list-style-type: none"> Agribusiness-led platforms provide farmers with agronomist advice and access to inputs They aim to expand the existing agribusiness (e.g. providing inputs) and to improve the quality of produce for off-take 	<ul style="list-style-type: none"> Farmers improve productivity based on an assessment, learning content, agronomist advice & access to inputs Agrodealers benefit from inventory management and gain access to farmer networks 	<ul style="list-style-type: none"> Platforms have existing agronomist networks to reach the field and provide customised solutions Established relationships with farmers from years of field operations in input provision enables quick onboarding of farmers 	<ul style="list-style-type: none"> Product partners expand platform's capabilities by providing content & precision ag. products Implementation partners boost channels to local network organisations and new farmers 	<ul style="list-style-type: none"> No direct revenue – it enhances the profit of the lead organisation; cost drivers are tech & HR Agribusiness-led platforms likely thrive in mature ag. markets which offer partners and networks
	Smallholder Farmers ⑥	<ul style="list-style-type: none"> Farmers gain through customised productivity reports, agronomist advice and learning content, and access to inputs. They can help to improve farmers productivity and incomes, and the platform could also link farmers to a guaranteed buyer 			
	Tech Innovators ⑦	<ul style="list-style-type: none"> For tech innovators such as precision agriculture services providers, agri-business led platforms provide direct inroads to their target market and exposure from working with a large player in the sector Agribusinesses have relationships with other actors that can help innovators to expand their work, providing funding and support 			
	Agriculture Ecosystem ⑧	<ul style="list-style-type: none"> Help implementing partners without tech skills to become more tech-savvy and digitally enabled Have the potential to work with the government to inform agriculture data about production volumes and yields by location, and strengthen resource allocation towards local food production, value chain promotion, and food security 			
Assessing the impact	Limitations and lessons learned	<ul style="list-style-type: none"> Lack of tech background and ability to tailor technology design for customers Platforms built on the existing analog network and need to take a flexible approach to mix digital technologies with existing agronomist and other networks 			

Bank-led platforms are uniquely positioned to drive SHF financial inclusion but rely on partners for agronomic expertise and in-the-field networks



Understanding the Platform					
	Overview 1	Value Proposition 2	Operational Model 3	Partnerships & Collaboration 4	Sustainability & Enabling environment 5
	<ul style="list-style-type: none"> Bank led platforms provide credit and savings products layered with additional features – e.g. market access Banks aim to tap into unbanked segments, new revenue streams, and lead financial innovation 	<ul style="list-style-type: none"> Farmers can use financial products to invest in high quality products and services that increase their productivity and incomes Banks' relationships and financial resources help stakeholders to scale 	<ul style="list-style-type: none"> Banks' risk aversion means they prefer to build and run their platforms Banks need implementing partners for field ops Banks' relationships and data on ecosystem actors' financial needs inform partnerships and products 	<ul style="list-style-type: none"> Product partners (e.g. tech innovators) provide agronomic expertise and additional products Enabling partners (e.g. govts and donors) provide funding Explore revenue models 	<ul style="list-style-type: none"> Main income from financial products; costs are mainly set-up capital and operational expenses Light-touch regulations and multiple agriculture players help nurture bank-led platforms
	Smallholder Farmers 6	<ul style="list-style-type: none"> Unbanked SHF can use credit and savings products to invest in improving yields and safeguarding their earnings Underserved SHF can improve their productivity and incomes through value-add products and services – e.g. input provision, learning, and market access 			
	Tech Innovators 7	<ul style="list-style-type: none"> Tech innovators gain from wider customer reach, competitive financing, and positive brand association with banks Barriers include duplicative efforts, misaligned expectations on speed of expansion, and banks' stringent procedures 			
Assessing the impact	Agriculture Ecosystem 8	<ul style="list-style-type: none"> Supply chain financing could increase competition in the agriculture sector Involvement in agriculture could signal additional investment into the sector Can aggregate data to improve governments' and donors' resource allocation and decision making 			
	Limitations and lessons learned	<ul style="list-style-type: none"> Banks' risk averse nature and limited agricultural background could lead to slow product development Banks can look to foster innovation and build new capabilities by housing platforms in teams outside the bank's conventional departments 			

Government-led platforms bring together actors and resources to drive ecosystem-wide impact but often struggle with internal capacity



Platforms can offer a predictable and accelerated path for digital innovators to scale and achieve financial viability

Platforms can help digital innovators to scale by overcoming their typical constraints



INFORMATION

DAP can provide easy access to relevant **market and customer information**



CUSTOMER ACQUISITION

DAP can simplify **customer acquisition** by connecting digital innovators with SHFs



RELATIONSHIPS

DAP can act as a **'matchmaker'**, building relationships between innovators, policy makers and donors




INVESTMENT FUNDING

DAP can **co-pitch with digital innovators for investment**, and facilitate further capital raise

Common ways of working with DAPs

1

REVENUE SHARING

- Partners give DAP a percentage of the revenue made through the platform
-  *DigiFarm prefers to build revenue sharing partnerships to have revenue coming from transactions and is moving field partners towards it*

2

DATA & CONTENT SHARING



- Partners offer interesting content that encourages frequent SHF engagement
- KALRO builds non-financial, data sharing partnerships that follow bilateral agreements*
- DigiFarm builds data-sharing partnerships with content providers*

3

PURCHASE AGREEMENTS

- DAPs purchase the services and products from partners upfront
- Other banks are open to exploring purchase agreements for some services – e.g. soil testing*

However, alignment between innovators and platforms is key to ensure innovators can make the most of their growth opportunities

Common challenges innovators face while engaging with platforms



Mismatched business models
and difficulty
ascertaining a fair
price point



Long/unclear partnership processes
create uncertainty



Limited partner engagement in
decision making



Unclear/stringent data sharing terms



Misaligned goals and expectations on
product sequencing
and expansion



Duplicative efforts
with the platform
leader

9 key principles for digital innovators to get the best out of platforms

Before partnership

1. Build a start-up vision with a product roadmap
2. Find finance partners and secure funding sources

In exploration

3. Partner with platforms that share your vision and execution priorities
4. Identify and develop relationships with key decision makers

In discussion

5. Be patient and invest time building rapport; large platforms may not act swiftly
6. Build solid financial analysis to back up remuneration and revenue share proposals
7. Agree on data ownership, sharing, use and licensing

As you work together

8. Clearly define roles and responsibilities
9. Set open communication and establish integrated ways of working

Platforms are well positioned to promote environmental sustainability through enabling access to climate-smart agriculture and data-driven insights

Need for Action	<ul style="list-style-type: none">• SHFs in SSA are at the forefront of the climate crisis, they face challenges of soil erosion and degradation, whilst changing rainfall patterns and the increase in extreme weather events affect crop suitability and yields• It is possible to increase agriculture yields and protect the environment through restoring forests, adopting CSA practices, employing green technology, and implementing better livestock and waste management practices• Farmers rely directly on the climate and environment for their livelihoods; there is a compelling case for engaging farmers and championing their action
Platform Opportunities	<ul style="list-style-type: none">• Platforms can link value chain actors to promote the uptake of Climate Smart Agriculture (CSA) practices, technology and finance, including providing advisory services to farmers through precision agriculture products• Platforms can help to collate information on agriculture activities on the environment, inputting to scenarios of current and future climate emissions and impacts to inform resource allocation and enhance data-driven decision making
Implementation challenges	<ul style="list-style-type: none">• CSA technologies can be more expensive than alternatives – for example, a solar water pump is more expensive upfront than a diesel pump, although the running cost of diesel makes it more expensive in the long run• Behavioural norms around damaging farming practices persist, making it difficult to train farmers and sustain change• There are low commercial incentives for platforms to integrate climate considerations, at least in the short run, so climate products and data analysis is often deprioritised
Principles for Platforms and Digital Innovators	<p><i>In design</i></p> <ul style="list-style-type: none">• Consider climate across the business model of the organisation and in each product to avoid perpetuating unsustainable climate practices for farmers• Consider climate finance partners when raising capital• Develop clear MEL structures that incorporate climate into KPIs• Partner with expert organizations who incorporate environmental considerations in implementation <p><i>In implementation</i></p> <ul style="list-style-type: none">• Gather and share environmental data such as soil quality and water use• Link CSA technologies to credit products through the platform• Use the platform's field force to deliver training on sustainable farming practices

Platforms can help to overcome cultural and structural barriers in agriculture when they are intentional in the design, outreach and engagement of women

Need for Action	<ul style="list-style-type: none">• Women face cultural and structural barriers in agriculture, including lower access to technology, access to finance, and unequal power dynamics• Gender gaps in agricultural productivity in sub-Saharan Africa range from 8% in Kenya, 11% in Ethiopia, and 28% in Malawi to 30% in Nigeria
Platform Opportunities	<ul style="list-style-type: none">• Platforms can help women to leapfrog inequities and to become more engaged in agricultural development through providing direct access to finance, agronomic knowledge and market connections• Gathering gender-disaggregated data can help to fill knowledge gaps on women's engagement, inform future product design, and build a case for investment planning
Implementation challenges	<ul style="list-style-type: none">• Women's unequal access to productive assets such as land, mobile phones, agricultural inputs reduces their ability to take advantage of DAP gains, whilst lower digital skills limits women's ability to engage with platforms• Gendered norms and practices, reflecting unequal divisions of labour, mean that women may have less time to engage on platforms and benefit from platform offerings• For platforms to progress gender equity, they must be intentional about integrating women and a gender perspective into the design and roll-out of their innovations – gender imbalances will not be overcome without effort
Principles for platforms and digital innovators	<p><i>In design</i></p> <ul style="list-style-type: none">• Incorporate gender targets into product design and MEL plans, including recruiting women into product design teams• Pursue partners that bring gender expertise to broaden the platform's understanding <p><i>In implementation</i></p> <ul style="list-style-type: none">• Gather data to better understand and analyse gender challenges for farmers, and the potential impact of platform interventions• Ensure female representation at all levels, from internal management to field agents• Embed gender goals into execution incentives – e.g. higher commissions for onboarding women

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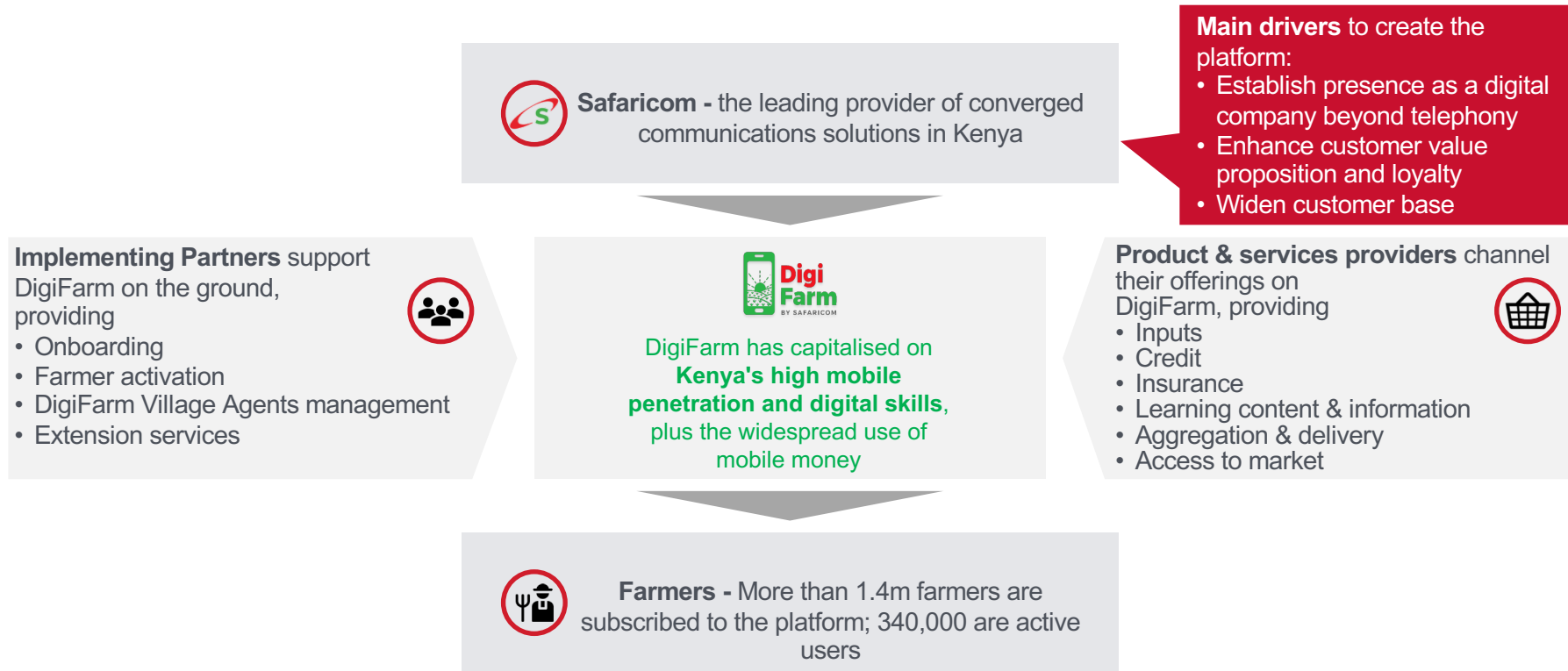
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UNDERSTANDING THE PLATFORM

Digifarm is more established than other platforms, and our detailed insights are drawn from multiple engagements since the platform's inception



Overview | DigiFarm is an integrated mobile-based platform that provides services to support SHFs in partnership with different organisations in Kenya





VP | DigiFarm is a marketplace with more than 300k SHFs active on the platform, which allows them to source, transact, learn, and grow

Value Proposition: bundled services for SHFs offering services & products through service providers and implementing partners on the field

Stakeholders	Value Proposition	Products
1 Agro-dealers	<ul style="list-style-type: none"> Access to customers within the DigiFarm network Produce and inventory tracking 	Inputs <ul style="list-style-type: none"> Customised package based on soil testing, value chain & potential yield Link between farmers to local distributors
2 Government	<ul style="list-style-type: none"> Access to farmers Efficiency gains in subsidies allocation 	E-subsidy <ul style="list-style-type: none"> Access to subsidies provided by the Ministry of Agriculture through the platform
3 Farmers	<ul style="list-style-type: none"> Access to products and services¹ that help to raise productivity and boost incomes Farmers can source for inputs, transact, learn, and grow their farms from a 'one-stop-shop' platform 	Credit <ul style="list-style-type: none"> Pre-planting loans for inputs and farm labour costs Cash loans for harvest and transportation of produce
4 Enterprises²	<ul style="list-style-type: none"> Access to products and services that help to raise their farmers' productivity and incomes 	Learning & information <ul style="list-style-type: none"> Digital learning content & call centre with agriculture experts In-person extension services to help maximise yields
5 Offtakers	<ul style="list-style-type: none"> Access to customers within the DigiFarm network Improve quality of produce for offtake 	Insurance <ul style="list-style-type: none"> Agri-insurance coverage on full yield for farmers Minimises weather-related risks
		Aggregation & delivery <ul style="list-style-type: none"> Aggregation of crops to specific locations and times Delivery services from aggregation to buyer and tractor renting services
		Enterprise product <ul style="list-style-type: none"> Access to products and services available on the platform to organisations that have direct contact with farmers
		Market access <ul style="list-style-type: none"> Links farmers to specific buyers Contract model guarantees the purchase at an agreed price point

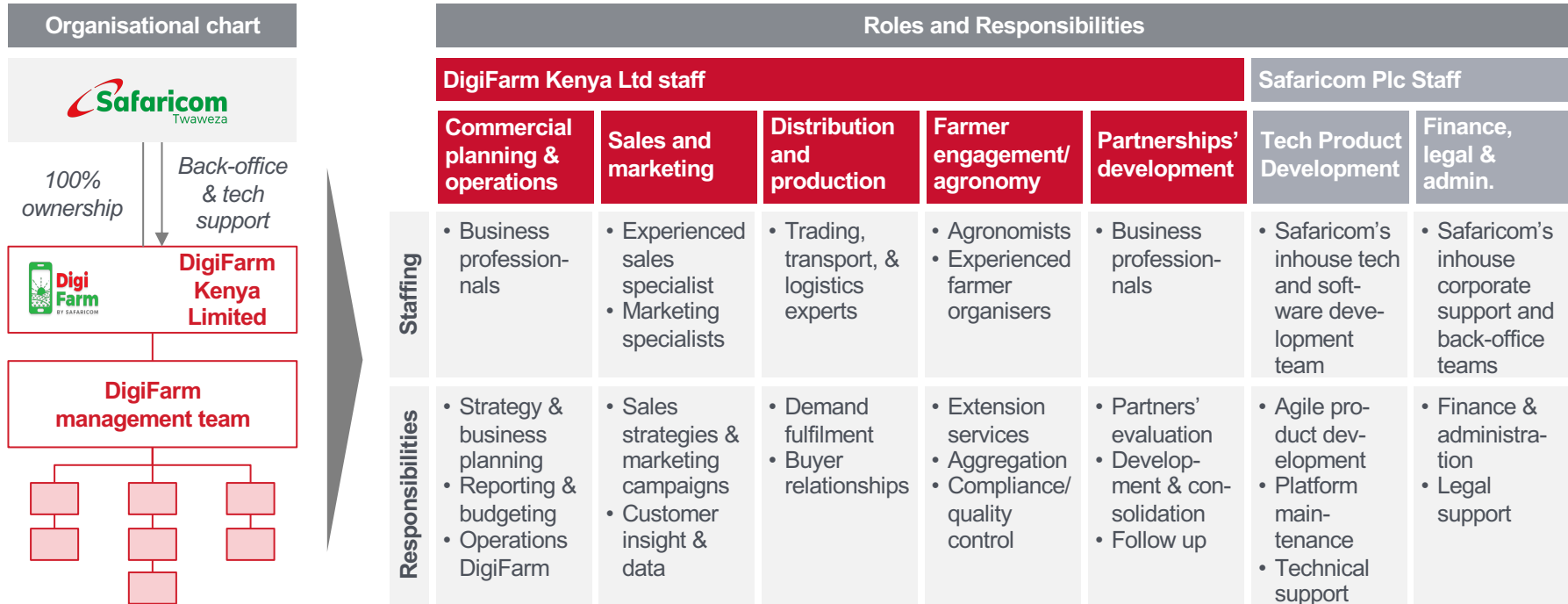
Note: ¹via implementing partners AIS and KLPA (AIS - Africa Instore Solutions; KLPA - Kenya Livestock Producers Association)

²organisations on the field that have direct contact with farmers

Source: Dalberg interviews and analysis, 2020



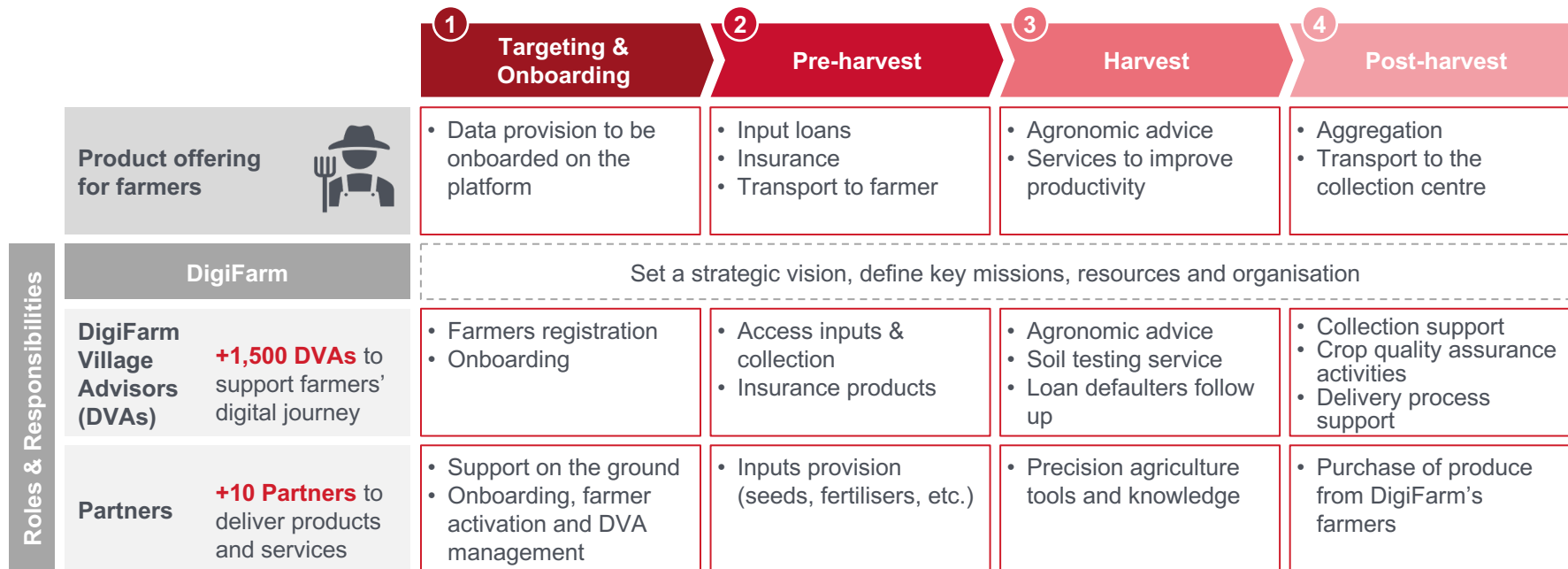
Operations | DigiFarm is resourced with a team of dedicated specialists, and leverages the world-class technology and corporate support teams within Safaricom



DigiFarm is incorporated as a **for-profit social enterprise**, which is **owned by Safaricom Plc**, but has a independent governance structure. Back office and tech support is given by Safaricom, whereas the rest of the roles are taken by DigiFarm



Operations | Digifarm works across the value chain through mobile and field agents managed by implementing partners



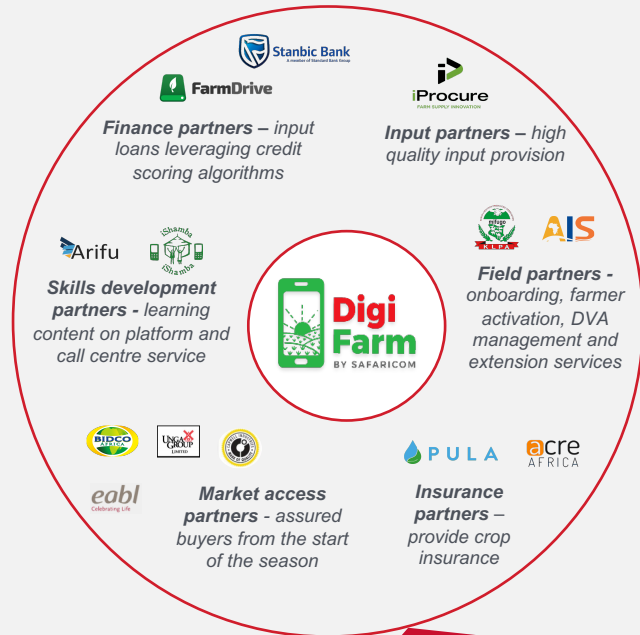
Technology & Data

- DigiFarm's services use **USSD functionality** available for 2G phones; a forthcoming Whatsapp for Business service is being prototyped to virtually connect farmers to agricultural experts, rich media agricultural learning resources, and peer learning
- DigiFarm's approach is not to design products and services from scratch but to **rely on the partnerships** to onboard their products on the platform
- DigiFarm holds different **data about SHFs** including personal data, farm characteristics and others and different types of **users benefit** from it¹

Note ¹Safaricom, financial service providers, buyers, and SHFs
 Source: Dalberg interviews and analysis, 2020; "DVA app design and DigiSoko UX evaluation", 2019

Partnerships | Since its inception, Digifarm has pursued partnerships that complement internal capabilities to offer value to farmers

DigiFarm has pursued partnerships that complement internal capabilities



Digifarm continues to build new partnerships, for example in agricultural machinery rental and solar irrigation

Key Takeaways

Partnership Approach

- DigiFarm pursues **bilateral and non-exclusive arrangements** and **takes a decision making role** in partnership direction and user engagement
- The **product roadmap** that DigiFarm developed from the start was a key advantage for building successful partnerships
- DigiFarm prefers a **transaction fee model** whereby partners give DigiFarm a percentage of the revenue made through the platform. The platform is moving field partners towards this model – e.g. Iprocure
- Partners that offer interesting content that encourages frequent SHF engagement can use a **data/content sharing model** – e.g. Arifu
- Digifarm **rarely needs to prioritise across multiple partners**, but they have previously used consultants to carry out analysis – e.g. Iprocure

Partnership Status

- DigiFarm build different partnerships to complement its capabilities and lack of agricultural background:
 - **Implementing channel providers** to engage directly with farmers
 - **Product and service providers** to deliver SHFs a diverse bundled offer
 - **Donors and technical experts** to gain access to **funding and technical support** such as business model design
 - National ministries, county governments and parastatals to **align with government objectives** and to gain support from policy makers



Sustainability | Learning content drives customer acquisition; more profitable products such as quality inputs and market linkages come later

Impact on profitability low/negative medium high/positive

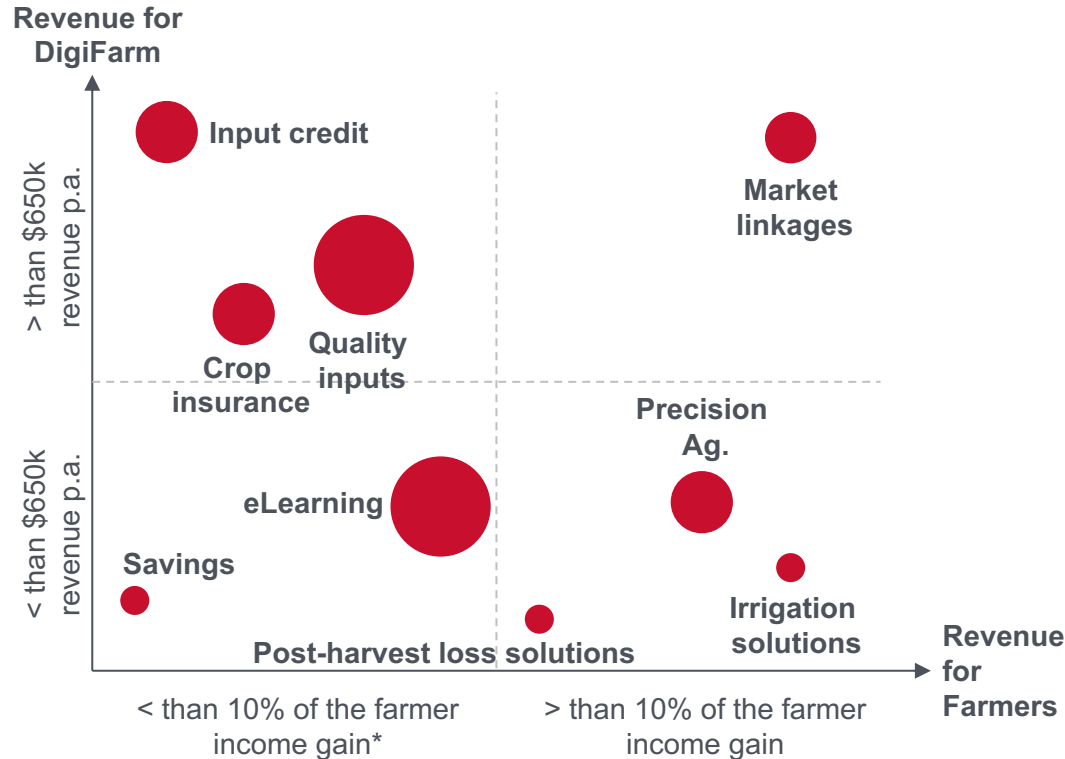
DigiFarm has 1.43 registered users but only 24% of them are active on the platform. 95% of active users are engaged on learning content offered on the platform – although many use multiple products; only 23% consume high profit services (market linkages & inputs)

Sequence products launched		1	2	3	4	5	6	7	8	9	10
		eLearning	Quality Inputs	Input Credit and Score card	Soil testing	Market Linkages	Crop Insurance	Precision Ag. & Weather	Savings	Irrigation Solutions	Post-Harvest Loss Solutions
Financial Impact DigiFarm	Cost	\$\$	\$	\$\$\$	\$	\$\$\$	\$	\$	Ongoing studies to verify impact		
	Revenue	\$	\$\$	\$\$\$	\$	\$\$\$	\$\$	\$			
Revenue for farmers	# users	HIGH	HIGH	MID	LOW	MID	MID	MID			
	SHFs increase in income & production	20 - 40%	10 - 30%	20%	50%	100% increase to 50% decrease	20 - 25%	70%	14% decrease in SHFs poverty	50 - 100%	20 – 50%
	\$ increase p.a per SHF	\$135.5	\$134	\$134	\$335	\$335	\$80	\$80	Ongoing studies to verify impact		



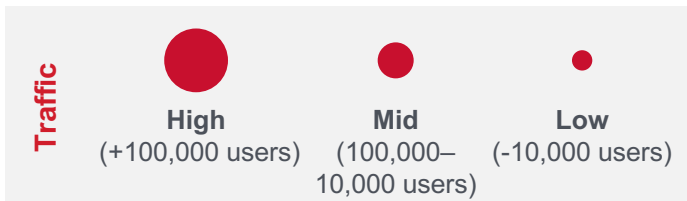
Sustainability | From its initial focus on building traffic, DigiFarm increasingly looks to cross-sell and up-sell farmers onto revenue generating products

Current Products and services benefits – DigiFarm revenue, farmers income & traffic



DigiFarm has a portfolio of products that drive

- **Traffic** – Learning content has more than 300k active users
- **Revenue for DigiFarm** – Input credit and market linkages are the most profitable products but have less than 80k users
- **Revenue for farmers** – The use of irrigation solutions and market linkages could increase the production and income of SHFs by up to 100%
- DigiFarm is increasingly focusing on cross-selling and up-selling farmers to revenue generating products across the customer journey



* Income gain: % of the farmers income increase explained by the adoption of the service
Source: Dalberg interviews and analysis, 2020; AgriFin, "DigiFarm Pitch", 2020

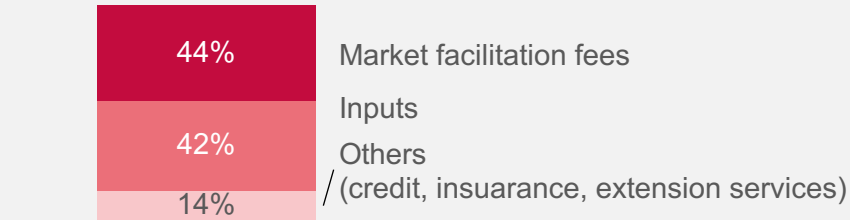


Sustainability | Main revenue streams are market facilitation fees and input sales transaction fees; costs are almost 50% farmer engagement related

Revenue drivers

DigiFarm revenue projections (2020-2021) – USD, M (millions)

1.7

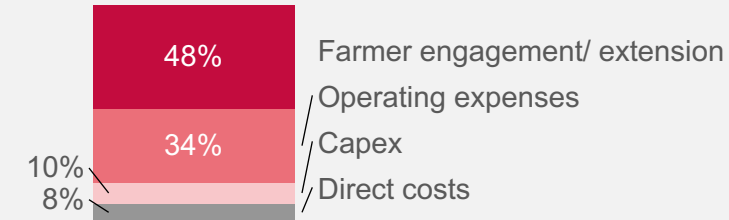


FY 2020-21

Cost drivers

DigiFarm cost projections (2020-2021) – USD, M (millions)

12.3



FY 2020-21

Key risks and mitigation factors

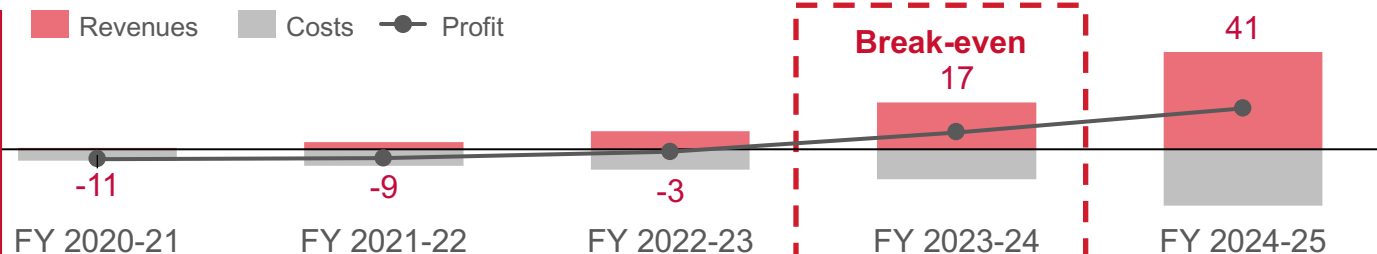
- ① **Market price volatility** leads to some off-takers defaulting on their commitment to purchase from Digifarm when market prices fall. Safaricom assumes all the risk by buying input from the farmers at contracted prices, even though Digifarm can no longer on-sell to off-takers
- ② **COVID-19** has reduced contact between DVAs and farmers making it difficult to gather farmer's information. Geo-tagging technology installed last year has helped DVAs to get information without having to go into the field
- ③ **Safaricom is a large organisation**, making it hard for a start-up to align on innovation initiatives that may not have an immediate return on investment. Digifarm's transition to a social enterprise may enable more flexibility
- ④ **Logistics** around aggregation, transportation, and post harvest activities requires high investment to co-ordinate transport, ensure quality checks and optimise supply chain management



Sustainability | DigiFarm's gross margin is not yet positive and they are targeting 2023 for break-even

Net income projections (2020-2025) - USD, M (millions)

- DigiFarm has 1.43 m registered users
- Only 24% are active on the platform
- Less than 23% of active users use revenue driver services¹



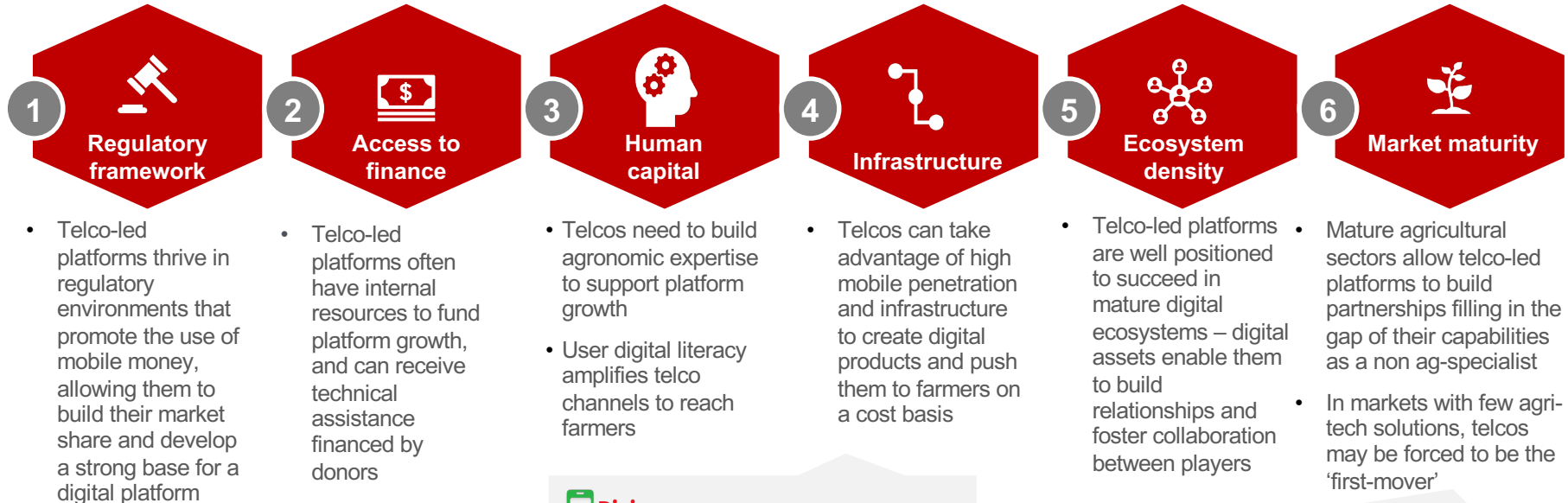
# Farmers (active users)	342,500	724,906	1,238,238	2,104,487	3,567,290
Average revenue per user (USD)	\$ 5	\$ 11	\$ 16	\$ 24	\$ 29
Average cost per user (USD)	\$ 35	\$ 24	\$ 18	\$ 15	\$ 17

To achieve break-even, DigiFarm needs to increase the amount of **active users 6 times**, not only by increasing the registration but also by engaging registered users to make them active. This means that they need to increase the **value of traded produce by 35 times** and the increase **value of issued loans by 23 times**

Notes: 1 Less than 80,000 farmers use the input credits and access to market services

Source: Dalberg interviews and analysis, 2020; Dalberg, "DigiFarm Financial Sustainability", 2019; AgriFin, "DigiFarm Pitch", 2020

Enabling Environment | Telco-led platforms are well placed to succeed in digital ecosystems where their network and mobile money assets can expand reach



Light regulation on mobile money by the Kenyan government at the onset of MPESA¹ allowed it to rapidly scale, giving DigiFarm a solid launchpad for success



DigiFarm has capitalised on Kenya's high mobile penetration and mobile money. They take advantage of services held by Safaricom to market digital products and push information out to farmers, making it cheaper to reach users



Safaricom started Digifarm from scratch rather than following their typical acquisition strategy. Yet the increasing maturity of the agriculture sector has provided DigiFarm with partners such as Iprocure, Arifu and Bidco for products & expertise.

IMPACT OF THE PLATFORM



SHF Impact | DigiFarm has 1.43 million registered SHFs, presence in over 12 counties in Kenya, and more than 67,000 processed loans

Reach



1.43 million
smallholder farmers
subscribed to the
platform

36% women

12% youth

42,122
SHFs accessing end-to-
end services

Footprint



12-14
counties in Kenya

5 value chains¹
maize, sorghum,
sunflower, soya, green
grams

Scalable Services

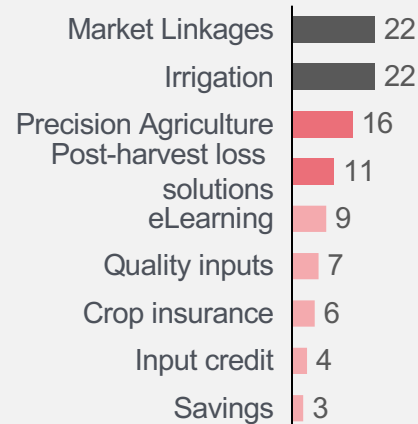
\$3.8M credit value
67,514 loans processed



\$1M value of marketed
produce 2,346 MT volume
produced

Farmers Income

% Farmers income impact
(% of the farmers income
increase explained by the
adoption of the service)



DigiFarm is transitioning from a focus on customer acquisition to an **emphasis on upselling and cross-selling services** to drive revenue as they enter a new stage of growth. By supporting farmers to engage with market linkages products, DigiFarm will not only increase their revenues, but also **help to improve farmers income**

Note: ¹ DigiFarm's original approach was to be demand led, so they would pick value chains based on the offtaker agreements they negotiated. However, this is now changing as they look to engage new farmers such as youth, so they are starting to focus on high value crops

Source: Dalberg interviews and analysis, 2020; AgriFin, "DigiFarm Impact Study", 2019



SHF Impact | DigiFarm creates a market channel to increase productivity and address systemic challenges for SHFs

Markets

- Improved market access creates a **competitive market for SHFs to trade** as commodity sellers
- However, the platform **negotiates on behalf of farmers** and offer a certain price through the platform, limiting farmer interactions with services providers

Capital and infrastructure

- Digifarm issues loans to farmers that enable them to **invest in their farms and increase their incomes**
- Digifarm **incentivises additional investment in the agriculture sector** from partners and other players across the value chain

Gender

- DigiFarm has the potential to empower female farmers, especially with a **continued deliberate measures to target them**
- DigiFarm has 36% female subscribers
- More women than men use the market access product***
- DigiFarm has hired **female brand ambassadors** with the aim of onboarding more female farmers



Skills

- DigiFarm provides **learning content for farmers** via USSD, on platform and call centre support
- Learning content improves farmer productivity and quality of produce

Land

- Limited application to date in addressing land issues, but with the **potential to address quality of land and mismatch in land access**, e.g.,
 - Partnerships with soil testing companies
 - Encouraging youth farmers to use their family land through digital content

Climate Smart Agriculture

- Partnerships with climate smart technology providers such as SunCulture could **widen access to farmers and improve resilience**



Innovators Impact | DigiFarm partners improve reach and access technical support; some prospects faced barriers to building a successful partnership

Benefits of partnering with DigiFarm

1. Reach & economies of scale

- Over 1.43 million SHF registered – 340,000 are active users whilst 42,122 actively access multiple products across the platform
- Relationships with farmers and other product providers
- Lower cost of customer acquisition

2. Access to improved quality of service

- Growing network of DigiFarm Village Agents with direct contact with SHFs on the field to support the implementation of partner services
- With productivity increases and agronomic advice, farmer quality of production increases, with knock-on effects for partners and buyers

3. Network effects

- Improved consolidation of service as the network grows



iProcure has reached 1,200 agrodealers and deployed ~145 iPOS systems; it aims to reach 4x as many agrodealers by 2023



Arifu provides USSD learning content for farmers to access on DigiFarm, with more than 2m interactions

Barriers to partnership

1. **Mismatch of business models** – DigiFarm only enters revenue sharing agreements and tends not to pay upfront
2. **Difference in price points** – DigiFarm always seeks the lowest possible price points for their farmers
3. **Decision-making** – DigiFarm prefers to retain control over operational decisions within a partnership
4. **Data sharing** – Data sharing policies and preferences are not always aligned
5. **Priorities' misalignment** – How DigiFarm prioritises potential partnerships is sometimes not aligned with the partner's expectations



FarmDrive

Farmdrive manages loan books, including application, credit scoring, and repayment. Partnership negotiations discontinued due to a lack of financing



agrocared
nutrient intelligence

AgroCares provides soil testing. Partnership negotiations halted due to a mismatch of business models (revenue sharing vs. product buying model)



Ecosystem Impact | DigiFarm platform is contributing to increased transparency across the agriculture sector and enhanced food security

Competitors

- DigiFarm is contributing to **increased transparency and competitive prices** of services & products across the agriculture sector
- However, the platform could be detrimental for competition due to their **leading and controlling position as the “one-stop-shop” platform** for farmers in Kenya

Customers

- Through DigiFarm, customers have **access to better quality products**
- Enhanced food security

Climate Planning

- The platform has the potential to build **datasets on land use and environmental impact at the smallholder farmer level** that could inform climate decision making
- DigiFarm is improving precision agriculture services based on weather information with different partners such as Arifu and CropIn
- However, **specific climate use of this data is not planned**



Government

- DigiFarm's platform could work with the government to provide agriculture information for **data-driven policy decisions**
- DigiFarm is partnering with the Ministry of Agriculture to provide **“e-subsidies”** to farmers through the platform

Donors







- The platform helps **donors to increase digitalisation and accelerate agricultural transformation** in Kenya
- DigiFarm has been receiving technical assistance from donor initiatives over the past 5 years

Other partners

- **Implementing partners** such as AIS and KLPA **become more tech savvy & digitally enabled** by partnering with DigiFarm
- Additionally, they benefit from DigiFarm's brand awareness and farmers' trust

SUMMARY

DigiFarm is a trusted platform that creates income for SHFs, challenges include the the limits of farmers price control and the lack of agriculture background

Drivers 	<ul style="list-style-type: none"> To draw new customers onto the Safaricom network and widen the customer base in order to increase profits To increase brand awareness, particularly in rural areas To build in-house content and establish a presence as a digital content provider set apart from international competition – With agriculture as a primer and under tapped market to operate in
Key Assets 	<ul style="list-style-type: none"> Digital and telco services held by Safaricom that enable them to create digital products and push information out to farmers, making it cheaper to reach users – They don't have to pay a margin to SMS farmers Safaricom already holds data on existing farmer customers, and has built a strong brand presence and trust
Current Status 	<ul style="list-style-type: none"> The platform has generated traffic and amassed interest and uptake from farmers with 1.4 million registered and 340,000 active users Digifarm is transitioning from a focus on customer acquisition to now an emphasis on upselling and cross-selling products to drive revenue as they enter a new stage of growth DigiFarm's gross margin is not yet positive and it is one of the key deliverables for this year. They are targeting 2023 for achieving break-even
Success Factors 	<ul style="list-style-type: none"> Digifarm has capitalised on Kenya's high mobile penetration and digital skills, plus the widespread use of mobile money Internally, high level buy-in and commitment to success have accelerated development and ensured strategic focus. Donor and technical support since inception has accorded a patient approach to product development Digifarm has pursued partnerships that complement internal capabilities, and bring access to technical and donor support
Challenges 	<ul style="list-style-type: none"> Digifarm's lack of agriculture background and team experience can limit the extent to which products are tailored to end-user needs, incorporate issues of land access, or gear towards high value crops Negotiation with services providers on behalf of farmers limits their possibility to negotiate a better price with service providers Digifarm has less financial control over the access to finance products given they are not ultimately a bank
Lessons Learnt 	<ul style="list-style-type: none"> Build expertise in areas such as commodities trading to understand agricultural market pricing Building on the brand and value of a host organisation carries reputational benefits to a platform Build partnerships early on in product channels with partners who know the agriculture landscape Design the product rollout plan and minimum viable product according to end-user needs based on feedback from farmers – they could increase the amount of feedback gathered and the use of customer lens int the design process

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UNDERSTANDING THE PLATFORM

FMN's platform is still in the design phase, and our insights touch on some features that have not yet been fully determined



Overview | FMN's platform is being developed by its subsidiary GAIL (Golden Allied Industries Limited) who provide inputs to farmers



Note: ¹ Extension services include agronomic services and farm management
Source: Dalberg interviews and analysis, 2020



VP | The platform will help farmers to improve their productivity with agronomist support and access to inputs from GAIL

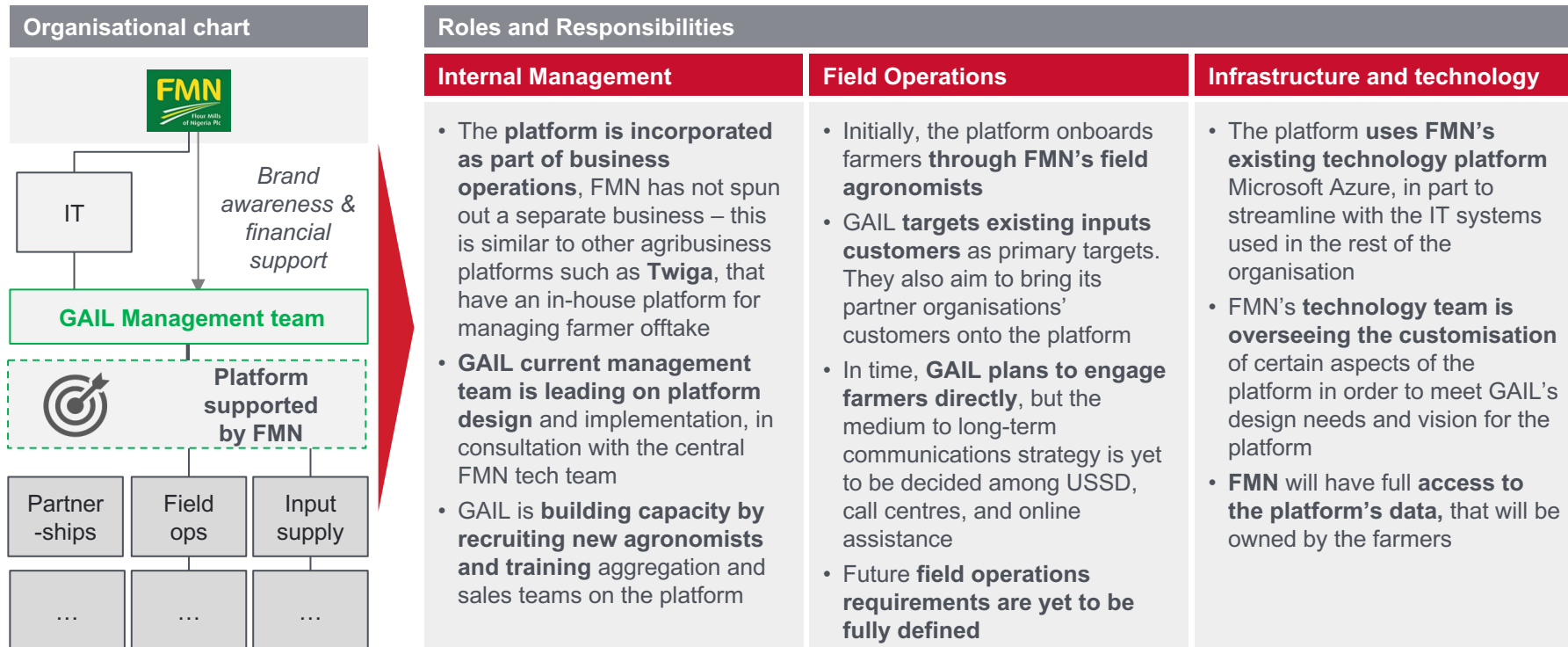
Value Proposition: Support to SHFs to increase productivity and quality produce by providing agronomist advice alongside a “one-stop-shop” platform for farmers to buy inputs, seeds, and fertilisers at a competitive price

Stakeholders	Value Proposition	Products
1 Farmers	<ul style="list-style-type: none"> Improve productivity based on an assessment and agronomist advice 	Products in development
		Customised productivity report FMN recommends productivity improvement opportunities for the farmer based on a survey, focused on input selection and crop varieties
		Matching service to Agronomist Agronomist from FMNs' team supports the farmer and recommends input selection
2 Agrodealers	<ul style="list-style-type: none"> Access to farmers within the FMN network Inventory management and supply availability of FMN (GAIL) products in each location 	Connection with Agrodealer Farmer buys seeds & fertiliser from the agro-dealer who purchases the inputs from GAIL
		Products under consideration
3 FMN	<ul style="list-style-type: none"> Manage its supply and manage SHF market channels Improve quality of produce for off-take 	Learning content Information, learning content and agronomic advice pushed to farmers to help improve productivity
		Mapping farmers produce The platform will map production in different farm locations to track produce inflows to FMN
		Market access FMN could buy farmers produce through the platform
		Potential future products
		Credit FMN could offer inputs on credit

Note: A key driver to build the platform is internal, therefore FMN included as a key stakeholder
 Source: Dalberg interviews and analysis, 2020



Operations | Initially FMN's agronomist will interact with the platform; long-term channel strategy and operational considerations are yet to be defined



Since the platform is in the design stage, **product roadmap, medium to long-term channel strategy and operational considerations are yet to be defined**



Partnerships | FMN is in the early stages of platform partnerships; they are looking for a variety of providers but face lengthy procurement processes

FMN Potential Partners

Existing partners:



Extension services partners- provide agronomic services and farm management



Weather information partners -provide weather forecasting services and additional weather information

Potential digital partners:



Aggregation partner – provide support in aggregation



Insurance partners -provide insurance to farmers

Potential field partners – Still need to be defined

Partnership approach & status

Partnership approach

- FMN has a **product roadmap** that determines the **priority of potential partners**
- FMN's current and potential partners include new **partners suited to serve on digital platform as “digital partners”**, and **partners with working relationship with FMN that move onto digital platform as “field partners”**
- **Partnership selection and onboarding** follows the general process FMN applies to all business partners, which is **lengthy**
- **Partnerships approach** and preferred revenue model are not yet defined

Partnership status

- **FMN is partnering with AgroMall** to support on the ground engagement with farmers and **Ignitia**, who provide weather info
- FMN has existing offtake and **implementation partnerships with farmer organisations in local areas**, which could be brought onto the platform
- The platform is still in early stage. **FMN plans to identify and bring other partners** – some are in discussion, and others are yet to be identified



Sustainability | The platform is integrated into core business of GAIL & FMN, and contributes to greater input sales, efficient operations, and in greater sourcing

Revenue drivers & Financing

- 1 The platform **resides within FMN's subsidiary of GAIL**. *The platform's cost is part of GAIL's P/L, and the platform does not have its standalone P/L.*
- 2 GAIL's core revenues come from input sales to farmers; **the platform should result in higher sales and more efficient operations**. Thus, the platform is financed internally with no direct revenues (at least initially); the same is true for Twiga's platform
- 3 In the future, **the platform could incorporate other revenue generating activities** such as weather services, and access to market via FMN's core business activities of produce offtake, processing and sale

Cost drivers

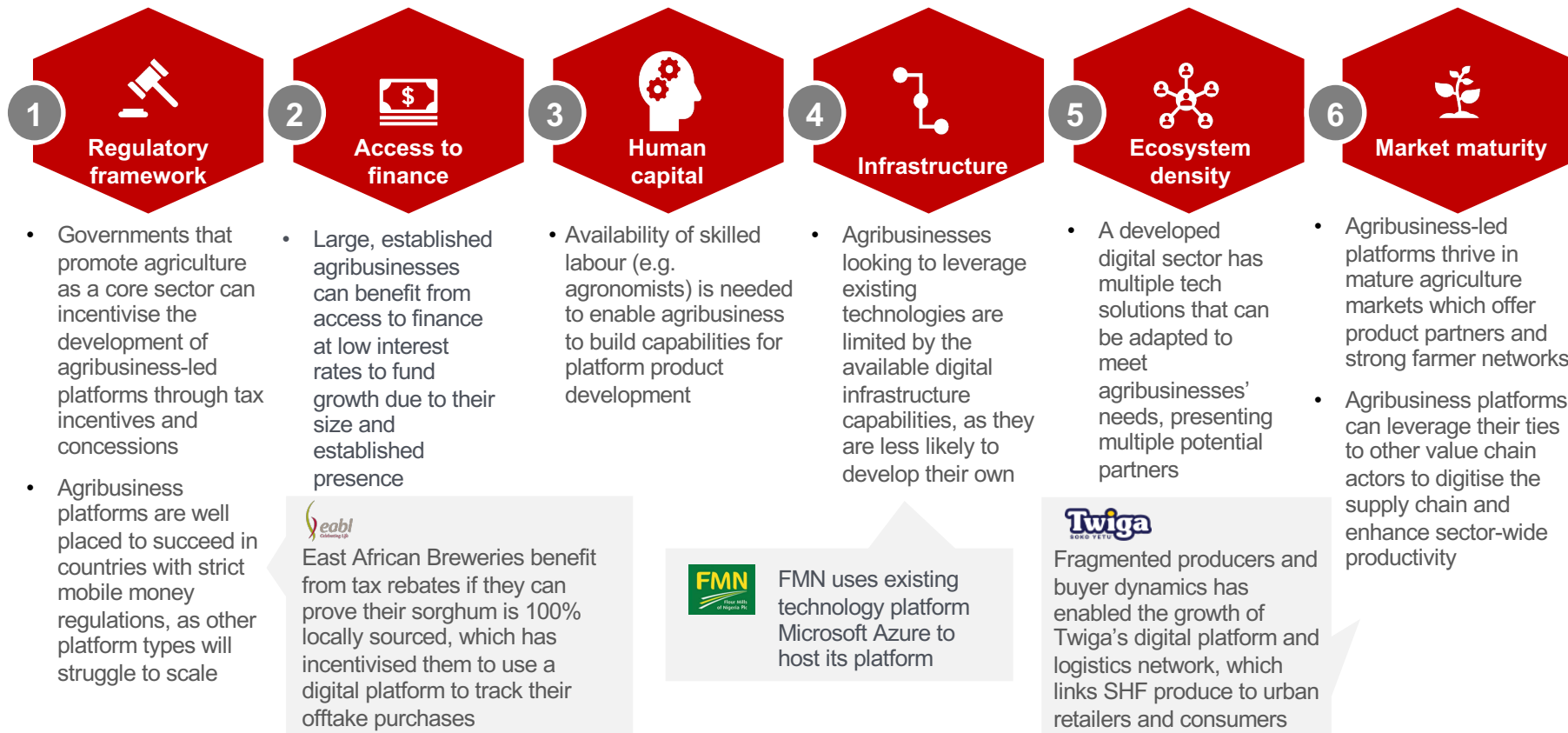
- 1 **Technology development and management** – cost associated to hardware and network
- 2 **Hiring expertise** – such as agronomic experts and associated overhead costs
- 3 **Training costs** – for agronomists, the aggregation team and the sales team

Since the platform is in the design stage, these costs are not yet quantified

Key risks

- 1 **Lack of customisation** – the digital solution sits on an existing platform with limited flexibility to customise the platform. Therefore they might have limited ability to tailor technology design for customer
- 2 **Lack of end user engagement** – initially, the platform is agronomist-facing and has limited consultation with farmers to incorporate their needs into design
- 3 **Lack of digital literacy** – within co-operatives, farmers, and more traditional organisations such as input distributors might limit the scalability of the platform
- 4 **FMN's large size** – makes it hard to streamline communication and ensure every relevant department is adequately informed and engaged. This could result in missed opportunities due to lack of coordination

Enabling Environment | Agribusiness-led platforms are likely to thrive in mature agriculture markets which offer partners and networks that enable growth



IMPACT OF THE PLATFORM



SHF Impact | FMN is planning to have 150k farmers onboarded in the platform, who will benefit from improved access to productive inputs

Reach



0 farmers to date -
the platform is in
design phase

Target 150k+
smallholder farmers
subscribed to the
platform by the end
of 2021

Target 50% women

Footprint



**Presence in
Nigeria**

Maize is the pilot
value chain – with
expansion
planned

SHF productivity impact



Markets

- Multiplier effect from **improved incomes and connections** to market for rural communities in Nigeria



Skills

- Potential to improve farmers understanding of productivity interventions on their farm by access to **customised productivity reports and agronomist advice**



Land

- Potential to address mismatch in land access by leasing land and **creating job opportunities in agriculture to farmers who are not landowners**, through the AgroMall partnership



Capital and infrastructure

- Credit is not currently offered but could be provided in future



Climate Smart Agriculture (CSA)

- Potential for **improved access to climate practices and technologies**
- No specific initiatives or direct impact planned



Gender

- Potential to empower female farmers in partnership with AgroMall by **improving access to land for women and overcoming cultural/religious barriers**
- The pilot aims to work with 50% women farmers, which will drive the platform to engage with more female farmers

FMN will track some key KPIs to track the platform's impact, including number of platform visits, investment in inputs and yields, increase in income due to better agricultural practices, access and availability of inputs when farmers need to plant



Innovators Impact | Innovators gain from FMN's scale, reputation & diversified resources; barriers include unclear platform design and long negotiation timelines

Benefits of partnering with FMN

1. **Scale & reach** - FMN provides innovators with direct inroads to their target market and a wide network of farmers
2. **Reputation and credibility** - working with FMN signals to the market that innovators have a strong proof of concept and are competitively positioned to operate at scale
3. **Robust agricultural supply chain** - FMN has developed strong relationships with ecosystem actors and can support innovators to engage with other actors in the field to expand their work

Current Partners say ...



- Ignitia stands to gain exposure from working with such a large player in the sector
- This partnership would widen Ignitia's reach whilst establishing themselves as a key player in the precision agriculture space



- AgroMall believes that FMNs brand could help to unlock credit to SHFs

Barriers to partnership

1. **Unclear platform design** - FMN is still designing key aspects of the platform, making it difficult to align on a clear vision with innovators
2. **Long procurement processes and extended trial period** - negotiations across multiple FMN entities can delay partnerships. FMN have also requested extended trial periods¹ on products and services which can be challenging for young tech innovators
3. **FMN resets their partner selection process every season** - making partnership a heavy investment for a short duration
4. **Platform's decision process to select partners is not yet defined** - however, it is expected to follow FMNs processes

Current Partners say ...



- Discussions to set up Ignitia's pilot program took one year before being finalised



- Extension services providers and aggregation partners need to have liquidity, so that they can fund inputs and support farmers



Ecosystem Impact | The platform is likely to improve outcomes for partners and consumers, but potential impact for government and climate is unexplored

Competitors

- FMNs platform could be detrimental for competition due to the **consolidation of FMN** as the leading food and agro-allied company in Nigeria. This could have a negative impact on the farmer if pricing is controlled by FMN

End Consumers

- Through FMN, customers will have access to better quality products
- Enhanced food security

Climate Planning

- The platform has the potential to provide quality **data on land use and inputs use for environmental modelling**. This data could improve data-driven decisions on climate policy and refine climate resilience programmes
- However, **no specific initiatives** are planned

Other Partners

- Implementing partners without tech skills could become **more tech savvy & digitally enabled** by partnering with FMN
- FMN is planning to build partnerships with field organisations to increase farmer reach



Government

- FMN's platform could work with the government to **inform agriculture data about production volumes and yields by location**, informing resource allocation towards local food production, value chain promotion, and food security
- However, **no specific initiatives** are planned

Donors

- The platform could help donors **to receive ground data and allocate funding** to accelerate in the regions and value chains most needing support
- FMN receives technical assistance from some donor initiatives

SUMMARY

FMN aims to launch a platform that strengthens the existing agribusiness, to do so they will need to build a corporate vision with a product roadmap from the very beginning

Drivers



- Expanding and **strengthening the existing agribusiness** of providing input
- Improving **quality of produce for offtake**

Current Status



- The platform is **still in development**, its potential is untested - the platform's channels and set of services provided **are still unclear**
- The platform **uses FMN's existing technology**, in part to streamline with the IT systems used in the rest of the organisation
- Conversations with **potential partners are in the early stages**
- FMN target is to reach **150,000 farmers by the end of 2021**

Key Assets



- **Significant market buying power** and **brand recognition** among farmers stemming from FMN's scale of operations
- **End to end value chain activities** and multiple services to farmers provide foundational knowledge to inform product design
- **Established relationships with farmers** from years of field operations in input provision enables quick onboarding of farmers
- Existing **agronomist networks to reach the field** and provide customised solutions for farmers

Success Factors



- **Building on the existing analog network** and taking a flexible approach to **mix digital technologies with existing agronomist networks**
- Staying **flexible to the emerging learnings during the development phase** enables GAIL to continually iterate and build on their initial platform concept

Challenges



- **Coordination across multiple departments and the integration of the platform across FMN's different entities** is still unclear, posing a risk to the effectiveness of the platform in improving internal management systems
- **Lack of customisation** – The limited farmer engagement could lead to a lack of user-lens in product development

Recommendations



- Build **corporate vision with product roadmap** that play to organisational strengths such as market buying power & brand recognition
- **Coordinate for effective execution** that leverage large organisation's asset
- Reviewing partnership approach to bring **partners with aligned vision and fit with the roadmap**
- Bring **more farmer lens in product development**

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UNDERSTANDING THE PLATFORM



Overview | Bank-led platforms provide financial products, bundled with other products and services to improve farmer productivity and income (1/2)



Bank-led platforms have varied structures and drivers. This section compiles high-level learnings from four bank-led platforms at different stages



Overview | Bank-led platforms provide financial products, bundled with other products and services to improve farmer productivity and income (2/2)

Platform

Platform drivers

Platform offerings



Uganda

OneFarm*

- Expand reach to unbanked SHF
- Link agriculture players (e.g. input suppliers, off-takers) through a digital network

OneFarm will provide:

- **Credit via input loans**
- **Insurance and savings**
- **Market access**
- **Agronomic services**



Nigeria

SABEX 1*; SABEX 2*

- Increase financial service provision to farmers and other agriculture players
- Cut out middlemen and ensure SHFs get maximum returns
- Reduce post-harvest loss

SABEX 1 supports agro-dealers with:

- **Input provision** delivered to the agro-dealership
- **Credit** to stock inputs

SABEX 2 supports farmers with

- **Credit** for loans against harvest
- **Market access**
- **Warehousing** to store produce



Rwanda

Smart Nkunganire System (SNS)*

- Increase farmers' access to finance
- Digitise the government's national agricultural subsidy program

BK TecHouse provides:

- **Government subsidised input provision** for farmers with last mile delivery
- **Credit** via loans to farmers and agro-dealers to purchase inputs
- **Digital order processing** to help agro-dealers more effectively manage stock



VP | Banks offer financial solutions linked to improving farmer productivity and incomes which enhance loan repayment and customer life-time return

Value Proposition: Banks offer loans to farmers, so they can **invest in quality products and services to raise their farm productivity and income**. For example, loans against harvest to encourage farmers to store their harvest and wait for **better market prices to achieve higher returns**.

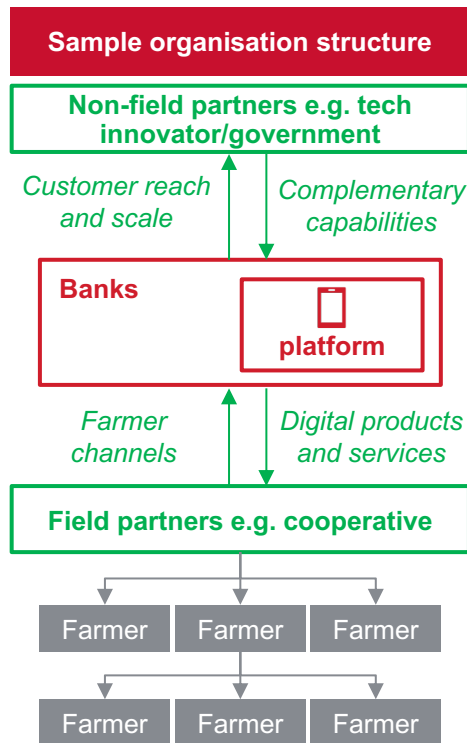
Stakeholder	Value Proposition	Products		Implementing banks
1 Farmers	<ul style="list-style-type: none"> Financial products to invest in farming activities Bundled value-add services to increase productivity and incomes 	Credit	Tailored loan products based on their needs and platform usage to invest in quality products and services	
		Savings	Savings accounts and support for farmers to earn interest and save for the future	
		Input provision	High quality inputs distributed to farmers and local resellers to increase farmers' productivity and yield	
		Learning and information	Digital content to upskill farmers with good agronomic practices, often supplemented by field agents	
2 Agro-dealers*	<ul style="list-style-type: none"> Financial products to procure stock Supply chain management solutions 	Market access	Market linkages between farmers and end consumers or off-takers, removing intermediaries and increasing farmer income	
		Logistics and warehousing	Transports inputs/harvests from producers to markets, and/or stores goods so farmers can get better prices at later dates	
		Insurance	Subsidised agri-insurance, sometimes in partnership with insurers or tech innovators, to protect farmers from harvest loss	

KEY: ■ Primary product ■ Additional products

Banks lead with credit and/or a savings products as their core offering, adding a combination of supplementary products as the platform develops



Operations | Banks often use dedicated internal teams to build platforms, supplementing their capabilities through partners for field operations



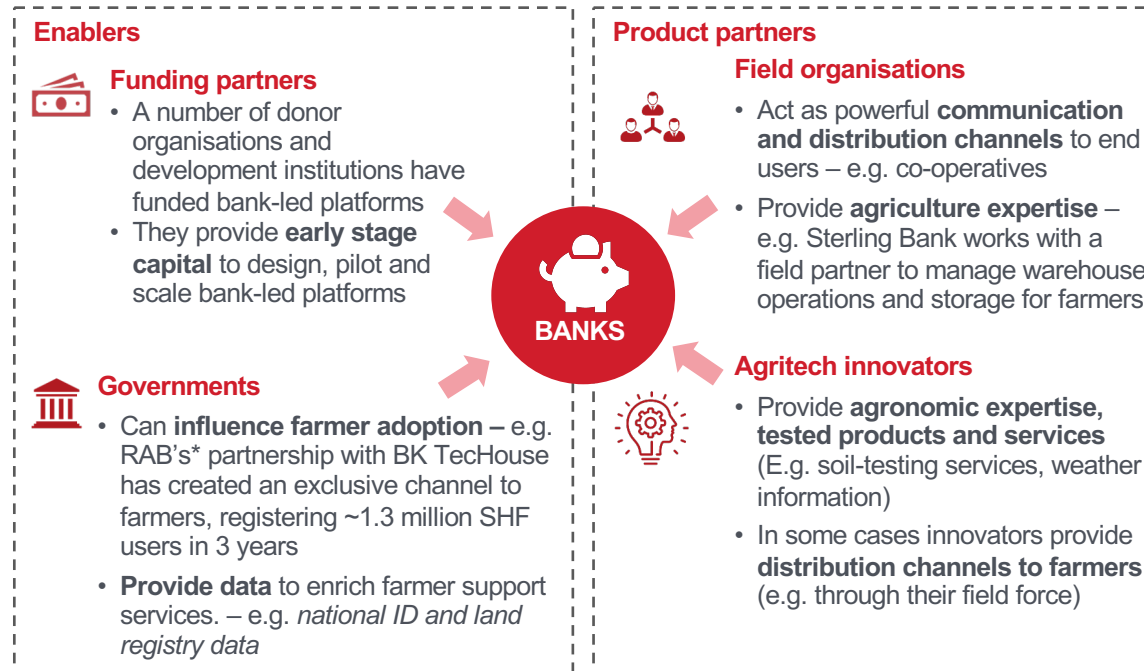
Roles and Responsibilities		
Internal management	Field operations	Infrastructure and technology
<ul style="list-style-type: none"> Banks often use dedicated units or distinct innovation arms, leaving room to experiment whilst benefiting from the bank's financial and reputational assets <ul style="list-style-type: none"> <i>BK Techouse runs as a separate entity under the BK Group. Sterling manages SABEX within its agriculture department.</i> Banks' internal capabilities include data analytics, partner outreach/management, and technology development Banks aim to recruit agronomists to support product design in future 	<ul style="list-style-type: none"> Banks lack agronomic field expertise and rely on partners and third-parties for agriculture specific field capabilities <ul style="list-style-type: none"> <i>SABEX 2 uses AFEX's warehouse and storage facilities to collect and aggregate produce. SNS relies on an external logistics provider to distribute inputs</i> Some banks combine their rural agent networks with partners' field forces to run farmer onboarding and support 	<ul style="list-style-type: none"> Banks prefer to develop their own platforms in order to retain control and minimise external liability risks Most platforms are designing low-tech platforms to reach rural farmers. SNS runs on USSD, but SABEX 2's web-based tech currently excludes feature phone users. However, they are now adapting the platform to improve low-tech functionality Personal data ownership and regulation varies by market

Banks aim to keep the bulk of their operations in-house to maintain oversight and minimise risks. However, they work with external partners to fill their knowledge gaps and provide new capabilities – e.g. agronomic expertise and field services



Partnerships | Product partners expand the banks' ability to innovate and build agriculture expertise; however they approach partnerships cautiously

Example bank partnerships



Partnership approach and status

Partnership approach

- Banks pursue partnerships to expand their capabilities**, mostly in in agronomic expertise and field presence E.g. AFEX provide commodities trading and warehousing on Sterling's SABEX 2
- Banks approach partnerships cautiously** to minimise risk. E.g. Stanbic aims to partner with multiple input providers to diversify risk
- Banks are exploring various revenue models¹** – e.g. revenue sharing and purchase agreements
- Banks often seek close relationships with government** due to industry regulations
- Some banks seek partnerships to **secure funding**

Partnership status

- Except for BK TechHouse, **most banks are at early stages of partnership development**, and focus on core capabilities first
- Engagement with tech innovators varies** – e.g. AFEX provides Sterling trading and storage services to enrich SABEX 2, whereas BK TechHouse does not engage tech innovators for SNS

Banks seek partnerships to complement capabilities, starting with agronomic expertise and field presence. Core platform functions such as technology infrastructure development and financial services remain in-house.

*Note: RAB - Rwanda Agricultural Board | ¹ Stanbic will test a commissions-based revenue sharing agreement; Sterling does not split AFEX's revenues from warehouse and storage services



Sustainability | Returns from financial services products are the main revenue driver, whilst technology and customer acquisition are major cost factors

Revenue drivers

- 1 **Interest and principal repayments** on loans products (e.g. input loans, or income smoothening credit products) sold through the platform
- 2 **Savings deposits** from users' money stored on the platform's virtual wallet
- 3 **Transaction fees** on purchases made on the platform, or facilitating payments made on the platform

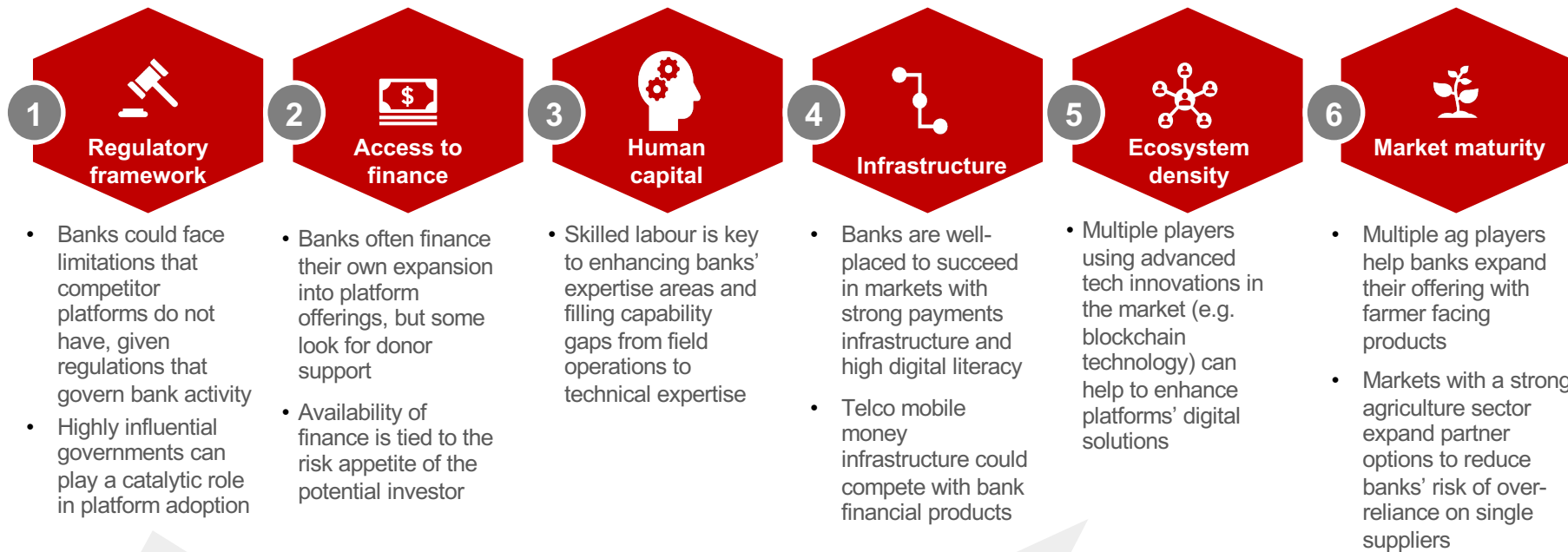
Cost drivers

- 1 **Technology costs** for platform development, technology maintenance, data analytics, and integration of new services into the core system
- 2 **Field operation costs** such as agent commissions and associated field visit costs
- 3 **Marketing costs** to drive customer acquisition and retainment
- 4 **Loan processing costs** such as assessment and loan servicing

Key risks

- 1 **Risk aversion may stall development** – banks' hesitancy to adapt their ways of working combined with risk aversion means that banks are evolving slower than other platforms and taking time to evolve the full bundle of products. Acute risk-aversion could also cause bank decision-makers to divest in platform development early if returns are not made
- 2 **Typical credit risks** could lead to default. These risks include the misapplication of cash loans compromising farmers' repayments, or poor/inaccurate data leading to misinformed loan disbursements
- 3 **Over-reliance on channel partners** to build/support farmer relationships could lower banks' ability to control their customer relationships; disengagements with field partners could weaken touchpoints to end users
- 4 **Low digital adoption and literacy** – for co-operatives, farmers, and more traditional organisations – could hinder uptake depending on the markets of operation

Enabling Environment | Bank-led platforms are well placed to succeed in ecosystems with light-touch regulations and numerous agriculture players



BK Techhouse's partnership with RAB has enabled nationwide adoption of their e-subsidy product in Rwanda



SABEX 2 leverages blockchain technology to facilitate loans and trades of produce in under 10 minutes, providing swift, reliable and transparent services to farmers



SABEX 2 leverages AFEX's digital commodities exchange services and their on-the-ground warehouse and storage services

IMPACT OF THE PLATFORM






SHF Impact | Bank-led platforms are nascent but hold promising potential to transform livelihoods through financial services offered to farmers



Reach

Current and projected reach of various bank-led platforms
No. of SHF

Bank	Phase	Current reach	Target reach
 Stanbic Bank <small>A member of Standard Bank Group</small>	Feature testing	700 SHF	1 million SHF in 3 years
 Sterling	Pilot	N/A	800,000 SHF in 1 year
 TECHHOUSE <small>POWERING INNOVATION</small>	Roll out	1.3 million SHF	N/A

Note: Platforms have varied targets; reach cannot be compared against each other because they are at different development stages

SHF productivity impact



Markets

- Access to storage can help farmers to get **more favorable prices** as they can choose when to sell produce



Skills

- **Improved financial literacy skills**
- **Learning content** can help to improve productivity



Land

- Banks **tend not to tackle land issues** as they work with farmers who own land or have access to land



Capital and infrastructure

- Access to **credit to invest in inputs, technology and labour**
- Access to storage facilities to reduce post harvest losses



Climate Smart Agriculture (CSA)

- Loans can be used to buy CSA technologies such as **solar water pumps to improve yields and increase climate resilience**
- There are **no CSA specific-loans** offered at present



Gender

- Women are **more likely to invest in income generation and are more likely to repay loans** – but bank outreach to women needs to be intentional to recruit and support women

Banks are well positioned to improve financial access whilst increasing productivity outcomes at scale by providing ways for farmers to invest in improving yields and income



Innovator Impact | Banks provide reach, competitive financing, and positive brand association; barriers include duplicative efforts and misaligned objectives

Benefits of partnering with Bank-led platforms

1. **Scale** through access to more potential customers
2. **Increased uptake by tying innovators' products to loans**
Bundling products with credit expands innovators' potential customer base, e.g. through payment plans
3. **Reduced exposure to high-risk customers** by leaning on banks' strict due-diligence when evaluating potential customers
4. **Brand association with reputable institutions** brokers trust between customers and new or relatively unknown innovators
5. **Potential investment** by banks in innovators' enterprises would help them to scale and signal to other investors to follow suit

Banks say...



BK TechHouse noted that agri-tech innovators often have niche markets but could benefit from banks' reach to target more customers and increase their impact

Barriers to partnership

1. **Duplicative efforts** would make partner roles redundant (e.g. Sterling and Binkabi below)
2. **Misaligned goals and expectations about the speed of expansion** create divergent approaches towards growing the platform. Banks' calculated risk-aversion and tech innovators' fast-paced agility could lead to a mismatch in ways of working
3. **Stringent regulatory requirements** could make banks less attractive to potential innovator partners

Banks and innovators have divergent attitudes towards risk and organisational culture. This could balance calculated risk-taking with agile testing and development, or lead to partnership breakdowns



Ecosystem Impact | Banks can leverage their role as financial actors to spark investment across the sector; platform data can help to improve decision-making

Competition

- Drive **informal lenders** to improve their rates and adhere to regulations
- Drive **traditional banks** to develop more farmer centric finance offers

Consumers

- Enjoy **more choice** from increased quantities of produce as well as **lower market prices**
- Improved **nutrition** from higher quality produce

Climate planning

- Data from platforms could help to inform **environmental modelling on inputs and land use**, and the uptake of CSA technologies
- However, no platforms consider this at present

Other partners

- Potential to **spark public and private investment** by sending signals on market readiness
- Potential to **increase capital flows through supply chain financing** along the value chain to agro-dealers, input suppliers, off-takers, wholesalers and retailers



Government

- Potential to **improve resource allocation** by identifying and targeting financial support towards the underserved segments
- Currently, SNS offers the Rwandan Agricultural Board dynamic data on the input subsidy disbursements at local and national levels

Donors

- Potential to **improve technical support programs** by targeting finance products to low-income farmers
- Currently donors are mainly engaged as funding partners, not beneficiaries of platform data

SUMMARY

Bank experiences demonstrate their risk averse nature, and highlight the need to build products that address user needs

Drivers



- To **expand the bank's customer base** by catering to unbanked demographics – e.g. underserved rural farmers
- To **de-risk agri-business lending** by providing financial products across the agriculture supply chain to expand income generating activities – e.g. providing working capital
- To **lead the market in financial innovation**, rather than be left behind in new developments – e.g. mPesa

Current Status



- Banks **anchor their platforms on credit** (mostly input loans) and supplement them with other services as they evolve e.g. learning content, market access
- Being risk-averse, banks are typically at an **earlier stage of development** than others pursuing agriculture as part of their core mission
- Banks have a **preference for keeping activities in-house**, only engaging with external partners when there is clear capability gap

Key Assets



- Core mission to provide financial services to customers through **savings and loan products**
- Considerable **financial resources** to invest in key strategic initiatives
- **Well established relationships** with agriculture ecosystem actors, and often existing data on their financial needs – e.g. Stanbic Bank has focused on commercial agriculture enterprises

Success Factors



- **Clear leadership, vision, and a mandate to innovate** from the highest level – e.g. Agriculture is 1 of 5 strategic focus areas for Sterling
- **Partnerships with innovative organisations** and/or dedicated **innovation departments** to build agriculture capabilities, build field operations and execute on their mandate
- **Incentives and donor support to encourage entry into the sector** and de-risk agriculture portfolios

Challenges



- **Limited experience in agriculture**, especially dealing with farmers and gathering the required data to inform agricultural advice. This could hinder their ability to design products that meet farmer needs
- **Risk-averse nature** leads to slow moving developments which risk losing market share and/or the scaling back of investment in the platform

Lessons Learnt



- Use **multiple partners**, often providing the same product (e.g. inputs) to help reduce the reliance on just one player and **mitigate risk**
- House platforms in teams outside the banks 'business as usual' departments **to foster innovation** and develop new capabilities
- Invest in developing products that **address end-user needs** to increase likelihood of success and achieve **high rates of repayment**

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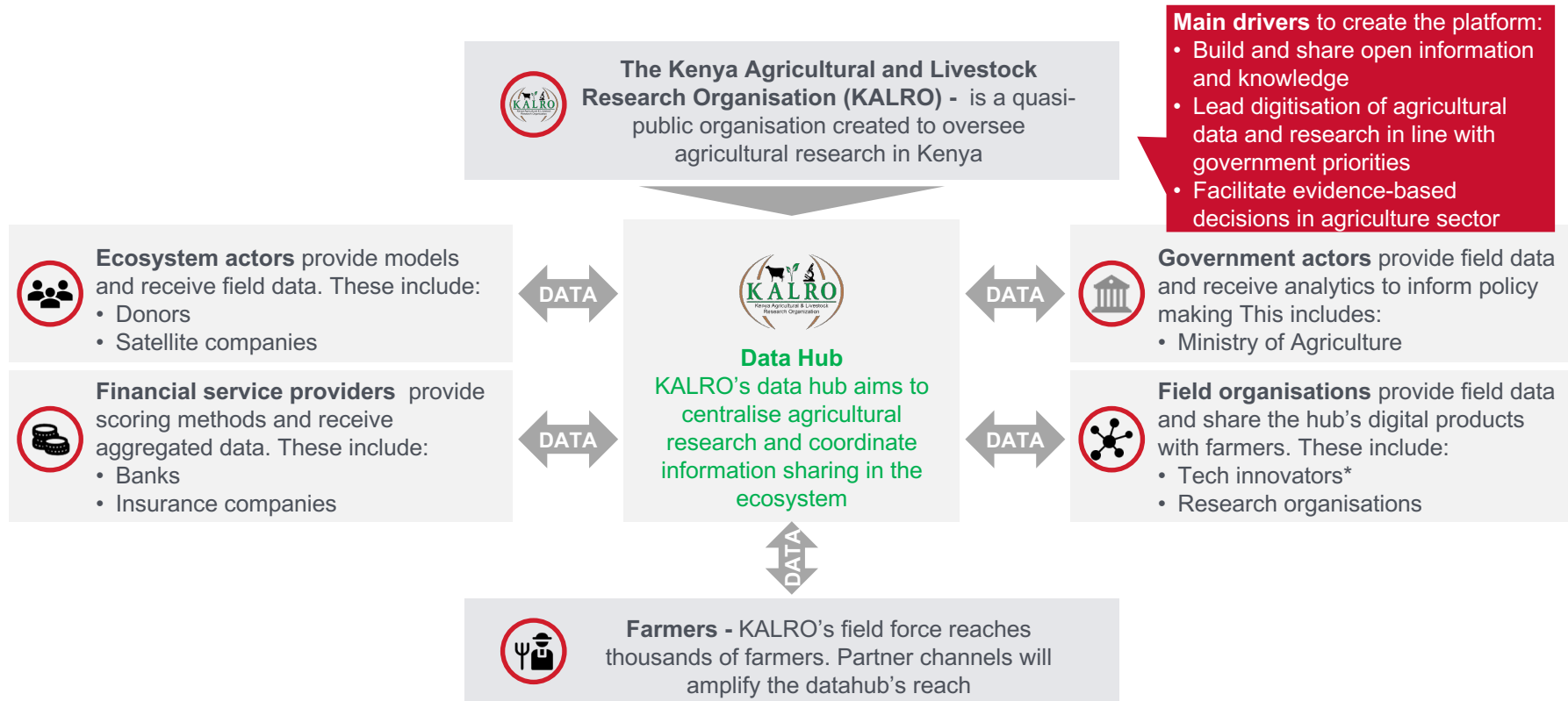
III. Banks

IV. KALRO

UNDERSTANDING THE PLATFORM



Overview | KALRO's data hub will receive and aggregate data, centralising research and sharing information across Kenya's agricultural ecosystem



Note: (1) The platform is still in development and not all products have been rolled out yet. (2) *The majority of tech innovators are field organisations, but some FSPs and satellite companies could also be tech innovators (3) Government-led platforms can take varied forms (e.g Ethiopia's Agricultural Transformation Agency focuses on direct product delivery as opposed to data partnerships). This blueprint focuses on KALRO's specific model

Source: Dalberg interviews and analysis, 2020



VP | KALRO offers data products to multiple users that inform decision making and planning, whilst offering agronomic learning content to farmers

Value Proposition: Open digital products that present data on food security, agronomy, environmental modelling, and financial services. Insights are packaged to make information more digestible for users' needs, including specific farmer-focused products to help improve productivity and practices

Stakeholders	Value Proposition	Products	Status
1 Ecosystem actors (e.g. policy makers, donors, satellite companies)	Accurate field data to inform national planning, program development, and help improve the range of insights from existing models	Food balance sheet (FBS) Tracks Kenya's food supply and demand , incorporating yield estimates for planning	Developed
2 Field and farm (e.g. tech innovators*, research organisations, farmers)	Actionable agronomic information for farmers - and field organisations to share with farmers - to increase productivity and improve incomes	Livestock/crop suitability mapping Maps areas that are suited to specific crops and livestock	In progress
		Modelling environmental changes Models climate change effects on agricultural ecosystems	In progress
		Early warning alert Signals impending disasters , food market interruptions, and their expected scale	In progress
		Weather/crop monitoring Provides weather forecasts and agronomic advice to farmers based on crop and location	Due for release
		Livestock/crop selector Advises farmers on crop and livestock breeds based on map suitability	Developed
3 Financial service providers (e.g. banks, insurance companies)	Data on farmers and farming activity to inform loan decisions	Agri-coach Advises farmers on the whole value chain, building on inputs from other digital products	In progress
		Credit scoring Assigns credit scores to farmers to access credit, leveraging agri-coach metrics	In progress

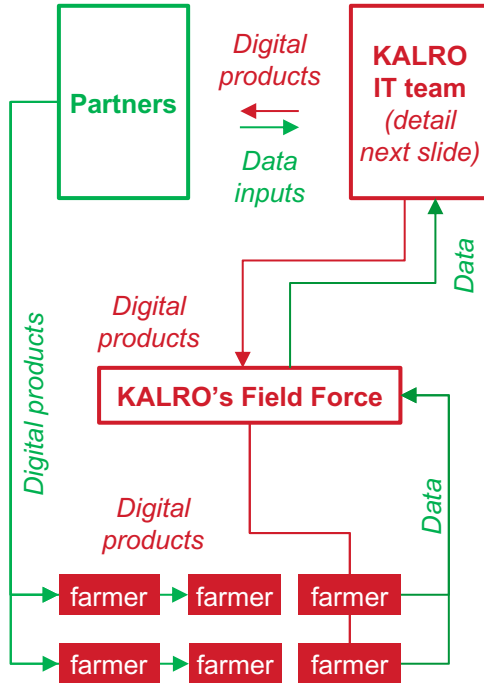
The big data platform and by extension the data hub was commissioned late 2019

Note: The majority of tech innovators are field organisations, but some FSPs and satellite companies could also be tech innovators
Source: Dalberg interviews and analysis, 2020



Operations | KALRO's IT team leads the data hub, which uses in-house infrastructure; field operations through KALRO and partners are not yet clear

Organisational Chart



Roles and Responsibilities

Internal management

- An **in-house IT team** designs and runs the platform
- **Visionary IT leadership** has been critical to amassing support from partners, donors, and the government
- A **small management team** supports partner outreach, data input and product output to partners. KALRO plans to expand its partnership and data management teams
- By contrast, Ethiopia's Agriculture Transformation Agency (ATA) chooses a lean in-house management team, whilst **service providers** implement projects

Field operations

- The datahub's field activities take two forms:
 - **Data input collection** from KALRO's field force, partner organisations, and county governments to build products
 - **Disseminating digital products** to farmers via KALRO's field force and partners' networks
- The datahub team has **not clearly planned data collection and dissemination**, either with partners or internally via KALRO's field force of 300 agronomists

Infrastructure and technology

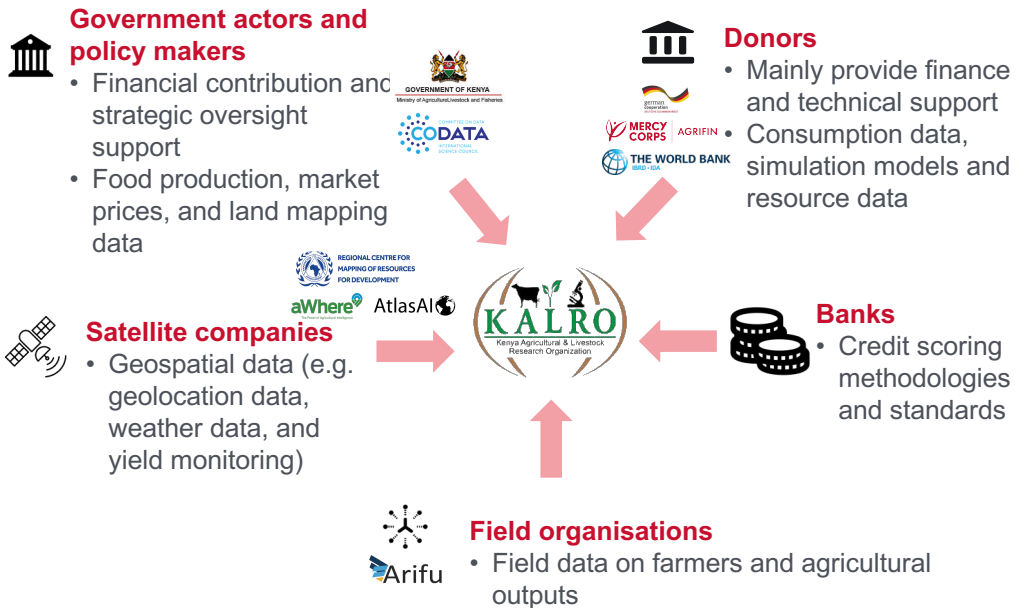
- The datahub uses **in-house technology infrastructure** and a 'big data' system
- **Infrastructure was financed by the World Bank** as part of a \$10million investment into developing an integrated weather and market information system under the Kenya Climate Smart Agriculture Program
- The big data system runs **on-site iPerformance computing** and data analytics software, with an **internal team running maintenance**

KALRO's model anchors on input and collaboration across multiple partners to build and distribute products. An in-house team leads design, set up and management of the datahub



Partnerships | KALRO uses data inputs from multiple partners, layering information from multiple sources to build digital products

KALRO's partnerships provide data inputs and technical support



Partnership approach and status

Partnership approach

- KALRO engages multiple potential partners in discussions through a **non-exclusive, wide-net** approach
- KALRO builds **non-financial, data sharing partnerships** that follow **bilateral agreements**, formalised via MoUs
- KALRO engages multiple potential partners in discussions, taking a **'wide-net'** approach to pursuing opportunities
- Some partners serve a dual role**, providing data inputs and acting as a product channel to farmers
- Partnership modalities differ among government-led platforms.** KALRO relies heavily on field partnerships whereas ATA works with contracted service providers

Partnership status

- KALRO reports to the **Ministry of Agriculture** and works closely with government county offices
- KALRO is part of **data sharing groups** such as CODATA* and the World Bank's DAT* group of tech innovators
- KALRO is **working with tech innovators** such as Atlas AI, aWhere and Arifu through bilateral agreements, with more in the pipeline

KALRO does not market existing partner products through their channels, but instead layers partner data inputs into their consolidated product offering, and offers partners free use of those products through their channels



Sustainability | The datahub relies on financial support from donors and the government; key risks include low capacity, communication, and data policy

Revenue drivers and financing

- 1 **The datahub is financed by external actors.** The World Bank allocated \$10m for developing an integrated weather and market information system under the Kenya Climate Smart Agriculture Program. Other financiers include Mercy Corps AgriFin, and the Kenyan government
- 2 KALRO also receives **in-kind support** – e.g. Atlas AI offered staff on secondment
- 3 **Currently, KALRO does not intend to generate revenues from the datahub**, which will be an open-source, public good

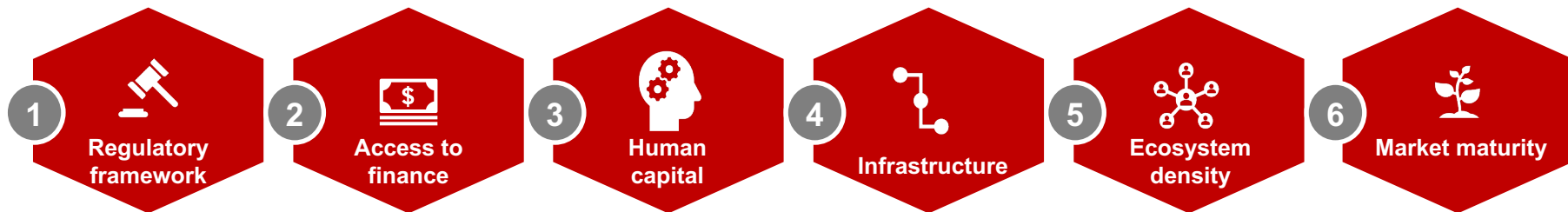
Cost drivers

- 1 **Internal team** – The datahub requires specialised skillsets from management professionals, agronomists, data analytics and technology experts including infrastructure and software engineers
- 2 **Technology infrastructure and maintenance** – Physical IT equipment, storage space, electricity and cooling and technical upkeep
- 3 **Field operations** – Farmer outreach can be expensive. Public org. have a clear mandate with seamless flow of information to Counties
- 4 **Data Sources** – Some organizations charge for access to their datasets, but KALRO will provide most datasets for free with only a requirement for prepare attribution of the source

Key risks

- 1 **Internal capacity** – Scaling is constrained by limited internal resources, and an insufficient disposable budget to attract new talent. An internal evaluation determined that KALRO would need to increase its agricultural researcher numbers by 40 percent to fulfil its research potential. Despite this, and the recent hiring of some interns on one-year contracts, KALRO's researcher capacity is slowly declining and will continue to do so based on the departure and retirement of senior researchers and the ongoing long-term hiring freeze
- 2 **High-quality research skills** – Given that a significant number of senior researchers in the government and higher education sectors are nearing retirement age, it is crucial to avoid losing research capacity and maintain high-quality research skills
- 3 **Limited funding** – Given declining government funding and the government's reallocation of commodity-levy funding to non research related activities, KALRO was forced to use reserve funding during 2015–2017 to meet its expenses

Enabling Environment | Government-led platforms grow in markets with strong government involvement in agriculture, where they can address systemic challenges



- Markets with strong government involvement in agriculture are likely to see government-led platforms as first-movers
- Regulations can enhance legitimacy and credibility

- Donor and govt support often subsidises platform development – but may depend on available funds and any donor limitations in specific markets
- In-kind support can contribute to capacity building

- Resource constraints may limit the ability of government-led platforms to hire skilled labour

- Digital and telco infrastructure in some markets is dominated by government entities, putting government-led platforms in a strong position

- In mature digital sectors with multiple innovators, government-led platforms may struggle to compete with commercial platforms due to capacity constraints

- Government-led platforms can facilitate collaboration and data sharing among ecosystem actors
- In markets with low private sector engagement, government-led platforms can directly address systemic challenges

The Agricultural Transformation Agency (ATA) was Ethiopia's first agriculture hotline, supporting SHFs with real-time agronomic information and best practices

Ethiopia's digital sector is marked by a dominant telco, limited digital connectivity companies, and high prices which stifle private sector-led innovation

Kenya's robust digital environment has given rise to commercial innovations that compete with some of KALRO's digital products

KALRO's datahub aims to centralise agricultural research across actors, whereas ATA Ethiopia runs digital projects to directly offer extension services and investment mapping

IMPACT OF THE PLATFORM



SHF Impact | KALRO has a footprint Kenya through government networks, but target reach is undefined and impact is unproven until the products are full developed

Reach



KALRO's direct channels currently reach **80,000** smallholder farmers

Target impact numbers are undefined, but are likely to reach **national scale** with partners channels

Footprint



47 counties in Kenya through government offices

The FBS launched with **Maize**

Other priority value chains include **rice, green grams, potatoes, wheat, beef and milk**

SHF productivity impact



Markets

- **Income security and more stable commodity markets** from better coordinated government policies on food production



Skills

- **Personalised advice on good agricultural practices** through agri-coach could encourage efficient farming and improve yields



Land

- Potentially **improve land use** by cultivating suitable crops/livestock
- Early warning information could **improve shock resilience**



Climate smart agriculture

- Potential to **increase adoption of climate smart practices** through the agri-coach
- Early warning alerts could **better enable farmers to prepare for impending disasters**, including weather-related such as floods



Gender

- No specific measures to reach women have been incorporated
- Impact may be limited without deliberate intention



Capital and infrastructure

- **Increased access to finance** through the forthcoming credit scoring product

KALRO's product suite has promising impact potential for farmers, however in some cases there is a **limited user engagement in product design** due to time constraints¹. **This raises uncertainties in how effectively products will meet end user needs.**

Note: ¹For example, in the partnership with aWhere to provide weather services, they were unable to test and improve different aspects of the messages (e.g. language) due to time constraints. As a result, they are providing the service only in English and not in Swahili.

Source: Dalberg interviews and analysis, 2020; AgriFin,



Innovators Impact | Partner gains include rich data inputs and network building; challenges include low capacity and lack of clear partnership processes

Benefits of partnering with KALRO

- **Access to rich data sets and insights** to create and improve product offering
 - *Satellite companies can cross-check yield estimates from abstract satellite models with the field datasets from counties and other field organisations*
 - *Innovators can access data to test products, bypassing high market costs and restrictive data networks*
- **Reputation and credibility from working with government-player** legitimises the value that innovators bring to the agriculture ecosystem
- **Strengthened networks in the agriculture ecosystem.** Data sharing through KALRO lays the foundation for tech innovators to deepen their relationships with other ecosystem actors such as governments, donors and field organisations
- **Expanded farmer offering at low cost.** Promoting complementary KALRO products can enable innovators to provide their farmer networks more value at low cost to the innovator organisation
 - *Digital Green are interested in weather/crop monitoring as an additional offering to their video-enabled extension services for farmers in their networks*

Barriers to partnership

- **Limited of capacity to engage partners.** Limited team resources and bureaucratic procedures prolong negotiations. The Government freeze “policy on hiring” is the greatest limitation to address this challenge
- **Unclear principles and processes for forging partnership,** including uncoordinated partnership strategy and lack of clear data sharing/purchase policy
- **Some duplicative products.** Some DAT innovators are developing similar offerings to weather monitoring and agri-coach, which could lead to conflict
- **Burdensome data sharing regulations.** Multiple external approvals in order to comply with Kenya data laws can extend partnership discussions

KALRO's datahub has the **potential to help innovators scale by providing valuable information** and strengthening their networks



Ecosystem Impact | The data hub can help to strengthen government policy and improve the competitive landscape for other partners and consumers

Competitors

- Potential to **create a more competitive sector** by providing robust data for market players
- Potential to **lower barriers to entry** for small-scale organisations who can leverage KALRO products

End Consumers

- End consumers could potentially benefit from **higher quality produce, stable market prices, and more predictable food supply**
- KALRO tracks consumer prices as part of the Food Balance Sheet

Climate modelling

- Potential to improve data-driven climate planning and adaptation by **informing policy on land use change, coordinating resource allocation, and refining technical support programs** to improve climate resilience
- The environmental modelling product has not yet been developed



Government

- Potential to **support data-driven policy-making and improve resource allocation towards** local food production, shock resilience and value chain promotion
- The food balance sheet offers the government more **visibility on food security** to inform agriculture policies

Donors





- Potential to receive reliable ground data to **inform programming and improve resource allocation**, e.g. food aid distribution volumes and location
- Channel for funding to catalyse impact across the sector

Other Partners

- Potential to **increase lending and insurance provision** through improved credit and weather information to profile farmers and inform pay-outs
- Potential to **improve data sharing among** researchers, policy actors, private investment, and development initiatives

SUMMARY

KALRO is well positioned to deliver the datahub and foster collaboration through open data-sharing; challenges include limited capacity and low user engagement

Drivers 	<ul style="list-style-type: none"> To build and share open information and knowledge and to foster innovation To fulfil KALRO's mandate to co-ordinate and lead the digitisation of agricultural data and research in line with government priorities To facilitate evidence-based decisions in agriculture sector
Current status 	<ul style="list-style-type: none"> The platform has so far only developed three incomplete products, with a pipeline of products in progress KALRO is a member of several data-sharing bodies and is in bilateral discussions with partners for product dissemination
Key Assets 	<ul style="list-style-type: none"> KALRO's wealth of agricultural research information, historical body of field work and agronomy expertise Trusted relationships and established reputation with partners, including as key implementing body for MoALF Deep knowledge of the local context, including field networks and a database of thousands of farmers across Kenya Dedicated IT team and established infrastructure making them a natural home for agriculture research platforms
Success Factors 	<ul style="list-style-type: none"> KALRO has aligned with strategic government priorities such as with the Food Balance Sheet, and holds an unrivalled position as the primary player the government looks to for agriculture research Strong vision and leadership from IT head has been key to bring in support from donors and establish KALRO's infrastructure Open data strategy encourages information sharing and transparency from county governments and prospective partners
Challenges 	<ul style="list-style-type: none"> Internal capacity is limited and the IT team tends to operate in a silo, having limited engagement with agronomic specialists Lack of clear principles and processes for data partnerships risks delaying product rollout By nature, KALRO is reliant on government and donor support to finance its activities Lack of user engagement in product design overlooks critical opportunities to validate SHF needs and assess product fit
Lessons Learnt 	<ul style="list-style-type: none"> Build internal team such as software engineers and data analysts to see the vision through to execution Build internal partnership capabilities and use 'matchmakers' to streamline the partnership process and align priorities Leverage existing assets and play to organisation strengths of (i) government position and (ii) agronomy expertise Engage end users in product design to ensure best fit to their needs

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